



12269 East Vassar Drive, Aurora, CO 80014
303.881.6816, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: Dioxin/Furans by Method 1613
QC Level: V¹
SDG: IPD1011
Matrix: Soil
No. of Samples: 6
No. of Reanalyses: 0
Date Reviewed: April 21, 2006
Reviewer: K. Shadowlight
Reference: *National Functional Guidelines for Chlorinated Dioxin/Furan Data Review (8/02), USEPA Method 1613*
Samples Reviewed: MJ775, MJ724, MJ729, MJ730, MJ735, MJ736

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received at Del Mar within the temperature limits of 4° ±2°C. The samples were shipped to Alta for dioxin/furan analysis and were received below the temperature limits at 0°C. As the samples were not noted to be damaged or frozen, no qualifications were required. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary.</p> <p>The original COC and transfer COC were signed and dated by field and laboratory personnel. According to a memo from MWH personnel, dated 04/12/06, the EPA ID was changed from MJ723 to MJ775 for Client ID NCBS18S01. The COCs accounted for the analyses presented in this SDG.</p> <p>The EPA IDs were added to the sample result summaries.</p>	No qualifications were required.

DATA VALIDATION REPORT

	Findings	Qualifications
<u>Sample Management Cont.</u>	The samples were extracted and analyzed within one year of sample collection.	No qualifications were required.
4. <u>Method Blanks</u> 0-7930-MB001	Target compounds HpCDD, OCDD, 1,2,3,4, 7,8-HxCDF, 1,2,3,4,7,8,9-HpCDF, and OCDF were reported at concentrations below the laboratory lower calibration levels in the method blank. These target compounds were also reported in the samples of this SDG; however, the detects exceeded five times the concentrations reported in the method blank.	No qualifications were required.
5. <u>OPR</u> 0-7930-OPR001	All recoveries were within the acceptance criteria listed in Table 6 of Method 1613.	No qualifications were required.
6. <u>MS/MSDs</u>	MS/MSD analyses were not performed on the samples in this SDG.	No qualifications were required.
7. <u>Field QC Samples</u> FB: None ER: MJ615 (IPB1429) FD: None	Target compounds 1,2,3,4,6,7,8-HpCDD and OCDD were reported at concentrations below the laboratory lower calibration level in the equipment rinsate. HpCDD and OCDD were also reported in the samples of this SDG; however the detects exceeded five times the amount in the equipment rinsate.	No qualifications were required.
10. <u>Other</u>	<p>According to the case narrative for this SDG, the results for OCDD were reported from diluted analyses in samples MJ775 and MJ724.</p> <p>Diphenyl ether interference was present in several samples of this SDG and was denoted with a "D" flag by the laboratory.</p> <p>Target compound 2,3,7,8-TCDF was reported in sample MJ730; however, a confirmation analysis was not performed by the laboratory.</p> <p>There were detects reported below the laboratory lower calibration level.</p> <p>Sample results were reported in units of pg/g on a dry-weight basis.</p>	<p>No qualifications were required.</p> <p>Any detects with diethyl ether interference were qualified as estimated, "J," in the samples of this SDG.</p> <p>The detect for 2,3,7,8-TCDF was qualified as estimated, "J," in sample MJ730.</p> <p>Any detects below the laboratory lower calibration level were qualified as estimated, "J."</p>

	Findings	Qualifications
<u>Comments</u>	Internal standard recoveries are not routinely evaluated at a Level V validation; however, the recoveries were reported on the sample result summaries. The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613 for all samples in this SDG.	None

¹ Level V validation consists of cursory review of the summary forms and chromatograms and raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed include instrument performance, initial and continuing calibrations

Sample ID: IPD1011-02		IPD1011-02		EPA Method 1613	
Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	Date Received:
Project:	IPD1011	Sample Size:	12.7 g	QC Batch No.:	Date Extracted:
Date Collected:	10-Apr-06	%Solids:	78.2	Date Analyzed DB-5	Dates Analyzed DB-225
Time Collected:	1200				18-Apr-06
Analyte	Conc. (pg/g)	DL ^a	EMPC ^b	Labeled Standard	%R ICL-UC ^d Qualifiers
2,3,7,8-TCDD	14.0			13C-2,3,7,8-TCDD	78.5 25 - 164
1,2,3,7,8-PeCDD	52.3			13C-1,2,3,7,8-PeCDD	85.5 25 - 181
1,2,3,4,7,8-HxCDD	133			13C-1,2,3,4,7,8-HxCDD	81.4 32 - 141
1,2,3,6,7,8-HxCDD	589			13C-1,2,3,6,7,8-HxCDD	83.7 28 - 130
1,2,3,7,8,9-HxCDD	184			13C-1,2,3,4,6,7,8-HpCDD	103 23 - 140
1,2,3,4,6,7,8-HpCDD	11400			13C-OCDD	75.8 17 - 157 *
OCDD	123000			13C-2,3,7,8-TCDF	60.3 24 - 169
2,3,7,8-TCDF	4.92			13C-1,2,3,7,8-PeCDF	77.6 24 - 185
1,2,3,7,8-PeCDF	6.66			13C-2,3,4,7,8-PeCDF	78.5 21 - 178
2,3,4,7,8-PeCDF	21.7			13C-1,2,3,4,7,8-HxCDF	87.6 26 - 152
1,2,3,4,7,8-HxCDF	79.4			13C-1,2,3,6,7,8-HxCDF	88.7 26 - 123
1,2,3,6,7,8-HxCDF	59.6			13C-2,3,4,6,7,8-HxCDF	86.9 28 - 136
2,3,4,6,7,8-HxCDF	142			13C-1,2,3,7,8,9-HxCDF	88.4 29 - 147
1,2,3,7,8,9-HxCDF	16.7			13C-1,2,3,4,6,7,8-HpCDF	91.3 28 - 143
1,2,3,4,6,7,8-HpCDF	2230			13C-1,2,3,4,7,8,9-HpCDF	101 26 - 138
1,2,3,4,7,8,9-HpCDF	206			13C-OCDF	92.5 17 - 157
OCDF	5320			CRS 37Cl-2,3,7,8-TCDD	81.1 35 - 197
Totals		Toxic Equivalent Quotient (TEQ) Data ^c			
Total TCDD	35.5			TEQ (Min):	439
Total PeCDD	288			a. Sample specific estimated detection limit	
Total HxCDD	2870			b. Estimated maximum possible concentration	
Total HpCDD	19700			c. Method detection limit	
Total TCDF	154			d. Lower control limit - upper control limit	
Total PeCDF	620			e. TEQ based on (1989) International Toxic Equivalent Factors (TEF)	
Total HxCDF	4200				
Total HpCDF	10800				

Analyst: JMH

Approved By:

William J. Luksemburg

19-Apr-2006 08:36

Sample ID: IPD1011-07				EPA Method 1613			
Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	27582-003	Date Received:	12-Apr-06
Project:	IPD1011	Sample Size:	11.7 g	QC Batch No:	7930	Date Extracted:	13-Apr-06
Date Collected:	10-Apr-06	%Solids:	85.6	Date Analyzed (DU):	17-Apr-06	Dates Analyzed (H):	18-Apr-06
Time Collected:	1225						
Analyte	Conc. (pg/g)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	5.11				IS 13C-2,3,7,8-TCDD	79.7	25 - 164
1,2,3,7,8-PeCDD	13.8				13C-1,2,3,7,8-PeCDD	85.1	25 - 181
1,2,3,4,7,8-HxCDD	34.0				13C-1,2,3,4,7,8-HxCDD	79.4	32 - 141
1,2,3,6,7,8-HxCDD	160				13C-1,2,3,6,7,8-HxCDD	80.4	28 - 130
1,2,3,7,8,9-HxCDD	65.6			B	13C-1,2,3,4,6,7,8-HpCDD	92.8	23 - 140
1,2,3,4,6,7,8-HpCDD	4510			B	13C-OCDD	79.1	17 - 157
OCDD	52700				13C-2,3,7,8-TCDF	57.6	24 - 169
2,3,7,8-TCDF	1.03				13C-1,2,3,7,8-PeCDF	75.5	24 - 185
1,2,3,7,8-PeCDF	1.37			J	13C-2,3,4,7,8-PeCDF	76.9	21 - 178
2,3,4,7,8-PeCDF	3.93				13C-1,2,3,4,7,8-HxCDF	84.1	26 - 152
1,2,3,4,7,8-HxCDF	16.1			B	13C-1,2,3,6,7,8-HxCDF	86.1	26 - 123
1,2,3,6,7,8-HxCDF	12.9				13C-2,3,4,6,7,8-HxCDF	85.1	28 - 136
2,3,4,6,7,8-HxCDF	28.5				13C-1,2,3,7,8,9-HxCDF	85.3	29 - 147
1,2,3,7,8,9-HxCDF	3.49				13C-1,2,3,4,6,7,8-HpCDF	84.2	28 - 143
1,2,3,4,6,7,8-HpCDF	537			B	13C-1,2,3,4,7,8,9-HpCDF	95.0	26 - 138
1,2,3,4,7,8,9-HpCDF	49.9				13C-OCDF	77.7	17 - 157
OCDF	1500			B	CRS 37Cl-2,3,7,8-TCDD	84.5	35 - 197
Totals				Toxic Equivalent Quotient (TEQ) Data ^e			
Total TCDD	9.26		9.80	TEQ (Min): 151			
Total PeCDD	64.3			a. Sample specific estimated detection limit.			
Total HxCDD	850			b. Estimated maximum possible concentration			
Total HpCDD	8200			c. Method detection limit			
Total TCDF	29.2		29.8	d. Lower control limit - upper control limit			
Total PeCDF	103			e. TEQ based on (1989) International Toxic Equivalent Factors (ITEF)			
Total HxCDF	841						
Total HpCDF	2550						

Analyst: JMH

Approved By:

William J. Luksemburg

19-Apr-2006 08:36

Sample ID: IPD1011-08		EPA Method 1613			
Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	27582-004
Project:	IPD1011	Sample Size:	11.3 g	QC Batch No:	7930
Date Collected:	10-Apr-06	%Solids:	88.3	Date Analyzed DB-5:	17-Apr-06
Time Collected:	1225			Date Analyzed DB-225:	NA
Analyte	Conc. (pg/g)	DL ^a	EMPC ^b	Labeled Standard	%R LCL-UCI ^d Qualifiers
2,3,7,8-TCDD	0.596			IS 13C-2,3,7,8-TCDD	71.7 25 - 164
1,2,3,7,8-PeCDD	2.27			13C-1,2,3,7,8-PeCDD	80.5 25 - 181
1,2,3,4,7,8-HxCDD	6.34			13C-1,2,3,4,7,8-HxCDD	76.6 32 - 141
1,2,3,6,7,8-HxCDD	29.5			13C-1,2,3,6,7,8-HxCDD	79.5 28 - 130
1,2,3,7,8,9-HxCDD	11.8			13C-1,2,3,4,6,7,8-HpCDD	87.2 23 - 140
1,2,3,4,6,7,8-HpCDD	921			13C-OCDD	70.9 17 - 157
OCDD	10600			13C-2,3,7,8-TCDF	58.6 24 - 169
2,3,7,8-TCDF	0.360			13C-1,2,3,7,8-PeCDF	75.0 24 - 185
1,2,3,7,8-PeCDF	0.377			13C-2,3,4,7,8-PeCDF	75.4 21 - 178
2,3,4,7,8-PeCDF	0.951			13C-1,2,3,4,7,8-HxCDF	82.1 26 - 152
1,2,3,4,7,8-HxCDF	3.46			13C-1,2,3,6,7,8-HxCDF	83.0 26 - 123
1,2,3,6,7,8-HxCDF	2.94			13C-2,3,4,6,7,8-HxCDF	81.8 28 - 136
2,3,4,6,7,8-HxCDF	6.58			13C-1,2,3,7,8,9-HxCDF	83.7 29 - 147
1,2,3,7,8,9-HxCDF	0.960			13C-1,2,3,4,6,7,8-HpCDF	83.2 28 - 143
1,2,3,4,6,7,8-HpCDF	143			13C-1,2,3,4,7,8,9-HpCDF	94.9 26 - 138
1,2,3,4,7,8,9-HpCDF	12.3			13C-OCDF	77.8 17 - 157
OCDF	384			CRS 37Cl-2,3,7,8-TCDD	76.6 35 - 197
Totals		Toxic Equivalent Quotient (TEQ) Data ^e			
Total TCDD	1.08	TEQ (Min): 30.2			
Total PeCDD	12.0	a. Sample specific estimated detection limit			
Total HxCDD	153	b. Estimated maximum possible concentration			
Total HpCDD	1580	c. Method detection limit			
Total TCDF	7.50	d. Lower control limit - upper control limit			
Total PeCDF	19.6	e. TEQ based on (1989) International Toxic Equivalent Factors (ITEF)			
Total HxCDF	189				
Total HpCDF	631				

Analyst: JMH

Approved By:

William J. Luksemburg

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Sample ID: IPD1011-13		EPA Method 1613	
Client Data		Laboratory Data	
Name	Del Mar Analytical, Irvine	Lab Sample:	27582-005
Project:	IPD1011	QC Batch No.:	7930
Date Collected:	10-Apr-06	Date Analyzed DB-5:	17-Apr-06
Time Collected:	1320	Date Received:	12-Apr-06
		Date Extracted:	13-Apr-06
		Dates Analyzed DB-235:	18-Apr-06
Sample Data		Labeled Standard	
Matrix	Solid	%R	LCL-UCL ^d Qualifiers
Sample Size:	12.6 g		
%Solids:	79.2		
Analyte	Conc. (pg/g)	DL ^a	EMPC ^b Qualifiers
2,3,7,8-TCDD	0.553		
1,2,3,7,8-PeCDD	5.30		
1,2,3,4,7,8-HxCDD	12.7		
1,2,3,6,7,8-HxCDD	33.6		
1,2,3,7,8,9-HxCDD	24.5		
1,2,3,4,6,7,8-HpCDD	1060		B
OCDD	13100		B
2,3,7,8-TCDF	11.8		
1,2,3,7,8-PeCDF	3.72		
2,3,4,7,8-PeCDF	9.42		
1,2,3,4,7,8-HxCDF	11.5		B
1,2,3,6,7,8-HxCDF	7.99		D
2,3,4,6,7,8-HxCDF	9.58		
1,2,3,7,8,9-HxCDF	2.29		J
1,2,3,4,6,7,8-HpCDF	180		B
1,2,3,4,7,8,9-HpCDF	13.2		
OCDF	799		B
Totals		Toxic Equivalent Quotient (TEQ) Data ^c	
Total TCDD	5.46	TEQ (Min):	45.9
Total PeCDD	32.2	^a Sample specific estimated detection limit. ^b Estimated maximum possible concentration. ^c Method detection limit. ^d Lower control limit - upper control limit ^e TEQ based on (1989) International Toxic Equivalent Factors (ITEF)	
Total HxCDD	270		
Total HpCDD	2410		
Total TCDF	117		
Total PeCDF	99.5		
Total HxCDF	214		
Total HpCDF	641		

Analyst: JMH

Approved By:

William J. Luksemburg

19-Apr-2006 08:36

Sample ID: IPD1011-14		EPA Method 1613			
Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample	Date Received: 12-Apr-06
Project:	IPD1011	Sample Size:	13.1 g	QC Batch No.:	Date Extracted: 13-Apr-06
Date Collected:	10-Apr-06	% Solids:	75.8	Date Analyzed DB-5:	Date Analyzed DB-225: 18-Apr-06
Time Collected:	1325				
Analyte	Conc. (pg/g)	DL ^a	EMPC ^b	Labeled Standard	%R LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	0.999			IS 13C-2,3,7,8-TCDD	77.7 25 - 164
1,2,3,7,8-PeCDD	5.52			13C-1,2,3,7,8-PeCDD	74.7 25 - 181
1,2,3,4,7,8-HxCDD	11.1			13C-1,2,3,4,7,8-HxCDD	77.3 32 - 141
1,2,3,6,7,8-HxCDD	38.8			13C-1,2,3,6,7,8-HxCDD	79.9 28 - 130
1,2,3,7,8,9-HxCDD	21.3			13C-1,2,3,4,6,7,8-HpCDD	89.4 23 - 140
1,2,3,4,6,7,8-HpCDD	1040			13C-OCDD	74.5 17 - 157
OCDD	10800			13C-2,3,7,8-TCDF	77.6 24 - 169
2,3,7,8-TCDF	8.59			13C-1,2,3,7,8-PeCDF	78.6 24 - 185
1,2,3,7,8-PeCDF	4.97			13C-2,3,4,7,8-PeCDF	78.7 21 - 178
2,3,4,7,8-PeCDF	8.59			13C-1,2,3,4,7,8-HxCDF	82.2 26 - 152
1,2,3,4,7,8-HxCDF	11.5			13C-1,2,3,6,7,8-HxCDF	82.6 26 - 123
1,2,3,6,7,8-HxCDF	8.53			13C-2,3,4,6,7,8-HxCDF	82.0 28 - 136
2,3,4,6,7,8-HxCDF	12.0			13C-1,2,3,7,8,9-HxCDF	85.3 29 - 147
1,2,3,7,8,9-HxCDF	2.96			13C-1,2,3,4,6,7,8-HpCDF	84.2 28 - 143
1,2,3,4,6,7,8-HpCDF	154			13C-1,2,3,4,7,8,9-HpCDF	94.6 26 - 138
1,2,3,4,7,8,9-HpCDF	12.8			13C-OCDF	81.5 17 - 157
OCDF	360			CRS 37Cl-2,3,7,8-TCDD	83.6 35 - 197
Totals		Toxic Equivalent Quotient (TEQ) Data ^c			
Total TCDD	16.7	TEQ (Min): 43.0			
Total PeCDD	55.0	a. Sample specific estimated detection limit			
Total HxCDD	314	b. Estimated maximum possible concentration			
Total HpCDD	2160	c. Method detection limit			
Total TCDF	100	d. Lower control limit - upper control limit			
Total PeCDF	102	e. TEQ based on (1989) International Toxic Equivalent Factors (ITEF)			
Total HxCDF	277				
Total HpCDF	611				

Analyst: JMH

Approved By

William J. Luksemburg

19-Apr-2006 08:36

Sample ID: IPD1011-01		IPD 7-78		EPA Method 1613	
Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	27582-001
Project:	IPD1011	Sample Size:	12.5 g	QC Batch No.:	7930
Date Collected:	10-Apr-06	% Solids:	80.5	Date Analyzed DB-5:	16-Apr-06
Time Collected:	1155			Date Analyzed DB-225:	18-Apr-06
Analyte	Conc. (pg/g)	DL ^a	EMPC ^b	Labeled Standard	%R LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	42.3			IS 13C-2,3,7,8-TCDD	78.8 25 - 164
1,2,3,7,8-PeCDD	94.9			13C-1,2,3,7,8-PeCDD	82.7 25 - 181
1,2,3,4,7,8-HxCDD	242			13C-1,2,3,4,7,8-HxCDD	83.5 32 - 141
1,2,3,6,7,8-HxCDD	896			13C-1,2,3,6,7,8-HxCDD	84.6 28 - 130
1,2,3,7,8,9-HxCDD	472			13C-1,2,3,4,6,7,8-HpCDD	115 23 - 140
1,2,3,4,6,7,8-HpCDD	26500			13C-OCDD	88.5 17 - 157 *
OCDD	275000			13C-2,3,7,8-TCDF	63.4 24 - 169
2,3,7,8-TCDF	4.84			13C-1,2,3,7,8-PeCDF	79.9 24 - 185
1,2,3,7,8-PeCDF	11.3			13C-2,3,4,7,8-PeCDF	78.1 21 - 178
2,3,4,7,8-PeCDF	25.5			13C-1,2,3,4,7,8-HxCDF	89.6 26 - 152
1,2,3,4,7,8-HxCDF	83.0			13C-1,2,3,6,7,8-HxCDF	90.7 26 - 123
1,2,3,6,7,8-HxCDF	80.1			13C-2,3,4,6,7,8-HxCDF	88.7 28 - 136
2,3,4,6,7,8-HxCDF	142			13C-1,2,3,7,8,9-HxCDF	88.8 29 - 147
1,2,3,7,8,9-HxCDF	18.7			13C-1,2,3,4,6,7,8-HpCDF	95.5 28 - 143
1,2,3,4,6,7,8-HpCDF	2460			13C-1,2,3,4,7,8,9-HpCDF	104 26 - 138
1,2,3,4,7,8,9-HpCDF	230			13C-OCDF	108 17 - 157
OCDF	6930			CRS 37Cl-2,3,7,8-TCDD	83.6 35 - 197
Totals		Toxic Equivalent Quotient (TEQ) Data ^e			
Total TCDD	77.4		78.0	TEQ (Min):	871
Total PeCDD	471			a. Sample specific estimated detection limit.	
Total HxCDD	5960			b. Estimated maximum possible concentration.	
Total HpCDD	55300			c. Method detection limit.	
Total TCDF	186			d. Lower control limit - upper control limit.	
Total PeCDF	664			e. TEQ based on (1989) International Toxic Equivalent Factors (ITEF).	
Total HxCDF	3940				
Total HpCDF	11400				

Analyst: JMH

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303.881.6816, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: Dioxin/Furans by Method 1613
QC Level: V¹
SDG: IPB1719
Matrix: Soil
No. of Samples: 5
No. of Reanalyses: 0
Date Reviewed: March 16, 2006
Reviewer: K. Shadowlight
Reference: *National Functional Guidelines for Chlorinated Dioxin/Furan Data Review (8/02), USEPA Method 1613*
Samples Reviewed: MJ665, MJ677, MJ678, MJ679, MJ680

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received at Del Mar within the temperature limits of 4° ±2°C. The samples were shipped to Alta for dioxin/furan analysis and were received below the temperature limits at 0°C. As the samples were not noted to be damaged or frozen, no qualifications were required. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary.</p> <p>The original COC and transfer COC were signed and dated by field and laboratory personnel. The original COC requested the analysis of dioxins by EPA Method 8290. The transfer COC requested analysis by Method 1613. The laboratory analyzed the samples by Method 1613 as indicated on the transfer COC.</p> <p>According to a notation on the original COC, the dioxin analysis for samples MJ666 and MJ667 was placed on "hold" status.</p>	No qualifications were required.

DATA VALIDATION REPORT

	Findings	Qualifications
<u>Sample Management (cont.)</u>	<p>The EPA IDs were added to the sample result summaries.</p> <p>The samples were extracted and analyzed within one year of sample collection.</p>	No qualifications were required.
4. <u>Method Blanks</u> 0-7786-MB001	Target compound 1,2,3,4,6,7,8-HpCDF was reported at a concentration below the laboratory lower calibration level in the soil method blank. This target compound was also reported in the samples of this SDG; however, the detects in the samples exceeded five times the concentration reported in the method blank. Target compounds 1,2,3,6,7,8-HxCDF and total HxCDF were reported as EMPCs in the method blank.	No qualifications were required.
5. <u>OPR</u> 0-7786-OPR001	All recoveries were within the acceptance criteria listed in Table 6 of Method 1613.	No qualifications were required.
6. <u>MS/MSDs</u>	MS/MSD analyses were not performed on the samples in this SDG.	No qualifications were required.
7. <u>Field QC Samples</u> FB: None ER: MJ615 (IPB1429) FD: MJ666/MJ667	<p>Target compounds 1,2,3,4,6,7,8-HpCDD and OCDD were reported at concentrations below the laboratory lower calibration level in the equipment rinsate; however, the detects in the samples exceeded five times the concentration reported in the method blank.</p> <p>Samples MJ666 and MJ667 were identified as the field duplicate pair for this SDG; however, the dioxin analysis was placed on "hold" status (see section 1).</p>	No qualifications were required.
10. <u>Other</u>	<p>EMPCs were identified in this SDG.</p> <p>Target compound 2,3,7,8-TCDF was reported in samples MJ677, MJ678 and MJ680; however, a confirmation analysis was not performed by the laboratory.</p>	<p>Any EMPC was qualified as an estimated nondetect, "UJ."</p> <p>The detects for 2,3,7,8-TCDF were qualified as estimated, "J," in the aforementioned samples.</p>

DATA VALIDATION REPORT

	Findings	Qualifications
<u>Other (cont.)</u>	<p>There were detects reported below the laboratory lower calibration level.</p> <p>Sample results were reported in units of pg/g on a dry-weight basis.</p>	Any detects below the laboratory lower calibration level were qualified as estimated, "J."
<u>Comments</u>	Internal standard recoveries are not routinely evaluated at a Level V validation; however, the recoveries were reported on the sample result summaries. The labeled standard recoveries were within the acceptance criteria listed in Table 7 of Method 1613 for all samples in this SDG.	None

¹ Level V validation consists of cursory review of the summary forms and chromatograms, and raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed include instrument performance, initial and continuing calibrations.

Sample ID: IPB1719-05		EPA Method 1613	
Client Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Lab Sample:	27312-001
Project:	IPB1719	QC Batch No.:	7786
Date Collected:	16-Feb-06	Date Analyzed DB-5:	28-Feb-06
Time Collected:	1028	Date Analyzed DB-225:	28-Feb-06
Sample Data		Labeled Standard	
Matrix:	Soil	%R LCL-UCL ^d Qualifiers	
Sample Size:	10.6 g		
%Solids:	95.8		
Analyte	Conc. (pg/g)	DL ^a	EMPC ^b Qualifiers
2,3,7,8-TCDD	ND	0.120	
1,2,3,7,8-PeCDD	0.658		J
1,2,3,4,7,8-HxCDD	1.11		J
1,2,3,6,7,8-HxCDD	3.51		
1,2,3,7,8,9-HxCDD	2.32		J
1,2,3,4,6,7,8-HpCDD	93.0		
OCDD	1690		
2,3,7,8-TCDF	0.925		
1,2,3,7,8-PeCDF	0.686		J
2,3,4,7,8-PeCDF	1.18		J
1,2,3,4,7,8-HxCDF	1.94		J
1,2,3,6,7,8-HxCDF	0.988		J
2,3,4,6,7,8-HxCDF	1.05		J
1,2,3,7,8,9-HxCDF	0.418		J
1,2,3,4,6,7,8-HpCDF	12.7		H
1,2,3,4,7,8,9-HpCDF	1.29		J
OCDF	46.1		
Totals			
Total TCDD	1.49		
Total PeCDD	6.19		
Total HxCDD	34.3		
Total HpCDD	308		
Total TCDF	11.7		
Total PeCDF	10.8		
Total HxCDF	23.4		
Total HpCDF	43.5		
Toxic Equivalent Quotient (TEQ) Data ^e		Toxic Equivalent Quotient (TEQ) Data ^e	
TEQ (Min):		4.99	
a. Sample specific estimated detection limit.			
b. Estimated maximum possible concentration.			
c. Method detection limit.			
d. Lower control limit - upper control limit.			
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).			

Analyst: DMS

Approved By:

William J. Luksemburg 03-Mar-2006 08:51

Sample ID: IPB1719-11 MSJ677				EPA Method 1613			
Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	27312-002	Date Received:	21-Feb-06
Project:	IPB1719	Sample Size:	10.5 g	QC Batch No.:	7786	Date Extracted:	26-Feb-06
Date Collected:	16-Feb-06	%Solids:	94.2	Date Analyzed DB-5:	28-Feb-06	Date Analyzed DB-225:	NA
Time Collected:	1159						
Analyte	Conc. (pg/g)	DL ^a	EMPC ^b	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	ND	0.0905		IS-13C-2,3,7,8-TCDD	102	25 - 164	
1,2,3,7,8-PeCDD	0.430		J	13C-1,2,3,7,8-PeCDD	103	25 - 181	
1,2,3,4,7,8-HxCDD	1.08			13C-1,2,3,4,7,8-HxCDD	101	32 - 141	
1,2,3,6,7,8-HxCDD	2.48		J	13C-1,2,3,6,7,8-HxCDD	115	28 - 130	
1,2,3,7,8,9-HxCDD	1.69		J	13C-1,2,3,4,6,7,8-HpCDD	89.0	23 - 140	
1,2,3,4,6,7,8-HpCDD	85.9			13C-OCDD	82.9	17 - 157	
OCDD	926			13C-2,3,7,8-TCDF	112	24 - 169	
2,3,7,8-TCDF	0.480		J	13C-1,2,3,7,8-PeCDF	111	24 - 185	
1,2,3,7,8-PeCDF	0.269		J	13C-2,3,4,7,8-PeCDF	111	21 - 178	
2,3,4,7,8-PeCDF	0.581		J	13C-1,2,3,4,7,8-HxCDF	112	26 - 152	
1,2,3,4,7,8-HxCDF	0.971			13C-1,2,3,6,7,8-HxCDF	112	26 - 123	
1,2,3,6,7,8-HxCDF	0.645		J	13C-2,3,4,6,7,8-HxCDF	107	28 - 136	
2,3,4,6,7,8-HxCDF	0.821			13C-1,2,3,7,8,9-HxCDF	104	29 - 147	
1,2,3,7,8,9-HxCDF	ND	0.287		13C-1,2,3,4,6,7,8-HpCDF	89.4	28 - 143	
1,2,3,4,6,7,8-HpCDF	16.1		B	13C-1,2,3,4,7,8,9-HpCDF	90.4	26 - 138	
1,2,3,4,7,8,9-HpCDF	1.26		J	13C-OCDF	90.5	17 - 157	
OCDF	69.2			CRS-13C-2,3,7,8-TCDD	79.1	35 - 197	
Totals				Toxic Equivalent Quotient (TEQ) Data ^e			
Total TCDD	0.190			TEQ (Min):	3.36		
Total PeCDD	2.72		3.81				
Total HxCDD	29.5						
Total HpCDD	323						
Total TCDF	3.99		4.24				
Total PeCDF	6.50						
Total HxCDF	18.5						
Total HpCDF	60.0		B				

a. Sample specific estimated detection limit.

b. Estimated maximum possible concentration.

c. Method detection limit.

d. Lower control limit - upper control limit.

e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).

Analyst: DMS

Approved By:

William J. Luksemburg

03-Mar-2006 08:51

Sample ID: IPB1719-12		IPB1719-12		EPA Method 1613	
Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	27312-003
Project:	IPB1719	Sample Size:	10.6 g	QC Batch No.:	7786
Date Collected:	16-Feb-06	%Solids:	94.3	Date Analyzed DB-5:	28-Feb-06
Time Collected:	1210			Date Analyzed DB-225:	NA
Analyte	Conc. (pg/g)	DL ^a	EMPC ^b	Labeled Standard	%R LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	0.149		13C-2,3,7,8-TCDD	84.0 25 - 164
1,2,3,7,8-PeCDD	0.524		J	13C-1,2,3,7,8-PeCDD	86.5 25 - 181
1,2,3,4,7,8-HxCDD	0.853		J	13C-1,2,3,4,7,8-HxCDD	76.7 32 - 141
1,2,3,6,7,8-HxCDD	2.28		J	13C-1,2,3,6,7,8-HxCDD	87.4 28 - 130
1,2,3,7,8,9-HxCDD	1.82		J	13C-1,2,3,7,8,9-HxCDD	70.8 23 - 140
1,2,3,4,7,8-HpCDD	58.5		J	13C-OCDD	63.1 17 - 157
OCDD	606		J	13C-2,3,7,8-TCDF	89.1 24 - 169
2,3,7,8-TCDF	0.864		J	13C-1,2,3,7,8-PeCDF	90.8 24 - 185
1,2,3,7,8-PeCDF	0.661		J	13C-2,3,4,7,8-PeCDF	90.1 21 - 178
2,3,4,7,8-HxCDF	1.22		J	13C-1,2,3,4,7,8-HxCDF	84.4 26 - 152
1,2,3,6,7,8-HxCDF	1.52		J	13C-1,2,3,6,7,8-HxCDF	86.1 26 - 123
1,2,3,7,8,9-HxCDF	0.955		J	13C-2,3,4,6,7,8-HxCDF	82.7 28 - 136
2,3,4,6,7,8-HpCDF	1.03		J	13C-1,2,3,7,8,9-HpCDF	81.2 29 - 147
1,2,3,7,8,9-HpCDF	0.269		J	13C-1,2,3,4,6,7,8-HpCDF	69.4 28 - 143
1,2,3,4,6,7,8-HpCDF	9.99		B	13C-1,2,3,4,7,8,9-HpCDF	71.8 26 - 138
1,2,3,4,7,8,9-HpCDF	0.842		J	13C-OCDF	70.5 17 - 157
OCDF	25.8		J	CRS 13C-2,3,7,8-TCDD	69.2 35 - 197
Toxic Equivalent Quotient (TEQ) Data ^e					
Total TCDD	1.30			TEQ (Min):	3.19
Total PeCDD	5.27		5.63	a. Sample specific estimated detection limit.	
Total HxCDD	22.4			b. Estimated minimum possible concentration.	
Total HpCDD	139			c. Method detection limit.	
Total TCDF	10.7		11.4	d. Lower control limit - upper control limit	
Total PeCDF	11.9			e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (ITEF).	
Total HxCDF	16.2				
Total HpCDF	26.4				

Analyst: DMS

Approved By:

William J. Luksemburg 03-Mar-2006 08:51

Project 27312

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Sample ID: IPB1719-13 <i>MS 679</i>				EPA Method 1613			
Client Data		Sample Data		Laboratory Data			
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	27312-004	Date Received:	21-Feb-06
Project:	IPB1719	Sample Size:	10.4 g	QC Batch No.:	7786	Date Extracted:	26-Feb-06
Date Collected:	16-Feb-06	%Solids:	94.4	Date Analyzed DB-5:	28-Feb-06	Dates Analyzed DB-225:	28-Feb-06
Time Collected:	1215						
Analyte	Conc. (pg/g)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	ND	0.158		IS 13C-2,3,7,8-TCDD	86.2	25 - 164
1,2,3,7,8-PeCDD	0.945			J	13C-1,2,3,7,8-PeCDD	85.2	25 - 181
1,2,3,4,7,8-HxCDD	1.58			J	13C-1,2,3,4,7,8-HxCDD	82.8	32 - 141
1,2,3,6,7,8-HxCDD	4.03				13C-1,2,3,6,7,8-HxCDD	90.4	28 - 130
1,2,3,7,8,9-HxCDD	2.80				13C-1,2,3,7,8,9-HxCDD	78.5	23 - 140
1,2,3,4,6,7,8-HpCDD	86.2				13C-OCDD	72.3	17 - 157
OCDD	771				13C-2,3,7,8-TCDF	89.3	24 - 169
2,3,7,8-TCDF	1.25				13C-1,2,3,7,8-PeCDF	88.6	24 - 185
1,2,3,7,8-PeCDF	7.11			J	13C-2,3,7,8-PeCDF	89.3	21 - 178
2,3,4,7,8-PeCDF	5.91				13C-1,2,3,4,7,8-HxCDF	89.9	26 - 152
1,2,3,4,7,8-HxCDF	6.01				13C-1,2,3,6,7,8-HxCDF	78.1	26 - 123
1,2,3,6,7,8-HxCDF	6.06				13C-2,3,4,6,7,8-HxCDF	86.1	28 - 136
2,3,4,6,7,8-HxCDF	6.54				13C-1,2,3,7,8,9-HxCDF	81.1	29 - 147
1,2,3,7,8,9-HxCDF	1.60			J	13C-1,2,3,4,6,7,8-HpCDF	70.4	28 - 143
2,3,4,6,7,8-HpCDF	31.5			B	13C-1,2,3,4,7,8,9-HpCDF	85.5	26 - 138
1,2,3,4,7,8,9-HpCDF	2.44			J	13C-OCDF	78.3	17 - 157
QCDF	573				CRS 37Cl-2,3,7,8-TCDD	79.9	35 - 197
Totals					Toxic Equivalent Quotient (TEQ) Data ^e		
Total TCDD	5.29				TEQ (Min):	8.55	
Total PeCDD	173		6.75		a. Sample specific estimated detection limit.		
Total HxCDD	43.7				b. Estimated maximum possible concentration.		
Total HpCDD	229				c. Method detection limit.		
Total TCDF	38.5		39.0		d. Lower control limit - upper control limit.		
Total PeCDF	55.4				e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (TEF).		
Total HxCDF	66.7						
Total HpCDF	77.2			B			

Analyst: DMS

Approved By:

William J. Luksemburg 03-Mar-2006 08:51

Sample ID: IPB1719-14		IPB1680		EPA Method 1613	
Client Data		Sample Data		Laboratory Data	
Name:	Del Mar Analytical, Irvine	Matrix:	Soil	Lab Sample:	27312-005
Project:	IPB1719	Sample Size:	10.5 g	QC Batch No.:	7786
Date Collected:	16-Feb-06	%Solids:	96.5	Date Analyzed DB-5:	28-Feb-06
Time Collected:	1219			Date Analyzed DB-225:	NA
Analyte	Conc. (pg/g)	DL ^a	EMPC ^b	Labeled Standard	%R LCL-UCL ^d Qualifiers
2,3,7,8-TCDD	ND	0.120		IS 13C-2,3,7,8-TCDD	90.2 25 - 164
1,2,3,7,8-PeCDD	0.147			13C-1,2,3,7,8-PeCDD	89.6 25 - 181
1,2,3,4,7,8-HxCDD	0.308			13C-1,2,3,4,7,8-HxCDD	83.4 32 - 141
1,2,3,6,7,8-HxCDD	0.940			13C-1,2,3,6,7,8-HxCDD	97.7 28 - 130
1,2,3,7,8,9-HxCDD	0.520			13C-1,2,3,4,6,7,8-HpCDD	80.9 23 - 140
1,2,3,4,6,7,8-HpCDD	27.6			13C-OCDD	75.1 17 - 157
OCDD	354			13C-2,3,7,8-TCDF	97.7 24 - 169
2,3,7,8-TCDF	0.253			13C-1,2,3,7,8-PeCDF	99.6 24 - 185
1,2,3,7,8-PeCDF	0.122			13C-2,3,4,7,8-PeCDF	98.3 21 - 178
2,3,4,7,8-PeCDF	0.371			13C-1,2,3,4,7,8-HxCDF	94.5 26 - 152
1,2,3,4,7,8-HxCDF	0.306			13C-1,2,3,6,7,8-HxCDF	98.6 26 - 123
1,2,3,6,7,8-HxCDF	0.222			13C-2,3,4,6,7,8-HxCDF	91.7 28 - 136
2,3,4,6,7,8-HxCDF	0.311			13C-1,2,3,7,8,9-HxCDF	86.9 29 - 147
1,2,3,7,8,9-HxCDF	ND	0.120		13C-1,2,3,4,6,7,8-HpCDF	77.0 28 - 143
1,2,3,4,6,7,8-HpCDF	4.74			13C-1,2,3,4,7,8,9-HpCDF	85.9 26 - 138
1,2,3,4,7,8,9-HpCDF	0.305			13C-OCDF	82.5 17 - 157
OCDF	17.5			CRS 87C-2,3,7,8-TCDD	73.2 35 - 197
Totals	Toxic Equivalent Quotient (TEQ) Data ^e				
Total TCDD	0.205			TEQ (Min):	1.25
Total PeCDD	1.42		1.64	a. Sample specific estimated detection limit.	
Total HxCDD	8.03			b. Estimated maximum possible concentration.	
Total HpCDD	82.5			c. Method detection limit.	
Total TCDF	0.920			d. Lower control limit - upper control limit.	
Total PeCDF	3.15		3.42	e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (I-TEF).	
Total HxCDF	6.13				
Total HpCDF	17.8				

Analyst: DMS

Approved By:

William J. Luksemburg

03-Mar-2006 08:51



12269 East Vassar Drive, Aurora, CO 80014
303.881 6816, Fax 720 535 7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: PAHs by Method 8270C/SIM
QC Level: V¹
SDG: IPB1719
Matrix: Soil
No. of Samples: 4
No. of Reanalyses: 0
Date Reviewed: March 17, 2006
Reviewer: L. Calvin
Reference: USEPA Contract Laboratory Program National Functional
Guidelines For Organic Data Review (2/94)
Samples Reviewed: MJ681, MJ682, MJ683, MJ684

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received at Del Mar within the temperature limits of 4° ±2°C, at 4°C, and received at Calscience at 3°C. The original COC was signed and dated by field and laboratory personnel and accounted for the analyses presented in this SDG. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary. The transfer COC was signed by personnel from both laboratories.</p> <p>The soil samples were extracted within 14 days of collection, and all samples were analyzed within 40 days of extraction.</p>	No qualifications were required.
4. <u>Method Blanks</u> 060223L09-MB	There were no target compounds detected in the associated method blank.	No qualifications were required.
5. <u>LCS/BS</u> 060223L09-LCS/L, CSD	The recoveries and RPDs for spiked compounds acenaphthene and pyrene were within the laboratory-established QC limits.	No qualifications were required.

	Findings	Qualifications
6. <u>Surrogates</u>	The recoveries were within the laboratory-established QC limits.	No qualifications were required.
7. <u>MS/MSDs</u> None	MS/MSD analyses were not performed on the samples of this SDG.	No qualifications were required.
9. <u>Field QC Samples</u> FB: None ER: MJ615 (IPB1429) FD: MJ683/MJ684	<p>The equipment rinsate had no target compound detects.</p> <p>The field duplicate samples had common detects for 13 of the 18 PAH target compounds, with RPDs <100%. Sample MJ683 also had detects just above the reporting limit for naphthalene and 1-methylnaphthalene. Neither compound was detected in MJ684. The pair was considered to be in good agreement.</p>	No qualifications were required.
10. <u>Other</u>	Sample results were reported in units of mg/Kg (ppm) on a dry-weight basis.	None.
<u>Comments</u>	None.	None.

¹ Level V validation consists of cursory review of the summary forms and chromatograms, and raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed include instrument tunes, initial and continuing calibrations, compound identification, and compound quantification.

Analytical Report

nd c

Del Mar Analytical
 17461 Derian Avenue, Suite 100
 Irvine, CA 92614-5845

Date Received: 02/24/06
 Work Order No: 06-02-1328
 Preparation: EPA 3545
 Method: EPA 8270C SIM PAHs
 Units: mg/kg

Project: IPB1719

Page 1 of 3

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IPB1719-15	06-02-1328-1	02/16/06	Solid	02/24/06	02/24/06	0602231.09

Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	ND	0.021	0.0038	1.03		Benzo (a) Anthracene	ND	0.021	0.0027	1.03	
2-Methylnaphthalene	ND	0.021	0.0025	1.03		Chrysene	ND	0.021	0.0049	1.03	
Acenaphthylene	ND	0.021	0.0025	1.03		Benzo (k) Fluoranthene	ND	0.021	0.0046	1.03	
Acenaphthene	ND	0.021	0.0052	1.03		Benzo (b) Fluoranthene	ND	0.021	0.0014	1.03	
Fluorene	ND	0.021	0.0031	1.03		Benzo (a) Pyrene	ND	0.021	0.0020	1.03	
Phenanthrene	ND	0.021	0.0039	1.03		Benzo (g,h,i) Perylene	ND	0.021	0.0034	1.03	
Anthracene	ND	0.021	0.0064	1.03		Indeno (1,2,3-c,d) Pyrene	ND	0.021	0.0036	1.03	
Fluoranthene	ND	0.021	0.0020	1.03		Dibenz (a,h) Anthracene	ND	0.021	0.0028	1.03	
Pyrene	ND	0.021	0.0034	1.03		1-Methylnaphthalene	ND	0.021	0.0044	1.03	
Surrogates:	REC (%)	Control Limits			Qual	Surrogates:	REC (%)	Control Limits			Qual
Nitrobenzene-d5	48	28-139				2-Fluorobiphenyl	55	33-144			
p-Terphenyl-d14	64	23-160									

IPB1719-16	06-02-1328-2	02/16/06	Solid	02/24/06	02/24/06	0602231.09
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Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.64	0.02	0.0037	1.01		Benzo (a) Anthracene	0.34	0.02	0.0026	1.01	
2-Methylnaphthalene	0.78	0.02	0.0024	1.01		Chrysene	0.39	0.02	0.0048	1.01	
Acenaphthylene	ND	0.020	0.0024	1.01		Benzo (k) Fluoranthene	0.27	0.02	0.0045	1.01	
Acenaphthene	ND	0.020	0.0050	1.01		Benzo (b) Fluoranthene	0.26	0.02	0.0014	1.01	
Fluorene	ND	0.020	0.0031	1.01		Benzo (a) Pyrene	0.22	0.02	0.0020	1.01	
Phenanthrene	0.17	0.02	0.0038	1.01		Benzo (g,h,i) Perylene	0.043	0.020	0.0033	1.01	
Anthracene	0.030	0.020	0.0062	1.01		Indeno (1,2,3-c,d) Pyrene	0.058	0.020	0.0035	1.01	
Fluoranthene	0.49	0.02	0.0020	1.01		Dibenz (a,h) Anthracene	ND	0.020	0.0027	1.01	
Pyrene	0.58	0.02	0.0033	1.01		1-Methylnaphthalene	0.39	0.02	0.0043	1.01	
Surrogates:	REC (%)	Control Limits			Qual	Surrogates:	REC (%)	Control Limits			Qual
Nitrobenzene-d5	84	28-139				2-Fluorobiphenyl	89	33-144			
p-Terphenyl-d14	109	23-160									

Level II

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers

Analytical Report



Del Mar Analytical
 17461 Derian Avenue, Suite 100
 Irvine, CA 92614-5845

Date Received: 02/24/06
 Work Order No: 06-02-1328
 Preparation: EPA 3545
 Method: EPA 8270C SIM PAHs
 Units: mg/kg

Project: IPB1719

Page 2 of 3

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID					
IPB1719-17	06-02-1328-3	02/16/06	Solid	02/24/06	02/24/06	060223L09					
Comment(s): -Results are reported on a dry weight basis. -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.											
Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	0.031	0.024	0.0044	1.19		Benzo (a) Anthracene	0.27	0.02	0.0031	1.19	
2-Methylnaphthalene	0.040	0.024	0.0028	1.19		Chrysene	0.44	0.02	0.0056	1.19	
Acenaphthylene	ND	0.024	0.0029	1.19		Benzo (k) Fluoranthene	0.30	0.02	0.0054	1.19	
Acenaphthene	ND	0.024	0.0060	1.19		Benzo (b) Fluoranthene	0.42	0.02	0.0017	1.19	
Fluorene	ND	0.024	0.0036	1.19		Benzo (a) Pyrene	0.26	0.02	0.0023	1.19	
Phenanthrene	0.25	0.02	0.0045	1.19		Benzo (g,h,i) Perylene	0.073	0.024	0.0039	1.19	
Anthracene	0.038	0.024	0.0074	1.19		Indeno (1,2,3-c,d) Pyrene	0.10	0.02	0.0041	1.19	
Fluoranthene	0.58	0.02	0.0023	1.19		Dibenz (a,h) Anthracene	0.025	0.024	0.0032	1.19	
Pyrene	0.60	0.02	0.0039	1.19		1-Methylnaphthalene	0.030	0.024	0.0051	1.19	
Surrogates:	REC (%)	Control Limits			Qual	Surrogates:	REC (%)	Control Limits			Qual
Nitrobenzene-d5	89	28-139				2-Fluorobiphenyl	84	33-144			
p-Terphenyl-d14	101	23-160									
IPB1719-18	06-02-1328-4	02/16/06	Solid	02/24/06	02/24/06	060223L09					

Comment(s): -Results are reported on a dry weight basis. -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.											
Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	ND	0.023	0.0042	1.13		Benzo (a) Anthracene	0.29	0.02	0.0030	1.13	
2-Methylnaphthalene	0.030	0.023	0.0027	1.13		Chrysene	0.50	0.02	0.0053	1.13	
Acenaphthylene	ND	0.023	0.0027	1.13		Benzo (k) Fluoranthene	0.38	0.02	0.0051	1.13	
Acenaphthene	ND	0.023	0.0057	1.13		Benzo (b) Fluoranthene	0.46	0.02	0.0016	1.13	
Fluorene	ND	0.023	0.0035	1.13		Benzo (a) Pyrene	0.28	0.02	0.0022	1.13	
Phenanthrene	0.22	0.02	0.0043	1.13		Benzo (g,h,i) Perylene	0.079	0.023	0.0037	1.13	
Anthracene	0.039	0.023	0.0070	1.13		Indeno (1,2,3-c,d) Pyrene	0.10	0.02	0.0039	1.13	
Fluoranthene	0.61	0.02	0.0022	1.13		Dibenz (a,h) Anthracene	0.027	0.023	0.0030	1.13	
Pyrene	0.64	0.02	0.0037	1.13		1-Methylnaphthalene	ND	0.023	0.0048	1.13	
Surrogates:	REC (%)	Control Limits			Qual	Surrogates:	REC (%)	Control Limits			Qual
Nitrobenzene-d5	83	28-139				2-Fluorobiphenyl	82	33-144			
p-Terphenyl-d14	103	23-160									

Level V

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers



12269 East Vassar Drive, Aurora, CO 80014
303.881.6816, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: NDMA by Method 1625C
QC Level: V¹
SDG: IPB1719
Matrix: Soil
No. of Samples: 4
No. of Reanalyses: 0
Date Reviewed: March 17, 2006
Reviewer: L. Calvin
Reference: USEPA *Contract Laboratory Program National Functional Guidelines For Organic Data Review (2/94)*
Samples Reviewed: MJ681, MJ682, MJ683, MJ684

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received at Del Mar within the temperature limits of $4^{\circ} \pm 2^{\circ}\text{C}$, at 3°C. The COC was signed and dated by field and laboratory personnel and accounted for the analyses presented in this SDG. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary.</p> <p>The soil samples were extracted within 14 days of collection and all samples were analyzed within 40 days of extraction.</p>	No qualifications were required.
4. <u>Method Blanks</u> 6B19073-MB	NDMA was detected between the MDL and reporting limit at $0.174 \mu\text{g/Kg}$ in the method blank; however, there were no NDMA detects in the associated soil samples.	No qualifications were required.
5. <u>LCS/BS</u> 6B19073-BS1	The recovery for NDMA in the soil blank spike was within the laboratory-established QC limits.	No qualifications were required.
6. <u>Surrogates</u>	Surrogates were not utilized for this analysis.	No qualifications were required.

DATA VALIDATION REPORT

	Findings	Qualifications
7. <u>MS/MSDs</u> None	MS/MSD analyses were not performed on the samples in this SDG.	No qualifications were required.
9. <u>Field QC Samples</u> FB: None ER: MJ615 (IPB1429) FD: MJ683/MJ684	NDMA was not detected in the equipment rinsate. NDMA was not detected in either of the field duplicate samples, and the pair was considered to be in agreement.	No qualifications were required.
10. <u>Other</u>	According to the sample result summary, samples MJ682, MJ683, and MJ684 were analyzed at 10× dilutions. The reviewer noted that 5× dilutions combined with a 2 ml final extract volume (rather than 1 ml) resulted in the effective 10× dilutions. A notation on the raw data noted the dilutions were based on dark extract color; however, the chromatograms showed no evidence of matrix interference. Sample results were reported in units of µg/Kg on a dry-weight basis.	No qualifications were required.
<u>Comments</u>	None	None.

¹ Level V validation consists of cursory review of the summary forms and chromatograms, and raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed include instrument performance, initial and continuing calibrations, compound identification, and compound quantification.



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1072 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd., #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 6
 Data Gap
 Report Number: IPB1719

Sampled: 02/16/06
 Received: 02/16/06

SEMI-VOL ORGANICS by GC/MS-CHEMICAL IONIZATION (EPA 3520C/1625C-CI MOD)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1719-15 (MJ681 - Soil)									RL-1
Reporting Units: ug/kg dry									
N-Nitrosodimethylamine	EPA 1625C-CI Mod	6B19073	0.13	3.2	ND	0.997	02/20/06	02/25/06	u
Sample ID: IPB1719-16 (MJ682 - Soil)									RL-1
Reporting Units: ug/kg dry									
N-Nitrosodimethylamine	EPA 1625C-CI Mod	6B19073	1.2	30	ND	9.98	02/20/06	02/25/06	u
Sample ID: IPB1719-17 (MJ683 - Soil)									RL-1
Reporting Units: ug/kg dry									
N-Nitrosodimethylamine	EPA 1625C-CI Mod	6B19073	1.3	33	ND	10	02/20/06	02/25/06	u
Sample ID: IPB1719-18 (MJ684 - Soil)									RL-1
Reporting Units: ug/kg dry									
N-Nitrosodimethylamine	EPA 1625C-CI Mod	6B19073	1.3	34	ND	10	02/20/06	02/25/06	u

Del Mar Analytical, Irvine
 Michele Chamberlin
 Project Manager

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IPB1719 <Page 4 of 24>

Level V



12269 East Vassar Drive, Aurora, CO 80014
720.535.5502, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: Metals by EPA 7470A
QC Level: V¹
SDG: IPE0402
Matrix: Soil
No. of Samples: 4
No. of Reanalyses: 1
Date Reviewed: May 23, 2006
Reviewer: P. Meeks
Reference: USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*
Samples Reviewed: MJ744RE, MJ746, MJ747, MJ748, MJ750

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received within the temperature limits of $4^{\circ}\pm 2^{\circ}\text{C}$, at 3°C. The COC was signed and dated by field and laboratory personnel. Sample MJ744 was originally analyzed for mercury in SDG IPD1108. The mercury reanalysis presented in this SDG was requested as per a telephone call from MWH personnel dated 5/5/06. As this was a reanalysis, the reviewer changed the EPA ID from MJ744 to MJ744RE. The remaining samples in this SDG were received on HOLD. The metals analyses were requested in a memo from MWH personnel dated 5/5/06. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary.</p> <p>The 6-month ICP and ICP-MS analytical holding time and the 28-day mercury analytical holding time were met.</p>	No qualifications were required.

	Findings	Qualifications
3. <u>Method Blanks</u> 6E05103-BLK1 6E05099-BLK1 6E08059-BLK1	Molybdenum was detected in method blank 6E05099-BLK at 0.100 mg/kg and in three bracketing CCBs at 0.100, 0.229, and 0.360 µg/L. Antimony and arsenic were detected in bracketing CCBs at 0.102 and 1.80 µg/L, respectively.	Molybdenum detected in MJ746, MJ747, and MJ750 was qualified as an estimated nondetect, "UJ." Antimony detected in MJ748 and arsenic detected in MJ746 were qualified as estimated nondetects, "UJ."
5. <u>LCS/BS</u> 6E05103-BS1 6E05099-BS1 6E08059-BS1	The recoveries were within the laboratory-established control limits.	No qualifications were required.
6. <u>Duplicates</u> None	None	None
7. <u>MS/MSDs</u> MJ746	Antimony and cadmium were recovered below the control limit in both the MS and the MSD. Nickel and barium were recovered below the control limit in the MSD only. The remaining recoveries were within the control limits of 75-125% and all RPDs were within the ≤20% control limit.	Antimony, cadmium, nickel, and barium in the samples were qualified as estimated, "UJ," for nondetects and, "J," for detects.
10. <u>Other</u>	The original mercury result for MJ744 was similar to the reanalysis mercury result, MJ744RE.	The reviewer rejected the reanalysis result, MJ744RE in favor of the original result, MJ744 (SDG IPD1108).
11. <u>Field QC Samples</u> Field blank: MJ813 (IPD1477) Equipment rinsate: MJ812 (IPD1477) Field duplicates: None	Barium, chromium, copper, lead, and zinc were detected in MJ812 at 1.7, 1.7, 29, 4.0, 370 µg/L, respectively. Chromium, copper, lead, and zinc were detected in MJ813 at 0.6, 2.3, 0.44, 46 µg/L, respectively.	Copper in MJ746 and MJ747, and zinc in all samples was qualified as estimated, "J."
<u>Comments</u>	None	None

[†] Level V validation consists of cursory review of the summary forms only, and raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed include initial and continuing calibration, continuing calibration blanks, interference check samples (ICSA/ICSAB), and serial dilutions.



17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Conley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd., #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPE0402

Sampled: 04/11/06
Received: 05/04/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IPE0402-01 (MJ746 - Soil)										
Reporting Units: mg/kg dry										
Aluminum	EPA 6010B	6E05103	6.0	12	27000	1	05/05/06	05/05/06		
Antimony	EPA 6020	6E05099	0.036	1.2	0.22	1	05/05/06	05/09/06	J M2, J	Q
Arsenic	EPA 6020	6E05099	0.30	0.60	4.4	1	05/05/06	05/09/06	UWJ	B
Barium	EPA 6020	6E05099	0.096	0.60	190	1	05/05/06	05/09/06	J M2	Q
Beryllium	EPA 6020	6E05099	0.048	0.36	0.83	1	05/05/06	05/09/06		
Boron	EPA 6010B	6E05103	1.2	6.0	7.1	1	05/05/06	05/05/06		
Cadmium	EPA 6020	6E05099	0.024	0.60	0.31	1	05/05/06	05/09/06	J M2, J	Q
Chromium	EPA 6020	6E05099	0.36	1.2	29	1	05/05/06	05/09/06		
Cobalt	EPA 6020	6E05099	0.024	0.60	9.5	1	05/05/06	05/09/06		
Copper	EPA 6020	6E05099	0.24	1.2	15	1	05/05/06	05/09/06	J M2	F
Lead	EPA 6020	6E05099	0.024	0.60	8.5	1	05/05/06	05/09/06		
Mercury	EPA 7471A	6E08059	0.0036	0.024	0.014	1	05/08/06	05/08/06	J	
Molybdenum	EPA 6020	6E05099	0.12	1.2	0.72	1	05/05/06	05/09/06	UJ J	B
Nickel	EPA 6020	6E05099	0.24	1.2	18	1	05/05/06	05/09/06	J M2	Q
Selenium	EPA 6020	6E05099	0.24	1.2	0.44	1	05/05/06	05/09/06	J	
Silver	EPA 6020	6E05099	0.024	0.60	0.075	1	05/05/06	05/09/06	J	
Thallium	EPA 6020	6E05099	0.12	0.60	0.49	1	05/05/06	05/09/06	J	
Vanadium	EPA 6020	6E05099	0.48	1.2	51	1	05/05/06	05/09/06	M2	
Zinc	EPA 6020	6E05099	0.60	12	71	1	05/05/06	05/09/06	J M2	F
Sample ID: IPE0402-02 (MJ747 - Soil)										
Reporting Units: mg/kg dry										
Aluminum	EPA 6010B	6E05103	6.0	12	27000	1	05/05/06	05/05/06		
Antimony	EPA 6020	6E05099	0.036	1.2	0.12	1	05/05/06	05/09/06	J J	Q
Arsenic	EPA 6020	6E05099	0.30	0.60	3.0	1	05/05/06	05/11/06		
Barium	EPA 6020	6E05099	0.095	0.60	160	1	05/05/06	05/09/06	J	Q
Beryllium	EPA 6020	6E05099	0.048	0.36	0.93	1	05/05/06	05/11/06		
Boron	EPA 6010B	6E05103	1.2	6.0	8.0	1	05/05/06	05/05/06		
Cadmium	EPA 6020	6E05099	0.024	0.60	0.23	1	05/05/06	05/09/06	J J	Q
Chromium	EPA 6020	6E05099	0.36	1.2	28	1	05/05/06	05/09/06		
Cobalt	EPA 6020	6E05099	0.024	0.60	7.2	1	05/05/06	05/09/06		
Copper	EPA 6020	6E05099	0.24	1.2	14	1	05/05/06	05/09/06	J	F
Lead	EPA 6020	6E05099	0.024	0.60	8.0	1	05/05/06	05/09/06		
Mercury	EPA 7471A	6E08059	0.0036	0.024	0.0061	1	05/08/06	05/08/06	J	
Molybdenum	EPA 6020	6E05099	0.12	1.2	0.45	1	05/05/06	05/09/06	UJ J	B
Nickel	EPA 6020	6E05099	0.24	1.2	15	1	05/05/06	05/09/06	J	Q
Selenium	EPA 6020	6E05099	0.24	1.2	0.47	1	05/05/06	05/09/06	J	
Silver	EPA 6020	6E05099	0.024	0.60	0.10	1	05/05/06	05/09/06	J	
Thallium	EPA 6020	6E05099	0.12	0.60	0.42	1	05/05/06	05/09/06	J	
Vanadium	EPA 6020	6E05099	0.48	1.2	49	1	05/05/06	05/09/06		
Zinc	EPA 6020	6E05099	0.60	12	60	1	05/05/06	05/09/06	J	F

Del Mar Analytical - Irvine
Sushmitha Reddy For Michele Chamberlin
Project Manager

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IPE0402 <Page 6 of 18>

LEVEL V



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd., #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPE0402

Sampled: 04/11/06
Received: 05/04/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Raw Qual	Qual Code
Sample ID: IPE0402-03 (MJ748 - Soil)											
Reporting Units: mg/kg dry											
Aluminum	EPA 6010B	6E05103	5.8	12	12000	1	05/05/06	05/05/06			
Antimony	EPA 6020	6E05099	0.035	1.2	0.28	1	05/05/06	05/08/06	UJ J		B, Q
Arsenic	EPA 6020	6E05099	0.29	0.58	2.9	1	05/05/06	05/08/06			
Barium	EPA 6020	6E05099	0.093	0.58	86	1	05/05/06	05/08/06	J		Q
Beryllium	EPA 6020	6E05099	0.047	0.35	0.48	1	05/05/06	05/11/06			
Boron	EPA 6010B	6E05103	1.2	5.8	5.0	1	05/05/06	05/05/06	J		
Cadmium	EPA 6020	6E05099	0.023	0.58	1.0	1	05/05/06	05/08/06	J		Q
Chromium	EPA 6020	6E05099	0.35	1.2	16	1	05/05/06	05/08/06			
Cobalt	EPA 6020	6E05099	0.023	0.58	5.4	1	05/05/06	05/08/06			
Copper	EPA 6020	6E05099	0.23	1.2	25	1	05/05/06	05/08/06			
Lead	EPA 6020	6E05099	0.023	0.58	24	1	05/05/06	05/08/06			
Mercury	EPA 7471A	6E08059	0.0035	0.023	0.081	1	05/08/06	05/08/06			
Molybdenum	EPA 6020	6E05099	0.12	1.2	0.81	1	05/05/06	05/08/06	UJ J		B
Nickel	EPA 6020	6E05099	0.23	1.2	14	1	05/05/06	05/08/06	J		Q
Selenium	EPA 6020	6E05099	0.23	1.2	0.30	1	05/05/06	05/08/06	J		
Silver	EPA 6020	6E05099	0.023	0.58	3.3	1	05/05/06	05/08/06			
Thallium	EPA 6020	6E05099	0.12	0.58	0.21	1	05/05/06	05/08/06	J		
Vanadium	EPA 6020	6E05099	0.47	1.2	27	1	05/05/06	05/08/06			
Zinc	EPA 6020	6E05099	0.58	12	92	1	05/05/06	05/08/06	J		F
Sample ID: IPE0402-04 (MJ750 - Soil)											
Reporting Units: mg/kg dry											
Aluminum	EPA 6010B	6E05103	6.7	13	23000	1	05/05/06	05/05/06			
Antimony	EPA 6020	6E05099	0.040	1.3	0.52	1	05/05/06	05/08/06	J J		Q
Arsenic	EPA 6020	6E05099	0.33	0.67	3.9	1	05/05/06	05/08/06			
Barium	EPA 6020	6E05099	0.11	0.67	130	1	05/05/06	05/08/06	J		Q
Beryllium	EPA 6020	6E05099	0.053	0.40	0.71	1	05/05/06	05/11/06			
Boron	EPA 6010B	6E05103	1.3	6.7	9.0	1	05/05/06	05/05/06			
Cadmium	EPA 6020	6E05099	0.027	0.67	2.0	1	05/05/06	05/08/06	J		Q
Chromium	EPA 6020	6E05099	0.40	1.3	30	1	05/05/06	05/08/06			
Cobalt	EPA 6020	6E05099	0.027	0.67	7.7	1	05/05/06	05/08/06			
Copper	EPA 6020	6E05099	0.27	1.3	29	1	05/05/06	05/08/06			
Lead	EPA 6020	6E05099	0.027	0.67	33	1	05/05/06	05/08/06			
Mercury	EPA 7471A	6E08059	0.0040	0.027	0.24	1	05/08/06	05/08/06			
Molybdenum	EPA 6020	6E05099	0.13	1.3	0.73	1	05/05/06	05/08/06	UJ J		B
Nickel	EPA 6020	6E05099	0.27	1.3	24	1	05/05/06	05/08/06	J		Q
Selenium	EPA 6020	6E05099	0.27	1.3	0.37	1	05/05/06	05/08/06	J		
Silver	EPA 6020	6E05099	0.027	0.67	1.9	1	05/05/06	05/08/06			
Thallium	EPA 6020	6E05099	0.13	0.67	0.30	1	05/05/06	05/08/06	J		
Vanadium	EPA 6020	6E05099	0.53	1.3	44	1	05/05/06	05/08/06			
Zinc	EPA 6020	6E05099	0.67	13	140	1	05/05/06	05/08/06	J		F

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Sushmitha Reddy For Michele Chamberlin
Project Manager

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LEVEL V



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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0351
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPE0402

Sampled: 04/11/06
Received: 05/04/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPE0402-11 (MJ744- Soil)									Rev Qual
Reporting Units: mg/kg dry									Qual
Mercury	EPA 7471A	6E09052	0.073	0.49	17	20	05/09/06	05/09/06	R D

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Sushmitha Reddy For Michele Chamberlin
Project Manager

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DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: Metals by EPA 6010B, 6020, and 7471A
QC Level: V¹
SDG: IPD1477
Matrix: Soil/Water
No. of Samples: 6
No. of Reanalyses: 0
Date Reviewed: May 10, 2006
Reviewer: P. Meeks
Reference: USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)
Samples Reviewed: MJ806, MJ807, MJ808, MJ809, MJ812, MJ813

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received within the temperature limits of 4°±2°C, at 6°C. The COC was signed and dated by field and laboratory personnel and accounted for the samples and analyses presented in this SDG. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary.</p> <p>The 6-month ICP and ICP-MS metals and the 28-day mercury analytical holding times were met.</p>	No qualifications were required.
3. <u>Method Blanks</u> 6D21084-BLK1 6D21083-BLK1 6D21085-BLK1 6D19083-BLK1 6D17063-BLK1 6D19080-BLK1	Boron was detected in method blank 6D21084-BLK1 at 1.33 mg/kg and barium was detected in method blank 6D19080-BLK1 at 0.216 µg/L. Nickel was detected in a bracketing CCB at 0.66 µg/L.	Boron detected in all soil samples and nickel detected in MJ812 were qualified as estimated nondetects, "UJ."

DATA VALIDATION REPORT

	Findings	Qualifications
5. <u>LCS/BS</u> 6D21084-BS1 6D21083-BS1 6D21085-BS1 6D19083-BS1 6D17063-BS1 6D19080-BS1	All recoveries were within the laboratory-established control limits.	No qualifications were required.
6. <u>Duplicates</u> None	None	None
7. <u>MS/MSDs</u> None	None	None
10. <u>Other</u>	None	None
11. <u>Field QC Samples</u> Field blank: MJ813 Equipment rinsate: MJ812 Field duplicates: MJ806/MJ807 MJ808/MJ809	Barium, chromium, copper, lead, and zinc were detected in MJ812 at 1.7, 1.7, 29, 4.0, 370 µg/L, respectively. Chromium, copper, lead, and zinc were detected in MJ813 at 0.6, 2.3, 0.44, 46 µg/L, respectively. For the field duplicate pairs, all detects were in common and all RPDs were ≤100%	Copper and zinc in all soil site samples were qualified as estimated, "J".
<u>Comments</u>	None	None

¹ Level V validation consists of cursory review of the summary forms only, and raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed include initial and continuing calibration, continuing calibration blanks, interference check samples (ICSA/ICSAB), and serial dilutions.



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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1477

Sampled: 04/13/06
Received: 04/13/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1477-06 (MJ806 - Soil)									Raw Qual
Reporting Units: mg/kg dry									Qual Code
Aluminum	EPA 6010B	6D21084	5.7	11	11000	1	04/21/06	04/22/06	
Antimony	EPA 6020	6D21083	0.034	1.1	0.53	1	04/21/06	04/25/06	J
Arsenic	EPA 6020	6D21083	0.29	0.57	2.7	1	04/21/06	04/25/06	
Barium	EPA 6020	6D21083	0.091	0.57	60	1	04/21/06	04/25/06	
Beryllium	EPA 6020	6D21083	0.046	0.34	0.41	1	04/21/06	04/25/06	
Boron	EPA 6010B	6D21084	1.1	5.7	3.6	1	04/21/06	04/22/06	UT B, J B
Cadmium	EPA 6020	6D21083	0.023	0.57	0.48	1	04/21/06	04/25/06	J
Chromium	EPA 6020	6D21083	0.34	1.1	13	1	04/21/06	04/25/06	
Cobalt	EPA 6020	6D21083	0.023	0.57	4.1	1	04/21/06	04/25/06	
Copper	EPA 6020	6D21083	0.23	1.1	9.6	1	04/21/06	04/25/06	J F
Lead	EPA 6020	6D21083	0.023	0.57	57	1	04/21/06	04/25/06	
Mercury	EPA 7471A	6D21085	0.0034	0.023	0.16	1	04/21/06	04/21/06	
Molybdenum	EPA 6020	6D21083	0.11	1.1	0.50	1	04/21/06	04/25/06	J
Nickel	EPA 6020	6D21083	0.23	1.1	8.3	1	04/21/06	04/25/06	
Selenium	EPA 6020	6D21083	0.23	1.1	ND	1	04/21/06	04/25/06	U
Silver	EPA 6020	6D21083	0.023	0.57	0.16	1	04/21/06	04/25/06	J
Thallium	EPA 6020	6D21083	0.11	0.57	0.20	1	04/21/06	04/25/06	J
Vanadium	EPA 6020	6D21083	0.46	1.1	25	1	04/21/06	04/25/06	
Zinc	EPA 6020	6D21083	0.57	11	52	1	04/21/06	04/25/06	J F
Sample ID: IPD1477-07 (MJ807 - Soil)									
Reporting Units: mg/kg dry									
Aluminum	EPA 6010B	6D21084	6.2	12	13000	1	04/21/06	04/22/06	
Antimony	EPA 6020	6D21083	0.037	1.2	0.36	1	04/21/06	04/25/06	J
Arsenic	EPA 6020	6D21083	0.31	0.62	3.3	1	04/21/06	04/25/06	
Barium	EPA 6020	6D21083	0.098	0.62	75	1	04/21/06	04/25/06	
Beryllium	EPA 6020	6D21083	0.049	0.37	0.50	1	04/21/06	04/25/06	
Boron	EPA 6010B	6D21084	1.2	6.2	5.7	1	04/21/06	04/22/06	UT B, J B
Cadmium	EPA 6020	6D21083	0.025	0.62	0.66	1	04/21/06	04/25/06	
Chromium	EPA 6020	6D21083	0.37	1.2	15	1	04/21/06	04/25/06	
Cobalt	EPA 6020	6D21083	0.025	0.62	5.9	1	04/21/06	04/25/06	
Copper	EPA 6020	6D21083	0.25	1.2	15	1	04/21/06	04/25/06	J F
Lead	EPA 6020	6D21083	0.025	0.62	51	1	04/21/06	04/25/06	
Mercury	EPA 7471A	6D21085	0.0037	0.025	0.29	1	04/21/06	04/21/06	
Molybdenum	EPA 6020	6D21083	0.12	1.2	0.68	1	04/21/06	04/25/06	J
Nickel	EPA 6020	6D21083	0.25	1.2	11	1	04/21/06	04/25/06	
Selenium	EPA 6020	6D21083	0.25	1.2	ND	1	04/21/06	04/25/06	U
Silver	EPA 6020	6D21083	0.025	0.62	0.14	1	04/21/06	04/25/06	J
Thallium	EPA 6020	6D21083	0.12	0.62	0.22	1	04/21/06	04/25/06	J
Vanadium	EPA 6020	6D21083	0.49	1.2	32	1	04/21/06	04/25/06	
Zinc	EPA 6020	6D21083	0.62	12	83	1	04/21/06	04/25/06	J

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Project Manager

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LEVEL V

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1477

Sampled: 04/13/06
Received: 04/13/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1477-08 (MJ808 - Soil)									
Reporting Units: mg/kg dry									
Aluminum	EPA 6010B	6D21084	5.9	12	12000	1	04/21/06	04/22/06	
Antimony	EPA 6020	6D21083	0.036	1.2	0.25	1	04/21/06	04/25/06	J
Arsenic	EPA 6020	6D21083	0.30	0.59	2.9	1	04/21/06	04/25/06	
Barium	EPA 6020	6D21083	0.095	0.59	59	1	04/21/06	04/25/06	
Beryllium	EPA 6020	6D21083	0.048	0.36	0.46	1	04/21/06	04/25/06	
Boron	EPA 6010B	6D21084	1.2	5.9	7.0	1	04/21/06	04/22/06	UTB B
Cadmium	EPA 6020	6D21083	0.024	0.59	0.26	1	04/21/06	04/25/06	J
Chromium	EPA 6020	6D21083	0.36	1.2	17	1	04/21/06	04/25/06	
Cobalt	EPA 6020	6D21083	0.024	0.59	4.6	1	04/21/06	04/25/06	
Copper	EPA 6020	6D21083	0.24	1.2	10	1	04/21/06	04/25/06	J F
Lead	EPA 6020	6D21083	0.024	0.59	26	1	04/21/06	04/25/06	
Mercury	EPA 7471A	6D21085	0.0036	0.024	0.048	1	04/21/06	04/21/06	
Molybdenum	EPA 6020	6D21083	0.12	1.2	0.45	1	04/21/06	04/25/06	J
Nickel	EPA 6020	6D21083	0.24	1.2	8.7	1	04/21/06	04/25/06	
Selenium	EPA 6020	6D21083	0.24	1.2	ND	1	04/21/06	04/25/06	U
Silver	EPA 6020	6D21083	0.024	0.59	0.33	1	04/21/06	04/25/06	J
Thallium	EPA 6020	6D21083	0.12	0.59	0.21	1	04/21/06	04/25/06	J
Vanadium	EPA 6020	6D21083	0.48	1.2	29	1	04/21/06	04/25/06	
Zinc	EPA 6020	6D21083	0.59	12	72	1	04/21/06	04/25/06	J F
Sample ID: IPD1477-09 (MJ809 - Soil)									
Reporting Units: mg/kg dry									
Aluminum	EPA 6010B	6D21084	5.9	12	12000	1	04/21/06	04/22/06	
Antimony	EPA 6020	6D21083	0.035	1.2	0.21	1	04/21/06	04/25/06	J
Arsenic	EPA 6020	6D21083	0.29	0.59	3.1	1	04/21/06	04/25/06	
Barium	EPA 6020	6D21083	0.094	0.59	63	1	04/21/06	04/25/06	
Beryllium	EPA 6020	6D21083	0.047	0.35	0.48	1	04/21/06	04/25/06	
Boron	EPA 6010B	6D21084	1.2	5.9	6.1	1	04/21/06	04/22/06	UTB B
Cadmium	EPA 6020	6D21083	0.024	0.59	0.24	1	04/21/06	04/25/06	J
Chromium	EPA 6020	6D21083	0.35	1.2	15	1	04/21/06	04/25/06	
Cobalt	EPA 6020	6D21083	0.024	0.59	5.3	1	04/21/06	04/25/06	
Copper	EPA 6020	6D21083	0.24	1.2	9.3	1	04/21/06	04/25/06	J F
Lead	EPA 6020	6D21083	0.024	0.59	26	1	04/21/06	04/25/06	
Mercury	EPA 7471A	6D21085	0.0035	0.024	0.059	1	04/21/06	04/21/06	
Molybdenum	EPA 6020	6D21083	0.12	1.2	0.48	1	04/21/06	04/25/06	J
Nickel	EPA 6020	6D21083	0.24	1.2	9.9	1	04/21/06	04/25/06	
Selenium	EPA 6020	6D21083	0.24	1.2	ND	1	04/21/06	04/25/06	U
Silver	EPA 6020	6D21083	0.024	0.59	0.13	1	04/21/06	04/25/06	J
Thallium	EPA 6020	6D21083	0.12	0.59	0.22	1	04/21/06	04/25/06	J
Vanadium	EPA 6020	6D21083	0.47	1.2	30	1	04/21/06	04/25/06	
Zinc	EPA 6020	6D21083	0.59	12	69	1	04/21/06	04/25/06	J

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Michele Chamberlin
Project Manager



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1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1477

Sampled: 04/13/06
Received: 04/13/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1477-12 (MJ812 - Water)									
Reporting Units: mg/l									
Aluminum	EPA 6010B	6D19083	0.040	0.050	ND	1	04/19/06	04/26/06	U
Boron	EPA 6010B	6D19083	0.0080	0.050	ND	1	04/19/06	04/26/06	
Mercury	EPA 7470A	6D17063	0.000050	0.00020	ND	1	04/17/06	04/17/06	
Sample ID: IPD1477-13 (MJ813 - Water)									
Reporting Units: mg/l									
Aluminum	EPA 6010B	6D19083	0.040	0.050	ND	1	04/19/06	04/26/06	
Boron	EPA 6010B	6D19083	0.0080	0.050	ND	1	04/19/06	04/26/06	
Mercury	EPA 7470A	6D17063	0.000050	0.00020	ND	1	04/17/06	04/17/06	
Sample ID: IPD1477-12 (MJ812 - Water)									
Reporting Units: ug/l									
Antimony	EPA 6020	6D19080	0.050	2.0	ND	1	04/19/06	04/25/06	
Arsenic	EPA 6020	6D19080	0.50	1.0	ND	1	04/19/06	04/25/06	
Barium	EPA 6020	6D19080	0.15	1.0	1.7	1	04/19/06	04/25/06	B
Beryllium	EPA 6020	6D19080	0.075	0.50	ND	1	04/19/06	04/25/06	
Cadmium	EPA 6020	6D19080	0.025	1.0	ND	1	04/19/06	04/25/06	
Chromium	EPA 6020	6D25065	0.56	2.0	1.7	1	04/25/06	04/27/06	J
Cobalt	EPA 6020	6D19080	0.035	1.0	ND	1	04/19/06	04/25/06	
Copper	EPA 6020	6D19080	0.25	2.0	29	1	04/19/06	04/25/06	
Lead	EPA 6020	6D19080	0.040	1.0	4.0	1	04/19/06	04/25/06	
Molybdenum	EPA 6020	6D19080	0.15	2.0	ND	1	04/19/06	04/25/06	
Nickel	EPA 6020	6D19080	0.35	2.0	0.66	1	04/19/06	04/25/06	J B
Selenium	EPA 6020	6D19080	0.30	2.0	ND	1	04/19/06	04/25/06	
Silver	EPA 6020	6D19080	0.025	1.0	ND	1	04/19/06	04/25/06	
Thallium	EPA 6020	6D19080	0.15	1.0	ND	1	04/19/06	04/25/06	
Vanadium	EPA 6020	6D19080	0.70	2.0	ND	1	04/19/06	04/25/06	
Zinc	EPA 6020	6D19080	1.0	20	370	1	04/19/06	04/25/06	

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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 6
 Data Gap
 Report Number: IPD1477

Sampled: 04/13/06
 Received: 04/13/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1477-13 (MJ813 - Water)									
Reporting Units: ug/l									
Antimony	EPA 6020	6D19080	0.050	2.0	ND	1	04/19/06	04/25/06	U
Arsenic	EPA 6020	6D19080	0.50	1.0	ND	1	04/19/06	04/25/06	U
Barium	EPA 6020	6D19080	0.15	1.0	0.38	1	04/19/06	04/25/06	UT B, J B
Beryllium	EPA 6020	6D19080	0.075	0.50	ND	1	04/19/06	04/25/06	U
Cadmium	EPA 6020	6D19080	0.025	1.0	ND	1	04/19/06	04/25/06	U
Chromium	EPA 6020	6D25065	0.56	2.0	0.60	1	04/25/06	04/27/06	J
Cobalt	EPA 6020	6D19080	0.035	1.0	ND	1	04/19/06	04/25/06	U
Copper	EPA 6020	6D19080	0.25	2.0	2.3	1	04/19/06	04/25/06	B
Lead	EPA 6020	6D19080	0.040	1.0	0.44	1	04/19/06	04/25/06	J
Molybdenum	EPA 6020	6D19080	0.15	2.0	ND	1	04/19/06	04/25/06	U
Nickel	EPA 6020	6D19080	0.35	2.0	ND	1	04/19/06	04/25/06	U
Selenium	EPA 6020	6D19080	0.30	2.0	ND	1	04/19/06	04/25/06	U
Silver	EPA 6020	6D19080	0.025	1.0	ND	1	04/19/06	04/25/06	U
Thallium	EPA 6020	6D19080	0.15	1.0	ND	1	04/19/06	04/25/06	U
Vanadium	EPA 6020	6D19080	0.70	2.0	ND	1	04/19/06	04/25/06	U
Zinc	EPA 6020	6D19080	1.0	20	46	1	04/19/06	04/25/06	U

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 Michele Chamberlin
 Project Manager

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 IPD1477 <Page 17 of 43>



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720.535.5502, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: Metals by EPA 6010B, 6020, and 7471A
QC Level: V¹
SDG: IPD1302
Matrix: Soil
No. of Samples: 12
No. of Reanalyses: 0
Date Reviewed: May 8, 2006
Reviewer: P. Meeks
Reference: USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*
Samples Reviewed: MJ784, MJ787, MJ788, MJ789, MJ790, MJ791, MJ794, MJ795, MJ796, MJ798, MJ799, MJ800

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received within the temperature limits of 4°±2°C, at 3°C. The COC was signed and dated by field and laboratory personnel and accounted for the samples and analyses presented in this SDG. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary.</p> <p>The 6-month ICP and ICP-MS metals and the 28-day mercury analytical holding times were met.</p>	No qualifications were required.
3. <u>Method Blanks</u> 6D20129-BLK1 6D20130-BLK1 6D21060-BLK1	<p>Boron was detected in method blank 6D20129-BLK1 at 1.10 mg/kg. Antimony and molybdenum were detected in several CCBs bracketing the samples analyses at 0.152 and 0.114 µg/L for antimony and 0.198 and 0.141 µg/L for molybdenum.</p>	<p>Boron detected in MJ787, MJ791, MJ795, and MJ800, antimony detected in MJ784, MJ787-MJ791, MJ794-MJ796, and MJ799, and molybdenum detected in MJ787-MJ791, MJ794-MJ796, MJ798, and MJ799 were qualified as estimated nondetects, "UJ."</p>

DATA VALIDATION REPORT

	Findings	Qualifications
5. <u>LCS/BS</u> 6D20129-BS1 6D20130-BS1 6D21060-BS1	All recoveries were within the laboratory-established control limits.	No qualifications were required.
6. <u>Duplicates</u> None	None	None
7. <u>MS/MSDs</u> MJ791	Zinc was recovered below the control limit in MSD only and antimony was recovered below the control limit in both the MS and the MSD.	Antimony and zinc in the samples were qualified as estimated, "J," for detects and, "UJ," for nondetects.
10. <u>Other</u>	None	None
11. <u>Field QC Samples</u> Field blank: MJ813 (IPD1477) Equipment rinsates: MJ812 (IPD1477) Field duplicates: None	Barium, chromium, copper, lead, and zinc were detected in MJ812 at 1.7, 1.7, 29, 4.0, 370 µg/L, respectively. Chromium, copper, lead, and zinc were detected in MJ813 at 0.6, 2.3, 0.44, 46 µg/L, respectively.	Copper and zinc in all samples, and lead in MJ784, MJ788-MJ791, MJ794, MJ795, MJ798, MJ799 were qualified as estimated, "J."
<u>Comments</u>	None	None

¹ Level V validation consists of cursory review of the summary forms only, and raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed include initial and continuing calibration, continuing calibration blanks, interference check samples (ICSA/ICSAB), and serial dilutions.



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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1302

Sampled: 04/12/06
Received: 04/12/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1302-09 (MJ784 - Soil)									Rev Qual
Reporting Units: mg/kg dry									Qual Code
Aluminum	EPA 6010B	6D20129	5.7	11	11000	1	04/20/06	04/24/06	
Antimony	EPA 6020	6D20130	0.034	1.1	0.26	1	04/20/06	04/25/06	UT J B, Q
Arsenic	EPA 6020	6D20130	0.29	0.57	2.3	1	04/20/06	04/25/06	
Barium	EPA 6020	6D20130	0.092	0.57	71	1	04/20/06	04/25/06	
Beryllium	EPA 6020	6D20130	0.046	0.34	0.40	1	04/20/06	04/25/06	
Boron	EPA 6010B	6D20129	1.1	5.7	ND	1	04/20/06	04/22/06	YC
Cadmium	EPA 6020	6D20130	0.023	0.57	0.13	1	04/20/06	04/25/06	J
Chromium	EPA 6020	6D20130	0.34	1.1	15	1	04/20/06	04/25/06	
Cobalt	EPA 6020	6D20130	0.023	0.57	4.2	1	04/20/06	04/25/06	
Copper	EPA 6020	6D20130	0.23	1.1	6.9	1	04/20/06	04/25/06	UT J
Lead	EPA 6020	6D20130	0.023	0.57	7.3	1	04/20/06	04/25/06	UT J
Mercury	EPA 7471A	6D21060	0.0034	0.023	0.0054	1	04/21/06	04/21/06	J
Molybdenum	EPA 6020	6D20130	0.11	1.1	1.6	1	04/20/06	04/25/06	J
Nickel	EPA 6020	6D20130	0.23	1.1	8.6	1	04/20/06	04/25/06	J
Selenium	EPA 6020	6D20130	0.23	1.1	ND	1	04/20/06	04/25/06	J
Silver	EPA 6020	6D20130	0.023	0.57	0.041	1	04/20/06	04/25/06	J
Thallium	EPA 6020	6D20130	0.11	0.57	0.28	1	04/20/06	04/25/06	J
Vanadium	EPA 6020	6D20130	0.46	1.1	31	1	04/20/06	04/25/06	J
Zinc	EPA 6020	6D20130	0.57	11	42	1	04/20/06	04/25/06	J
Sample ID: IPD1302-12 (MJ787 - Soil)									PM 5/2/06
Reporting Units: mg/kg dry									
Aluminum	EPA 6010B	6D20129	6.4	13	11000	1	04/20/06	04/24/06	
Antimony	EPA 6020	6D20130	0.038	1.3	0.19	1	04/20/06	04/25/06	UT J B, Q
Arsenic	EPA 6020	6D20130	0.32	0.64	2.2	1	04/20/06	04/25/06	
Barium	EPA 6020	6D20130	0.10	0.64	89	1	04/20/06	04/25/06	
Beryllium	EPA 6020	6D20130	0.051	0.38	0.39	1	04/20/06	04/25/06	
Boron	EPA 6010B	6D20129	1.3	6.4	2.7	1	04/20/06	04/22/06	UT B, J
Cadmium	EPA 6020	6D20130	0.025	0.64	0.48	1	04/20/06	04/25/06	J
Chromium	EPA 6020	6D20130	0.38	1.3	17	1	04/20/06	04/25/06	
Cobalt	EPA 6020	6D20130	0.025	0.64	5.0	1	04/20/06	04/25/06	
Copper	EPA 6020	6D20130	0.25	1.3	8.0	1	04/20/06	04/25/06	J
Lead	EPA 6020	6D20130	0.025	0.64	17	1	04/20/06	04/25/06	J
Mercury	EPA 7471A	6D21060	0.0038	0.025	0.051	1	04/21/06	04/21/06	J
Molybdenum	EPA 6020	6D20130	0.13	1.3	0.57	1	04/20/06	04/25/06	UT J
Nickel	EPA 6020	6D20130	0.25	1.3	10	1	04/20/06	04/25/06	J
Selenium	EPA 6020	6D20130	0.25	1.3	ND	1	04/20/06	04/25/06	J
Silver	EPA 6020	6D20130	0.025	0.64	0.056	1	04/20/06	04/25/06	J
Thallium	EPA 6020	6D20130	0.13	0.64	0.22	1	04/20/06	04/25/06	J
Vanadium	EPA 6020	6D20130	0.51	1.3	34	1	04/20/06	04/25/06	J
Zinc	EPA 6020	6D20130	0.64	13	48	1	04/20/06	04/25/06	J

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1302

Sampled: 04/12/06
Received: 04/12/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1302-13 (MJ788 - Soil)									Rev Qual Code
Reporting Units: mg/kg dry									
Aluminum	EPA 6010B	6D20129	6.1	12	11000	1	04/20/06	04/24/06	
Antimony	EPA 6020	6D20130	0.036	1.2	0.10	1	04/20/06	04/25/06	UJ J B, Q
Arsenic	EPA 6020	6D20130	0.30	0.61	2.0	1	04/20/06	04/25/06	
Barium	EPA 6020	6D20130	0.097	0.61	62	1	04/20/06	04/25/06	
Beryllium	EPA 6020	6D20130	0.049	0.36	0.36	1	04/20/06	04/25/06	
Boron	EPA 6010B	6D20129	1.2	6.1	ND	1	04/20/06	04/22/06	UJ J
Cadmium	EPA 6020	6D20130	0.024	0.61	0.12	1	04/20/06	04/25/06	UJ J
Chromium	EPA 6020	6D20130	0.36	1.2	17	1	04/20/06	04/25/06	
Cobalt	EPA 6020	6D20130	0.024	0.61	4.9	1	04/20/06	04/25/06	
Copper	EPA 6020	6D20130	0.24	1.2	6.6	1	04/20/06	04/25/06	UJ J
Lead	EPA 6020	6D20130	0.024	0.61	4.2	1	04/20/06	04/25/06	UJ J
Mercury	EPA 7471A	6D21060	0.0036	0.024	0.0066	1	04/21/06	04/21/06	UJ J
Molybdenum	EPA 6020	6D20130	0.12	1.2	0.34	1	04/20/06	04/25/06	UJ J
Nickel	EPA 6020	6D20130	0.24	1.2	9.3	1	04/20/06	04/25/06	UJ J
Selenium	EPA 6020	6D20130	0.24	1.2	ND	1	04/20/06	04/25/06	UJ J
Silver	EPA 6020	6D20130	0.024	0.61	0.056	1	04/20/06	04/25/06	UJ J
Thallium	EPA 6020	6D20130	0.12	0.61	0.21	1	04/20/06	04/25/06	UJ J
Vanadium	EPA 6020	6D20130	0.49	1.2	33	1	04/20/06	04/25/06	
Zinc	EPA 6020	6D20130	0.61	12	38	1	04/20/06	04/25/06	UJ J
Sample ID: IPD1302-14 (MJ789 - Soil)									
Reporting Units: mg/kg dry									
Aluminum	EPA 6010B	6D20129	5.6	11	9700	1	04/20/06	04/24/06	
Antimony	EPA 6020	6D20130	0.034	1.1	0.11	1	04/20/06	04/25/06	UJ J B, Q
Arsenic	EPA 6020	6D20130	0.28	0.56	2.2	1	04/20/06	04/25/06	
Barium	EPA 6020	6D20130	0.089	0.56	56	1	04/20/06	04/25/06	
Beryllium	EPA 6020	6D20130	0.045	0.34	0.32	1	04/20/06	04/25/06	UJ J
Boron	EPA 6010B	6D20129	1.1	5.6	ND	1	04/20/06	04/22/06	UJ J
Cadmium	EPA 6020	6D20130	0.022	0.56	0.092	1	04/20/06	04/25/06	UJ J
Chromium	EPA 6020	6D20130	0.34	1.1	14	1	04/20/06	04/25/06	
Cobalt	EPA 6020	6D20130	0.022	0.56	4.7	1	04/20/06	04/25/06	
Copper	EPA 6020	6D20130	0.22	1.1	7.0	1	04/20/06	04/25/06	UJ J
Lead	EPA 6020	6D20130	0.022	0.56	6.7	1	04/20/06	04/25/06	UJ J
Mercury	EPA 7471A	6D21060	0.0034	0.022	0.0075	1	04/21/06	04/21/06	UJ J
Molybdenum	EPA 6020	6D20130	0.11	1.1	0.31	1	04/20/06	04/25/06	UJ J
Nickel	EPA 6020	6D20130	0.22	1.1	8.2	1	04/20/06	04/25/06	UJ J
Selenium	EPA 6020	6D20130	0.22	1.1	ND	1	04/20/06	04/25/06	UJ J
Silver	EPA 6020	6D20130	0.022	0.56	0.034	1	04/20/06	04/25/06	UJ J
Thallium	EPA 6020	6D20130	0.11	0.56	0.18	1	04/20/06	04/25/06	UJ J
Vanadium	EPA 6020	6D20130	0.45	1.1	31	1	04/20/06	04/25/06	
Zinc	EPA 6020	6D20130	0.56	11	38	1	04/20/06	04/25/06	UJ J

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Project Manager

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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1302

Sampled: 04/12/06
Received: 04/12/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1302-15 (MJ790 - Soil)									Raw Qual
Reporting Units: mg/kg dry									Qual Code
Aluminum	EPA 6010B	6D20129	6.1	12	11000	1	04/20/06	04/22/06	
Antimony	EPA 6020	6D20130	0.036	1.2	0.091	1	04/20/06	04/25/06	UTJ B, Q
Arsenic	EPA 6020	6D20130	0.30	0.61	2.6	1	04/20/06	04/25/06	
Barium	EPA 6020	6D20130	0.097	0.61	79	1	04/20/06	04/25/06	
Beryllium	EPA 6020	6D20130	0.048	0.36	0.42	1	04/20/06	04/25/06	
Boron	EPA 6010B	6D20129	1.2	6.1	ND	1	04/20/06	04/22/06	CU
Cadmium	EPA 6020	6D20130	0.024	0.61	0.11	1	04/20/06	04/25/06	MJ
Chromium	EPA 6020	6D20130	0.36	1.2	18	1	04/20/06	04/25/06	
Cobalt	EPA 6020	6D20130	0.024	0.61	5.3	1	04/20/06	04/25/06	
Copper	EPA 6020	6D20130	0.24	1.2	7.8	1	04/20/06	04/25/06	J F
Lead	EPA 6020	6D20130	0.024	0.61	4.4	1	04/20/06	04/25/06	J F
Mercury	EPA 7471A	6D21060	0.0036	0.024	0.0040	1	04/21/06	04/21/06	J
Molybdenum	EPA 6020	6D20130	0.12	1.2	0.33	1	04/20/06	04/25/06	UTJ B
Nickel	EPA 6020	6D20130	0.24	1.2	10	1	04/20/06	04/25/06	CU
Selenium	EPA 6020	6D20130	0.24	1.2	ND	1	04/20/06	04/25/06	C
Silver	EPA 6020	6D20130	0.024	0.61	0.048	1	04/20/06	04/25/06	J
Thallium	EPA 6020	6D20130	0.12	0.61	0.21	1	04/20/06	04/25/06	J
Vanadium	EPA 6020	6D20130	0.48	1.2	35	1	04/20/06	04/25/06	
Zinc	EPA 6020	6D20130	0.61	12	42	1	04/20/06	04/25/06	J F, Q

Sample ID: IPD1302-16 (MJ791 - Soil)

Reporting Units: mg/kg dry

Aluminum	EPA 6010B	6D20129	5.8	12	12000	1	04/20/06	04/21/06	M-HA
Antimony	EPA 6020	6D20130	0.035	1.2	0.21	1	04/20/06	04/25/06	UTJ M2, J B, Q
Arsenic	EPA 6020	6D20130	0.29	0.58	2.7	1	04/20/06	04/25/06	
Barium	EPA 6020	6D20130	0.092	0.58	75	1	04/20/06	04/25/06	
Beryllium	EPA 6020	6D20130	0.046	0.35	0.43	1	04/20/06	04/25/06	
Boron	EPA 6010B	6D20129	1.2	5.8	4.2	1	04/20/06	04/24/06	B, J
Cadmium	EPA 6020	6D20130	0.023	0.58	0.12	1	04/20/06	04/25/06	MJ
Chromium	EPA 6020	6D20130	0.35	1.2	18	1	04/20/06	04/25/06	
Cobalt	EPA 6020	6D20130	0.023	0.58	5.3	1	04/20/06	04/25/06	
Copper	EPA 6020	6D20130	0.23	1.2	7.7	1	04/20/06	04/25/06	J F
Lead	EPA 6020	6D20130	0.023	0.58	5.4	1	04/20/06	04/25/06	J F
Mercury	EPA 7471A	6D21060	0.0035	0.023	0.011	1	04/21/06	04/21/06	J
Molybdenum	EPA 6020	6D20130	0.12	1.2	0.42	1	04/20/06	04/25/06	UTJ
Nickel	EPA 6020	6D20130	0.23	1.2	10	1	04/20/06	04/25/06	CU
Selenium	EPA 6020	6D20130	0.23	1.2	0.27	1	04/20/06	04/25/06	J
Silver	EPA 6020	6D20130	0.023	0.58	0.051	1	04/20/06	04/25/06	J
Thallium	EPA 6020	6D20130	0.12	0.58	0.31	1	04/20/06	04/25/06	J
Vanadium	EPA 6020	6D20130	0.46	1.2	37	1	04/20/06	04/25/06	
Zinc	EPA 6020	6D20130	0.58	12	42	1	04/20/06	04/25/06	J M2

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Project Manager

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1302

Sampled: 04/12/06
Received: 04/12/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1302-19 (MJ794 - Soil)									
Reporting Units: mg/kg dry									
Aluminum	EPA 6010B	6D20129	6.0	12	11000	1	04/20/06	04/22/06	Rev Qual
Antimony	EPA 6020	6D20130	0.036	1.2	0.11	1	04/20/06	04/25/06	UT J B, Q
Arsenic	EPA 6020	6D20130	0.30	0.60	2.5	1	04/20/06	04/25/06	
Barium	EPA 6020	6D20130	0.096	0.60	68	1	04/20/06	04/25/06	
Beryllium	EPA 6020	6D20130	0.048	0.36	0.43	1	04/20/06	04/25/06	
Boron	EPA 6010B	6D20129	1.2	6.0	ND	1	04/20/06	04/22/06	AC J
Cadmium	EPA 6020	6D20130	0.024	0.60	0.10	1	04/20/06	04/25/06	J
Chromium	EPA 6020	6D20130	0.36	1.2	19	1	04/20/06	04/25/06	
Cobalt	EPA 6020	6D20130	0.024	0.60	5.2	1	04/20/06	04/25/06	
Copper	EPA 6020	6D20130	0.24	1.2	7.8	1	04/20/06	04/25/06	
Lead	EPA 6020	6D20130	0.024	0.60	5.4	1	04/20/06	04/25/06	
Mercury	EPA 7471A	6D21060	0.0036	0.024	0.020	1	04/21/06	04/21/06	J
Molybdenum	EPA 6020	6D20130	0.12	1.2	0.45	1	04/20/06	04/25/06	J
Nickel	EPA 6020	6D20130	0.24	1.2	11	1	04/20/06	04/25/06	J
Selenium	EPA 6020	6D20130	0.24	1.2	ND	1	04/20/06	04/25/06	J
Silver	EPA 6020	6D20130	0.024	0.60	0.061	1	04/20/06	04/25/06	J
Thallium	EPA 6020	6D20130	0.12	0.60	0.24	1	04/20/06	04/25/06	J
Vanadium	EPA 6020	6D20130	0.48	1.2	37	1	04/20/06	04/25/06	
Zinc	EPA 6020	6D20130	0.60	12	43	1	04/20/06	04/25/06	J
Sample ID: IPD1302-20 (MJ795 - Soil)									
Reporting Units: mg/kg dry									
Aluminum	EPA 6010B	6D20129	6.9	14	9900	1	04/20/06	04/22/06	
Antimony	EPA 6020	6D20130	0.042	1.4	0.15	1	04/20/06	04/25/06	UT J B, Q
Arsenic	EPA 6020	6D20130	0.35	0.69	2.8	1	04/20/06	04/25/06	
Barium	EPA 6020	6D20130	0.11	0.69	66	1	04/20/06	04/25/06	
Beryllium	EPA 6020	6D20130	0.055	0.42	0.38	1	04/20/06	04/25/06	J
Boron	EPA 6010B	6D20129	1.4	6.9	7.4	1	04/20/06	04/22/06	UT B
Cadmium	EPA 6020	6D20130	0.028	0.69	0.25	1	04/20/06	04/25/06	J
Chromium	EPA 6020	6D20130	0.42	1.4	14	1	04/20/06	04/25/06	
Cobalt	EPA 6020	6D20130	0.028	0.69	3.9	1	04/20/06	04/25/06	
Copper	EPA 6020	6D20130	0.28	1.4	8.0	1	04/20/06	04/25/06	
Lead	EPA 6020	6D20130	0.028	0.69	12	1	04/20/06	04/25/06	
Mercury	EPA 7471A	6D21060	0.0042	0.028	0.018	1	04/21/06	04/21/06	J
Molybdenum	EPA 6020	6D20130	0.14	1.4	0.60	1	04/20/06	04/25/06	J
Nickel	EPA 6020	6D20130	0.28	1.4	7.8	1	04/20/06	04/25/06	J
Selenium	EPA 6020	6D20130	0.28	1.4	ND	1	04/20/06	04/25/06	J
Silver	EPA 6020	6D20130	0.028	0.69	0.074	1	04/20/06	04/25/06	J
Thallium	EPA 6020	6D20130	0.14	0.69	0.20	1	04/20/06	04/25/06	J
Vanadium	EPA 6020	6D20130	0.55	1.4	26	1	04/20/06	04/25/06	
Zinc	EPA 6020	6D20130	0.69	14	57	1	04/20/06	04/25/06	J

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Michele Chamberlin
Project Manager

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1302

Sampled: 04/12/06
Received: 04/12/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev	Qual Code
Sample ID: IPD1302-21 (MJ796 - Soil)											
Reporting Units: mg/kg dry											
Aluminum	EPA 6010B	6D20129	6.4	13	9200	1	04/20/06	04/22/06			
Antimony	EPA 6020	6D20130	0.038	1.3	0.43	1	04/20/06	04/25/06	US J		B, G
Arsenic	EPA 6020	6D20130	0.32	0.64	2.3	1	04/20/06	04/25/06			
Barium	EPA 6020	6D20130	0.10	0.64	72	1	04/20/06	04/25/06			
Beryllium	EPA 6020	6D20130	0.051	0.38	0.35	1	04/20/06	04/25/06	J		
Boron	EPA 6010B	6D20129	1.3	6.4	12	1	04/20/06	04/22/06			
Cadmium	EPA 6020	6D20130	0.025	0.64	0.28	1	04/20/06	04/25/06	J		
Chromium	EPA 6020	6D20130	0.38	1.3	13	1	04/20/06	04/25/06			
Cobalt	EPA 6020	6D20130	0.025	0.64	3.9	1	04/20/06	04/25/06			
Copper	EPA 6020	6D20130	0.25	1.3	7.6	1	04/20/06	04/25/06	J		F
Lead	EPA 6020	6D20130	0.025	0.64	17	1	04/20/06	04/25/06			
Mercury	EPA 7471A	6D21060	0.0038	0.025	0.038	1	04/21/06	04/21/06			
Molybdenum	EPA 6020	6D20130	0.13	1.3	0.45	1	04/20/06	04/25/06	US J		B
Nickel	EPA 6020	6D20130	0.25	1.3	7.5	1	04/20/06	04/25/06	US J		N
Selenium	EPA 6020	6D20130	0.25	1.3	ND	1	04/20/06	04/25/06	US J		N
Silver	EPA 6020	6D20130	0.025	0.64	0.090	1	04/20/06	04/25/06	J		
Thallium	EPA 6020	6D20130	0.13	0.64	0.18	1	04/20/06	04/25/06	J		
Vanadium	EPA 6020	6D20130	0.51	1.3	25	1	04/20/06	04/25/06			
Zinc	EPA 6020	6D20130	0.64	13	61	1	04/20/06	04/25/06	US J		F, G
Sample ID: IPD1302-23 (MJ798 - Soil)											
Reporting Units: mg/kg dry											
Aluminum	EPA 6010B	6D20129	5.6	11	11000	1	04/20/06	04/22/06			
Antimony	EPA 6020	6D20130	0.034	1.1	0.97	1	04/20/06	04/25/06	US J		D
Arsenic	EPA 6020	6D20130	0.28	0.56	3.2	1	04/20/06	04/25/06			
Barium	EPA 6020	6D20130	0.090	0.56	63	1	04/20/06	04/25/06			
Beryllium	EPA 6020	6D20130	0.045	0.34	0.37	1	04/20/06	04/25/06			
Boron	EPA 6010B	6D20129	1.1	5.6	ND	1	04/20/06	04/22/06			
Cadmium	EPA 6020	6D20130	0.022	0.56	0.15	1	04/20/06	04/25/06	US J		N
Chromium	EPA 6020	6D20130	0.34	1.1	14	1	04/20/06	04/25/06			
Cobalt	EPA 6020	6D20130	0.022	0.56	4.6	1	04/20/06	04/25/06			
Copper	EPA 6020	6D20130	0.22	1.1	6.5	1	04/20/06	04/25/06			
Lead	EPA 6020	6D20130	0.022	0.56	10	1	04/20/06	04/25/06			
Mercury	EPA 7471A	6D21060	0.0034	0.022	0.060	1	04/21/06	04/21/06			
Molybdenum	EPA 6020	6D20130	0.11	1.1	0.45	1	04/20/06	04/25/06	US J		B
Nickel	EPA 6020	6D20130	0.22	1.1	8.0	1	04/20/06	04/25/06	US J		N
Selenium	EPA 6020	6D20130	0.22	1.1	ND	1	04/20/06	04/25/06	US J		N
Silver	EPA 6020	6D20130	0.022	0.56	0.073	1	04/20/06	04/25/06	J		
Thallium	EPA 6020	6D20130	0.11	0.56	0.22	1	04/20/06	04/25/06	J		
Vanadium	EPA 6020	6D20130	0.45	1.1	29	1	04/20/06	04/25/06			
Zinc	EPA 6020	6D20130	0.56	11	44	1	04/20/06	04/25/06	US J		F, G

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Project Manager

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ms: s/10/06



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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1302

Sampled: 04/12/06
Received: 04/12/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1302-24 (MJ799 - Soil)									
Reporting Units: mg/kg dry									
Aluminum	EPA 6010B	6D20129	5.4	11	9000	1	04/20/06	04/22/06	Rev Qual
Antimony	EPA 6020	6D20130	0.033	1.1	0.21	1	04/20/06	04/25/06	UT J B, Q
Arsenic	EPA 6020	6D20130	0.27	0.54	2.8	1	04/20/06	04/25/06	
Barium	EPA 6020	6D20130	0.087	0.54	50	1	04/20/06	04/25/06	
Beryllium	EPA 6020	6D20130	0.044	0.33	0.35	1	04/20/06	04/25/06	
Boron	EPA 6010B	6D20129	1.1	5.4	ND	1	04/20/06	04/22/06	UT J
Cadmium	EPA 6020	6D20130	0.022	0.54	0.058	1	04/20/06	04/25/06	UT J
Chromium	EPA 6020	6D20130	0.33	1.1	10	1	04/20/06	04/25/06	
Cobalt	EPA 6020	6D20130	0.022	0.54	3.6	1	04/20/06	04/25/06	
Copper	EPA 6020	6D20130	0.22	1.1	4.2	1	04/20/06	04/25/06	
Lead	EPA 6020	6D20130	0.022	0.54	3.2	1	04/20/06	04/25/06	
Mercury	EPA 7471A	6D21060	0.0033	0.022	0.0080	1	04/21/06	04/21/06	J
Molybdenum	EPA 6020	6D20130	0.11	1.1	0.26	1	04/20/06	04/25/06	J B
Nickel	EPA 6020	6D20130	0.22	1.1	5.5	1	04/20/06	04/25/06	J
Selenium	EPA 6020	6D20130	0.22	1.1	ND	1	04/20/06	04/25/06	J
Silver	EPA 6020	6D20130	0.022	0.54	0.023	1	04/20/06	04/25/06	J
Thallium	EPA 6020	6D20130	0.11	0.54	0.18	1	04/20/06	04/25/06	J
Vanadium	EPA 6020	6D20130	0.44	1.1	22	1	04/20/06	04/25/06	J
Zinc	EPA 6020	6D20130	0.54	11	34	1	04/20/06	04/25/06	J F, Q
Sample ID: IPD1302-25 (MJ800 - Soil)									
Reporting Units: mg/kg dry									
Aluminum	EPA 6010B	6D20129	5.4	11	9700	1	04/20/06	04/22/06	
Antimony	EPA 6020	6D20130	0.033	1.1	0.61	1	04/20/06	04/25/06	J J Q
Arsenic	EPA 6020	6D20130	0.27	0.54	2.8	1	04/20/06	04/25/06	
Barium	EPA 6020	6D20130	0.087	0.54	47	1	04/20/06	04/25/06	
Beryllium	EPA 6020	6D20130	0.043	0.33	0.36	1	04/20/06	04/25/06	
Boron	EPA 6010B	6D20129	1.1	5.4	3.0	1	04/20/06	04/22/06	UT B, J B
Cadmium	EPA 6020	6D20130	0.022	0.54	0.52	1	04/20/06	04/25/06	J
Chromium	EPA 6020	6D20130	0.33	1.1	14	1	04/20/06	04/25/06	
Cobalt	EPA 6020	6D20130	0.022	0.54	3.9	1	04/20/06	04/25/06	
Copper	EPA 6020	6D20130	0.22	1.1	9.7	1	04/20/06	04/25/06	J F
Lead	EPA 6020	6D20130	0.022	0.54	43	1	04/20/06	04/25/06	
Mercury	EPA 7471A	6D21060	0.0033	0.022	0.078	1	04/21/06	04/21/06	
Molybdenum	EPA 6020	6D20130	0.11	1.1	0.51	1	04/20/06	04/25/06	J
Nickel	EPA 6020	6D20130	0.22	1.1	7.6	1	04/20/06	04/25/06	J B
Selenium	EPA 6020	6D20130	0.22	1.1	ND	1	04/20/06	04/25/06	J
Silver	EPA 6020	6D20130	0.022	0.54	0.41	1	04/20/06	04/25/06	J
Thallium	EPA 6020	6D20130	0.11	0.54	0.20	1	04/20/06	04/25/06	J
Vanadium	EPA 6020	6D20130	0.43	1.1	27	1	04/20/06	04/25/06	J
Zinc	EPA 6020	6D20130	0.54	11	110	1	04/20/06	04/25/06	J F, Q

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Michele Chamberlin
Project Manager

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LEVEL 1
Phm Shidong



12269 East Vassar Drive, Aurora, CO 80014
720.535.5502, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: Metals by EPA 6010B, 6020, and 7471A
QC Level: V¹
SDG: IPD1108
Matrix: Soil
No. of Samples: 12
No. of Reanalyses: 0
Date Reviewed: May 5, 2006
Reviewer: P. Meeks
Reference: USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*
Samples Reviewed: MJ739, MJ740, MJ741, MJ742, MJ743, MJ744, MJ745, MJ770, MJ771, MJ772, MJ773, MJ774

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received within the temperature limits of 4^o±2^oC, at 3^oC. The COC was signed and dated by field and laboratory personnel and accounted for the samples and analyses presented in this SDG. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary.</p> <p>The 6-month ICP and ICP-MS metals and the 28 day mercury analytical holding times were met.</p>	No qualifications were required.

DATA VALIDATION REPORT

	Findings	Qualifications
3. <u>Method Blanks</u> 6D20107-BLK1 6D20105-BLK1 6D20073-BLK1	<p>Beryllium, selenium, molybdenum, thallium, silver, cadmium, and antimony were reported in the method blank at -0.25, -0.48, -0.40, -0.35, -0.045, -0.26, and -0.47 mg/kg.</p> <p>Mercury was reported in a bracketing CCB at -0.044 mg/kg. Antimony was detected in a bracketing CCB at 0.318 µg/L.</p>	<p>Beryllium, selenium, molybdenum, and thallium detected in the samples were qualified as estimated, "J," for detects and "UJ," for nondetects. Silver and antimony detected in MJ739 were qualified as estimated, "J," for detects and "UJ," for nondetects. Cadmium detected in MJ739 and MJ745 were qualified as estimated, "J."</p> <p>Mercury detected in MJ739 was qualified as estimated, "J." Antimony detected in MJ744 and MJ745 was qualified as estimated, "UJ."</p>
5. <u>LCS/BS</u> 6D20107-BS1 6D20105-BS1 6D20073-BS1	All recoveries were within the laboratory-established control limits.	No qualifications were required.
6. <u>Duplicates</u> None	None	None
7. <u>MS/MSDs</u> MJ739 (no mercury) MJ744 (mercury only)	Barium was recovered below the control limit in MS only and antimony and zinc were recovered below the control limit in both the MS and the MSD.	Barium, antimony, and zinc in the samples was qualified as estimated, "J," for detects and, "UJ," for nondetects.
10. <u>Other</u>	None	None
11. <u>Field QC Samples</u> Field blanks: MJ813 (IPD1477) Equipment rinsates: MJ812 (IPD1477) Field duplicates: MJ773/MJ774	<p>Barium, chromium, copper, lead, and zinc were detected in MJ812 at 1.7, 1.7, 29, 4.0, 370 µg/L, respectively. Chromium, copper, lead, and zinc were detected in MJ813 at 0.6, 2.3, 0.44, 46 µg/L, respectively.</p> <p>Mercury was detected in both field duplicate samples with an RPD ≤100%.</p>	Copper and zinc in all samples were qualified as estimated, "J."
<u>Comments</u>	None	None

¹ Level V validation consists of cursory review of the summary forms only, and raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed include initial and continuing calibration, continuing calibration blanks, interference check samples (ICSA/ICSAB), and serial dilutions.



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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1108

Sampled: 04/11/06
Received: 04/11/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev	Qual Code
Sample ID: IPD1108-01 (MJ739 - Soil)											
Reporting Units: mg/kg dry											
Aluminum	EPA 6010B	6D20107	5.6	11	13000	1	04/20/06	04/20/06	M-HA		
Antimony	EPA 6020	6D20105	0.034	1.1	ND	1	04/20/06	04/26/06	M2J	B, Q	
Arsenic	EPA 6020	6D20105	0.28	0.56	3.4	1	04/20/06	04/26/06			
Barium	EPA 6020	6D20105	0.090	0.56	110	1	04/20/06	04/26/06	J M2	Q	
Beryllium	EPA 6020	6D20105	0.045	0.34	0.46	1	04/20/06	04/26/06	J	B	
Boron	EPA 6010B	6D20107	1.1	5.6	2.5	1	04/20/06	04/20/06	J		
Cadmium	EPA 6020	6D20105	0.022	0.56	0.12	1	04/20/06	04/26/06	J J	B, K	
Chromium	EPA 6020	6D20105	0.34	1.1	21	1	04/20/06	04/26/06			
Cobalt	EPA 6020	6D20105	0.022	0.56	7.7	1	04/20/06	04/26/06			
Copper	EPA 6020	6D20105	0.22	1.1	13	1	04/20/06	04/26/06	J	F	
Lead	EPA 6020	6D20105	0.022	0.56	14	1	04/20/06	04/26/06			
Mercury	EPA 7471A	6D20073	0.0034	0.022	0.0060	1	04/20/06	04/20/06	J J	B	
Molybdenum	EPA 6020	6D20105	0.11	1.1	0.49	1	04/20/06	04/26/06	J		
Nickel	EPA 6020	6D20105	0.22	1.1	14	1	04/20/06	04/26/06			
Selenium	EPA 6020	6D20105	0.22	1.1	ND	1	04/20/06	04/26/06			
Silver	EPA 6020	6D20105	0.022	0.56	0.13	1	04/20/06	04/26/06	J J	B	
Thallium	EPA 6020	6D20105	0.11	0.56	0.35	1	04/20/06	04/26/06	J J	B	
Vanadium	EPA 6020	6D20105	0.45	1.1	38	1	04/20/06	04/26/06			
Zinc	EPA 6020	6D20105	0.56	11	53	1	04/20/06	04/26/06	M2J	F, Q	
Sample ID: IPD1108-02 (MJ740 - Soil)											
Reporting Units: mg/kg dry											
Silver	EPA 6020	6D20105	0.024	0.61	0.34	1	04/20/06	04/26/06	J		
Sample ID: IPD1108-03 (MJ741 - Soil)											
Reporting Units: mg/kg dry											
Silver	EPA 6020	6D20105	0.024	0.59	0.026	1	04/20/06	04/26/06	J		
Sample ID: IPD1108-04 (MJ742 - Soil)											
Reporting Units: mg/kg dry											
Silver	EPA 6020	6D20105	0.023	0.59	0.061	1	04/20/06	04/26/06	J		
Sample ID: IPD1108-05 (MJ743 - Soil)											
Reporting Units: mg/kg dry											
Silver	EPA 6020	6D20105	0.024	0.60	0.15	1	04/20/06	04/26/06	J		
Sample ID: IPD1108-06 (MJ744 - Soil)											
Reporting Units: mg/kg dry											
Aluminum	EPA 6010B	6D20107	6.1	12	8300	1	04/20/06	04/20/06			
Antimony	EPA 6020	6D20105	0.037	1.2	0.24	1	04/20/06	04/26/06	J J	B, Q	
Arsenic	EPA 6020	6D20105	0.31	0.61	2.0	1	04/20/06	04/26/06			
Barium	EPA 6020	6D20105	0.098	0.61	67	1	04/20/06	04/26/06	J	Q	
Beryllium	EPA 6020	6D20105	0.049	0.37	0.34	1	04/20/06	04/26/06	J J	B	

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Project Manager

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1108

Sampled: 04/11/06
Received: 04/11/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1108-06 (MJ744 - Soil) - cont.									Raw Qual Code
Reporting Units: mg/kg dry									
Boron	EPA 6010B	6D20107	1.2	6.1	4.4	1	04/20/06	04/20/06	J
Cadmium	EPA 6020	6D20105	0.024	0.61	1.5	1	04/20/06	04/26/06	
Chromium	EPA 6020	6D20105	0.37	1.2	15	1	04/20/06	04/26/06	
Cobalt	EPA 6020	6D20105	0.024	0.61	4.5	1	04/20/06	04/26/06	
Copper	EPA 6020	6D20105	0.24	1.2	20	1	04/20/06	04/26/06	J F
Lead	EPA 6020	6D20105	0.024	0.61	68	1	04/20/06	04/26/06	
Mercury	EPA 7471A	6D20073	0.37	2.4	23	100	04/20/06	04/20/06	
Molybdenum	EPA 6020	6D20105	0.12	1.2	0.86	1	04/20/06	04/26/06	J
Nickel	EPA 6020	6D20105	0.24	1.2	21	1	04/20/06	04/26/06	J R
Selenium	EPA 6020	6D20105	0.24	1.2	ND	1	04/20/06	04/26/06	J B
Silver	EPA 6020	6D20105	0.024	0.61	2.6	1	04/20/06	04/26/06	
Thallium	EPA 6020	6D20105	0.12	0.61	0.18	1	04/20/06	04/26/06	JT B
Vanadium	EPA 6020	6D20105	0.49	1.2	24	1	04/20/06	04/26/06	
Zinc	EPA 6020	6D20105	0.61	12	130	1	04/20/06	04/26/06	J F, Q
Sample ID: IPD1108-07 (MJ745 - Soil)									
Reporting Units: mg/kg dry									
Aluminum	EPA 6010B	6D20107	6.7	13	8500	1	04/20/06	04/20/06	
Antimony	EPA 6020	6D20105	0.040	1.3	0.26	1	04/20/06	04/26/06	UT J B, Q
Arsenic	EPA 6020	6D20105	0.34	0.67	2.1	1	04/20/06	04/26/06	
Barium	EPA 6020	6D20105	0.11	0.67	61	1	04/20/06	04/26/06	J Q
Beryllium	EPA 6020	6D20105	0.054	0.40	0.39	1	04/20/06	04/26/06	JT B
Boron	EPA 6010B	6D20107	1.3	6.7	3.2	1	04/20/06	04/20/06	J
Cadmium	EPA 6020	6D20105	0.027	0.67	2.0	1	04/20/06	04/26/06	J B
Chromium	EPA 6020	6D20105	0.40	1.3	15	1	04/20/06	04/26/06	
Cobalt	EPA 6020	6D20105	0.027	0.67	4.7	1	04/20/06	04/26/06	
Copper	EPA 6020	6D20105	0.27	1.3	17	1	04/20/06	04/26/06	J F
Lead	EPA 6020	6D20105	0.027	0.67	33	1	04/20/06	04/26/06	
Mercury	EPA 7471A	6D20073	0.0040	0.027	0.10	1	04/20/06	04/20/06	
Molybdenum	EPA 6020	6D20105	0.13	1.3	0.61	1	04/20/06	04/26/06	J
Nickel	EPA 6020	6D20105	0.27	1.3	22	1	04/20/06	04/26/06	J R
Selenium	EPA 6020	6D20105	0.27	1.3	ND	1	04/20/06	04/26/06	UT B
Silver	EPA 6020	6D20105	0.027	0.67	2.4	1	04/20/06	04/26/06	
Thallium	EPA 6020	6D20105	0.13	0.67	0.16	1	04/20/06	04/26/06	JT B
Vanadium	EPA 6020	6D20105	0.54	1.3	25	1	04/20/06	04/26/06	
Zinc	EPA 6020	6D20105	0.67	13	160	1	04/20/06	04/26/06	J F, Q

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Michele Chamberlin
Project Manager

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17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1108

Sampled: 04/11/06
Received: 04/11/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1108-32 (MJ770 - Soil)									
Reporting Units: mg/kg dry									
Mercury	EPA 7471A	6D20073	0.0041	0.028	0.036	1	04/20/06	04/20/06	Qual Code
Sample ID: IPD1108-33 (MJ771 - Soil)									
Reporting Units: mg/kg dry									
Mercury	EPA 7471A	6D20073	0.0037	0.025	0.72	1	04/20/06	04/20/06	Qual Code
Sample ID: IPD1108-34 (MJ772 - Soil)									
Reporting Units: mg/kg dry									
Mercury	EPA 7471A	6D20073	0.0039	0.026	0.034	1	04/20/06	04/20/06	Qual Code
Sample ID: IPD1108-35 (MJ773 - Soil)									
Reporting Units: mg/kg dry									
Mercury	EPA 7471A	6D20073	0.0040	0.026	0.058	1	04/20/06	04/20/06	Qual Code
Sample ID: IPD1108-36 (MJ774 - Soil)									
Reporting Units: mg/kg dry									
Mercury	EPA 7471A	6D20073	0.0037	0.025	0.059	1	04/20/06	04/20/06	Qual Code

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Michele Chamberlin
Project Manager

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12269 East Vassar Drive, Aurora, CO 80014
720.535.5502, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: Metals by EPA 6010B, 6020, 7470A, and 7471A
QC Level: V¹
SDG: IPB1791
Matrix: Soil
No. of Samples: 15
No. of Reanalyses: 0
Date Reviewed: March 20, 2006
Reviewer: P. Meeks
Reference: USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)
Samples Reviewed: MJ695, MJ696, MJ697, MJ698, MJ699, MJ700, MJ701, MJ702, MJ703, MJ704, MJ705, MJ707, MJ708, MJ710, MJ718

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received within the temperature limits of 4°±2°C, at 5°C. The COCs were signed and dated by field and laboratory personnel and accounted for the samples and analyses presented in this SDG. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary.</p> <p>The 6-month ICP and ICP-MS metals, and the 28-day mercury analytical holding times were met.</p>	No qualifications were required.
3. <u>Method Blanks</u> 6B23091-BLK1 6B23092-BLK1 6B23123-BLK1 6B24079-BLK1 6B24105-BLK1	Selenium was reported in 6B223091-BLK1 at -0.26 mg/kg. Antimony was detected in bracketing CCBs at 0.93 and 1.02 µg/L. Mercury was reported in a CCB at -0.052 µg/L.	Antimony detected in all site samples and nondetected selenium in all site samples were qualified as estimated nondetects, "UJ." Nondetected mercury in WA695 was qualified as estimated, "UJ," and mercury detected in MJ700, MJ701, MJ702, MJ705, MJ708, and MJ710 was qualified as estimated, "J."

DATA VALIDATION REPORT

	Findings	Qualifications
5. <u>LCS/BS</u> 6B23091-BS1 6B23092-BS1 6B23123-BS1 6B24079-BS1 6B24105-BS1	The recoveries were within the laboratory-established control limits.	No qualifications were required.
6. <u>Duplicates</u> None	None	None
7. <u>MS/MSDs</u> MJ695 (ICP and ICP-MS)	Selenium and boron were recovered below the control limit in both the MS and the MSD and arsenic, barium, cadmium, chromium, cobalt, copper, nickel, vanadium, and zinc were recovered below the control limit in the MS only.	Arsenic, barium, boron, cadmium, chromium, cobalt, copper, nickel, selenium, vanadium, and zinc were qualified as estimated, "J," for detects and, "UJ," for nondetects.
10. <u>Other</u>	Selenium, reported by the laboratory as nondetected in all site samples was reported as negative in the raw data, from -0.40 to -1.4 µg/L.	The reviewer raised the selenium MDLs to the absolute value of the highest level of interference reported, 1.4 µg/L.
11. <u>Field QC Samples</u> Field blanks: None Equipment rinsates: MJ615 (IPB1429) Field duplicates: None	Cadmium, copper, nickel, lead, and zinc were detected in MJ615 at 0.084, 19, 58, 3.8, 140 µg/L, respectively.	Copper, nickel, and zinc in all site samples, cadmium in MJ695, MJ700, MJ701, MJ703, MJ707, MJ708, and MJ710 were qualified as estimated, "J."
<u>Comments</u>	None	None

¹ Level V validation consists of cursory review of the summary forms only, and raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed include initial and continuing calibration, continuing calibration blanks, interference check samples (ICSA/ICSAB), and serial dilutions.



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 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 6
 Data Gap
 Report Number: IPB1791

Sampled: 02/17/06
 Received: 02/17/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev Qual	Qual Code
Sample ID: IPB1791-03 (MJ695 - Soil)											
Reporting Units: mg/kg dry											
Aluminum	EPA 6010B	6B23092	5.5	11	11000	1	02/23/06	02/26/06	M-HA		
Antimony	EPA 6020	6B23091	0.033	1.1	0.34	1	02/23/06	02/24/06	UT J		B
Arsenic	EPA 6020	6B23091	0.27	0.55	3.0	1	02/23/06	02/24/06	J M2		Q
Barium	EPA 6020	6B23091	0.087	0.55	95	1	02/23/06	02/24/06	J M2		Q
Beryllium	EPA 6020	6B23091	0.044	0.33	0.56	1	02/23/06	02/24/06			
Boron	EPA 6010B	6B24105	1.1	5.5	6.1	1	02/24/06	02/25/06	J M2		Q
Cadmium	EPA 6020	6B23091	0.022	0.55	0.15	1	02/23/06	02/24/06	M2, J		F
Chromium	EPA 6020	6B23091	0.33	1.1	15	1	02/23/06	02/24/06	M2		
Cobalt	EPA 6020	6B23091	0.022	0.55	5.7	1	02/23/06	02/24/06	M2		
Copper	EPA 6020	6B23091	0.22	1.1	10	1	02/23/06	02/24/06	M2		F
Lead	EPA 6020	6B23091	0.022	0.55	5.3	1	02/23/06	02/24/06			
Mercury	EPA 7471A	6B24079	0.0033	0.022	ND	1	02/24/06	02/24/06	UT		B
Molybdenum	EPA 6020	6B23091	0.11	1.1	0.64	1	02/23/06	02/24/06	M2, J		
Nickel	EPA 6020	6B23091	0.22	1.1	10	1	02/23/06	02/24/06	J M2		Q
Selenium	EPA 6020	6B23091	0.22	1.1	ND	1	02/23/06	02/24/06	UT M2		B, Q, F
Silver	EPA 6020	6B23091	0.022	0.55	0.044	1	02/23/06	02/24/06	J		
Thallium	EPA 6020	6B23091	0.11	0.55	0.36	1	02/23/06	02/24/06	J		
Vanadium	EPA 6020	6B23091	0.44	1.1	30	1	02/23/06	02/24/06	J M2		Q
Zinc	EPA 6020	6B23091	0.55	11	46	1	02/23/06	02/24/06	M2		F

Sample ID: IPB1791-04 (MJ696 - Soil)

Reporting Units: mg/kg dry

Aluminum	EPA 6010B	6B23132	5.6	11	15000	1	02/23/06	02/26/06		
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Sample ID: IPB1791-05 (MJ697 - Soil)

Reporting Units: mg/kg dry

Aluminum	EPA 6010B	6B23132	5.6	11	10000	1	02/23/06	02/26/06		
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Sample ID: IPB1791-06 (MJ698 - Soil)

Reporting Units: mg/kg dry

Aluminum	EPA 6010B	6B23132	5.6	11	12000	1	02/23/06	02/26/06		
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Sample ID: IPB1791-07 (MJ699 - Soil)

Reporting Units: mg/kg dry

Aluminum	EPA 6010B	6B23132	5.3	11	11000	1	02/23/06	02/26/06	M-HA	
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Sample ID: IPB1791-08 (MJ700 - Soil)

Reporting Units: mg/kg dry

Aluminum	EPA 6010B	6B23092	5.5	11	15000	1	02/23/06	02/26/06		
Antimony	EPA 6020	6B23091	0.033	1.1	0.36	1	02/23/06	02/24/06	UT J	B
Arsenic	EPA 6020	6B23091	0.28	0.55	4.0	1	02/23/06	02/24/06	J	Q
Barium	EPA 6020	6B23091	0.089	0.55	100	1	02/23/06	02/24/06	J	
Beryllium	EPA 6020	6B23091	0.044	0.33	0.65	1	02/23/06	02/24/06		

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 Project Manager

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPB1791

Sampled: 02/17/06
Received: 02/17/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1791-08 (MJ700 - Soil) - cont. Reporting Units: mg/kg dry									
Boron	EPA 6010B	6B24105	1.1	5.5	8.6	1	02/24/06	02/25/06	J J B
Cadmium	EPA 6020	6B23091	0.022	0.55	0.20	1	02/23/06	02/24/06	J J B
Chromium	EPA 6020	6B23091	0.33	1.1	20	1	02/23/06	02/24/06	J J B
Cobalt	EPA 6020	6B23091	0.022	0.55	7.9	1	02/23/06	02/24/06	J J B
Copper	EPA 6020	6B23091	0.22	1.1	13	1	02/23/06	02/24/06	J J B
Lead	EPA 6020	6B23091	0.022	0.55	8.8	1	02/23/06	02/24/06	J J B
Mercury	EPA 7471A	6B24079	0.0033	0.022	0.0072	1	02/24/06	02/24/06	J J B
Molybdenum	EPA 6020	6B23091	0.11	1.1	0.60	1	02/23/06	02/24/06	J J B
Nickel	EPA 6020	6B23091	0.22	1.1	15	1	02/23/06	02/24/06	J J B
Selenium	EPA 6020	6B23091	0.22	1.1	ND	1	02/23/06	02/24/06	J J B
Silver	EPA 6020	6B23091	0.022	0.55	0.052	1	02/23/06	02/24/06	J J B
Thallium	EPA 6020	6B23091	0.11	0.55	0.38	1	02/23/06	02/24/06	J J B
Vanadium	EPA 6020	6B23091	0.44	1.1	40	1	02/23/06	02/24/06	J J B
Zinc	EPA 6020	6B23091	0.55	11	51	1	02/23/06	02/24/06	J J B

Sample ID: IPB1791-09 (MJ701 - Soil)
Reporting Units: mg/kg dry

Aluminum	EPA 6010B	6B23092	5.5	11	17000	1	02/23/06	02/26/06	J J B
Antimony	EPA 6020	6B23091	0.033	1.1	0.36	1	02/23/06	02/24/06	J J B
Arsenic	EPA 6020	6B23091	0.28	0.55	4.2	1	02/23/06	02/24/06	J J B
Barium	EPA 6020	6B23091	0.088	0.55	99	1	02/23/06	02/24/06	J J B
Beryllium	EPA 6020	6B23091	0.044	0.33	0.67	1	02/23/06	02/24/06	J J B
Boron	EPA 6010B	6B24105	1.1	5.5	12	1	02/24/06	02/25/06	J J B
Cadmium	EPA 6020	6B23091	0.022	0.55	0.22	1	02/23/06	02/24/06	J J B
Chromium	EPA 6020	6B23091	0.33	1.1	22	1	02/23/06	02/24/06	J J B
Cobalt	EPA 6020	6B23091	0.022	0.55	9.0	1	02/23/06	02/24/06	J J B
Copper	EPA 6020	6B23091	0.22	1.1	14	1	02/23/06	02/24/06	J J B
Lead	EPA 6020	6B23091	0.022	0.55	9.7	1	02/23/06	02/24/06	J J B
Mercury	EPA 7471A	6B24079	0.0033	0.022	0.0044	1	02/24/06	02/24/06	J J B
Molybdenum	EPA 6020	6B23091	0.11	1.1	0.45	1	02/23/06	02/24/06	J J B
Nickel	EPA 6020	6B23091	0.22	1.1	16	1	02/23/06	02/24/06	J J B
Selenium	EPA 6020	6B23091	0.22	1.1	ND	1	02/23/06	02/24/06	J J B
Silver	EPA 6020	6B23091	0.022	0.55	0.043	1	02/23/06	02/24/06	J J B
Thallium	EPA 6020	6B23091	0.11	0.55	0.31	1	02/23/06	02/24/06	J J B
Vanadium	EPA 6020	6B23091	0.44	1.1	42	1	02/23/06	02/24/06	J J B
Zinc	EPA 6020	6B23091	0.55	11	61	1	02/23/06	02/24/06	J J B

pm 3/20/06

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Michele Chamberlin
Project Manager

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPB1791

Sampled: 02/17/06
Received: 02/17/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Raw Qual	Qual Code
Sample ID: IPB1791-10 (MJ702 - Soil)											
Reporting Units: mg/kg dry											
Aluminum	EPA 6010B	6B23092	5.5	11	19000	1	02/23/06	02/26/06			
Antimony	EPA 6020	6B23091	0.033	1.1	0.42	1	02/23/06	02/24/06	J	J	B
Arsenic	EPA 6020	6B23091	0.28	0.55	4.1	1	02/23/06	02/24/06	J	J	Q
Barium	EPA 6020	6B23091	0.089	0.55	100	1	02/23/06	02/24/06	J	J	Q
Beryllium	EPA 6020	6B23091	0.044	0.33	0.65	1	02/23/06	02/24/06	J	J	Q
Boron	EPA 6010B	6B24105	1.1	5.5	9.2	1	02/24/06	02/25/06	J	J	Q
Cadmium	EPA 6020	6B23091	0.022	0.55	0.25	1	02/23/06	02/24/06	J	J	Q
Chromium	EPA 6020	6B23091	0.33	1.1	23	1	02/23/06	02/24/06	J	J	Q
Cobalt	EPA 6020	6B23091	0.022	0.55	8.2	1	02/23/06	02/24/06	J	J	Q
Copper	EPA 6020	6B23091	0.22	1.1	14	1	02/23/06	02/24/06	J	J	Q
Lead	EPA 6020	6B23091	0.022	0.55	9.6	1	02/23/06	02/24/06	J	J	Q
Mercury	EPA 7471A	6B24079	0.0033	0.022	0.010	1	02/24/06	02/24/06	J	J	B
Molybdenum	EPA 6020	6B23091	0.11	1.1	0.46	1	02/23/06	02/24/06	J	J	Q
Nickel	EPA 6020	6B23091	0.22	1.1	16	1	02/23/06	02/24/06	J	J	Q
Selenium	EPA 6020	6B23091	0.22	1.1	ND	1	02/23/06	02/24/06	J	J	Q
Silver	EPA 6020	6B23091	0.022	0.55	0.068	1	02/23/06	02/24/06	J	J	Q
Thallium	EPA 6020	6B23091	0.11	0.55	0.30	1	02/23/06	02/24/06	J	J	Q
Vanadium	EPA 6020	6B23091	0.44	1.1	43	1	02/23/06	02/24/06	J	J	Q
Zinc	EPA 6020	6B23091	0.55	11	56	1	02/23/06	02/24/06	J	J	Q

Sample ID: IPB1791-11 (MJ703 - Soil)

Reporting Units: mg/kg dry

Aluminum	EPA 6010B	6B23092	5.3	11	13000	1	02/23/06	02/26/06			
Antimony	EPA 6020	6B23091	0.032	1.1	0.59	1	02/23/06	02/24/06	J	J	B
Arsenic	EPA 6020	6B23091	0.26	0.53	4.1	1	02/23/06	02/24/06	J	J	Q
Barium	EPA 6020	6B23091	0.084	0.53	72	1	02/23/06	02/24/06	J	J	Q
Beryllium	EPA 6020	6B23091	0.042	0.32	0.48	1	02/23/06	02/24/06	J	J	Q
Boron	EPA 6010B	6B24105	1.1	5.3	7.0	1	02/24/06	02/25/06	J	J	Q
Cadmium	EPA 6020	6B23091	0.021	0.53	0.22	1	02/23/06	02/24/06	J	J	Q
Chromium	EPA 6020	6B23091	0.32	1.1	15	1	02/23/06	02/24/06	J	J	Q
Cobalt	EPA 6020	6B23091	0.021	0.53	5.0	1	02/23/06	02/24/06	J	J	Q
Copper	EPA 6020	6B23091	0.21	1.1	9.6	1	02/23/06	02/24/06	J	J	Q
Lead	EPA 6020	6B23091	0.021	0.53	8.5	1	02/23/06	02/24/06	J	J	Q
Mercury	EPA 7471A	6B24079	0.0032	0.021	0.029	1	02/24/06	02/24/06	J	J	B
Molybdenum	EPA 6020	6B23091	0.11	1.1	0.52	1	02/23/06	02/24/06	J	J	Q
Nickel	EPA 6020	6B23091	0.21	1.1	9.7	1	02/23/06	02/24/06	J	J	Q
Selenium	EPA 6020	6B23091	0.21	1.1	ND	1	02/23/06	02/24/06	J	J	Q
Silver	EPA 6020	6B23091	0.021	0.53	0.052	1	02/23/06	02/24/06	J	J	Q
Thallium	EPA 6020	6B23091	0.11	0.53	0.23	1	02/23/06	02/24/06	J	J	Q
Vanadium	EPA 6020	6B23091	0.42	1.1	30	1	02/23/06	02/24/06	J	J	Q
Zinc	EPA 6020	6B23091	0.53	11	45	1	02/23/06	02/24/06	J	J	Q

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Project Manager

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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPB1791

Sampled: 02/17/06
Received: 02/17/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1791-12 (MJ704 - Soil)									
Reporting Units: mg/kg dry									
Aluminum	EPA 6010B	6B23092	5.2	10	6500	1	02/23/06	02/26/06	
Antimony	EPA 6020	6B23091	0.031	1.0	0.90	1	02/23/06	02/24/06	UT J B
Arsenic	EPA 6020	6B23091	0.26	0.52	4.7	1	02/23/06	02/24/06	J Q
Barium	EPA 6020	6B23091	0.083	0.52	72	1	02/23/06	02/24/06	J Q
Beryllium	EPA 6020	6B23091	0.041	0.31	0.33	1	02/23/06	02/24/06	J Q
Boron	EPA 6010B	6B24105	1.0	5.2	6.4	1	02/24/06	02/25/06	J Q
Cadmium	EPA 6020	6B23091	0.021	0.52	0.86	1	02/23/06	02/24/06	J Q
Chromium	EPA 6020	6B23091	0.31	1.0	11	1	02/23/06	02/24/06	J Q
Cobalt	EPA 6020	6B23091	0.021	0.52	3.7	1	02/23/06	02/24/06	J Q
Copper	EPA 6020	6B23091	0.21	1.0	6.6	1	02/23/06	02/24/06	J Q
Lead	EPA 6020	6B23091	0.021	0.52	11	1	02/23/06	02/24/06	J Q
Mercury	EPA 7471A	6B24079	0.0031	0.021	0.12	1	02/24/06	02/24/06	J Q
Molybdenum	EPA 6020	6B23091	0.10	1.0	0.37	1	02/23/06	02/24/06	J Q
Nickel	EPA 6020	6B23091	0.21	1.0	7.1	1	02/23/06	02/24/06	J Q
Selenium	EPA 6020	6B23091	0.21	1.0	ND	1	02/23/06	02/24/06	J Q
Silver	EPA 6020	6B23091	0.021	0.52	0.14	1	02/23/06	02/24/06	J Q
Thallium	EPA 6020	6B23091	0.10	0.52	0.14	1	02/23/06	02/24/06	J Q
Vanadium	EPA 6020	6B23091	0.41	1.0	18	1	02/23/06	02/24/06	J Q
Zinc	EPA 6020	6B23091	0.52	10	65	1	02/23/06	02/24/06	J Q
Sample ID: IPB1791-13 (MJ705 - Soil)									
Reporting Units: mg/kg dry									
Aluminum	EPA 6010B	6B23092	5.4	11	10000	1	02/23/06	02/26/06	
Antimony	EPA 6020	6B23091	0.032	1.1	0.40	1	02/23/06	02/24/06	UT J B
Arsenic	EPA 6020	6B23091	0.27	0.54	3.4	1	02/23/06	02/24/06	J Q
Barium	EPA 6020	6B23091	0.086	0.54	140	1	02/23/06	02/24/06	J Q
Beryllium	EPA 6020	6B23091	0.043	0.32	0.38	1	02/23/06	02/24/06	J Q
Boron	EPA 6010B	6B24105	1.1	5.4	6.4	1	02/24/06	02/25/06	J Q
Cadmium	EPA 6020	6B23091	0.022	0.54	0.35	1	02/23/06	02/24/06	J Q
Chromium	EPA 6020	6B23091	0.32	1.1	45	1	02/23/06	02/24/06	J Q
Cobalt	EPA 6020	6B23091	0.022	0.54	5.7	1	02/23/06	02/24/06	J Q
Copper	EPA 6020	6B23091	0.22	1.1	8.2	1	02/23/06	02/24/06	J Q
Lead	EPA 6020	6B23091	0.022	0.54	8.6	1	02/23/06	02/24/06	J Q
Mercury	EPA 7471A	6B24079	0.0032	0.022	0.011	1	02/24/06	02/24/06	J J B
Molybdenum	EPA 6020	6B23091	0.11	1.1	0.37	1	02/23/06	02/24/06	J Q
Nickel	EPA 6020	6B23091	0.22	1.1	13	1	02/23/06	02/24/06	J Q
Selenium	EPA 6020	6B23091	0.22	1.1	ND	1	02/23/06	02/24/06	J Q
Silver	EPA 6020	6B23091	0.022	0.54	0.058	1	02/23/06	02/24/06	J Q
Thallium	EPA 6020	6B23091	0.11	0.54	0.18	1	02/23/06	02/24/06	J Q
Vanadium	EPA 6020	6B23091	0.43	1.1	25	1	02/23/06	02/24/06	J Q
Zinc	EPA 6020	6B23091	0.54	11	39	1	02/23/06	02/24/06	J Q

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Project Manager

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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPB1791

Sampled: 02/17/06
Received: 02/17/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev Qual	Qual Code
Sample ID: IPB1791-15 (MJ707 - Soil)											
Reporting Units: mg/kg dry											
Aluminum	EPA 6010B	6B23092	26	51	3100	5	02/23/06	02/27/06			
Antimony	EPA 6020	6B23091	0.031	1.0	0.93	1	02/23/06	02/24/06	UJ	J	B
Arsenic	EPA 6020	6B23091	0.26	0.51	3.9	1	02/23/06	02/24/06	J		Q
Barium	EPA 6020	6B23091	0.082	0.51	43	1	02/23/06	02/24/06	J		Q
Beryllium	EPA 6020	6B23091	0.041	0.31	0.14	1	02/23/06	02/24/06	J		
Boron	EPA 6010B	6B24105	3.1	15	5.0	3	02/24/06	02/26/06	J	RL-1, J	Q
Cadmium	EPA 6020	6B23091	0.021	0.51	0.19	1	02/23/06	02/24/06	J		I, F
Chromium	EPA 6020	6B23091	0.31	1.0	6.8	1	02/23/06	02/24/06			
Cobalt	EPA 6020	6B23091	0.021	0.51	2.0	1	02/23/06	02/24/06			
Copper	EPA 6020	6B23091	0.21	1.0	9.2	1	02/23/06	02/24/06			I, F
Lead	EPA 6020	6B23091	0.021	0.51	7.8	1	02/23/06	02/24/06			
Mercury	EPA 7471A	6B24079	0.0031	0.021	0.047	1	02/24/06	02/24/06			
Molybdenum	EPA 6020	6B23091	0.10	1.0	0.33	1	02/23/06	02/24/06	J		
Nickel	EPA 6020	6B23091	0.21	1.0	2.2	1	02/23/06	02/24/06	J		Q, F
Selenium	EPA 6020	6B23091	0.21	1.0	ND	1	02/23/06	02/24/06	UJ		B, Q, I, F
Silver	EPA 6020	6B23091	0.021	0.51	0.039	1	02/23/06	02/24/06	J		
Thallium	EPA 6020	6B23091	0.10	0.51	ND	1	02/23/06	02/24/06	U		
Vanadium	EPA 6020	6B23091	0.41	1.0	10	1	02/23/06	02/24/06	J		Q
Zinc	EPA 6020	6B23091	0.51	10	30	1	02/23/06	02/24/06	J		I, F

Sample ID: IPB1791-16 (MJ708 - Soil)
Reporting Units: mg/kg dry

Aluminum	EPA 6010B	6B23092	5.3	11	5300	1	02/23/06	02/26/06			
Antimony	EPA 6020	6B23091	0.032	1.1	0.32	1	02/23/06	02/24/06	UJ	J	B
Arsenic	EPA 6020	6B23091	0.26	0.53	1.8	1	02/23/06	02/24/06	J		Q
Barium	EPA 6020	6B23091	0.084	0.53	59	1	02/23/06	02/24/06	J		Q
Beryllium	EPA 6020	6B23091	0.042	0.32	0.26	1	02/23/06	02/24/06	J		
Boron	EPA 6010B	6B24105	1.1	5.3	8.7	1	02/24/06	02/26/06	J		Q
Cadmium	EPA 6020	6B23091	0.021	0.53	0.19	1	02/23/06	02/24/06	J		I, F
Chromium	EPA 6020	6B23091	0.32	1.1	9.5	1	02/23/06	02/24/06			
Cobalt	EPA 6020	6B23091	0.021	0.53	3.3	1	02/23/06	02/24/06			
Copper	EPA 6020	6B23091	0.21	1.1	5.9	1	02/23/06	02/24/06			I, F
Lead	EPA 6020	6B23091	0.021	0.53	11	1	02/23/06	02/24/06			
Mercury	EPA 7471A	6B24079	0.0032	0.021	0.021	1	02/24/06	02/24/06	J		B
Molybdenum	EPA 6020	6B23091	0.11	1.1	0.25	1	02/23/06	02/24/06	J		
Nickel	EPA 6020	6B23091	0.21	1.1	5.8	1	02/23/06	02/24/06	J		Q, F
Selenium	EPA 6020	6B23091	0.21	1.1	ND	1	02/23/06	02/24/06	UJ		B, Q, I, F
Silver	EPA 6020	6B23091	0.021	0.53	0.057	1	02/23/06	02/24/06	J		
Thallium	EPA 6020	6B23091	0.11	0.53	ND	1	02/23/06	02/24/06	U		
Vanadium	EPA 6020	6B23091	0.42	1.1	19	1	02/23/06	02/24/06	J		Q
Zinc	EPA 6020	6B23091	0.53	11	35	1	02/23/06	02/24/06	J		I, F

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Project Manager

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 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 6
 Data Gap
 Report Number: IPB1791

Sampled: 02/17/06
 Received: 02/17/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1791-18 (MJ710 - Soil)									
Reporting Units: mg/kg dry									
Aluminum	EPA 6010B	6B23092	5.3	11	6200	1	02/23/06	02/26/06	
Antimony	EPA 6020	6B23091	0.032	1.1	0.18	1	02/23/06	02/24/06	UJ J B
Arsenic	EPA 6020	6B23091	0.26	0.53	2.0	1	02/23/06	02/24/06	J J B
Barium	EPA 6020	6B23091	0.084	0.53	68	1	02/23/06	02/24/06	J J B
Beryllium	EPA 6020	6B23091	0.042	0.32	0.27	1	02/23/06	02/24/06	J J B
Boron	EPA 6010B	6B24105	1.1	5.3	5.4	1	02/24/06	02/26/06	J J B
Cadmium	EPA 6020	6B23091	0.021	0.53	0.19	1	02/23/06	02/24/06	J J B
Chromium	EPA 6020	6B23091	0.32	1.1	11	1	02/23/06	02/24/06	J J B
Cobalt	EPA 6020	6B23091	0.021	0.53	3.3	1	02/23/06	02/24/06	J J B
Copper	EPA 6020	6B23091	0.21	1.1	6.2	1	02/23/06	02/24/06	J J B
Lead	EPA 6020	6B23091	0.021	0.53	12	1	02/23/06	02/24/06	J J B
Mercury	EPA 7471A	6B24079	0.0032	0.021	0.015	1	02/24/06	02/24/06	J J B
Molybdenum	EPA 6020	6B23091	0.11	1.1	0.33	1	02/23/06	02/24/06	J J B
Nickel	EPA 6020	6B23091	0.21	1.1	6.8	1	02/23/06	02/24/06	J J B
Selenium	EPA 6020	6B23091	0.21	1.1	ND	1	02/23/06	02/24/06	J J B
Silver	EPA 6020	6B23091	0.021	0.53	0.057	1	02/23/06	02/24/06	J J B
Thallium	EPA 6020	6B23091	0.11	0.53	0.11	1	02/23/06	02/24/06	J J B
Vanadium	EPA 6020	6B23091	0.42	1.1	20	1	02/23/06	02/24/06	J J B
Zinc	EPA 6020	6B23091	0.53	11	34	1	02/23/06	02/24/06	J J B

Sample ID: IPB1791-22 (MJ718 - Soil)
 Reporting Units: mg/kg dry

Thallium	EPA 6020	6B23091	0.11	0.53	0.21	1	02/23/06	02/24/06	J
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mm 3/22/06

Del Mar Analytical, Irvine
 Michele Chamberlin
 Project Manager

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LEVEL II

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12269 East Vassar Drive, Aurora, CO 80014
720.535.5502, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: Metals by EPA 6010B, 6020, 7470A, and 7471A
QC Level: V¹
SDG: IPB1719
Matrix: Soil
No. of Samples: 12
No. of Reanalyses: 0
Date Reviewed: March 17, 2006
Reviewer: P. Meeks
Reference: USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*
Samples Reviewed: MJ664, MJ665, MJ666, MJ676, MJ677, MJ678, MJ679, MJ680, MJ682, MJ684, MJ685, MJ686

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received within the temperature limits of 4°±2°C, at 3 °C. Metals analyses were not requested for MJ682. The analyses were added as per a memo from MWH personnel dated 03/22/06. The COCs were signed and dated by field and laboratory personnel and accounted for the remaining samples and analyses presented in this SDG. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary.</p> <p>The 6-month ICP and ICP-MS metals analytical holding times were met. The 28-day mercury analytical holding time was met for all samples except MJ682.</p>	<p>No qualifications were required.</p> <p>Mercury detected in MJ682 was qualified as estimated, "J."</p>

DATA VALIDATION REPORT

	Findings	Qualifications
3. <u>Method Blanks</u> 6B21131-BLK1 6B21132-BLK1 6B22114-BLK1 6B23059-BLK1 6B23083-BLK1 6C27086-BLK1 6C29125-BLK1 6C30094-BLK1	Boron was detected in 6B21131-BLK1 at 1.56 mg/kg and antimony was detected in 6B21132-BLK1 at 0.0960 mg/kg. Silver was reported in 6B21132-BLK1 at -0.095 µg/L. Beryllium was reported in a bracketing CCB at 0.13 µg/L.	Boron and antimony detected in all soil samples except MJ682 were qualified as estimated nondetects, "UJ." Nondetected silver in all samples except MJ682 was qualified as estimated, "UJ," and silver detected in MJ664 and MJ680 was qualified as estimated, "J." Beryllium detected in MJ682 was qualified as estimated, "UJ."
5. <u>LCS/BS</u> 6B21131-BS1 6B21132-BS1 6B22114-BS1 6B23059-BS1 6B23083-BS1 6C27086-BS1 6C29125-BS1 6C30094-BS1	The recoveries were within the laboratory-established control limits.	No qualifications were required.
6. <u>Duplicates</u> None	None	None
7. <u>MS/MSDs</u> None	Although MS/MSD analyses were not performed on a sample in this SDG, the MS/MSD associated with this SDG was performed on a soil sample from the Boeing SSFL RFI site. Antimony was recovered below 30% in both the MS and the MSD.	As antimony has not been recovered in any of the MS/MSD analyses performed on soil samples from the site, nondetected antimony (see Section 3) in samples in this SDG was rejected, "R."
10. <u>Other</u>	Selenium, reported as nondetected in all site soil samples except MJ682, was reported as negative in the raw data, from -0.88 to -1.56 µg/L, except for MJ680.	The reviewer raised the MDL for all soil samples, except MJ680 and MJ682, to the highest level of interference reported, 1.56 µg/L.
11. <u>Field QC Samples</u> Field blanks: None Equipment rinsates: MJ615 (IPB1462) Field duplicates: None	Cadmium, copper, nickel, lead, and zinc were detected in MJ615 at 0.084, 19, 58, 3.8, 140 µg/L, respectively.	Copper, nickel, and zinc detected in the soil site samples were qualified as estimated detects, "J." Cadmium and lead detected in sample MJ680 were qualified as estimated, "J."
<u>Comments</u>	None	None

¹ Level V validation consists of cursory review of the summary forms only, and raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed include initial and continuing calibration, continuing calibration blanks, interference check samples (ICSA/ICSAB), and serial dilutions.



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1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPB1719

Sampled: 02/16/06
Received: 02/16/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1719-04 (MJ664 - Soil)									Raw Qual
Reporting Units: mg/kg dry									Qual Code
Aluminum	EPA 6010B	6B21131	5.5	11	11000	1	02/21/06	02/24/06	
Antimony	EPA 6020	6B21132	0.033	1.1	0.10	1	02/21/06	02/22/06	RDQ B, J B, Q
Arsenic	EPA 6020	6B21132	0.27	0.55	2.2	1	02/21/06	02/22/06	
Barium	EPA 6020	6B21132	0.088	0.55	68	1	02/21/06	02/22/06	
Beryllium	EPA 6020	6B21132	0.044	0.33	0.43	1	02/21/06	02/22/06	
Boron	EPA 6010B	6B21131	1.1	5.5	5.6	1	02/21/06	02/24/06	UT B B
Cadmium	EPA 6020	6B21132	0.022	0.55	0.86	1	02/21/06	02/22/06	
Chromium	EPA 6020	6B21132	0.33	1.1	13	1	02/21/06	02/22/06	
Cobalt	EPA 6020	6B21132	0.022	0.55	3.7	1	02/21/06	02/22/06	
Copper	EPA 6020	6B21132	0.22	1.1	8.2	1	02/21/06	02/22/06	J F
Lead	EPA 6020	6B21132	0.022	0.55	20	1	02/21/06	02/22/06	
Mercury	EPA 7471A	6B23059	0.0033	0.022	0.37	1	02/23/06	02/23/06	
Molybdenum	EPA 6020	6B21132	0.11	1.1	0.50	1	02/21/06	02/22/06	J
Nickel	EPA 6020	6B21132	0.22	1.1	8.8	1	02/21/06	02/22/06	J F
Selenium	EPA 6020	6B21132	-0.22	1.1	ND	1	02/21/06	02/22/06	J C F
Silver	EPA 6020	6B21132	0.022	0.55	0.055	1	02/21/06	02/22/06	J J B
Thallium	EPA 6020	6B21132	0.11	0.55	0.24	1	02/21/06	02/22/06	J
Vanadium	EPA 6020	6B21132	0.44	1.1	19	1	02/21/06	02/22/06	
Zinc	EPA 6020	6B21132	0.55	11	86	1	02/21/06	02/22/06	J F
Sample ID: IPB1719-05 (MJ665 - Soil)									
Reporting Units: mg/kg dry									
Thallium	EPA 6020	6B21132	0.10	0.52	0.21	1	02/21/06	02/22/06	J
Sample ID: IPB1719-06 (MJ666 - Soil)									
Reporting Units: mg/kg dry									
Thallium	EPA 6020	6B21132	0.10	0.52	0.21	1	02/21/06	02/22/06	J
Sample ID: IPB1719-10 (MJ676 - Soil)									
Reporting Units: mg/kg dry									
Silver	EPA 6020	6B21132	0.021	0.52	0.41	1	02/21/06	02/22/06	J
Thallium	EPA 6020	6B21132	0.10	0.52	0.19	1	02/21/06	02/22/06	J
Sample ID: IPB1719-11 (MJ677 - Soil)									
Reporting Units: mg/kg dry									
Aluminum	EPA 6010B	6B21131	5.3	11	9400	1	02/21/06	02/24/06	
Antimony	EPA 6020	6B21132	0.032	1.1	0.14	1	02/21/06	02/22/06	RDQ B, J B, Q
Arsenic	EPA 6020	6B21132	0.26	0.53	2.1	1	02/21/06	02/22/06	
Barium	EPA 6020	6B21132	0.084	0.53	73	1	02/21/06	02/22/06	
Beryllium	EPA 6020	6B21132	0.042	0.32	0.27	1	02/21/06	02/22/06	J
Boron	EPA 6010B	6B21131	1.1	5.3	6.1	1	02/21/06	02/24/06	UT B B
Cadmium	EPA 6020	6B21132	0.021	0.53	0.36	1	02/21/06	02/22/06	J
Chromium	EPA 6020	6B21132	0.32	1.1	11	1	02/21/06	02/22/06	

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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPB1719

Sampled: 02/16/06
Received: 02/16/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	Rev Qual	Qual Code
Sample ID: IPB1719-11 (MJ677 - Soil) - cont.											
Reporting Units: mg/kg dry											
Cobalt	EPA 6020	6B21132	0.021	0.53	4.2	1	02/21/06	02/22/06			
Copper	EPA 6020	6B21132	0.21	1.1	10	1	02/21/06	02/22/06	J		F
Lead	EPA 6020	6B21132	0.021	0.53	18	1	02/21/06	02/22/06			
Mercury	EPA 7471A	6B23083	0.0032	0.021	0.030	1	02/23/06	02/23/06			
Molybdenum	EPA 6020	6B21132	0.11	1.1	0.38	1	02/21/06	02/22/06	J		
Nickel	EPA 6020	6B21132	0.21	1.1	8.2	1	02/21/06	02/22/06	J		F
Selenium	EPA 6020	6B21132	0.21	1.1	ND	1	02/21/06	02/22/06	U		\$
Silver	EPA 6020	6B21132	0.021	0.53	0.85	1	02/21/06	02/22/06			
Thallium	EPA 6020	6B21132	0.11	0.53	0.17	1	02/21/06	02/22/06	J		
Vanadium	EPA 6020	6B21132	0.42	1.1	32	1	02/21/06	02/22/06			
Zinc	EPA 6020	6B21132	0.53	11	90	1	02/21/06	02/22/06	J		F
Sample ID: IPB1719-12 (MJ678 - Soil)											
Reporting Units: mg/kg dry											
Aluminum	EPA 6010B	6B21131	5.3	11	8800	1	02/21/06	02/24/06			
Antimony	EPA 6020	6B21132	0.032	1.1	0.24	1	02/21/06	02/22/06	R0JB, J		B, G
Arsenic	EPA 6020	6B21132	0.27	0.53	2.3	1	02/21/06	02/22/06			
Barium	EPA 6020	6B21132	0.085	0.53	68	1	02/21/06	02/22/06			
Beryllium	EPA 6020	6B21132	0.042	0.32	0.30	1	02/21/06	02/22/06	J		
Boron	EPA 6010B	6B21131	1.1	5.3	5.5	1	02/21/06	02/24/06	UJB		B
Cadmium	EPA 6020	6B21132	0.021	0.53	0.38	1	02/21/06	02/22/06	J		
Chromium	EPA 6020	6B21132	0.32	1.1	12	1	02/21/06	02/22/06			
Cobalt	EPA 6020	6B21132	0.021	0.53	3.7	1	02/21/06	02/22/06			
Copper	EPA 6020	6B21132	0.21	1.1	12	1	02/21/06	02/22/06	J		F
Lead	EPA 6020	6B21132	0.021	0.53	15	1	02/21/06	02/22/06			
Mercury	EPA 7471A	6B23083	0.0032	0.021	0.039	1	02/23/06	02/23/06			
Molybdenum	EPA 6020	6B21132	0.11	1.1	0.58	1	02/21/06	02/22/06	J		
Nickel	EPA 6020	6B21132	0.21	1.1	8.4	1	02/21/06	02/22/06	J		F
Selenium	EPA 6020	6B21132	0.21	1.1	ND	1	02/21/06	02/22/06	U		\$
Silver	EPA 6020	6B21132	0.021	0.53	0.95	1	02/21/06	02/22/06			
Thallium	EPA 6020	6B21132	0.11	0.53	0.16	1	02/21/06	02/22/06	J		
Vanadium	EPA 6020	6B21132	0.42	1.1	23	1	02/21/06	02/22/06			
Zinc	EPA 6020	6B21132	0.53	11	120	1	02/21/06	02/22/06	J		F

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LEVEL V



MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPB1719

Sampled: 02/16/06
Received: 02/16/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1719-13 (MJ679 - Soil)									
Reporting Units: mg/kg dry									
Aluminum	EPA 6010B	6B21131	5.4	11	8300	1	02/21/06	02/24/06	Rev Qual
Antimony	EPA 6020	6B21132	0.032	1.1	0.18	1	02/21/06	02/22/06	ROTB, J B, Q
Arsenic	EPA 6020	6B21132	0.27	0.54	2.5	1	02/21/06	02/22/06	
Barium	EPA 6020	6B21132	0.086	0.54	64	1	02/21/06	02/22/06	
Beryllium	EPA 6020	6B21132	0.043	0.32	0.33	1	02/21/06	02/22/06	
Boron	EPA 6010B	6B21131	1.1	5.4	5.3	1	02/21/06	02/24/06	UT J, B B
Cadmium	EPA 6020	6B21132	0.022	0.54	0.48	1	02/21/06	02/22/06	J
Chromium	EPA 6020	6B21132	0.32	1.1	14	1	02/21/06	02/22/06	
Cobalt	EPA 6020	6B21132	0.022	0.54	4.0	1	02/21/06	02/22/06	
Copper	EPA 6020	6B21132	0.22	1.1	11	1	02/21/06	02/22/06	J F
Lead	EPA 6020	6B21132	0.022	0.54	32	1	02/21/06	02/22/06	
Mercury	EPA 7471A	6B23083	0.0032	0.022	0.016	1	02/23/06	02/23/06	J J B
Molybdenum	EPA 6020	6B21132	0.11	1.1	0.62	1	02/21/06	02/22/06	J
Nickel	EPA 6020	6B21132	0.22	1.1	12	1	02/21/06	02/22/06	J F
Selenium	EPA 6020	6B21132	-0.22 1.1	1.1	ND	1	02/21/06	02/22/06	U S
Silver	EPA 6020	6B21132	0.022	0.54	1.4	1	02/21/06	02/22/06	
Thallium	EPA 6020	6B21132	0.11	0.54	0.17	1	02/21/06	02/22/06	J
Vanadium	EPA 6020	6B21132	0.43	1.1	22	1	02/21/06	02/22/06	
Zinc	EPA 6020	6B21132	0.54	11	65	1	02/21/06	02/22/06	J F
Sample ID: IPB1719-14 (MJ680 - Soil)									
Reporting Units: mg/kg dry									
Aluminum	EPA 6010B	6B21131	5.2	10	12000	1	02/21/06	02/24/06	
Antimony	EPA 6020	6B21132	0.031	1.0	0.094	1	02/21/06	02/22/06	ROTB, J B, Q
Arsenic	EPA 6020	6B21132	0.26	0.52	2.7	1	02/21/06	02/22/06	
Barium	EPA 6020	6B21132	0.083	0.52	79	1	02/21/06	02/22/06	
Beryllium	EPA 6020	6B21132	0.041	0.31	0.46	1	02/21/06	02/22/06	
Boron	EPA 6010B	6B21131	1.0	5.2	5.3	1	02/21/06	02/24/06	UT B B
Cadmium	EPA 6020	6B21132	0.021	0.52	0.19	1	02/21/06	02/22/06	J J F
Chromium	EPA 6020	6B21132	0.31	1.0	14	1	02/21/06	02/22/06	
Cobalt	EPA 6020	6B21132	0.021	0.52	4.5	1	02/21/06	02/22/06	
Copper	EPA 6020	6B21132	0.21	1.0	8.6	1	02/21/06	02/22/06	J F
Lead	EPA 6020	6B21132	0.021	0.52	11	1	02/21/06	02/22/06	J F
Mercury	EPA 7471A	6B23083	0.0031	0.021	0.010	1	02/23/06	02/23/06	J J B
Molybdenum	EPA 6020	6B21132	0.10	1.0	0.40	1	02/21/06	02/22/06	J
Nickel	EPA 6020	6B21132	0.21	1.0	9.9	1	02/21/06	02/22/06	J F
Selenium	EPA 6020	6B21132	0.21	1.0	ND	1	02/21/06	02/22/06	U
Silver	EPA 6020	6B21132	0.021	0.52	0.24	1	02/21/06	02/22/06	J J B
Thallium	EPA 6020	6B21132	0.10	0.52	0.22	1	02/21/06	02/22/06	J
Vanadium	EPA 6020	6B21132	0.41	1.0	26	1	02/21/06	02/22/06	
Zinc	EPA 6020	6B21132	0.52	10	55	1	02/21/06	02/22/06	J F

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPB1719

Sampled: 02/16/06
Received: 02/16/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1719-18 (MJ684 - Soil)									
Reporting Units: mg/kg dry									
Aluminum	EPA 6010B	6B21131	5.6	11	12000	1	02/21/06	02/24/06	Rev Qual
Antimony	EPA 6020	6B21132	0.034	1.1	0.26	1	02/21/06	02/22/06	Rev Qual B, J
Arsenic	EPA 6020	6B21132	0.28	0.56	2.4	1	02/21/06	02/22/06	
Barium	EPA 6020	6B21132	0.090	0.56	77	1	02/21/06	02/22/06	
Beryllium	EPA 6020	6B21132	0.045	0.34	0.40	1	02/21/06	02/22/06	
Boron	EPA 6010B	6B21131	1.1	5.6	7.2	1	02/21/06	02/24/06	US B
Cadmium	EPA 6020	6B21132	0.022	0.56	2.2	1	02/21/06	02/22/06	
Chromium	EPA 6020	6B21132	0.34	1.1	16	1	02/21/06	02/22/06	
Cobalt	EPA 6020	6B21132	0.022	0.56	5.0	1	02/21/06	02/22/06	
Copper	EPA 6020	6B21132	0.22	1.1	21	1	02/21/06	02/22/06	J
Lead	EPA 6020	6B21132	0.022	0.56	25	1	02/21/06	02/22/06	
Mercury	EPA 7471A	6B23083	0.0034	0.022	0.13	1	02/23/06	02/23/06	
Molybdenum	EPA 6020	6B21132	0.11	1.1	0.82	1	02/21/06	02/22/06	J
Nickel	EPA 6020	6B21132	0.22	1.1	22	1	02/21/06	02/22/06	CH
Selenium	EPA 6020	6B21132	0.22	1.1	ND	1	02/21/06	02/22/06	CH
Silver	EPA 6020	6B21132	0.022	0.56	3.3	1	02/21/06	02/22/06	
Thallium	EPA 6020	6B21132	0.11	0.56	0.23	1	02/21/06	02/22/06	J
Vanadium	EPA 6020	6B21132	0.45	1.1	26	1	02/21/06	02/22/06	
Zinc	EPA 6020	6B21132	0.56	11	150	1	02/21/06	02/22/06	

Sample ID: IPB1719-19 (MJ685 - Soil)

Reporting Units: mg/kg dry

Aluminum	EPA 6010B	6B21131	5.3	11	8900	1	02/21/06	02/24/06	
Antimony	EPA 6020	6B21132	0.032	1.1	0.76	1	02/21/06	02/22/06	Rev Qual B, J
Arsenic	EPA 6020	6B21132	0.26	0.53	2.1	1	02/21/06	02/22/06	
Barium	EPA 6020	6B21132	0.084	0.53	60	1	02/21/06	02/22/06	
Beryllium	EPA 6020	6B21132	0.042	0.32	0.32	1	02/21/06	02/22/06	
Boron	EPA 6010B	6B21131	1.1	5.3	8.5	1	02/21/06	02/24/06	US B
Cadmium	EPA 6020	6B21132	0.021	0.53	1.5	1	02/21/06	02/22/06	
Chromium	EPA 6020	6B21132	0.32	1.1	13	1	02/21/06	02/22/06	
Cobalt	EPA 6020	6B21132	0.021	0.53	3.4	1	02/21/06	02/22/06	
Copper	EPA 6020	6B21132	0.21	1.1	10	1	02/21/06	02/22/06	J
Lead	EPA 6020	6B21132	0.021	0.53	49	1	02/21/06	02/22/06	
Mercury	EPA 7471A	6B23083	0.0032	0.021	0.13	1	02/23/06	02/23/06	
Molybdenum	EPA 6020	6B21132	0.11	1.1	0.47	1	02/21/06	02/22/06	J
Nickel	EPA 6020	6B21132	0.21	1.1	11	1	02/21/06	02/22/06	CH
Selenium	EPA 6020	6B21132	0.21	1.1	ND	1	02/21/06	02/22/06	CH
Silver	EPA 6020	6B21132	0.021	0.53	2.2	1	02/21/06	02/22/06	
Thallium	EPA 6020	6B21132	0.11	0.53	0.17	1	02/21/06	02/22/06	J
Vanadium	EPA 6020	6B21132	0.42	1.1	18	1	02/21/06	02/22/06	
Zinc	EPA 6020	6B21132	0.53	11	79	1	02/21/06	02/22/06	

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Michele Chamberlin
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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPB1719

Sampled: 02/16/06
Received: 02/16/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1719-20 (MJ686 - Soil)									
Reporting Units: mg/kg dry									
Thallium	EPA 6020	6B22114	0.12	0.62	0.13	1	02/22/06	02/23/06	J

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPB1719

Sampled: 02/16/06
Received: 02/16/06

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1719-16 (MJ682 - Soil) - cont.									
Reporting Units: mg/kg dry									
Aluminum	EPA 6010B	6C27086	5.0	10	5000	1	03/27/06	03/28/06	
Antimony	EPA 6020	6C29125	0.030	1.0	0.12	1	03/29/06	03/30/06	J
Arsenic	EPA 6020	6C29125	0.25	0.50	1.1	1	03/29/06	03/30/06	
Barium	EPA 6020	6C29125	0.080	0.50	43	1	03/29/06	03/30/06	
Beryllium	EPA 6020	6C29125	0.040	0.30	0.21	1	03/29/06	03/31/06	J B
Boron	EPA 6010B	6C27086	1.0	5.0	2.5	1	03/27/06	03/28/06	J
Cadmium	EPA 6020	6C29125	0.020	0.50	0.68	1	03/29/06	03/30/06	
Chromium	EPA 6020	6C29125	0.30	1.0	10	1	03/29/06	03/30/06	
Cobalt	EPA 6020	6C29125	0.020	0.50	3.5	1	03/29/06	03/30/06	
Copper	EPA 6020	6C29125	0.20	1.0	11	1	03/29/06	03/30/06	J F
Lead	EPA 6020	6C29125	0.020	0.50	41	1	03/29/06	03/30/06	
Mercury	EPA 7471A	6C30094	0.0030	0.020	0.53	1	03/30/06	03/30/06	
Molybdenum	EPA 6020	6C29125	0.10	1.0	0.25	1	03/29/06	03/30/06	J
Nickel	EPA 6020	6C29125	0.20	1.0	12	1	03/29/06	03/30/06	J F
Selenium	EPA 6020	6C29125	0.20	1.0	ND	1	03/29/06	03/30/06	U
Silver	EPA 6020	6C29125	0.020	0.50	0.72	1	03/29/06	03/30/06	
Thallium	EPA 6020	6C29125	0.10	0.50	ND	1	03/29/06	03/30/06	U
Vanadium	EPA 6020	6C29125	0.40	1.0	15	1	03/29/06	03/30/06	
Zinc	EPA 6020	6C29125	0.50	10	130	1	03/29/06	03/30/06	J F

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

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12269 East Vassar Drive, Aurora, CO 80014
303.881.6816, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: PAHs by Method 8270C/SIM
QC Level: V¹
SDG: IPB1791
Matrix: Soil
No. of Samples: 10
No. of Reanalyses: 0
Date Reviewed: March 20, 2006
Reviewer: L. Calvin
Reference: USEPA *Contract Laboratory Program National Functional Guidelines For Organic Data Review (2/94)*
Samples Reviewed: MJ695, MJ700, MJ701, MJ702, MJ703, MJ704, MJ705, MJ707, MJ708, MJ710

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received at Del Mar within the temperature limits of 4° ±2°C, at 5°C, and received at Calscience at 4°C. The original COC was signed and dated by field and laboratory personnel and accounted for the analyses presented in this SDG. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary. The transfer COC was signed by personnel from both laboratories.</p> <p>The soil samples were extracted within 14 days of collection, and all samples were analyzed within 40 days of extraction.</p>	No qualifications were required.
4. <u>Method Blanks</u> 060221L08-MB	There were no target compounds detected above the MDLs in the associated method blank.	No qualifications were required.
5. <u>LCS/BS</u> 060221L08-LCS/LCSD	The recoveries and RPDs for spiked compounds acenaphthene and pyrene were within the laboratory-established QC limits.	No qualifications were required.

DATA VALIDATION REPORT

	Findings	Qualifications
6. <u>Surrogates</u>	The recoveries were within the laboratory-established QC limits.	No qualifications were required.
7. <u>MS/MSDs</u> None	MS/MSD analyses were not performed on the samples of this SDG.	No qualifications were required.
9. <u>Field QC Samples</u> FB: None ER: MJ615 (IPB1429) FD: None	The equipment rinsate had no target compound detects.	No qualifications were required.
10. <u>Other</u>	Sample results were reported in units of mg/Kg (ppm) on a dry-weight basis.	None.
<u>Comments</u>	None.	None.

[†] Level V validation consists of cursory review of the summary forms and chromatograms, and raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed include instrument tunes, initial and continuing calibrations, compound identification, and compound quantification.

Analytical Report



Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received: 02/21/06
Work Order No: 06-02-1154
Preparation: EPA 3545
Method: EPA 8270C SIM PAHs
Units: mg/kg

Project: IPB1791

Page 1 of 6

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IPB1791-03	06-02-1154-1	02/17/06	Solid	02/22/06	02/23/06	060221L08

Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	ND	0.022	0.0040	1.09		Benzo (a) Anthracene	ND	0.022	0.0028	1.09	
2-Methylnaphthalene	ND	0.022	0.0026	1.09		Chrysene	ND	0.022	0.0051	1.09	
Acenaphthylene	ND	0.022	0.0026	1.09		Benzo (k) Fluoranthene	ND	0.022	0.0049	1.09	
Acenaphthene	ND	0.022	0.0054	1.09		Benzo (b) Fluoranthene	ND	0.022	0.0015	1.09	
Fluorene	ND	0.022	0.0033	1.09		Benzo (a) Pyrene	ND	0.022	0.0021	1.09	
Phenanthrene	ND	0.022	0.0041	1.09		Benzo (g,h,i) Perylene	ND	0.022	0.0036	1.09	
Anthracene	ND	0.022	0.0067	1.09		Indeno (1,2,3-c,d) Pyrene	ND	0.022	0.0038	1.09	
Fluoranthene	ND	0.022	0.0021	1.09		Dibenz (a,h) Anthracene	ND	0.022	0.0029	1.09	
Pyrene	ND	0.022	0.0035	1.09		1-Methylnaphthalene	ND	0.022	0.0047	1.09	
Surrogates:	REC (%)	Control Limits			Qual	Surrogates:	REC (%)	Control Limits			Qual
Nitrobenzene-d5	100	28-139				2-Fluorobiphenyl	106	33-144			
p-Terphenyl-d14	135	23-160									

IPB1791-03	06-02-1154-2	02/17/06	Solid	02/22/06	02/24/06	060221L08
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Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	ND	0.023	0.0042	1.14		Benzo (a) Anthracene	ND	0.023	0.0030	1.14	
2-Methylnaphthalene	ND	0.023	0.0027	1.14		Chrysene	ND	0.023	0.0054	1.14	
Acenaphthylene	ND	0.023	0.0027	1.14		Benzo (k) Fluoranthene	ND	0.023	0.0051	1.14	
Acenaphthene	ND	0.023	0.0057	1.14		Benzo (b) Fluoranthene	ND	0.023	0.0016	1.14	
Fluorene	ND	0.023	0.0035	1.14		Benzo (a) Pyrene	ND	0.023	0.0022	1.14	
Phenanthrene	ND	0.023	0.0043	1.14		Benzo (g,h,i) Perylene	ND	0.023	0.0037	1.14	
Anthracene	ND	0.023	0.0070	1.14		Indeno (1,2,3-c,d) Pyrene	ND	0.023	0.0039	1.14	
Fluoranthene	ND	0.023	0.0022	1.14		Dibenz (a,h) Anthracene	ND	0.023	0.0031	1.14	
Pyrene	ND	0.023	0.0037	1.14		1-Methylnaphthalene	ND	0.023	0.0049	1.14	
Surrogates:	REC (%)	Control Limits			Qual	Surrogates:	REC (%)	Control Limits			Qual
Nitrobenzene-d5	97	28-139				2-Fluorobiphenyl	97	33-144			
p-Terphenyl-d14	115	23-160									

W/C 03-20-06

Level II

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report

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Del Mar Analytical
 17461 Derian Avenue, Suite 100
 Irvine, CA 92614-5845

Date Received: 02/21/06
 Work Order No: 06-02-1154
 Preparation: EPA 3545
 Method: EPA 8270C SIM PAHs
 Units: mg/kg

Project: IPB1791

Page 2 of 6

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IPB1791-09	06-02-1154-3	02/17/06	Solid	02/22/06	02/24/06	060221L08

Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	ND	0.022	0.0041	1.1		Benzo (a) Anthracene	ND	0.022	0.0029	1.1	
2-Methylnaphthalene	ND	0.022	0.0026	1.1		Chrysene	ND	0.022	0.0052	1.1	
Acenaphthylene	ND	0.022	0.0026	1.1		Benzo (k) Fluoranthene	ND	0.022	0.0050	1.1	
Acenaphthene	ND	0.022	0.0055	1.1		Benzo (b) Fluoranthene	ND	0.022	0.0015	1.1	
Fluorene	ND	0.022	0.0034	1.1		Benzo (a) Pyrene	ND	0.022	0.0022	1.1	
Phenanthrene	ND	0.022	0.0042	1.1		Benzo (g,h,i) Perylene	ND	0.022	0.0036	1.1	
Anthracene	ND	0.022	0.0068	1.1		Indeno (1,2,3-c,d) Pyrene	ND	0.022	0.0038	1.1	
Fluoranthene	ND	0.022	0.0021	1.1		Dibenz (a,h) Anthracene	ND	0.022	0.0030	1.1	
Pyrene	ND	0.022	0.0036	1.1		1-Methylnaphthalene	ND	0.022	0.0047	1.1	
Surrogates:	REC (%)	Control Limits			Qual	Surrogates:	REC (%)	Control Limits			Qual
Nitrobenzene-d5	108	28-139				2-Fluorobiphenyl	105	33-144			
p-Terphenyl-d14	132	23-160									

IPB1791-10	06-02-1154-4	02/17/06	Solid	02/22/06	02/24/06	060221L08
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Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	ND	0.022	0.0041	1.1		Benzo (a) Anthracene	ND	0.022	0.0029	1.1	
2-Methylnaphthalene	ND	0.022	0.0026	1.1		Chrysene	ND	0.022	0.0052	1.1	
Acenaphthylene	ND	0.022	0.0026	1.1		Benzo (k) Fluoranthene	ND	0.022	0.0050	1.1	
Acenaphthene	ND	0.022	0.0055	1.1		Benzo (b) Fluoranthene	ND	0.022	0.0015	1.1	
Fluorene	ND	0.022	0.0034	1.1		Benzo (a) Pyrene	ND	0.022	0.0022	1.1	
Phenanthrene	ND	0.022	0.0042	1.1		Benzo (g,h,i) Perylene	ND	0.022	0.0036	1.1	
Anthracene	ND	0.022	0.0068	1.1		Indeno (1,2,3-c,d) Pyrene	ND	0.022	0.0038	1.1	
Fluoranthene	ND	0.022	0.0021	1.1		Dibenz (a,h) Anthracene	ND	0.022	0.0030	1.1	
Pyrene	ND	0.022	0.0036	1.1		1-Methylnaphthalene	ND	0.022	0.0047	1.1	
Surrogates:	REC (%)	Control Limits			Qual	Surrogates:	REC (%)	Control Limits			Qual
Nitrobenzene-d5	93	28-139				2-Fluorobiphenyl	90	33-144			
p-Terphenyl-d14	110	23-160									

Level IV

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received: 02/21/06
Work Order No: 06-02-1154
Preparation: EPA 3545
Method: EPA 8270C SIM PAHs
Units: mg/kg

Project: IPB1791

Page 3 of 6

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IPB1791-11	06-02-1154-5	02/17/06	Solid	02/22/06	02/23/06	060221L08

Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	ND	0.021	0.0038	1.03		Benzo (a) Anthracene	ND	0.021	0.0027	1.03	
2-Methylnaphthalene	ND	0.021	0.0025	1.03		Chrysene	ND	0.021	0.0049	1.03	
Acenaphthylene	ND	0.021	0.0025	1.03		Benzo (k) Fluoranthene	ND	0.021	0.0046	1.03	
Acenaphthene	ND	0.021	0.0052	1.03		Benzo (b) Fluoranthene	ND	0.021	0.0014	1.03	
Fluorene	ND	0.021	0.0031	1.03		Benzo (a) Pyrene	ND	0.021	0.0020	1.03	
Phenanthrene	ND	0.021	0.0039	1.03		Benzo (g,h,i) Perylene	ND	0.021	0.0034	1.03	
Anthracene	ND	0.021	0.0064	1.03		Indeno (1,2,3-c,d) Pyrene	ND	0.021	0.0036	1.03	
Fluoranthene	ND	0.021	0.0020	1.03		Dibenz (a,h) Anthracene	ND	0.021	0.0028	1.03	
Pyrene	ND	0.021	0.0034	1.03		1-Methylnaphthalene	ND	0.021	0.0044	1.03	
Surrogates:	REC (%)	Control Limits			Qual	Surrogates:	REC (%)	Control Limits			Qual
Nitrobenzene-d5	89	28-139				2-Fluorobiphenyl	92	33-144			
p-Terphenyl-d14	111	23-160									

IPB1791-12	06-02-1154-6	02/17/06	Solid	02/22/06	02/24/06	060221L08
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Comment(s): -Results are reported on a dry weight basis.

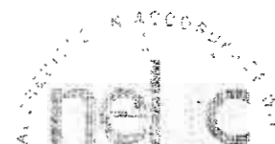
-Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	ND	0.021	0.0038	1.03		Benzo (a) Anthracene	0.33	0.02	0.0027	1.03	
2-Methylnaphthalene	ND	0.021	0.0025	1.03		Chrysene	0.40	0.02	0.0049	1.03	
Acenaphthylene	ND	0.021	0.0025	1.03		Benzo (k) Fluoranthene	0.21	0.02	0.0046	1.03	
Acenaphthene	ND	0.021	0.0052	1.03		Benzo (b) Fluoranthene	0.25	0.02	0.0014	1.03	
Fluorene	ND	0.021	0.0031	1.03		Benzo (a) Pyrene	0.19	0.02	0.0020	1.03	
Phenanthrene	0.33	0.02	0.0039	1.03		Benzo (g,h,i) Perylene	0.087	0.021	0.0034	1.03	
Anthracene	0.039	0.021	0.0064	1.03		Indeno (1,2,3-c,d) Pyrene	0.11	0.02	0.0036	1.03	
Fluoranthene	0.59	0.02	0.0020	1.03		Dibenz (a,h) Anthracene	0.033	0.021	0.0028	1.03	
Pyrene	0.48	0.02	0.0034	1.03		1-Methylnaphthalene	ND	0.021	0.0044	1.03	
Surrogates:	REC (%)	Control Limits			Qual	Surrogates:	REC (%)	Control Limits			Qual
Nitrobenzene-d5	97	28-139				2-Fluorobiphenyl	95	33-144			
p-Terphenyl-d14	114	23-160									

Level IV

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Del Mar Analytical
 17461 Derian Avenue, Suite 100
 Irvine, CA 92614-5845

Date Received: 02/21/06
 Work Order No: 06-02-1154
 Preparation: EPA 3545
 Method: EPA 8270C SIM PAHs
 Units: mg/kg

Project: IPB1791

Page 4 of 6

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IPB1791-13	06-02-1154-7	02/17/06	Solid	02/22/06	02/24/06	060221L08

Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	ND	0.022	0.0040	1.08		Benzo (a) Anthracene	ND	0.022	0.0028	1.08	
2-Methylnaphthalene	ND	0.022	0.0026	1.08		Chrysene	ND	0.022	0.0051	1.08	
Acenaphthylene	ND	0.022	0.0026	1.08		Benzo (k) Fluoranthene	ND	0.022	0.0048	1.08	
Acenaphthene	ND	0.022	0.0054	1.08		Benzo (b) Fluoranthene	ND	0.022	0.0015	1.08	
Fluorene	ND	0.022	0.0033	1.08		Benzo (a) Pyrene	ND	0.022	0.0021	1.08	
Phenanthrene	ND	0.022	0.0041	1.08		Benzo (g,h,i) Perylene	ND	0.022	0.0035	1.08	
Anthracene	ND	0.022	0.0067	1.08		Indeno (1,2,3-c,d) Pyrene	ND	0.022	0.0037	1.08	
Fluoranthene	ND	0.022	0.0021	1.08		Dibenz (a,h) Anthracene	ND	0.022	0.0029	1.08	
Pyrene	ND	0.022	0.0035	1.08		1-Methylnaphthalene	ND	0.022	0.0046	1.08	
Surrogates:	REC (%)	Control Limits			Qual	Surrogates:	REC (%)	Control Limits			Qual
Nitrobenzene-d5	93	28-139				2-Fluorobiphenyl	92	33-144			
p-Terphenyl-d14	118	23-160									

IPB1791-15	06-02-1154-8	02/17/06	Solid	02/22/06	02/24/06	060221L08
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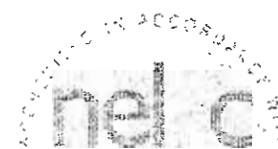
Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	ND	0.020	0.0038	1.02		Benzo (a) Anthracene	ND	0.020	0.0027	1.02	
2-Methylnaphthalene	ND	0.020	0.0024	1.02		Chrysene	ND	0.020	0.0048	1.02	
Acenaphthylene	ND	0.020	0.0025	1.02		Benzo (k) Fluoranthene	ND	0.020	0.0046	1.02	
Acenaphthene	ND	0.020	0.0051	1.02		Benzo (b) Fluoranthene	ND	0.020	0.0014	1.02	
Fluorene	ND	0.020	0.0031	1.02		Benzo (a) Pyrene	ND	0.020	0.0020	1.02	
Phenanthrene	ND	0.020	0.0039	1.02		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1.02	
Anthracene	ND	0.020	0.0063	1.02		Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1.02	
Fluoranthene	ND	0.020	0.0020	1.02		Dibenz (a,h) Anthracene	ND	0.020	0.0028	1.02	
Pyrene	ND	0.020	0.0033	1.02		1-Methylnaphthalene	ND	0.020	0.0044	1.02	
Surrogates:	REC (%)	Control Limits			Qual	Surrogates:	REC (%)	Control Limits			Qual
Nitrobenzene-d5	93	28-139				2-Fluorobiphenyl	94	33-144			
p-Terphenyl-d14	115	23-160									

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Del Mar Analytical
 17461 Derian Avenue, Suite 100
 Irvine, CA 92614-5845

Date Received: 02/21/06
 Work Order No: 06-02-1154
 Preparation: EPA 3545
 Method: EPA 8270C SIM PAHs
 Units: mg/kg

Project: IPB1791

Page 5 of 6

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IPB1791-18	06-02-1154-9	02/17/06	Solid	02/22/06	02/24/06	060221L08

Comment(s):

-Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	ND	0.021	0.0039	1.07		Benzo (a) Anthracene	ND	0.021	0.0028	1.07	
2-Methylnaphthalene	ND	0.021	0.0025	1.07		Chrysene	ND	0.021	0.0050	1.07	
Acenaphthylene	ND	0.021	0.0026	1.07		Benzo (k) Fluoranthene	ND	0.021	0.0048	1.07	
Acenaphthene	ND	0.021	0.0053	1.07		Benzo (b) Fluoranthene	ND	0.021	0.0015	1.07	
Fluorene	ND	0.021	0.0033	1.07		Benzo (a) Pyrene	ND	0.021	0.0021	1.07	
Phenanthrene	ND	0.021	0.0041	1.07		Benzo (g,h,i) Perylene	ND	0.021	0.0035	1.07	
Anthracene	ND	0.021	0.0066	1.07		Indeno (1,2,3-c,d) Pyrene	ND	0.021	0.0037	1.07	
Fluoranthene	ND	0.021	0.0021	1.07		Dibenz (a,h) Anthracene	ND	0.021	0.0029	1.07	
Pyrene	ND	0.021	0.0035	1.07		1-Methylnaphthalene	ND	0.021	0.0046	1.07	
Surrogates:	REC (%)	Control Limits			Qual	Surrogates:	REC (%)	Control Limits			Qual
Nitrobenzene-d5	105	28-139				2-Fluorobiphenyl	94	33-144			
p-Terphenyl-d14	110	23-160									

IPB1791-18	06-02-1154-10	02/17/06	Solid	02/22/06	02/23/06	060221L08
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Comment(s):

-Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	ND	0.021	0.0039	1.06		Benzo (a) Anthracene	ND	0.021	0.0028	1.06	
2-Methylnaphthalene	ND	0.021	0.0025	1.06		Chrysene	ND	0.021	0.0050	1.06	
Acenaphthylene	ND	0.021	0.0025	1.06		Benzo (k) Fluoranthene	ND	0.021	0.0048	1.06	
Acenaphthene	ND	0.021	0.0053	1.06		Benzo (b) Fluoranthene	ND	0.021	0.0015	1.06	
Fluorene	ND	0.021	0.0032	1.06		Benzo (a) Pyrene	ND	0.021	0.0021	1.06	
Phenanthrene	ND	0.021	0.0040	1.06		Benzo (g,h,i) Perylene	ND	0.021	0.0035	1.06	
Anthracene	ND	0.021	0.0065	1.06		Indeno (1,2,3-c,d) Pyrene	ND	0.021	0.0037	1.06	
Fluoranthene	ND	0.021	0.0021	1.06		Dibenz (a,h) Anthracene	ND	0.021	0.0028	1.06	
Pyrene	ND	0.021	0.0035	1.06		1-Methylnaphthalene	ND	0.021	0.0045	1.06	
Surrogates:	REC (%)	Control Limits			Qual	Surrogates:	REC (%)	Control Limits			Qual
Nitrobenzene-d5	101	28-139				2-Fluorobiphenyl	101	33-144			
p-Terphenyl-d14	118	23-160									

Level II

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



12269 East Vassar Drive, Aurora, CO 80014
303.881.6816, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: PAHs by Method 8270C/SIM
QC Level: V¹
SDG: IPD1302
Matrix: Soil
No. of Samples: 11
No. of Reanalyses: 0
Date Reviewed: May 19, 2006
Reviewer: P. Meeks
Reference: USEPA *Contract Laboratory Program National Functional Guidelines for Organic Data Review (2/94)*
Samples Reviewed: MJ787, MJ788, MJ789, MJ790, MJ791, MJ794, MJ795, MJ796, MJ798, MJ799, MJ800

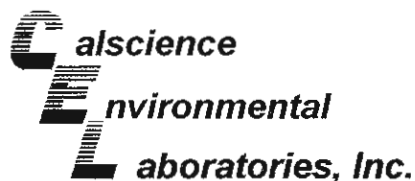
Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received at Del Mar within the temperature limits of $4^{\circ} \pm 2^{\circ}\text{C}$, at 3°C, and received at Calscience at 2.8°C. The original COC was signed and dated by field and laboratory personnel and accounted for the analyses presented in this SDG. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary. The transfer COC was signed by personnel from both laboratories.</p> <p>The soil samples were extracted within 14 days of collection, and all samples were analyzed within 40 days of extraction.</p>	No qualifications were required.
4. <u>Method Blanks</u> 060418L02-MB	There were no target compounds detected above the MDLs in the associated method blank.	No qualifications were required.
5. <u>LCS/BS</u> 060418L02-LCS/LCSD	The recoveries and RPDs for spiked compounds acenaphthene and pyrene were within the laboratory-established QC limits.	No qualifications were required.

DATA VALIDATION REPORT

	Findings	Qualifications
6. <u>Surrogates</u>	The recoveries were within the laboratory-established QC limits.	No qualifications were required.
7. <u>MS/MSDs</u> MJ800	The RPD for acenaphthene was outside the control limit of $\leq 11\%$, at 16%. The recoveries for spiked compounds acenaphthene and pyrene and the RPD for pyrene were within the laboratory-established QC limits.	No qualifications were required.
9. <u>Field QC Samples</u> FB: MJ813 (IPD1477) ER: MJ812 (IPD1477) FD: None	There were no target compound detects in either the field blank or the equipment rinsate.	No qualifications were required.
10. <u>Other</u>	There were target compounds detected below the reporting limit in several samples. Sample results were reported in units of mg/Kg (ppm) on a dry-weight basis.	Target compounds detected below the reporting limit were qualified as estimated, "J."
<u>Comments</u>	None.	None.

¹ Level V validation consists of cursory review of the summary forms and chromatograms, and raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed include instrument tunes, initial and continuing calibrations, compound identification, and compound quantification.



Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received: 04/14/06
Work Order No: 06-04-0814
Preparation: EPA 3545
Method: EPA 8270C SIM PAHs
Units: mg/kg

Project: IPD1302

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Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IPD1302-12 MJ787	06-04-0814-1	04/12/06	Solid	04/18/06	04/21/06	060418L02

Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Rev	Qual	Code	Result	RL	MDL	DF	Qual	Parameter	Rev	Qual	Code	Result	RL	MDL	DF	Qual
Naphthalene	J			0.011	0.027	0.0050	1.35	J	Benzo (a) Anthracene	J			0.0090	0.027	0.0035	1.35	J
2-Methylnaphthalene	J			0.0052	0.027	0.0032	1.35	J	Chrysene				0.028	0.027	0.0064	1.35	
Acenaphthylene	J			ND	0.027	0.0032	1.35		Benzo (k) Fluoranthene	J			ND	0.027	0.0061	1.35	
Acenaphthene	J			ND	0.027	0.0068	1.35		Benzo (b) Fluoranthene	J			0.0039	0.027	0.0019	1.35	J
Fluorene	J			ND	0.027	0.0041	1.35		Benzo (a) Pyrene	J			0.0036	0.027	0.0027	1.35	J
Phenanthrene	J			0.010	0.027	0.0051	1.35	J	Benzo (g,h,i) Perylene	J			0.0048	0.027	0.0044	1.35	J
Anthracene	J			ND	0.027	0.0084	1.35		Indeno (1,2,3-c,d) Pyrene	J			ND	0.027	0.0047	1.35	
Fluoranthene	J			0.012	0.027	0.0026	1.35	J	Dibenz (a,h) Anthracene	J			ND	0.027	0.0036	1.35	
Pyrene	J			0.012	0.027	0.0044	1.35	J	1-Methylnaphthalene	J			ND	0.027	0.0058	1.35	
Surrogates:				REC (%)	Control Limits			Qual	Surrogates:				REC (%)	Control Limits			Qual
Nitrobenzene-d5				120	28-139				2-Fluorobiphenyl				100	33-144			
p-Terphenyl-d14				100	23-160												

IPD1302-13 MJ788	06-04-0814-2	04/12/06	Solid	04/18/06	04/20/06	060418L02
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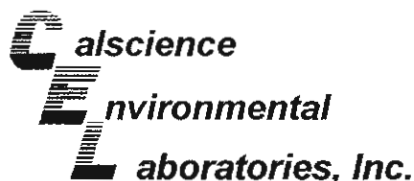
Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Rev	Qual	Code	Result	RL	MDL	DF	Qual	Parameter	Rev	Qual	Code	Result	RL	MDL	DF	Qual
Naphthalene	J			ND	0.024	0.0044	1.19		Benzo (a) Anthracene	J			0.0041	0.024	0.0031	1.19	J
2-Methylnaphthalene	J			ND	0.024	0.0028	1.19		Chrysene	J			ND	0.024	0.0056	1.19	
Acenaphthylene	J			ND	0.024	0.0029	1.19		Benzo (k) Fluoranthene	J			ND	0.024	0.0054	1.19	
Acenaphthene	J			ND	0.024	0.0060	1.19		Benzo (b) Fluoranthene	J			ND	0.024	0.0017	1.19	
Fluorene	J			ND	0.024	0.0036	1.19		Benzo (a) Pyrene	J			ND	0.024	0.0024	1.19	
Phenanthrene	J			ND	0.024	0.0045	1.19		Benzo (g,h,i) Perylene	J			ND	0.024	0.0039	1.19	
Anthracene	J			ND	0.024	0.0074	1.19		Indeno (1,2,3-c,d) Pyrene	J			ND	0.024	0.0041	1.19	
Fluoranthene	J			ND	0.024	0.0023	1.19		Dibenz (a,h) Anthracene	J			ND	0.024	0.0032	1.19	
Pyrene	J			ND	0.024	0.0039	1.19		1-Methylnaphthalene	J			ND	0.024	0.0051	1.19	
Surrogates:				REC (%)	Control Limits			Qual	Surrogates:				REC (%)	Control Limits			Qual
Nitrobenzene-d5				99	28-139				2-Fluorobiphenyl				83	33-144			
p-Terphenyl-d14				90	23-160												

LEVEL V

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received: 04/14/06
Work Order No: 06-04-0814
Preparation: EPA 3545
Method: EPA 8270C SIM PAHs
Units: mg/kg

Project: IPD1302

Page 2 of 6

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IPD1302-14 MJ789	06-04-0814-3	04/12/06	Solid	04/18/06	04/21/06	060418L02

Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Rev	Qual	Code	Result	RL	MDL	DF	Qual	Parameter	Rev	Qual	Code	Result	RL	MDL	DF	Qual
Naphthalene				ND	0.022	0.0041	1.09		Benzo (a) Anthracene				ND	0.022	0.0029	1.09	
2-Methylnaphthalene				ND	0.022	0.0026	1.09		Chrysene				ND	0.022	0.0052	1.09	
Acenaphthylene				ND	0.022	0.0026	1.09		Benzo (k) Fluoranthene				ND	0.022	0.0049	1.09	
Acenaphthene				ND	0.022	0.0055	1.09		Benzo (b) Fluoranthene				ND	0.022	0.0015	1.09	
Fluorene				ND	0.022	0.0033	1.09		Benzo (a) Pyrene				ND	0.022	0.0022	1.09	
Phenanthrene				ND	0.022	0.0042	1.09		Benzo (g,h,i) Perylene				ND	0.022	0.0036	1.09	
Anthracene				ND	0.022	0.0068	1.09		Indeno (1,2,3-c,d) Pyrene				ND	0.022	0.0038	1.09	
Fluoranthene				ND	0.022	0.0021	1.09		Dibenz (a,h) Anthracene				ND	0.022	0.0029	1.09	
Pyrene				ND	0.022	0.0036	1.09		1-Methylnaphthalene				ND	0.022	0.0047	1.09	
Surrogates:				REC (%)	Control Limits			Qual	Surrogates:				REC (%)	Control Limits			Qual
Nitrobenzene-d5				54	28-139				2-Fluorobiphenyl				117	33-144			
p-Terphenyl-d14				86	23-160												

IPD1302-15 MJ790	06-04-0814-4	04/12/06	Solid	04/18/06	04/21/06	060418L02
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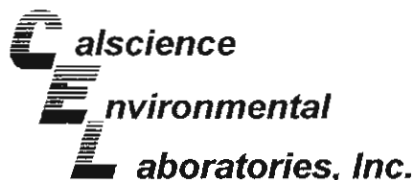
Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Rev	Qual	Code	Result	RL	MDL	DF	Qual	Parameter	Rev	Qual	Code	Result	RL	MDL	DF	Qual
Naphthalene				ND	0.024	0.0044	1.18		Benzo (a) Anthracene				ND	0.024	0.0031	1.18	
2-Methylnaphthalene				ND	0.024	0.0028	1.18		Chrysene				ND	0.024	0.0056	1.18	
Acenaphthylene				ND	0.024	0.0028	1.18		Benzo (k) Fluoranthene				ND	0.024	0.0053	1.18	
Acenaphthene				ND	0.024	0.0059	1.18		Benzo (b) Fluoranthene				ND	0.024	0.0017	1.18	
Fluorene				ND	0.024	0.0036	1.18		Benzo (a) Pyrene				ND	0.024	0.0023	1.18	
Phenanthrene				ND	0.024	0.0045	1.18		Benzo (g,h,i) Perylene				ND	0.024	0.0039	1.18	
Anthracene				ND	0.024	0.0073	1.18		Indeno (1,2,3-c,d) Pyrene				ND	0.024	0.0041	1.18	
Fluoranthene				ND	0.024	0.0023	1.18		Dibenz (a,h) Anthracene				ND	0.024	0.0032	1.18	
Pyrene				ND	0.024	0.0039	1.18		1-Methylnaphthalene				ND	0.024	0.0051	1.18	
Surrogates:				REC (%)	Control Limits			Qual	Surrogates:				REC (%)	Control Limits			Qual
Nitrobenzene-d5				125	28-139				2-Fluorobiphenyl				101	33-144			
p-Terphenyl-d14				125	23-160												

LEVEL V

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers



Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received: 04/14/06
Work Order No: 06-04-0814
Preparation: EPA 3545
Method: EPA 8270C SIM PAHs
Units: mg/kg

Project: IPD1302

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Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IPD1302-16 MJ791	06-04-0814-5	04/12/06	Solid	04/18/06	04/21/06	060418L02

Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Raw Qual	Result	RL	MDL	DF	Qual	Parameter	Raw Qual	Result	RL	MDL	DF	Qual
Naphthalene	U	ND	0.023	0.0042	1.13		Benzo (a) Anthracene	J	0.0033	0.023	0.0029	1.13	J
2-Methylnaphthalene		ND	0.023	0.0027	1.13		Chrysene	U	ND	0.023	0.0053	1.13	
Acenaphthylene		ND	0.023	0.0027	1.13		Benzo (k) Fluoranthene		ND	0.023	0.0051	1.13	
Acenaphthene		ND	0.023	0.0056	1.13		Benzo (b) Fluoranthene		ND	0.023	0.0016	1.13	
Fluorene		ND	0.023	0.0034	1.13		Benzo (a) Pyrene		ND	0.023	0.0022	1.13	
Phenanthrene		ND	0.023	0.0043	1.13		Benzo (g,h,i) Perylene		ND	0.023	0.0037	1.13	
Anthracene		ND	0.023	0.0070	1.13		Indeno (1,2,3-c,d) Pyrene		ND	0.023	0.0039	1.13	
Fluoranthene		ND	0.023	0.0022	1.13		Dibenz (a,h) Anthracene		ND	0.023	0.0030	1.13	
Pyrene		ND	0.023	0.0037	1.13		1-Methylnaphthalene		ND	0.023	0.0048	1.13	
Surrogates:		REC (%)	Control Limits			Qual	Surrogates:		REC (%)	Control Limits			Qual
Nitrobenzene-d5		73	28-139				2-Fluorobiphenyl		104	33-144			
p-Terphenyl-d14		104	23-160										

IPD1302-19 MJ794	06-04-0814-6	04/12/06	Solid	04/18/06	04/20/06	060418L02
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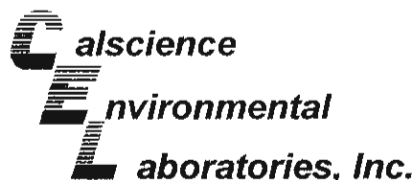
Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Raw Qual	Result	RL	MDL	DF	Qual	Parameter	Raw Qual	Result	RL	MDL	DF	Qual
Naphthalene	U	ND	0.024	0.0044	1.19		Benzo (a) Anthracene	J	0.0044	0.024	0.0031	1.19	J
2-Methylnaphthalene		ND	0.024	0.0028	1.19		Chrysene	U	ND	0.024	0.0056	1.19	
Acenaphthylene		ND	0.024	0.0029	1.19		Benzo (k) Fluoranthene		ND	0.024	0.0054	1.19	
Acenaphthene		ND	0.024	0.0060	1.19		Benzo (b) Fluoranthene		ND	0.024	0.0017	1.19	
Fluorene		ND	0.024	0.0036	1.19		Benzo (a) Pyrene		ND	0.024	0.0023	1.19	
Phenanthrene		ND	0.024	0.0045	1.19		Benzo (g,h,i) Perylene		ND	0.024	0.0039	1.19	
Anthracene		ND	0.024	0.0074	1.19		Indeno (1,2,3-c,d) Pyrene		ND	0.024	0.0041	1.19	
Fluoranthene		ND	0.024	0.0023	1.19		Dibenz (a,h) Anthracene		ND	0.024	0.0032	1.19	
Pyrene		ND	0.024	0.0039	1.19		1-Methylnaphthalene		ND	0.024	0.0051	1.19	
Surrogates:		REC (%)	Control Limits			Qual	Surrogates:		REC (%)	Control Limits			Qual
Nitrobenzene-d5		118	28-139				2-Fluorobiphenyl		94	33-144			
p-Terphenyl-d14		112	23-160										

LEVEL V

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers



Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received: 04/14/06
Work Order No: 06-04-0814
Preparation: EPA 3545
Method: EPA 8270C SIM PAHs
Units: mg/kg

Project: IPD1302

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Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IPD1302-20 MJ795	06-04-0814-7	04/12/06	Solid	04/18/06	04/20/06	060418L02

Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Rev	Qual	Code	Result	RL	MDL	DF	Qual	Parameter	Rev	Qual	Code	Result	RL	MDL	DF	Qual
Naphthalene				0.022	0.028	0.0052	1.41	J	Benzo (a) Anthracene				0.0063	0.028	0.0037	1.41	J
2-Methylnaphthalene				0.011	0.028	0.0034	1.41	J	Chrysene				ND	0.028	0.0067	1.41	
Acenaphthylene				ND	0.028	0.0034	1.41		Benzo (k) Fluoranthene				ND	0.028	0.0064	1.41	
Acenaphthene				0.015	0.028	0.0071	1.41	J	Benzo (b) Fluoranthene				ND	0.028	0.0020	1.41	
Fluorene				ND	0.028	0.0043	1.41		Benzo (a) Pyrene				ND	0.028	0.0028	1.41	
Phenanthrene				0.0094	0.028	0.0054	1.41	J	Benzo (g,h,i) Perylene				ND	0.028	0.0046	1.41	
Anthracene				ND	0.028	0.0088	1.41		Indeno (1,2,3-c,d) Pyrene				ND	0.028	0.0049	1.41	
Fluoranthene				0.0058	0.028	0.0028	1.41	J	Dibenz (a,h) Anthracene				ND	0.028	0.0038	1.41	
Pyrene				0.019	0.028	0.0046	1.41	J	1-Methylnaphthalene				0.0067	0.028	0.0061	1.41	J
Surrogates:				REC (%)	Control Limits			Qual	Surrogates:				REC (%)	Control Limits			Qual
Nitrobenzene-d5				132	28-139				2-Fluorobiphenyl				102	33-144			
p-Terphenyl-d14				107	23-160												

IPD1302-21 MJ796	06-04-0814-8	04/12/06	Solid	04/18/06	04/20/06	060418L02
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Comment(s): -Results are reported on a dry weight basis.

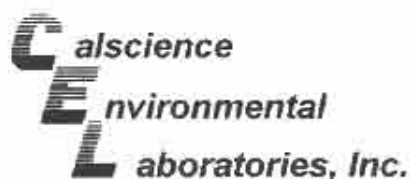
-Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Rev	Qual	Code	Result	RL	MDL	DF	Qual	Parameter	Rev	Qual	Code	Result	RL	MDL	DF	Qual
Naphthalene				0.0062	0.026	0.0049	1.32	J	Benzo (a) Anthracene				0.0057	0.026	0.0034	1.32	J
2-Methylnaphthalene				ND	0.026	0.0031	1.32		Chrysene				0.0072	0.026	0.0062	1.32	J
Acenaphthylene				ND	0.026	0.0032	1.32		Benzo (k) Fluoranthene				ND	0.026	0.0059	1.32	
Acenaphthene				ND	0.026	0.0066	1.32		Benzo (b) Fluoranthene				ND	0.026	0.0018	1.32	
Fluorene				ND	0.026	0.0040	1.32		Benzo (a) Pyrene				ND	0.026	0.0026	1.32	
Phenanthrene				ND	0.026	0.0050	1.32		Benzo (g,h,i) Perylene				ND	0.026	0.0043	1.32	
Anthracene				ND	0.026	0.0082	1.32		Indeno (1,2,3-c,d) Pyrene				ND	0.026	0.0046	1.32	
Fluoranthene				0.0055	0.026	0.0026	1.32	J	Dibenz (a,h) Anthracene				ND	0.026	0.0036	1.32	
Pyrene				0.0059	0.026	0.0043	1.32	J	1-Methylnaphthalene				ND	0.026	0.0056	1.32	
Surrogates:				REC (%)	Control Limits			Qual	Surrogates:				REC (%)	Control Limits			Qual
Nitrobenzene-d5				114	28-139				2-Fluorobiphenyl				88	33-144			
p-Terphenyl-d14				103	23-160												

mm 5/22/06

LEVEL V

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received: 04/14/06
Work Order No: 06-04-0814
Preparation: EPA 3545
Method: EPA 8270C SIM PAHs
Units: mg/kg

Project: IPD1302

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Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IPD1302-23 MJ798	06-04-0814-9	04/12/06	Solid	04/18/06	04/21/06	060418L02

Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Rev	Qual	Result	RL	MDL	DF	Qual	Parameter	Rev	Qual	Result	RL	MDL	DF	Qual
Naphthalene	J		0.0091	0.022	0.0042	1.12	J	Benzo (a) Anthracene	U		ND	0.022	0.0029	1.12	
2-Methylnaphthalene	J		0.0071	0.022	0.0027	1.12	J	Chrysene	U		0.053	0.022	0.0053	1.12	
Acenaphthylene	U		ND	0.022	0.0027	1.12		Benzo (k) Fluoranthene	J		0.014	0.022	0.0051	1.12	J
Acenaphthene	U		0.013	0.022	0.0056	1.12	J	Benzo (b) Fluoranthene	U		ND	0.022	0.0016	1.12	
Fluorene	U		ND	0.022	0.0034	1.12		Benzo (a) Pyrene	J		0.0059	0.022	0.0022	1.12	J
Phenanthrene	J		0.011	0.022	0.0043	1.12	J	Benzo (g,h,i) Perylene	J		0.0049	0.022	0.0037	1.12	J
Anthracene	U		ND	0.022	0.0070	1.12		Indeno (1,2,3-c,d) Pyrene	U		ND	0.022	0.0039	1.12	
Fluoranthene	J		0.021	0.022	0.0022	1.12	J	Dibenz (a,h) Anthracene	J		ND	0.022	0.0030	1.12	
Pyrene	J		0.016	0.022	0.0037	1.12	J	1-Methylnaphthalene	J		ND	0.022	0.0048	1.12	
Surrogates:			REC (%)	Control Limits			Qual	Surrogates:			REC (%)	Control Limits			Qual
Nitrobenzene-d5			132	28-139				2-Fluorobiphenyl			108	33-144			
p-Terphenyl-d14			109	23-160											

IPD1302-24 MJ799	06-04-0814-10	04/12/06	Solid	04/18/06	04/20/06	060418L02
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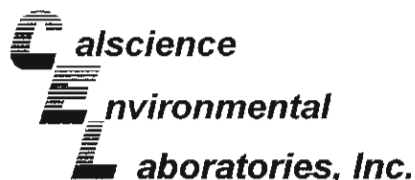
Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Rev	Qual	Result	RL	MDL	DF	Qual	Parameter	Rev	Qual	Result	RL	MDL	DF	Qual
Naphthalene	U		ND	0.022	0.0040	1.08		Benzo (a) Anthracene	J		0.0034	0.022	0.0028	1.08	J
2-Methylnaphthalene			ND	0.022	0.0026	1.08		Chrysene	U		ND	0.022	0.0051	1.08	
Acenaphthylene			ND	0.022	0.0026	1.08		Benzo (k) Fluoranthene			ND	0.022	0.0048	1.08	
Acenaphthene			ND	0.022	0.0054	1.08		Benzo (b) Fluoranthene			ND	0.022	0.0015	1.08	
Fluorene			ND	0.022	0.0033	1.08		Benzo (a) Pyrene			ND	0.022	0.0021	1.08	
Phenanthrene			ND	0.022	0.0041	1.08		Benzo (g,h,i) Perylene			ND	0.022	0.0036	1.08	
Anthracene			ND	0.022	0.0067	1.08		Indeno (1,2,3-c,d) Pyrene			ND	0.022	0.0038	1.08	
Fluoranthene			ND	0.022	0.0021	1.08		Dibenz (a,h) Anthracene			ND	0.022	0.0029	1.08	
Pyrene			ND	0.022	0.0035	1.08		1-Methylnaphthalene	J		ND	0.022	0.0047	1.08	
Surrogates:			REC (%)	Control Limits			Qual	Surrogates:			REC (%)	Control Limits			Qual
Nitrobenzene-d5			86	28-139				2-Fluorobiphenyl			103	33-144			
p-Terphenyl-d14			99	23-160											

LEVEL V

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers



Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received: 04/14/06
Work Order No: 06-04-0814
Preparation: EPA 3545
Method: EPA 8270C SIM PAHs
Units: mg/kg

Project: IPD1302

Page 6 of 6

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IPD1302-25 MJ 800	06-04-0814-11	04/12/06	Solid	04/18/06	04/20/06	060418L02

Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Rev	Qual	Code	Result	RL	MDL	DF	Qual	Parameter	Rev	Qual	Code	Result	RL	MDL	DF	Qual
Naphthalene				ND	0.022	0.0041	1.10		Benzo (a) Anthracene				ND	0.022	0.0029	1.10	
2-Methylnaphthalene				ND	0.022	0.0026	1.10		Chrysene				ND	0.022	0.0052	1.10	
Acenaphthylene				ND	0.022	0.0026	1.10		Benzo (k) Fluoranthene				ND	0.022	0.0049	1.10	
Acenaphthene				ND	0.022	0.0055	1.10		Benzo (b) Fluoranthene				ND	0.022	0.0015	1.10	
Fluorene				ND	0.022	0.0034	1.10		Benzo (a) Pyrene				ND	0.022	0.0022	1.10	
Phenanthrene				ND	0.022	0.0042	1.10		Benzo (g,h,i) Perylene				ND	0.022	0.0036	1.10	
Anthracene				ND	0.022	0.0068	1.10		Indeno (1,2,3-c,d) Pyrene				ND	0.022	0.0038	1.10	
Fluoranthene				ND	0.022	0.0021	1.10		Dibenz (a,h) Anthracene				ND	0.022	0.0030	1.10	
Pyrene				ND	0.022	0.0036	1.10		1-Methylnaphthalene				ND	0.022	0.0047	1.10	
Surrogates:				REC (%)	Control Limits			Qual	Surrogates:				REC (%)	Control Limits			Qual
Nitrobenzene-d5				60	28-139				2-Fluorobiphenyl				111	33-144			
p-Terphenyl-d14				79	23-160												

Method Blank	099-06-010-83	N/A	Solid	04/18/06	04/19/06	060418L02
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Comment(s): -Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Naphthalene	ND	0.020	0.0037	1		Benzo (a) Anthracene	ND	0.020	0.0026	1	
2-Methylnaphthalene	ND	0.020	0.0024	1		Chrysene	ND	0.020	0.0047	1	
Acenaphthylene	ND	0.020	0.0024	1		Benzo (k) Fluoranthene	ND	0.020	0.0045	1	
Acenaphthene	ND	0.020	0.0050	1		Benzo (b) Fluoranthene	ND	0.020	0.0014	1	
Fluorene	ND	0.020	0.0031	1		Benzo (a) Pyrene	ND	0.020	0.0020	1	
Phenanthrene	ND	0.020	0.0038	1		Benzo (g,h,i) Perylene	ND	0.020	0.0033	1	
Anthracene	ND	0.020	0.0062	1		Indeno (1,2,3-c,d) Pyrene	ND	0.020	0.0035	1	
Fluoranthene	ND	0.020	0.0019	1		Dibenz (a,h) Anthracene	ND	0.020	0.0027	1	
Pyrene	ND	0.020	0.0033	1		1-Methylnaphthalene	ND	0.020	0.0043	1	
Surrogates:	REC (%)	Control Limits			Qual	Surrogates:	REC (%)	Control Limits			Qual
Nitrobenzene-d5	122	28-139				2-Fluorobiphenyl	132	33-144			
p-Terphenyl-d14	126	23-160									

LEVEL V

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers



12269 East Vassar Drive, Aurora, CO 80014
720.535.5502, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap Analysis
Project Manager: D. Hambrick
Analysis/Method: PCBs by EPA Method 8082
QC Level: V¹
SDG: IPD1387
Matrix: Soil
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Date Reviewed: May 3, 2006
Reviewer: E. Wessling
Reference: USEPA *Contract Laboratory Program National Functional Guidelines for Organic Data Review (2/94)*
Samples Reviewed: MJ814

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The sample was received at Del Mar within the temperature limits of $4^{\circ} \pm 2^{\circ}\text{C}$, at 5°C. The COC was signed and dated by field and laboratory personnel. As the sample was couriered directly from the field to the laboratory, custody seals were not necessary.</p> <p>The soil sample was extracted within 14 days of collection and was analyzed within 40 days of extraction.</p>	No qualifications were required.
4. <u>Method Blanks</u> 6D16020-BLK1	There were no Aroclors detected in the method blank.	No qualifications were required.
5. <u>LCS/BS</u> 6D16020-BS1 6D16020-BSD1	The recoveries and RPD for Aroclor 1016 and Aroclor 1260 were within the laboratory-established QC limits.	No qualifications were required.
6. <u>Surrogates</u>	The surrogate recovery was within the laboratory-established QC limits.	No qualifications were required.

	Findings	Qualifications
7. <u>MS/MSDs</u> None	None	None
9. <u>Field QC Samples</u> FB: None ER: MJ632 (IPB1429) FD: None	There were no field QC samples associated with the samples in this SDG.	No qualifications were required.
10. <u>Other</u>	The soil sample was reported on a dry-weight basis in units of µg/Kg.	None
<u>Comments</u>	None	None

¹ Level V validation consists of cursory review of the summary forms only; raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed included instrument performance, analytical sequence, initial calibration, continuing calibration, instrument blanks, sample clean-up performance, compound identification, and compound quantification.



17451 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 261-1257
10111 E. Cropley Dr., Suite A, Citron, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
7520 E. Sunset Rd. #1, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1387

Sampled: 04/13/06
Received: 04/13/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1387-01 (MJ814 - Soil)									
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6D16020	11	56	ND	1	04/16/06	04/17/06	u ↓ l
Aroclor 1221	EPA 3545/8082	6D16020	15	56	ND	1	04/16/06	04/17/06	
Aroclor 1232	EPA 3545/8082	6D16020	6.7	56	ND	1	04/16/06	04/17/06	
Aroclor 1242	EPA 3545/8082	6D16020	18	56	ND	1	04/16/06	04/17/06	
Aroclor 1248	EPA 3545/8082	6D16020	11	56	ND	1	04/16/06	04/17/06	
Aroclor 1254	EPA 3545/8082	6D16020	18	56	ND	1	04/16/06	04/17/06	
Aroclor 1260	EPA 3545/8082	6D16020	28	56	ND	1	04/16/06	04/17/06	
Surrogate: Decachlorobiphenyl (45-120%)					66 %				

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

Label V

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IPD1387 <Page 2 of 2>



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720.535.5502, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: PCBs by EPA Method 8082
QC Level: V¹
SDG: IPB1791
Matrix: Soil
No. of Samples: 9
No. of Reanalyses/Dilutions: 1
Date Reviewed: March 20, 2006
Reviewer: L. Calvin
Reference: USEPA Contract Laboratory Program National Functional
Guidelines For Organic Data Review (2/94)
Samples Reviewed: MJ687, MJ691, MJ704, MJ705, MJ707, MJ708, MJ710,
MJ710DL, MJ711, MJ715,

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received at Del Mar within the temperature limits of $4^{\circ} \pm 2^{\circ}\text{C}$, at 5°C. The COC was signed and dated by field and laboratory personnel and accounted for the analyses presented in this SDG. The COC noted the following composite samples: MJ687 (composite of samples MJ688-MJ690), sample MJ691 (MJ692-MJ694), sample MJ711 (MJ712-MJ714) and sample MJ715 (MJ716-MJ718). Thirteen of 22 samples for PCB analysis on the COC were on a "hold" status. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary.</p> <p>The soil samples were extracted within 14 days of collection and all samples were analyzed within 40 days of extraction.</p>	No qualifications were required.

	Findings	Qualifications
4. <u>Method Blanks</u> 6B23051-MB	There were no Aroclors detected in the method blank.	No qualifications were required.
5. <u>LCS/BS</u> 6B23051-BS1	The recoveries for Aroclor 1016 and Aroclor 1260 were within the laboratory-established QC limits.	No qualifications were required.
6. <u>Surrogates</u>	The surrogate recoveries were within the laboratory-established QC limits.	No qualifications were required.
7. <u>MS/MSDs</u>	MS/MSD analyses were performed on sample MJ715. The recoveries for Aroclor 1016 and Aroclor 1260 were within the laboratory-established QC limits, and the RPDs were within the QC limit of $\leq 30\%$.	No qualifications were required.
9. <u>Field QC Samples</u> FB: None ER: MJ632 (IPB1429) FD: None	There were no target compound detects in the equipment rinsate.	No qualifications were required.
10. <u>Other</u>	The soil samples were reported on a dry-weight basis in units of $\mu\text{g/Kg}$. Reporting limits for samples MJ705, MJ708, and MJ710 reflected a 1.5 \times dilution due to limited extraction amount (10 grams rather than 15 grams). Sample MJ710 required a further dilution of 3 \times (an effective dilution of 7.5 \times), for the sample concentration of Aroclor 1248.	None.
<u>Comments</u>	None.	None.

¹ Level V validation consists of cursory review of the summary forms only; raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed included instrument performance, analytical sequence, initial calibration, continuing calibration, instrument blanks, sample clean-up performance, compound identification, and compound quantification.



17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPB1791

Sampled: 02/17/06
Received: 02/17/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1791-01 (MJ687 - Soil)									
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6B23051	10	54	ND	1	02/23/06	02/23/06	u
Aroclor 1221	EPA 3545/8082	6B23051	14	54	ND	1	02/23/06	02/23/06	u
Aroclor 1232	EPA 3545/8082	6B23051	6.5	54	ND	1	02/23/06	02/23/06	u
Aroclor 1242	EPA 3545/8082	6B23051	17	54	ND	1	02/23/06	02/23/06	u
Aroclor 1248	EPA 3545/8082	6B23051	11	54	260	1	02/23/06	02/23/06	u
Aroclor 1254	EPA 3545/8082	6B23051	17	54	ND	1	02/23/06	02/23/06	u
Aroclor 1260	EPA 3545/8082	6B23051	27	54	ND	1	02/23/06	02/23/06	u
Surrogate: Decachlorobiphenyl (45-120%)					83 %				
Sample ID: IPB1791-02 (MJ691 - Soil)									
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6B23051	10	55	ND	1	02/23/06	02/23/06	u
Aroclor 1221	EPA 3545/8082	6B23051	14	55	ND	1	02/23/06	02/23/06	u
Aroclor 1232	EPA 3545/8082	6B23051	6.6	55	ND	1	02/23/06	02/23/06	u
Aroclor 1242	EPA 3545/8082	6B23051	18	55	ND	1	02/23/06	02/23/06	u
Aroclor 1248	EPA 3545/8082	6B23051	11	55	ND	1	02/23/06	02/23/06	u
Aroclor 1254	EPA 3545/8082	6B23051	18	55	ND	1	02/23/06	02/23/06	u
Aroclor 1260	EPA 3545/8082	6B23051	28	55	ND	1	02/23/06	02/23/06	u
Surrogate: Decachlorobiphenyl (45-120%)					83 %				
Sample ID: IPB1791-12 (MJ704 - Soil)									
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6B23051	9.8	52	ND	1	02/23/06	02/23/06	u
Aroclor 1221	EPA 3545/8082	6B23051	13	52	ND	1	02/23/06	02/23/06	u
Aroclor 1232	EPA 3545/8082	6B23051	6.2	52	ND	1	02/23/06	02/23/06	u
Aroclor 1242	EPA 3545/8082	6B23051	17	52	ND	1	02/23/06	02/23/06	u
Aroclor 1248	EPA 3545/8082	6B23051	10	52	ND	1	02/23/06	02/23/06	u
Aroclor 1254	EPA 3545/8082	6B23051	17	52	ND	1	02/23/06	02/23/06	u
Aroclor 1260	EPA 3545/8082	6B23051	26	52	ND	1	02/23/06	02/23/06	u
Surrogate: Decachlorobiphenyl (45-120%)					81 %				

Del Mar Analytical, Irvine
Michele Chamberlin
Project Manager

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IPB1791 <Page 4 of 24>



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 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 6
 Data Gap
 Report Number: IPB1791

Sampled: 02/17/06
 Received: 02/17/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1791-13 (MJ705 - Soil)									
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6B23051	15	81	ND	1.5	02/23/06	02/23/06	u
Aroclor 1221	EPA 3545/8082	6B23051	21	81	ND	1.5	02/23/06	02/23/06	u
Aroclor 1232	EPA 3545/8082	6B23051	9.7	81	ND	1.5	02/23/06	02/23/06	u
Aroclor 1242	EPA 3545/8082	6B23051	26	81	ND	1.5	02/23/06	02/23/06	u
Aroclor 1248	EPA 3545/8082	6B23051	16	81	ND	1.5	02/23/06	02/23/06	u
Aroclor 1254	EPA 3545/8082	6B23051	26	81	ND	1.5	02/23/06	02/23/06	u
Aroclor 1260	EPA 3545/8082	6B23051	40	81	ND	1.5	02/23/06	02/23/06	u

Surrogate: Decachlorobiphenyl (45-120%)

82 %

Sample ID: IPB1791-15 (MJ707 - Soil)

Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6B23051	9.7	51	ND	1	02/23/06	02/23/06	u
Aroclor 1221	EPA 3545/8082	6B23051	13	51	ND	1	02/23/06	02/23/06	u
Aroclor 1232	EPA 3545/8082	6B23051	6.2	51	ND	1	02/23/06	02/23/06	u
Aroclor 1242	EPA 3545/8082	6B23051	16	51	ND	1	02/23/06	02/23/06	u
Aroclor 1248	EPA 3545/8082	6B23051	10	51	79	1	02/23/06	02/23/06	u
Aroclor 1254	EPA 3545/8082	6B23051	16	51	ND	1	02/23/06	02/23/06	u
Aroclor 1260	EPA 3545/8082	6B23051	26	51	ND	1	02/23/06	02/23/06	u

Surrogate: Decachlorobiphenyl (45-120%)

68 %

Sample ID: IPB1791-16 (MJ708 - Soil)

Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6B23051	15	79	ND	1.5	02/23/06	02/23/06	u
Aroclor 1221	EPA 3545/8082	6B23051	21	79	ND	1.5	02/23/06	02/23/06	u
Aroclor 1232	EPA 3545/8082	6B23051	9.5	79	ND	1.5	02/23/06	02/23/06	u
Aroclor 1242	EPA 3545/8082	6B23051	25	79	ND	1.5	02/23/06	02/23/06	u
Aroclor 1248	EPA 3545/8082	6B23051	16	79	120	1.5	02/23/06	02/23/06	u
Aroclor 1254	EPA 3545/8082	6B23051	25	79	ND	1.5	02/23/06	02/23/06	u
Aroclor 1260	EPA 3545/8082	6B23051	40	79	ND	1.5	02/23/06	02/23/06	u

Surrogate: Decachlorobiphenyl (45-120%)

70 %

Del Mar Analytical, Irvine
 Michele Chamberlin
 Project Manager

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 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 6
 Data Gap
 Report Number: IPB1791

Sampled: 02/17/06
 Received: 02/17/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IPB1791-18 (MJ710 - Soil)										
Reporting Units: ug/kg dry										
Aroclor 1016	EPA 3545/8082	6B23051	15	79	ND	1.5	02/23/06	02/23/06	rel. qual. code	
Aroclor 1221	EPA 3545/8082	6B23051	21	79	ND	1.5	02/23/06	02/23/06		
Aroclor 1232	EPA 3545/8082	6B23051	9.5	79	ND	1.5	02/23/06	02/23/06		
Aroclor 1242	EPA 3545/8082	6B23051	25	79	ND	1.5	02/23/06	02/23/06		
Aroclor 1254	EPA 3545/8082	6B23051	25	79	ND	1.5	02/23/06	02/23/06		
Aroclor 1260	EPA 3545/8082	6B23051	40	79	230	1.5	02/23/06	02/23/06		
Surrogate: Decachlorobiphenyl (45-120%)					76 %					
Sample ID: IPB1791-18RE1 (MJ710 - Soil)										
Reporting Units: ug/kg dry										
Aroclor 1248	EPA 3545/8082	6B23051	79	400	3100	7.5	02/23/06	02/27/06	A-01	
Surrogate: Decachlorobiphenyl (45-120%)					76 %					
Sample ID: IPB1791-19 (MJ711 - Soil)										
Reporting Units: ug/kg dry										
Aroclor 1016	EPA 3545/8082	6B23051	9.9	52	ND	1	02/23/06	02/23/06	rel. qual. code	
Aroclor 1221	EPA 3545/8082	6B23051	14	52	ND	1	02/23/06	02/23/06		
Aroclor 1232	EPA 3545/8082	6B23051	6.3	52	ND	1	02/23/06	02/23/06		
Aroclor 1242	EPA 3545/8082	6B23051	17	52	ND	1	02/23/06	02/23/06		
Aroclor 1248	EPA 3545/8082	6B23051	10	52	ND	1	02/23/06	02/23/06		
Aroclor 1254	EPA 3545/8082	6B23051	17	52	ND	1	02/23/06	02/23/06		
Aroclor 1260	EPA 3545/8082	6B23051	26	52	ND	1	02/23/06	02/23/06		
Surrogate: Decachlorobiphenyl (45-120%)					73 %					
Sample ID: IPB1791-20 (MJ715 - Soil)										
Reporting Units: ug/kg dry										
Aroclor 1016	EPA 3545/8082	6B23051	10	53	ND	1	02/23/06	02/23/06	rel. qual. code	
Aroclor 1221	EPA 3545/8082	6B23051	14	53	ND	1	02/23/06	02/23/06		
Aroclor 1232	EPA 3545/8082	6B23051	6.4	53	ND	1	02/23/06	02/23/06		
Aroclor 1242	EPA 3545/8082	6B23051	17	53	ND	1	02/23/06	02/23/06		
Aroclor 1248	EPA 3545/8082	6B23051	11	53	ND	1	02/23/06	02/23/06		
Aroclor 1254	EPA 3545/8082	6B23051	17	53	ND	1	02/23/06	02/23/06		
Aroclor 1260	EPA 3545/8082	6B23051	27	53	ND	1	02/23/06	02/23/06		
Surrogate: Decachlorobiphenyl (45-120%)					86 %					

Del Mar Analytical, Irvine
 Michele Chamberlin
 Project Manager

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720.535.5502, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: PCBs by EPA Method 8082
QC Level: V¹
SDG: IPB1719
Matrix: Soil
No. of Samples: 5
No. of Reanalyses/Dilutions: 0
Date Reviewed: March 16, 2006
Reviewer: K. Shadowlight
Reference: USEPA Contract Laboratory Program National Functional
Guidelines for Organic Data Review (2/94)
Samples Reviewed: MJ664, MJ668, MJ682, MJ683, MJ684

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received at Del Mar within the temperature limits of $4^{\circ} \pm 2^{\circ}\text{C}$, at 3°C. The COC was signed and dated by field and laboratory personnel. In a memo dated 02/21/06, the PCB analysis was placed on a "hold" status for samples MJ673, MJ674, and MJ675. The COC noted sample MJ668 was a composite of samples MJ669-MJ671. PCB analyses were requested for MJ682 in a memo from MWH personnel dated 03/21/06. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary.</p> <p>MJ682 was extracted beyond 14 days of collection. The remaining soil samples were extracted within 14 days of collection and all samples were analyzed within 40 days of extraction.</p>	<p>No qualifications were required.</p> <p>Aroclors in MJ682 were qualified as estimated, "J," for detects and "UJ," for nondetects.</p>

	Findings	Qualifications
4. <u>Method Blanks</u> 6B22048-BLK1 6C28048-BLK1	There were no Aroclors detected in the method blanks.	No qualifications were required.
5. <u>LCS/BS</u> 6B22048-BS1 6C28048-BS1	The recoveries for Aroclor 1016 and Aroclor 1260 were within the laboratory-established QC limits.	No qualifications were required.
6. <u>Surrogates</u>	The surrogate recoveries were within the laboratory-established QC limits.	No qualifications were required.
7. <u>MS/MSDs</u>	No MS/MSD analyses were performed.	No qualifications were required.
9. <u>Field QC Samples</u> FB: None ER: MJ632 (IPB1429) FD: MJ683/MJ684	There were no target compound detects in the equipment rinsate. There was a common detect for Aroclor 1254 in the field duplicate pair with a calculated RPD of 18%. Aroclor 1260 was reported in sample MJ683 only.	No qualifications were required.
10. <u>Other</u>	The soil samples were reported on a dry-weight basis in units of µg/Kg. The laboratory noted that for MJ682, Aroclors 1254 and 1260 coeluted.	None. The reviewer qualified Aroclors 1254 and 1260 detected in MJ682 as estimated, "J."
<u>Comments</u>	None.	None.

¹ Level V validation consists of cursory review of the summary forms only; raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed included instrument performance, analytical sequence, initial calibration, continuing calibration, instrument blanks, sample clean-up performance, compound identification, and compound quantification.



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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPB1719

Sampled: 02/16/06
Received: 02/16/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1719-04 (MJ664 - Soil)									RL-1
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6B22048	16	82	ND	1.5	02/22/06	02/23/06	
Aroclor 1221	EPA 3545/8082	6B22048	21	82	ND	1.5	02/22/06	02/23/06	
Aroclor 1232	EPA 3545/8082	6B22048	9.8	82	ND	1.5	02/22/06	02/23/06	
Aroclor 1242	EPA 3545/8082	6B22048	26	82	ND	1.5	02/22/06	02/23/06	
Aroclor 1248	EPA 3545/8082	6B22048	16	82	ND	1.5	02/22/06	02/23/06	
Aroclor 1254	EPA 3545/8082	6B22048	26	82	ND	1.5	02/22/06	02/23/06	
Aroclor 1260	EPA 3545/8082	6B22048	41	82	ND	1.5	02/22/06	02/23/06	

Surrogate: Decachlorobiphenyl (45-120%)

74 %

Sample ID: IPB1719-08 (MJ668 - Soil)

Reporting Units: ug/kg dry

Aroclor 1016	EPA 3545/8082	6B22048	10	53	ND	1	02/22/06	02/23/06	
Aroclor 1221	EPA 3545/8082	6B22048	14	53	ND	1	02/22/06	02/23/06	
Aroclor 1232	EPA 3545/8082	6B22048	6.4	53	ND	1	02/22/06	02/23/06	
Aroclor 1242	EPA 3545/8082	6B22048	17	53	ND	1	02/22/06	02/23/06	
Aroclor 1248	EPA 3545/8082	6B22048	11	53	ND	1	02/22/06	02/23/06	
Aroclor 1254	EPA 3545/8082	6B22048	17	53	72	1	02/22/06	02/23/06	A-01
Aroclor 1260	EPA 3545/8082	6B22048	27	53	55	1	02/22/06	02/23/06	A-01

Surrogate: Decachlorobiphenyl (45-120%)

64 %

Sample ID: IPB1719-17 (MJ683 - Soil)

Reporting Units: ug/kg dry

Aroclor 1016	EPA 3545/8082	6B22048	11	56	ND	1	02/22/06	02/23/06	
Aroclor 1221	EPA 3545/8082	6B22048	15	56	ND	1	02/22/06	02/23/06	
Aroclor 1232	EPA 3545/8082	6B22048	6.7	56	ND	1	02/22/06	02/23/06	
Aroclor 1242	EPA 3545/8082	6B22048	18	56	ND	1	02/22/06	02/23/06	
Aroclor 1248	EPA 3545/8082	6B22048	11	56	ND	1	02/22/06	02/23/06	
Aroclor 1254	EPA 3545/8082	6B22048	18	56	400	1	02/22/06	02/23/06	A-01
Aroclor 1260	EPA 3545/8082	6B22048	28	56	95	1	02/22/06	02/23/06	A-01a

Surrogate: Decachlorobiphenyl (45-120%)

65 %

Level V

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Michele Chamberlin
Project Manager

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 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 6
 Data Gap
 Report Number: IPB1719

Sampled: 02/16/06
 Received: 02/16/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1719-18 (MJ684 - Soil)									
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6B22048	11	56	ND	1	02/22/06	02/23/06	
Aroclor 1221	EPA 3545/8082	6B22048	15	56	ND	1	02/22/06	02/23/06	
Aroclor 1232	EPA 3545/8082	6B22048	6.7	56	ND	1	02/22/06	02/23/06	
Aroclor 1242	EPA 3545/8082	6B22048	18	56	ND	1	02/22/06	02/23/06	
Aroclor 1248	EPA 3545/8082	6B22048	11	56	ND	1	02/22/06	02/23/06	
Aroclor 1254	EPA 3545/8082	6B22048	18	56	480	1	02/22/06	02/23/06	
Aroclor 1260	EPA 3545/8082	6B22048	28	56	ND	1	02/22/06	02/23/06	
Surrogate: Decachlorobiphenyl (45-120%)					76 %				

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 Michele Chamberlin
 Project Manager

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPB1719

Sampled: 02/16/06
Received: 02/16/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1719-16 (MJ682 - Soil) - cont.									
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6C28048	9.5	50	ND	1	03/28/06	03/29/06	UJ C H
Aroclor 1221	EPA 3545/8082	6C28048	13	50	ND	1	03/28/06	03/29/06	↓
Aroclor 1232	EPA 3545/8082	6C28048	6.0	50	ND	1	03/28/06	03/29/06	↓
Aroclor 1242	EPA 3545/8082	6C28048	16	50	ND	1	03/28/06	03/29/06	↓
Aroclor 1248	EPA 3545/8082	6C28048	10	50	ND	1	03/28/06	03/29/06	↓
Aroclor 1254	EPA 3545/8082	6C28048	16	50	110	1	03/28/06	03/29/06	↓ A-01
Aroclor 1260	EPA 3545/8082	6C28048	25	50	53	1	03/28/06	03/29/06	↓ A-01
Surrogate: Decachlorobiphenyl (45-120%)					87 %				

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

LEVEL IV

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IPB1719 <Page 3 of 14>



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720.535.5502, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: PCBs by EPA Method 8082
QC Level: V¹
SDG: IPE0402
Matrix: Soil
No. of Samples: 10
No. of Reanalyses/Dilutions: 0
Date Reviewed: May 19, 2006
Reviewer: P. Meeks
Reference: USEPA *Contract Laboratory Program National Functional Guidelines for Organic Data Review (2/94)*
Samples Reviewed: MJ746, MJ747, MJ748, MJ750, MJ752, MJ754, MJ756, MJ759, MJ761, MJ763

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received at Del Mar within the temperature limits of $4^{\circ} \pm 2^{\circ}\text{C}$, at 3°C. The COCs were signed and dated by field and laboratory personnel. All samples were received on HOLD. Per three memos from MWH personnel, all dated 5/5/06, the PCB analyses were requested for the samples presented in this SDG. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary.</p> <p>All samples were extracted beyond the 14 day holding time. All samples were analyzed within 40 days of extraction.</p>	<p>No qualifications were required.</p> <p>All PCB results were qualified as estimated, "UJ," for nondetects and, "J," for detects.</p>
4. <u>Method Blanks</u> 6E09094-BLK1	There were no Aroclors detected in the method blank.	No qualifications were required.

	Findings	Qualifications
5. <u>LCS/BS</u> 6E09094-BS1	The recoveries and the RPDs for Aroclor 1016 and Aroclor 1260 were within the laboratory-established QC limits.	No qualifications were required.
6. <u>Surrogates</u>	The surrogate recoveries were within the laboratory-established QC limits.	No qualifications were required.
7. <u>MS/MSDs</u> None	None	None
9. <u>Field QC Samples</u> FB: MJ813 (IPD1477) ER: MJ812 (IPD1477) FD: None	There were no target compound detects in the field QC samples.	No qualifications were required.
10. <u>Other</u>	<p>Due to the presence of nontarget compounds, all samples, except MJ752 and MJ756, were reported from 3x dilutions.</p> <p>The laboratory noted that the following were reported from coeluting peaks: Aroclors 1254 and 1260 in samples MJ748 and MJ754, and Aroclors 1248 and 1254 in samples MJ750, MJ759, and MJ761. Additionally, the laboratory noted that the RPD between the primary and confirmation analyses of Aroclor 1254 in MJ756 exceeded 40%.</p> <p>There were Aroclors detected below the reporting limit.</p> <p>The soil samples were reported on a dry-weight basis in units of µg/Kg.</p>	<p>None.</p> <p>Aroclors 1254 and 1260 in samples MJ748 and MJ754, Aroclors 1248 and 1254 in samples MJ750, MJ759, and MJ761, and Aroclor 1254 in MJ756 were qualified as estimated, "J."</p> <p>Aroclors detected below the reporting limit were qualified as estimated, "J."</p>
<u>Comments</u>	None.	None.

¹ Level V validation consists of cursory review of the summary forms only; raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed included instrument performance, analytical sequence, initial calibration, continuing calibration, instrument blanks, sample clean-up performance, compound identification, and compound quantification.



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12401 Delmar Ave., Suite 100, Irvine, CA 92614 (949) 261-3922 FAX (949) 261-3297
1014 E. Coolidge Dr., Suite A, Collins, CA 92524 (909) 370-4447 FAX (909) 370-1144
1800 South 11th St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2500 E. Sunset Rd., #3, Las Vegas, NV 89120 (702) 798-3600 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPE0402

Sampled: 04/11/06
Received: 05/04/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPE0402-01 (MJ746 - Soil)									
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6E09094	34	180	ND	3	05/09/06	05/10/06	H4, RL-1 UI
Aroclor 1221	EPA 3545/8082	6E09094	47	180	ND	3	05/09/06	05/10/06	↓ ↓ ↓ ↓ ↓ ↓
Aroclor 1232	EPA 3545/8082	6E09094	22	180	ND	3	05/09/06	05/10/06	
Aroclor 1242	EPA 3545/8082	6E09094	58	180	ND	3	05/09/06	05/10/06	
Aroclor 1248	EPA 3545/8082	6E09094	36	180	ND	3	05/09/06	05/10/06	
Aroclor 1254	EPA 3545/8082	6E09094	58	180	ND	3	05/09/06	05/10/06	
Aroclor 1260	EPA 3545/8082	6E09094	90	180	ND	3	05/09/06	05/10/06	
Surrogate: Decachlorobiphenyl (45-120%)					84 %				
Sample ID: IPE0402-02 (MJ747 - Soil)									
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6E09094	34	180	ND	3	05/09/06	05/10/06	H4, RL-1 UI
Aroclor 1221	EPA 3545/8082	6E09094	46	180	ND	3	05/09/06	05/10/06	↓ ↓ ↓ ↓ ↓ ↓
Aroclor 1232	EPA 3545/8082	6E09094	21	180	ND	3	05/09/06	05/10/06	
Aroclor 1242	EPA 3545/8082	6E09094	57	180	ND	3	05/09/06	05/10/06	
Aroclor 1248	EPA 3545/8082	6E09094	36	180	ND	3	05/09/06	05/10/06	
Aroclor 1254	EPA 3545/8082	6E09094	57	180	ND	3	05/09/06	05/10/06	
Aroclor 1260	EPA 3545/8082	6E09094	89	180	ND	3	05/09/06	05/10/06	
Surrogate: Decachlorobiphenyl (45-120%)					83 %				
Sample ID: IPE0402-03 (MJ748 - Soil)									
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6E09094	33	170	ND	3	05/09/06	05/10/06	H4 UI
Aroclor 1221	EPA 3545/8082	6E09094	45	170	ND	3	05/09/06	05/10/06	↓ ↓ ↓ ↓ ↓ ↓
Aroclor 1232	EPA 3545/8082	6E09094	21	170	ND	3	05/09/06	05/10/06	
Aroclor 1242	EPA 3545/8082	6E09094	56	170	ND	3	05/09/06	05/10/06	
Aroclor 1248	EPA 3545/8082	6E09094	35	170	ND	3	05/09/06	05/10/06	
Aroclor 1254	EPA 3545/8082	6E09094	56	170	220	3	05/09/06	05/10/06	
Aroclor 1260	EPA 3545/8082	6E09094	87	170	200	3	05/09/06	05/10/06	
Surrogate: Decachlorobiphenyl (45-120%)					66 %	A-01a A-01b			

Del Mar Analytical - Irvine
Sushmitha Reddy For Michele Chamberlin
Project Manager

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LEVEL V

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9530 South 11th St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0857
2530 E. Sunset Rd., #3, Las Vegas, NV 89120 (702) 798-3670 FAX (702) 798-3671

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPE0402

Sampled: 04/11/06
Received: 05/04/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IPE0402-04 (MJ750 - Soil)										
Reporting Units: ug/kg dry										
Aroclor 1016	EPA 3545/8082	6E09094	38	200	ND	3	05/09/06	05/10/06	H4 Rev Qual	↓
Aroclor 1221	EPA 3545/8082	6E09094	52	200	ND	3	05/09/06	05/10/06	↓	↓
Aroclor 1232	EPA 3545/8082	6E09094	24	200	ND	3	05/09/06	05/10/06	↓	↓
Aroclor 1242	EPA 3545/8082	6E09094	64	200	ND	3	05/09/06	05/10/06	↓	↓
Aroclor 1248	EPA 3545/8082	6E09094	40	200	180	3	05/09/06	05/10/06	J A-01, J	↓
Aroclor 1254	EPA 3545/8082	6E09094	64	200	460	3	05/09/06	05/10/06	J A-01	↓
Aroclor 1260	EPA 3545/8082	6E09094	100	200	ND	3	05/09/06	05/10/06	↓	↓
Surrogate: Decachlorobiphenyl (45-120%)					74 %					
Sample ID: IPE0402-05 (MJ752 - Soil)										
Reporting Units: ug/kg dry										
Aroclor 1016	EPA 3545/8082	6E09094	17	89	ND	1.5	05/09/06	05/10/06	H4 Rev Qual	↓
Aroclor 1221	EPA 3545/8082	6E09094	23	89	ND	1.5	05/09/06	05/10/06	↓	↓
Aroclor 1232	EPA 3545/8082	6E09094	11	89	ND	1.5	05/09/06	05/10/06	↓	↓
Aroclor 1242	EPA 3545/8082	6E09094	29	89	ND	1.5	05/09/06	05/10/06	↓	↓
Aroclor 1248	EPA 3545/8082	6E09094	18	89	ND	1.5	05/09/06	05/10/06	↓	↓
Aroclor 1254	EPA 3545/8082	6E09094	29	89	ND	1.5	05/09/06	05/10/06	↓	↓
Aroclor 1260	EPA 3545/8082	6E09094	45	89	ND	1.5	05/09/06	05/10/06	↓	↓
Surrogate: Decachlorobiphenyl (45-120%)					73 %					
Sample ID: IPE0402-06 (MJ754 - Soil)										
Reporting Units: ug/kg dry										
Aroclor 1016	EPA 3545/8082	6E09094	34	180	ND	3	05/09/06	05/10/06	H4 Rev Qual	↓
Aroclor 1221	EPA 3545/8082	6E09094	47	180	ND	3	05/09/06	05/10/06	↓	↓
Aroclor 1232	EPA 3545/8082	6E09094	21	180	ND	3	05/09/06	05/10/06	↓	↓
Aroclor 1242	EPA 3545/8082	6E09094	57	180	ND	3	05/09/06	05/10/06	↓	↓
Aroclor 1248	EPA 3545/8082	6E09094	36	180	ND	3	05/09/06	05/10/06	↓	↓
Aroclor 1254	EPA 3545/8082	6E09094	57	180	240	3	05/09/06	05/10/06	J A-01a	↓
Aroclor 1260	EPA 3545/8082	6E09094	89	180	110	3	05/09/06	05/10/06	J A-01b, J	↓
Surrogate: Decachlorobiphenyl (45-120%)					76 %					

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Project Manager

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 1014 E. Cookey Dr., Suite A, Gilroy, CA 95020 (408) 870-4667 FAX (408) 870-1046
 4850 South 114th St., Suite B-120, Phoenix, AZ 85044 (480) 785-0045 FAX (480) 785-0877
 2570 F. Korman Rd. #3, Las Vegas, NV 89120 (702) 796-1620 FAX (702) 796-1627

MWH-San Diego
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 6
 Data Gap
 Report Number: IPE0402

Sampled: 04/11/06
 Received: 05/04/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPE0402-07 (MJ756 - Soil)									H4
Reporting Units: ug/kg dry									Rev. Sig. Code
Aroclor 1016	EPA 3545/8082	6E09094	16	84	ND	1.5	05/09/06	05/10/06	UT H
Aroclor 1221	EPA 3545/8082	6E09094	22	84	ND	1.5	05/09/06	05/10/06	
Aroclor 1232	EPA 3545/8082	6E09094	10	84	ND	1.5	05/09/06	05/10/06	
Aroclor 1242	EPA 3545/8082	6E09094	27	84	ND	1.5	05/09/06	05/10/06	
Aroclor 1248	EPA 3545/8082	6E09094	17	84	ND	1.5	05/09/06	05/10/06	
Aroclor 1254	EPA 3545/8082	6E09094	27	84	60	1.5	05/09/06	05/10/06	J R-10, J
Aroclor 1260	EPA 3545/8082	6E09094	42	84	ND	1.5	05/09/06	05/10/06	UT
Surrogate: Decachlorobiphenyl (45-120%)					63 %				
Sample ID: IPE0402-08 (MJ759 - Soil)									H4
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6E09094	34	180	ND	3	05/09/06	05/10/06	UT H
Aroclor 1221	EPA 3545/8082	6E09094	46	180	ND	3	05/09/06	05/10/06	
Aroclor 1232	EPA 3545/8082	6E09094	21	180	ND	3	05/09/06	05/10/06	
Aroclor 1242	EPA 3545/8082	6E09094	57	180	ND	3	05/09/06	05/10/06	
Aroclor 1248	EPA 3545/8082	6E09094	35	180	1400	3	05/09/06	05/10/06	J A-01
Aroclor 1254	EPA 3545/8082	6E09094	57	180	480	3	05/09/06	05/10/06	J A-01
Aroclor 1260	EPA 3545/8082	6E09094	88	180	ND	3	05/09/06	05/10/06	UT
Surrogate: Decachlorobiphenyl (45-120%)					79 %				
Sample ID: IPE0402-09 (MJ761 - Soil)									H4
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6E09094	35	180	ND	3	05/09/06	05/10/06	UT H
Aroclor 1221	EPA 3545/8082	6E09094	48	180	ND	3	05/09/06	05/10/06	
Aroclor 1232	EPA 3545/8082	6E09094	22	180	ND	3	05/09/06	05/10/06	
Aroclor 1242	EPA 3545/8082	6E09094	59	180	ND	3	05/09/06	05/10/06	
Aroclor 1248	EPA 3545/8082	6E09094	37	180	1900	3	05/09/06	05/10/06	J A-01
Aroclor 1254	EPA 3545/8082	6E09094	59	180	660	3	05/09/06	05/10/06	J A-01
Aroclor 1260	EPA 3545/8082	6E09094	92	180	ND	3	05/09/06	05/10/06	UT
Surrogate: Decachlorobiphenyl (45-120%)					78 %				

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9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPE0402

17461 Latham Ave., Suite 100, Irvine, CA 92614 (949) 261-3122 FAX (949) 265-1297
1014 E. Copley Dr., Suite A, Colton, CA 92324 (909) 570-4407 FAX (909) 570-1040
9816 South 5th St., Suite B-120, Phoenix, AZ 85044 (480) 785-0041 FAX (480) 785-0011
2320 E. Sunset Rd., #3, Las Vegas, NV 89120 (702) 790-3620 FAX (702) 790-3621

Sampled: 04/11/06
Received: 05/04/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPE0402-10 (MJ763 - Soil)									H4, RL-1
Reporting Units: ug/kg dry									RL-1
Aroclor 1016	EPA 3545/8082	6E09094	35	190	ND	3	05/09/06	05/10/06	✓
Aroclor 1221	EPA 3545/8082	6E09094	49	190	ND	3	05/09/06	05/10/06	✓
Aroclor 1232	EPA 3545/8082	6E09094	22	190	ND	3	05/09/06	05/10/06	✓
Aroclor 1242	EPA 3545/8082	6E09094	60	190	ND	3	05/09/06	05/10/06	✓
Aroclor 1248	EPA 3545/8082	6E09094	37	190	ND	3	05/09/06	05/10/06	✓
Aroclor 1254	EPA 3545/8082	6E09094	60	190	ND	3	05/09/06	05/10/06	✓
Aroclor 1260	EPA 3545/8082	6E09094	93	190	ND	3	05/09/06	05/10/06	✓
Surrogate: Decachlorobiphenyl (45-120%)					80 %				

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720.535.5502, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: PCBs by EPA Method 8082
QC Level: V¹
SDG: IPD1477
Matrix: Soil/Water
No. of Samples: 9
No. of Reanalyses/Dilutions: 0
Date Reviewed: May 5, 2006
Reviewer: P. Meeks
Reference: USEPA Contract Laboratory Program National Functional
Guidelines for Organic Data Review (2/94)
Samples Reviewed: MJ803, MJ804, MJ805, MJ806, MJ807, MJ808, MJ809, MJ812,
MJ813

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received at Del Mar within the temperature limits of $4^{\circ} \pm 2^{\circ}\text{C}$, at 6°C. The COC was signed and dated by field and laboratory personnel and accounted for the samples and analyses presented in this SDG. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary.</p> <p>The soil samples were extracted within 14 days of collection and all samples were analyzed within 40 days of extraction.</p>	No qualifications were required.
4. <u>Method Blanks</u> 6D21050-BLK1 6D20122-BLK1 6D22026-BLK1	There were no Aroclors detected in the method blanks.	No qualifications were required.

	Findings	Qualifications
5. <u>LCS/BS</u> 6D21050-BS1 6D20122-BS2/BSD2 6D22026-BS1	The recoveries and the RPD for Aroclor 1016 and Aroclor 1260 were within the laboratory-established QC limits.	No qualifications were required.
6. <u>Surrogates</u>	The surrogate recoveries were within the laboratory-established QC limits. Surrogates were not considered recoverable in samples analyzed at dilutions of 10× or greater.	No qualifications were required.
7. <u>MS/MSDs</u>	None	None
9. <u>Field QC Samples</u> FB: MJ813 ER: MJ812 FD: MJ803/MJ804 MJ806/MJ807 MJ808.MJ809	There were no target compound detects in the field QC samples. There were no detects in any of the field duplicate samples. The pairs were considered to be in agreement.	No qualifications were required.
10. <u>Other</u>	Due to the presence of nontarget compounds, MJ808 was reported from a 150× dilution and MJ809 was reported from a 100× dilution. The soil samples were reported on a dry-weight basis in units of µg/Kg.	None.
<u>Comments</u>	None.	None.

¹ Level V validation consists of cursory review of the summary forms only; raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed included instrument performance, analytical sequence, initial calibration, continuing calibration, instrument blanks, sample clean-up performance, compound identification, and compound quantification.



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1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1477

Sampled: 04/13/06
Received: 04/13/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1477-03 (MJ803 - Soil)									RL-1
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6D21050	18	96	ND	1.5	04/21/06	04/22/06	C
Aroclor 1221	EPA 3545/8082	6D21050	25	96	ND	1.5	04/21/06	04/22/06	
Aroclor 1232	EPA 3545/8082	6D21050	12	96	ND	1.5	04/21/06	04/22/06	
Aroclor 1242	EPA 3545/8082	6D21050	31	96	ND	1.5	04/21/06	04/22/06	
Aroclor 1248	EPA 3545/8082	6D21050	19	96	ND	1.5	04/21/06	04/22/06	
Aroclor 1254	EPA 3545/8082	6D21050	31	96	ND	1.5	04/21/06	04/22/06	
Aroclor 1260	EPA 3545/8082	6D21050	48	96	ND	1.5	04/21/06	04/22/06	
Surrogate: Decachlorobiphenyl (45-120%)					72 %				
Sample ID: IPD1477-04 (MJ804 - Soil)									RL-1
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6D21050	18	96	ND	1.5	04/21/06	04/22/06	C
Aroclor 1221	EPA 3545/8082	6D21050	25	96	ND	1.5	04/21/06	04/22/06	
Aroclor 1232	EPA 3545/8082	6D21050	12	96	ND	1.5	04/21/06	04/22/06	
Aroclor 1242	EPA 3545/8082	6D21050	31	96	ND	1.5	04/21/06	04/22/06	
Aroclor 1248	EPA 3545/8082	6D21050	19	96	ND	1.5	04/21/06	04/22/06	
Aroclor 1254	EPA 3545/8082	6D21050	31	96	ND	1.5	04/21/06	04/22/06	
Aroclor 1260	EPA 3545/8082	6D21050	48	96	ND	1.5	04/21/06	04/22/06	
Surrogate: Decachlorobiphenyl (45-120%)					75 %				
Sample ID: IPD1477-05 (MJ805 - Soil)									RL-1
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6D21050	18	94	ND	1.5	04/21/06	04/22/06	C
Aroclor 1221	EPA 3545/8082	6D21050	25	94	ND	1.5	04/21/06	04/22/06	
Aroclor 1232	EPA 3545/8082	6D21050	11	94	ND	1.5	04/21/06	04/22/06	
Aroclor 1242	EPA 3545/8082	6D21050	30	94	ND	1.5	04/21/06	04/22/06	
Aroclor 1248	EPA 3545/8082	6D21050	19	94	ND	1.5	04/21/06	04/22/06	
Aroclor 1254	EPA 3545/8082	6D21050	30	94	ND	1.5	04/21/06	04/22/06	
Aroclor 1260	EPA 3545/8082	6D21050	47	94	ND	1.5	04/21/06	04/22/06	
Surrogate: Decachlorobiphenyl (45-120%)					66 %				

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Michele Chamberlin
Project Manager

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1477

Sampled: 04/13/06
Received: 04/13/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1477-06 (MJ806 - Soil)									RL-1
Reporting Units: ug/kg dry									Qual Code
Aroclor 1016	EPA 3545/8082	6D21050	16	86	ND	1.5	04/21/06	04/22/06	C
Aroclor 1221	EPA 3545/8082	6D21050	22	86	ND	1.5	04/21/06	04/22/06	
Aroclor 1232	EPA 3545/8082	6D21050	10	86	ND	1.5	04/21/06	04/22/06	
Aroclor 1242	EPA 3545/8082	6D21050	27	86	ND	1.5	04/21/06	04/22/06	
Aroclor 1248	EPA 3545/8082	6D21050	17	86	ND	1.5	04/21/06	04/22/06	
Aroclor 1254	EPA 3545/8082	6D21050	27	86	ND	1.5	04/21/06	04/22/06	
Aroclor 1260	EPA 3545/8082	6D21050	43	86	ND	1.5	04/21/06	04/22/06	
Surrogate: Decachlorobiphenyl (45-120%)					57 %				
Sample ID: IPD1477-07 (MJ807 - Soil)									RL-1
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6D21050	18	92	ND	1.5	04/21/06	04/22/06	C
Aroclor 1221	EPA 3545/8082	6D21050	24	92	ND	1.5	04/21/06	04/22/06	
Aroclor 1232	EPA 3545/8082	6D21050	11	92	ND	1.5	04/21/06	04/22/06	
Aroclor 1242	EPA 3545/8082	6D21050	30	92	ND	1.5	04/21/06	04/22/06	
Aroclor 1248	EPA 3545/8082	6D21050	18	92	ND	1.5	04/21/06	04/22/06	
Aroclor 1254	EPA 3545/8082	6D21050	30	92	ND	1.5	04/21/06	04/22/06	
Aroclor 1260	EPA 3545/8082	6D21050	46	92	ND	1.5	04/21/06	04/22/06	
Surrogate: Decachlorobiphenyl (45-120%)					61 %				
Sample ID: IPD1477-08 (MJ808 - Soil)									RL-3
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6D21050	1700	8900	ND	150	04/21/06	04/23/06	✓
Aroclor 1221	EPA 3545/8082	6D21050	2300	8900	ND	150	04/21/06	04/23/06	
Aroclor 1232	EPA 3545/8082	6D21050	1100	8900	ND	150	04/21/06	04/23/06	
Aroclor 1242	EPA 3545/8082	6D21050	2900	8900	ND	150	04/21/06	04/23/06	
Aroclor 1248	EPA 3545/8082	6D21050	1800	8900	ND	150	04/21/06	04/23/06	
Aroclor 1254	EPA 3545/8082	6D21050	2900	8900	ND	150	04/21/06	04/23/06	
Aroclor 1260	EPA 3545/8082	6D21050	4500	8900	ND	150	04/21/06	04/23/06	
Surrogate: Decachlorobiphenyl (45-120%)					*				

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Project Manager

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1477

Sampled: 04/13/06
Received: 04/13/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
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Sample ID: IPD1477-09 (MJ809 - Soil)

Reporting Units: ug/kg dry

Aroclor 1016	EPA 3545/8082	6D22026	1100	5900	ND	100	04/22/06	04/23/06	
Aroclor 1221	EPA 3545/8082	6D22026	1500	5900	ND	100	04/22/06	04/23/06	
Aroclor 1232	EPA 3545/8082	6D22026	710	5900	ND	100	04/22/06	04/23/06	
Aroclor 1242	EPA 3545/8082	6D22026	1900	5900	ND	100	04/22/06	04/23/06	
Aroclor 1248	EPA 3545/8082	6D22026	1200	5900	ND	100	04/22/06	04/23/06	
Aroclor 1254	EPA 3545/8082	6D22026	1900	5900	ND	100	04/22/06	04/23/06	
Aroclor 1260	EPA 3545/8082	6D22026	2900	5900	ND	100	04/22/06	04/23/06	

Surrogate: Decachlorobiphenyl (45-120%)

*

Z3

Sample ID: IPD1477-12 (MJ812 - Water)

Reporting Units: ug/l

Aroclor 1016	EPA 3510/8082	6D20122	0.20	0.98	ND	0.98	04/20/06	04/21/06	
Aroclor 1221	EPA 3510/8082	6D20122	0.098	0.98	ND	0.98	04/20/06	04/21/06	
Aroclor 1232	EPA 3510/8082	6D20122	0.25	0.98	ND	0.98	04/20/06	04/21/06	
Aroclor 1242	EPA 3510/8082	6D20122	0.25	0.98	ND	0.98	04/20/06	04/21/06	
Aroclor 1248	EPA 3510/8082	6D20122	0.25	0.98	ND	0.98	04/20/06	04/21/06	
Aroclor 1254	EPA 3510/8082	6D20122	0.25	0.98	ND	0.98	04/20/06	04/21/06	
Aroclor 1260	EPA 3510/8082	6D20122	0.39	0.98	ND	0.98	04/20/06	04/21/06	

Surrogate: Decachlorobiphenyl (45-120%)

67 %

Sample ID: IPD1477-13 (MJ813 - Water)

Reporting Units: ug/l

Aroclor 1016	EPA 3510/8082	6D20122	0.19	0.94	ND	0.943	04/20/06	04/21/06	
Aroclor 1221	EPA 3510/8082	6D20122	0.094	0.94	ND	0.943	04/20/06	04/21/06	
Aroclor 1232	EPA 3510/8082	6D20122	0.24	0.94	ND	0.943	04/20/06	04/21/06	
Aroclor 1242	EPA 3510/8082	6D20122	0.24	0.94	ND	0.943	04/20/06	04/21/06	
Aroclor 1248	EPA 3510/8082	6D20122	0.24	0.94	ND	0.943	04/20/06	04/21/06	
Aroclor 1254	EPA 3510/8082	6D20122	0.24	0.94	ND	0.943	04/20/06	04/21/06	
Aroclor 1260	EPA 3510/8082	6D20122	0.38	0.94	ND	0.943	04/20/06	04/21/06	

Surrogate: Decachlorobiphenyl (45-120%)

61 %

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Michele Chamberlin
Project Manager

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LEVEL V



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720.535.5502, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: PCBs by EPA Method 8082
QC Level: V¹
SDG: IPD1302
Matrix: Soil
No. of Samples: 18
No. of Reanalyses/Dilutions: 2
Date Reviewed: May 8, 2006
Reviewer: P. Meeks
Reference: USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (2/94)
Samples Reviewed: MJ776, MJ777, MJ781, MJ782, MJ782RE, MJ783, MJ784, MJ784RE, MJ786, MJ787, MJ788, MJ789, MJ790, MJ791, MJ794, MJ795, MJ796, MJ798, MJ799, MJ800

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received at Del Mar within the temperature limits of 4° ±2°C, at 4°C. The COC was signed and dated by field and laboratory personnel. MJ776 and MJ777 were received on HOLD. As per a memo from MWH personnel dated 4/14/06, the samples were analyzed for PCBs. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary.</p> <p>The soil samples were extracted within 14 days of collection and all samples were analyzed within 40 days of extraction.</p>	No qualifications were required.

	Findings	Qualifications
4. <u>Method Blanks</u> 6D22026-BLK1 6D20050-BLK1 6D21050-BLK1	There were no Aroclors detected in the method blanks.	No qualifications were required.
5. <u>LCS/BS</u> 6D22026-BS1 6D20050-BS1 6D21050-BS1	The recoveries for Aroclor 1016 and Aroclor 1260 were within the laboratory-established QC limits.	No qualifications were required.
6. <u>Surrogates</u>	The surrogate recoveries were within the laboratory-established QC limits. Surrogates were not considered recoverable in samples analyzed at dilutions of 10× or greater.	No qualifications were required.
7. <u>MS/MSDs</u> MJ783, MJ798	The recoveries for Aroclor 1016 and Aroclor 1260 were within the laboratory-established QC limits.	None
9. <u>Field QC Samples</u> FB: MJ813 (IPD1477) ER: MJ812 (IPD1477) FD: None	There were no target compound detects in the field QC samples.	No qualifications were required.
10. <u>Other</u>	<p>Due to large concentrations of target analytes Aroclors 1248 and 1250 in MJ782RE were both reported from a 15× dilution, and Aroclor 1248 in MJ784RE was reported from a 30000× dilution.</p> <p>The concentration of the following target compounds were affected by coelution: Aroclor 1260 in MJ782, Aroclors 1248 and 1254 in MJ782RE, Aroclor 1260 in MJ784, Aroclor 1248 in MJ784RE, and Aroclors 1248 and 1254 in MJ787.</p> <p>The soil samples were reported on a dry-weight basis in units of µg/Kg.</p>	<p>None.</p> <p>These target compounds were qualified as estimated, "J."</p>
<u>Comments</u>	None.	None.

¹ Level V validation consists of cursory review of the summary forms only; raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed included instrument performance, analytical sequence, initial calibration, continuing calibration, instrument blanks, sample clean-up performance, compound identification, and compound quantification.



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17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1302

Sampled: 04/12/06
Received: 04/12/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
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Sample ID: IPD1302-01 (MJ776 - Soil)

Reporting Units: ug/kg dry

Aroclor 1016	EPA 3545/8082	6D22026	17	88	ND	1.5	04/22/06	04/22/06	U
Aroclor 1221	EPA 3545/8082	6D22026	23	88	ND	1.5	04/22/06	04/22/06	U
Aroclor 1232	EPA 3545/8082	6D22026	11	88	ND	1.5	04/22/06	04/22/06	U
Aroclor 1242	EPA 3545/8082	6D22026	28	88	ND	1.5	04/22/06	04/22/06	U
Aroclor 1248	EPA 3545/8082	6D22026	18	88	ND	1.5	04/22/06	04/22/06	U
Aroclor 1254	EPA 3545/8082	6D22026	28	88	ND	1.5	04/22/06	04/22/06	U
Aroclor 1260	EPA 3545/8082	6D22026	44	88	ND	1.5	04/22/06	04/22/06	U

Surrogate: Decachlorobiphenyl (45-120%)

89 %

Sample ID: IPD1302-02 (MJ777 - Soil)

Reporting Units: ug/kg dry

Aroclor 1016	EPA 3545/8082	6D22026	17	88	ND	1.5	04/22/06	04/22/06	U
Aroclor 1221	EPA 3545/8082	6D22026	23	88	ND	1.5	04/22/06	04/22/06	U
Aroclor 1232	EPA 3545/8082	6D22026	11	88	ND	1.5	04/22/06	04/22/06	U
Aroclor 1242	EPA 3545/8082	6D22026	28	88	ND	1.5	04/22/06	04/22/06	U
Aroclor 1248	EPA 3545/8082	6D22026	18	88	ND	1.5	04/22/06	04/22/06	U
Aroclor 1254	EPA 3545/8082	6D22026	28	88	ND	1.5	04/22/06	04/22/06	U
Aroclor 1260	EPA 3545/8082	6D22026	44	88	ND	1.5	04/22/06	04/22/06	U

Surrogate: Decachlorobiphenyl (45-120%)

87 %

Sample ID: IPD1302-06 (MJ781 - Soil)

Reporting Units: ug/kg dry

Aroclor 1016	EPA 3545/8082	6D20050	17	89	ND	1.5	04/20/06	04/21/06	U
Aroclor 1221	EPA 3545/8082	6D20050	23	89	ND	1.5	04/20/06	04/21/06	U
Aroclor 1232	EPA 3545/8082	6D20050	11	89	ND	1.5	04/20/06	04/21/06	U
Aroclor 1242	EPA 3545/8082	6D20050	28	89	ND	1.5	04/20/06	04/21/06	U
Aroclor 1248	EPA 3545/8082	6D20050	18	89	170	1.5	04/20/06	04/21/06	R-10
Aroclor 1254	EPA 3545/8082	6D20050	28	89	ND	1.5	04/20/06	04/21/06	U
Aroclor 1260	EPA 3545/8082	6D20050	44	89	ND	1.5	04/20/06	04/21/06	U

Surrogate: Decachlorobiphenyl (45-120%)

58 %

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Project Manager

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1302

Sampled: 04/12/06
Received: 04/12/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1302-07 (MJ782 - Soil)									
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6D20050	17	89	ND	1.5	04/20/06	04/21/06	U
Aroclor 1221	EPA 3545/8082	6D20050	23	89	ND	1.5	04/20/06	04/21/06	↓
Aroclor 1232	EPA 3545/8082	6D20050	11	89	ND	1.5	04/20/06	04/21/06	↓
Aroclor 1242	EPA 3545/8082	6D20050	28	89	ND	1.5	04/20/06	04/21/06	↓
Aroclor 1260	EPA 3545/8082	6D20050	44	89	430	1.5	04/20/06	04/21/06	J A-01b
Surrogate: Decachlorobiphenyl (45-120%)					65 %				
Sample ID: IPD1302-07RE1 (MJ782 - Soil)									
Reporting Units: ug/kg dry									
Aroclor 1248	EPA 3545/8082	6D20050	180	890	13000	15	04/20/06	04/21/06	J A-01b
Aroclor 1254	EPA 3545/8082	6D20050	280	890	5400	15	04/20/06	04/21/06	J A-01b
Surrogate: Decachlorobiphenyl (45-120%)					132 %	Z3			
Sample ID: IPD1302-08 (MJ783 - Soil)									
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6D20050	17	89	ND	1.5	04/20/06	04/21/06	U
Aroclor 1221	EPA 3545/8082	6D20050	23	89	ND	1.5	04/20/06	04/21/06	↓
Aroclor 1232	EPA 3545/8082	6D20050	11	89	ND	1.5	04/20/06	04/21/06	↓
Aroclor 1242	EPA 3545/8082	6D20050	28	89	ND	1.5	04/20/06	04/21/06	↓
Aroclor 1248	EPA 3545/8082	6D20050	18	89	180	1.5	04/20/06	04/21/06	U
Aroclor 1254	EPA 3545/8082	6D20050	28	89	ND	1.5	04/20/06	04/21/06	U
Aroclor 1260	EPA 3545/8082	6D20050	44	89	ND	1.5	04/20/06	04/21/06	U
Surrogate: Decachlorobiphenyl (45-120%)					82 %				
Sample ID: IPD1302-09 (MJ784 - Soil)									
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6D20050	16000	86000	ND	1500	04/20/06	04/24/06	U
Aroclor 1221	EPA 3545/8082	6D20050	22000	86000	ND	1500	04/20/06	04/24/06	↓
Aroclor 1232	EPA 3545/8082	6D20050	10000	86000	ND	1500	04/20/06	04/24/06	↓
Aroclor 1242	EPA 3545/8082	6D20050	27000	86000	ND	1500	04/20/06	04/24/06	↓
Aroclor 1254	EPA 3545/8082	6D20050	27000	86000	ND	1500	04/20/06	04/24/06	↓
Aroclor 1260	EPA 3545/8082	6D20050	43000	86000	630000	1500	04/20/06	04/24/06	J A-01a
Surrogate: Decachlorobiphenyl (45-120%)					*	Z3			
Sample ID: IPD1302-09RE1 (MJ784 - Soil)									
Reporting Units: ug/kg dry									
Aroclor 1248	EPA 3545/8082	6D20050	340000	1700000	24000000	30000	04/20/06	04/23/06	J A-01a
Surrogate: Decachlorobiphenyl (45-120%)					*	Z3			

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Michele Chamberlin
Project Manager

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1302

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-1621

Sampled: 04/12/06
Received: 04/12/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1302-11 (MJ786 - Soil)									Raw Qual Code
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6D20050	18	94	ND	1.5	04/20/06	04/21/06	U
Aroclor 1221	EPA 3545/8082	6D20050	24	94	ND	1.5	04/20/06	04/21/06	U
Aroclor 1232	EPA 3545/8082	6D20050	11	94	ND	1.5	04/20/06	04/21/06	U
Aroclor 1242	EPA 3545/8082	6D20050	30	94	ND	1.5	04/20/06	04/21/06	U
Aroclor 1248	EPA 3545/8082	6D20050	19	94	110	1.5	04/20/06	04/21/06	U
Aroclor 1254	EPA 3545/8082	6D20050	30	94	ND	1.5	04/20/06	04/21/06	U
Aroclor 1260	EPA 3545/8082	6D20050	47	94	ND	1.5	04/20/06	04/21/06	U
Surrogate: Decachlorobiphenyl (45-120%)					60 %				
Sample ID: IPD1302-12 (MJ787 - Soil)									Raw Qual Code
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6D20050	18	96	ND	1.5	04/20/06	04/21/06	U
Aroclor 1221	EPA 3545/8082	6D20050	25	96	ND	1.5	04/20/06	04/21/06	U
Aroclor 1232	EPA 3545/8082	6D20050	11	96	ND	1.5	04/20/06	04/21/06	U
Aroclor 1242	EPA 3545/8082	6D20050	31	96	ND	1.5	04/20/06	04/21/06	U
Aroclor 1248	EPA 3545/8082	6D20050	19	96	110	1.5	04/20/06	04/21/06	U A-01
Aroclor 1254	EPA 3545/8082	6D20050	31	96	250	1.5	04/20/06	04/21/06	U A-01
Aroclor 1260	EPA 3545/8082	6D20050	48	96	ND	1.5	04/20/06	04/21/06	U
Surrogate: Decachlorobiphenyl (45-120%)					78 %				
Sample ID: IPD1302-13 (MJ788 - Soil)									RL-1
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6D20050	17	91	ND	1.5	04/20/06	04/21/06	U
Aroclor 1221	EPA 3545/8082	6D20050	24	91	ND	1.5	04/20/06	04/21/06	U
Aroclor 1232	EPA 3545/8082	6D20050	11	91	ND	1.5	04/20/06	04/21/06	U
Aroclor 1242	EPA 3545/8082	6D20050	29	91	ND	1.5	04/20/06	04/21/06	U
Aroclor 1248	EPA 3545/8082	6D20050	18	91	ND	1.5	04/20/06	04/21/06	U
Aroclor 1254	EPA 3545/8082	6D20050	29	91	ND	1.5	04/20/06	04/21/06	U
Aroclor 1260	EPA 3545/8082	6D20050	46	91	ND	1.5	04/20/06	04/21/06	U
Surrogate: Decachlorobiphenyl (45-120%)					87 %				

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Michele Chamberlin
Project Manager

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1302

Sampled: 04/12/06
Received: 04/12/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IPD1302-14 (MJ789 - Soil)										
Reporting Units: ug/kg dry										
Aroclor 1016	EPA 3545/8082	6D20050	11	56	ND	1	04/20/06	04/21/06	U ↓	Qual Code
Aroclor 1221	EPA 3545/8082	6D20050	15	56	ND	1	04/20/06	04/21/06		
Aroclor 1232	EPA 3545/8082	6D20050	6.7	56	ND	1	04/20/06	04/21/06		
Aroclor 1242	EPA 3545/8082	6D20050	18	56	ND	1	04/20/06	04/21/06		
Aroclor 1248	EPA 3545/8082	6D20050	11	56	ND	1	04/20/06	04/21/06		
Aroclor 1254	EPA 3545/8082	6D20050	18	56	ND	1	04/20/06	04/21/06		
Aroclor 1260	EPA 3545/8082	6D20050	28	56	ND	1	04/20/06	04/21/06		
Surrogate: Decachlorobiphenyl (45-120%)					80 %					
Sample ID: IPD1302-15 (MJ790 - Soil)										
Reporting Units: ug/kg dry										
Aroclor 1016	EPA 3545/8082	6D20050	17	91	ND	1.5	04/20/06	04/21/06	U ↓	RL-1
Aroclor 1221	EPA 3545/8082	6D20050	24	91	ND	1.5	04/20/06	04/21/06		
Aroclor 1232	EPA 3545/8082	6D20050	11	91	ND	1.5	04/20/06	04/21/06		
Aroclor 1242	EPA 3545/8082	6D20050	29	91	ND	1.5	04/20/06	04/21/06		
Aroclor 1248	EPA 3545/8082	6D20050	18	91	ND	1.5	04/20/06	04/21/06		
Aroclor 1254	EPA 3545/8082	6D20050	29	91	ND	1.5	04/20/06	04/21/06		
Aroclor 1260	EPA 3545/8082	6D20050	45	91	ND	1.5	04/20/06	04/21/06		
Surrogate: Decachlorobiphenyl (45-120%)					81 %					
Sample ID: IPD1302-16 (MJ791 - Soil)										
Reporting Units: ug/kg dry										
Aroclor 1016	EPA 3545/8082	6D20050	16	86	ND	1.5	04/20/06	04/21/06	U ↓	RL-1
Aroclor 1221	EPA 3545/8082	6D20050	22	86	ND	1.5	04/20/06	04/21/06		
Aroclor 1232	EPA 3545/8082	6D20050	10	86	ND	1.5	04/20/06	04/21/06		
Aroclor 1242	EPA 3545/8082	6D20050	28	86	ND	1.5	04/20/06	04/21/06		
Aroclor 1248	EPA 3545/8082	6D20050	17	86	ND	1.5	04/20/06	04/21/06		
Aroclor 1254	EPA 3545/8082	6D20050	28	86	ND	1.5	04/20/06	04/21/06		
Aroclor 1260	EPA 3545/8082	6D20050	43	86	ND	1.5	04/20/06	04/21/06		
Surrogate: Decachlorobiphenyl (45-120%)					84 %					

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Michele Chamberlin
Project Manager

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LEVEL V

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1302

Sampled: 04/12/06
Received: 04/12/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
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Sample ID: IPD1302-19 (MJ794 - Soil)

Reporting Units: ug/kg dry

Aroclor 1016	EPA 3545/8082	6D20050	17	90	ND	1.5	04/20/06	04/21/06	RL-1
Aroclor 1221	EPA 3545/8082	6D20050	23	90	ND	1.5	04/20/06	04/21/06	Rev Qual Code
Aroclor 1232	EPA 3545/8082	6D20050	11	90	ND	1.5	04/20/06	04/21/06	
Aroclor 1242	EPA 3545/8082	6D20050	29	90	ND	1.5	04/20/06	04/21/06	
Aroclor 1248	EPA 3545/8082	6D20050	18	90	ND	1.5	04/20/06	04/21/06	
Aroclor 1254	EPA 3545/8082	6D20050	29	90	ND	1.5	04/20/06	04/21/06	
Aroclor 1260	EPA 3545/8082	6D20050	45	90	ND	1.5	04/20/06	04/21/06	

Surrogate: Decachlorobiphenyl (45-120%)

85 %

Sample ID: IPD1302-20 (MJ795 - Soil)

Reporting Units: ug/kg dry

Aroclor 1016	EPA 3545/8082	6D20050	20	100	ND	1.5	04/20/06	04/21/06	RL-1
Aroclor 1221	EPA 3545/8082	6D20050	27	100	ND	1.5	04/20/06	04/21/06	
Aroclor 1232	EPA 3545/8082	6D20050	12	100	ND	1.5	04/20/06	04/21/06	
Aroclor 1242	EPA 3545/8082	6D20050	33	100	ND	1.5	04/20/06	04/21/06	
Aroclor 1248	EPA 3545/8082	6D20050	21	100	ND	1.5	04/20/06	04/21/06	
Aroclor 1254	EPA 3545/8082	6D20050	33	100	ND	1.5	04/20/06	04/21/06	
Aroclor 1260	EPA 3545/8082	6D20050	52	100	ND	1.5	04/20/06	04/21/06	

Surrogate: Decachlorobiphenyl (45-120%)

76 %

Sample ID: IPD1302-21 (MJ796 - Soil)

Reporting Units: ug/kg dry

Aroclor 1016	EPA 3545/8082	6D20050	36	190	ND	3	04/20/06	04/21/06	RL-1
Aroclor 1221	EPA 3545/8082	6D20050	50	190	ND	3	04/20/06	04/21/06	
Aroclor 1232	EPA 3545/8082	6D20050	23	190	ND	3	04/20/06	04/21/06	
Aroclor 1242	EPA 3545/8082	6D20050	61	190	ND	3	04/20/06	04/21/06	
Aroclor 1248	EPA 3545/8082	6D20050	38	190	ND	3	04/20/06	04/21/06	
Aroclor 1254	EPA 3545/8082	6D20050	61	190	ND	3	04/20/06	04/21/06	
Aroclor 1260	EPA 3545/8082	6D20050	95	190	ND	3	04/20/06	04/21/06	

Surrogate: Decachlorobiphenyl (45-120%)

84 %

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Project Manager

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LEVEL V
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1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1302

Sampled: 04/12/06
Received: 04/12/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1302-23 (MJ798 - Soil)									RL-1
Reporting Units: ug/kg dry									Raw Anal Code
Aroclor 1016	EPA 3545/8082	6D21050	16	84	ND	1.5	04/21/06	04/21/06	U
Aroclor 1221	EPA 3545/8082	6D21050	22	84	ND	1.5	04/21/06	04/21/06	U
Aroclor 1232	EPA 3545/8082	6D21050	10	84	ND	1.5	04/21/06	04/21/06	U
Aroclor 1242	EPA 3545/8082	6D21050	27	84	ND	1.5	04/21/06	04/21/06	U
Aroclor 1248	EPA 3545/8082	6D21050	17	84	ND	1.5	04/21/06	04/21/06	U
Aroclor 1254	EPA 3545/8082	6D21050	27	84	ND	1.5	04/21/06	04/21/06	U
Aroclor 1260	EPA 3545/8082	6D21050	42	84	ND	1.5	04/21/06	04/21/06	U
Surrogate: Decachlorobiphenyl (45-120%)					60 %				
Sample ID: IPD1302-24 (MJ799 - Soil)									RL-1
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6D21050	16	82	ND	1.5	04/21/06	04/21/06	U
Aroclor 1221	EPA 3545/8082	6D21050	21	82	ND	1.5	04/21/06	04/21/06	U
Aroclor 1232	EPA 3545/8082	6D21050	9.8	82	ND	1.5	04/21/06	04/21/06	U
Aroclor 1242	EPA 3545/8082	6D21050	26	82	ND	1.5	04/21/06	04/21/06	U
Aroclor 1248	EPA 3545/8082	6D21050	16	82	ND	1.5	04/21/06	04/21/06	U
Aroclor 1254	EPA 3545/8082	6D21050	26	82	ND	1.5	04/21/06	04/21/06	U
Aroclor 1260	EPA 3545/8082	6D21050	41	82	ND	1.5	04/21/06	04/21/06	U
Surrogate: Decachlorobiphenyl (45-120%)					76 %				
Sample ID: IPD1302-25 (MJ800 - Soil)									RL-1
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6D21050	15	81	ND	1.5	04/21/06	04/22/06	U
Aroclor 1221	EPA 3545/8082	6D21050	21	81	ND	1.5	04/21/06	04/22/06	U
Aroclor 1232	EPA 3545/8082	6D21050	9.8	81	ND	1.5	04/21/06	04/22/06	U
Aroclor 1242	EPA 3545/8082	6D21050	26	81	ND	1.5	04/21/06	04/22/06	U
Aroclor 1248	EPA 3545/8082	6D21050	16	81	ND	1.5	04/21/06	04/22/06	U
Aroclor 1254	EPA 3545/8082	6D21050	26	81	ND	1.5	04/21/06	04/22/06	U
Aroclor 1260	EPA 3545/8082	6D21050	41	81	ND	1.5	04/21/06	04/22/06	U
Surrogate: Decachlorobiphenyl (45-120%)					66 %				

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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12269 East Vassar Drive, Aurora, CO 80014
720.535.5502, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: PCBs by EPA Method 8082
QC Level: V¹
SDG: IPD1108
Matrix: Soil
No. of Samples: 7
No. of Reanalyses/Dilutions: 0
Date Reviewed: May 5, 2006
Reviewer: P. Meeks
Reference: USEPA *Contract Laboratory Program National Functional Guidelines for Organic Data Review (2/94)*
Samples Reviewed: MJ739, MJ744, MJ745, MJ765, MJ767, MJ768, MJ769

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received at Del Mar within the temperature limits of $4^{\circ} \pm 2^{\circ}\text{C}$, at 3°C. The COC was signed and dated by field and laboratory personnel and accounted for the analyses presented in this SDG. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary.</p> <p>The soil samples were extracted within 14 days of collection and all samples were analyzed within 40 days of extraction.</p>	No qualifications were required.
4. <u>Method Blanks</u> 6D200501-MB	There were no Aroclors detected in the method blank.	No qualifications were required.
5. <u>LCS/BS</u> 6D20050-BS1	The recoveries for Aroclor 1016 and Aroclor 1260 were within the laboratory-established QC limits.	No qualifications were required.

	Findings	Qualifications
6. <u>Surrogates</u>	The surrogate recoveries were within the laboratory-established QC limits.	No qualifications were required.
7. <u>MS/MSDs</u>	None	None
9. <u>Field QC Samples</u> FB: MJ813 (IPD1477) ER: MJ812 (IPD1477) FD: None	There were no target compound detects in the field QC samples.	No qualifications were required.
10. <u>Other</u>	The soil samples were reported on a dry-weight basis in units of µg/Kg. All target compounds in samples MJ765 and MJ767 were reported from 3× dilutions. The remaining samples reflected a 1.5× dilution due to limited extraction amount (10 grams rather than 15 grams).	None.
<u>Comments</u>	None.	None.

¹ Level V validation consists of cursory review of the summary forms only; raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed included instrument performance, analytical sequence, initial calibration, continuing calibration, instrument blanks, sample clean-up performance, compound identification, and compound quantification.



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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1108

Sampled: 04/11/06
Received: 04/11/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
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Sample ID: IPD1108-01 (MJ739 - Soil) - cont.

Reporting Units: ug/kg dry

Aroclor 1016	EPA 3545/8082	6D20050	16	84	ND	1.5	04/20/06	04/21/06	
Aroclor 1221	EPA 3545/8082	6D20050	22	84	ND	1.5	04/20/06	04/21/06	
Aroclor 1232	EPA 3545/8082	6D20050	10	84	ND	1.5	04/20/06	04/21/06	
Aroclor 1242	EPA 3545/8082	6D20050	27	84	ND	1.5	04/20/06	04/21/06	
Aroclor 1248	EPA 3545/8082	6D20050	17	84	ND	1.5	04/20/06	04/21/06	
Aroclor 1254	EPA 3545/8082	6D20050	27	84	ND	1.5	04/20/06	04/21/06	
Aroclor 1260	EPA 3545/8082	6D20050	42	84	ND	1.5	04/20/06	04/21/06	

Surrogate: Decachlorobiphenyl (45-120%)

77 %

Sample ID: IPD1108-06 (MJ744 - Soil)

Reporting Units: ug/kg dry

Aroclor 1016	EPA 3545/8082	6D20050	17	92	ND	1.5	04/20/06	04/21/06	
Aroclor 1221	EPA 3545/8082	6D20050	24	92	ND	1.5	04/20/06	04/21/06	
Aroclor 1232	EPA 3545/8082	6D20050	11	92	ND	1.5	04/20/06	04/21/06	
Aroclor 1242	EPA 3545/8082	6D20050	29	92	ND	1.5	04/20/06	04/21/06	
Aroclor 1248	EPA 3545/8082	6D20050	18	92	ND	1.5	04/20/06	04/21/06	
Aroclor 1254	EPA 3545/8082	6D20050	29	92	260	1.5	04/20/06	04/21/06	
Aroclor 1260	EPA 3545/8082	6D20050	46	92	ND	1.5	04/20/06	04/21/06	

Surrogate: Decachlorobiphenyl (45-120%)

74 %

Sample ID: IPD1108-07 (MJ745 - Soil)

Reporting Units: ug/kg dry

Aroclor 1016	EPA 3545/8082	6D20050	19	100	ND	1.5	04/20/06	04/21/06	
Aroclor 1221	EPA 3545/8082	6D20050	26	100	ND	1.5	04/20/06	04/21/06	
Aroclor 1232	EPA 3545/8082	6D20050	12	100	ND	1.5	04/20/06	04/21/06	
Aroclor 1242	EPA 3545/8082	6D20050	32	100	ND	1.5	04/20/06	04/21/06	
Aroclor 1248	EPA 3545/8082	6D20050	20	100	ND	1.5	04/20/06	04/21/06	
Aroclor 1254	EPA 3545/8082	6D20050	32	100	350	1.5	04/20/06	04/21/06	
Aroclor 1260	EPA 3545/8082	6D20050	50	100	ND	1.5	04/20/06	04/21/06	

Surrogate: Decachlorobiphenyl (45-120%)

64 %

RL-1
Res Qual Code

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1108

Sampled: 04/11/06
Received: 04/11/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1108-27 (MJ765 - Soil)									RL-1
Reporting Units: ug/kg dry									Rev. Qual
Aroclor 1016	EPA 3545/8082	6D20050	34	180	ND	3	04/20/06	04/21/06	↓
Aroclor 1221	EPA 3545/8082	6D20050	47	180	ND	3	04/20/06	04/21/06	
Aroclor 1232	EPA 3545/8082	6D20050	22	180	ND	3	04/20/06	04/21/06	
Aroclor 1242	EPA 3545/8082	6D20050	58	180	ND	3	04/20/06	04/21/06	
Aroclor 1248	EPA 3545/8082	6D20050	36	180	ND	3	04/20/06	04/21/06	
Aroclor 1254	EPA 3545/8082	6D20050	58	180	ND	3	04/20/06	04/21/06	
Aroclor 1260	EPA 3545/8082	6D20050	90	180	ND	3	04/20/06	04/21/06	
Surrogate: Decachlorobiphenyl (45-120%)					60 %				
Sample ID: IPD1108-29 (MJ767 - Soil)									RL-1
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6D20050	39	210	ND	3	04/20/06	04/21/06	↓
Aroclor 1221	EPA 3545/8082	6D20050	53	210	ND	3	04/20/06	04/21/06	
Aroclor 1232	EPA 3545/8082	6D20050	25	210	ND	3	04/20/06	04/21/06	
Aroclor 1242	EPA 3545/8082	6D20050	66	210	ND	3	04/20/06	04/21/06	
Aroclor 1248	EPA 3545/8082	6D20050	41	210	ND	3	04/20/06	04/21/06	
Aroclor 1254	EPA 3545/8082	6D20050	66	210	ND	3	04/20/06	04/21/06	
Aroclor 1260	EPA 3545/8082	6D20050	100	210	ND	3	04/20/06	04/21/06	
Surrogate: Decachlorobiphenyl (45-120%)					56 %				
Sample ID: IPD1108-30 (MJ768 - Soil)									RL-1
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6D20050	16	85	ND	1.5	04/20/06	04/21/06	↓
Aroclor 1221	EPA 3545/8082	6D20050	22	85	ND	1.5	04/20/06	04/21/06	
Aroclor 1232	EPA 3545/8082	6D20050	10	85	ND	1.5	04/20/06	04/21/06	
Aroclor 1242	EPA 3545/8082	6D20050	27	85	ND	1.5	04/20/06	04/21/06	
Aroclor 1248	EPA 3545/8082	6D20050	17	85	ND	1.5	04/20/06	04/21/06	
Aroclor 1254	EPA 3545/8082	6D20050	27	85	ND	1.5	04/20/06	04/21/06	
Aroclor 1260	EPA 3545/8082	6D20050	42	85	ND	1.5	04/20/06	04/21/06	
Surrogate: Decachlorobiphenyl (45-120%)					52 %				

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1108

Sampled: 04/11/06
Received: 04/11/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IPD1108-31 (MJ769 - Soil)										
Reporting Units: ug/kg dry										
Aroclor 1016	EPA 3545/8082	6D20050	18	96	ND	1.5	04/20/06	04/21/06	Raw Qual ↓ R-10	Qual Code
Aroclor 1221	EPA 3545/8082	6D20050	25	96	ND	1.5	04/20/06	04/21/06		
Aroclor 1232	EPA 3545/8082	6D20050	12	96	ND	1.5	04/20/06	04/21/06		
Aroclor 1242	EPA 3545/8082	6D20050	31	96	ND	1.5	04/20/06	04/21/06		
Aroclor 1248	EPA 3545/8082	6D20050	19	96	ND	1.5	04/20/06	04/21/06		
Aroclor 1254	EPA 3545/8082	6D20050	31	96	ND	1.5	04/20/06	04/21/06		
Aroclor 1260	EPA 3545/8082	6D20050	48	96	240	1.5	04/20/06	04/21/06		
Surrogate: Decachlorobiphenyl (45-120%)					52 %					

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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720.535.5502, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap Analysis
Project Manager: D. Hambrick
Analysis/Method: PCBs by EPA Method 8082
QC Level: V'
SDG: IPC1562
Matrix: Soil
No. of Samples: 13
No. of Reanalyses/Dilutions: 0
Date Reviewed: May 4, 2006
Reviewer: E. Wessling
Reference: USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (2/94)
Samples Reviewed: MJ623, MJ624, MJ625, MJ626, MJ627, MJ669, MJ670, MJ671, MJ672, MJ688, MJ689, MJ690 and MJ709

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received at Del Mar within the temperature limits of $4^{\circ} \pm 2^{\circ}\text{C}$, at 5°C. The COC was signed and dated by field and laboratory personnel. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary.</p> <p>Samples MJ688, MJ689, MJ690 and MJ709 were extracted beyond the 14 day holding time. The remaining samples were extracted within 14 days of collection. All samples were analyzed within 40 days of extraction.</p>	<p>No qualifications were required.</p> <p>Samples MJ688, MJ689, MJ690 and MJ709 were qualified as estimated, "J," for detects and, "UJ," for nondetects.</p>
4. <u>Method Blanks</u> 6B22048-BLK1 6D19021-BLK1	<p>There were no Aroclors detected in the method blanks.</p>	<p>No qualifications were required.</p>

	Findings	Qualifications
5. <u>LCS/BS</u> 6B22046-BS1 6D19021-BS1/BSD1	The recoveries for Aroclor 1016 and Aroclor 1260 were within the laboratory-established QC limits for the blank spike. Recoveries and RPD were within the laboratory-established QC limits for the BS/BSD pair.	No qualifications were required.
6. <u>Surrogates</u>	The surrogate recovery was within the laboratory-established QC limits with the exception of MJ690 which was recovered above QC limits. Samples requiring dilution above a 10-fold dilution were not evaluated for surrogate recovery.	Detects in sample MJ690 were qualified as estimated, "J." No further qualifications were required.
7. <u>MS/MSDs</u> None	None	None
9. <u>Field QC Samples</u> FB: None ER: None FD: None	There were no field QC samples associated with the samples in this SDG.	No qualifications were required.
10. <u>Other</u>	The soil samples were reported on a dry-weight basis in units of $\mu\text{g/Kg}$.	None
<u>Comments</u>	Overlapping peaks were used for target compound quantitation for Aroclors 1248, 1254 and 1260; therefore, samples with detects for both congeners were estimated.	Detects for Aroclors 1254 and 1260 in samples MJ669, MJ670 and MJ671 and for Aroclors 1248 and 1260 in sample MJ690 were qualified as estimated, "J."

¹ Level V validation consists of cursory review of the summary forms only; raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed included instrument performance, analytical sequence, initial calibration, continuing calibration, instrument blanks, sample clean-up performance, compound identification, and compound quantification.

MWH-San Diego
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 6
 Data Gap
 Report Number: IPC1562

Sampled: 02/14/06-02/17/06
 Received: 03/13/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
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Sample ID: IPC1562-01 (MJ623 - Soil)

Reporting Units: ug/kg dry

Sampled: 02/14/06

Aroclor 1016	EPA 3545/8082	6C19021	200	1100	ND	20	03/19/06	03/21/06	u
Aroclor 1221	EPA 3545/8082	6C19021	280	1100	ND	20	03/19/06	03/21/06	
Aroclor 1232	EPA 3545/8082	6C19021	130	1100	ND	20	03/19/06	03/21/06	
Aroclor 1242	EPA 3545/8082	6C19021	340	1100	ND	20	03/19/06	03/21/06	
Aroclor 1248	EPA 3545/8082	6C19021	210	1100	ND	20	03/19/06	03/21/06	
Aroclor 1254	EPA 3545/8082	6C19021	340	1100	ND	20	03/19/06	03/21/06	
Aroclor 1260	EPA 3545/8082	6C19021	530	1100	6900	20	03/19/06	03/21/06	

Surrogate: Decachlorobiphenyl (45-120%)

121 %

Z3

Sample ID: IPC1562-02 (MJ624 - Soil)

Reporting Units: ug/kg dry

Sampled: 02/14/06

Aroclor 1016	EPA 3545/8082	6C19021	200	1100	ND	20	03/19/06	03/21/06	u
Aroclor 1221	EPA 3545/8082	6C19021	280	1100	ND	20	03/19/06	03/21/06	
Aroclor 1232	EPA 3545/8082	6C19021	130	1100	ND	20	03/19/06	03/21/06	
Aroclor 1242	EPA 3545/8082	6C19021	340	1100	ND	20	03/19/06	03/21/06	
Aroclor 1248	EPA 3545/8082	6C19021	220	1100	ND	20	03/19/06	03/21/06	
Aroclor 1254	EPA 3545/8082	6C19021	340	1100	ND	20	03/19/06	03/21/06	
Aroclor 1260	EPA 3545/8082	6C19021	540	1100	6400	20	03/19/06	03/21/06	

Surrogate: Decachlorobiphenyl (45-120%)

115 %

Z3

Sample ID: IPC1562-03 (MJ625 - Soil)

Reporting Units: ug/kg dry

Sampled: 02/14/06

Aroclor 1016	EPA 3545/8082	6C19021	100	540	ND	10	03/19/06	03/21/06	u
Aroclor 1221	EPA 3545/8082	6C19021	140	540	ND	10	03/19/06	03/21/06	
Aroclor 1232	EPA 3545/8082	6C19021	65	540	ND	10	03/19/06	03/21/06	
Aroclor 1242	EPA 3545/8082	6C19021	170	540	ND	10	03/19/06	03/21/06	
Aroclor 1248	EPA 3545/8082	6C19021	110	540	ND	10	03/19/06	03/21/06	
Aroclor 1254	EPA 3545/8082	6C19021	170	540	ND	10	03/19/06	03/21/06	
Aroclor 1260	EPA 3545/8082	6C19021	270	540	4800	10	03/19/06	03/21/06	

Surrogate: Decachlorobiphenyl (45-120%)

112 %

Z3

Del Mar Analytical - Irvine
 Michele Chamberlin
 Project Manager

Level 1

MWH-San Diego
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 6
 Data Gap
 Report Number: IPC1562

Sampled: 02/14/06-02/17/06
 Received: 03/13/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IPC1562-04 (MJ626 - Soil)					Sampled: 02/14/06					
Reporting Units: ug/kg dry										
Aroclor 1016	EPA 3545/8082	6C19021	210	1100	ND	20	03/19/06	03/21/06	↓	
Aroclor 1221	EPA 3545/8082	6C19021	280	1100	ND	20	03/19/06	03/21/06		
Aroclor 1232	EPA 3545/8082	6C19021	130	1100	ND	20	03/19/06	03/21/06		
Aroclor 1242	EPA 3545/8082	6C19021	350	1100	ND	20	03/19/06	03/21/06		
Aroclor 1248	EPA 3545/8082	6C19021	220	1100	ND	20	03/19/06	03/21/06		
Aroclor 1254	EPA 3545/8082	6C19021	350	1100	ND	20	03/19/06	03/21/06		
Aroclor 1260	EPA 3545/8082	6C19021	550	1100	7800	20	03/19/06	03/21/06		
Surrogate: Decachlorobiphenyl (45-120%)					129 %					Z3
Sample ID: IPC1562-05 (MJ627 - Soil)					Sampled: 02/14/06					
Reporting Units: ug/kg dry										
Aroclor 1016	EPA 3545/8082	6C19021	11	56	ND	1	03/19/06	03/20/06	↓	
Aroclor 1221	EPA 3545/8082	6C19021	15	56	ND	1	03/19/06	03/20/06		
Aroclor 1232	EPA 3545/8082	6C19021	6.7	56	NTD	1	03/19/06	03/20/06		
Aroclor 1242	EPA 3545/8082	6C19021	18	56	ND	1	03/19/06	03/20/06		
Aroclor 1248	EPA 3545/8082	6C19021	11	56	ND	1	03/19/06	03/20/06		
Aroclor 1254	EPA 3545/8082	6C19021	18	56	ND	1	03/19/06	03/20/06		
Aroclor 1260	EPA 3545/8082	6C19021	28	56	140	1	03/19/06	03/20/06		
Surrogate: Decachlorobiphenyl (45-120%)					72 %					
Sample ID: IPC1562-06 (MJ669 - Soil)					Sampled: 02/16/06					
Reporting Units: ug/kg dry										
Aroclor 1016	EPA 3545/8082	6C19021	9.9	52	ND	1	03/19/06	03/20/06	↓	
Aroclor 1221	EPA 3545/8082	6C19021	14	52	ND	1	03/19/06	03/20/06		
Aroclor 1232	EPA 3545/8082	6C19021	6.2	52	ND	1	03/19/06	03/20/06		
Aroclor 1242	EPA 3545/8082	6C19021	17	52	ND	1	03/19/06	03/20/06		
Aroclor 1248	EPA 3545/8082	6C19021	10	52	ND	1	03/19/06	03/20/06		
Aroclor 1254	EPA 3545/8082	6C19021	17	52	75	1	03/19/06	03/20/06		
Aroclor 1260	EPA 3545/8082	6C19021	26	52	43	1	03/19/06	03/20/06		
Surrogate: Decachlorobiphenyl (45-120%)					83 %					JL A-0100

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 Michele Chamberlin
 Project Manager

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10461 Denham Ave. Suite 100, Irvine, CA 92614-9900 TEL: 949-450-1234 FAX: 949-450-1235
 1014 E. Coover Dr. Suite A, Chino, CA 91704 TEL: 909-376-4447 FAX: 909-376-4448
 9830 South 51st St. Suite B, Phoenix, AZ 85044-1480 TEL: 480-753-0123 FAX: 480-753-0124
 1520 E. Sunset Rd. #100, Las Vegas, NV 89119-1100 TEL: 702-738-1000 FAX: 702-738-1001

MWH-San Diego
 5444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 6
 Data Gap
 Report Number: IPC1562

Sampled: 02/14/06-02/17/06
 Received: 03/17/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPC1562-07 (MJ670 - Soil)					Sampled: 02/16/06				
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6C19021	9.9	52	ND	1	03/19/06	03/20/06	Test Qual ↓ A-01a A-01a
Aroclor 1221	EPA 3545/8082	6C19021	14	52	ND	1	03/19/06	03/20/06	
Aroclor 1232	EPA 3545/8082	6C19021	6.2	52	ND	1	03/19/06	03/20/06	
Aroclor 1242	EPA 3545/8082	6C19021	17	52	ND	1	03/19/06	03/20/06	
Aroclor 1248	EPA 3545/8082	6C19021	10	52	ND	1	03/19/06	03/20/06	
Aroclor 1254	EPA 3545/8082	6C19021	17	52	37	1	03/19/06	03/20/06	
Aroclor 1260	EPA 3545/8082	6C19021	26	52	46	1	03/19/06	03/20/06	
Surrogate: Decachlorobiphenyl (45-120%)					77 %				
Sample ID: IPC1562-08 (MJ671 - Soil)					Sampled: 02/16/06				
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6C19021	11	56	ND	1	03/19/06	03/20/06	Test Qual ↓ A-01a A-01a
Aroclor 1221	EPA 3545/8082	6C19021	14	56	ND	1	03/19/06	03/20/06	
Aroclor 1232	EPA 3545/8082	6C19021	6.7	56	ND	1	03/19/06	03/20/06	
Aroclor 1242	EPA 3545/8082	6C19021	18	56	ND	1	03/19/06	03/20/06	
Aroclor 1248	EPA 3545/8082	6C19021	11	56	ND	1	03/19/06	03/20/06	
Aroclor 1254	EPA 3545/8082	6C19021	18	56	120	1	03/19/06	03/20/06	
Aroclor 1260	EPA 3545/8082	6C19021	28	56	85	1	03/19/06	03/20/06	
Surrogate: Decachlorobiphenyl (45-120%)					88 %				
Sample ID: IPC1562-09 (MJ672 - Soil)					Sampled: 02/16/06				
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6B22048	16	84	ND	1.5	02/22/06	02/23/06	Test Qual ↓ A-01a A-01a
Aroclor 1221	EPA 3545/8082	6B22048	22	84	ND	1.5	02/22/06	02/23/06	
Aroclor 1232	EPA 3545/8082	6B22048	10	84	ND	1.5	02/22/06	02/23/06	
Aroclor 1242	EPA 3545/8082	6B22048	27	84	ND	1.5	02/22/06	02/23/06	
Aroclor 1248	EPA 3545/8082	6B22048	17	84	ND	1.5	02/22/06	02/23/06	
Aroclor 1254	EPA 3545/8082	6B22048	27	84	ND	1.5	02/22/06	02/23/06	
Aroclor 1260	EPA 3545/8082	6B22048	42	84	ND	1.5	02/22/06	02/23/06	
Surrogate: Decachlorobiphenyl (45-120%)					69 %				

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 Project Manager

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17451 Orion Ave., Suite 100, Irvine, CA 92614 (949) 261-7022 FAX (949) 261-3797
 10114 E. Coolley Dr., Suite A, Culver, CA 92324 (951) 370-4602 FAX (951) 370-1046
 9830 South 51st St., Suite B 120, Phoenix, AZ 85044 (480) 755-1818 FAX (480) 755-0851
 2570 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3631

MWH-San Diego
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 6
 Data Gap
 Report Number: IPC1562

Sampled: 02/14/06-02/17/06
 Received: 03/13/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPC1562-10 (MJ688 - Soil)					Sampled: 02/17/06				<i>Base Qual</i> <i>Sub</i>
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6C19021	10	54	ND	1	03/19/06	03/21/06	u3 H4
Aroclor 1221	EPA 3545/8082	6C19021	14	54	ND	1	03/19/06	03/21/06	u3
Aroclor 1232	EPA 3545/8082	6C19021	6.5	54	ND	1	03/19/06	03/21/06	u3
Aroclor 1242	EPA 3545/8082	6C19021	17	54	ND	1	03/19/06	03/21/06	u3
Aroclor 1248	EPA 3545/8082	6C19021	11	54	100	1	03/19/06	03/21/06	u3
Aroclor 1254	EPA 3545/8082	6C19021	17	54	ND	1	03/19/06	03/21/06	u3
Aroclor 1260	EPA 3545/8082	6C19021	27	54	ND	1	03/19/06	03/21/06	u3
Surrogate: Decachlorobiphenyl (45-120%)					86 %				
Sample ID: IPC1562-11 (MJ689 - Soil)					Sampled: 02/17/06				H4
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6C19021	10	55	ND	1	03/19/06	03/21/06	u3
Aroclor 1221	EPA 3545/8082	6C19021	14	55	ND	1	03/19/06	03/21/06	u3
Aroclor 1232	EPA 3545/8082	6C19021	6.6	55	ND	1	03/19/06	03/21/06	u3
Aroclor 1242	EPA 3545/8082	6C19021	17	55	ND	1	03/19/06	03/21/06	u3
Aroclor 1248	EPA 3545/8082	6C19021	11	55	120	1	03/19/06	03/21/06	u3
Aroclor 1254	EPA 3545/8082	6C19021	17	55	ND	1	03/19/06	03/21/06	u3
Aroclor 1260	EPA 3545/8082	6C19021	27	55	ND	1	03/19/06	03/21/06	u3
Surrogate: Decachlorobiphenyl (45-120%)					106 %				
Sample ID: IPC1562-12 (MJ690 - Soil)					Sampled: 02/17/06				H4
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6C19021	10	55	ND	1	03/19/06	03/21/06	u3
Aroclor 1221	EPA 3545/8082	6C19021	14	55	ND	1	03/19/06	03/21/06	u3
Aroclor 1232	EPA 3545/8082	6C19021	6.6	55	ND	1	03/19/06	03/21/06	u3
Aroclor 1242	EPA 3545/8082	6C19021	18	55	ND	1	03/19/06	03/21/06	u3
Aroclor 1248	EPA 3545/8082	6C19021	11	55	310	1	03/19/06	03/21/06	u3 A-01
Aroclor 1254	EPA 3545/8082	6C19021	18	55	ND	1	03/19/06	03/21/06	u3
Aroclor 1260	EPA 3545/8082	6C19021	27	55	32	1	03/19/06	03/21/06	u3 A-01, J
Surrogate: Decachlorobiphenyl (45-120%)					123 %				Z5

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 Project Manager

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1014 E. Cooley Dr., Suite A, Cotton, CA 95224 (909) 370-4367 FAX (909) 370-1430
9810 South 71st St., Suite B 120, Phoenix, AZ 85044 (480) 785-0033 FAX (480) 785-0034
2320 E. Sunset Rd., #1, Las Vegas, NV 89120 (702) 758-3020 FAX (702) 758-3021

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPC1562

Sampled: 02-14/06-02-17/06
Received: 03-13/06

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPC1562-13 (MJ709 - Soil)					Sampled: 02/17/06				
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	6C19021	10	54	ND	1	03/19/06	03/21/06	H4
Aroclor 1221	EPA 3545/8082	6C19021	14	54	ND	1	03/19/06	03/21/06	H4
Aroclor 1232	EPA 3545/8082	6C19021	6.4	54	ND	1	03/19/06	03/21/06	H4
Aroclor 1242	EPA 3545/8082	6C19021	17	54	ND	1	03/19/06	03/21/06	H4
Aroclor 1248	EPA 3545/8082	6C19021	11	54	ND	1	03/19/06	03/21/06	H4
Aroclor 1254	EPA 3545/8082	6C19021	17	54	ND	1	03/19/06	03/21/06	H4
Aroclor 1260	EPA 3545/8082	6C19021	27	54	ND	1	03/19/06	03/21/06	H4
Surrogate Decachlorobiphenyl (45-120%)					89 %				

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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12269 East Vassar Drive, Aurora, CO 80014
303.881.6816, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: PAHs by Method 8270C/SIM
QC Level: V¹
SDG: IPD1477
Matrix: Soil/Water
No. of Samples: 6
No. of Reanalyses: 0
Date Reviewed: May 19, 2006
Reviewer: P. Meeks
Reference: USEPA *Contract Laboratory Program National Functional Guidelines for Organic Data Review (2/94)*
Samples Reviewed: MJ806, MJ807, MJ808, MJ809, MJ812, MJ813

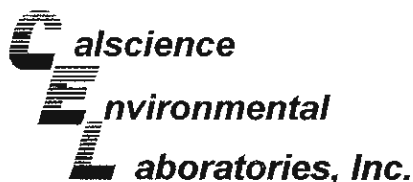
Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received at Del Mar within the temperature limits of 4°±2°C, at 6°C, and received at Calscience at 3.7°C. The original COC was signed and dated by field and laboratory personnel and accounted for the analyses presented in this SDG. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary. The transfer COC was signed by personnel from both laboratories.</p> <p>The soil samples were extracted within 14 days of collection and the waster samples were extracted within seven days of collection. All samples were analyzed within 40 days of extraction.</p>	No qualifications were required.
4. <u>Method Blanks</u> 060418L02-MB 060418L04-MB	There were no target compounds detected above the MDLs in the associated method blanks.	No qualifications were required.

DATA VALIDATION REPORT

	Findings	Qualifications
5. <u>LCS/BS</u> 060418L02-LCS/LCSD 060418L04-LCS/LCSD	The recoveries and RPDs for spiked compounds acenaphthene and pyrene were within the laboratory-established QC limits.	No qualifications were required.
6. <u>Surrogates</u>	The recoveries were within the laboratory-established QC limits.	No qualifications were required.
7. <u>MS/MSDs</u> none	None	None
9. <u>Field QC Samples</u> FB: MJ813 ER: MJ812 FD: MJ806/MJ807 MJ808/MJ809	<p>There were no target compound detects in either the field blank or the equipment rinsate.</p> <p>Naphthalene and 2-methylnaphthalene were detected below the reporting limit in MJ806 but were not detected in MJ807 and benzo(a)anthracene, benzo(k)fluoranthene, benzo(ghi)perylene, and dibenzene(a,h)anthracene were detected below the reporting limit in MJ807 but were not detected in MJ806. There were common detects below the reporting limit for fluoranthene, pyrene, chrysene, benzo(b)fluoranthene, and benzo(a)pyrene. Fluoranthene, pyrene, benzo(a)fluoranthene, chrysene, and benzo(b)fluoranthene were detected below the reporting limit in MJ808 but were not detected in MJ809. The pairs were considered to be in agreement.</p>	No qualifications were required.
10. <u>Other</u>	<p>There were target compounds detected below the reporting limit.</p> <p>Sample results were reported in units of mg/Kg (ppm) on a dry-weight basis.</p>	Target compounds detected below the reporting limit were qualified as estimated, "J."
<u>Comments</u>	None.	None.

¹ Level V validation consists of cursory review of the summary forms and chromatograms, and raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed include instrument tunes, initial and continuing calibrations, compound identification, and compound quantification.



Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received: 04/17/06
Work Order No: 06-04-0931
Preparation: EPA 3545
Method: EPA 8270C SIM PAHs
Units: mg/kg

Project: IPD1477

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Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IPD1477-06 MJ806	06-04-0931-1	04/13/06	Solid	04/18/06	04/22/06	060418L02

Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Raw Qual	Qual Code	Result	RL	MDL	DF	Qual	Parameter	Raw Qual	Qual Code	Result	RL	MDL	DF	Qual
Naphthalene	J		0.0079	0.023	0.0043	1.16	J	Benzo (a) Anthracene			ND	0.023	0.0030	1.16	
2-Methylnaphthalene	J		0.0075	0.023	0.0028	1.16	J	Chrysene			0.010	0.023	0.0055	1.16	J
Acenaphthylene			ND	0.023	0.0028	1.16		Benzo (k) Fluoranthene			ND	0.023	0.0052	1.16	
Acenaphthene			ND	0.023	0.0058	1.16		Benzo (b) Fluoranthene			0.0022	0.023	0.0016	1.16	J
Fluorene			ND	0.023	0.0035	1.16		Benzo (a) Pyrene			0.0026	0.023	0.0023	1.16	J
Phenanthrene			ND	0.023	0.0044	1.16		Benzo (g,h,i) Perylene			ND	0.023	0.0038	1.16	
Anthracene			ND	0.023	0.0072	1.16		Indeno (1,2,3-c,d) Pyrene			ND	0.023	0.0040	1.16	
Fluoranthene			0.0039	0.023	0.0023	1.16	J	Dibenz (a,h) Anthracene			ND	0.023	0.0031	1.16	
Pyrene			0.0093	0.023	0.0038	1.16	J	1-Methylnaphthalene			ND	0.023	0.0050	1.16	
Surrogates:			REC (%)	Control Limits			Qual	Surrogates:			REC (%)	Control Limits			Qual
Nitrobenzene-d5			127	28-139				2-Fluorobiphenyl			111	33-144			
p-Terphenyl-d14			102	23-160											

IPD1477-07 MJ807	06-04-0931-2	04/13/06	Solid	04/18/06	04/22/06	060418L02
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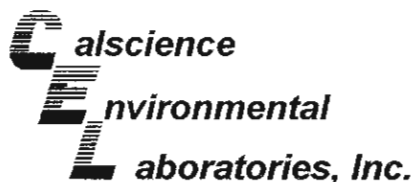
Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations \geq to the MDL but $<$ RL, if found, are qualified with a "J" flag.

Parameter	Raw Qual	Qual Code	Result	RL	MDL	DF	Qual	Parameter	Raw Qual	Qual Code	Result	RL	MDL	DF	Qual
Naphthalene			ND	0.023	0.0043	1.17		Benzo (a) Anthracene	J		0.0050	0.023	0.0031	1.17	J
2-Methylnaphthalene			ND	0.023	0.0028	1.17		Chrysene			0.024	0.023	0.0055	1.17	
Acenaphthylene			ND	0.023	0.0028	1.17		Benzo (k) Fluoranthene	J		0.011	0.023	0.0052	1.17	J
Acenaphthene			ND	0.023	0.0058	1.17		Benzo (b) Fluoranthene			0.013	0.023	0.0016	1.17	J
Fluorene			ND	0.023	0.0036	1.17		Benzo (a) Pyrene			0.0047	0.023	0.0023	1.17	J
Phenanthrene			ND	0.023	0.0044	1.17		Benzo (g,h,i) Perylene			0.0069	0.023	0.0038	1.17	J
Anthracene			ND	0.023	0.0072	1.17		Indeno (1,2,3-c,d) Pyrene			ND	0.023	0.0040	1.17	
Fluoranthene			0.0041	0.023	0.0023	1.17	J	Dibenz (a,h) Anthracene	J		0.0039	0.023	0.0031	1.17	J
Pyrene			0.014	0.023	0.0038	1.17	J	1-Methylnaphthalene			ND	0.023	0.0050	1.17	
Surrogates:			REC (%)	Control Limits			Qual	Surrogates:			REC (%)	Control Limits			Qual
Nitrobenzene-d5			120	28-139				2-Fluorobiphenyl			97	33-144			
p-Terphenyl-d14			102	23-160											

LEVEL V

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers



Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received: 04/17/06
Work Order No: 06-04-0931
Preparation: EPA 3545
Method: EPA 8270C SIM PAHs
Units: mg/kg

Project: IPD1477

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Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IPD1477-08 MJ808	06-04-0931-3	04/13/06	Solid	04/18/06	04/22/06	060418L02

Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Rev Qual	Qual Code	Result	RL	MDL	DF	Qual	Parameter	Rev Qual	Qual Code	Result	RL	MDL	DF	Qual
Naphthalene	U		ND	0.025	0.0046	1.24		Benzo (a) Anthracene	J		0.0055	0.025	0.0032	1.24	J
2-Methylnaphthalene			ND	0.025	0.0030	1.24		Chrysene	J		0.0078	0.025	0.0059	1.24	J
Acenaphthylene			ND	0.025	0.0030	1.24		Benzo (k) Fluoranthene			ND	0.025	0.0056	1.24	
Acenaphthene			ND	0.025	0.0062	1.24		Benzo (b) Fluoranthene	J		0.0023	0.025	0.0017	1.24	J
Fluorene			ND	0.025	0.0038	1.24		Benzo (a) Pyrene			ND	0.025	0.0024	1.24	
Phenanthrene			ND	0.025	0.0047	1.24		Benzo (g,h,i) Perylene			ND	0.025	0.0041	1.24	
Anthracene			ND	0.025	0.0077	1.24		Indeno (1,2,3-c,d) Pyrene			ND	0.025	0.0043	1.24	
Fluoranthene			0.0061	0.025	0.0024	1.24	J	Dibenz (a,h) Anthracene			ND	0.025	0.0033	1.24	
Pyrene			0.0051	0.025	0.0041	1.24	J	1-Methylnaphthalene			ND	0.025	0.0053	1.24	
Surrogates:			REC (%)	Control Limits			Qual	Surrogates:			REC (%)	Control Limits			Qual
Nitrobenzene-d5			130	28-139				2-Fluorobiphenyl			84	33-144			
p-Terphenyl-d14			90	23-160											

IPD1477-09 MJ809	06-04-0931-4	04/13/06	Solid	04/18/06	04/22/06	060418L02
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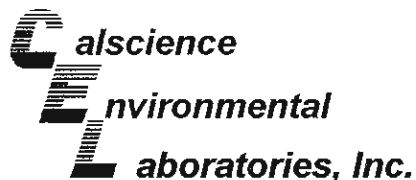
Comment(s): -Results are reported on a dry weight basis.

-Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Rev Qual	Qual Code	Result	RL	MDL	DF	Qual	Parameter	Rev Qual	Qual Code	Result	RL	MDL	DF	Qual
Naphthalene	U		ND	0.024	0.0044	1.19		Benzo (a) Anthracene	U		ND	0.024	0.0031	1.19	
2-Methylnaphthalene			ND	0.024	0.0028	1.19		Chrysene			ND	0.024	0.0056	1.19	
Acenaphthylene			ND	0.024	0.0029	1.19		Benzo (k) Fluoranthene			ND	0.024	0.0054	1.19	
Acenaphthene			ND	0.024	0.0060	1.19		Benzo (b) Fluoranthene			ND	0.024	0.0017	1.19	
Fluorene			ND	0.024	0.0036	1.19		Benzo (a) Pyrene			ND	0.024	0.0023	1.19	
Phenanthrene			ND	0.024	0.0045	1.19		Benzo (g,h,i) Perylene			ND	0.024	0.0039	1.19	
Anthracene			ND	0.024	0.0074	1.19		Indeno (1,2,3-c,d) Pyrene			ND	0.024	0.0041	1.19	
Fluoranthene			ND	0.024	0.0023	1.19		Dibenz (a,h) Anthracene			ND	0.024	0.0032	1.19	
Pyrene			ND	0.024	0.0039	1.19		1-Methylnaphthalene			ND	0.024	0.0051	1.19	
Surrogates:			REC (%)	Control Limits			Qual	Surrogates:			REC (%)	Control Limits			Qual
Nitrobenzene-d5			59	28-139				2-Fluorobiphenyl			114	33-144			
p-Terphenyl-d14			78	23-160											

LEVEL V

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report

Del Mar Analytical
17461 Derian Avenue, Suite 100
Irvine, CA 92614-5845

Date Received: 04/17/06
Work Order No: 06-04-0931
Preparation: EPA 3510B
Method: EPA 8270C SIM PAHs
Units: ug/L

Project: IPD1477

Page 1 of 2

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
IPD1477-12 <i>MJ812</i>	06-04-0931-5	04/13/06	Aqueous	04/18/06	04/21/06	060418L04

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Raw Qual	Qual Code	Result	RL	MDL	DF	Qual	Parameter	Raw Qual	Qual Code	Result	RL	MDL	DF	Qual
Naphthalene	U		ND	0.95	0.10	0.953		Pyrene	U		ND	0.95	0.12	0.953	
2-Methylnaphthalene			ND	0.95	0.095	0.953		Benzo (a) Anthracene			ND	0.95	0.21	0.953	
1-Methylnaphthalene			ND	0.95	0.10	0.953		Chrysene			ND	0.95	0.13	0.953	
Acenaphthylene			ND	0.95	0.16	0.953		Benzo (k) Fluoranthene			ND	0.95	0.33	0.953	
Acenaphthene			ND	0.95	0.12	0.953		Benzo (b) Fluoranthene			ND	0.95	0.25	0.953	
Fluorene			ND	0.95	0.17	0.953		Benzo (a) Pyrene			ND	0.95	0.14	0.953	
Phenanthrene			ND	0.95	0.13	0.953		Indeno (1,2,3-c,d) Pyrene			ND	0.95	0.17	0.953	
Anthracene			ND	0.95	0.17	0.953		Dibenz (a,h) Anthracene			ND	0.95	0.21	0.953	
Fluoranthene			ND	0.95	0.14	0.953		Benzo (g,h,i) Perylene			ND	0.95	0.14	0.953	
Surrogates:			REC (%)	Control Limits			Qual	Surrogates:			REC (%)	Control Limits			Qual
Nitrobenzene-d5			112	28-139				2-Fluorobiphenyl			101	33-144			
p-Terphenyl-d14			115	23-160											

IPD1477-13 <i>MJ813</i>	06-04-0931-6	04/13/06	Aqueous	04/18/06	04/21/06	060418L04
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Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Raw Qual	Qual Code	Result	RL	MDL	DF	Qual	Parameter	Raw Qual	Qual Code	Result	RL	MDL	DF	Qual
Naphthalene	U		ND	0.96	0.10	0.962		Pyrene	U		ND	0.96	0.13	0.962	
2-Methylnaphthalene			ND	0.96	0.096	0.962		Benzo (a) Anthracene			ND	0.96	0.21	0.962	
1-Methylnaphthalene			ND	0.96	0.10	0.962		Chrysene			ND	0.96	0.13	0.962	
Acenaphthylene			ND	0.96	0.16	0.962		Benzo (k) Fluoranthene			ND	0.96	0.34	0.962	
Acenaphthene			ND	0.96	0.12	0.962		Benzo (b) Fluoranthene			ND	0.96	0.25	0.962	
Fluorene			ND	0.96	0.17	0.962		Benzo (a) Pyrene			ND	0.96	0.14	0.962	
Phenanthrene			ND	0.96	0.13	0.962		Indeno (1,2,3-c,d) Pyrene			ND	0.96	0.17	0.962	
Anthracene			ND	0.96	0.17	0.962		Dibenz (a,h) Anthracene			ND	0.96	0.21	0.962	
Fluoranthene			ND	0.96	0.14	0.962		Benzo (g,h,i) Perylene			ND	0.96	0.14	0.962	
Surrogates:			REC (%)	Control Limits			Qual	Surrogates:			REC (%)	Control Limits			Qual
Nitrobenzene-d5			121	28-139				2-Fluorobiphenyl			103	33-144			
p-Terphenyl-d14			124	23-160											

LEVEL V

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers



12269 East Vassar Drive, Aurora, CO 80014
720.535.5502, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: TFH (EFH) by EPA Method 8015M
QC Level: V¹
SDG: IPB1719
Matrix: Soil
No. of Samples: 7
No. of Reanalyses/Dilutions: 0
Date Reviewed: March 17, 2006
Reviewer: L. Calvin
Reference: USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (2/94)
Samples Reviewed: MJ661, MJ662, MJ663, MJ664, MJ682, MJ683, MJ684

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received at Del Mar within the temperature limits of $4^{\circ} \pm 2^{\circ}\text{C}$, at 3°C. The COC was signed and dated by field and laboratory personnel. EFH analyses were requested for sample MJ683 as per a memo from MWH personnel dated 3/22/06. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary.</p> <p>MJ682 was extracted beyond the 14 day holding time. The remaining soil samples were extracted within 14 days of collection, and were analyzed within 40 days of extraction.</p>	<p>No qualifications were required.</p> <p>EFH hydrocarbon ranges in MJ682 were qualified as estimated, "J," for detects and "UJ" for nondetects.</p>
4. <u>Method Blanks</u> 6B24056-BLK1 6C28088-BLK1	<p>There were no detects for the EFH hydrocarbon ranges in the soil method blanks.</p>	<p>No qualifications were required.</p>

	Findings	Qualifications
5. <u>LCS/BS</u> 6B24056-BS1 6C28088-BS1	The recoveries for total EFH (C8-C30) were within the laboratory QC limits of 40-120%.	No qualifications were required.
6. <u>Surrogates</u>	The sample surrogate recoveries were within the laboratory QC limits of 40-125%.	No qualifications were required.
7. <u>MS/MSDs</u>	MS/MSD analyses were not performed on the samples of this SDG.	No qualifications were required.
9. <u>Field QC Samples</u> FB: None ER: MJ632 (IPB1429) FD: MJ683/MJ684	<p>The equipment rinsate had a detect below the reporting limit for EFH (C21-C30) at a concentration of 0.13 mg/L. Any detects for EFH (C21-C30) in the site samples were greater than five times the equipment rinsate concentration.</p> <p>The field duplicate samples had common detects for EFH (C15-C20) below the reporting limit and EFH (C21-C30) above the reporting limit, with RPDs <100%. The pair was considered to be in agreement.</p>	No qualifications were required.
10. <u>Other</u>	<p>The soil samples were reported on a dry-weight basis in units of mg/Kg. Four EFH hydrocarbon ranges were reported: C8-C11, C12-C14, C15-C20, and C21-C30, as well as a total, C8-C30.</p> <p>All of the samples had 2 ml final extract volumes (rather than 1 ml) resulting in effective dilutions of 2x. Reporting limits were adjusted accordingly.</p> <p>Any sample detects between the MDL and the reporting limit were qualified as estimated, "J."</p>	Results for total EFH (C8-C30) were rejected, "R," as duplicate data, as the total result was represented by the four separate ranges.
<u>Comments</u>	None.	None.

¹ Level V validation consists of cursory review of the summary forms only; raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed included instrument performance, analytical sequence, initial calibration, continuing calibration, compound identification, and compound quantification.



17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPB1719

Sampled: 02/16/06
Received: 02/16/06

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1719-16 (MJ682 - Soil)									
Reporting Units: mg/kg dry									
EFH (C8 - C30)	EPA 8015 MOD.	6C28088	3.6	10	75	2	03/28/06	03/28/06	Raw H-1
EFH (C8 - C11)	EPA 8015 MOD.	6C28088	3.6	10	ND	2	03/28/06	03/28/06	Qual H-1
EFH (C12 - C14)	EPA 8015 MOD.	6C28088	3.6	10	ND	2	03/28/06	03/28/06	Qual H-1
EFH (C15 - C20)	EPA 8015 MOD.	6C28088	3.6	10	4.2	2	03/28/06	03/28/06	Qual H-1
EFH (C21 - C30)	EPA 8015 MOD.	6C28088	3.6	10	69	2	03/28/06	03/28/06	Qual H-1
Surrogate: n-Octacosane (40-125%)					46 %				

pm 5/4/06

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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LEVEL V
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Del Mar Analytical

17461 Denan Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-1291
1014 E. Copley Dr., Suite A, Folsom, CA 95734 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0651
2520 E. Sunset Rd., #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPB1719

Sampled: 02/16/06
Received: 02/16/06

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1719-01 (MJ661 - Soil)									
Reporting Units: mg/kg dry									
EFH (C8 - C30)	EPA 8015 MOD.	6B24056	4.2	12	4.5	2	02/24/06	02/24/06	RL-1
EFH (C8 - C11)	EPA 8015 MOD.	6B24056	4.2	12	ND	2	02/24/06	02/24/06	RL-1
EFH (C12 - C14)	EPA 8015 MOD.	6B24056	4.2	12	ND	2	02/24/06	02/24/06	RL-1
EFH (C15 - C20)	EPA 8015 MOD.	6B24056	4.2	12	ND	2	02/24/06	02/24/06	RL-1
EFH (C21 - C30)	EPA 8015 MOD.	6B24056	4.2	12	ND	2	02/24/06	02/24/06	RL-1
Surrogate: n-Octacosane (40-125%)					75 %	RL-1			
Sample ID: IPB1719-02 (MJ662 - Soil)									
Reporting Units: mg/kg dry									
EFH (C8 - C30)	EPA 8015 MOD.	6B24056	4.0	11	8.2	2	02/24/06	02/25/06	RL-1
EFH (C8 - C11)	EPA 8015 MOD.	6B24056	4.0	11	ND	2	02/24/06	02/25/06	RL-1
EFH (C12 - C14)	EPA 8015 MOD.	6B24056	4.0	11	ND	2	02/24/06	02/25/06	RL-1
EFH (C15 - C20)	EPA 8015 MOD.	6B24056	4.0	11	ND	2	02/24/06	02/25/06	RL-1
EFH (C21 - C30)	EPA 8015 MOD.	6B24056	4.0	11	ND	2	02/24/06	02/25/06	RL-1
Surrogate: n-Octacosane (40-125%)					93 %	RL-1			
Sample ID: IPB1719-03 (MJ663 - Soil)									
Reporting Units: mg/kg dry									
EFH (C8 - C30)	EPA 8015 MOD.	6B24056	4.0	11	6.7	2	02/24/06	02/25/06	RL-1
EFH (C8 - C11)	EPA 8015 MOD.	6B24056	4.0	11	ND	2	02/24/06	02/25/06	RL-1
EFH (C12 - C14)	EPA 8015 MOD.	6B24056	4.0	11	ND	2	02/24/06	02/25/06	RL-1
EFH (C15 - C20)	EPA 8015 MOD.	6B24056	4.0	11	ND	2	02/24/06	02/25/06	RL-1
EFH (C21 - C30)	EPA 8015 MOD.	6B24056	4.0	11	5.0	2	02/24/06	02/25/06	RL-1
Surrogate: n-Octacosane (40-125%)					79 %	RL-1			
Sample ID: IPB1719-04 (MJ664 - Soil)									
Reporting Units: mg/kg dry									
EFH (C8 - C30)	EPA 8015 MOD.	6B24056	3.9	11	7.9	2	02/24/06	02/25/06	RL-1
EFH (C8 - C11)	EPA 8015 MOD.	6B24056	3.9	11	ND	2	02/24/06	02/25/06	RL-1
EFH (C12 - C14)	EPA 8015 MOD.	6B24056	3.9	11	ND	2	02/24/06	02/25/06	RL-1
EFH (C15 - C20)	EPA 8015 MOD.	6B24056	3.9	11	ND	2	02/24/06	02/25/06	RL-1
EFH (C21 - C30)	EPA 8015 MOD.	6B24056	3.9	11	6.3	2	02/24/06	02/25/06	RL-1
Surrogate: n-Octacosane (40-125%)					75 %	RL-1			
Sample ID: IPB1719-17 (MJ683 - Soil)									
Reporting Units: mg/kg dry									
EFH (C8 - C30)	EPA 8015 MOD.	6B24056	4.0	11	64	2	02/24/06	02/25/06	RL-1
EFH (C8 - C11)	EPA 8015 MOD.	6B24056	4.0	11	ND	2	02/24/06	02/25/06	RL-1
EFH (C12 - C14)	EPA 8015 MOD.	6B24056	4.0	11	ND	2	02/24/06	02/25/06	RL-1
EFH (C15 - C20)	EPA 8015 MOD.	6B24056	4.0	11	8.8	2	02/24/06	02/25/06	RL-1
EFH (C21 - C30)	EPA 8015 MOD.	6B24056	4.0	11	52	2	02/24/06	02/25/06	RL-1
Surrogate: n-Octacosane (40-125%)					75 %	RL-1			

Del Mar Analytical, Irvine
Michele Chamberlin
Project Manager

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17461 Clemen Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 266-1297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
 9030 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 783-0851
 2520 E. Sunset Rd., #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSF1 Group 6
 Data Gap
 Report Number: IPB1719

Sampled: 02/16/06
 Received: 02/16/06

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1719-18 (MJ684 - Soil)									
Reporting Units: mg/kg dry									
EFH (C8 - C30)	EPA 8015 MOD.	6B24056	4.0	11	85	2	02/24/06	02/25/06	new qual. code
EFH (C8 - C11)	EPA 8015 MOD.	6B24056	4.0	11	ND	2	02/24/06	02/25/06	u.
EFH (C12 - C14)	EPA 8015 MOD.	6B24056	4.0	11	ND	2	02/24/06	02/25/06	u.
EFH (C15 - C20)	EPA 8015 MOD.	6B24056	4.0	11	10	2	02/24/06	02/25/06	J
EFH (C21 - C30)	EPA 8015 MOD.	6B24056	4.0	11	71	2	02/24/06	02/25/06	
Surrogate: n-Octacosane (40-125%)					73 %				

Del Mar Analytical, Irvine
 Michele Chamberlin
 Project Manager

Level II

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720.535.5502, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: TFH (EFH) by EPA Method 8015M
QC Level: V¹
SDG: IPB2004
Matrix: Soil
No. of Samples: 3
No. of Reanalyses/Dilutions: 0
Date Review ed: March 16, 2006
Review er: L. Calvin
Reference: USEPA *Contract Laboratory Program National Functional Guidelines For Organic Data Review(2/94)*
Samples Review ed: MJ720, MJ721, MJ722

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received at Del Mar above the temperature limits of 4° ? 2°C, at 7°C; however, the samples had not had sufficient time to cool in transit. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary. The COC was signed and dated by field and laboratory personnel and accounted for the analyses presented in this SDG.</p> <p>The soil samples were extracted within 14 days of collection, and were analyzed within 40 days of extraction.</p>	No qualifications were required.
4. <u>Method Blanks</u> 6C01057-MB	There were no detects for the EFH hydrocarbon ranges in the soil method blank.	No qualifications were required.

	Findings	Qualifications
5. <u>LCS/BS</u> 6C01057-BS1	The recovery for total EFH (C8-C30) was within the laboratory QC limits of 40-120%.	No qualifications were required.
6. <u>Surrogates</u>	The sample surrogate recoveries were within the laboratory QC limits of 40-125%.	No qualifications were required.
7. <u>MS/MSDs</u>	MS/MSD analyses were not performed on the samples of this SDG.	No qualifications were required.
9. <u>Field QC Samples</u> FB: None ER: None FD: None	There were no identified field QC samples associated with the site samples in this SDG.	No qualifications were required.
10. <u>Other</u>	<p>The soil samples were reported on a dry-weight basis in units of mg/Kg. Four EFH hydrocarbon ranges were reported: C8-C11, C12-C14, C15-C20, and C21-C30, as well as a total, C8-C30.</p> <p>Any sample detects between the MDL and the reporting limit were qualified as estimated, "J;" however, no reportable "J" values were detected in this SDG.</p>	Results for total EFH (C8-C30) were rejected, "R," as duplicate data, as the total result was represented by the four separate ranges.
<u>Comments</u>	None.	None.

¹ Level V validation consists of cursory review of the summary forms only; raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed included instrument performance, analytical sequence, initial calibration, continuing calibration, compound identification, and compound quantification.

MWH-San Diego
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 6
 Data Gap
 Report Number: IPB2004

Sampled: 02/21/06
 Received: 02/22/06

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB2004-01 (MJ720 - Soil)									
Reporting Units: mg/kg dry									
EFH (C8 - C30)	EPA 8015 MOD.	6C01057	2.2	6.0	2.2	1	03/01/06	03/01/06	R J D
EFH (C8 - C11)	EPA 8015 MOD.	6C01057	2.2	6.0	ND	1	03/01/06	03/01/06	u
EFH (C12 - C14)	EPA 8015 MOD.	6C01057	2.2	6.0	ND	1	03/01/06	03/01/06	↓
EFH (C15 - C20)	EPA 8015 MOD.	6C01057	2.2	6.0	ND	1	03/01/06	03/01/06	↓
EFH (C21 - C30)	EPA 8015 MOD.	6C01057	2.2	6.0	ND	1	03/01/06	03/01/06	↓
Surrogate: n-Octacosane (40-125%)					71 %				
Sample ID: IPB2004-02 (MJ721 - Soil)									
Reporting Units: mg/kg dry									
EFH (C8 - C30)	EPA 8015 MOD.	6C01057	2.1	5.7	ND	0.999	03/01/06	03/01/06	R D
EFH (C8 - C11)	EPA 8015 MOD.	6C01057	2.1	5.7	ND	0.999	03/01/06	03/01/06	u
EFH (C12 - C14)	EPA 8015 MOD.	6C01057	2.1	5.7	ND	0.999	03/01/06	03/01/06	↓
EFH (C15 - C20)	EPA 8015 MOD.	6C01057	2.1	5.7	ND	0.999	03/01/06	03/01/06	↓
EFH (C21 - C30)	EPA 8015 MOD.	6C01057	2.1	5.7	ND	0.999	03/01/06	03/01/06	↓
Surrogate: n-Octacosane (40-125%)					72 %				
Sample ID: IPB2004-03 (MJ722 - Soil)									
Reporting Units: mg/kg dry									
EFH (C8 - C30)	EPA 8015 MOD.	6C01057	2.0	5.6	ND	0.999	03/01/06	03/01/06	R D
EFH (C8 - C11)	EPA 8015 MOD.	6C01057	2.0	5.6	ND	0.999	03/01/06	03/01/06	u
EFH (C12 - C14)	EPA 8015 MOD.	6C01057	2.0	5.6	ND	0.999	03/01/06	03/01/06	↓
EFH (C15 - C20)	EPA 8015 MOD.	6C01057	2.0	5.6	ND	0.999	03/01/06	03/01/06	↓
EFH (C21 - C30)	EPA 8015 MOD.	6C01057	2.0	5.6	ND	0.999	03/01/06	03/01/06	↓
Surrogate: n-Octacosane (40-125%)					67 %				

Del Mar Analytical, Irvine
 Michele Chamberlin
 Project Manager

Level II

OGDEN

ENVIRONMENTAL AND ENERGY SERVICES



1

550 South Wadsworth Blvd. Ste. 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: 6010/7000

No. of Samples: 17

Date Completed: August 5, 1998

Reviewer: K. Okonczak-Lowry

Ref: USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994), Columbia Analytical Services, Inc. - Canoga Park, Determination of Trace Elements by Inductively Coupled Plasma, Optical Emission Spectrometry SOP ICP-OES, Revision 1.0 (8/96). Columbia Analytical Services, Inc. - Canoga Park, Graphite Furnace Atomic Absorption Spectrometry SOP GFA-GFAA, Revision 1.0 (8/96). Columbia Analytical Services, Inc. - Canoga Park, Mercury in Solid or Semisolid Waste SOP MET-7471, Revision 2.0 (3/98).

SDG: L9703547

Samples Reviewed: RF007, RF008, RF009, RF010, RF011, RF012, RF013, RF014, RF015, RF016, RF017, RF018, RF019, RF661, RF030, RF031, RF032

EPA Level V- Metals Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	The sample condition questions were answered on the COC for RF661 but were not answered on any of the other applicable COCs. Sample cooler temperatures upon receipt were not noted, and only some of the COCs were signed by the laboratory.	Due to the nonvolatile nature of the analytes, the samples were not qualified for the lack of the temperature blank information.
2. <u>Method Blanks</u>	None. All method blank results were below laboratory determined PQLs.	None
3. <u>LCS</u>	The LCS results were within the laboratory established control limits of 75-125%R.	None
4. <u>Duplicates</u>	None performed.	None
5. <u>MS/MSDs</u> Performed on soil sample RF010	Antimony: MS at 42%R/MSD at 24%R	Antimony soil sample detects qualified "J" and antimony nondetects rejected,

	Problems	Qualifications
	Antimony MS/MSD %RPD at 53.4%.	“R” Antimony detected in ample RF661 qualified “J” due to the high %RPD between the spiked aliquots.
6. <u>Furnace Atomic Absorption QC</u> Post digestion spikes performed on samples RF007 and RF015	The post digestion spike recoveries for the arsenic, selenium, and thallium analyses were within the 85-115%R control limit. The validator determined the post spike results by reviewing the GFAA raw data.	None
7. <u>ICP Serial Dilution</u> Performed on sample RF661	Copper: 15.2%D Zinc: 21.6%D There was no ICP serial dilution form in the report. The validator determined the serial dilution results by reviewing the ICP raw data.	The copper and zinc soil sample detects were qualified “J.”
8. <u>Field QC Samples</u> ER samples: RF020, RF803, and RF149 FB sample: RS682 Field Duplicates: None identified for this SDG	ER RF149: Zinc at 160 g/L	Zinc detected in soil samples RF031 and RF032 qualified “J.”
9. <u>Other</u>		
10. <u>Comments</u>	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne 313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Metals

Sample Name: RF007
 Lab Code: L9703547-002
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev	Qual Code
Antimony, Total	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	R	Q
Arsenic, Total	EPA 3050	7060	6	1	10/22/97	10/22/97	6	U	u	
Barium, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	69			
Beryllium, Total	EPA 3050	6010	0.6	1	10/22/97	10/22/97	0.6	U	u	
Cadmium, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Chromium, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	14			
Cobalt, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	5			
Copper, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	14	J	J	A
Lead, Total	EPA 3050	6010	6	1	10/22/97	10/22/97	6	U	u	
Mercury, Total	METHOD	7471	0.3	1	10/22/97	10/22/97	0.3	U	u	
Molybdenum, Total	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	u	
Nickel, Total	EPA 3050	6010	6	1	10/22/97	10/22/97	11			
Selenium, Total	EPA 3050	7740	6	1	10/22/97	10/22/97	6	U	u	
Silver, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Thallium, Total	EPA 3050	7841	6	1	10/22/97	10/22/97	6	U	u	
Vanadium, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	26			
Zinc, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	54		J	A

1102
 8/05/98

CODEN VALIDATED

LEVEL V

Approved By: J. P. [Signature]
 1544-0211979

Date: 1/14/98

5001

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Metals

Sample Name: RF008
 Lab Code: L9703547-003
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony, Total	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	R	Q
Arsenic, Total	EPA 3050	7060	6	1	10/22/97	10/22/97	8			
Barium, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	61			
Beryllium, Total	EPA 3050	6010	0.6	1	10/22/97	10/22/97	0.6	U	u	
Cadmium, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Chromium, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	12			
Cobalt, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	5			
Copper, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	5		J	A
Lead, Total	EPA 3050	6010	6	1	10/22/97	10/22/97	6	U	u	
Mercury, Total	METHOD	7471	0.3	1	10/22/97	10/22/97	0.3	U	u	
Molybdenum, Total	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	u	
Nickel, Total	EPA 3050	6010	6	1	10/22/97	10/22/97	8			
Selenium, Total	EPA 3050	7740	6	1	10/22/97	10/22/97	6	U	u	
Silver, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Thallium, Total	EPA 3050	7841	6	1	10/22/97	10/22/97	6	U	u	
Vanadium, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	23			
Zinc, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	38		J	A

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1834/b21397p

Date: 11/12/97

5002

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Metals

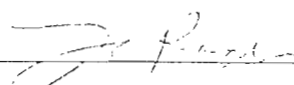
Sample Name: RF009
 Lab Code: L9703547-004
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev. Qual	Qual Code
Antimony, Total	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	R	Q
Arsenic, Total	EPA 3050	7060	6	1	10/22/97	10/22/97	8			
Barium, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	53			
Beryllium, Total	EPA 3050	6010	0.6	1	10/22/97	10/22/97	0.6	U	u	
Cadmium, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Chromium, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	14			
Cobalt, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	3			
Copper, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	5		J	A
Lead, Total	EPA 3050	6010	6	1	10/22/97	10/22/97	6	U	u	
Mercury, Total	METHOD	7471	0.3	1	10/22/97	10/22/97	0.3	U	u	
Molybdenum, Total	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	u	
Nickel, Total	EPA 3050	6010	6	1	10/22/97	10/22/97	9			
Selenium, Total	EPA 3050	7740	6	1	10/22/97	10/22/97	6	U	u	
Silver, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Thallium, Total	EPA 3050	7841	6	1	10/22/97	10/22/97	6	U	u	
Vanadium, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	29			
Zinc, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	41		J	A

OGDEN VALIDATED

LEVEL V

Approved By: 
 1344/021397p

Date: 1/2/98

5003

Analytical Report

Service Request: L9703547
Date Collected: 10/16/97
Date Received: 10/17/97

Sample Name: RF010
Lab Code: L9703547-005
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result	Rev	Qual
								Notes	Qual	Code
Antimony, Total	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	R	Q
Arsenic, Total	EPA 3050	7060	6	1	10/22/97	10/22/97	7			
Barium, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	37			
Beryllium, Total	EPA 3050	6010	0.6	1	10/22/97	10/22/97	0.6	U	u	
Cadmium, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Chromium, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	10			
Cobalt, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	5			
Copper, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	5		J	A
Lead, Total	EPA 3050	6010	6	1	10/22/97	10/22/97	6	U	u	
Mercury, Total	METHOD	7471	0.3	1	10/22/97	10/22/97	0.3	U	u	
Molybdenum, Total	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	u	
Nickel, Total	EPA 3050	6010	6	1	10/22/97	10/22/97	7			
Selenium, Total	EPA 3050	7740	6	1	10/22/97	10/22/97	6	U	u	
Silver, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Thallium, Total	EPA 3050	7841	6	1	10/22/97	10/22/97	6	U	u	
Vanadium, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	21			
Zinc, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	36		J	A

CODEN VALIDATED

LEVEL V

Approved By:
15/4/0213970

Date: 1/12/20

5004

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Metals

Sample Name: RF011
 Lab Code: L9703547-006
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	for Qual	Qu. Co.
Antimony, Total	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	R	Q
Arsenic, Total	EPA 3050	7060	5	1	10/22/97	10/22/97	8			
Barium, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	49			
Beryllium, Total	EPA 3050	6010	0.6	1	10/22/97	10/22/97	0.6	U	u	
Cadmium, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Chromium, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	12			
Cobalt, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	5			
Copper, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	5		J	A
Lead, Total	EPA 3050	6010	5	1	10/22/97	10/22/97	5	U	u	
Mercury, Total	METHOD	7471	0.3	1	10/22/97	10/22/97	0.3	U	u	
Molybdenum, Total	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	u	
Nickel, Total	EPA 3050	6010	5	1	10/22/97	10/22/97	9			
Selenium, Total	EPA 3050	7740	5	1	10/22/97	10/22/97	5	U	u	
Silver, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Thallium, Total	EPA 3050	7841	5	1	10/22/97	10/22/97	5	U	u	
Vanadium, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	25			
Zinc, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	38		J	A

QUALITY VALIDATED

LEVEL V

Revision #1

Ac 1/21/99

Approved By: _____

Date: _____

9/27/98

5005-R

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Metals


Sample Name: RF012
 Lab Code: L9703547-007
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Anal	Qva Code
Antimony, Total	EPA 3050	6010	13	1	10/22/97	10/22/97	13	U	R	Q
Arsenic, Total	EPA 3050	7060	6	1	10/22/97	10/22/97	7			
Barium, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	55			
Beryllium, Total	EPA 3050	6010	0.6	1	10/22/97	10/22/97	0.6	U	u	
Cadmium, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Chromium, Total	EPA 3050	6010	3	1	10/22/97	10/22/97	13			
Cobalt, Total	EPA 3050	6010	3	1	10/22/97	10/22/97	4			
Copper, Total	EPA 3050	6010	3	1	10/22/97	10/22/97	5		J	A
Lead, Total	EPA 3050	6010	6	1	10/22/97	10/22/97	6	U	u	
Mercury, Total	METHOD	7471	0.3	1	10/22/97	10/22/97	0.3	U	u	
Molybdenum, Total	EPA 3050	6010	13	1	10/22/97	10/22/97	13	U	u	
Nickel, Total	EPA 3050	6010	6	1	10/22/97	10/22/97	10			
Selenium, Total	EPA 3050	7740	6	1	10/22/97	10/22/97	6	U	u	
Silver, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Thallium, Total	EPA 3050	7841	6	1	10/22/97	10/22/97	6	U	u	
Vanadium, Total	EPA 3050	6010	3	1	10/22/97	10/22/97	27			
Zinc, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	45		J	A

ODGEN VALIDATED

LEVEL V

Approved By: 
 1544/021397p

Date: 11/1/97

5006

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Metals

Sample Name: RF013
 Lab Code: L9703547-008
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony, Total	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	R	Q
Arsenic, Total	EPA 3050	7060	5	1	10/22/97	10/22/97	5	U	u	
Barium, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	26			
Beryllium, Total	EPA 3050	6010	0.6	1	10/22/97	10/22/97	0.6	U	u	
Cadmium, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Chromium, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	10			
Cobalt, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	2	U	u	
Copper, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	4		J	A
Lead, Total	EPA 3050	6010	5	1	10/22/97	10/22/97	5	U	u	
Mercury, Total	METHOD	7471	0.3	1	10/22/97	10/22/97	0.3	U	u	
Molybdenum, Total	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	u	
Nickel, Total	EPA 3050	6010	5	1	10/22/97	10/22/97	7			
Selenium, Total	EPA 3050	7740	5	1	10/22/97	10/22/97	5	U	u	
Silver, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Thallium, Total	EPA 3050	7841	5	1	10/22/97	10/22/97	5	U	u	
Vanadium, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	15			
Zinc, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	26		J	A

CODEN VALIDATED

LEVEL V

Approved By: J. R. Ruel
 1544021392

Date: 1/12/01

5007

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne 313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Metals

Sample Name: RF014
 Lab Code: L9703547-009
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony, Total	EPA 3050	6010	10	1	10/22/97	10/22/97	10	U	R	Q
Arsenic, Total	EPA 3050	7060	5	1	10/22/97	10/22/97	5	U	u	
Barium, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	110			
Beryllium, Total	EPA 3050	6010	0.6	1	10/22/97	10/22/97	0.6	U	u	
Cadmium, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Chromium, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	6			
Cobalt, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	5			
Copper, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	8		J	A
Lead, Total	EPA 3050	6010	5	1	10/22/97	10/22/97	5	U	u	
Mercury, Total	METHOD	7471	0.3	1	10/22/97	10/22/97	0.3	U	u	
Molybdenum, Total	EPA 3050	6010	10	1	10/22/97	10/22/97	10	U	u	
Nickel, Total	EPA 3050	6010	5	1	10/22/97	10/22/97	6			
Selenium, Total	EPA 3050	7740	5	1	10/22/97	10/22/97	5	U	u	
Silver, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Thallium, Total	EPA 3050	7841	5	1	10/22/97	10/22/97	5	U	u	
Vanadium, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	22			
Zinc, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	33		J	A

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1344/021397p

Date: 1/2/02

5003

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Metals

Sample Name: RF015
 Lab Code: L9703547-010
 Test Notes:


Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	for Qual	Qual Loc
Antimony, Total	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	R	Q
Arsenic, Total	EPA 3050	7060	6	1	10/22/97	10/22/97	10			
Barium, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	58			
Beryllium, Total	EPA 3050	6010	0.6	1	10/22/97	10/22/97	0.6	U	u	
Cadmium, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Chromium, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	11			
Cobalt, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	5			
Copper, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	5		J	A
Lead, Total	EPA 3050	6010	6	1	10/22/97	10/22/97	6	U	u	
Mercury, Total	METHOD	7471	0.3	1	10/22/97	10/22/97	0.3	U	u	
Molybdenum, Total	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	u	
Nickel, Total	EPA 3050	6010	6	1	10/22/97	10/22/97	9			
Selenium, Total	EPA 3050	7740	6	1	10/22/97	10/22/97	6	U	u	
Silver, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Thallium, Total	EPA 3050	7841	6	1	10/22/97	10/22/97	6	U	u	
Vanadium, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	23			
Zinc, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	37		J	A

COPIES VALIDATED

LEVEL V

Revision # 1
 As 1/21/99

Approved By: 
 IS44/021397p

Date: 9/23/98

5009-R

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne 313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Metals

Sample Name: RF016
 Lab Code: L9703547-011
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony, Total	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	R	Q
Arsenic, Total	EPA 3050	7060	6	1	10/22/97	10/22/97	14			
Barium, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	57			
Beryllium, Total	EPA 3050	6010	0.6	1	10/22/97	10/22/97	0.6	U	u	
Cadmium, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Chromium, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	14			
Cobalt, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	4			
Copper, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	5		J	A
Lead, Total	EPA 3050	6010	6	1	10/22/97	10/22/97	6			
Mercury, Total	METHOD	7471	0.3	1	10/22/97	10/22/97	0.3	U	u	
Molybdenum, Total	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	u	
Nickel, Total	EPA 3050	6010	6	1	10/22/97	10/22/97	8			
Selenium, Total	EPA 3050	7740	6	1	10/22/97	10/22/97	6	U	u	
Silver, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Thallium, Total	EPA 3050	7841	6	1	10/22/97	10/22/97	6	U	u	
Vanadium, Total	EPA 3050	6010	2	1	10/22/97	10/22/97	27			
Zinc, Total	EPA 3050	6010	1	1	10/22/97	10/22/97	41		J	A

OGDEN VALIDATION

LEVEL V

Approved By: [Signature]
 1544/021397p

Date: 11/1/97

5010

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Metals

Sample Name: RF017
 Lab Code: L9703547-012
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	R	Q
Arsenic	EPA 3050	7060	5	1	10/22/97	10/22/97	6			
Barium	EPA 3050	6010	1	1	10/22/97	10/22/97	44			
Beryllium	EPA 3050	6010	0.6	1	10/22/97	10/22/97	0.6	U	u	
Cadmium	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Chromium	EPA 3050	6010	2	1	10/22/97	10/22/97	13			
Cobalt	EPA 3050	6010	2	1	10/22/97	10/22/97	3			
Copper	EPA 3050	6010	2	1	10/22/97	10/22/97	5		J	A
Lead	EPA 3050	6010	5	1	10/22/97	10/22/97	5	U	u	
Mercury	METHOD	7471	0.3	1	10/22/97	10/22/97	0.3	U	u	
Molybdenum	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	u	
Nickel	EPA 3050	6010	5	1	10/22/97	10/22/97	7			
Selenium	EPA 3050	7740	5	1	10/22/97	10/22/97	5	U	u	
Silver	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Thallium	EPA 3050	7841	5	1	10/22/97	10/22/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	10/22/97	10/22/97	19			
Zinc	EPA 3050	6010	1	1	10/22/97	10/22/97	31		J	A

OGDEN VALIDATE

LEVEL V

Approved By: J. P. [Signature]
 1544/021397p

Date: 1/12/98

5011

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Metals

Sample Name: RF018
 Lab Code: L9703547-013
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Quag Colls
Antimony	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	R	Q
Arsenic	EPA 3050	7060	5	1	10/22/97	10/22/97	10			
Barium	EPA 3050	6010	1	1	10/22/97	10/22/97	49			
Beryllium	EPA 3050	6010	0.6	1	10/22/97	10/22/97	0.6	U	u	
Cadmium	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Chromium	EPA 3050	6010	2	1	10/22/97	10/22/97	12			
Cobalt	EPA 3050	6010	2	1	10/22/97	10/22/97	5			
Copper	EPA 3050	6010	2	1	10/22/97	10/22/97	5		J	A
Lead	EPA 3050	6010	5	1	10/22/97	10/22/97	5	U	u	
Mercury	METHOD	7471	0.3	1	10/22/97	10/22/97	0.3	U	u	
Molybdenum	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	u	
Nickel	EPA 3050	6010	5	1	10/22/97	10/22/97	8			
Selenium	EPA 3050	7740	5	1	10/22/97	10/22/97	5	U	u	
Silver	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Thallium	EPA 3050	7841	5	1	10/22/97	10/22/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	10/22/97	10/22/97	23			
Zinc	EPA 3050	6010	1	1	10/22/97	10/22/97	36		J	A

DO NOT VALIDATE

LEVEL V

Approved By: [Signature]
 1844021397p

Date: 11/12/97

5012

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Metals

Sample Name: RF019
 Lab Code: L9703547-014
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev/Qual	Quan Code
Antimony	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	R	Q
Arsenic	EPA 3050	7060	6	1	10/22/97	10/22/97	6	U	u	
Barium	EPA 3050	6010	1	1	10/22/97	10/22/97	67			
Beryllium	EPA 3050	6010	0.6	1	10/22/97	10/22/97	0.6	U	u	
Cadmium	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Chromium	EPA 3050	6010	2	1	10/22/97	10/22/97	13			
Cobalt	EPA 3050	6010	2	1	10/22/97	10/22/97	5			
Copper	EPA 3050	6010	2	1	10/22/97	10/22/97	6		J	A
Lead	EPA 3050	6010	6	1	10/22/97	10/22/97	6	U	u	
Mercury	METHOD	7471	0.3	1	10/22/97	10/22/97	0.3	U	u	
Molybdenum	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	u	
Nickel	EPA 3050	6010	6	1	10/22/97	10/22/97	9			
Selenium	EPA 3050	7740	6	1	10/22/97	10/22/97	6	U	u	
Silver	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Thallium	EPA 3050	7841	6	1	10/22/97	10/22/97	6	U	u	
Vanadium	EPA 3050	6010	2	1	10/22/97	10/22/97	29			
Zinc	EPA 3050	6010	1	1	10/22/97	10/22/97	38		J	A

SCREEN VALIDATED

LEVEL V

Approved By: [Signature]
 13440213572

Date: 10/27/97

5013

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/20/97
 Date Received: 10/20/97

Metals

Sample Name: RF030
 Lab Code: L9703547-018
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev	Qual
Antimony	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	R	Q
Arsenic	EPA 3050	7060	5	1	10/22/97	10/22/97	5	U	u	
Barium	EPA 3050	6010	1	1	10/22/97	10/22/97	73			
Beryllium	EPA 3050	6010	0.6	1	10/22/97	10/22/97	0.6	U	u	
Cadmium	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Chromium	EPA 3050	6010	2	1	10/22/97	10/22/97	36			
Cobalt	EPA 3050	6010	2	1	10/22/97	10/22/97	10			
Copper	EPA 3050	6010	2	1	10/22/97	10/22/97	21		J	A
Lead	EPA 3050	6010	5	1	10/22/97	10/22/97	15			
Mercury	METHOD	7471	0.3	1	10/22/97	10/22/97	0.3	U	u	
Molybdenum	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	u	
Nickel	EPA 3050	6010	5	1	10/22/97	10/22/97	22			
Selenium	EPA 3050	7740	5	1	10/22/97	10/22/97	5	U	u	
Silver	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Thallium	EPA 3050	7841	5	1	10/22/97	10/22/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	10/22/97	10/22/97	55			
Zinc	EPA 3050	6010	1	1	10/22/97	10/22/97	89		J	A

OGEN VALIDATED

LEVEL V

Approved By: [Signature]
 15440213979

Date: 11/12/97

5015

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/20/97
 Date Received: 10/20/97

Metals

Sample Name: RF031
 Lab Code: L9703547-019
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Aug Coll
Antimony	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	R	Q
Arsenic	EPA 3050	7060	6	1	10/22/97	10/22/97	6	U	u	
Barium	EPA 3050	6010	1	1	10/22/97	10/22/97	73			
Beryllium	EPA 3050	6010	0.6	1	10/22/97	10/22/97	0.6	U	u	
Cadmium	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Chromium	EPA 3050	6010	2	1	10/22/97	10/22/97	15			
Cobalt	EPA 3050	6010	2	1	10/22/97	10/22/97	5			
Copper	EPA 3050	6010	2	1	10/22/97	10/22/97	7		J	A
Lead	EPA 3050	6010	6	1	10/22/97	10/22/97	6	U	u	
Mercury	METHOD	7471	0.3	1	10/22/97	10/22/97	0.3	U	u	
Molybdenum	EPA 3050	6010	11	1	10/22/97	10/22/97	11	U	u	
Nickel	EPA 3050	6010	6	1	10/22/97	10/22/97	11			
Selenium	EPA 3050	7740	6	1	10/22/97	10/22/97	6	U	u	
Silver	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Thallium	EPA 3050	7841	6	1	10/22/97	10/22/97	6	U	u	
Vanadium	EPA 3050	6010	2	1	10/22/97	10/22/97	31			
Zinc	EPA 3050	6010	1	1	10/22/97	10/22/97	41	J		F, A

VALIDATED

LEVEL V

Approved By: [Signature]
 1544021397p

Date: 11/12/97

5016

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/20/97
 Date Received: 10/20/97

Metals

Sample Name: RF032
 Lab Code: L9703547-020
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	10/22/97	10/22/97	10	U	R	Q
Arsenic	EPA 3050	7060	5	1	10/22/97	10/22/97	5	U	u	
Barium	EPA 3050	6010	1	1	10/22/97	10/22/97	85			
Beryllium	EPA 3050	6010	0.6	1	10/22/97	10/22/97	0.6	U	u	
Cadmium	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Chromium	EPA 3050	6010	2	1	10/22/97	10/22/97	30			
Cobalt	EPA 3050	6010	2	1	10/22/97	10/22/97	10			
Copper	EPA 3050	6010	2	1	10/22/97	10/22/97	15		J	A
Lead	EPA 3050	6010	5	1	10/22/97	10/22/97	6			
Mercury	METHOD	7471	0.3	1	10/22/97	10/22/97	0.3	U	u	
Molybdenum	EPA 3050	6010	10	1	10/22/97	10/22/97	10	U	u	
Nickel	EPA 3050	6010	5	1	10/22/97	10/22/97	20			
Selenium	EPA 3050	7740	5	1	10/22/97	10/22/97	5	U	u	
Silver	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Thallium	EPA 3050	7841	5	1	10/22/97	10/22/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	10/22/97	10/22/97	52			
Zinc	EPA 3050	6010	1	1	10/22/97	10/22/97	56	J		F, 1

OGEN VALIDATED

LEVEL V

Approved By: [Signature]
 13440621397

Date: 1/12/98

5017

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/17/97
 Date Received: 10/17/97

Metals

Sample Name: RF661
 Lab Code: L9703547-017
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	QAC Code
Antimony	EPA 3050	6010	10	1	10/22/97	10/22/97	25		J	Q, i
Arsenic	EPA 3050	7060	5	1	10/22/97	10/22/97	5	U	u	
Barium	EPA 3050	6010	1	1	10/22/97	10/22/97	85			
Beryllium	EPA 3050	6010	0.6	1	10/22/97	10/22/97	0.6	U	u	
Cadmium	EPA 3050	6010	1	1	10/22/97	10/22/97	9			
Chromium	EPA 3050	6010	2	1	10/22/97	10/22/97	35			
Cobalt	EPA 3050	6010	2	1	10/22/97	10/22/97	11			
Copper	EPA 3050	6010	2	1	10/22/97	10/22/97	260		J	A
Lead	EPA 3050	6010	5	1	10/22/97	10/22/97	60			
Mercury	METHOD	7471	0.3	5	10/22/97	10/22/97	1.3			
Molybdenum	EPA 3050	6010	10	1	10/22/97	10/22/97	10	U	u	
Nickel	EPA 3050	6010	5	1	10/22/97	10/22/97	23			
Selenium	EPA 3050	7740	5	1	10/22/97	10/22/97	5	U	u	
Silver	EPA 3050	6010	1	1	10/22/97	10/22/97	1	U	u	
Thallium	EPA 3050	7841	5	1	10/22/97	10/22/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	10/22/97	10/22/97	36			
Zinc	EPA 3050	6010	1	1	10/22/97	10/22/97	640		J	A

OGDEN VALIDATED

LEVEL V

Approved By: J. R. Paul
 1544621397p

Date:

11/12/97

5014



550 South Wadsworth Blvd. Suite 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: EPA Method 8240

No. of Samples: 6

Date Reviewed: 02/22/99

Reviewer: L. Calvin

Reference: USEPA Contract Laboratory Program National Functional Guidelines For Organic Data Review (Feb. 1994), and Ogden Data Validation Procedure for Volatile Organics by GC/MS (DVP-2, Rev. 2).

SDG: OLD YARD

Samples Reviewed: OLD CONS 1, OLD CONS 2, OLD CONS 3, OLD CONS 4, OLD CONS 5, and OLD CONS 6

Matrix: Soil

EPA Level V- Volatiles Assessment Form

	Problems	Qualifications
1. Sample Management	The COCs were signed by field and laboratory personnel. Sample conditions and cooler temperatures were not recorded on the COCs; therefore, no evaluation of the sample data could be made based on sample conditions upon receipt. Samples were analyzed within 14 days of collection.	No qualifications were required.
4. Method Blanks	Two method blanks were associated with the samples of this SDG. There were no target compounds detected in either method blank.	No qualifications were required.
5. LCS/BS	Blank spike results were not included in the laboratory's report. Evaluation of laboratory accuracy was not possible.	No qualifications were required.

	Problems	Qualifications
6. Surrogates	Sample surrogate recoveries were not included in the laboratory's report. No evaluation of sample data was made on the basis of surrogate recoveries.	No qualifications were required.
7. MS/MSDs	The laboratory did not analyze any MS/MSD pairs with the samples of this SDG. No evaluation of the sample data could be made regarding accuracy and precision.	No qualifications were required.
8. Field QC Samples TB: none ER: none FB: none Field duplicates: none	The data package did not contain field QC sample information; no evaluation of sample data was made based on field QC.	No qualifications were required.
10. Other	TICs were not reported with the sample results. Toluene and/or 2-butanone were reported in several of the samples in this SDG. A letter from the analytical laboratory to the client dated 09/29/88 stated that because the soil core samples were sealed with electrical tape, possible 2-butanone and toluene contamination of the samples by the tape could not be ruled out.	No qualifications were required. Detects for either 2-butanone or toluene were qualified as estimated, "J."
11. Comments	None	None

VOLATILE ORGANICS ANALYSIS DATA SHEET

OLDCONS1

Lab Name: TMA/NORCAL Contract: _____

Code: TMA Case No.: 6105-1 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL
Sample wt/vol: 5.0 (g/mL) G
Level: (low/med) LOW
Moisture: not dec. _____
Column: (pack/cap) PACKLab Sample ID: 6105-1-7
Lab File ID: A17635
Date Received: 08/29/88
Date Analyzed: 09/06/88
Dilution Factor: 1.000CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	g	rev qual	qual code
74-87-3	-----Chloromethane	10 U	u	
74-83-9	-----Bromomethane	10 U		
75-01-4	-----Vinyl Chloride	10 U		
75-00-3	-----Chloroethane	10 U		
75-09-2	-----Methylene Chloride	5 U		
67-64-1	-----Acetone	10 U		
75-15-0	-----Carbon Disulfide	5 U		
75-35-4	-----1,1-Dichloroethene	5 U		
75-35-3	-----1,1-Dichloroethane	5 U		
540-59-0	-----1,2-Dichloroethene (total)	5 U		
67-66-3	-----Chloroform	5 U		
107-06-2	-----1,2-Dichloroethane	5 U		
78-93-3	-----2-Butanone	10 U		
71-55-6	-----1,1,1-Trichloroethane	5 U		
56-23-5	-----Carbon Tetrachloride	5 U		
108-05-4	-----Vinyl Acetate	10 U		
75-27-4	-----Bromodichloromethane	5 U		
78-87-5	-----1,2-Dichloropropane	5 U		
10061-01-5	-----cis-1,3-Dichloropropene	5 U		
79-01-6	-----Trichloroethene	5 U		
124-48-1	-----Dibromochloromethane	5 U		
79-00-5	-----1,1,2-Trichloroethane	5 U		
71-43-2	-----Benzene	5 U		
10061-02-6	-----Trans-1,3-Dichloropropene	5 U		
75-25-2	-----Bromoform	5 U		
591-78-6	-----2-Hexanone	10 U		
108-10-1	-----4-Methyl-2-Pentanone	10 U		
127-18-4	-----Tetrachloroethene	5 U		
79-34-5	-----1,1,2,2-Tetrachloroethane	5 U		
108-88-3	-----Toluene	3 U		
108-90-7	-----Chlorobenzene	5 U		
100-41-4	-----Ethylbenzene	5 U		
100-42-5	-----Styrene	5 U		
1330-20-7	-----Total Xylenes	5 U		

U - Analyzed for but not detected
J - Present but below detection limit
B - Present in Blank
E - Exceeds calibration range

FORM I VOA

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LEVEL V 1/87 Rev.

VOLATILE ORGANICS ANALYSIS DATA SHEET

OLDCONS2

Lab Name: TMA/NORCAL Contract: _____

Code: TMA Case No.: 6105-1 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL
 Sample wt/vol: 5.0 (g/mL) G
 Level: (low/med) LOW
 Moisture: not dec.
 Column: (pack/cap) PACK

Lab Sample ID: 6105-1-8
 Lab File ID: A17636
 Date Received: 08/29/88
 Date Analyzed: 09/06/88
 Dilution Factor: 1.000

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q	new qual	qual code
74-87-3	Chloromethane	10	U	u	
74-83-9	Bromomethane	10	U		
75-01-4	Vinyl Chloride	10	U		
75-00-3	Chloroethane	10	U		
75-09-2	Methylene Chloride	5	U		
67-64-1	Acetone	10	U		
75-15-0	Carbon Disulfide	5	U		
75-35-4	1,1-Dichloroethene	5	U		
75-35-3	1,1-Dichloroethane	5	U		
540-59-0	1,2-Dichloroethene (total)	5	U		
67-66-3	Chloroform	5	U		
107-06-2	1,2-Dichloroethane	5	U		
78-93-3	2-Butanone	10	U		
71-55-6	1,1,1-Trichloroethane	5	U		
56-23-5	Carbon Tetrachloride	5	U		
108-05-4	Vinyl Acetate	10	U		
75-27-4	Bromodichloromethane	5	U		
78-87-5	1,2-Dichloropropane	5	U		
10061-01-5	cis-1,3-Dichloropropene	5	U		
79-01-6	Trichloroethene	5	U		
124-48-1	Dibromochloromethane	5	U		
79-00-5	1,1,2-Trichloroethane	5	U		
71-43-2	Benzene	5	U		
10061-02-6	Trans-1,3-Dichloropropene	5	U		
75-25-2	Bromoform	5	U		
591-78-6	2-Hexanone	10	U		
108-10-1	4-Methyl-2-Pentanone	10	U		
127-18-4	Tetrachloroethene	5	U		
79-34-5	1,1,2,2-Tetrachloroethane	5	U		
108-88-3	Toluene	7			
108-90-7	Chlorobenzene	5	U		
100-41-4	Ethylbenzene	5	U		
100-42-5	Styrene	5	U		
1330-20-7	Total Xylenes	13			

U - Analyzed for but not detected
 J - Present but below detection limit
 B - Present in Blank
 E - Exceeds calibration range

OGDEN VALIDATED

LEVEL V

1/87 Rev.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT NO

OLDCONS/3

LAB OR FIELD REPC
GF 10/17

Lab Name: TMA/NORCAL Contract: _____

Code: TMA Case No.: 6105-1 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL
Sample wt/vol: 5.0 (g/mL) G
Level: (low/med) LOW
% Moisture: not dec.
Column: (pack/cap) PACK

Lab Sample ID: 6105-1-10
Lab File ID: A17652
Date Received: 08/29/88
Date Analyzed: 09/07/88
Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	Q	rev qual	qual code
74-87-3	Chloromethane	10	U	u	
74-83-9	Bromomethane	10	U		
75-01-4	Vinyl Chloride	10	U		
75-00-3	Chloroethane	10	U		
75-09-2	Methylene Chloride	6			
67-64-1	Acetone	14			
75-15-0	Carbon Disulfide	5	U	u	
75-35-4	1,1-Dichloroethene	5	U		
75-35-3	1,1-Dichloroethane	5	U		
540-59-0	1,2-Dichloroethene (total)	5	U		
67-66-3	Chloroform	5	U		
107-06-2	1,2-Dichloroethane	5	U		
78-93-3	2-Butanone	10	U		
71-55-6	1,1,1-Trichloroethane	5	U		
56-23-5	Carbon Tetrachloride	5	U		
108-05-4	Vinyl Acetate	10	U		
75-27-4	Bromodichloromethane	5	U		
78-87-5	1,2-Dichloropropane	5	U		
10061-01-5	cis-1,3-Dichloropropene	5	U		
79-01-6	Trichloroethene	5	U		
124-48-1	Dibromochloromethane	5	U		
79-00-5	1,1,2-Trichloroethane	5	U		
71-43-2	Benzene	5	U		
10061-02-6	Trans-1,3-Dichloropropene	5	U		
75-25-2	Bromoform	5	U		
591-78-6	2-Hexanone	10	U		
108-10-1	4-Methyl-2-Pentanone	10	U		
127-18-4	Tetrachloroethene	5	U		
79-34-5	1,1,2,2-Tetrachloroethane	5	U		
106-88-3	Toluene	5	U		
108-90-7	Chlorobenzene	5	U		
100-41-4	Ethylbenzene	5	U		
100-42-5	Styrene	5	U		
1330-20-7	Total Xylenes	6			

U - Analyzed for but not detected
J - Present but below detection limit
B - Present in Blank
E - Exceeds calibration range

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VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT NO

OLDCONS/4

Lab Name: TMA/NORCAL Contract: _____

Code: TMA Case No.: 6105-1 SAS No.: _____ SDG No.: _____ LAB or Field Error GF 10/17

Matrix: (soil/water) SOIL
Sample wt/vol: 5.0 (g/mL) G
Level: (low/med) LOW
Moisture: not dec.
Column: (pack/cap) PACKLab Sample ID: 6105-1-9
Lab File ID: A17637
Date Received: 08/29/88
Date Analyzed: 09/06/88
Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	rev qual	qual code
74-87-3	Chloromethane	10	U	u	
74-83-9	Bromomethane	10	U		
75-01-4	Vinyl Chloride	10	U		
75-00-3	Chloroethane	10	U		
75-09-2	Methylene Chloride	5	U		
67-64-1	Acetone	10	U		
75-15-0	Carbon Disulfide	5	U		
75-35-4	1,1-Dichloroethene	5	U		
75-35-3	1,1-Dichloroethane	5	U		
540-59-0	1,2-Dichloroethene (total)	5	U		
67-66-3	Chloroform	5	U		
107-06-2	1,2-Dichloroethane	5	U		
78-93-3	2-Butanone	11			*10
71-55-6	1,1,1-Trichloroethane	5	U		
56-23-5	Carbon Tetrachloride	5	U		
108-05-4	Vinyl Acetate	10	U		
75-27-4	Bromodichloromethane	5	U		
78-87-5	1,2-Dichloropropane	5	U		
10061-01-5	cis-1,3-Dichloropropene	5	U		
79-01-6	Trichloroethene	5	U		
124-48-1	Dibromochloromethane	5	U		
79-00-5	1,1,2-Trichloroethane	5	U		
71-43-2	Benzene	5	U		
10061-02-6	Trans-1,3-Dichloropropene	5	U		
75-25-2	Bromoform	5	U		
591-78-6	2-Hexanone	10	U		
108-10-1	4-Methyl-2-Pentanone	10	U		
127-18-4	Tetrachloroethene	5	U		
79-34-5	1,1,2,2-Tetrachloroethane	5	U		
108-88-3	Toluene	5	U		
108-90-7	Chlorobenzene	5	U		
100-41-4	Ethylbenzene	5	U		
100-42-5	Styrene	5	U		
1330-20-7	Total Xylenes	5	U		

U - Analyzed for but not detected
J - Present but below detection limit
B - Present in Blank
E - Exceeds calibration range

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LEVEL V 1/87 Rev.

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT NO

OLDCONS5

Lab Name: TMA/NORCAL Contract: _____Code: TMA Case No.: 6105-1 SAS No.: _____ SDG No.: _____Matrix: (soil/water) SOIL
Sample wt/vol: 5.0 (g/mL) G
Level: (low/med) LOW
% Moisture: not dec.
Column: (pack/cap) PACKLab Sample ID: 6105-1-11
Lab File ID: A17639
Date Received: 08/29/88
Date Analyzed: 09/06/88
Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS:		g	rev qual	qual code
		(ug/L or ug/Kg)	UG/KG			
74-87-3	Chloromethane	10	U		u	
74-83-9	Bromomethane	10	U			
75-01-4	Vinyl Chloride	10	U			
75-00-3	Chloroethane	10	U			
75-09-2	Methylene Chloride	5	U			
67-64-1	Acetone	10	U			
75-15-0	Carbon Disulfide	5	U			
75-35-4	1,1-Dichloroethene	5	U			
75-35-3	1,1-Dichloroethane	5	U			
540-59-0	1,2-Dichloroethene (total)	5	U			
67-66-3	Chloroform	5	U			
107-06-2	1,2-Dichloroethane	5	U			
78-93-3	2-Butanone	10	U			
71-55-6	1,1,1-Trichloroethane	5	U			
56-23-5	Carbon Tetrachloride	5	U			
108-05-4	Vinyl Acetate	10	U			
75-27-4	Bromodichloromethane	5	U			
78-87-5	1,2-Dichloropropane	5	U			
10061-01-5	cis-1,3-Dichloropropene	5	U			
79-01-6	Trichloroethene	5	U			
124-48-1	Dibromochloromethane	5	U			
79-00-5	1,1,2-Trichloroethane	5	U			
71-43-2	Benzene	5	U			
10061-02-6	Trans-1,3-Dichloropropene	5	U			
75-25-2	Bromoform	5	U			
591-78-6	2-Hexanone	10	U			
106-10-1	4-Methyl-2-Pentanone	10	U			
127-18-4	Tetrachloroethene	5	U			
79-34-5	1,1,2,2-Tetrachloroethane	5	U			
102-88-3	Toluene	14			J	
108-90-7	Chlorobenzene	5	U		u	
100-41-4	Ethylbenzene	5	U			
100-42-5	Styrene	5	U			
1330-20-7	Total Xylenes	10				

U - Analyzed for but not detected
J - Present but below detection limit
B - Present in Blank
E - Exceeds calibration range

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OGDEN VALIDATED**LEVEL V**

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT NO

OLDCONS6

Lab Name: TMA/NORCAL Contract: _____

Code: TMA Case No.: 6105-1 SAS No: _____ SDG No.: _____

Matrix: (soil/water) SOIL
Sample wt/vol: 5.0 (g/mL) G
Level: (low/med) LOW
Moisture: not dec.
Column: (pack/cap) PACK

Lab Sample ID: 6105-1-12
Lab File ID: A17640
Date Received: 08/29/88
Date Analyzed: 09/07/88
Dilution Factor: 1.000

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	g	val qual	qual code
74-87-3	Chloromethane	10	U	u	
74-83-9	Bromomethane	10	U		
75-01-4	Vinyl Chloride	10	U		
75-00-3	Chloroethane	10	U		
75-09-2	Methylene Chloride	5	U		
67-64-1	Acetone	10	U		
75-15-0	Carbon Disulfide	5	U		
75-35-4	1,1-Dichloroethene	5	U		
75-35-3	1,1-Dichloroethane	5	U		
540-59-0	1,2-Dichloroethene (total)	5	U		
67-66-3	Chloroform	5	U		
107-06-2	1,2-Dichloroethane	5	U		
78-93-3	2-Butanone	10	U		
71-55-6	1,1,1-Trichloroethane	5	U		
56-23-5	Carbon Tetrachloride	5	U		
108-05-4	Vinyl Acetate	10	U		
75-27-4	Bromodichloromethane	5	U		
78-87-5	1,2-Dichloropropane	5	U		
10061-01-5	cis-1,3-Dichloropropene	5	U		
79-01-6	Trichloroethene	5	U		
124-48-1	Dibromochloromethane	5	U		
79-00-5	1,1,2-Trichloroethane	5	U		
71-43-2	Benzene	5	U		
10061-02-6	Trans-1,3-Dichloropropene	5	U		
75-25-2	Bromoform	5	U		
591-78-6	2-Hexanone	10	U		
108-10-1	4-Methyl-2-Pentanone	10	U		
127-18-4	Tetrachloroethene	5	U		
79-34-5	1,1,2,2-Tetrachloroethane	5	U		
108-88-3	Toluene	5	U		
108-90-7	Chlorobenzene	5	U		
100-41-4	Ethylbenzene	5	U		
100-42-5	Styrene	5	U		
1330-20-7	Total Xylenes	5	U		

U - Analyzed for but not detected
J - Present but below detection limit
B - Present in Blank
E - Exceeds calibration range

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OGDEN VALIDATED

LEVEL V

VOLATILE ORGANICS ANALYSIS DATA SHEET

RMDF1

Lab Name: TMA/NORCAL Contract: _____Lab Code: TMA Case No. 6105-1 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 6105-1-1
 Sample wt/vol: 5.0 (g/mL) G Lab File ID: A17629
 Level: (low/med) LOW Date Received: 08/29/88
 Moisture: not dec. _____ Date Analyzed: 09/06/88
 Column: (pack/cap) PACK Dilution Factor: 1.000

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG G

74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	7	
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	7	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	34	
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	4	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	18	

U - Analyzed for but not detected
 J - Present but below detection limit
 B - Present in Blank
 E - Exceeds calibration range

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT NO

RMDF2

Lab Name: TMA/NORCAL Contract

Code: TMA Case No.: 6105-1 SAS No. SDG No.:

Matrix (soil/water) SOIL Lab Sample ID: 6105-1-2
 Sample wt/vol: 5.0 (g/mL) G Lab File ID: A17630
 Level: (low/med) LOW Date Received: 08/29/88
 % Moisture: not dec. Date Analyzed: 09/06/88
 Column: (pack/cap) PACK Dilution Factor: 1.000

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG G

74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	4	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
106-88-3	Toluene	25	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	3	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	16	U

U - Analyzed for but not detected
 J - Present but below detection limit
 B - Present in Blank
 E - Exceeds calibration range

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT NO

RMDF3

Lab Name: TMA/NORCAL Contract: _____

Code: TMA Case No.: 6105-1 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) <u>SOIL</u>	Lab Sample ID: <u>6105-1-3</u>
Sample wt/vol: <u>5.0</u> (g/mL) <u>G</u>	Lab File ID: <u>A17631</u>
Level: (low/med) <u>LOW</u>	Date Received: <u>08/29/88</u>
% Moisture: not dec. _____	Date Analyzed: <u>09/06/88</u>
Column: (pack/cap) <u>PACK</u>	Dilution Factor: <u>1.000</u>

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) <u>UG/KG</u>	<u>G</u>
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	51	
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	26	

U - Analyzed for but not detected
J - Present but below detection limit
B - Present in Blank
E - Exceeds calibration range

VOLATILE ORGANICS ANALYSIS DATA SHEET

RMDF4

Lab Name TMA/NORCAL Contract. _____Code TMA Case No. 6105-1 SAS No. _____ SDG No. _____Matrix (soil/water) SOILLab Sample ID: 6105-1-4Sample wt/vol: 5.0 (g/mL) GLab File ID: A17632Level: (low/med) LOWDate Received: 08/29/88

Moisture: not dec. _____

Date Analyzed: 09/06/88Column: (pack/cap) PACKDilution Factor: 1.000

CONCENTRATION UNITS.

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG G

74-87-3-----	Chloromethane	10	U
74-83-9-----	Bromomethane	10	U
75-01-4-----	Vinyl Chloride	10	U
75-00-3-----	Chloroethane	10	U
75-09-2-----	Methylene Chloride	5	U
67-64-1-----	Acetone	10	U
75-15-0-----	Carbon Disulfide	5	U
75-35-4-----	1,1-Dichloroethene	5	U
75-35-3-----	1,1-Dichloroethane	5	U
540-59-0-----	1,2-Dichloroethene (total)	5	U
67-66-3-----	Chloroform	5	U
107-06-2-----	1,2-Dichloroethane	5	U
75-93-3-----	2-Butanone	8	U
71-55-6-----	1,1,1-Trichloroethane	5	U
56-23-5-----	Carbon Tetrachloride	5	U
106-05-4-----	Vinyl Acetate	10	U
75-27-4-----	Bromodichloromethane	5	U
75-87-5-----	1,2-Dichloropropane	5	U
10661-01-5-----	cis-1,3-Dichloropropene	5	U
79-01-6-----	Trichloroethene	5	U
124-48-1-----	Dibromochloromethane	5	U
79-00-5-----	1,1,2-Trichloroethane	5	U
71-43-2-----	Benzene	5	U
10061-02-6-----	Trans-1,3-Dichloropropene	5	U
75-25-2-----	Bromoform	5	U
591-78-6-----	2-Hexanone	10	U
105-10-1-----	4-Methyl-2-Pentanone	10	U
127-18-4-----	Tetrachloroethene	5	U
79-34-5-----	1,1,2,2-Tetrachloroethane	5	U
108-88-3-----	Toluene	28	U
108-90-7-----	Chlorobenzene	5	U
100-41-4-----	Ethylbenzene	8	U
100-42-5-----	Styrene	5	U
1330-20-7-----	Total Xylenes	39	U

U - Analyzed for but not detected

J - Present but below detection limit

B - Present in Blank

E - Exceeds calibration range

VOLATILE ORGANICS ANALYSIS DATA SHEET

RMDF5

Lab Name: TMA/NORCAL Contract: _____Code: TMA Case No. 6105-1 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 6105-1-5
 Sample wt/vol: 5.0 (g/mL) G Lab File ID: A17633
 Level: (low/med) LOW Date Received: 08/29/88
 % Moisture: not dec. _____ Date Analyzed: 09/06/88
 Column: (pack/cap) PACK Dilution Factor: 1.000

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG G

74-87-3-----	Chloromethane_____	10	U
74-83-9-----	Bromomethane_____	10	U
75-01-4-----	Vinyl Chloride_____	10	U
75-00-3-----	Chloroethane_____	10	U
75-09-2-----	Methylene Chloride_____	5	U
67-64-1-----	Acetone_____	10	U
75-15-0-----	Carbon Disulfide_____	5	U
75-35-4-----	1,1-Dichloroethene_____	5	U
75-35-3-----	1,1-Dichloroethane_____	5	U
540-59-0-----	1,2-Dichloroethene (total)_____	5	U
67-66-3-----	Chloroform_____	5	U
107-06-2-----	1,2-Dichloroethane_____	5	U
78-93-3-----	2-Butanone_____	10	U
71-55-6-----	1,1,1-Trichloroethane_____	5	U
56-23-5-----	Carbon Tetrachloride_____	5	U
108-05-4-----	Vinyl Acetate_____	10	U
75-27-4-----	Bromodichloromethane_____	5	U
78-87-5-----	1,2-Dichloropropane_____	5	U
10061-01-5-----	cis-1,3-Dichloropropene_____	5	U
79-01-6-----	Trichloroethene_____	5	U
124-48-1-----	Dibromochloromethane_____	5	U
79-00-5-----	1,1,2-Trichloroethane_____	5	U
71-43-2-----	Benzene_____	5	U
10061-02-6-----	Trans-1,3-Dichloropropene_____	5	U
75-25-2-----	Bromoform_____	5	U
591-78-6-----	2-Hexanone_____	10	U
108-10-1-----	4-Methyl-2-Pentanone_____	10	U
127-18-4-----	Tetrachloroethene_____	5	U
79-34-5-----	1,1,2,2-Tetrachloroethane_____	5	U
108-82-3-----	Toluene_____	30	U
108-90-7-----	Chlorobenzene_____	5	U
100-41-4-----	Ethylbenzene_____	5	U
100-42-5-----	Styrene_____	5	U
1330-20-7-----	Total Xylenes_____	22	U

U - Analyzed for but not detected
 J - Present but below detection limit
 B - Present in Blank
 E - Exceeds calibration range

VOLATILE ORGANICS ANALYSIS DATA SHEET

RMDF6

Lab Name TMA/NORCAL Contract: _____

Code: TMA Case No. 6105-1 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 6105-1-6
 Sample wt/vol: 5.0 (g/mL) G Lab File ID: A17634
 Level: (low/med) LOW Date Received: 08/29/88
 Moisture, not dec Date Analyzed: 09/03/88
 Column: (pack/cap) PACK Dilution Factor: 1.000

CONCENTRATION UNITS:

CAS NO COMPOUND (ug/L or ug/Kg) UG/KG Q

74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	6	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	31	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	26	U

U - Analyzed for but not detected
 J - Present but below detection limit
 B - Present in Blank
 E - Exceeds calibration range

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT NO

B133-1

Lab Name: TMA/NORCAL Contract: _____

Code: TMA Case No : 6105-1 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 6105-1-13
 Sample wt/vol: 5.0 (g/mL) G Lab File ID: A17661
 Level: (low/med) LOW Date Received: 08/29/88
 % Moisture: not dec. Date Analyzed: 09/08/88
 Column: (pack/cap) PACK Dilution Factor: 1.000

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG G

74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	9	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	11	
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	3	J

U - Analyzed for but not detected
 J - Present but below detection limit
 B - Present in Blank
 E - Exceeds calibration range

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT NO

B133-2

Lab Name: TMA/NORCAL Contract: _____Code: TMA Case No.: 6105-1 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 6105-1-14
Sample wt/vol: 5.0 (g/mL) G Lab File ID: A17654
Level: (low/med) LOW Date Received: 08/29/88
Moisture: not dec. Date Analyzed: 09/08/88
Column: (pack/cap) PACK Dilution Factor: 1.000

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Q

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	13	
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	99	
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	4	U

U - Analyzed for but not detected

J - Present but below detection limit

B - Present in Blank

E - Exceeds calibration range

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT NO

B133-3

Lab Name: TMA/NORCAL Contract: _____

Lab Code: TMA Case No.: 6105-1 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 6105-1-15
 Sample wt/vol: 5.0 (g/mL) G Lab File ID: A17655
 Level: (low/med) LOW Date Received: 08/29/88
 % Moisture: not dec. Date Analyzed: 09/08/88
 Column: (pack/cap) PACK Dilution Factor: 1.000

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG G

74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	18	
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	4	J
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	4	J

U - Analyzed for but not detected
 J - Present but below detection limit
 B - Present in Blank
 E - Exceeds calibration range

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT NO.

B133-4

Lab Name: TMA/NORCAL Contract: _____Lab Code: TMA Case No.: 6105-1 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 6105-1-16
Sample wt/vol: 5.0 (g/mL) G Lab File ID: A17655
Level: (low/med) LOW Date Received: 08/29/88
% Moisture: not dec. Date Analyzed: 09/08/88
Column: (pack/cap) PACK Dilution Factor: 1.000

CAS NO	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	UG/KG
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	7	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

U - Analyzed for but not detected
J - Present but below detection limit
B - Present in Blank
E - Exceeds calibration range

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT NO

B133-5

Lab Name: TMA/NORCAL Contract: _____

Code: TMA Case No.: 6105-1 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 6105-1-17
 Sample wt/vol: 5.0 (g/mL) G Lab File ID: A17657
 Level: (low/med) LOW Date Received: 08/29/88
 Moisture: not dec. Date Analyzed: 09/08/88
 Column: (pack/cap) PACK Dilution Factor: 1.000

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG G

74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	7	J
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	4	J
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	11	

U - Analyzed for but not detected
 J - Present but below detection limit
 B - Present in Blank
 E - Exceeds calibration range

VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT NO

B133-6

Lab Name: TMA/NORCAL Contract: _____Code: TMA Case No.: 6105-1 SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 6105-1-18
Sample wt/vol: 5.0 (g/mL) G Lab File ID: A17658
Level: (low/med) LOW Date Received: 08/29/88
% Moisture: not dec Date Analyzed: 09/08/88
Column: (pack/cap) PACK Dilution Factor: 1.000

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG G

CAS NO.	COMPOUND		
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	7	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
106-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

U - Analyzed for but not detected

J - Present but below detection limit

B - Present in Blank

E - Exceeds calibration range

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK1N

Lab Name: TMA/NORCAL Contract: _____Lab Code: TMA Case No.: 6105-1 SAS No.: _____ SDG No.: _____Matrix: (soil/water) WATERLab Sample ID: VBLKSample wt/vol: 5.0 (g/mL) MLLab File ID: A17651Level: (low/med) LOW

Date Received: _____

Moisture: not dec. _____

Date Analyzed: 09/07/88Column: (pack/cap) PACKDilution Factor: 1.000

CONCENTRATION UNITS:

CAS NO COMPOUND (ug/L or ug/Kg) UG/L G

74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

U - Analyzed for but not detected

J - Present but below detection limit

B - Present in Blank

E - Exceeds calibration range

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK1L

Lab Name: TMA/NORCAL Contract: _____Code: TMA Case No.: 6105-1 SAS No.: _____ SDG No.: _____Matrix: (soil/water) WATERLab Sample ID: VBLKSample wt/vol: 5.0 (g/mL) MLLab File ID: A17627Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 09/06/88Column: (pack/cap) PACKDilution Factor: 1.000

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L Q

74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-35-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
591-78-6	2-Hexanone	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

U - Analyzed for but not detected

J - Present but below detection limit

B - Present in Blank

E - Exceeds calibration range



550 South Wadsworth Blvd. Suite 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: Modified EPA Method 8015

No. of Samples: 6

Date Reviewed: 02/23/99

Reviewer: L. Calvin

Reference: USEPA Contract Laboratory Program National Functional Guidelines For Organic Data Review (Feb. 1994), and Ogden Data Validation Procedure for Extractable Total Fuel Hydrocarbons by GC (DVP-8, Rev. 2).

SDG: OLD YARD

Samples Reviewed: OLD CONS 1, OLD CONS 2, OLD CONS 3, OLD CONS 4, OLD CONS 5, and OLD CONS 6

Matrix: Soil

EPA Level V- Volatiles Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	The COCs were signed by field and laboratory personnel. Sample conditions and cooler temperatures were not recorded on the COCs; therefore, no evaluation of the sample data could be made based on sample conditions upon receipt. Sample extraction dates were not provided by the laboratory; therefore, whether the extraction holding time was met could not be determined. The samples appear to have been analyzed in a timely manner.	No qualifications were required.
4. <u>Method Blanks</u>	Method blank results were not included in the laboratory's report. Evaluation of possible laboratory contamination could not be made.	No qualifications were required.
5. <u>LCS/BS</u>	There were no blank spikes included in the laboratory's report. Evaluation of laboratory accuracy was not possible.	No qualifications were required.

	Problems	Qualifications
6. <u>Surrogates</u>	Whether the samples were spiked with a surrogate could not be determined, as sample surrogate recoveries were not included in the laboratory's report. No evaluation of sample data was made on the basis of surrogate recoveries.	No qualifications were required.
7. <u>MS/MSDs</u>	The laboratory did not analyze any MS/MSD pairs with the samples of this SDG. No evaluation of the sample data could be made regarding accuracy and precision.	No qualifications were required.
8. <u>Field QC Samples</u> TB: none ER: none FB: none Field duplicates: none	The data package did not contain field QC sample information; no evaluation of sample data was made based on field QC.	No qualifications were required.
10. <u>Other</u>	<p>The sample result summaries indicated that laboratory reported results in the n-alkane ranges of C5-C12 (Gasoline Range), C10-C16 (Jet Fuel Range), and C9-C22 (Diesel Range). Heavy Oil was listed on the sample result summaries as C22+ rather than a range. The standard used for quantitation was not specified on the sample result summaries.</p> <p>Nominal detection limits appear to be approximately 50-100 lower than normal soil reporting limits for Method 8015. Neither a laboratory method detection limit study (MDL) nor sample prep information were available to aid in determining how the reporting limits were derived.</p>	No qualifications were required.
11. Comments	None	None

Receive 09/02/88

Result: y Sample

SAMPLE ID 6105-1-7

FRACTION 07B TEST CODE 8015MS NAME Fuels-Total Hydrocarbons

CLIENT ID OLD CONSI 1315

Date & Time Collected not specified

Category

MODIFIED 8015 - FUEL HYDROCARBONS

COMPOUND

RESULT DET LIMIT

vet qual grade

C5 - C12 Gasoline Range ND
C10 - C16 Jet Fuel Range ND
C9 - C22 Diesel Range 64
C22 + Heavy Oil ND

0.1
0.1
0.1
0.1

u
u
u
u

ANALYST RPM

DATE INJECTED 09/06/88

DILUTION FACTOR 1.00

VERIFIED WMC

NOTE: All results reported in mg/Kg unless otherwise specified
ND = Not detected at the specified limits

QGDEN VALIDATED

LEVEL V

1-25-47

Receiver

09/02/88

Results Sample

FRACTION 08B TEST CODE 8015MS NAME Fuels-Total Hydrocarbons

Date & Time Collected not specified

Category

CLIENT ID CONS2 1325

MODIFIED 8015 - FUEL HYDROCARBONS

COMPOUND	RESULT DET LIMIT		ANALYST	RPM
	cell	qual		
C5 - C12 Gasoline Range	ND	u	DATE INJECTED	09/06/88
C10 - C16 Jet Fuel Range	ND	↓	DILUTION FACTOR	1.00
C9 - C22 Diesel Range	4		VERIFIED	WMC

NOTE: All results reported in mg/Kg unless otherwise specified
ND = Not detected at the specified limits

QGDN VALIDATED

LEVEL V

WVA Q101 11 00-07-017

RECEIVED

11/11/88

Received 09/02/88

SAMPLE ID 6015-1-10
CLIENT ID ~~OLD CONS-1340~~
FRACTION 10B TEST CODE 8015MS NAME Fuels-Total Hydrocarbons
Date & Time Collected not specified Category

OLD CONS 3
SF 10/17

MODIFIED 8015 - FUEL HYDROCARBONS

new qual code

COMPOUND	RESULT	DET LIMIT	qual code
C5 - C12 Gasoline Range	ND	0.1	u
C10 - C16 Jet Fuel Range	ND	0.1	↓
C9 - C22 Diesel Range	ND	0.1	
C22+ Heavy Oil	4,000	0.1	

ANALYST RPM
DATE INJECTED 09/07/88
DILUTION FACTOR 1.00
VERIFIED WMC

NOTE: All results reported in mg/Kg unless otherwise specified
ND = Not detected at the specified limits

OGDEN VALIDATED

LEVEL V

1 day 20
Receive

09/02/88

11:00 AM

Results , Sample

RECEIVED

WORK ORDER # 00-07-VIT

SAMPLE ID 6105-1-9

CLIENT ID ~~OLD CONS-1330~~

GLD CONS4

CAF 10/17

FRACTION 09B

TEST CODE 8015MS

NAME Fuels-Total Hydrocarbons

Date & Time Collected not specified

Category

MODIFIED 8015 - FUEL HYDROCARBONS

COMPOUND

RESULT DET LIMIT

rel. quat
qual Code

C5 - C12 Gasoline Range ND
C10 - C16 Jet Fuel Range ND
C9 - C22 Diesel Range 2

0.1
0.1
0.1

u
↓

ANALYST RPM

DATE INJECTED 09/07/88

DILUTION FACTOR 1.00

VERIFIED WMC

NOTE: All results reported in mg/Kg unless otherwise specified
ND = Not detected at the specified limits

OGDEN VALIDATED

LEVEL V

Page 20
Receiv(09/02/88
SAMPLE ID 6105-1-11
CLIENT ID OLD CONS5 1350

DATE REC'D
Result. y Sample
FRACTION 11B TEST CODE 8015MS NAME Fuels-Total Hydrocarbons
Date & Time Collected not specified Category

WORK ORDER # 00-07-V14

MODIFIED 8015 - FUEL HYDROCARBONS				
COMPOUND	RESULT DET LIMIT		rel qual qual code	
			u	↓
C5 - C12 Gasoline Range	ND	0.1	u	
C10 - C16 Jet Fuel Range	ND	0.1	↓	
C9 - C22 Diesel Range	0.3	0.1		

ANALYST RPM
DATE INJECTED 09/07/88
DILUTION FACTOR 1.00
VERIFIED WMC

NOTE: All results reported in mg/Kg unless otherwise specified
ND = Not detected at the specified limits

QGDEN VALIDATED

LEVEL V

Receiver 09/02/88

Results Sample

SAMPLE ID 6105-1-12

FRACTION 12B TEST CODE 8015MS NAME Fuels-Total Hydrocarbons

CLIENT ID OLD CONS6 1355

Date & Time Collected not specified Category

MODIFIED 8015 - FUEL HYDROCARBONS

COMPOUND	RESULT	DET	LIMIT	rel qual code	
C5 - C12 Gasoline Range	ND		0.1	u	ANALYST RPM
C10 - C16 Jet Fuel Range	ND		0.1	↓	DATE INJECTED 09/12/88
C9 - C22 Diesel Range	ND		0.1		DILUTION FACTOR 1.00
C22+ Heavy Oil	5		0.1		VERIFIED WMC

NOTE: All results reported in mg/Kg unless otherwise specified
ND = Not detected at the specified limits

QGDEN VALIDATED

LEVEL V

550 South Wadsworth Blvd. Suite 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: EPA Method 8270

No. of Samples: 6

Date Reviewed: 02/18/99

Reviewer: M. Pokorny

Reference: USEPA Contract Laboratory Program National Functional Guidelines For Organic Data Review (Feb. 1994), and Ogden Data Validation Procedure for Semivolatile Organics by GC/MS (DVP-3, Rev. 2).

SDG: OLD YARD

Samples Reviewed: OLD CONS 1, OLD CONS 2, OLD CONS 3, OLD CONS 4, OLD CONS 5, OLD CONS 6

Matrix: Soil

EPA Level V- Semivolatiles Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	The COC was signed by field and laboratory personnel. The conditions of the samples or the temperatures at which they were received were not recorded on the COC; no evaluation of the samples could be made in regards to sample receipt conditions.	No qualifications were required.
4. <u>Method Blanks</u>	The data package did not contain method blank information; no evaluation of the samples could be made in regards to possible laboratory contamination.	No qualifications were required.
5. <u>LCS/BS</u>	The data package did not contain blank spike information; no evaluation of the samples could be made in regards to laboratory accuracy.	No qualifications were required.
6. <u>Surrogates</u>	Samples OLD CONS 1, OLD CONS 2, OLD CONS 4, and OLD CONS 5 were analyzed at dilutions and had all surrogate compounds diluted out. All	No qualifications were required.

	Problems	Qualifications
	other sample surrogate recoveries were within the EPA Method 8270 QC limits.	
7. MS/MSDs There were no MS/MSD.	The data package did not contain matrix spike information; no evaluation of the samples could be made in regards to accuracy or precision.	No qualifications were required.
8. Field QC Samples ER: none FB: none Field duplicates: None	The data package did not contain field QC sample information; no evaluation of the samples could be made in regards to field QC samples.	No qualifications were required.
10. Other	Samples OLD CONS 1, OLD CONS 2, OLD CONS 3, and OLD CONS 5 were analyzed at 10, 10, 100, and 10 fold dilutions, respectively. Sample OLD CONS 1 had high concentrations of target compounds; none of the other samples which were diluted had any target compound detects. The laboratory did not indicate why the samples were analyzed at dilutions. Nominal reporting limits were approximately 10 lower than normal for Method 8270. Reporting limits on the diluted samples were raised accordingly. No TICs were included in the laboratory report.	No qualifications were required.
11. Comments		

THE

Cataglyph

RESULT DET LIMIT

2000

3-nitroaniline	ND	2000
acenaphthene	ND	300
2,4-dinitrophenol	ND	2000
4-nitrophenol	ND	2000
dibenzofuran	ND	300
2,6-dinitrotoluene	ND	300
2,4-dinitrotoluene	ND	300
diethylphthalate	ND	300
4-chlorophenylphenyl ether	ND	300
fluorene	ND	300
4-nitroaniline	ND	2000
4,6-dinitro-2-methylphenol	ND	2000
n-nitrosodiphenylamine	ND	300
1,2-diphenylhydrazine	ND	300
4-bromophenylphenyl ether	ND	300
hexachlorobenzene	ND	300
pentachlorophenol	ND	2000
phenanthrene	1600	300
anthracene	ND	300
di-n-butylphthalate	ND	300
fluoranthene	2100	300
benzidine	ND	2000
pyrene	1000	300
butylbenzylphthalate	ND	300
3,3'-dichlorobenzidine	ND	600
benzo(a)anthracene	ND	300
bis(2-ethylhexyl)phthalate	ND	300
chrysene	500	300
di-n-octyl phthalate	ND	300
benzo(b)fluoranthene	ND	300
benzo(k)fluoranthene	ND	300
benzo(a)pyrene	ND	300
indeno(1,2,3-cd)pyrene	ND	300
dibenzo(a,h)anthracene	ND	300
benzo(a,h,i)perylene	ND	300

LEVEL V GOLDEN VALIDATED

Receiver 09/02/88

Results Sample

DATE RECEIVED 09/02/88

SAMPLE ID 6105-1-8

FRACTION 08A

TEST CODE BNA 5

NAME Semivolatile Organics

CLIENT ID OLD CONS2 1325

Date & Time Collected not specified

Category

SEMI-VOLATILE		ORGANIC	
COMPOUND	RESULT DET LIMIT	COMPOUND	RESULT DET LIMIT
n-nitrosodimethylamine	ND 300	3-nitroaniline	ND 2000
phenol	ND 300	acenaphthene	ND 300
aniline	ND 300	2,4-dinitrophenol	ND 2000
bis(2-chloroethyl)ether	ND 300	4-nitrophenol	ND 2000
2-chlorophenol	ND 300	dibenzofuran	ND 300
1,3-dichlorobenzene	ND 300	2,6-dinitrotoluene	ND 300
1,4-dichlorobenzene	ND 300	2,4-dinitrotoluene	ND 300
benzyl alcohol	ND 300	diethylphthalate	ND 300
1,2-dichlorobenzene	ND 300	4-chlorophenylphenyl ether	ND 300
2-methylphenol	ND 300	fluorene	ND 300
bis(2-chloroisopropyl)ether	ND 300	4-nitroaniline	ND 2000
4-methylphenol	ND 300	4,6-dinitro-2-methylphenol	ND 2000
n-nitroso-di-n-propylamine	ND 300	n-nitrosodiphenylamine	ND 300
hexachloroethane	ND 300	1,2-diphenylhydrazine	ND 300
nitrobenzene	ND 300	4-bromophenylphenyl ether	ND 300
isophorone	ND 300	hexachlorobenzene	ND 300
2-nitrophenol	ND 300	pentachlorophenol	ND 300
2,4-dimethylphenol	ND 300	phenanthrene	ND 300
benzoic acid	2000	anthracene	ND 300
bis(2-chloroethoxy)methane	ND 300	di-n-butylphthalate	ND 300
2,4-dichlorophenol	ND 300	fluoranthene	ND 300
1,2,4-trichlorobenzene	ND 300	benzidine	2000
naphthalene	ND 300	pyrene	ND 300
4-chloroaniline	ND 300	butylbenzylphthalate	ND 300
hexachlorobutadiene	ND 300	3,3'-dichlorobenzidine	ND 600
4-chloro-3-methylphenol	ND 300	benzo(a)anthracene	ND 300
2-methylnaphthalene	ND 300	bis(2-ethylhexyl)phthalate	ND 300
hexachlorocyclopentadiene	ND 300	chrysene	ND 300
2,4,6-trichlorophenol	ND 300	di-n-octyl phthalate	ND 300
2,4,5-trichlorophenol	ND 2000	benzo(b)fluoranthene	ND 300
2-chloronaphthalene	ND 300	benzo(k)fluoranthene	ND 300
2-nitroaniline	ND 2000	benzo(a)pyrene	ND 300
dimethyl phthalate	ND 300	indeno(1,2,3-cd)pyrene	ND 300
acenaphthylene	ND 300	dibenzo(a,h)anthracene	ND 300
ND = Not detected. All units are in ug/kg.		benzo(g,h,i)perylene	ND 300

LEVEL V QADEN VALIDATED

Received 09/12/88

Results

Sample

MULTI ANALYST REPORT

SAMPLE ID 6015-1-10

FRACTION 10A

TEST CODE BNA 5

NAME Semivolatile Organics

CLIENT ID ~~010-1340~~
6LD COMS3

Date & Time Collected not specified

Category

6F/10/17

COMPOUND	8270 SEMI-VOLATILE RESULT DET LIMIT	ORGANIC RESULTS	COMPOUND	RESULT DET LIMIT	QUAL CODE
n-nitrosodimethylamine	ND 3000		3-nitroaniline	ND 20000	
phenol	ND 3000		acenaphthene	ND 3000	
aniline	ND 3000		2,4-dinitrophenol	ND 20000	
bis(2-chloroethyl)ether	ND 3000		4-nitrophenol	ND 20000	
2-chlorophenol	ND 3000		dibenzofuran	ND 3000	
1,3-dichlorobenzene	ND 3000		2,6-dinitrotoluene	ND 3000	
1,4-dichlorobenzene	ND 3000		2,4-dinitrotoluene	ND 3000	
benzyl alcohol	ND 3000		diethylphthalate	ND 3000	
1,2-dichlorobenzene	ND 3000		4-chlorophenylphenyl ether	ND 3000	
2-methylphenol	ND 3000		fluorene	ND 3000	
bis(2-chloroisopropyl)ether	ND 3000		4-nitroaniline	ND 20000	
4-methylphenol	ND 3000		4,6-dinitro-2-methylphenol	ND 20000	
n-nitroso-di-n-propylamine	ND 3000		n-nitrosodiphenylamine	ND 3000	
hexachloroethane	ND 3000		1,2-diphenylhydrazine	ND 3000	
nitrobenzene	ND 3000		4-bromophenylphenyl ether	ND 3000	
isophorone	ND 3000		hexachlorobenzene	ND 3000	
2-nitrophenol	ND 3000		pentachlorophenol	ND 3000	
2,4-dimethylphenol	ND 3000		phenanthrene	ND 3000	
benzoic acid	ND 20000		anthracene	ND 3000	
bis(2-chloroethoxy)methane	ND 3000		di-n-butylphthalate	ND 3000	
2,4-dichlorophenol	ND 3000		fluoranthene	ND 3000	
1,2,4-trichlorobenzene	ND 3000		benzidine	ND 20000	
naphthalene	ND 3000		pyrene	ND 3000	
4-chloroaniline	ND 3000		butylbenzylphthalate	ND 3000	
hexachlorobutadiene	ND 3000		3,3'-dichlorobenzidine	ND 6000	
4-chloro-3-methylphenol	ND 3000		benzo(a)anthracene	ND 3000	
2-methylnaphthalene	ND 3000		bis(2-ethylhexyl)phthalate	ND 3000	
hexachlorocyclopentadiene	ND 3000		chrysene	ND 3000	
2,4,6-trichlorophenol	ND 3000		di-n-octyl phthalate	ND 3000	
2,4,5-trichlorophenol	ND 20000		benzo(b)fluoranthene	ND 3000	
2-chloronaphthalene	ND 3000		benzo(k)fluoranthene	ND 3000	
2-nitroaniline	ND 20000		benzo(a)pyrene	ND 3000	
dimethyl phthalate	ND 3000		indeno(1,2,3-cd)pyrene	ND 3000	
acenaphthylene	ND 3000		dibenzo(a,h)anthracene	ND 3000	
ND = Not detected. All units are in ug/kg.			benzo(g,h,i)perylene	ND 3000	

LEVEL V QDEN VALIDATED

WOLFE, JAMES

NAME Semi-volatile Organics

Cataglyph

2

Small

19

7

RESULT DET LIMIT

ND
200

30	ND
30	ND

	CO ₂	CO ₂	CO ₂
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
14	14	14	14
15	15	15	15
16	16	16	16
17	17	17	17
18	18	18	18
19	19	19	19
20	20	20	20
21	21	21	21
22	22	22	22
23	23	23	23
24	24	24	24
25	25	25	25
26	26	26	26
27	27	27	27
28	28	28	28
29	29	29	29
30	30	30	30
31	31	31	31
32	32	32	32
33	33	33	33
34	34	34	34
35	35	35	35
36	36	36	36
37	37	37	37
38	38	38	38
39	39	39	39
40	40	40	40
41	41	41	41
42	42	42	42
43	43	43	43
44	44	44	44
45	45	45	45
46	46	46	46
47	47	47	47
48	48	48	48
49	49	49	49
50	50	50	50
51	51	51	51
52	52	52	52
53	53	53	53
54	54	54	54
55	55	55	55
56	56	56	56
57	57	57	57
58	58	58	58
59	59	59	59
60	60	60	60
61	61	61	61
62	62	62	62
63	63	63	63
64	64	64	64
65	65	65	65
66	66	66	66
67	67	67	67
68	68	68	68
69	69	69	69
70	70	70	70
71	71	71	71
72	72	72	72
73	73	73	73
74	74	74	74
75	75	75	75
76	76	76	76
77	77	77	77
78	78	78	78
79	79	79	79
80	80	80	80
81	81	81	81
82	82	82	82
83	83	83	83
84	84	84	84
85	85	85	85
86	86	86	86
87	87	87	87
88	88	88	88
89	89	89	89
90	90	90	90
91	91	91	91
92	92	92	92
93	93	93	93
94	94	94	94
95	95	95	95
96	96	96	96
97	97	97	97
98	98	98	98
99	99	99	99
100	100	100	100

[illegible]

2008

2000

30

ND 30

ND 30

ND 200

ND	200
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ND	30
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ND	30
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ND 30

ND 30

ND 200

30
ND
|

30	ND
30	ND

ND

30

[illegible]

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— 1 —

ND 30

ND 30

ND	30
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ND	30
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ND	30
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ND 30

ND
30

30
ND

ND 30

5475

NEW

1

OGDEN VALIDATED

Received 09/02/88

Results Sample

SAMPLE ID 6105-1-11

FRACTION 11A

TEST CODE BNA 5

NAME Semivolatile Organics

CLIENT ID OLD CONS 1350

Date & Time Collected not specified

Category

COMPOUND	8270 SEMI-VOLATILE		ORGANIC RESULTS	
	RESULT	DET LIMIT	COMPOUND	RESULT DET LIMIT
n-nitrosodimethylamine	ND	300	3-nitroaniline	ND 2000
phenol	ND	300	acenaphthene	ND 300
aniline	ND	300	2,4-dinitrophenol	ND 2000
bis(2-chloroethyl)ether	ND	300	4-nitrophenol	ND 2000
2-chlorophenol	ND	300	dibenzofuran	ND 300
1,3-dichlorobenzene	ND	300	2,5-dinitrotoluene	ND 300
1,4-dichlorobenzene	ND	300	2,4-dinitrotoluene	ND 300
benzyl alcohol	ND	300	diethylphthalate	ND 300
1,2-dichlorobenzene	ND	300	4-chlorophenyl phenyl ether	ND 300
2-methylphenol	ND	300	fluorene	ND 300
bis(2-chloroisopropyl)ether	ND	300	4-nitroaniline	ND 2000
4-methylphenol	ND	300	4,6-dinitro-2-methylphenol	ND 2000
n-nitroso-di-n-propylamine	ND	300	n-nitrosodiphenylamine	ND 300
hexachloroethane	ND	300	1,2-diphenylhydrazine	ND 300
nitrobenzene	ND	300	4-bromophenyl phenyl ether	ND 300
isophorone	ND	300	hexachlorobenzene	ND 300
2-nitrophenol	ND	300	pentachlorophenol	ND 2000
2,4-dimethylphenol	ND	300	phenanthrene	ND 300
benzoic acid	ND	2000	anthracene	ND 300
bis(2-chloroethoxy)methane	ND	300	di-n-butylphthalate	ND 300
2,4-dichlorophenol	ND	300	fluoranthene	ND 300
1,2,4-trichlorobenzene	ND	300	benzidine	ND 2000
naphthalene	ND	300	pyrene	ND 300
4-chloroaniline	ND	300	butylbenzylphthalate	ND 300
hexachlorobutadiene	ND	300	3,3'-dichlorobenzidine	ND 600
4-chloro-3-methylphenol	ND	300	benzo(a)anthracene	ND 300
2-methylnaphthalene	ND	300	bis(2-ethylhexyl)phthalate	ND 300
hexachlorocyclopentadiene	ND	300	chrysene	ND 300
2,4,6-trichlorophenol	ND	300	di-n-octyl phthalate	ND 300
2,4,5-trichlorophenol	ND	2000	benzo(b)fluoranthene	ND 300
2-chloronaphthalene	ND	300	benzo(k)fluoranthene	ND 300
2-nitroaniline	ND	2000	benzo(a)pyrene	ND 300
dimethyl phthalate	ND	300	indeno(1,2,3-cd)pyrene	ND 300
acenaphthylene	ND	300	dibenzo(a,h)anthracene	ND 300
ND = Not detected. All units are in ug/Kg.			benzo(g,h,i)perylene	ND 300

LEVEL V
QGDEN VALIDATED

Received 79/02/88

Results Sample

SAMPLE ID 6105-1-12

CLIENT ID OLD CONSG 1355

FRACTION 12A

TEST CODE BNA S

NAME Semivolatile Organics

Date & Time Collected not specified

Category

8270 SEMI-VOLATILE ORGANIC RESULTS		QUAL AVG CPE	
COMPOUND	RESULT DET LIMIT	QUAL AVG CPE	QUAL AVG CPE
n-nitrosodimethylamine	ND	30	0
phenol	ND	30	
aniline	ND	30	
bis(2-chloroethyl) ether	ND	30	
2-chlorophenol	ND	30	
1,3-dichlorobenzene	ND	30	
1,4-dichlorobenzene	ND	30	
benzyl alcohol	ND	30	
1,2-dichlorobenzene	ND	30	
2-methylphenol	ND	30	
bis(2-chloroisopropyl) ether	ND	30	
4-methylphenol	ND	30	
n-nitroso-di-n-propylamine	ND	30	
hexachloroethane	ND	30	
nitrobenzene	ND	30	
isophorone	ND	30	
2-nitrophenol	ND	30	
2,4-dimethylphenol	ND	30	
benzoic acid	ND	200	
bis(2-chloroethoxy)methane	ND	30	
2,4-dichlorophenol	ND	30	
1,2,4-trichlorobenzene	ND	30	
naphthalene	ND	30	
4-chloroaniline	ND	30	
hexachlorobutadiene	ND	30	
4-chloro-3-methylphenol	ND	30	
2-methylnaphthalene	ND	30	
hexachlorocyclopentadiene	ND	30	
2,4,6-trichlorophenol	ND	30	
2,4,5-trichlorophenol	ND	200	
2-chloronaphthalene	ND	30	
2-nitroaniline	ND	200	
dimethyl phthalate	ND	30	
acenaphthylene	ND	30	
ND = Not detected. All units are in ug/kg.			
COMPOUND		RESULT DET LIMIT	
3-nitroaniline	ND	200	
acenaphthene	ND	30	
2,4-dinitrophenol	ND	200	
4-nitrophenol	ND	200	
dibenzofuran	ND	30	
2,6-dinitrotoluene	ND	30	
2,4-dinitrotoluene	ND	30	
diethylphthalate	ND	30	
4-chlorophenyl ether	ND	30	
fluorene	ND	30	
4-nitroaniline	ND	200	
4,6-dinitro-2-methylphenol	ND	200	
n-nitrosodimethylamine	ND	30	
1,2-diphenylhydrazine	ND	30	
4-bromophenyl ether	ND	30	
hexachlorobenzene	ND	30	
pentachlorophenol	ND	200	
phenanthrene	ND	30	
anthracene	ND	30	
di-n-butylphthalate	ND	30	
fluoranthene	ND	30	
benzidine	ND	200	
pyrene	ND	30	
butylbenzylphthalate	ND	30	
3,3'-dichlorobenzidine	ND	60	
benzo(a)anthracene	ND	30	
bis(2-ethylhexyl)phthalate	ND	30	
chrysene	ND	30	
di-n-octyl phthalate	ND	30	
benzo(b)fluoranthene	ND	30	
benzo(k)fluoranthene	ND	30	
benzo(a)pyrene	ND	30	
indeno(1,2,3-cd)pyrene	ND	30	
dibenzo(a,h)anthracene	ND	30	
benzo(g,h,i)perylene	ND	30	

LEVEL V

QGDEN VALIDATED



12269 East Vassar Drive, Aurora, CO 80014
303.881.6816, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: Volatiles by Method 8260B
QC Level: V¹
SDG: IPD1477
Matrix: Soil
No. of Samples: 2
No. of Reanalyses: 2
Date Reviewed: May 8, 2006
Reviewer: P. Meeks
Reference: USEPA Contract Laboratory Program National Functional
Guidelines For Organic Data Review (2/94)
Samples Reviewed: MJ810, MJ810RE, MJ811, MJ811RE

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received at Del Mar within the temperature limits of $4^{\circ} \pm 2^{\circ}\text{C}$, at 6°C. The COC was signed and dated by field and laboratory personnel and accounted for the soil analyses presented in this SDG. Two field QC samples, MJ812 and MJ813, were also listed on the COC for volatile analyses; however, no results were provided for these samples. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary.</p> <p>The soil samples were analyzed within 14 days of collection.</p>	No qualifications were required.
4. <u>Method Blanks</u> 6D18030-BLK1 6D19026-BLK1	There were no target compounds detected in the associated method blanks.	No qualifications were required.

	Findings	Qualifications
5. <u>LCS/BS</u> 6D18030-BS1 6D19026-BS1/BSD1	The recoveries for the blank spike and the blank spike/blank spike duplicate pair were within the laboratory-established QC limits. Added target compounds 2-chloro-1,1,1-trifluoroethane and chlorotrifluoroethene were not included in the blank spikes (see section 10).	No qualifications were required.
6. <u>Surrogates</u>	The recoveries were within the laboratory-established QC limits.	No qualifications were required.
7. <u>MS/MSDs</u> None	MS/MSD analyses were not performed on the samples of this SDG.	No qualifications were required.
9. <u>Field QC Samples</u> TB: None FB: None ER: MJ647 (IPB1641) FD: MJ810/MJ811	Acetone and chloroform were detected in the equipment rinsate below the reporting limits at concentrations of 8.3 µg/L and 0.43 µg/L, respectively. Neither compound was detected in associated site samples of this SDG. The field duplicate samples had a common detect for p-isopropyltoluene, with an RPD of <100%. The pair was considered to be in good agreement.	No qualifications were required.
10. <u>Other</u>	Requested target compounds 2-chloro-1,1,1-trifluoroethane and chlorotrifluoroethene were searched for only as TICs. Acetone for both samples was reported from a reanalysis, MJ810RE and MJ811RE. p-Isopropyltoluene was detected below the reporting limit in both samples. Soil sample results were reported in units of µg/Kg (ppb) on a dry-weight basis, and the water samples were reported in units of µg/L.	Results for 2-chloro-1,1,1-trifluoroethane and chlorotrifluoroethene (all nondetects) were qualified as estimated, "UJ," in the site samples. p-Isopropyltoluene was qualified as estimated in both samples.
<u>Comments</u>	None	None.

¹ Level V validation consists of cursory review of the summary forms and chromatograms, and raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed include instrument tunes, initial and continuing calibrations, compound identification, and compound quantification.



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17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd., #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1477

Sampled: 04/13/06
Received: 04/13/06

VOLATILE ORGANICS by GC/MS (EPA 5035/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1477-10 (MJ810 - Soil)									
Reporting Units: ug/kg dry									
Benzene	EPA 8260B	6D18030	0.76	3.0	ND	1.32	04/18/06	04/18/06	U
Bromobenzene	EPA 8260B	6D18030	1.3	7.6	ND	1.32	04/18/06	04/18/06	
Bromochloromethane	EPA 8260B	6D18030	1.1	7.6	ND	1.32	04/18/06	04/18/06	
Bromodichloromethane	EPA 8260B	6D18030	0.64	3.0	ND	1.32	04/18/06	04/18/06	
Bromoform	EPA 8260B	6D18030	1.2	7.6	ND	1.32	04/18/06	04/18/06	
Bromomethane	EPA 8260B	6D18030	1.4	7.6	ND	1.32	04/18/06	04/18/06	
2-Butanone (MEK)	EPA 8260B	6D18030	9.1	15	ND	1.32	04/18/06	04/18/06	
n-Butylbenzene	EPA 8260B	6D18030	1.1	7.6	ND	1.32	04/18/06	04/18/06	
sec-Butylbenzene	EPA 8260B	6D18030	1.0	7.6	ND	1.32	04/18/06	04/18/06	
tert-Butylbenzene	EPA 8260B	6D18030	0.94	7.6	ND	1.32	04/18/06	04/18/06	
Carbon tetrachloride	EPA 8260B	6D18030	0.76	7.6	ND	1.32	04/18/06	04/18/06	
Chlorobenzene	EPA 8260B	6D18030	0.79	3.0	ND	1.32	04/18/06	04/18/06	
Chloroethane	EPA 8260B	6D18030	2.3	7.6	ND	1.32	04/18/06	04/18/06	
2-Chloroethyl vinyl ether	EPA 8260B	6D18030	5.8	7.6	ND	1.32	04/18/06	04/18/06	
Chloroform	EPA 8260B	6D18030	0.61	3.0	ND	1.32	04/18/06	04/18/06	
Chloromethane	EPA 8260B	6D18030	1.5	7.6	ND	1.32	04/18/06	04/18/06	
2-Chlorotoluene	EPA 8260B	6D18030	1.3	7.6	ND	1.32	04/18/06	04/18/06	
4-Chlorotoluene	EPA 8260B	6D18030	1.1	7.6	ND	1.32	04/18/06	04/18/06	
Dibromochloromethane	EPA 8260B	6D18030	0.85	3.0	ND	1.32	04/18/06	04/18/06	
1,2-Dibromo-3-chloropropane	EPA 8260B	6D18030	2.3	7.6	ND	1.32	04/18/06	04/18/06	
1,2-Dibromoethane (EDB)	EPA 8260B	6D18030	1.2	3.0	ND	1.32	04/18/06	04/18/06	
Dibromomethane	EPA 8260B	6D18030	0.94	3.0	ND	1.32	04/18/06	04/18/06	
1,2-Dichlorobenzene	EPA 8260B	6D18030	1.4	3.0	ND	1.32	04/18/06	04/18/06	
1,3-Dichlorobenzene	EPA 8260B	6D18030	1.3	3.0	ND	1.32	04/18/06	04/18/06	
1,4-Dichlorobenzene	EPA 8260B	6D18030	1.4	3.0	ND	1.32	04/18/06	04/18/06	
Dichlorodifluoromethane	EPA 8260B	6D18030	2.3	7.6	ND	1.32	04/18/06	04/18/06	
1,1-Dichloroethane	EPA 8260B	6D18030	0.56	3.0	ND	1.32	04/18/06	04/18/06	
1,2-Dichloroethane	EPA 8260B	6D18030	1.2	3.0	ND	1.32	04/18/06	04/18/06	
1,1-Dichloroethene	EPA 8260B	6D18030	0.68	7.6	ND	1.32	04/18/06	04/18/06	
cis-1,2-Dichloroethene	EPA 8260B	6D18030	1.3	3.0	ND	1.32	04/18/06	04/18/06	
trans-1,2-Dichloroethene	EPA 8260B	6D18030	0.62	3.0	ND	1.32	04/18/06	04/18/06	
1,2-Dichloropropane	EPA 8260B	6D18030	0.53	3.0	ND	1.32	04/18/06	04/18/06	
1,3-Dichloropropane	EPA 8260B	6D18030	0.96	3.0	ND	1.32	04/18/06	04/18/06	
2,2-Dichloropropane	EPA 8260B	6D18030	0.68	3.0	ND	1.32	04/18/06	04/18/06	
1,1-Dichloropropene	EPA 8260B	6D18030	0.50	3.0	ND	1.32	04/18/06	04/18/06	
cis-1,3-Dichloropropene	EPA 8260B	6D18030	0.67	3.0	ND	1.32	04/18/06	04/18/06	
trans-1,3-Dichloropropene	EPA 8260B	6D18030	0.93	3.0	ND	1.32	04/18/06	04/18/06	
Ethylbenzene	EPA 8260B	6D18030	0.76	3.0	ND	1.32	04/18/06	04/18/06	
Hexachlorobutadiene	EPA 8260B	6D18030	1.1	7.6	ND	1.32	04/18/06	04/18/06	
2-Hexanone	EPA 8260B	6D18030	14	15	ND	1.32	04/18/06	04/18/06	
Isopropylbenzene	EPA 8260B	6D18030	0.82	3.0	ND	1.32	04/18/06	04/18/06	

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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Level V

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1477

Sampled: 04/13/06
Received: 04/13/06

VOLATILE ORGANICS by GC/MS (EPA 5035/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1477-10 (MJ810 - Soil) - cont.									
Reporting Units: ug/kg dry									
p-Isopropyltoluene	EPA 8260B	6D18030	1.1	3.0	1.9	1.32	04/18/06	04/18/06	Rev Qual
Methylene chloride	EPA 8260B	6D18030	9.9	30	ND	1.32	04/18/06	04/18/06	Code
4-Methyl-2-pentanone (MIBK)	EPA 8260B	6D18030	4.9	7.6	ND	1.32	04/18/06	04/18/06	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	6D18030	1.5	7.6	ND	1.32	04/18/06	04/18/06	
Naphthalene	EPA 8260B	6D18030	1.7	7.6	ND	1.32	04/18/06	04/18/06	
n-Propylbenzene	EPA 8260B	6D18030	0.93	3.0	ND	1.32	04/18/06	04/18/06	
Styrene	EPA 8260B	6D18030	0.88	3.0	ND	1.32	04/18/06	04/18/06	
1,1,1,2-Tetrachloroethane	EPA 8260B	6D18030	0.87	7.6	ND	1.32	04/18/06	04/18/06	
1,1,2,2-Tetrachloroethane	EPA 8260B	6D18030	1.3	3.0	ND	1.32	04/18/06	04/18/06	
Tetrachloroethene	EPA 8260B	6D18030	0.75	3.0	ND	1.32	04/18/06	04/18/06	
Toluene	EPA 8260B	6D18030	0.76	3.0	ND	1.32	04/18/06	04/18/06	
1,2,3-Trichlorobenzene	EPA 8260B	6D18030	1.5	7.6	ND	1.32	04/18/06	04/18/06	
1,2,4-Trichlorobenzene	EPA 8260B	6D18030	1.5	7.6	ND	1.32	04/18/06	04/18/06	
1,1,1-Trichloroethane	EPA 8260B	6D18030	0.59	3.0	ND	1.32	04/18/06	04/18/06	
1,1,2-Trichloroethane	EPA 8260B	6D18030	1.3	3.0	ND	1.32	04/18/06	04/18/06	
Trichloroethene	EPA 8260B	6D18030	0.52	3.0	ND	1.32	04/18/06	04/18/06	
Trichlorofluoromethane	EPA 8260B	6D18030	0.82	7.6	ND	1.32	04/18/06	04/18/06	
1,2,3-Trichloropropane	EPA 8260B	6D18030	1.5	15	ND	1.32	04/18/06	04/18/06	
1,2,4-Trimethylbenzene	EPA 8260B	6D18030	1.2	3.0	ND	1.32	04/18/06	04/18/06	
1,3,5-Trimethylbenzene	EPA 8260B	6D18030	0.96	3.0	ND	1.32	04/18/06	04/18/06	
Vinyl chloride	EPA 8260B	6D18030	1.4	3.0	ND	1.32	04/18/06	04/18/06	
o-Xylene	EPA 8260B	6D18030	0.76	3.0	ND	1.32	04/18/06	04/18/06	
m,p-Xylenes	EPA 8260B	6D18030	1.2	3.0	ND	1.32	04/18/06	04/18/06	
Trichlorotrifluoroethane (Freon 113)	EPA 8260B	6D18030	3.0	7.6	ND	1.32	04/18/06	04/18/06	
Surrogate: Dibromofluoromethane (80-125%)					106 %				
Surrogate: Toluene-d8 (80-120%)					92 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					90 %				

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1477

Sampled: 04/13/06
Received: 04/13/06

VOLATILE ORGANICS by GC/MS (EPA 5035/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1477-10RE1 (MJ810 - Soil) - cont.									
Reporting Units: ug/kg dry									
Acetone	EPA 8260B	6D19026	9.7	14	ND	1.2	04/19/06	04/19/06	U
Surrogate: Dibromofluoromethane (80-125%)					100 %				
Surrogate: Toluene-d8 (80-120%)					109 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					92 %				

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LEVEL V

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1477

Sampled: 04/13/06
Received: 04/13/06

VOLATILE ORGANICS by GC/MS (EPA 5035/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1477-11 (MJ811 - Soil)									
Reporting Units: ug/kg dry									
Benzene	EPA 8260B	6D18030	0.68	2.7	ND	1.17	04/18/06	04/18/06	Rev Qual
Bromobenzene	EPA 8260B	6D18030	1.2	6.8	ND	1.17	04/18/06	04/18/06	Qual Code
Bromochloromethane	EPA 8260B	6D18030	0.97	6.8	ND	1.17	04/18/06	04/18/06	
Bromodichloromethane	EPA 8260B	6D18030	0.58	2.7	ND	1.17	04/18/06	04/18/06	
Bromoform	EPA 8260B	6D18030	1.1	6.8	ND	1.17	04/18/06	04/18/06	
Bromomethane	EPA 8260B	6D18030	1.3	6.8	ND	1.17	04/18/06	04/18/06	
2-Butanone (MEK)	EPA 8260B	6D18030	8.2	14	ND	1.17	04/18/06	04/18/06	
n-Butylbenzene	EPA 8260B	6D18030	0.99	6.8	ND	1.17	04/18/06	04/18/06	
sec-Butylbenzene	EPA 8260B	6D18030	0.92	6.8	ND	1.17	04/18/06	04/18/06	
tert-Butylbenzene	EPA 8260B	6D18030	0.85	6.8	ND	1.17	04/18/06	04/18/06	
Carbon tetrachloride	EPA 8260B	6D18030	0.68	6.8	ND	1.17	04/18/06	04/18/06	
Chlorobenzene	EPA 8260B	6D18030	0.71	2.7	ND	1.17	04/18/06	04/18/06	
Chloroethane	EPA 8260B	6D18030	2.1	6.8	ND	1.17	04/18/06	04/18/06	
2-Chloroethyl vinyl ether	EPA 8260B	6D18030	5.2	6.8	ND	1.17	04/18/06	04/18/06	
Chloroform	EPA 8260B	6D18030	0.55	2.7	ND	1.17	04/18/06	04/18/06	
Chloromethane	EPA 8260B	6D18030	1.4	6.8	ND	1.17	04/18/06	04/18/06	
2-Chlorotoluene	EPA 8260B	6D18030	1.2	6.8	ND	1.17	04/18/06	04/18/06	
4-Chlorotoluene	EPA 8260B	6D18030	1.0	6.8	ND	1.17	04/18/06	04/18/06	
Dibromochloromethane	EPA 8260B	6D18030	0.77	2.7	ND	1.17	04/18/06	04/18/06	
1,2-Dibromo-3-chloropropane	EPA 8260B	6D18030	2.1	6.8	ND	1.17	04/18/06	04/18/06	
1,2-Dibromoethane (EDB)	EPA 8260B	6D18030	1.1	2.7	ND	1.17	04/18/06	04/18/06	
Dibromomethane	EPA 8260B	6D18030	0.85	2.7	ND	1.17	04/18/06	04/18/06	
1,2-Dichlorobenzene	EPA 8260B	6D18030	1.3	2.7	ND	1.17	04/18/06	04/18/06	
1,3-Dichlorobenzene	EPA 8260B	6D18030	1.2	2.7	ND	1.17	04/18/06	04/18/06	
1,4-Dichlorobenzene	EPA 8260B	6D18030	1.3	2.7	ND	1.17	04/18/06	04/18/06	
Dichlorodifluoromethane	EPA 8260B	6D18030	2.1	6.8	ND	1.17	04/18/06	04/18/06	
1,1-Dichloroethane	EPA 8260B	6D18030	0.51	2.7	ND	1.17	04/18/06	04/18/06	
1,2-Dichloroethane	EPA 8260B	6D18030	1.1	2.7	ND	1.17	04/18/06	04/18/06	
1,1-Dichloroethene	EPA 8260B	6D18030	0.62	6.8	ND	1.17	04/18/06	04/18/06	
cis-1,2-Dichloroethene	EPA 8260B	6D18030	1.1	2.7	ND	1.17	04/18/06	04/18/06	
trans-1,2-Dichloroethene	EPA 8260B	6D18030	0.56	2.7	ND	1.17	04/18/06	04/18/06	
1,2-Dichloropropane	EPA 8260B	6D18030	0.48	2.7	ND	1.17	04/18/06	04/18/06	
1,3-Dichloropropane	EPA 8260B	6D18030	0.86	2.7	ND	1.17	04/18/06	04/18/06	
2,2-Dichloropropane	EPA 8260B	6D18030	0.62	2.7	ND	1.17	04/18/06	04/18/06	
1,1-Dichloropropene	EPA 8260B	6D18030	0.45	2.7	ND	1.17	04/18/06	04/18/06	
cis-1,3-Dichloropropene	EPA 8260B	6D18030	0.60	2.7	ND	1.17	04/18/06	04/18/06	
trans-1,3-Dichloropropene	EPA 8260B	6D18030	0.84	2.7	ND	1.17	04/18/06	04/18/06	
Ethylbenzene	EPA 8260B	6D18030	0.68	2.7	ND	1.17	04/18/06	04/18/06	
Hexachlorobutadiene	EPA 8260B	6D18030	1.0	6.8	ND	1.17	04/18/06	04/18/06	
2-Hexanone	EPA 8260B	6D18030	12	14	ND	1.17	04/18/06	04/18/06	
Isopropylbenzene	EPA 8260B	6D18030	0.74	2.7	ND	1.17	04/18/06	04/18/06	

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1477

Sampled: 04/13/06
Received: 04/13/06

VOLATILE ORGANICS by GC/MS (EPA 5035/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1477-11 (MJ811 - Soil) - cont.									
Reporting Units: ug/kg dry									
p-Isopropyltoluene	EPA 8260B	6D18030	0.99	2.7	1.3	1.17	04/18/06	04/18/06	J J
Methylene chloride	EPA 8260B	6D18030	8.9	27	ND	1.17	04/18/06	04/18/06	U
4-Methyl-2-pentanone (MIBK)	EPA 8260B	6D18030	4.4	6.8	ND	1.17	04/18/06	04/18/06	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	6D18030	1.4	6.8	ND	1.17	04/18/06	04/18/06	
Naphthalene	EPA 8260B	6D18030	1.5	6.8	ND	1.17	04/18/06	04/18/06	
n-Propylbenzene	EPA 8260B	6D18030	0.84	2.7	ND	1.17	04/18/06	04/18/06	
Styrene	EPA 8260B	6D18030	0.79	2.7	ND	1.17	04/18/06	04/18/06	
1,1,1,2-Tetrachloroethane	EPA 8260B	6D18030	0.78	6.8	ND	1.17	04/18/06	04/18/06	
1,1,2,2-Tetrachloroethane	EPA 8260B	6D18030	1.2	2.7	ND	1.17	04/18/06	04/18/06	
Tetrachloroethene	EPA 8260B	6D18030	0.67	2.7	ND	1.17	04/18/06	04/18/06	
Toluene	EPA 8260B	6D18030	0.68	2.7	ND	1.17	04/18/06	04/18/06	
1,2,3-Trichlorobenzene	EPA 8260B	6D18030	1.4	6.8	ND	1.17	04/18/06	04/18/06	
1,2,4-Trichlorobenzene	EPA 8260B	6D18030	1.4	6.8	ND	1.17	04/18/06	04/18/06	
1,1,1-Trichloroethane	EPA 8260B	6D18030	0.53	2.7	ND	1.17	04/18/06	04/18/06	
1,1,2-Trichloroethane	EPA 8260B	6D18030	1.2	2.7	ND	1.17	04/18/06	04/18/06	
Trichloroethene	EPA 8260B	6D18030	0.47	2.7	ND	1.17	04/18/06	04/18/06	
Trichlorofluoromethane	EPA 8260B	6D18030	0.74	6.8	ND	1.17	04/18/06	04/18/06	
1,2,3-Trichloropropane	EPA 8260B	6D18030	1.4	14	ND	1.17	04/18/06	04/18/06	
1,2,4-Trimethylbenzene	EPA 8260B	6D18030	1.1	2.7	ND	1.17	04/18/06	04/18/06	
1,3,5-Trimethylbenzene	EPA 8260B	6D18030	0.86	2.7	ND	1.17	04/18/06	04/18/06	
Vinyl chloride	EPA 8260B	6D18030	1.2	2.7	ND	1.17	04/18/06	04/18/06	
o-Xylene	EPA 8260B	6D18030	0.68	2.7	ND	1.17	04/18/06	04/18/06	
m,p-Xylenes	EPA 8260B	6D18030	1.1	2.7	ND	1.17	04/18/06	04/18/06	
Trichlorotrifluoroethane (Freon 113)	EPA 8260B	6D18030	2.7	6.8	ND	1.17	04/18/06	04/18/06	
Surrogate: Dibromofluoromethane (80-125%)					111 %				
Surrogate: Toluene-d8 (80-120%)					91 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					88 %				

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1477

Sampled: 04/13/06
Received: 04/13/06

VOLATILE ORGANICS by GC/MS (EPA 5035/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1477-11RE1 (MJ811 - Soil) - cont.									
Reporting Units: ug/kg dry									
Acetone	EPA 8260B	6D19026	10	15	ND	1.26	04/19/06	04/19/06	Rev Qual
Surrogate: Dibromofluoromethane (80-125%)					109 %				Qual Code
Surrogate: Toluene-d8 (80-120%)					106 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					93 %				

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1477

Sampled: 04/13/06
Received: 04/13/06

PURGEABLES BY GC/MS, TENTATIVELY IDENTIFIED COMPOUNDS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1477-10 (MJ810 - Soil)									
Reporting Units: ug/kg dry									
2-Chloro-1,1,1-trifluoroethane	EPA 8260B	6D18030	N/A	76	ND	1.32	04/18/06	04/18/06	UT *10
Chlorotrifluoroethene	EPA 8260B	6D18030	N/A	76	ND	1.32	04/18/06	04/18/06	
Sample ID: IPD1477-11 (MJ811 - Soil)									
Reporting Units: ug/kg dry									
2-Chloro-1,1,1-trifluoroethane	EPA 8260B	6D18030	N/A	68	ND	1.17	04/18/06	04/18/06	
Chlorotrifluoroethene	EPA 8260B	6D18030	N/A	68	ND	1.17	04/18/06	04/18/06	

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720.535.5502, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: TFH (EFH) by EPA Method 8015M
QC Level: V¹
SDG: IPD1477
Matrix: Soil/Water
No. of Samples: 6
No. of Reanalyses/Dilutions: 0
Date Reviewed: May 8, 2006
Reviewer: P. Meeks
Reference: USEPA *Contract Laboratory Program National Functional Guidelines For Organic Data Review (2/94)*
Samples Reviewed: MJ806, MJ807, MJ808, MJ809, MJ812, MJ813

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received at Del Mar within the temperature limits of 4° ± 2°C, at 6°C. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary. The COCs were signed and dated by field and laboratory personnel and accounted for the analyses presented in this SDG.</p> <p>The soil samples were extracted within 14 days of collection, and was analyzed within 40 days of extraction.</p>	No qualifications were required.
4. <u>Method Blanks</u> 6D21103-BLK1 6D20100-BLK1	Total EFH (C8-C30) was reported in both method blanks. There were no other detects for the EFH hydrocarbon ranges in the soil method blanks.	As the total EFH results were not retained (see section 10), no qualifications were required.

	Findings	Qualifications
5. <u>LCS/BS</u> 6D21103-BS1 6D20100-BS1/BSD1	The recoveries for total EFH (C8-C30) were within the laboratory QC limits of 40-120% and the RPD was within the QC limit of $\leq 25\%$.	No qualifications were required.
6. <u>Surrogates</u>	The sample surrogate recoveries were within the laboratory QC limits of 40-125%.	No qualifications were required.
7. <u>MS/MSDs</u> None	None	None
9. <u>Field QC Samples</u> FB: MJ813 ER: MJ812 FD: MJ806/MJ807 MJ808/MJ809	<p>The equipment rinsate had detects below the reporting limit for EFH (C8-C11), EFH (C15-C20), and EFH (C21-C30) at concentrations of 0.066, 0.089, and 0.22 mg/L. EFH (C8-C11) was not reported in the site samples.</p> <p>Duplicate pair MJ806 and MJ807 had a common detect for EFH (C21-C30), with an RPD $\leq 100\%$. Duplicate pair MJ808 and MJ809 had common detects for EFH (C15-C20) and EFH (C21-C30), with RPDs $\leq 100\%$. The pairs were considered to be in agreement.</p>	EFH (C15-C20) in MJ808 and MJ809 and EFH (C21-C30) detected in MJ806, MJ808, and MJ809 were qualified as estimated, "J."
10. <u>Other</u>	<p>The soil samples were reported on a dry-weight basis in units of mg/Kg. Four EFH hydrocarbon ranges were reported: C8-C11, C12-C14, C15-C20, and C21-C30, as well as a total, C8-C30.</p> <p>EFH hydrocarbon ranges were detected below the reporting limit.</p>	<p>The results for total EFH (C8-C30) were rejected, "R," in all samples as duplicate data, as the total result was represented by the four separate ranges.</p> <p>Results below the reporting limit were qualified as estimated, "J."</p>
<u>Comments</u>	None	None

¹ Level V validation consists of cursory review of the summary forms only; raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed included instrument performance, analytical sequence, initial calibration, continuing calibration, compound identification, and compound quantification.



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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1477

Sampled: 04/13/06
Received: 04/13/06

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IPD1477-06 (MJ806 - Soil)									Rev Qual	Qual Code
Reporting Units: mg/kg dry										
EFH (C8 - C30)	EPA 8015 MOD.	6D21103	2.1	5.7	21	1	04/21/06	04/23/06	R-B	D
EFH (C8 - C11)	EPA 8015 MOD.	6D21103	2.1	5.7	ND	1	04/21/06	04/23/06	U	
EFH (C12 - C14)	EPA 8015 MOD.	6D21103	2.1	5.7	ND	1	04/21/06	04/23/06	↓	
EFH (C15 - C20)	EPA 8015 MOD.	6D21103	2.1	5.7	ND	1	04/21/06	04/23/06	J	F
EFH (C21 - C30)	EPA 8015 MOD.	6D21103	2.1	5.7	18	1	04/21/06	04/23/06		
Surrogate: n-Octacosane (40-125%)					68 %					
Sample ID: IPD1477-07 (MJ807 - Soil)										
Reporting Units: mg/kg dry										
EFH (C8 - C30)	EPA 8015 MOD.	6D21103	4.4	12	45	2	04/21/06	04/23/06	R	D
EFH (C8 - C11)	EPA 8015 MOD.	6D21103	4.4	12	ND	2	04/21/06	04/23/06	U	
EFH (C12 - C14)	EPA 8015 MOD.	6D21103	4.4	12	ND	2	04/21/06	04/23/06	↓	
EFH (C15 - C20)	EPA 8015 MOD.	6D21103	4.4	12	ND	2	04/21/06	04/23/06		
EFH (C21 - C30)	EPA 8015 MOD.	6D21103	4.4	12	38	2	04/21/06	04/23/06		
Surrogate: n-Octacosane (40-125%)					79 %					
Sample ID: IPD1477-08 (MJ808 - Soil)										
Reporting Units: mg/kg dry										
EFH (C8 - C30)	EPA 8015 MOD.	6D21103	2.1	5.9	18	0.998	04/21/06	04/23/06	R-B	D
EFH (C8 - C11)	EPA 8015 MOD.	6D21103	2.1	5.9	ND	0.998	04/21/06	04/23/06	U	
EFH (C12 - C14)	EPA 8015 MOD.	6D21103	2.1	5.9	ND	0.998	04/21/06	04/23/06	↓	
EFH (C15 - C20)	EPA 8015 MOD.	6D21103	2.1	5.9	7.0	0.998	04/21/06	04/23/06	J	F
EFH (C21 - C30)	EPA 8015 MOD.	6D21103	2.1	5.9	8.8	0.998	04/21/06	04/23/06		
Surrogate: n-Octacosane (40-125%)					72 %					
Sample ID: IPD1477-09 (MJ809 - Soil)										
Reporting Units: mg/kg dry										
EFH (C8 - C30)	EPA 8015 MOD.	6D21103	2.1	5.9	14	0.998	04/21/06	04/22/06	R-B	D
EFH (C8 - C11)	EPA 8015 MOD.	6D21103	2.1	5.9	ND	0.998	04/21/06	04/22/06	U	
EFH (C12 - C14)	EPA 8015 MOD.	6D21103	2.1	5.9	ND	0.998	04/21/06	04/22/06	↓	
EFH (C15 - C20)	EPA 8015 MOD.	6D21103	2.1	5.9	5.2	0.998	04/21/06	04/22/06	J	F
EFH (C21 - C30)	EPA 8015 MOD.	6D21103	2.1	5.9	7.5	0.998	04/21/06	04/22/06		
Surrogate: n-Octacosane (40-125%)					77 %					

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MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1477

Sampled: 04/13/06
Received: 04/13/06

EXTRACTABLE FUEL HYDROCARBONS (EPA 3510C/8015 CADHS Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IPD1477-12 (MJ812 - Water)									Rev	Qual
Reporting Units: mg/l									Qual	Code
EFH (C8 - C30)	EPA 8015 MOD.	6D20100	0.042	0.47	0.41	0.943	04/20/06	04/20/06	R, J, B	D
EFH (C8 - C11)	EPA 8015 MOD.	6D20100	0.042	0.47	0.066	0.943	04/20/06	04/20/06	J, J	
EFH (C12 - C14)	EPA 8015 MOD.	6D20100	0.042	0.47	ND	0.943	04/20/06	04/20/06	U	
EFH (C15 - C20)	EPA 8015 MOD.	6D20100	0.042	0.47	0.089	0.943	04/20/06	04/20/06	J, J	
EFH (C21 - C30)	EPA 8015 MOD.	6D20100	0.042	0.47	0.22	0.943	04/20/06	04/20/06	J, J	
Surrogate: n-Octacosane (40-125%)					83 %					
Sample ID: IPD1477-13 (MJ813 - Water)										
Reporting Units: mg/l										
EFH (C8 - C30)	EPA 8015 MOD.	6D20100	0.043	0.48	0.068	0.952	04/20/06	04/20/06	R, J, B	D
EFH (C8 - C11)	EPA 8015 MOD.	6D20100	0.043	0.48	ND	0.952	04/20/06	04/20/06	U	
EFH (C12 - C14)	EPA 8015 MOD.	6D20100	0.043	0.48	ND	0.952	04/20/06	04/20/06		
EFH (C15 - C20)	EPA 8015 MOD.	6D20100	0.043	0.48	ND	0.952	04/20/06	04/20/06		
EFH (C21 - C30)	EPA 8015 MOD.	6D20100	0.043	0.48	ND	0.952	04/20/06	04/20/06		
Surrogate: n-Octacosane (40-125%)					87 %					

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Project Manager

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720.535.5502, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: TFH (EFH) by EPA Method 8015M
QC Level: V¹
SDG: IPD1108
Matrix: Soil
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Date Reviewed: May 5, 2006
Reviewer: P. Meeks
Reference: USEPA Contract Laboratory Program National Functional
Guidelines For Organic Data Review (2/94)
Samples Reviewed: MJ739

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The sample was received at Del Mar within the temperature limits of $4^{\circ} \pm 2^{\circ}\text{C}$, at 5°C. As the sample was couriered directly from the field to the laboratory, custody seals were not necessary. The COC was signed and dated by field and laboratory personnel and accounted for the analysis presented in this SDG.</p> <p>The soil sample was extracted within 14 days of collection, and was analyzed within 40 days of extraction.</p>	No qualifications were required.
4. <u>Method Blanks</u> 6D19067-MB	There were no detects for the EFH hydrocarbon ranges in the soil method blank.	No qualifications were required.
5. <u>LCS/BS</u> 6D19067-BS1	The recovery for total EFH (C8-C30) was within the laboratory QC limits of 40-120%.	No qualifications were required.

	Findings	Qualifications
6. <u>Surrogates</u>	The sample surrogate recoveries were within the laboratory QC limits of 40-125%.	No qualifications were required.
7. <u>MS/MSDs</u> None	None	None
9. <u>Field QC Samples</u> FB: MJ813 (IPD1477) ER: MJ812 (IPD1477) FD: None	The equipment rinsate had detects below the reporting limit for EFH (C8-C11), EFH (C15-C20), and EFH (C21-C30) at concentrations of 0.066, 0.089, and 0.22 mg/L. None of the ranges were reported in MJ739.	No qualifications were required.
10. <u>Other</u>	The soil sample was reported on a dry-weight basis in units of mg/Kg. Four EFH hydrocarbon ranges were reported: C8-C11, C12-C14, C15-C20, and C21-C30, as well as a total, C8-C30.	The result for total EFH (C8-C30) was rejected, "R," in MJ739 as duplicate data, as the total result was represented by the four separate ranges.
<u>Comments</u>	None	None

¹ Level V validation consists of cursory review of the summary forms only; raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed included instrument performance, analytical sequence, initial calibration, continuing calibration, compound identification, and compound quantification.



12269 East Vassar Drive, Aurora, CO 80014
720.535.5502, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: TFH (EFH) by EPA Method 8015M
QC Level: V¹
SDG: IPD1302
Matrix: Soil
No. of Samples: 11
No. of Reanalyses/Dilutions: 0
Date Reviewed: May 8, 2006
Reviewer: P. Meeks
Reference: USEPA Contract Laboratory Program National Functional Guidelines For Organic Data Review (2/94)
Samples Reviewed: MJ787, MJ788, MJ789, MJ790, MJ791, MJ794, MJ795, MJ796, MJ798, MJ799, MJ800

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received at Del Mar within the temperature limits of $4^{\circ} \pm 2^{\circ}\text{C}$, at 3°C. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary. The COC was signed and dated by field and laboratory personnel and accounted for the samples and analyses presented in this SDG.</p> <p>The soil samples were extracted within 14 days of collection, and were analyzed within 40 days of extraction.</p>	No qualifications were required.
4. <u>Method Blanks</u> 6D21099-BLK1 6D19067-BLK1	There were no detects for the EFH hydrocarbon ranges in the soil method blanks.	No qualifications were required.

	Findings	Qualifications
5. <u>LCS/BS</u> 6D21099-BS1 6D19067-BS1	The recovery for total EFH (C8-C30) was within the laboratory QC limits of 40-120%.	No qualifications were required.
6. <u>Surrogates</u>	The sample surrogate recoveries were within the laboratory QC limits of 40-125%.	No qualifications were required.
7. <u>MS/MSDs</u>	MS/MSD analyses were performed on sample MJ799. The recoveries for total EFH were within the QC limits and the RPD was within the QC limit of $\leq 30\%$.	No qualifications were required.
9. <u>Field QC Samples</u> FB: MJ813 (IPD1477) ER: MJ812 (IPD1477) FD: None	The equipment rinsate had detects below the reporting limit for EFH (C8-C11), EFH (C15-C20), and EFH (C21-C30) at concentrations of 0.066, 0.089, and 0.22 mg/L. The sample concentration for EFH (C21-C30) was greater than five times the equipment rinsate concentration in sample MJ798.	EFH (C8-C11) in MJ787, MJ789, MJ790 and MJ798, EFH (C15-C20) in MJ787, MJ789, MJ790, MJ796, MJ798, and MJ799, and EFH (C21-C30) in MJ787, MJ788, MJ789, MJ790, MJ794, MJ795, MJ796, MJ799, and MJ800 were qualified as estimated, "J."
10. <u>Other</u>	The soil samples were reported on a dry-weight basis in units of mg/Kg. Four EFH hydrocarbon ranges were reported: C8-C11, C12-C14, C15-C20, and C21-C30, as well as a total, C8-C30. Any sample detects between the MDL and the reporting limit were qualified as estimated, "J."	Results for total EFH (C8-C30) were rejected, "R," as duplicate data, as the total result was represented by the four separate ranges.
<u>Comments</u>	None.	None.

¹ Level V validation consists of cursory review of the summary forms only; raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed included instrument performance, analytical sequence, initial calibration, continuing calibration, compound identification, and compound quantification.



17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Conley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1302

Sampled: 04/12/06
Received: 04/12/06

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IPD1302-12 (MJ787 - Soil)									Rev	Qual Code
Reporting Units: mg/kg dry										
EFH (C8 - C30)	EPA 8015 MOD.	6D19067	2.3	6.4	33	1	04/19/06	04/19/06	P	D
EFH (C8 - C11)	EPA 8015 MOD.	6D19067	2.3	6.4	3.0	1	04/19/06	04/19/06	J	F
EFH (C12 - C14)	EPA 8015 MOD.	6D19067	2.3	6.4	ND	1	04/19/06	04/19/06	J	F
EFH (C15 - C20)	EPA 8015 MOD.	6D19067	2.3	6.4	6.0	1	04/19/06	04/19/06	J	F
EFH (C21 - C30)	EPA 8015 MOD.	6D19067	2.3	6.4	22	1	04/19/06	04/19/06	J	F
Surrogate: n-Octacosane (40-125%)					54 %					
Sample ID: IPD1302-13 (MJ788 - Soil)										
Reporting Units: mg/kg dry										
EFH (C8 - C30)	EPA 8015 MOD.	6D19067	2.2	6.1	5.1	1	04/19/06	04/19/06	P	D
EFH (C8 - C11)	EPA 8015 MOD.	6D19067	2.2	6.1	ND	1	04/19/06	04/19/06	J	F
EFH (C12 - C14)	EPA 8015 MOD.	6D19067	2.2	6.1	ND	1	04/19/06	04/19/06	J	F
EFH (C15 - C20)	EPA 8015 MOD.	6D19067	2.2	6.1	ND	1	04/19/06	04/19/06	J	F
EFH (C21 - C30)	EPA 8015 MOD.	6D19067	2.2	6.1	2.5	1	04/19/06	04/19/06	J	F
Surrogate: n-Octacosane (40-125%)					72 %					
Sample ID: IPD1302-14 (MJ789 - Soil)										
Reporting Units: mg/kg dry										
EFH (C8 - C30)	EPA 8015 MOD.	6D19067	2.0	5.6	21	1	04/19/06	04/19/06	P	D
EFH (C8 - C11)	EPA 8015 MOD.	6D19067	2.0	5.6	2.3	1	04/19/06	04/19/06	J	F
EFH (C12 - C14)	EPA 8015 MOD.	6D19067	2.0	5.6	ND	1	04/19/06	04/19/06	J	F
EFH (C15 - C20)	EPA 8015 MOD.	6D19067	2.0	5.6	3.3	1	04/19/06	04/19/06	J	F
EFH (C21 - C30)	EPA 8015 MOD.	6D19067	2.0	5.6	14	1	04/19/06	04/19/06	J	F
Surrogate: n-Octacosane (40-125%)					77 %					
Sample ID: IPD1302-15 (MJ790 - Soil)										
Reporting Units: mg/kg dry										
EFH (C8 - C30)	EPA 8015 MOD.	6D19067	2.2	6.1	17	1	04/19/06	04/19/06	P	D
EFH (C8 - C11)	EPA 8015 MOD.	6D19067	2.2	6.1	2.7	1	04/19/06	04/19/06	J	F
EFH (C12 - C14)	EPA 8015 MOD.	6D19067	2.2	6.1	ND	1	04/19/06	04/19/06	J	F
EFH (C15 - C20)	EPA 8015 MOD.	6D19067	2.2	6.1	3.1	1	04/19/06	04/19/06	J	F
EFH (C21 - C30)	EPA 8015 MOD.	6D19067	2.2	6.1	10	1	04/19/06	04/19/06	J	F
Surrogate: n-Octacosane (40-125%)					77 %					
Sample ID: IPD1302-16 (MJ791 - Soil)										
Reporting Units: mg/kg dry										
EFH (C8 - C30)	EPA 8015 MOD.	6D19067	2.1	5.8	4.9	1	04/19/06	04/19/06	P	D
EFH (C8 - C11)	EPA 8015 MOD.	6D19067	2.1	5.8	ND	1	04/19/06	04/19/06	J	F
EFH (C12 - C14)	EPA 8015 MOD.	6D19067	2.1	5.8	ND	1	04/19/06	04/19/06	J	F
EFH (C15 - C20)	EPA 8015 MOD.	6D19067	2.1	5.8	ND	1	04/19/06	04/19/06	J	F
EFH (C21 - C30)	EPA 8015 MOD.	6D19067	2.1	5.8	ND	1	04/19/06	04/19/06	J	F
Surrogate: n-Octacosane (40-125%)					72 %					

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-1621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1302

Sampled: 04/12/06
Received: 04/12/06

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IPD1302-19 (MJ794 - Soil)									Raw	Qual
Reporting Units: mg/kg dry									Qual	Code
EFH (C8 - C30)	EPA 8015 MOD.	6D21099	2.2	6.0	12	1	04/21/06	04/21/06	R	D
EFH (C8 - C11)	EPA 8015 MOD.	6D21099	2.2	6.0	ND	1	04/21/06	04/21/06	C	
EFH (C12 - C14)	EPA 8015 MOD.	6D21099	2.2	6.0	ND	1	04/21/06	04/21/06	↓	
EFH (C15 - C20)	EPA 8015 MOD.	6D21099	2.2	6.0	ND	1	04/21/06	04/21/06	↓	
EFH (C21 - C30)	EPA 8015 MOD.	6D21099	2.2	6.0	7.7	1	04/21/06	04/21/06	J	F
Surrogate: n-Octacosane (40-125%)					83 %					
Sample ID: IPD1302-20 (MJ795 - Soil)										
Reporting Units: mg/kg dry										
EFH (C8 - C30)	EPA 8015 MOD.	6D21099	7.5	21	40	3	04/21/06	04/21/06	R	D
EFH (C8 - C11)	EPA 8015 MOD.	6D21099	7.5	21	ND	3	04/21/06	04/21/06	C	
EFH (C12 - C14)	EPA 8015 MOD.	6D21099	7.5	21	ND	3	04/21/06	04/21/06	↓	
EFH (C15 - C20)	EPA 8015 MOD.	6D21099	7.5	21	ND	3	04/21/06	04/21/06	↓	
EFH (C21 - C30)	EPA 8015 MOD.	6D21099	7.5	21	28	3	04/21/06	04/21/06	J	F
Surrogate: n-Octacosane (40-125%)					77 %					
Sample ID: IPD1302-21 (MJ796 - Soil)										
Reporting Units: mg/kg dry										
EFH (C8 - C30)	EPA 8015 MOD.	6D21099	4.6	13	34	2	04/21/06	04/21/06	R	D
EFH (C8 - C11)	EPA 8015 MOD.	6D21099	4.6	13	ND	2	04/21/06	04/21/06	C	
EFH (C12 - C14)	EPA 8015 MOD.	6D21099	4.6	13	ND	2	04/21/06	04/21/06	↓	
EFH (C15 - C20)	EPA 8015 MOD.	6D21099	4.6	13	8.5	2	04/21/06	04/21/06	J	F
EFH (C21 - C30)	EPA 8015 MOD.	6D21099	4.6	13	21	2	04/21/06	04/21/06	J	F
Surrogate: n-Octacosane (40-125%)					81 %					
Sample ID: IPD1302-23 (MJ798 - Soil)										
Reporting Units: mg/kg dry										
EFH (C8 - C30)	EPA 8015 MOD.	6D21099	2.0	5.6	85	1	04/21/06	04/21/06	R	D
EFH (C8 - C11)	EPA 8015 MOD.	6D21099	2.0	5.6	7.3	1	04/21/06	04/21/06	C	
EFH (C12 - C14)	EPA 8015 MOD.	6D21099	2.0	5.6	3.3	1	04/21/06	04/21/06	↓	
EFH (C15 - C20)	EPA 8015 MOD.	6D21099	2.0	5.6	11	1	04/21/06	04/21/06	J	F
EFH (C21 - C30)	EPA 8015 MOD.	6D21099	2.0	5.6	64	1	04/21/06	04/21/06	J	F
Surrogate: n-Octacosane (40-125%)					100 %					
Sample ID: IPD1302-24 (MJ799 - Soil)										
Reporting Units: mg/kg dry										
EFH (C8 - C30)	EPA 8015 MOD.	6D21099	2.0	5.4	21	1	04/21/06	04/21/06	R	
EFH (C8 - C11)	EPA 8015 MOD.	6D21099	2.0	5.4	ND	1	04/21/06	04/21/06	C	
EFH (C12 - C14)	EPA 8015 MOD.	6D21099	2.0	5.4	ND	1	04/21/06	04/21/06	↓	
EFH (C15 - C20)	EPA 8015 MOD.	6D21099	2.0	5.4	2.7	1	04/21/06	04/21/06	J	
EFH (C21 - C30)	EPA 8015 MOD.	6D21099	2.0	5.4	16	1	04/21/06	04/21/06	J	
Surrogate: n-Octacosane (40-125%)					89 %					

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Michele Chamberlin
Project Manager

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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPD1302

Sampled: 04/12/06
Received: 04/12/06

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPD1302-25 (MJ800 - Soil)									
Reporting Units: mg/kg dry									
EFH (C8 - C30)	EPA 8015 MOD.	6D21099	3.9	11	11	2	04/21/06	04/21/06	Rev Qual Qual Code
EFH (C8 - C11)	EPA 8015 MOD.	6D21099	3.9	11	ND	2	04/21/06	04/21/06	R D
EFH (C12 - C14)	EPA 8015 MOD.	6D21099	3.9	11	ND	2	04/21/06	04/21/06	U
EFH (C15 - C20)	EPA 8015 MOD.	6D21099	3.9	11	ND	2	04/21/06	04/21/06	↓
EFH (C21 - C30)	EPA 8015 MOD.	6D21099	3.9	11	5.2	2	04/21/06	04/21/06	J J F
Surrogate: n-Octacosane (40-125%)					86 %				

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Michele Chamberlin
Project Manager

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720.535.5502, Fax 720.535.7555

DATA ASSESSMENT FORM

Project Title: Boeing SSFL RFI, Group 6 Data Gap
Project Manager: D. Hambrick
Analysis/Method: TFH (EFH) by EPA Method 8015M
QC Level: V¹
SDG: IPB1791
Matrix: Soil
No. of Samples: 8
No. of Reanalyses/Dilutions: 0
Date Reviewed: March 20, 2006
Reviewer: L. Calvin
Reference: USEPA Contract Laboratory Program National Functional
Guidelines For Organic Data Review (2/94)
Samples Reviewed: MJ696, MJ697, MJ698, MJ704, MJ705, MJ707, MJ708, MJ710

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The samples were received at Del Mar within the temperature limits of $4^{\circ} \pm 2^{\circ}\text{C}$, at 5°C. As the samples were couriered directly from the field to the laboratory, custody seals were not necessary. The COC was signed and dated by field and laboratory personnel and accounted for the analyses presented in this SDG.</p> <p>The soil samples were extracted within 14 days of collection, and were analyzed within 40 days of extraction.</p>	No qualifications were required.
4. <u>Method Blanks</u> 6B25044-MB	There were no detects for the EFH hydrocarbon ranges in the soil method blank.	No qualifications were required.
5. <u>LCS/BS</u> 6B25044-BS1	The recovery for total EFH (C8-C30) was within the laboratory QC limits of 40-120%.	No qualifications were required.

	Findings	Qualifications
6. <u>Surrogates</u>	The sample surrogate recoveries were within the laboratory QC limits of 40-125%.	No qualifications were required.
7. <u>MS/MSDs</u>	MS/MSD analyses were performed on sample MJ697. The recovery for total EFH was above the QC limits in the MS and within the QC limits in the MSD. The RPD was within the QC limit of $\leq 30\%$.	No qualifications were required.
9. <u>Field QC Samples</u> FB: None ER: MJ632 (IPB1429) FD: None	The equipment rinsate had a detect below the reporting limit for EFH (C21-C30) at a concentration of 0.13 mg/L. Any sample concentrations for EFH (C21-C30) were greater than five times the equipment rinsate concentration.	No qualifications were required.
10. <u>Other</u>	The soil samples were reported on a dry-weight basis in units of mg/Kg. Four EFH hydrocarbon ranges were reported: C8-C11, C12-C14, C15-C20, and C21-C30, as well as a total, C8-C30. Any sample detects between the MDL and the reporting limit were qualified as estimated, "J."	Results for total EFH (C8-C30) were rejected, "R," as duplicate data, as the total result was represented by the four separate ranges.
<u>Comments</u>	None.	None.

¹ Level V validation consists of cursory review of the summary forms only; raw data is not evaluated. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed. Criteria not reviewed included instrument performance, analytical sequence, initial calibration, continuing calibration, compound identification, and compound quantification.



MWH-San Diego
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 6
Data Gap
Report Number: IPB1791

Sampled: 02/17/06
Received: 02/17/06

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1791-04 (MJ696 - Soil)									
Reporting Units: mg/kg dry									
EFH (C8 - C30)	EPA 8015 MOD.	6B25044	2.0	5.6	3.1	1	02/25/06	02/27/06	R JD
EFH (C8 - C11)	EPA 8015 MOD.	6B25044	2.0	5.6	ND	1	02/25/06	02/27/06	u
EFH (C12 - C14)	EPA 8015 MOD.	6B25044	2.0	5.6	ND	1	02/25/06	02/27/06	u
EFH (C15 - C20)	EPA 8015 MOD.	6B25044	2.0	5.6	ND	1	02/25/06	02/27/06	u
EFH (C21 - C30)	EPA 8015 MOD.	6B25044	2.0	5.6	ND	1	02/25/06	02/27/06	u
Surrogate: n-Octacosane (40-125%)					56 %				
Sample ID: IPB1791-05 (MJ697 - Soil)									
Reporting Units: mg/kg dry									
EFH (C8 - C30)	EPA 8015 MOD.	6B28061	4.0	11	130	2	02/28/06	02/28/06	R M1D
EFH (C8 - C11)	EPA 8015 MOD.	6B28061	4.0	11	ND	2	02/28/06	02/28/06	u
EFH (C12 - C14)	EPA 8015 MOD.	6B28061	4.0	11	13	2	02/28/06	02/28/06	u
EFH (C15 - C20)	EPA 8015 MOD.	6B28061	4.0	11	59	2	02/28/06	02/28/06	u
EFH (C21 - C30)	EPA 8015 MOD.	6B28061	4.0	11	60	2	02/28/06	02/28/06	u
Surrogate: n-Octacosane (40-125%)					65 %				
Sample ID: IPB1791-06 (MJ698 - Soil)									
Reporting Units: mg/kg dry									
EFH (C8 - C30)	EPA 8015 MOD.	6B25044	2.0	5.6	ND	1	02/25/06	02/27/06	R D
EFH (C8 - C11)	EPA 8015 MOD.	6B25044	2.0	5.6	ND	1	02/25/06	02/27/06	u
EFH (C12 - C14)	EPA 8015 MOD.	6B25044	2.0	5.6	ND	1	02/25/06	02/27/06	u
EFH (C15 - C20)	EPA 8015 MOD.	6B25044	2.0	5.6	ND	1	02/25/06	02/27/06	u
EFH (C21 - C30)	EPA 8015 MOD.	6B25044	2.0	5.6	ND	1	02/25/06	02/27/06	u
Surrogate: n-Octacosane (40-125%)					62 %				
Sample ID: IPB1791-12 (MJ704 - Soil)									
Reporting Units: mg/kg dry									
EFH (C8 - C30)	EPA 8015 MOD.	6B25044	1.9	5.2	ND	1	02/25/06	02/27/06	R D
EFH (C8 - C11)	EPA 8015 MOD.	6B25044	1.9	5.2	ND	1	02/25/06	02/27/06	u
EFH (C12 - C14)	EPA 8015 MOD.	6B25044	1.9	5.2	ND	1	02/25/06	02/27/06	u
EFH (C15 - C20)	EPA 8015 MOD.	6B25044	1.9	5.2	ND	1	02/25/06	02/27/06	u
EFH (C21 - C30)	EPA 8015 MOD.	6B25044	1.9	5.2	ND	1	02/25/06	02/27/06	u
Surrogate: n-Octacosane (40-125%)					54 %				
Sample ID: IPB1791-13 (MJ705 - Soil)									
Reporting Units: mg/kg dry									
EFH (C8 - C30)	EPA 8015 MOD.	6B25044	1.9	5.4	2.2	1	02/25/06	02/27/06	R JD
EFH (C8 - C11)	EPA 8015 MOD.	6B25044	1.9	5.4	ND	1	02/25/06	02/27/06	u
EFH (C12 - C14)	EPA 8015 MOD.	6B25044	1.9	5.4	ND	1	02/25/06	02/27/06	u
EFH (C15 - C20)	EPA 8015 MOD.	6B25044	1.9	5.4	ND	1	02/25/06	02/27/06	u
EFH (C21 - C30)	EPA 8015 MOD.	6B25044	1.9	5.4	ND	1	02/25/06	02/27/06	u
Surrogate: n-Octacosane (40-125%)					69 %				

Del Mar Analytical, Irvine
Michele Chamberlin
Project Manager



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
 9444 Farnham Street, Suite 300
 San Diego, CA 92123
 Attention: Lisa J. Tucker

Project ID: SSFL Group 6
 Data Gap
 Report Number: IPB1791

Sampled: 02/17/06
 Received: 02/17/06

EXTRACTABLE FUEL HYDROCARBONS (CADHS/8015 Modified)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IPB1791-15 (MJ707 - Soil)									
Reporting Units: mg/kg dry									
EFH (C8 - C30)	EPA 8015 MOD.	6B25044	3.7	10	4.3	2	02/25/06	02/27/06	RL-1 JD
EFH (C8 - C11)	EPA 8015 MOD.	6B25044	3.7	10	ND	2	02/25/06	02/27/06	u
EFH (C12 - C14)	EPA 8015 MOD.	6B25044	3.7	10	ND	2	02/25/06	02/27/06	u
EFH (C15 - C20)	EPA 8015 MOD.	6B25044	3.7	10	ND	2	02/25/06	02/27/06	u
EFH (C21 - C30)	EPA 8015 MOD.	6B25044	3.7	10	ND	2	02/25/06	02/27/06	u

Surrogate: n-Octacosane (40-125%)

64 %

Sample ID: IPB1791-16 (MJ708 - Soil)

Reporting Units: mg/kg dry

EFH (C8 - C30)	EPA 8015 MOD.	6B25044	3.8	11	6.1	2	02/25/06	02/27/06	RL-1 JD
EFH (C8 - C11)	EPA 8015 MOD.	6B25044	3.8	11	ND	2	02/25/06	02/27/06	u
EFH (C12 - C14)	EPA 8015 MOD.	6B25044	3.8	11	ND	2	02/25/06	02/27/06	u
EFH (C15 - C20)	EPA 8015 MOD.	6B25044	3.8	11	ND	2	02/25/06	02/27/06	u
EFH (C21 - C30)	EPA 8015 MOD.	6B25044	3.8	11	4.5	2	02/25/06	02/27/06	J

Surrogate: n-Octacosane (40-125%)

70 %

Sample ID: IPB1791-18 (MJ710 - Soil)

Reporting Units: mg/kg dry

EFH (C8 - C30)	EPA 8015 MOD.	6B25044	1.9	5.3	3.5	1	02/25/06	02/27/06	RL-1 JD
EFH (C8 - C11)	EPA 8015 MOD.	6B25044	1.9	5.3	ND	1	02/25/06	02/27/06	u
EFH (C12 - C14)	EPA 8015 MOD.	6B25044	1.9	5.3	ND	1	02/25/06	02/27/06	u
EFH (C15 - C20)	EPA 8015 MOD.	6B25044	1.9	5.3	ND	1	02/25/06	02/27/06	u
EFH (C21 - C30)	EPA 8015 MOD.	6B25044	1.9	5.3	2.2	1	02/25/06	02/27/06	J

Surrogate: n-Octacosane (40-125%)

56 %

Del Mar Analytical, Irvine
 Michele Chamberlin
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

IPB1791 <Page 3 of 24>

OGDEN ENVIRONMENTAL AND ENERGY SERVICES



1

550 South Wadsworth Blvd. Ste. 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: 6010/7000

No. of Samples: 14

Date Completed: August 5, 1998

Reviewer: K. Okonzak-Lowry

Ref: USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994)

SDG: L9703578

Samples Reviewed: RF033, RF662, RF664, RF665, RF666, RF667, RF671, RF672, RF673, RF674, RF679, RF680, RF681, RF088

EPA Level V- Metals Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	The sample condition questions were not answered on any of the applicable COCs. Sample cooler temperatures upon receipt were not noted, and the COCs were not signed by the laboratory.	Due to the nonvolatile nature of the analytes, the samples were not qualified for the lack of the temperature blank information.
2. <u>Method Blanks</u>	None. All method blank results were below laboratory determined PQLs.	None
3. <u>LCS</u>	The LCS results were all within the laboratory established control limits of 75-125%R.	None
4. <u>Duplicates</u>	None performed.	None
5. <u>MS/MSDs</u> Performed on soil sample RF679	Antimony: MS at 32%R/MSD at 44%R Arsenic: MS at 82%R/MSD at 74%R Mercury: MS at 130.7%R/MSD at 138.6%R The %Rs for the mercury, selenium.	Antimony and arsenic detects qualified "J" and nondetects qualified "UJ" Mercury detects qualified "J" and mercury nondetects were not qualified

	Problems	Qualifications
	and thallium MS/MSD results were calculated incorrectly on the MS/MSD reporting form.	
6. <u>Furnace Atomic Absorption QC</u> Post digestion spikes performed on samples RF033 and RF672	The post digestion spike recoveries for the arsenic, selenium, and thallium analyses were within the 85-115% R control limit. The validator determined the post spike results by reviewing the GFAA raw data.	None
7. <u>ICP Serial Dilution</u> Performed on sample RF681	Barium: 13.7%D Copper: 13.6%D Zinc: 24.2%D There was no ICP serial dilution form in the report. The validator determined the serial dilution results by reviewing the ICP raw data.	The barium, copper, and zinc soil sample detects were qualified "J."
8. <u>Field QC Samples</u> ER samples: RF803 and RF149 FB sample: RS682 Field Duplicates: None identified for this SDG	There were detects in the field QC samples but none at high enough levels to require sample qualifications.	None
9. <u>Other</u>	None	None
10. <u>Comments</u>	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703578
 Date Collected: 10/20/97
 Date Received: 10/20/97

Metals

Sample Name: RF033
 Lab Code: L9703578-001
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	11	1	10/27/97	10/29/97	11	U	uJ	Q
Arsenic	EPA 3050	7060	6	1	10/27/97	10/28/97	6	U	uJ	Q
Barium	EPA 3050	6010	1	1	10/27/97	10/29/97	78		J	A
Beryllium	EPA 3050	6010	0.6	1	10/27/97	10/29/97	0.6	U	u	
Cadmium	EPA 3050	6010	1	1	10/27/97	10/29/97	1	U	u	
Chromium	EPA 3050	6010	2	1	10/27/97	10/29/97	14			
Cobalt	EPA 3050	6010	2	1	10/27/97	10/29/97	7			
Copper	EPA 3050	6010	2	1	10/27/97	10/29/97	7		J	A
Lead	EPA 3050	6010	6	1	10/27/97	10/29/97	7			
Mercury	METHOD	7471	0.2	1	10/27/97	10/28/97	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	10/27/97	10/29/97	11	U	u	
Nickel	EPA 3050	6010	6	1	10/27/97	10/29/97	9			
Selenium	EPA 3050	7740	6	1	10/27/97	10/28/97	6	U	u	
Silver	EPA 3050	6010	1	1	10/27/97	10/29/97	1	U	u	
Thallium	EPA 3050	7841	6	1	10/27/97	10/29/97	6	U	u	
Vanadium	EPA 3050	6010	2	1	10/27/97	10/29/97	30			
Zinc	EPA 3050	6010	1	1	10/27/97	10/29/97	43		J	A

OGDEN VALIDATED

LEVEL V

Approved By:
 1544/021397p

Date: 1/12/98

5001

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703578
 Date Collected: 10/22/97
 Date Received: 10/22/97

Metals

Sample Name: RF088
 Lab Code: L9703578-020
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qua Code
Antimony	EPA 3050	6010	10	1	10/27/97	10/29/97	10	U	uJ	Q
Arsenic	EPA 3050	7060	5	1	10/27/97	10/28/97	16		J	Q
Barium	EPA 3050	6010	1	1	10/27/97	10/29/97	93		J	A
Beryllium	EPA 3050	6010	0.5	1	10/27/97	10/29/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	10/27/97	10/29/97	6			
Chromium	EPA 3050	6010	2	1	10/27/97	10/29/97	13			
Cobalt	EPA 3050	6010	2	1	10/27/97	10/29/97	6			
Copper	EPA 3050	6010	2	1	10/27/97	10/29/97	14		J	A
Lead	EPA 3050	6010	5	1	10/27/97	10/29/97	29			
Mercury	METHOD	7471	0.2	1	10/27/97	10/28/97	0.2		J	Q
Molybdenum	EPA 3050	6010	10	1	10/27/97	10/29/97	10	U	u	
Nickel	EPA 3050	6010	5	1	10/27/97	10/29/97	14			
Selenium	EPA 3050	7740	5	1	10/27/97	10/28/97	5	U	u	
Silver	EPA 3050	6010	1	1	10/27/97	10/29/97	1	U	u	
Thallium	EPA 3050	7841	5	1	10/27/97	10/27/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	10/27/97	10/29/97	31			
Zinc	EPA 3050	6010	1	1	10/27/97	10/29/97	300		J	A

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LEVEL V

Approved By:
 1544/021397p

Date: 11/12/98

5014

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703578
 Date Collected: 10/20/97
 Date Received: 10/20/97

Metals

Sample Name: RF662
 Lab Code: L9703578-002
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Rev Qual Code
Antimony	EPA 3050	6010	18	1	10/27/97	10/29/97	18	U	uJ	Q
Arsenic	EPA 3050	7060	9	1	10/27/97	10/28/97	9	U	uJ	Q
Barium	EPA 3050	6010	2	1	10/27/97	10/29/97	100		J	A
Beryllium	EPA 3050	6010	0.9	1	10/27/97	10/29/97	0.9	U	u	
Cadmium	EPA 3050	6010	2	1	10/27/97	10/29/97	2	U	u	
Chromium	EPA 3050	6010	4	1	10/27/97	10/29/97	27			
Cobalt	EPA 3050	6010	4	1	10/27/97	10/29/97	7			
Copper	EPA 3050	6010	4	1	10/27/97	10/29/97	36		J	A
Lead	EPA 3050	6010	9	1	10/27/97	10/29/97	38			
Mercury	METHOD	7471	0.4	1	10/27/97	10/28/97	0.4	U	u	
Molybdenum	EPA 3050	6010	18	1	10/27/97	10/29/97	18	U	u	
Nickel	EPA 3050	6010	9	1	10/27/97	10/29/97	20			
Selenium	EPA 3050	7740	9	1	10/27/97	10/28/97	9	U	u	
Silver	EPA 3050	6010	2	1	10/27/97	10/29/97	15			
Thallium	EPA 3050	7841	9	1	10/27/97	10/27/97	9	U	u	
Vanadium	EPA 3050	6010	4	1	10/27/97	10/29/97	34			
Zinc	EPA 3050	6010	2	1	10/27/97	10/29/97	140		J	A

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LEVEL V

Approved By: _____
 IS:44/021397p

Date: 1/12/98

Kud
6/30/98

5002
 Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703578
 Date Collected: 10/20/97
 Date Received: 10/20/97

Metals

Sample Name: RF664
 Lab Code: L9703578-004
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	10/27/97	10/29/97	10	U	uJ	Q
Arsenic	EPA 3050	7060	5	1	10/27/97	10/28/97	5	U	uJ	Q
Barium	EPA 3050	6010	1	1	10/27/97	10/29/97	110		J	A
Beryllium	EPA 3050	6010	0.5	1	10/27/97	10/29/97	0.6			
Cadmium	EPA 3050	6010	1	1	10/27/97	10/29/97	1	U	u	
Chromium	EPA 3050	6010	2	1	10/27/97	10/29/97	22			
Cobalt	EPA 3050	6010	2	1	10/27/97	10/29/97	7			
Copper	EPA 3050	6010	2	1	10/27/97	10/29/97	12		J	A
Lead	EPA 3050	6010	5	1	10/27/97	10/29/97	14			
Mercury	METHOD	7471	0.2	1	10/27/97	10/28/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	10/27/97	10/29/97	10	U	u	
Nickel	EPA 3050	6010	5	1	10/27/97	10/29/97	15			
Selenium	EPA 3050	7740	5	1	10/27/97	10/28/97	5	U	u	
Silver	EPA 3050	6010	1	1	10/27/97	10/29/97	7			
Thallium	EPA 3050	7841	5	1	10/27/97	10/27/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	10/27/97	10/29/97	34			
Zinc	EPA 3050	6010	1	1	10/27/97	10/29/97	63		J	A

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LEVEL V

Approved By: _____
 1544/021397p

Jc Rood

Date: _____

1/12/98

5003

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703578
 Date Collected: 10/20/97
 Date Received: 10/20/97

Metals

Sample Name: RF665
 Lab Code: L9703578-005
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	10/27/97	10/29/97	10	U	uJ	Q
Arsenic	EPA 3050	7060	5	1	10/27/97	10/28/97	6		J	Q
Barium	EPA 3050	6010	1	1	10/27/97	10/29/97	73		J	A
Beryllium	EPA 3050	6010	0.5	1	10/27/97	10/29/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	10/27/97	10/29/97	1			
Chromium	EPA 3050	6010	2	1	10/27/97	10/29/97	42			
Cobalt	EPA 3050	6010	2	1	10/27/97	10/29/97	6			
Copper	EPA 3050	6010	2	1	10/27/97	10/29/97	23		J	A
Lead	EPA 3050	6010	5	1	10/27/97	10/29/97	11			
Mercury	METHOD	7471	0.2	1	10/27/97	10/28/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	10/27/97	10/29/97	10	U	u	
Nickel	EPA 3050	6010	5	1	10/27/97	10/29/97	15			
Selenium	EPA 3050	7740	5	1	10/27/97	10/28/97	5	U	u	
Silver	EPA 3050	6010	1	1	10/27/97	10/29/97	50			
Thallium	EPA 3050	7841	5	1	10/27/97	10/27/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	10/27/97	10/29/97	28			
Zinc	EPA 3050	6010	1	1	10/27/97	10/29/97	75		J	A

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1544/021397p

Date: 1/12/98

5004

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703578
 Date Collected: 10/20/97
 Date Received: 10/20/97

Metals

Sample Name: RF666
 Lab Code: L9703578-006
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	11	1	10/27/97	10/29/97	11	U	UJ	Q
Arsenic	EPA 3050	7060	5	1	10/27/97	10/28/97	7		J	Q
Barium	EPA 3050	6010	1	1	10/27/97	10/29/97	110		J	A
Beryllium	EPA 3050	6010	0.5	1	10/27/97	10/29/97	0.7			
Cadmium	EPA 3050	6010	1	1	10/27/97	10/29/97	1	U	u	
Chromium	EPA 3050	6010	2	1	10/27/97	10/29/97	22			
Cobalt	EPA 3050	6010	2	1	10/27/97	10/29/97	7			
Copper	EPA 3050	6010	2	1	10/27/97	10/29/97	10		J	A
Lead	EPA 3050	6010	5	1	10/27/97	10/29/97	7			
Mercury	METHOD	7471	0.2	1	10/27/97	10/28/97	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	10/27/97	10/29/97	11	U	u	
Nickel	EPA 3050	6010	5	1	10/27/97	10/29/97	14			
Selenium	EPA 3050	7740	5	1	10/27/97	10/28/97	5	U	u	
Silver	EPA 3050	6010	1	1	10/27/97	10/29/97	4			
Thallium	EPA 3050	7841	5	1	10/27/97	10/27/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	10/27/97	10/29/97	41			
Zinc	EPA 3050	6010	1	1	10/27/97	10/29/97	52		J	A

OGDEN VALIDATED

LEVEL V

Approved By:
 1544/021397p

Date: 1/12/98

5005

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703578
 Date Collected: 10/20/97
 Date Received: 10/20/97

Metals

Sample Name: RF667
 Lab Code: L9703578-007
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qua Code
Antimony	EPA 3050	6010	10	1	10/27/97	10/29/97	10	U	uJ	Q
Arsenic	EPA 3050	7060	5	1	10/27/97	10/28/97	5	U	uJ	Q
Barium	EPA 3050	6010	1	1	10/27/97	10/29/97	96		J	A
Beryllium	EPA 3050	6010	0.5	1	10/27/97	10/29/97	0.5			
Cadmium	EPA 3050	6010	1	1	10/27/97	10/29/97	1	U	u	
Chromium	EPA 3050	6010	2	1	10/27/97	10/29/97	18			
Cobalt	EPA 3050	6010	2	1	10/27/97	10/29/97	7			
Copper	EPA 3050	6010	2	1	10/27/97	10/29/97	12		J	A
Lead	EPA 3050	6010	5	1	10/27/97	10/29/97	10			
Mercury	METHOD	7471	0.2	1	10/27/97	10/28/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	10/27/97	10/29/97	10	U	u	
Nickel	EPA 3050	6010	5	1	10/27/97	10/29/97	14			
Selenium	EPA 3050	7740	5	1	10/27/97	10/28/97	5	U	u	
Silver	EPA 3050	6010	1	1	10/27/97	10/29/97	1	U	u	
Thallium	EPA 3050	7841	5	1	10/27/97	10/27/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	10/27/97	10/29/97	32			
Zinc	EPA 3050	6010	1	1	10/27/97	10/29/97	55		J	A

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1544/021397p

Date: 1/12/98

5006

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703578
 Date Collected: 10/21/97
 Date Received: 10/21/97

Metals

Sample Name: RF671
 Lab Code: L9703578-008
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qua Code
Antimony	EPA 3050	6010	20	1	10/27/97	10/29/97	20	U	uJ	Q
Arsenic	EPA 3050	7060	10	1	10/27/97	10/28/97	14		J	Q
Barium	EPA 3050	6010	2	1	10/27/97	10/29/97	180		J	A
Beryllium	EPA 3050	6010	1	1	10/27/97	10/29/97	1.1			
Cadmium	EPA 3050	6010	2	1	10/27/97	10/29/97	3			
Chromium	EPA 3050	6010	4	1	10/27/97	10/29/97	74			
Cobalt	EPA 3050	6010	4	1	10/27/97	10/29/97	12			
Copper	EPA 3050	6010	4	1	10/27/97	10/29/97	95		J	A
Lead	EPA 3050	6010	10	1	10/27/97	10/29/97	41			
Mercury	METHOD	7471	0.4	1	10/27/97	10/28/97	0.4	U	u	
Molybdenum	EPA 3050	6010	20	1	10/27/97	10/29/97	20	U	u	
Nickel	EPA 3050	6010	10	1	10/27/97	10/29/97	27			
Selenium	EPA 3050	7740	10	1	10/27/97	10/28/97	10	U	u	
Silver	EPA 3050	6010	2	1	10/27/97	10/29/97	50			
Thallium	EPA 3050	7841	10	1	10/27/97	10/27/97	10	U	u	
Vanadium	EPA 3050	6010	4	1	10/27/97	10/29/97	61			
Zinc	EPA 3050	6010	2	1	10/27/97	10/29/97	200		J	A

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1544/021397p

Date: 1/12/98

5007

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703578
 Date Collected: 10/21/97
 Date Received: 10/21/97

Metals

Sample Name: RF672
 Lab Code: L9703578-009
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev	Qual Code
Antimony	EPA 3050	6010	17	1	10/27/97	10/29/97	17	U	uJ	Q
Arsenic	EPA 3050	7060	9	1	10/27/97	10/28/97	9	U	uJ	Q
Barium	EPA 3050	6010	2	1	10/27/97	10/29/97	77		J	A
Beryllium	EPA 3050	6010	0.9	1	10/27/97	10/29/97	0.9	U	u	
Cadmium	EPA 3050	6010	2	1	10/27/97	10/29/97	2	U	u	
Chromium	EPA 3050	6010	3	1	10/27/97	10/29/97	17			
Cobalt	EPA 3050	6010	3	1	10/27/97	10/29/97	6			
Copper	EPA 3050	6010	3	1	10/27/97	10/29/97	14		J	A
Lead	EPA 3050	6010	9	1	10/27/97	10/29/97	14			
Mercury	METHOD	7471	0.3	1	10/27/97	10/28/97	0.3	U	u	
Molybdenum	EPA 3050	6010	17	1	10/27/97	10/29/97	17	U	u	
Nickel	EPA 3050	6010	9	1	10/27/97	10/29/97	12			
Selenium	EPA 3050	7740	9	1	10/27/97	10/28/97	9	U	u	
Silver	EPA 3050	6010	2	1	10/27/97	10/29/97	4			
Thallium	EPA 3050	7841	9	1	10/27/97	10/27/97	9	U	u	
Vanadium	EPA 3050	6010	3	1	10/27/97	10/29/97	26			
Zinc	EPA 3050	6010	2	1	10/27/97	10/29/97	80		J	A

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1544/021397p

Date: 1/12/98

5008

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703578
 Date Collected: 10/21/97
 Date Received: 10/21/97

Metals

Sample Name: RF673
 Lab Code: L9703578-010
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Aug Code
Antimony	EPA 3050	6010	14	1	10/27/97	10/29/97	14	U	u J	Q
Arsenic	EPA 3050	7060	7	1	10/27/97	10/28/97	7	U	u J	Q
Barium	EPA 3050	6010	1	1	10/27/97	10/29/97	29		J	A
Beryllium	EPA 3050	6010	0.6	1	10/27/97	10/29/97	0.6	U	u	
Cadmium	EPA 3050	6010	1	1	10/27/97	10/29/97	1	U	u	
Chromium	EPA 3050	6010	3	1	10/27/97	10/29/97	15			
Cobalt	EPA 3050	6010	3	1	10/27/97	10/29/97	3	U	u	
Copper	EPA 3050	6010	3	1	10/27/97	10/29/97	3		J	A
Lead	EPA 3050	6010	7	1	10/27/97	10/29/97	7	U	u	
Mercury	METHOD	7471	0.3	1	10/27/97	10/28/97	0.3	U	u	
Molybdenum	EPA 3050	6010	14	1	10/27/97	10/29/97	14	U	u	
Nickel	EPA 3050	6010	7	1	10/27/97	10/29/97	21			
Selenium	EPA 3050	7740	7	1	10/27/97	10/28/97	7	U	u	
Silver	EPA 3050	6010	1	1	10/27/97	10/29/97	1	U	u	
Thallium	EPA 3050	7841	7	1	10/27/97	10/27/97	7	U	u	
Vanadium	EPA 3050	6010	3	1	10/27/97	10/29/97	11			
Zinc	EPA 3050	6010	1	1	10/27/97	10/29/97	32		J	A

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1544/021397p

Date: 11/12/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703578
 Date Collected: 10/21/97
 Date Received: 10/21/97

Metals

Sample Name: RF674
 Lab Code: L9703578-011
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qua Code
Antimony	EPA 3050	6010	23	1	10/27/97	10/29/97	23	U	uJ	Q
Arsenic	EPA 3050	7060	12	1	10/27/97	10/28/97	12	U	uJ	Q
Barium	EPA 3050	6010	2	1	10/27/97	10/29/97	160		J	A
Beryllium	EPA 3050	6010	1	1	10/27/97	10/29/97	1	U	u	
Cadmium	EPA 3050	6010	2	1	10/27/97	10/29/97	2	U	u	
Chromium	EPA 3050	6010	5	1	10/27/97	10/29/97	59			
Cobalt	EPA 3050	6010	5	1	10/27/97	10/29/97	12			
Copper	EPA 3050	6010	5	1	10/27/97	10/29/97	35		J	A
Lead	EPA 3050	6010	12	1	10/27/97	10/29/97	23			
Mercury	METHOD	7471	0.5	1	10/27/97	10/28/97	0.5	U	u	
Molybdenum	EPA 3050	6010	23	1	10/27/97	10/29/97	23	U	u	
Nickel	EPA 3050	6010	12	1	10/27/97	10/29/97	32			
Selenium	EPA 3050	7740	12	1	10/27/97	10/28/97	12	U	u	
Silver	EPA 3050	6010	2	1	10/27/97	10/29/97	16			
Thallium	EPA 3050	7841	12	1	10/27/97	10/27/97	12	U	u	
Vanadium	EPA 3050	6010	5	1	10/27/97	10/29/97	68			
Zinc	EPA 3050	6010	2	1	10/27/97	10/29/97	150		J	A

OGDEN VALIDATED

LEVEL V

Approved By: JK Rave
 10/21/97

Date: 1/12/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703578
 Date Collected: 10/22/97
 Date Received: 10/22/97

Metals

Sample Name: RF679
 Lab Code: L9703578-016
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev	Qual Code
Antimony	EPA 3050	6010	10	1	10/27/97	10/29/97	10	U	uJ	Q
Arsenic	EPA 3050	7060	5	1	10/27/97	10/28/97	9		J	Q
Barium	EPA 3050	6010	1	1	10/27/97	10/29/97	46		J	A
Beryllium	EPA 3050	6010	0.5	1	10/27/97	10/29/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	10/27/97	10/29/97	1	U	u	
Chromium	EPA 3050	6010	2	1	10/27/97	10/29/97	9			
Cobalt	EPA 3050	6010	2	1	10/27/97	10/29/97	4			
Copper	EPA 3050	6010	2	1	10/27/97	10/29/97	6		J	A
Lead	EPA 3050	6010	5	1	10/27/97	10/29/97	11			
Mercury	METHOD	7471	0.2	1	10/27/97	10/28/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	10/27/97	10/29/97	10	U	u	
Nickel	EPA 3050	6010	5	1	10/27/97	10/29/97	7			
Selenium	EPA 3050	7740	5	1	10/27/97	10/28/97	5	U	u	
Silver	EPA 3050	6010	1	1	10/27/97	10/29/97	1	U	u	
Thallium	EPA 3050	7841	5	1	10/27/97	10/27/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	10/27/97	10/29/97	18			
Zinc	EPA 3050	6010	1	1	10/27/97	10/29/97	41		J	A

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1544/021397p

Date: _____

1/12/98

5011

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703578
 Date Collected: 10/22/97
 Date Received: 10/22/97

Metals

Sample Name: RF680
 Lab Code: L9703578-017
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev	Aug Code
Antimony	EPA 3050	6010	19	1	10/27/97	10/29/97	19	U	uJ	Q
Arsenic	EPA 3050	7060	10	1	10/27/97	10/28/97	10	U	uJ	Q
Barium	EPA 3050	6010	2	1	10/27/97	10/29/97	370		J	A
Beryllium	EPA 3050	6010	1	1	10/27/97	10/29/97	1	U	u	
Cadmium	EPA 3050	6010	2	1	10/27/97	10/29/97	100			
Chromium	EPA 3050	6010	4	1	10/27/97	10/29/97	250			
Cobalt	EPA 3050	6010	4	1	10/27/97	10/29/97	45			
Copper	EPA 3050	6010	4	1	10/27/97	10/29/97	300		J	A
Lead	EPA 3050	6010	10	1	10/27/97	10/29/97	1300			
Mercury	METHOD	7471	0.4	1	10/27/97	10/28/97	0.4	U	u	
Molybdenum	EPA 3050	6010	19	1	10/27/97	10/29/97	23			
Nickel	EPA 3050	6010	10	1	10/27/97	10/29/97	330			
Selenium	EPA 3050	7740	10	1	10/27/97	10/28/97	10	U	u	
Silver	EPA 3050	6010	2	1	10/27/97	10/29/97	2	U	u	
Thallium	EPA 3050	7841	10	1	10/27/97	10/27/97	10	U	u	
Vanadium	EPA 3050	6010	4	1	10/27/97	10/29/97	23			
Zinc	EPA 3050	6010	2	1	10/27/97	10/29/97	2900		J	A

OGDEN VALIDATED

LEVEL V

10/27/97 V

Approved By: _____
 1S44/021397p

Date: 1/12/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703578
 Date Collected: 10/22/97
 Date Received: 10/22/97

Metals

Sample Name: RF681
 Lab Code: L9703578-018
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qua Code
Antimony	EPA 3050	6010	19	1	10/27/97	10/29/97	19		J	Q
Arsenic	EPA 3050	7060	9	1	10/27/97	10/28/97	17		J	Q
Barium	EPA 3050	6010	2	1	10/27/97	10/29/97	220		J	A
Beryllium	EPA 3050	6010	0.9	1	10/27/97	10/29/97	0.9	U	u	
Cadmium	EPA 3050	6010	2	1	10/27/97	10/29/97	3			
Chromium	EPA 3050	6010	4	1	10/27/97	10/29/97	78			
Cobalt	EPA 3050	6010	4	1	10/27/97	10/29/97	16			
Copper	EPA 3050	6010	4	1	10/27/97	10/29/97	2200		J	A
Lead	EPA 3050	6010	9	1	10/27/97	10/29/97	180			
Mercury	METHOD	7471	0.4	50	10/27/97	10/28/97	38		J	Q
Molybdenum	EPA 3050	6010	19	1	10/27/97	10/29/97	23			
Nickel	EPA 3050	6010	9	1	10/27/97	10/29/97	54			
Selenium	EPA 3050	7740	9	1	10/27/97	10/28/97	9	U	u	
Silver	EPA 3050	6010	4	1	10/27/97	10/29/97	4	U	u	
Thallium	EPA 3050	7841	9	1	10/27/97	10/27/97	9	U	u	
Vanadium	EPA 3050	6010	4	1	10/27/97	10/29/97	17			
Zinc	EPA 3050	6010	2	1	10/27/97	10/29/97	5400		J	A

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1544/021397p

Date: 1/12/98

5013

OGDEN

ENVIRONMENTAL AND ENERGY SERVICES



1

550 South Wadsworth Blvd. Ste. 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: 6010/7000

No. of Samples: 12

Date Completed: August 19, 1998

Reviewer: K. Okonczak-Lowry

Ref: USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994), Columbia Analytical Services, Inc. - Canoga Park, Determination of Trace Elements by Inductively Coupled Plasma, Optical Emission Spectrometry SOP ICP-OES, Revision 1.0 (8/96). Columbia Analytical Services, Inc. - Canoga Park, Graphite Furnace Atomic Absorption Spectrometry SOP GFA-GFAA, Revision 1.0 (8/96). Columbia Analytical Services, Inc. - Canoga Park, Mercury in Solid or Semisolid Waste SOP MET-7471, Revision 2.0 (3/98).

SDG: L9703679

Samples Reviewed: RF713, RF714, RF715, RF717, RF718, RF719, RF720, RF721, RF723, RF728, RF731, RF732

EPA Level V- Metals Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	The sample condition questions were answered on the applicable COCs. The sample cooler temperatures upon receipt were noted on the COCs at 14°C and 3°C. The COCs were signed by the field and laboratory personnel. No cooler custody seals were present.	Due to the nonvolatile nature of the analytes, the samples were not qualified for the temperature blanks.
2. <u>Method Blanks</u>	None. All method blank results were below laboratory determined PQLs.	None
3. <u>LCS</u>	The LCS results were all within the laboratory established control limits of 75-125%R.	None
4. <u>Duplicates</u>	None performed.	None
5. <u>MS/MSDs</u> Performed on soil samples	Antimony: MS at 49%R/MSD at 46%R.	Antimony nondetects qualified "UJ" for the MS/MSD %Rs.

	Problems	Qualifications
RF731(no Al or B) and RF458, SDG 4204,(Al and B only)	The aluminum and boron only results for RF458 were within the 75-125%R control limits.	
6. <u>Furnace Atomic Absorption QC</u> Post digestion spikes performed on sample RF715	The post digestion spike recoveries for the arsenic, selenium, and thallium analyses were within the 85-115%R control limit. The validator determined the post spike results by reviewing the GFAA raw data.	None
7. <u>ICP Serial Dilution</u> Performed on sample RF714	All serial dilution results greater than 10 the PQL were within the 10%D control limit with the exception of zinc with a 15.3%D. There was no ICP serial dilution form in the report. The validator determined the serial dilution results by reviewing the ICP raw data.	Zinc detected in the samples was qualified "J."
8. <u>Field QC Samples</u> ER sample: RF803 FB sample: RS682 Field Duplicates: None identified for this SDG	There were detects in the field QC samples but none at high enough levels to require sample qualifications.	None
9. <u>Other</u>	None	None
10. <u>Comments</u>	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Metals

Sample Name: RF713
 Lab Code: L9703679-001
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	Q
Arsenic	EPA 3050	7060	5	1	11/6/97	11/6/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/6/97	11/6/97	970			
Beryllium	EPA 3050	6010	0.5	1	11/6/97	11/6/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/6/97	11/6/97	1			
Chromium	EPA 3050	6010	2	1	11/6/97	11/6/97	29			
Cobalt	EPA 3050	6010	2	1	11/6/97	11/6/97	6			
Copper	EPA 3050	6010	2	1	11/6/97	11/6/97	27			
Lead	EPA 3050	6010	5	1	11/6/97	11/6/97	77			
Mercury	METHOD	7471	0.2	1	11/6/97	11/6/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/6/97	11/6/97	11			
Selenium	EPA 3050	7740	5	1	11/6/97	11/6/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/6/97	11/6/97	150			
Thallium	EPA 3050	7841	5	1	11/6/97	11/6/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/6/97	11/6/97	24			
Zinc	EPA 3050	6010	1	1	11/6/97	11/6/97	3400	J		A

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz
 1544021397p

Date: 2/5/98

5001

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Metals

Sample Name: RF714
 Lab Code: L9703679-002
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Augl Code
Antimony	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	J
Arsenic	EPA 3050	7060	5	1	11/6/97	11/6/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/6/97	11/6/97	1000			
Beryllium	EPA 3050	6010	0.5	1	11/6/97	11/6/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/6/97	11/6/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/6/97	11/6/97	16			
Cobalt	EPA 3050	6010	2	1	11/6/97	11/6/97	6			
Copper	EPA 3050	6010	2	1	11/6/97	11/6/97	17			
Lead	EPA 3050	6010	5	1	11/6/97	11/6/97	40			
Mercury	METHOD	7471	0.2	1	11/6/97	11/6/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/6/97	11/6/97	11			
Selenium	EPA 3050	7740	5	1	11/6/97	11/6/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/6/97	11/6/97	110			
Thallium	EPA 3050	7841	5	1	11/6/97	11/6/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/6/97	11/6/97	28			
Zinc	EPA 3050	6010	1	1	11/6/97	11/6/97	3200	J		A

CODEN VALIDATED

LEVEL V

Approved By: *Eydie Schwartz*
 15-41021197p

Date: *2/5/98*

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Metals

Sample Name: RF715
 Lab Code: L9703679-003
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	39	1	11/6/97	11/6/97	39	U	u	Q
Arsenic	EPA 3050	7060	20	1	11/6/97	11/6/97	20	U	u	
Barium	EPA 3050	6010	4	1	11/6/97	11/6/97	68			
Beryllium	EPA 3050	6010	2	1	11/6/97	11/6/97	2	U	u	
Cadmium	EPA 3050	6010	4	1	11/6/97	11/6/97	27			
Chromium	EPA 3050	6010	8	1	11/6/97	11/6/97	32			
Cobalt	EPA 3050	6010	8	1	11/6/97	11/6/97	8	U	u	
Copper	EPA 3050	6010	8	1	11/6/97	11/6/97	68			
Lead	EPA 3050	6010	20	1	11/6/97	11/6/97	200			
Mercury	METHOD	7471	0.8	4	11/6/97	11/6/97	5.3			
Molybdenum	EPA 3050	6010	39	1	11/6/97	11/6/97	39	U	u	
Nickel	EPA 3050	6010	20	1	11/6/97	11/6/97	30			
Selenium	EPA 3050	7740	20	1	11/6/97	11/6/97	20	U	u	
Silver	EPA 3050	6010	4	1	11/6/97	11/6/97	4	U	u	
Thallium	EPA 3050	7841	20	1	11/6/97	11/6/97	20	U	u	
Vanadium	EPA 3050	6010	8	1	11/6/97	11/6/97	10			
Zinc	EPA 3050	6010	4	1	11/6/97	11/6/97	1200		J	A

OGDEN VALIDATED

LEVEL V

Approved By: Euphe Schwartz
 1344/021397p

Date: 2/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Metals

Sample Name: RF717
 Lab Code: L9703679-005
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qua Code
Antimony	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	J Q
Arsenic	EPA 3050	7060	5	1	11/6/97	11/6/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/6/97	11/6/97	340			
Beryllium	EPA 3050	6010	0.5	1	11/6/97	11/6/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/6/97	11/6/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/6/97	11/6/97	13			
Cobalt	EPA 3050	6010	2	1	11/6/97	11/6/97	5			
Copper	EPA 3050	6010	2	1	11/6/97	11/6/97	12			
Lead	EPA 3050	6010	5	1	11/6/97	11/6/97	35			
Mercury	METHOD	7471	0.2	1	11/6/97	11/6/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/6/97	11/6/97	9			
Selenium	EPA 3050	7740	5	1	11/6/97	11/6/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/6/97	11/6/97	35			
Thallium	EPA 3050	7841	5	1	11/6/97	11/6/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/6/97	11/6/97	21			
Zinc	EPA 3050	6010	1	1	11/6/97	11/6/97	250		J	A

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz
 1844021197p

Date: 2/5/98

5004

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Metals

Sample Name: RF718
 Lab Code: L9703679-006
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qua Cod
Antimony	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	J Q
Arsenic	EPA 3050	7060	5	1	11/6/97	11/6/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/6/97	11/6/97	150			
Beryllium	EPA 3050	6010	0.5	1	11/6/97	11/6/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/6/97	11/6/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/6/97	11/6/97	18			
Cobalt	EPA 3050	6010	2	1	11/6/97	11/6/97	6			
Copper	EPA 3050	6010	2	1	11/6/97	11/6/97	10			
Lead	EPA 3050	6010	5	1	11/6/97	11/6/97	12			
Mercury	METHOD	7471	0.2	1	11/6/97	11/6/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/6/97	11/6/97	14			
Selenium	EPA 3050	7740	5	1	11/6/97	11/6/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/6/97	11/6/97	6			
Thallium	EPA 3050	7841	5	1	11/6/97	11/6/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/6/97	11/6/97	32			
Zinc	EPA 3050	6010	1	1	11/6/97	11/6/97	89		J	A

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz
 1544/021397p

Date: 2/5/98

5005

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Metals

Sample Name: RF719
 Lab Code: L9703679-007
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	uJ	Q
Arsenic	EPA 3050	7060	5	1	11/6/97	11/6/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/6/97	11/6/97	140			
Beryllium	EPA 3050	6010	0.5	1	11/6/97	11/6/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/6/97	11/6/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/6/97	11/6/97	11			
Cobalt	EPA 3050	6010	2	1	11/6/97	11/6/97	5			
Copper	EPA 3050	6010	2	1	11/6/97	11/6/97	9			
Lead	EPA 3050	6010	5	1	11/6/97	11/6/97	12			
Mercury	METHOD	7471	0.2	1	11/6/97	11/6/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/6/97	11/6/97	9			
Selenium	EPA 3050	7740	5	1	11/6/97	11/6/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/6/97	11/6/97	7			
Thallium	EPA 3050	7841	5	1	11/6/97	11/6/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/6/97	11/6/97	21			
Zinc	EPA 3050	6010	1	1	11/6/97	11/6/97	73		J	A

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz
 1544/021397p

Date: 2/5/98

5006

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Metals

Sample Name: RF720
 Lab Code: L9703679-008
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	J Q
Arsenic	EPA 3050	7060	5	1	11/6/97	11/6/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/6/97	11/6/97	110			
Beryllium	EPA 3050	6010	0.5	1	11/6/97	11/6/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/6/97	11/6/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/6/97	11/6/97	14			
Cobalt	EPA 3050	6010	2	1	11/6/97	11/6/97	5			
Copper	EPA 3050	6010	2	1	11/6/97	11/6/97	17			
Lead	EPA 3050	6010	5	1	11/6/97	11/6/97	24			
Mercury	METHOD	7471	0.2	1	11/6/97	11/6/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/6/97	11/6/97	13			
Selenium	EPA 3050	7740	5	1	11/6/97	11/6/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/6/97	11/6/97	5			
Thallium	EPA 3050	7841	5	1	11/6/97	11/6/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/6/97	11/6/97	25			
Zinc	EPA 3050	6010	1	1	11/6/97	11/6/97	130		J	A

CODEN VALIDATED

LEVEL V

Approved By: *Eydie Schwartz*
 1544/021397p

Date: *2/5/98*

5007

Page No.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703679
Date Collected: 10/28/97
Date Received: 10/28/97

Metals

Sample Name: RF721
Lab Code: L9703679-009
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Aluminum	EPA 3050	6010	10	1	11/6/97	11/6/97	9300			
Boron	EPA 3050	6010	10	1	11/6/97	11/6/97	18			

CODEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz
1544/021197p

Date: 2/5/98

5008

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703679
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF728
 Lab Code: L9703679-017
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	12	1	11/6/97	11/6/97	12	U	u	Q
Arsenic	EPA 3050	7060	6	1	11/6/97	11/6/97	6	U	u	
Barium	EPA 3050	6010	1	1	11/6/97	11/6/97	97			
Beryllium	EPA 3050	6010	0.6	1	11/6/97	11/6/97	0.6	U	u	
Cadmium	EPA 3050	6010	1	1	11/6/97	11/6/97	2			
Chromium	EPA 3050	6010	2	1	11/6/97	11/6/97	17			
Cobalt	EPA 3050	6010	2	1	11/6/97	11/6/97	6			
Copper	EPA 3050	6010	2	1	11/6/97	11/6/97	21			
Lead	EPA 3050	6010	6	1	11/6/97	11/6/97	22			
Mercury	METHOD	7471	0.2	1	11/6/97	11/6/97	0.2	U	u	
Molybdenum	EPA 3050	6010	12	1	11/6/97	11/6/97	12	U	u	
Nickel	EPA 3050	6010	6	1	11/6/97	11/6/97	24			
Selenium	EPA 3050	7740	6	1	11/6/97	11/6/97	6	U	u	
Silver	EPA 3050	6010	1	1	11/6/97	11/6/97	3			
Thallium	EPA 3050	7841	6	1	11/6/97	11/6/97	6	U	u	
Vanadium	EPA 3050	6010	2	1	11/6/97	11/6/97	28			
Zinc	EPA 3050	6010	1	1	11/6/97	11/6/97	110		J	A

EDEN VALIDATED

LEVEL V

Approved By: Eugene Schumacher
 1544/021397p

Date: 2/5/98

5009

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF731
 Lab Code: L9703679-019
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Aug Code
Antimony	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	J
Arsenic	EPA 3050	7060	5	1	11/6/97	11/6/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/6/97	11/6/97	60			
Beryllium	EPA 3050	6010	0.5	1	11/6/97	11/6/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/6/97	11/6/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/6/97	11/6/97	11			
Cobalt	EPA 3050	6010	2	1	11/6/97	11/6/97	5			
Copper	EPA 3050	6010	2	1	11/6/97	11/6/97	7			
Lead	EPA 3050	6010	5	1	11/6/97	11/6/97	23			
Mercury	METHOD	7471	0.2	1	11/6/97	11/6/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/6/97	11/6/97	7			
Selenium	EPA 3050	7740	5	1	11/6/97	11/6/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/6/97	11/6/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/6/97	11/6/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/6/97	11/6/97	23			
Zinc	EPA 3050	6010	1	1	11/6/97	11/6/97	78		J	A

OGDEN VALIDATED

LEVEL V

Approved By: Euphie Schwartz
 1544021397p

Date: 2/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF732
 Lab Code: L9703679-020
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	Q
Arsenic	EPA 3050	7060	5	1	11/6/97	11/6/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/6/97	11/6/97	94			
Beryllium	EPA 3050	6010	0.5	1	11/6/97	11/6/97	0.6			
Cadmium	EPA 3050	6010	1	1	11/6/97	11/6/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/6/97	11/6/97	18			
Cobalt	EPA 3050	6010	2	1	11/6/97	11/6/97	7			
Copper	EPA 3050	6010	2	1	11/6/97	11/6/97	9			
Lead	EPA 3050	6010	5	1	11/6/97	11/6/97	8			
Mercury	METHOD	7471	0.2	1	11/6/97	11/6/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/6/97	11/6/97	12			
Selenium	EPA 3050	7740	5	1	11/6/97	11/6/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/6/97	11/6/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/6/97	11/6/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/6/97	11/6/97	36			
Zinc	EPA 3050	6010	1	1	11/6/97	11/6/97	62		J	A

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schmitt
 1544/021397p

Date: 2/5/97

5011

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703679
Date Collected: 10/28/97
Date Received: 10/28/97

Metals

Sample Name: RF723
Lab Code: L9703679-011
Test Notes:

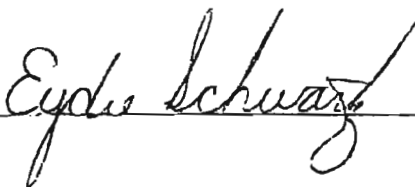
Units: MC/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Aluminum	EPA 3050	6010	10	1	12/19/97	12/26/97	12000			
Boron	EPA 3050	6010	10	1	12/19/97	12/26/97	10			

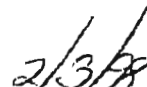
CODEN VALIDATED

LEVEL V

Approved By:
1360021197p



Date:



550 South Wadsworth Blvd. Suite 500
Lakewood, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: EPA Method 8270-SIM

No. of Samples: 13 & 3 dilutions

Date Reviewed: 08/06/98

Reviewer: K. McNeill

Reference: USEPA Contract Laboratory Program National Functional Guidelines For Organic Data Review (Feb. 1994), and Columbia Analytical Services SOP 97-SOA-SIM-00M (Revision 1, 10/14/97).

SDG: L9703713

Samples Reviewed: RF166, RF167, RF168, RF169, RF172DL, RF172DLDL, RF172DLDDL, RF176DL, RF182DL, RF748, RF749, RF750DL, RF751, RF751DL, RF754DL, RF756.

Matrix: Soil

EPA Level V- Polynuclear Aromatic Hydrocarbons Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	All samples, except RF176 and RF182, were received with cooler temperatures of 8 C. No temperature was noted on the COC for samples RF176 and RF182. Sample receipt was acceptable for all samples.	No qualifications were applied to the samples due to the lack of sample receipt temperature or high cooler temperatures by the laboratory. The samples were hand delivered to the laboratory the day of sampling by a courier; however, the laboratory case narrative failed to note this.
4. Method Blanks	One method blank was analyzed with this SDG. No target compounds were detected in the method blank.	No qualifications were required.
5. LCS/BS	One LCS was analyzed with this SDG. The LCS had acceptable recovery values for all compounds.	No qualifications were required.
6. Surrogates	Most samples had acceptable surrogate recovery values. The diluted analyses of sample RF172 (50X and 100X) had no surrogate recovery due to the high dilution factors.	No qualifications were required.

	Problems	Qualifications
7. <u>MS/MSDs</u> Sample RF157 (found in SDG L9703698) was the MS/MSD associated with this SDG.	The MS/MSD's had acceptable %R and RPD values.	No qualifications were required.
8. <u>Field QC Samples</u> ER: RF308 (L9703919); RF804 (L9703780); RF020 (L9703531) FB: RS682 (L9800210) Duplicates: None.	Equipment rinsates RF308 and RF804 had nondetects for all compounds. Equipment rinsate RF020 had a detect for bis(2-ethylhexyl)phthalate, but it was not detected in the associated sample. The field blank had nondetects for all compounds.	No qualifications were required.
9. <u>Other</u>	Samples RF750DL, RF176DL, and RF182DL were all initially analyzed at 10X dilution. All three samples reported nondetects for all compounds. The case narrative failed to note the reason for the dilutions. Samples RF172 and RF751 reported compounds that exceeded the instruments detection range. Sample RF172 was listed as a laboratory Performance Evaluation (PE) sample. The 8270-SIM analysis analyses for selected compounds; therefore, all spiked compounds present in the PE are not present. The compound bis(2-ethylhexyl)phthalate was above the sample lot performance limits. All other compounds had recoveries within the performance limits. See table 1 for the sample recoveries and performance limits.	No qualifications were required. The compounds that required dilutions were retained, and the original analyses were rejected "R." All compounds in the original analyses which had acceptable recoveries were retained.
10. <u>Comments</u>	The MS/MSD form provided with the package incorrectly identified the SDG. The MS/MSD was associated with another SDG, which was extracted with	N/A

	Problems	Qualifications
	this SDG.	

Table 1
PE Sample Table

Compound	Certified Value (g/Kg)	Sample Recovery (g/Kg)	Performance Limits (g/Kg)
Acenaphthene	7910	8000	3470 - 8310
Anthracene	7650	6300	879 - 8030
Benzo(b)fluoranthene	3480	3100	689 - 3790
Benzo(k)fluoranthene	3070	3000	1190 - 3330
Chrysene	3720	3400	1370 - 4150
Bis(2-ethylhexyl)phthalate	9170	12000 *	3610 - 11400
Napthalene	2200	1900	1280 - 2310
Pyrene	5910	5600	1640 - 6560

* Listed value is outside the accepted performance limits.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703713
 Date Collected: 10/31/97
 Date Received: 10/31/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF166
 Lab Code: L9703713-002
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	11/7/97	11/16/97	2	U	U	
Naphthalene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	U	
Acenaphthylene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	U	
Acenaphthene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	U	
Diethyl Phthalate	EPA 3550	8270SIM	110	1	11/7/97	11/16/97	110	U	U	
Fluorene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	U	
Phenanthrene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	U	
Anthracene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	110	1	11/7/97	11/16/97	110	U	U	
Fluoranthene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	U	
Pyrene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	U	
Benz(a)anthracene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	110	1	11/7/97	11/16/97	110	U	U	
Chrysene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	U	
Benzo(a)pyrene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	U	

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED
LEVEL V

1001

Approved By: *Eydie Schumacher*

Date: *2/6/98*

1522/020597p

0371350A A42 - Sample 12/8/97

Page No :

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703713
 Date Collected: 10/31/97
 Date Received: 10/31/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF167
 Lab Code: L9703713-003
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	11/7/97	11/15/97	2	U	C	
Naphthalene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Acenaphthylene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Acenaphthene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Diethyl Phthalate	EPA 3550	8270SIM	110	1	11/7/97	11/15/97	110	U		
Fluorene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Phenanthrene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Anthracene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Di-n-butyl Phthalate	EPA 3550	8270SIM	110	1	11/7/97	11/15/97	110	U		
Fluoranthene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Pyrene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Benz(a)anthracene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	110	1	11/7/97	11/15/97	120			
Chrysene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Benzo(b)fluoranthene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Benzo(k)fluoranthene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Benzo(a)pyrene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Dibenz(a,h)anthracene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Benzo(g,h,i)perylene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED
LEVEL V 1002

Approved By: *Eydie Schmitt*

Date: *2/6/98*

1522/020597p

03713SOA.AA2 - Sample (2) 12/8/97

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703713
Date Collected: 10/31/97
Date Received: 10/31/97

Selected Ion Monitoring (SIM)
Base Neutral Semivolatile Organic Compounds

Sample Name: RF168
Lab Code: L9703713-004
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	11/7/97	11/15/97	2	U	U
Naphthalene	EPA 3550	8270SIM	33	1	11/7/97	11/15/97	33	U	
Acenaphthylene	EPA 3550	8270SIM	33	1	11/7/97	11/15/97	33	U	
Acenaphthene	EPA 3550	8270SIM	33	1	11/7/97	11/15/97	33	U	
Diethyl Phthalate	EPA 3550	8270SIM	110	1	11/7/97	11/15/97	110	U	
Fluorene	EPA 3550	8270SIM	33	1	11/7/97	11/15/97	33	U	
Phenanthrene	EPA 3550	8270SIM	33	1	11/7/97	11/15/97	33	U	
Anthracene	EPA 3550	8270SIM	33	1	11/7/97	11/15/97	33	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	110	1	11/7/97	11/15/97	110	U	
Fluoranthene	EPA 3550	8270SIM	33	1	11/7/97	11/15/97	33	U	
Pyrene	EPA 3550	8270SIM	33	1	11/7/97	11/15/97	33	U	
Benz(a)anthracene	EPA 3550	8270SIM	33	1	11/7/97	11/15/97	33	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	110	1	11/7/97	11/15/97	110	U	
Chrysene	EPA 3550	8270SIM	33	1	11/7/97	11/15/97	33	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	33	1	11/7/97	11/15/97	33	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	33	1	11/7/97	11/15/97	33	U	
Benzo(a)pyrene	EPA 3550	8270SIM	33	1	11/7/97	11/15/97	33	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	33	1	11/7/97	11/15/97	33	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	33	1	11/7/97	11/15/97	33	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	33	1	11/7/97	11/15/97	33	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	33	1	11/7/97	11/15/97	33	U	U

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED

LEVEL V

1003

Approved By: *Eydie Schwartz*

Date: *11/6/97*

IS22/020597p

037135QA AA2 - Sample (3) 12/8/97

Page No.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703713
 Date Collected: 10/31/97
 Date Received: 10/31/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF169
 Lab Code: L9703713-005
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	11/7/97	11/15/97	2	U	C	
Naphthalene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U		
Acenaphthylene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U		
Acenaphthene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U		
Diethyl Phthalate	EPA 3550	8270SIM	100	1	11/7/97	11/15/97	100	U		
Fluorene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U		
Phenanthrene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U		
Anthracene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U		
Di-n-butyl Phthalate	EPA 3550	8270SIM	100	1	11/7/97	11/15/97	100	U		
Fluoranthene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U		
Pyrene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U		
Benz(a)anthracene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U		
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	100	1	11/7/97	11/15/97	100	U		
Chrysene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U		
Benzo(b)fluoranthene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U		
Benzo(k)fluoranthene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U		
Benzo(a)pyrene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U		
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U		
Dibenz(a,h)anthracene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U		
Benzo(g,h,i)perylene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U	C	

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED
LEVEL V₁₀₀₄

Approved By: *Eydie Schurz*

Date: *2/6/98*

1522/020597p

03713SCA.AA2 - Sample (4) 12/8/97

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703713
 Date Collected: 10/31/97
 Date Received: 10/31/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF172DL
 Lab Code: L9703713-006
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
N-Nitrosodimethylamine	EPA 3550	8270SIM	20	10	11/7/97	11/15/97	20	U	C	
Naphthalene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	1900	E	R	D
Acenaphthylene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	C	
Acenaphthene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	3800	E	R	D
Diethyl Phthalate	EPA 3550	8270SIM	1000	10	11/7/97	11/15/97	1000	U	C	
Fluorene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	↓	
Phenanthrene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	↓	
Anthracene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	1000	E	R	D
Di-n-butyl Phthalate	EPA 3550	8270SIM	1000	10	11/7/97	11/15/97	1000	U	C	
Fluoranthene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	C	
Pyrene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	1600	E	R	D
Benz(a)anthracene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	C	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1000	10	11/7/97	11/15/97	1900	E	R	D
Chrysene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	4200	E	↓	↓
Benzo(b)fluoranthene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	3500	E	↓	↓
Benzo(k)fluoranthene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	2900	E	R	D
Benzo(a)pyrene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	C	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	↓	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	↓	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	↓	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	↓	

N-Nitrosodimethylamine Reported Method Detection Limit

C2A

PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

LEVEL V

Approved By:

Eddie Scheidt

Date:

2/6/98

1005

1522/020597p

0371350AA2 - Sample (5) 1/16/98

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703713
 Date Collected: 10/31/97
 Date Received: 10/31/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF172DLDL
 Lab Code: L9703713-006
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
N-Nitrosodimethylamine	EPA 3550	8270SIM	100	50	11/7/97	11/15/97	100	U	R	D
* Naphthalene	EPA 3550	8270SIM	1500	50	11/7/97	11/15/97	1900			
Acenaphthylene	EPA 3550	8270SIM	1500	50	11/7/97	11/15/97	1500	U	R	D
* Acenaphthene	EPA 3550	8270SIM	1500	50	11/7/97	11/15/97	7600	E	R	D
Diethyl Phthalate	EPA 3550	8270SIM	5000	50	11/7/97	11/15/97	5000	U	R	D
Fluorene	EPA 3550	8270SIM	1500	50	11/7/97	11/15/97	1500	U		
Phenanthrene	EPA 3550	8270SIM	1500	50	11/7/97	11/15/97	1500	U	R	D
* Anthracene	EPA 3550	8270SIM	1500	50	11/7/97	11/15/97	6300			
Di-n-butyl Phthalate	EPA 3550	8270SIM	5000	50	11/7/97	11/15/97	5000	U	R	D
Fluoranthene	EPA 3550	8270SIM	1500	50	11/7/97	11/15/97	1500	U	R	D
* Pyrene	EPA 3550	8270SIM	1500	50	11/7/97	11/15/97	5600			
Benz(a)anthracene	EPA 3550	8270SIM	1500	50	11/7/97	11/15/97	1500	U	R	D
* Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	5000	50	11/7/97	11/15/97	9800	E	R	D
* Chrysene	EPA 3550	8270SIM	1500	50	11/7/97	11/15/97	3400			
* Benzo(b)fluoranthene	EPA 3550	8270SIM	1500	50	11/7/97	11/15/97	3100			
* Benzo(k)fluoranthene	EPA 3550	8270SIM	1500	50	11/7/97	11/15/97	3000			
Benzo(a)pyrene	EPA 3550	8270SIM	1500	50	11/7/97	11/15/97	1500	U	R	D
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	1500	50	11/7/97	11/15/97	1500	U		
Dibenz(a,h)anthracene	EPA 3550	8270SIM	1500	50	11/7/97	11/15/97	1500	U		
Benzo(g,h,i)perylene	EPA 3550	8270SIM	1500	50	11/7/97	11/15/97	1500	U		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	1500	50	11/7/97	11/15/97	1500	U	R	D

N-Nitrosodimethylamine Reported Method Detection Limit

C2A

PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

LEVEL V
1006

Approved By:

Eudie Schmitt

Date:

2/6/98

1S22/020597p

03713SOA AA2 - Sample (9) 12/6/98

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703713
 Date Collected: 10/31/97
 Date Received: 10/31/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF172DLDDL
 Lab Code: L9703713-006
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Qual	Final Notes
N-Nitrosodimethylamine	EPA 3550	8270SIM	200	100	11/7/97	11/17/97	200	U	R	D
Naphthalene	EPA 3550	8270SIM	3000	100	11/7/97	11/17/97	3000	U		
Acenaphthylene	EPA 3550	8270SIM	3000	100	11/7/97	11/17/97	3000	U		
Acenaphthene	EPA 3550	8270SIM	3000	100	11/7/97	11/17/97	8000			
Diethyl Phthalate	EPA 3550	8270SIM	10000	100	11/7/97	11/17/97	10000	U	R	D
Fluorene	EPA 3550	8270SIM	3000	100	11/7/97	11/17/97	3000	U		
Phenanthrene	EPA 3550	8270SIM	3000	100	11/7/97	11/17/97	3000	U		
Anthracene	EPA 3550	8270SIM	3000	100	11/7/97	11/17/97	5700			
Di-n-butyl Phthalate	EPA 3550	8270SIM	10000	100	11/7/97	11/17/97	10000	U		
Fluoranthene	EPA 3550	8270SIM	3000	100	11/7/97	11/17/97	3000	U		
Pyrene	EPA 3550	8270SIM	3000	100	11/7/97	11/17/97	5800			
Benz[a]anthracene	EPA 3550	8270SIM	3000	100	11/7/97	11/17/97	3000	U	R	D
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	10000	100	11/7/97	11/17/97	12000			
Chrysene	EPA 3550	8270SIM	3000	100	11/7/97	11/17/97	3300		R	D
Benzo[b]fluoranthene	EPA 3550	8270SIM	3000	100	11/7/97	11/17/97	3300			
Benzo[k]fluoranthene	EPA 3550	8270SIM	3000	100	11/7/97	11/17/97	2800	J		
Benzo[a]pyrene	EPA 3550	8270SIM	3000	100	11/7/97	11/17/97	3000	U		
Indeno[1,2,3-cd]pyrene	EPA 3550	8270SIM	3000	100	11/7/97	11/17/97	3000	U		
Dibenz[a,h]anthracene	EPA 3550	8270SIM	3000	100	11/7/97	11/17/97	3000	U		
Benzo[ghi]perylene	EPA 3550	8270SIM	3000	100	11/7/97	11/17/97	3000	U		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	3000	100	11/7/97	11/17/97	3000	U	R	D

N-Nitrosodimethylamine Reported Method Detection Limit

C2A

PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

LEVEL V
100%

Approved By: *Eydie Schwartz*

Date: *2/6/98*

1522 020597

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703713
 Date Collected: 11/3/97
 Date Received: 11/3/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF176DL
 Lab Code: L9703713-019
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Qual	Anal Amb
N-Nitrosodimethylamine	EPA 3550	8270SIM	21	10	11/7/97	11/15/97	21	U	U	
Naphthalene	EPA 3550	8270SIM	310	10	11/7/97	11/15/97	310	U		
Acenaphthylene	EPA 3550	8270SIM	310	10	11/7/97	11/15/97	310	U		
Acenaphthene	EPA 3550	8270SIM	310	10	11/7/97	11/15/97	310	U		
Diethyl Phthalate	EPA 3550	8270SIM	1000	10	11/7/97	11/15/97	1000	U		
Fluorene	EPA 3550	8270SIM	310	10	11/7/97	11/15/97	310	U		
Phenanthrene	EPA 3550	8270SEM	310	10	11/7/97	11/15/97	310	U		
Anthracene	EPA 3550	8270SEM	310	10	11/7/97	11/15/97	310	U		
Di-n-butyl Phthalate	EPA 3550	8270SIM	1000	10	11/7/97	11/15/97	1000	U		
Fluoranthene	EPA 3550	8270SIM	310	10	11/7/97	11/15/97	310	U		
Pyrene	EPA 3550	8270SIM	310	10	11/7/97	11/15/97	310	U		
Benz(a)anthracene	EPA 3550	8270SIM	310	10	11/7/97	11/15/97	310	U		
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1000	10	11/7/97	11/15/97	1000	U		
Chrysene	EPA 3550	8270SIM	310	10	11/7/97	11/15/97	310	U		
Benzo(b)fluoranthene	EPA 3550	8270SEM	310	10	11/7/97	11/15/97	310	U		
Benzo(k)fluoranthene	EPA 3550	8270SIM	310	10	11/7/97	11/15/97	310	U		
Benzo(a)pyrene	EPA 3550	8270SIM	310	10	11/7/97	11/15/97	310	U		
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	310	10	11/7/97	11/15/97	310	U		
Dibenz(a,h)anthracene	EPA 3550	8270SIM	310	10	11/7/97	11/15/97	310	U		
Benzo(g,h,i)perylene	EPA 3550	8270SIM	310	10	11/7/97	11/15/97	310	U		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	310	10	11/7/97	11/15/97	310	U		

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

Approved By: *Erich Schmitt*

1522.020597p

03713SOA-AA3 - Sample(4) 1/15/04

OGDEN VALIDATED
 LEVEL V
 Date: 12/1/98

Page No.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703713
 Date Collected: 11/3/97
 Date Received: 11/3/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF182DL
 Lab Code: L9703713-020
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Qual	Unit Note
N-Nitrosodimethylamine	EPA 3550	8270SIM	21	10	11/7/97	11/15/97	21	U	C	
Naphthalene	EPA 3550	8270SIM	320	10	11/7/97	11/15/97	320	U		
Acenaphthylene	EPA 3550	8270SIM	320	10	11/7/97	11/15/97	320	U		
Acenaphthene	EPA 3550	8270SIM	320	10	11/7/97	11/15/97	320	U		
Diethyl Phthalate	EPA 3550	8270SIM	1100	10	11/7/97	11/15/97	1100	U		
Fluorene	EPA 3550	8270SIM	320	10	11/7/97	11/15/97	320	U		
Phenanthrene	EPA 3550	8270SIM	320	10	11/7/97	11/15/97	320	U		
Anthracene	EPA 3550	8270SIM	320	10	11/7/97	11/15/97	320	U		
Di-n-butyl Phthalate	EPA 3550	8270SIM	1100	10	11/7/97	11/15/97	1100	U		
Fluoranthene	EPA 3550	8270SIM	320	10	11/7/97	11/15/97	320	U		
Pyrene	EPA 3550	8270SIM	320	10	11/7/97	11/15/97	320	U		
Benz(a)anthracene	EPA 3550	8270SIM	320	10	11/7/97	11/15/97	320	U		
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1100	10	11/7/97	11/15/97	1100	U		
Chrysene	EPA 3550	8270SIM	320	10	11/7/97	11/15/97	320	U		
Benzo(b)fluoranthene	EPA 3550	8270SIM	320	10	11/7/97	11/15/97	320	U		
Benzo(k)fluoranthene	EPA 3550	8270SIM	320	10	11/7/97	11/15/97	320	U		
Benzo(a)pyrene	EPA 3550	8270SIM	320	10	11/7/97	11/15/97	320	U		
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	320	10	11/7/97	11/15/97	320	U		
Dibenz(a,h)anthracene	EPA 3550	8270SIM	320	10	11/7/97	11/15/97	320	U		
Benzo(g,h,i)perylene	EPA 3550	8270SIM	320	10	11/7/97	11/15/97	320	U		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	320	10	11/7/97	11/15/97	320	U		

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

Approved By: *Eudie Schwan*

1522/020597p

03713SOA AA3 - Sample(S) 1/15/98

OGDEN VALIDATED
LEVEL V
 Date: 12/1/98

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703713
 Date Collected: 10/31/97
 Date Received: 10/31/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF748
 Lab Code: L9703713-009
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual	Anal
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	11/7/97	11/15/97	2	U	C		
Naphthalene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U			
Acenaphthylene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U			
Acenaphthene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U			
Diethyl Phthalate	EPA 3550	8270SIM	100	1	11/7/97	11/15/97	100	U			
Fluorene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U			
Phenanthrene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U			
Anthracene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U			
Di-n-butyl Phthalate	EPA 3550	8270SIM	100	1	11/7/97	11/15/97	100	U			
Fluoranthene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U			
Pyrene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U			
Benz(a)anthracene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U			
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	100	1	11/7/97	11/15/97	100	U			
Chrysene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U			
Benzo(b)fluoranthene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U			
Benzo(k)fluoranthene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U			
Benzo(a)pyrene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U			
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U			
Dibenz(a,h)anthracene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U			
Benzo(g,h,i)perylene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U			
N-Nitrosodiphenylamine	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U			

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED
LEVEL V
 1008

Approved By: *Eydie Schuyt*

Date: *2/6/98*

1522/020597p

03713SOA-AA2 - Sample (6) 12/8/97

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703713
 Date Collected: 10/31/97
 Date Received: 10/31/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF749
 Lab Code: L9703713-010
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Qual	Final Notes
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	11/7/97	11/15/97	2	U	C	
Naphthalene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U		
Acenaphthylene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U		
Acenaphthene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U		
Diethyl Phthalate	EPA 3550	8270SIM	100	1	11/7/97	11/15/97	100	U		
Fluorene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U		
Phenanthrene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U		
Anthracene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U		
Di-n-butyl Phthalate	EPA 3550	8270SIM	100	1	11/7/97	11/15/97	100	U		
Fluoranthene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U		
Pyrene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U		
Benz(a)anthracene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U		
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	100	1	11/7/97	11/15/97	100	U		
Chrysene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U		
Benzo(b)fluoranthene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U		
Benzo(k)fluoranthene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U		
Benzo(a)pyrene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U		
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U		
Dibenz(a,h)anthracene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U		
Benzo(g,h,i)perylene	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	30	1	11/7/97	11/15/97	30	U		

N-Nitrosodimethylamine Reported Method Detection Limit

Approved By: *Eugene Schwart*

1522-020597p

13713SOA AA2 - Sample (7) 12/8/97

OGDEN VALIDATED
LEVEL V
 1003

Date: 2/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703713
 Date Collected: 10/31/97
 Date Received: 10/31/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF750DL
 Lab Code: L9703713-011
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
N-Nitrosodimethylamine	EPA 3550	8270SIM	20	10	11/7/97	11/16/97	20	U	C	
Naphthalene	EPA 3550	8270SIM	300	10	11/7/97	11/16/97	300	U		
Acenaphthylene	EPA 3550	8270SIM	300	10	11/7/97	11/16/97	300	U		
Acenaphthene	EPA 3550	8270SIM	300	10	11/7/97	11/16/97	300	U		
Diethyl Phthalate	EPA 3550	8270SIM	1000	10	11/7/97	11/16/97	1000	U		
Fluorene	EPA 3550	8270SIM	300	10	11/7/97	11/16/97	300	U		
Phenanthrene	EPA 3550	8270SIM	300	10	11/7/97	11/16/97	300	U		
Anthracene	EPA 3550	8270SIM	300	10	11/7/97	11/16/97	300	U		
Di-n-butyl Phthalate	EPA 3550	8270SIM	1000	10	11/7/97	11/16/97	1000	U		
Fluoranthene	EPA 3550	8270SIM	300	10	11/7/97	11/16/97	300	U		
Pyrene	EPA 3550	8270SIM	300	10	11/7/97	11/16/97	300	U		
Benz(a)anthracene	EPA 3550	8270SIM	300	10	11/7/97	11/16/97	300	U		
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1000	10	11/7/97	11/16/97	1000	U		
Chrysene	EPA 3550	8270SIM	300	10	11/7/97	11/16/97	300	U		
Benzo(b)fluoranthene	EPA 3550	8270SIM	300	10	11/7/97	11/16/97	300	U		
Benzo(k)fluoranthene	EPA 3550	8270SIM	300	10	11/7/97	11/16/97	300	U		
Benzo(a)pyrene	EPA 3550	8270SIM	300	10	11/7/97	11/16/97	300	U		
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	300	10	11/7/97	11/16/97	300	U		
Dibenz(a,h)anthracene	EPA 3550	8270SIM	300	10	11/7/97	11/16/97	300	U		
Benzo(g,h,i)perylene	EPA 3550	8270SIM	300	10	11/7/97	11/16/97	300	U		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	300	10	11/7/97	11/16/97	300	U		

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

Approved By: *Eugene Schwartz*

1522/020597p

03:12:00.AA2 - Sample (8) 1/16/98

OGDEN VALIDATED
LEVEL V
 Date: 10/16/97

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703713
 Date Collected: 10/31/97
 Date Received: 10/31/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF751
 Lab Code: L9703713-012
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	11/7/97	11/16/97	2	U	U	
Naphthalene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	31	U	U	
Acenaphthylene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	31	U	U	
Acenaphthene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	170	E	R	D
Diethyl Phthalate	EPA 3550	8270SIM	100	1	11/7/97	11/16/97	100	U	U	
Fluorene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	110			
Phenanthrene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	120	E	R	D
Anthracene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	210	E	R	D
Di-n-butyl Phthalate	EPA 3550	8270SIM	100	1	11/7/97	11/16/97	100	U	U	
Fluoranthene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	240	E	R	D
Pyrene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	130	E	R	D
Benzo(a)anthracene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	370	E	R	D
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	100	1	11/7/97	11/16/97	100	U	U	
Chrysene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	340	E	R	D
Benzo(b)fluoranthene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	310	E	R	D
Benzo(k)fluoranthene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	96			
Benzo(a)pyrene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	280	E	R	D
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	160	E	R	D
Dibenz(a,h)anthracene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	44			
Benzo(g,h,i)perylene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	170	E	R	D
N-Nitrosodiphenylamine	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	31	U	U	

N-Nitrosodimethylamine Reported Method Detection Limit

Approved By: *Eydie Schurz*

1525/0295/97p

03713SOA 03 - Sample 12/8/97

**OGDEN VALIDATED
LEVEL V**

Date: *11/16/97*

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703713
 Date Collected: 10/31/97
 Date Received: 10/31/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF751DL
 Lab Code: L9703713-012
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
N-Nitrosodimethylamine	EPA 3550	8270SIM	20	10	11/7/97	11/17/97	20	U	R	D
Naphthalene	EPA 3550	8270SIM	310	10	11/7/97	11/17/97	310	U	R	D
Acenaphthylene	EPA 3550	8270SIM	310	10	11/7/97	11/17/97	310	U	R	D
Acenaphthene	EPA 3550	8270SIM	310	10	11/7/97	11/17/97	170	J	J	
Diethyl Phthalate	EPA 3550	8270SIM	1000	10	11/7/97	11/17/97	1000	U	R	D
Fluorene	EPA 3550	8270SIM	310	10	11/7/97	11/17/97	310	U	R	D
Phenanthrene	EPA 3550	8270SIM	310	10	11/7/97	11/17/97	790			
Anthracene	EPA 3550	8270SIM	310	10	11/7/97	11/17/97	170	J	J	
Di-n-butyl Phthalate	EPA 3550	8270SIM	1000	10	11/7/97	11/17/97	1000	U	R	D
Fluoranthene	EPA 3550	8270SIM	310	10	11/7/97	11/17/97	810			
Pyrene	EPA 3550	8270SIM	310	10	11/7/97	11/17/97	730			
Benz(a)anthracene	EPA 3550	8270SIM	310	10	11/7/97	11/17/97	340			
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1000	10	11/7/97	11/17/97	1000	U	R	D
Chrysene	EPA 3550	8270SIM	310	10	11/7/97	11/17/97	380			
Benzo(b)fluoranthene	EPA 3550	8270SIM	310	10	11/7/97	11/17/97	330			
Benzo(k)fluoranthene	EPA 3550	8270SIM	310	10	11/7/97	11/17/97	310	U	R	D
Benzo(a)pyrene	EPA 3550	8270SIM	310	10	11/7/97	11/17/97	270	J	J	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	310	10	11/7/97	11/17/97	110	J	J	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	310	10	11/7/97	11/17/97	310	U	R	D
Benzo(g,h,i)perylene	EPA 3550	8270SIM	310	10	11/7/97	11/17/97	120	J	J	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	310	10	11/7/97	11/17/97	310	U	R	D

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

Approved By: *Egidio Schunz*

1522/020597p

03713SOA.AA3 - Sample (6) 2/6/98

OGDEN VALIDATED
LEVEL V
 1012
 Date: 12/1/97
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Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703713
 Date Collected: 10/31/97
 Date Received: 10/31/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF754DL
 Lab Code: L9703713-015
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Qual
N-Nitrosodimethylamine	EPA 3550	8270SIM	20	10	11/7/97	11/15/97	20	U	C
Naphthalene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	
Acenaphthylene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	
Acenaphthene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	
Diethyl Phthalate	EPA 3550	8270SIM	1000	10	11/7/97	11/15/97	1000	U	
Fluorene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	
Phenanthrene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	
Anthracene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	1000	10	11/7/97	11/15/97	1000	U	
Fluoranthene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	
Pyrene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	
Benz(a)anthracene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1000	10	11/7/97	11/15/97	1000	U	
Chrysene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	
Benzo(a)pyrene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	300	10	11/7/97	11/15/97	300	U	

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

Approved By: *Eyde Schuyf*

1522/020597p

03713SOA AA2 - Sample (2) 1/16/98

OGDEN VALIDATED
LEVEL V
 Date: 10/15/97

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703713
 Date Collected: 10/31/97
 Date Received: 10/31/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF756
 Lab Code: L9703713-016
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	11/7/97	11/15/97	2	U
Naphthalene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U
Acenaphthylene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U
Acenaphthene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U
Diethyl Phthalate	EPA 3550	8270SIM	100	1	11/7/97	11/15/97	100	U
Fluorene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U
Phenanthrene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U
Anthracene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U
Di-n-butyl Phthalate	EPA 3550	8270SIM	100	1	11/7/97	11/15/97	100	U
Fluoranthene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U
Pyrene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U
Benz(a)anthracene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	100	1	11/7/97	11/15/97	100	U
Chrysene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U
Benzo(b)fluoranthene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U
Benzo(k)fluoranthene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U
Benzo(a)pyrene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U
Dibenz(a,h)anthracene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U
Benzo(g,h,i)perylene	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U
N-Nitrosodiphenylamine	EPA 3550	8270SIM	31	1	11/7/97	11/15/97	31	U

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED

LEVEL V

Approved By: *Eyde Schwarz*

IS22/020597p

03:13SOA.AA3 - Sample (3) 12/3/97

Page No.:

550 South Wadsworth Blvd. Suite 500
 Lakewood, CO 80226
 (303) 935-6505

Rocketdyne

Analysis/Method: EPA Method 8270-SIM

No. of Samples: 5 & 2 dilutions

Date Reviewed: 08/05/98

Reviewer: K. McNeill

Reference: USEPA Contract Laboratory Program National Functional Guidelines For Organic Data Review (Feb. 1994), and Columbia Analytical Services SOP 97-SOA-SIM-00M (Revision 1, 10/14/97).

SDG: L9703698

Samples Reviewed: RF157, RF160, RF160DL, RF702DL, RF738DL, RF744, RF744DL.

Matrix: Soil

EPA Level V- Polynuclear Aromatic Hydrocarbons Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	Samples RF702DL was received with a cooler temperatures of 3 C and was noted to be intact. No other sample receipt temperatures were provided for the remaining samples.	No qualifications were applied to the samples due to the lack of sample receipt information by the laboratory. The samples were hand delivered to the laboratory the day of sampling by a courier; however, the laboratory case narrative failed to note this.
4. Method Blanks	One method blank was analyzed with this SDG. No target compounds were detected in the method blank.	No qualifications were required.
5. LCS/BS	One LCS was analyzed with this SDG. The LCS had acceptable recovery values for all compounds.	No qualifications were required.
6. Surrogates	All samples had acceptable surrogate recovery values.	No qualifications were required.
7. MS/MSDs Sample RF157 was the MS/MSD associated with this SDG.	The MS/MSDs had acceptable %R and RPD values.	No qualifications were required.

	Problems	Qualifications
8. Field QC Samples ER: RF308 (L9703919); RF711 (L9703657); RF804 (L9703780) FB: RS682 (L9800210) Duplicates: None.	Equipment rinsates RF308, RF711, and RF804 all had nondetects for all compounds. The field blank had nondetects for all compounds.	No qualifications were required.
9. Other	Samples RF738DL(10X) and RF702DL(10X) were all initially analyzed at a dilution, and reported all nondetects. The case narrative failed to note the reason for the dilutions, and no other information was provided to see if the analyses were properly diluted. Samples RF744 and RF160 both had detects which exceeded the instruments detection range. The samples were diluted and reanalyzed with acceptable values.	No qualifications were required. The compounds that required dilutions were retained, and the original analyses were rejected "R." All compounds in the original analyses which had acceptable recoveries were retained.
10. Comments	N/A	N/A

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/30/97
 Date Received: 10/30/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF157
 Lab Code: L9703698-012
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Qual
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	11/7/97	11/16/97	2	U	U
Naphthalene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	
Acenaphthylene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	
Acenaphthene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	
Diethyl Phthalate	EPA 3550	8270SIM	110	1	11/7/97	11/16/97	110	U	
Fluorene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	
Phenanthrene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	
Anthracene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	110	1	11/7/97	11/16/97	110	U	
Fluoranthene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	
Pyrene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	
Benz(a)anthracene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	110	1	11/7/97	11/16/97	110	U	
Chrysene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	
Benzo(a)pyrene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	32	1	11/7/97	11/16/97	32	U	U

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED

Approved By: *Eudie Schwartz*

Date: *11/29/97*

1001

1S22/020597p

03698SOA.AA1 - Sample 12/6/97

LEVEL V

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/31/97
 Date Received: 10/31/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF160
 Lab Code: L9703698-020
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	11/7/97	11/15/97	2	U	C	
Naphthalene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Acenaphthylene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Acenaphthene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Diethyl Phthalate	EPA 3550	8270SIM	110	1	11/7/97	11/15/97	110	U		
Fluorene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Phenanthrene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Anthracene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Di-n-butyl Phthalate	EPA 3550	8270SIM	110	1	11/7/97	11/15/97	110	U		
Fluoranthene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Pyrene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Benz(a)anthracene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U	C	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	110	1	11/7/97	11/15/97	220	E	R	D
Chrysene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U	C	
Benzo(b)fluoranthene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Benzo(k)fluoranthene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Benzo(a)pyrene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Dibenz(a,h)anthracene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
Benzo(g,h,i)perylene	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	32	1	11/7/97	11/15/97	32	U	C	

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED

Approved By: *Erick Schmitt*

Date: *2/19/98*

1006

1522/020597p

03698SOA.AA1 - Sample (5) 2/19/98

LEVEL V

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/31/97
 Date Received: 10/31/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF160DL
 Lab Code: L9703698-020
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual	Cont	Notes
N-Nitrosodimethylamine	EPA 3550	8270SIM	4	2	11/7/97	11/15/97	4	U	R			D
Naphthalene	EPA 3550	8270SIM	65	2	11/7/97	11/15/97	65	U				
Acenaphthylene	EPA 3550	8270SIM	65	2	11/7/97	11/15/97	65	U				
Acenaphthene	EPA 3550	8270SIM	65	2	11/7/97	11/15/97	65	U				
Diethyl Phthalate	EPA 3550	8270SIM	220	2	11/7/97	11/15/97	220	U				
Fluorene	EPA 3550	8270SIM	65	2	11/7/97	11/15/97	65	U				
Phenanthrene	EPA 3550	8270SIM	65	2	11/7/97	11/15/97	65	U				
Anthracene	EPA 3550	8270SIM	65	2	11/7/97	11/15/97	65	U				
Di-n-butyl Phthalate	EPA 3550	8270SIM	220	2	11/7/97	11/15/97	220	U				
Fluoranthene	EPA 3550	8270SIM	65	2	11/7/97	11/15/97	65	U				
Pyrene	EPA 3550	8270SIM	65	2	11/7/97	11/15/97	65	U				
Benz(a)anthracene	EPA 3550	8270SIM	65	2	11/7/97	11/15/97	65	U	R			D
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	220	2	11/7/97	11/15/97	270					
Chrysene	EPA 3550	8270SIM	65	2	11/7/97	11/15/97	65	U	R			D
Benzo(b)fluoranthene	EPA 3550	8270SIM	65	2	11/7/97	11/15/97	65	U				
Benzo(k)fluoranthene	EPA 3550	8270SIM	65	2	11/7/97	11/15/97	65	U				
Benzo(a)pyrene	EPA 3550	8270SIM	65	2	11/7/97	11/15/97	65	U				
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	65	2	11/7/97	11/15/97	65	U				
Dibenz(a,h)anthracene	EPA 3550	8270SIM	65	2	11/7/97	11/15/97	65	U				
Benzo(g,h,i)perylene	EPA 3550	8270SIM	65	2	11/7/97	11/15/97	65	U				
N-Nitrosodiphenylamine	EPA 3550	8270SIM	65	2	11/7/97	11/15/97	65	U	R			D

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

Approved By:

Eyde Schuratz

Date:

11/27/98

1007

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/27/97
 Date Received: 10/27/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF702DL
 Lab Code: L9703698-019
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
N-Nitrosodimethylamine	EPA 3550	8270SIM	37	10	11/7/97	11/17/97	37	U	C	
Naphthalene	EPA 3550	8270SIM	560	10	11/7/97	11/17/97	560	U		
Acenaphthylene	EPA 3550	8270SIM	560	10	11/7/97	11/17/97	560	U		
Acenaphthene	EPA 3550	8270SIM	560	10	11/7/97	11/17/97	560	U		
Diethyl Phthalate	EPA 3550	8270SIM	1900	10	11/7/97	11/17/97	1900	U		
Fluorene	EPA 3550	8270SIM	560	10	11/7/97	11/17/97	560	U		
Phenanthrene	EPA 3550	8270SIM	560	10	11/7/97	11/17/97	560	U		
Anthracene	EPA 3550	8270SIM	560	10	11/7/97	11/17/97	560	U		
Di-n-butyl Phthalate	EPA 3550	8270SIM	1900	10	11/7/97	11/17/97	1900	U		
Fluoranthene	EPA 3550	8270SIM	560	10	11/7/97	11/17/97	560	U		
Pyrene	EPA 3550	8270SIM	560	10	11/7/97	11/17/97	560	U		
Benz(a)anthracene	EPA 3550	8270SIM	560	10	11/7/97	11/17/97	560	U		
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1900	10	11/7/97	11/17/97	1900	U		
Chrysene	EPA 3550	8270SIM	560	10	11/7/97	11/17/97	560	U		
Benzo(b)fluoranthene	EPA 3550	8270SIM	560	10	11/7/97	11/17/97	560	U		
Benzo(k)fluoranthene	EPA 3550	8270SIM	560	10	11/7/97	11/17/97	560	U		
Benzo(a)pyrene	EPA 3550	8270SIM	560	10	11/7/97	11/17/97	560	U		
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	560	10	11/7/97	11/17/97	560	U		
Dibenz(a,h)anthracene	EPA 3550	8270SIM	560	10	11/7/97	11/17/97	560	U		
Benzo(g,h,i)perylene	EPA 3550	8270SIM	560	10	11/7/97	11/17/97	560	U		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	560	10	11/7/97	11/17/97	560	U		

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

1005

Approved By: *Eirid Schwan*

Date: *2/19/98*

1S22/020597p

03698SGA.AA1 - Sample (4) 2/19/98

LEVEL V

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698

Date Collected: 10/30/97

Date Received: 10/30/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF738DL
 Lab Code: L9703698-014
 Test Notes: C2A

Units: UG/KG

Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Out
N-Nitrosodimethylamine	EPA 3550	8270SIM	20	10	11/7/97	11/17/97	20	U	C
Naphthalene	EPA 3550	8270SIM	300	10	11/7/97	11/17/97	300	U	
Acenaphthylene	EPA 3550	8270SIM	300	10	11/7/97	11/17/97	300	U	
Acenaphthene	EPA 3550	8270SIM	300	10	11/7/97	11/17/97	300	U	
Diethyl Phthalate	EPA 3550	8270SIM	1000	10	11/7/97	11/17/97	1000	U	
Fluorene	EPA 3550	8270SIM	300	10	11/7/97	11/17/97	300	U	
Phenanthrene	EPA 3550	8270SIM	300	10	11/7/97	11/17/97	300	U	
Anthracene	EPA 3550	8270SIM	300	10	11/7/97	11/17/97	300	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	1000	10	11/7/97	11/17/97	1000	U	
Fluoranthene	EPA 3550	8270SIM	300	10	11/7/97	11/17/97	300	U	
Pyrene	EPA 3550	8270SIM	300	10	11/7/97	11/17/97	300	U	
Benz(a)anthracene	EPA 3550	8270SIM	300	10	11/7/97	11/17/97	300	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1000	10	11/7/97	11/17/97	1000	U	
Chrysene	EPA 3550	8270SIM	300	10	11/7/97	11/17/97	300	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	300	10	11/7/97	11/17/97	300	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	300	10	11/7/97	11/17/97	300	U	
Benzo(a)pyrene	EPA 3550	8270SIM	300	10	11/7/97	11/17/97	300	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	300	10	11/7/97	11/17/97	300	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	300	10	11/7/97	11/17/97	300	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	300	10	11/7/97	11/17/97	300	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	300	10	11/7/97	11/17/97	300	U	C2A

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

1002

Approved By: *Eide Schwartz*Date: *1/29/98*

1522/020597p

03698SOA.AA1 - Sample (2) 1/16/98

LEVEL V

Page No:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703698
 Date Collected: 10/30/97
 Date Received: 10/30/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF744
 Lab Code: L9703698-018
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual	Anal Notes
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	11/7/97	11/16/97	2	U	U		
Naphthalene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	31	U	U		
Acenaphthylene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	31	U	U		
Acenaphthene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	31	U	U		
Diethyl Phthalate	EPA 3550	8270SIM	100	1	11/7/97	11/16/97	100	U	U		
Fluorene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	31	U	U		
Phenanthrene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	270	E	R	D	
Anthracene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	64				
Di-n-butyl Phthalate	EPA 3550	8270SIM	100	1	11/7/97	11/16/97	100	U	U		
Fluoranthene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	180	E	R	D	
Pyrene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	180	E	R	D	
Benz(a)anthracene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	280	E	R	D	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	100	1	11/7/97	11/16/97	100	U	U		
Chrysene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	290	E	R	D	
Benzo(b)fluoranthene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	310	E	R	D	
Benzo(k)fluoranthene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	110				
Benzo(a)pyrene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	270	E	R	D	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	170	E	R	D	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	41				
Benzo(g,h,i)perylene	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	170	E	R	D	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	31	1	11/7/97	11/16/97	31	U	U		

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED

Approved By: *Eydie Schmitt*

Date: *2/6/98*

1003

1S22/020597p

0.1698SOA.AA1 - Sample (3) 2/6/98

LEVEL V

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/30/97
 Date Received: 10/30/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF744DL
 Lab Code: L9703698-018
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual	Cond.
N-Nitrosodimethylamine	EPA 3550	8270SIM	10	5	11/7/97	11/17/97	10	U	R		
Naphthalene	EPA 3550	8270SIM	160	5	11/7/97	11/17/97	160	U			
Acenaphthylene	EPA 3550	8270SIM	160	5	11/7/97	11/17/97	160	U			
Acenaphthene	EPA 3550	8270SIM	160	5	11/7/97	11/17/97	160	U			
Diethyl Phthalate	EPA 3550	8270SIM	500	5	11/7/97	11/17/97	500	U			
Fluorene	EPA 3550	8270SIM	160	5	11/7/97	11/17/97	160	U			
Phenanthrene	EPA 3550	8270SIM	160	5	11/7/97	11/17/97	250				
Anthracene	EPA 3550	8270SIM	160	5	11/7/97	11/17/97	160	U	R		D
Di-n-butyl Phthalate	EPA 3550	8270SIM	500	5	11/7/97	11/17/97	500	U	R		D
Fluoranthene	EPA 3550	8270SIM	160	5	11/7/97	11/17/97	510				
Pyrene	EPA 3550	8270SIM	160	5	11/7/97	11/17/97	460				
Benz(a)anthracene	EPA 3550	8270SIM	160	5	11/7/97	11/17/97	270				
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	500	5	11/7/97	11/17/97	500	U	R		D
Chrysene	EPA 3550	8270SIM	160	5	11/7/97	11/17/97	290				
Benzo(b)fluoranthene	EPA 3550	8270SIM	160	5	11/7/97	11/17/97	300				
Benzo(k)fluoranthene	EPA 3550	8270SIM	160	5	11/7/97	11/17/97	160	U	R		D
Benzo(a)pyrene	EPA 3550	8270SIM	160	5	11/7/97	11/17/97	250				
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	160	5	11/7/97	11/17/97	120	J	J		
Dibenz(a,h)anthracene	EPA 3550	8270SIM	160	5	11/7/97	11/17/97	160	U	R		D
Benzo(g,h,i)perylene	EPA 3550	8270SIM	160	5	11/7/97	11/17/97	130	J	J		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	160	5	11/7/97	11/17/97	160	U	R		D

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

Approved By: *Eugene Scheraga*

Date: *11/17/97*

1004

1522/020597p

03698SOA AA1 - Sample (9) 2/6/98

LEVEL V

Page 110

550 South Wadsworth Blvd. Suite 500
 Denver, CO 80226
 (303) 935-6505

Rocketdyne

Analysis/Method: EPA Method 8270-SIM

No. of Samples: 9 & 3 dilutions

Date Reviewed: 07/05/98

Reviewer: K. McNeill

Reference: USEPA Contract Laboratory Program National Functional Guidelines For Organic Data Review (Feb. 1994), and Columbia Analytical Services SOP 97-SOA-SIM-00M (Revision 1, 10/14/97).

SDG: L9703679

Samples Reviewed: RF721, RF722, RF723DL, RF723DLDL, RF124DL, RF126DL, RF127DL, RF128, RF128DL, RF726DL, RF726DLDL, and RF728DL.

Matrix: Soil

EPA Level V- Polynuclear Aromatic Hydrocarbons Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	Samples were received with cooler temperatures of 3 C and 14 C, they were also noted to be intact. No other sample receipt information was provided for the remaining samples.	No qualifications were applied to the samples due to the lack of sample receipt information and high cooler temperatures by the laboratory. The samples were hand delivered to the laboratory the day of sampling by Ogden personnel; however, the laboratory case narrative failed to note this.
4. Method Blanks	Two method blanks were analyzed with this SDG. No target compounds were detected in the method blank.	No qualifications were required.
5. LCS/BS	Two LCSs were analyzed with this SDG, which had acceptable recovery values for all compounds.	No qualifications were required.
6. <u>Surrogates</u>	Samples RF723DL, RF728DL, RF723DLDL, and RF726DLDL had 0% recovery for all three surrogate compounds. The samples were diluted due to high compound values; therefore,	No qualifications were required because the surrogates were either diluted out or only one surrogate was outlier, which does not require qualifications.

	Problems	Qualifications
	the surrogate spike compounds were present but diluted out due to the raised detection limits. Sample RF126DL had a high %R value for terphenyl-d14. All other samples had acceptable surrogate recovery values.	
7. MS/MSDs Sample RF721 was the MS/MSD analysis associated with this SDG.	The %R and RPD values were acceptable.	No qualifications were required.
8. Field QC Samples ER: RF711 (L9703657); RF138 (L9703657) FB: RS682 (L9800210) Duplicates: RF127/RF128	<p>Equipment rinsate RF711 had nondetects for all compounds. Equipment rinsate RF138 had a detect for bis(2-ethylhexyl)phthalate.</p> <p>The field blank had nondetects for all compounds.</p> <p>Sample RF127 was initially analyzed at 10X. Sample RF128, initial analysis at 1X, had a detect for bis(2-ethylhexyl)phthalate that exceeded the calibration range. The diluted 2X analysis had a detect of 160J g/Kg. No comparison of the duplicate analyses could be made due the difference in detection levels caused by the dilutions.</p>	<p>Sample RF128DL had a detects for bis(2-ethylhexyl)phthalate qualified "J" for the equipment rinsate detect. No other qualifications were required.</p> <p>No qualifications were required.</p> <p>No qualifications were required.</p>
9. Other	<p>The following samples were initially analyzed at dilutions and reported nondetects for all compounds: RF124DL (10X), RF126DL (10X), RF127DL(10X), and RF728DL (50X). No other information was provided by the laboratory to determine if the analyses were properly diluted and the reason for the dilutions.</p> <p>Sample RF128 had a detect for bis(2-ethylhexyl)phthalate above the instruments detection range. The reanalyzed analysis, RF128DL, had a detection within the instrument range.</p> <p>Samples RF723DL and RF726DL both</p>	<p>N/A</p> <p>The diluted analysis was retained and bis(2-ethylhexyl)phthalate was rejected "R" in the original analysis. All other compounds in the original analyses were retained.</p>

	Problems	Qualifications
	had detects which exceeded the instruments calibration range. The two samples were reanalyzed at dilutions, RF723DLDL and RF726DLDL, which yielded acceptable recovery values.	The original detections were rejected "R," and the diluted analyses were retained. All other compounds in the original analyses were retained.
10. <u>Comments</u>	N/A	N/A

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF124DL
 Lab Code: L9703679-012
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodimethylamine	EPA 3550	8270SIM	21	10	11/3/97	11/11/97	21	U
Naphthalene	EPA 3550	8270SIM	320	10	11/3/97	11/11/97	320	U
Acenaphthylene	EPA 3550	8270SIM	320	10	11/3/97	11/11/97	320	U
Acenaphthene	EPA 3550	8270SIM	320	10	11/3/97	11/11/97	320	U
Diethyl Phthalate	EPA 3550	8270SIM	1100	10	11/3/97	11/11/97	1100	U
Fluorene	EPA 3550	8270SIM	320	10	11/3/97	11/11/97	320	U
Phenanthrene	EPA 3550	8270SIM	320	10	11/3/97	11/11/97	320	U
Anthracene	EPA 3550	8270SIM	320	10	11/3/97	11/11/97	320	U
Di-n-butyl Phthalate	EPA 3550	8270SIM	1100	10	11/3/97	11/11/97	1100	U
Fluoranthene	EPA 3550	8270SIM	320	10	11/3/97	11/11/97	320	U
Pyrene	EPA 3550	8270SIM	320	10	11/3/97	11/11/97	320	U
Benz(a)anthracene	EPA 3550	8270SIM	320	10	11/3/97	11/11/97	320	U
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1100	10	11/3/97	11/11/97	1100	U
Chrysene	EPA 3550	8270SIM	320	10	11/3/97	11/11/97	320	U
Benzo(b)fluoranthene	EPA 3550	8270SIM	320	10	11/3/97	11/11/97	320	U
Benzo(k)fluoranthene	EPA 3550	8270SIM	320	10	11/3/97	11/11/97	320	U
Benzo(a)pyrene	EPA 3550	8270SIM	320	10	11/3/97	11/11/97	320	U
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	320	10	11/3/97	11/11/97	320	U
Dibenz(a,h)anthracene	EPA 3550	8270SIM	320	10	11/3/97	11/11/97	320	U
Benzo(g,h,i)perylene	EPA 3550	8270SIM	320	10	11/3/97	11/11/97	320	U
N-Nitrosodiphenylamine	EPA 3550	8270SIM	320	10	11/3/97	11/11/97	320	U

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

Approved By: *Eddie Schwart*

Date: *2/19/98*

1522/025597p

97679502- A7 2 - Sample 10/28/97

ODDEN VALIDATED LEVEL V 1005
 Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF126DL
 Lab Code: L9703679-013
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual Code
N-Nitrosodimethylamine	EPA 3550	8270SIM	22	10	11/3/97	11/13/97	22	U	
Naphthalene	EPA 3550	8270SIM	330	10	11/3/97	11/13/97	330	U	
Acenaphthylene	EPA 3550	8270SIM	330	10	11/3/97	11/13/97	330	U	
Acenaphthene	EPA 3550	8270SIM	330	10	11/3/97	11/13/97	330	U	
Diethyl Phthalate	EPA 3550	8270SIM	1100	10	11/3/97	11/13/97	1100	U	
Fluorene	EPA 3550	8270SIM	330	10	11/3/97	11/13/97	330	U	
Phenanthrene	EPA 3550	8270SIM	330	10	11/3/97	11/13/97	330	U	
Anthracene	EPA 3550	8270SIM	330	10	11/3/97	11/13/97	330	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	1100	10	11/3/97	11/13/97	1100	U	
Fluoranthene	EPA 3550	8270SIM	330	10	11/3/97	11/13/97	330	U	
Pyrene	EPA 3550	8270SIM	330	10	11/3/97	11/13/97	330	U	
Benz(a)anthracene	EPA 3550	8270SIM	330	10	11/3/97	11/13/97	330	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1100	10	11/3/97	11/13/97	1100	U	
Chrysene	EPA 3550	8270SIM	330	10	11/3/97	11/13/97	330	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	330	10	11/3/97	11/13/97	330	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	330	10	11/3/97	11/13/97	330	U	
Benzo(a)pyrene	EPA 3550	8270SIM	330	10	11/3/97	11/13/97	330	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	330	10	11/3/97	11/13/97	330	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	330	10	11/3/97	11/13/97	330	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	330	10	11/3/97	11/13/97	330	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	330	10	11/3/97	11/13/97	330	U	

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

Approved By: *Erika Schmitz*

Date: *2/19/98*

1522/020597p

C3679SOA.AA2 - Sample 313150002

OGDEN VALIDATED

LEVEL V

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF127DL
 Lab Code: L9703679-014
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Rev Qual	Result Notes	Q/C
N-Nitrosodimethylamine	EPA 3550	8270SIM	22	10	11/3/97	11/13/97	22	C	U	
Naphthalene	EPA 3550	8270SIM	320	10	11/3/97	11/13/97	320		U	
Acenaphthylene	EPA 3550	8270SIM	320	10	11/3/97	11/13/97	320		U	
Acenaphthene	EPA 3550	8270SIM	320	10	11/3/97	11/13/97	320		U	
Diethyl Phthalate	EPA 3550	8270SIM	1100	10	11/3/97	11/13/97	1100		U	
Fluorene	EPA 3550	8270SIM	320	10	11/3/97	11/13/97	320		U	
Phenanthrene	EPA 3550	8270SIM	320	10	11/3/97	11/13/97	320		U	
Anthracene	EPA 3550	8270SIM	320	10	11/3/97	11/13/97	320		U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	1100	10	11/3/97	11/13/97	1100		U	
Fluoranthene	EPA 3550	8270SIM	320	10	11/3/97	11/13/97	320		U	
Pyrene	EPA 3550	8270SIM	320	10	11/3/97	11/13/97	320		U	
Benz(a)anthracene	EPA 3550	8270SIM	320	10	11/3/97	11/13/97	320		U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1100	10	11/3/97	11/13/97	1100		U	
Chrysene	EPA 3550	8270SIM	320	10	11/3/97	11/13/97	320		U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	320	10	11/3/97	11/13/97	320		U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	320	10	11/3/97	11/13/97	320		U	
Benzo(a)pyrene	EPA 3550	8270SIM	320	10	11/3/97	11/13/97	320		U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	320	10	11/3/97	11/13/97	320		U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	320	10	11/3/97	11/13/97	320		U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	320	10	11/3/97	11/13/97	320		U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	320	10	11/3/97	11/13/97	320	C	U	

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

Approved By: *Eydie Schwartz*

Date: *2/17/98*

1322-020597p

036795CA PA2 - Sample

OGDEN VALIDATED

LEVEL V 1007

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679

Date Collected: 10/28/97

Date Received: 10/28/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF128
 Lab Code: L9703679-015
 Test Notes:

Units: UG/KG

Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Rev Qual	Result Notes	Sign
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	11/3/97	11/13/97	2	U	U	
Naphthalene	EPA 3550	8270SIM	33	1	11/3/97	11/13/97	33	U	U	
Acenaphthylene	EPA 3550	8270SIM	33	1	11/3/97	11/13/97	33	U	U	
Acenaphthene	EPA 3550	8270SIM	33	1	11/3/97	11/13/97	33	U	U	
Diethyl Phthalate	EPA 3550	8270SIM	110	1	11/3/97	11/13/97	110	U	U	
Fluorene	EPA 3550	8270SIM	33	1	11/3/97	11/13/97	33	U	U	
Phenanthrene	EPA 3550	8270SIM	33	1	11/3/97	11/13/97	33	U	U	
Anthracene	EPA 3550	8270SIM	33	1	11/3/97	11/13/97	33	U	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	110	1	11/3/97	11/13/97	110	U	U	
Fluoranthene	EPA 3550	8270SIM	33	1	11/3/97	11/13/97	33	U	U	
Pyrene	EPA 3550	8270SIM	33	1	11/3/97	11/13/97	33	U	U	
Benz(a)anthracene	EPA 3550	8270SIM	33	1	11/3/97	11/13/97	33	U	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	110	1	11/3/97	11/13/97	190	R	E	D
Chrysene	EPA 3550	8270SIM	33	1	11/3/97	11/13/97	33	U	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	33	1	11/3/97	11/13/97	33	U	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	33	1	11/3/97	11/13/97	33	U	U	
Benzo(a)pyrene	EPA 3550	8270SIM	33	1	11/3/97	11/13/97	33	U	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	33	1	11/3/97	11/13/97	33	U	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	33	1	11/3/97	11/13/97	33	U	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	33	1	11/3/97	11/13/97	33	U	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	33	1	11/3/97	11/13/97	33	U	U	

N-Nitrosodimethylamine Reported Method Detection Limit

Approved By: *Egypte Schmitt*Date: *1/26/98*

1522/020597p

0367 ISOAA2 - Supp 10/28/97

OGDEN VALIDATED

LEVEL V¹⁰⁰⁸

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF128DL
 Lab Code: L9703679-015
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Rev Qual	Result Notes	Code
N-Nitrosodimethylamine	EPA 3550	8270SIM	4	2	11/3/97	11/15/97	4	R	U	D
Naphthalene	EPA 3550	8270SIM	67	2	11/3/97	11/15/97	67		U	
Acenaphthylene	EPA 3550	8270SIM	67	2	11/3/97	11/15/97	67		U	
Acenaphthene	EPA 3550	8270SIM	67	2	11/3/97	11/15/97	67		U	
Diethyl Phthalate	EPA 3550	8270SIM	220	2	11/3/97	11/15/97	220		U	
Fluorene	EPA 3550	8270SIM	67	2	11/3/97	11/15/97	67		U	
Phenanthrene	EPA 3550	8270SIM	67	2	11/3/97	11/15/97	67		U	
Anthracene	EPA 3550	8270SIM	67	2	11/3/97	11/15/97	67		U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	220	2	11/3/97	11/15/97	220		U	
Fluoranthene	EPA 3550	8270SIM	67	2	11/3/97	11/15/97	67		U	
Pyrene	EPA 3550	8270SIM	67	2	11/3/97	11/15/97	67		U	
Benz(a)anthracene	EPA 3550	8270SIM	67	2	11/3/97	11/15/97	67	R	U	D
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	220	2	11/3/97	11/15/97	160	J	J	F
Chrysene	EPA 3550	8270SIM	67	2	11/3/97	11/15/97	67	R	U	D
Benzo(b)fluoranthene	EPA 3550	8270SIM	67	2	11/3/97	11/15/97	67		U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	67	2	11/3/97	11/15/97	67		U	
Benzo(a)pyrene	EPA 3550	8270SIM	67	2	11/3/97	11/15/97	67		U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	67	2	11/3/97	11/15/97	67		U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	67	2	11/3/97	11/15/97	67		U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	67	2	11/3/97	11/15/97	67		U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	67	2	11/3/97	11/15/97	33	R	U	D

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

Approved By: *Cydie Schuett*

Date: *1/26/98*

1522-020597

036750A.AA2 - Sample (U) 2/5/98

OGDEN VALIDATED LEVEL V 1009
 Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF721
 Lab Code: L9703679-009
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Per Qd	Result Notes	Qd Code
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	11/4/97	11/13/97	2	C	U	
Naphthalene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30		U	
Acenaphthylene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30		U	
Acenaphthene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30		U	
Diethyl Phthalate	EPA 3550	8270SIM	100	1	11/4/97	11/13/97	100		U	
Fluorene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30		U	
Phenanthrene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30		U	
Anthracene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30		U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	100	1	11/4/97	11/13/97	100		U	
Fluoranthene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30		U	
Pyrene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30		U	
Benzo(a)anthracene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30		U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	100	1	11/4/97	11/13/97	100		U	
Chrysene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30		U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30		U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30		U	
Benzo(a)pyrene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30		U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30		U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30		U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30		U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30	C	U	

N-Nitrosodimethylamine Reported Method Detection Limit

Approved By: *Egde Schmitt*

Date: *2/19/98*

1522-0205-7p

62-780A-AA2 - Sample 2/19/98

OGDEN VALIDATED

LEVEL V

1001
Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF722
 Lab Code: L9703679-010
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	11/4/97	11/13/97	2	U
Naphthalene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30	U
Acenaphthylene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30	U
Acenaphthene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30	U
Diethyl Phthalate	EPA 3550	8270SIM	100	1	11/4/97	11/13/97	100	U
Fluorene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30	U
Phenanthrene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30	U
Anthracene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30	U
Di-n-butyl Phthalate	EPA 3550	8270SIM	100	1	11/4/97	11/13/97	100	U
Fluoranthene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30	U
Pyrene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30	U
Benz(a)anthracene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30	U
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	100	1	11/4/97	11/13/97	100	U
Chrysene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30	U
Benzo(b)fluoranthene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30	U
Benzo(k)fluoranthene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30	U
Benzo(a)pyrene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30	U
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30	U
Dibenz(a,h)anthracene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30	U
Benzo(g,h,i)perylene	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30	U
N-Nitrosodiphenylamine	EPA 3550	8270SIM	30	1	11/4/97	11/13/97	30	U

N-Nitrosodimethylamine Reported Method Detection Limit

Approved By: *Eyde Schmitt*

Date: 11/26/98

1522/020597p

03679SOA AA2 - Sample (2) 12/8/97

OGDEN VALIDATED LEVEL V

1002
Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF723DL
 Lab Code: L9703679-011
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	
N-Nitrosodimethylamine	EPA 3550	8270SIM	100	50	11/3/97	11/13/97	100	U	
Naphthalene	EPA 3550	8270SIM	1500	50	11/3/97	11/13/97	1500	U	
Acenaphthylene	EPA 3550	8270SIM	1500	50	11/3/97	11/13/97	1500	U	
Acenaphthene	EPA 3550	8270SIM	1500	50	11/3/97	11/13/97	1500	U	
Diethyl Phthalate	EPA 3550	8270SIM	5000	50	11/3/97	11/13/97	5000	U	
Fluorene	EPA 3550	8270SIM	1500	50	11/3/97	11/13/97	1500	U	
Phenanthrene	EPA 3550	8270SIM	1500	50	11/3/97	11/13/97	1500	U	
Anthracene	EPA 3550	8270SIM	1500	50	11/3/97	11/13/97	1500	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	5000	50	11/3/97	11/13/97	5000	U	
Fluoranthene	EPA 3550	8270SIM	1500	50	11/3/97	11/13/97	1500	U	
Pyrene	EPA 3550	8270SIM	1500	50	11/3/97	11/13/97	1500	U	
Benz(a)anthracene	EPA 3550	8270SIM	1500	50	11/3/97	11/13/97	1500	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	5000	50	11/3/97	11/13/97	16000	R E	D
Chrysene	EPA 3550	8270SIM	1500	50	11/3/97	11/13/97	1500	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	1500	50	11/3/97	11/13/97	1500	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	1500	50	11/3/97	11/13/97	1500	U	
Benzo(a)pyrene	EPA 3550	8270SIM	1500	50	11/3/97	11/13/97	1500	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	1500	50	11/3/97	11/13/97	1500	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	1500	50	11/3/97	11/13/97	1500	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	1500	50	11/3/97	11/13/97	1500	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	1500	50	11/3/97	11/13/97	1500	U	

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

Approved By: *Eddie Schwartz*

Date: *2/19/98*

1522/0205/-p

03679SCA AA2 - Sample (3) 2/19/98

OGDEN VALIDATED LEVEL V

1003

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF723DLDL
 Lab Code: L9703679-011
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Rev	Result Notes	g/g
N-Nitrosodimethylamine	EPA 3550	8270SIM	400	200	11/3/97	11/17/97	400	R	U	D
Naphthalene	EPA 3550	8270SIM	6000	200	11/3/97	11/17/97	6000		U	
Acenaphthylene	EPA 3550	8270SIM	6000	200	11/3/97	11/17/97	6000		U	
Acenaphthene	EPA 3550	8270SIM	6000	200	11/3/97	11/17/97	6000		U	
Diethyl Phthalate	EPA 3550	8270SIM	20000	200	11/3/97	11/17/97	20000		U	
Fluorene	EPA 3550	8270SIM	6000	200	11/3/97	11/17/97	6000		U	
Phenanthrene	EPA 3550	8270SIM	6000	200	11/3/97	11/17/97	6000		U	
Anthracene	EPA 3550	8270SIM	6000	200	11/3/97	11/17/97	6000		U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	20000	200	11/3/97	11/17/97	20000		U	
Fluoranthene	EPA 3550	8270SIM	6000	200	11/3/97	11/17/97	6000	↓	U	
Pyrene	EPA 3550	8270SIM	6000	200	11/3/97	11/17/97	6000	R	U	↓
Benz(a)anthracene	EPA 3550	8270SIM	6000	200	11/3/97	11/17/97	6000	R R	U	↓
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	20000	200	11/3/97	11/17/97	23000			
Chrysene	EPA 3550	8270SIM	6000	200	11/3/97	11/17/97	6000	R	U	↓
Benzo(b)fluoranthene	EPA 3550	8270SIM	6000	200	11/3/97	11/17/97	6000		U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	6000	200	11/3/97	11/17/97	6000		U	
Benzo(a)pyrene	EPA 3550	8270SIM	6000	200	11/3/97	11/17/97	6000		U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	6000	200	11/3/97	11/17/97	6000		U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	6000	200	11/3/97	11/17/97	6000		U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	6000	200	11/3/97	11/17/97	6000		U	↓
N-Nitrosodiphenylamine	EPA 3550	8270SIM	6000	200	11/3/97	11/17/97	1500	R	U	↓

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

KM

8.5.98

Approved By: *Eugene Schmitt*Date: *2/19/98*

1522/020597p

0.3679SOA-AA2

OGDEN VALIDATED LEVEL V 1.004
 Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/29/97
 Date Received: 10/29/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF726DL
 Lab Code: L9703679-016
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	RevQual	Result Notes	Qual Code
N-Nitrosodimethylamine	EPA 3550	8270SIM	20	10	11/4/97	11/13/97	20	C	U	
Naphthalene	EPA 3550	8270SIM	300	10	11/4/97	11/13/97	300		U	
Acenaphthylene	EPA 3550	8270SIM	300	10	11/4/97	11/13/97	300		U	
Acenaphthene	EPA 3550	8270SIM	300	10	11/4/97	11/13/97	300		U	
Diethyl Phthalate	EPA 3550	8270SIM	1000	10	11/4/97	11/13/97	1000		U	
Fluorene	EPA 3550	8270SIM	300	10	11/4/97	11/13/97	300		U	
Phenanthrene	EPA 3550	8270SIM	300	10	11/4/97	11/13/97	300		U	
Anthracene	EPA 3550	8270SIM	300	10	11/4/97	11/13/97	300		U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	1000	10	11/4/97	11/13/97	1000	C	U	
Fluoranthene	EPA 3550	8270SIM	300	10	11/4/97	11/13/97	430			
Pyrene	EPA 3550	8270SIM	300	10	11/4/97	11/13/97	380			
Benz(a)anthracene	EPA 3550	8270SIM	300	10	11/4/97	11/13/97	300	C	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1000	10	11/4/97	11/13/97	2400	R	E	D
Chrysene	EPA 3550	8270SIM	300	10	11/4/97	11/13/97	310			
Benzo(b)fluoranthene	EPA 3550	8270SIM	300	10	11/4/97	11/13/97	400			
Benzo(k)fluoranthene	EPA 3550	8270SIM	300	10	11/4/97	11/13/97	300	C	U	
Benzo(a)pyrene	EPA 3550	8270SIM	300	10	11/4/97	11/13/97	350			
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	300	10	11/4/97	11/13/97	300	C	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	300	10	11/4/97	11/13/97	300	C	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	300	10	11/4/97	11/13/97	350			
N-Nitrosodiphenylamine	EPA 3550	8270SIM	300	10	11/4/97	11/13/97	30	C	U	

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

Approved By: *Eugene Schumacher*

Date: *2/19/98*

1S22/020597p

OGDEN VALIDATED

LEVEL V¹⁰¹⁰
 Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/29/97
 Date Received: 10/29/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF726DLDL
 Lab Code: L9703679-016
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Rev Qual	Result Notes	Qual Code
N-Nitrosodimethylamine	EPA 3550	8270SIM	40	20	11/4/97	11/15/97	40	R	U	D
Naphthalene	EPA 3550	8270SIM	600	20	11/4/97	11/15/97	600		U	
Acenaphthylene	EPA 3550	8270SIM	600	20	11/4/97	11/15/97	600		U	
Acenaphthene	EPA 3550	8270SIM	600	20	11/4/97	11/15/97	600		U	
Diethyl Phthalate	EPA 3550	8270SIM	2000	20	11/4/97	11/15/97	2000		U	
Fluorene	EPA 3550	8270SIM	600	20	11/4/97	11/15/97	600		U	
Phenanthrene	EPA 3550	8270SIM	600	20	11/4/97	11/15/97	600		U	
Anthracene	EPA 3550	8270SIM	600	20	11/4/97	11/15/97	600		U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	2000	20	11/4/97	11/15/97	2000		U	
Fluoranthene	EPA 3550	8270SIM	600	20	11/4/97	11/15/97	600		U	
Pyrene	EPA 3550	8270SIM	600	20	11/4/97	11/15/97	600		U	
Benz(a)anthracene	EPA 3550	8270SIM	600	20	11/4/97	11/15/97	600	R	U	D
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	2000	20	11/4/97	11/15/97	1900	J	J	
Chrysene	EPA 3550	8270SIM	600	20	11/4/97	11/15/97	600	R	U	D
Benzo(b)fluoranthene	EPA 3550	8270SIM	600	20	11/4/97	11/15/97	600		U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	600	20	11/4/97	11/15/97	600		U	
Benzo(a)pyrene	EPA 3550	8270SIM	600	20	11/4/97	11/15/97	600		U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	600	20	11/4/97	11/15/97	600		U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	600	20	11/4/97	11/15/97	600		U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	600	20	11/4/97	11/15/97	600		U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	600	20	11/4/97	11/15/97	600	R	U	D

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

Approved By: *Eydie Schunz*

Date: *2/17/98*

1522/020597p

0367900A AA2 - Sample (11) 2/19/98

OGDEN VALIDATED

LEVEL V 1011
 Page No.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/29/97
 Date Received: 10/29/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF728DL
 Lab Code: L9703679-017
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result	Notes
N-Nitrosodimethylamine	EPA 3550	8270SIM	120	50	11/4/97	11/14/97	120	U	U
Naphthalene	EPA 3550	8270SIM	1800	50	11/4/97	11/14/97	1800	U	U
Acenaphthylene	EPA 3550	8270SIM	1800	50	11/4/97	11/14/97	1800	U	U
Acenaphthene	EPA 3550	8270SIM	1800	50	11/4/97	11/14/97	1800	U	U
Diethyl Phthalate	EPA 3550	8270SIM	6000	50	11/4/97	11/14/97	6000	U	U
Fluorene	EPA 3550	8270SIM	1800	50	11/4/97	11/14/97	1800	U	U
Phenanthrene	EPA 3550	8270SIM	1800	50	11/4/97	11/14/97	1800	U	U
Anthracene	EPA 3550	8270SIM	1800	50	11/4/97	11/14/97	1800	U	U
Di-n-butyl Phthalate	EPA 3550	8270SIM	6000	50	11/4/97	11/14/97	6000	U	U
Fluoranthene	EPA 3550	8270SIM	1800	50	11/4/97	11/14/97	1800	U	U
Pyrene	EPA 3550	8270SIM	1800	50	11/4/97	11/14/97	1800	U	U
Benz(a)anthracene	EPA 3550	8270SIM	1800	50	11/4/97	11/14/97	1800	U	U
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	6000	50	11/4/97	11/14/97	6000	U	U
Chrysene	EPA 3550	8270SIM	1800	50	11/4/97	11/14/97	1800	U	U
Benzo(b)fluoranthene	EPA 3550	8270SIM	1800	50	11/4/97	11/14/97	1800	U	U
Benzo(k)fluoranthene	EPA 3550	8270SIM	1800	50	11/4/97	11/14/97	1800	U	U
Benzo(a)pyrene	EPA 3550	8270SIM	1800	50	11/4/97	11/14/97	1800	U	U
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	1800	50	11/4/97	11/14/97	1800	U	U
Dibenz(a,h)anthracene	EPA 3550	8270SIM	1800	50	11/4/97	11/14/97	1800	U	U
Benzo(g,h,i)perylene	EPA 3550	8270SIM	1800	50	11/4/97	11/14/97	1800	U	U
N-Nitrosodiphenylamine	EPA 3550	8270SIM	1800	50	11/4/97	11/14/97	1800	U	U

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

Approved By: *Eyden Schwartz*

Date: *2/19/98*

1S22/020597p

OGDEN VALIDATED

LEVEL V

1012
Page No.:



550 South Wadsworth Blvd. Suite 500
 Denver, CO 80226
 (303) 935-6505

RocketdyneAnalysis/Method: EPA Method 8270-SIMNo. of Samples: 18 & 2 dilutionsDate Reviewed: 07/24/98Reviewer: K. McNeillReference: USEPA Contract Laboratory Program National Functional Guidelines For Organic Data Review (Feb. 1994), and Columbia Analytical Services SOP 97-SOA-SIM-00M (Revision 1, 10/14/97).SDG: L9703578Samples Reviewed: RF033DL, RF662DL, RF663DL, RF664DL, RF665, RF666, RF667DL, RF671DL, RF672DL, RF673, RF674DL, RF675DL, RF676DL, RF677DL, RF678DL, RF679DL, RF680DL, RF680DLDDL, RF680DLDDL, and RF681DL.Matrix: Soil**EPA Level V- Polynuclear Aromatic Hydrocarbons Assessment Form**

	Problems	Qualifications
1. Sample Management	Samples RF671, RF672, RF673, and RF674 were received on 10/21/97 with a cooler temperature of 7 C, and were noted to be intact. No other sample receipt information was provided for the remaining samples.	No qualifications were applied to the samples due to the lack of sample receipt information by the laboratory. The samples were hand delivered to the laboratory; however, the laboratory case narrative failed to note this.
4. Method Blanks	Two soil method blanks were analyzed with this SDG. No target compounds were detected in the either method blank.	No qualifications were required.
5. LCS/BS	One soil LCS was analyzed with this SDG. The LCS had acceptable recovery values.	No qualifications were required.
6. Surrogates	The recovery of nitrobenzene-d5 had low recoveries for RF667DL (21%), and RF671 (N/A). The laboratory noted sample RF671 had matrix interference and was not due to the 10X dilution; therefore, the surrogate was not detected. All other %R values were acceptable.	No qualifications were required.
7. MS/MSDs		

	Problems	Qualifications
Sample RF033 was the MS/MSD analysis associated with this package.	All recoveries were acceptable, except for pyrene. Pyrene had %R values of 190% and 210% in the MS/MSDs, which are above the QC limits. The RPD values were all acceptable.	No qualifications were required.
8. Field QC Samples ER: RF149 (SDG L9703657), RF711 (SDG L9703657), RF804 (SDG L9703780). FB: RS682 (SDG L9800210) There are no field duplicates.	Equipment rinsates RF149 did not have a PAH analysis requested. Equipment rinsates RF711 and RF804 had nondetects for all compounds. RS682 had nondetects for all compounds.	No qualifications were required. No qualifications were required.
9. Other	The following samples were initially analyzed at a 10X dilution and reported nondetects for all compounds: RF033DL, RF662DL, RF663DL, RF664DL, RF667DL, RF672DL, RF674DL, RF675DL, RF676DL, RF677DL, RF678DL, and RF679DL. Samples RF671 and RF680 were also initially analyzed at a 10X dilution, reported compound detects, but did not have a undiluted analysis performed. No other information was provided by the laboratory to determine if the samples were properly diluted. Sample RF680DL had detects above the calibration range.	No qualifications were required Detects above the calibration limits were rejected "R" in the original 10X analysis and retained in the diluted analyses (50X, 200X) which had results within the calibration limits.
Comments	N/A	N/A

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703578
 Date Collected: 10/20/97
 Date Received: 10/20/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF033DL
 Lab Code: L9703578-001
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Rev	Result Notes	Code
N-Nitrosodimethylamine	EPA 3550	8270SIM	22	10	10/24/97	10/28/97	22	C	U	
Naphthalene	EPA 3550	8270SIM	330	10	10/24/97	10/28/97	330		U	
Acenaphthylene	EPA 3550	8270SIM	330	10	10/24/97	10/28/97	330		U	
Acenaphthene	EPA 3550	8270SIM	330	10	10/24/97	10/28/97	330		U	
Diethyl Phthalate	EPA 3550	8270SIM	1100	10	10/24/97	10/28/97	1100		U	
Fluorene	EPA 3550	8270SIM	330	10	10/24/97	10/28/97	330		U	
Phenanthrene	EPA 3550	8270SIM	330	10	10/24/97	10/28/97	330		U	
Anthracene	EPA 3550	8270SIM	330	10	10/24/97	10/28/97	330		U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	1100	10	10/24/97	10/28/97	1100		U	
Fluoranthene	EPA 3550	8270SIM	330	10	10/24/97	10/28/97	330		U	
Pyrene	EPA 3550	8270SIM	330	10	10/24/97	10/28/97	330		U	
Benz(a)anthracene	EPA 3550	8270SIM	330	10	10/24/97	10/28/97	330		U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1100	10	10/24/97	10/28/97	1100		U	
Chrysene	EPA 3550	8270SIM	330	10	10/24/97	10/28/97	330		U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	330	10	10/24/97	10/28/97	330		U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	330	10	10/24/97	10/28/97	330		U	
Benzo(a)pyrene	EPA 3550	8270SIM	330	10	10/24/97	10/28/97	330		U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	330	10	10/24/97	10/28/97	330		U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	330	10	10/24/97	10/28/97	330		U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	330	10	10/24/97	10/28/97	330		U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	330	10	10/24/97	10/28/97	330	C	U	

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

Approved By: Eydie Schwartz

Date: 2/16/98

1S22/020597p

03578/0A.AA1 - Sample 2/16/98

LEVEL V

Page No: 1001-12

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703578
 Date Collected: 10/20/97
 Date Received: 10/20/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF662DL
 Lab Code: L9703578-002
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Code
N-Nitrosodimethylamine	EPA 3550	8270SIM	36	10	10/24/97	10/28/97	36	U	
Naphthalene	EPA 3550	8270SIM	540	10	10/24/97	10/28/97	540	U	
Acenaphthylene	EPA 3550	8270SIM	540	10	10/24/97	10/28/97	540	U	
Acenaphthene	EPA 3550	8270SIM	540	10	10/24/97	10/28/97	540	U	
Diethyl Phthalate	EPA 3550	8270SIM	1800	10	10/24/97	10/28/97	1800	U	
Fluorene	EPA 3550	8270SIM	540	10	10/24/97	10/28/97	540	U	
Phenanthrene	EPA 3550	8270SIM	540	10	10/24/97	10/28/97	540	U	
Anthracene	EPA 3550	8270SIM	540	10	10/24/97	10/28/97	540	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	1800	10	10/24/97	10/28/97	1800	U	
Fluoranthene	EPA 3550	8270SIM	540	10	10/24/97	10/28/97	540	U	
Pyrene	EPA 3550	8270SIM	540	10	10/24/97	10/28/97	540	U	
Benz(a)anthracene	EPA 3550	8270SIM	540	10	10/24/97	10/28/97	540	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1800	10	10/24/97	10/28/97	1800	U	
Chrysene	EPA 3550	8270SIM	540	10	10/24/97	10/28/97	540	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	540	10	10/24/97	10/28/97	540	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	540	10	10/24/97	10/28/97	540	U	
Benzo(a)pyrene	EPA 3550	8270SIM	540	10	10/24/97	10/28/97	540	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	540	10	10/24/97	10/28/97	540	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	540	10	10/24/97	10/28/97	540	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	540	10	10/24/97	10/28/97	540	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	540	10	10/24/97	10/28/97	540	U	

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

Approved By: Eydie Schwartz

Date: 2/16/98

1522/020597p

03578SOA.AA1 - Sample (2) 2/16/98

LEVEL V

Page No.: 1002-R

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703578
 Date Collected: 10/20/97
 Date Received: 10/20/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF663DL
 Lab Code: L9703578-003
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Rev Qual	Result Notes	Qual Code
N-Nitrosodimethylamine	EPA 3550	8270SIM	20	10	10/24/97	10/28/97	20	U	U	
Naphthalene	EPA 3550	8270SIM	310	10	10/24/97	10/28/97	310	U	U	
Acenaphthylene	EPA 3550	8270SIM	310	10	10/24/97	10/28/97	310	U	U	
Acenaphthene	EPA 3550	8270SIM	310	10	10/24/97	10/28/97	310	U	U	
Diethyl Phthalate	EPA 3550	8270SIM	1000	10	10/24/97	10/28/97	1000	U	U	
Fluorene	EPA 3550	8270SIM	310	10	10/24/97	10/28/97	310	U	U	
Phenanthrene	EPA 3550	8270SIM	310	10	10/24/97	10/28/97	310	U	U	
Anthracene	EPA 3550	8270SIM	310	10	10/24/97	10/28/97	310	U	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	1000	10	10/24/97	10/28/97	1000	U	U	
Fluoranthene	EPA 3550	8270SIM	310	10	10/24/97	10/28/97	310	U	U	
Pyrene	EPA 3550	8270SIM	310	10	10/24/97	10/28/97	310	U	U	
Benz(a)anthracene	EPA 3550	8270SIM	310	10	10/24/97	10/28/97	310	U	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1000	10	10/24/97	10/28/97	1000	U	U	
Chrysene	EPA 3550	8270SIM	310	10	10/24/97	10/28/97	310	U	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	310	10	10/24/97	10/28/97	310	U	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	310	10	10/24/97	10/28/97	310	U	U	
Benzo(a)pyrene	EPA 3550	8270SIM	310	10	10/24/97	10/28/97	310	U	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	310	10	10/24/97	10/28/97	310	U	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	310	10	10/24/97	10/28/97	310	U	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	310	10	10/24/97	10/28/97	310	U	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	310	10	10/24/97	10/28/97	310	U	U	

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

Approved By: Eyde Schwart

1522/020597p

Date: 2/16/98

OGDEN VALIDATED

LEVEL V

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703578
 Date Collected: 10/20/97
 Date Received: 10/20/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF664DL
 Lab Code: L9703578-004
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Rev Orig	Result Notes	Orig Code
N-Nitrosodimethylamine	EPA 3550	8270SIM	20	10	10/24/97	10/28/97	20	C	U	
Naphthalene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300		U	
Acenaphthylene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300		U	
Acenaphthene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300		U	
Diethyl Phthalate	EPA 3550	8270SIM	1000	10	10/24/97	10/28/97	1000		U	
Fluorene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300		U	
Phenanthrene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300		U	
Anthracene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300		U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	1000	10	10/24/97	10/28/97	1000		U	
Fluoranthene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300		U	
Pyrene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300		U	
Benz(a)anthracene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300		U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1000	10	10/24/97	10/28/97	1000		U	
Chrysene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300		U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300		U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300		U	
Benzo(a)pyrene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300		U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300		U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300		U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300		U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300	C	U	

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

Approved By: *Eyde Schenck*

Date: *2/16/98*

1S22/020597p

03578SO/AA1 - Sample (4) 2/16/98

LEVEL V

Page No.: *1004R*

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703578
 Date Collected: 10/20/97
 Date Received: 10/20/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF665
 Lab Code: L9703578-005
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Rev Code	Result Notes	Code
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	10/24/97	10/28/97	2	U	U	
Naphthalene	EPA 3550	8270SIM	31	1	10/24/97	10/28/97	31		U	
Acenaphthylene	EPA 3550	8270SIM	31	1	10/24/97	10/28/97	31		U	
Acenaphthene	EPA 3550	8270SIM	31	1	10/24/97	10/28/97	31		U	
Diethyl Phthalate	EPA 3550	8270SIM	100	1	10/24/97	10/28/97	100		U	
Fluorene	EPA 3550	8270SIM	31	1	10/24/97	10/28/97	31		U	
Phenanthrene	EPA 3550	8270SIM	31	1	10/24/97	10/28/97	31		U	
Anthracene	EPA 3550	8270SIM	31	1	10/24/97	10/28/97	31		U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	100	1	10/24/97	10/28/97	100		U	
Fluoranthene	EPA 3550	8270SIM	31	1	10/24/97	10/28/97	31		U	
Pyrene	EPA 3550	8270SIM	31	1	10/24/97	10/28/97	31		U	
Benz(a)anthracene	EPA 3550	8270SIM	31	1	10/24/97	10/28/97	31		U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	100	1	10/24/97	10/28/97	100		U	
Chrysene	EPA 3550	8270SIM	31	1	10/24/97	10/28/97	31		U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	31	1	10/24/97	10/28/97	31		U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	31	1	10/24/97	10/28/97	31		U	
Benzo(a)pyrene	EPA 3550	8270SIM	31	1	10/24/97	10/28/97	31		U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	31	1	10/24/97	10/28/97	31		U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	31	1	10/24/97	10/28/97	31		U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	31	1	10/24/97	10/28/97	31		U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	31	1	10/24/97	10/28/97	31		U	

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED

1005

Approved By: _____

Date: _____

1522/020597p

03578SOA.AA1 - Sample (5) 12/19/97

LEVEL V

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703578
 Date Collected: 10/20/97
 Date Received: 10/20/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF666
 Lab Code: L9703578-006
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Res Qval	Result Notes	Qval Code
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	10/24/97	10/28/97	2	C	U	
Naphthalene	EPA 3550	8270SIM	32	1	10/24/97	10/28/97	32		U	
Acenaphthylene	EPA 3550	8270SIM	32	1	10/24/97	10/28/97	32		U	
Acenaphthene	EPA 3550	8270SIM	32	1	10/24/97	10/28/97	32		U	
Diethyl Phthalate	EPA 3550	8270SIM	110	1	10/24/97	10/28/97	110		U	
Fluorene	EPA 3550	8270SIM	32	1	10/24/97	10/28/97	32		U	
Phenanthrene	EPA 3550	8270SIM	32	1	10/24/97	10/28/97	32		U	
Anthracene	EPA 3550	8270SIM	32	1	10/24/97	10/28/97	32		U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	110	1	10/24/97	10/28/97	110		U	
Fluoranthene	EPA 3550	8270SIM	32	1	10/24/97	10/28/97	32		U	
Pyrene	EPA 3550	8270SIM	32	1	10/24/97	10/28/97	32		U	
Benz(a)anthracene	EPA 3550	8270SIM	32	1	10/24/97	10/28/97	32		U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	110	1	10/24/97	10/28/97	110		U	
Chrysene	EPA 3550	8270SIM	32	1	10/24/97	10/28/97	32		U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	32	1	10/24/97	10/28/97	32		U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	32	1	10/24/97	10/28/97	32		U	
Benzo(a)pyrene	EPA 3550	8270SIM	32	1	10/24/97	10/28/97	32		U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	32	1	10/24/97	10/28/97	32		U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	32	1	10/24/97	10/28/97	32		U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	32	1	10/24/97	10/28/97	32		U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	32	1	10/24/97	10/28/97	32	C	U	

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED 006

Approved By: _____

Date: _____

1S22/020597p

03578SOA.AA1 - Sample (6) 12/19/97

LEVEL V

Page No

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703578
 Date Collected: 10/20/97
 Date Received: 10/20/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF667DL
 Lab Code: L9703578-007
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Per Qug	Result Notes	Qug Code
N-Nitrosodimethylamine	EPA 3550	8270SIM	20	10	10/24/97	10/28/97	20	U	U	
Naphthalene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300	U	U	
Acenaphthylene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300	U	U	
Acenaphthene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300	U	U	
Diethyl Phthalate	EPA 3550	8270SIM	1000	10	10/24/97	10/28/97	1000	U	U	
Fluorene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300	U	U	
Phenanthrene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300	U	U	
Anthracene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300	U	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	1000	10	10/24/97	10/28/97	1000	U	U	
Fluoranthene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300	U	U	
Pyrene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300	U	U	
Benz(a)anthracene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300	U	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1000	10	10/24/97	10/28/97	1000	U	U	
Chrysene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300	U	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300	U	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300	U	U	
Benzo(a)pyrene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300	U	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300	U	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300	U	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300	U	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	300	10	10/24/97	10/28/97	300	U	U	

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

Approved By: Eydie Schwartz

Date: 2/16/98

1522/020597p

03578SOA.AA1 - Sample (7) 2/16/98

LEVEL V

Page No.: 1007-f

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703578
 Date Collected: 10/21/97
 Date Received: 10/21/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF671DL
 Lab Code: L9703578-008
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Rev Qud	Result Notes	Qud Code
N-Nitrosodimethylamine	EPA 3550	8270SIM	40	10	10/24/97	10/28/97	40	U	U	
Naphthalene	EPA 3550	8270SIM	600	10	10/24/97	10/28/97	600	U	U	
Acenaphthylene	EPA 3550	8270SIM	600	10	10/24/97	10/28/97	600	U	U	
Acenaphthene	EPA 3550	8270SIM	600	10	10/24/97	10/28/97	600	U	U	
Diethyl Phthalate	EPA 3550	8270SIM	2000	10	10/24/97	10/28/97	2000	U	U	
Fluorene	EPA 3550	8270SIM	600	10	10/24/97	10/28/97	600	U	U	
Phenanthrene	EPA 3550	8270SIM	600	10	10/24/97	10/28/97	600	U	U	
Anthracene	EPA 3550	8270SIM	600	10	10/24/97	10/28/97	600	U	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	2000	10	10/24/97	10/28/97	2000	U	U	
Fluoranthene	EPA 3550	8270SIM	600	10	10/24/97	10/28/97	600	U	U	
Pyrene	EPA 3550	8270SIM	600	10	10/24/97	10/28/97	600	U	U	
Benz(a)anthracene	EPA 3550	8270SIM	600	10	10/24/97	10/28/97	600	U	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	2000	10	10/24/97	10/28/97	2000			
Chrysene	EPA 3550	8270SIM	600	10	10/24/97	10/28/97	600	U	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	600	10	10/24/97	10/28/97	600	U	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	600	10	10/24/97	10/28/97	600	U	U	
Benzo(a)pyrene	EPA 3550	8270SIM	600	10	10/24/97	10/28/97	600	U	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	600	10	10/24/97	10/28/97	600	U	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	600	10	10/24/97	10/28/97	600	U	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	600	10	10/24/97	10/28/97	600	U	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	600	10	10/24/97	10/28/97	600	U	U	

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

Approved By: *Eddie Schwartz*

Date: 2/16/98

1S22/020597p

03578SOA.AA1 - Sample (8) 2/16/98

LEVEL V

Page No.: 1008-1

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703578
 Date Collected: 10/21/97
 Date Received: 10/21/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF672DL
 Lab Code: L9703578-009
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Rev Qud	Result Notes	Qud Code
N-Nitrosodimethylamine	EPA 3550	8270SIM	34	10	10/27/97	10/29/97	34	U	U	
Naphthalene	EPA 3550	8270SIM	520	10	10/27/97	10/29/97	520	U	U	
Acenaphthylene	EPA 3550	8270SIM	520	10	10/27/97	10/29/97	520	U	U	
Acenaphthene	EPA 3550	8270SIM	520	10	10/27/97	10/29/97	520	U	U	
Diethyl Phthalate	EPA 3550	8270SIM	1700	10	10/27/97	10/29/97	1700	U	U	
Fluorene	EPA 3550	8270SIM	520	10	10/27/97	10/29/97	520	U	U	
Phenanthrene	EPA 3550	8270SIM	520	10	10/27/97	10/29/97	520	U	U	
Anthracene	EPA 3550	8270SIM	520	10	10/27/97	10/29/97	520	U	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	1700	10	10/27/97	10/29/97	1700	U	U	
Fluoranthene	EPA 3550	8270SIM	520	10	10/27/97	10/29/97	520	U	U	
Pyrene	EPA 3550	8270SIM	520	10	10/27/97	10/29/97	520	U	U	
Benz(a)anthracene	EPA 3550	8270SIM	520	10	10/27/97	10/29/97	520	U	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1700	10	10/27/97	10/29/97	1700	U	U	
Chrysene	EPA 3550	8270SIM	520	10	10/27/97	10/29/97	520	U	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	520	10	10/27/97	10/29/97	520	U	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	520	10	10/27/97	10/29/97	520	U	U	
Benzo(a)pyrene	EPA 3550	8270SIM	520	10	10/27/97	10/29/97	520	U	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	520	10	10/27/97	10/29/97	520	U	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	520	10	10/27/97	10/29/97	520	U	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	520	10	10/27/97	10/29/97	520	U	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	520	10	10/27/97	10/29/97	520	U	U	

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

Approved By: *Eydie Schwartz*

Date: *2/16/98*

1522/020597p

03578SOA A-12 - Sample 2/16/98

LEVEL V

Page No.: 1069-R

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703578
 Date Collected: 10/21/97
 Date Received: 10/21/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF673
 Lab Code: L9703578-010
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodimethylamine	EPA 3550	8270SIM	3	1	10/27/97	10/29/97	3	U
Naphthalene	EPA 3550	8270SIM	41	1	10/27/97	10/29/97	41	U
Acenaphthylene	EPA 3550	8270SIM	41	1	10/27/97	10/29/97	41	U
Acenaphthene	EPA 3550	8270SIM	41	1	10/27/97	10/29/97	41	U
Diethyl Phthalate	EPA 3550	8270SIM	140	1	10/27/97	10/29/97	140	U
Fluorene	EPA 3550	8270SIM	41	1	10/27/97	10/29/97	41	U
Phenanthrene	EPA 3550	8270SIM	41	1	10/27/97	10/29/97	41	U
Anthracene	EPA 3550	8270SIM	41	1	10/27/97	10/29/97	41	U
Di-n-butyl Phthalate	EPA 3550	8270SIM	140	1	10/27/97	10/29/97	140	U
Fluoranthene	EPA 3550	8270SIM	41	1	10/27/97	10/29/97	41	U
Pyrene	EPA 3550	8270SIM	41	1	10/27/97	10/29/97	41	U
Benz(a)anthracene	EPA 3550	8270SIM	41	1	10/27/97	10/29/97	41	U
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	140	1	10/27/97	10/29/97	140	U
Chrysene	EPA 3550	8270SIM	41	1	10/27/97	10/29/97	41	U
Benzo(b)fluoranthene	EPA 3550	8270SIM	41	1	10/27/97	10/29/97	41	U
Benzo(k)fluoranthene	EPA 3550	8270SIM	41	1	10/27/97	10/29/97	41	U
Benzo(a)pyrene	EPA 3550	8270SIM	41	1	10/27/97	10/29/97	41	U
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	41	1	10/27/97	10/29/97	41	U
Dibenz(a,h)anthracene	EPA 3550	8270SIM	41	1	10/27/97	10/29/97	41	U
Benzo(g,h,i)perylene	EPA 3550	8270SIM	41	1	10/27/97	10/29/97	41	U
N-Nitrosodiphenylamine	EPA 3550	8270SIM	41	1	10/27/97	10/29/97	41	U

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED 10/10

Approved By: J. R. Ried

Date: 1/12/98

IS22/020597p

03578SOA-AA2 - Sample (2) 12/19/97

LEVEL V

Page No.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703578
 Date Collected: 10/21/97
 Date Received: 10/21/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF674DL
 Lab Code: L9703578-011
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Rev	Qual	Result Notes	Signature
N-Nitrosodimethylamine	EPA 3550	8270SIM	47	10	10/27/97	10/28/97	47	C		U	
Naphthalene	EPA 3550	8270SIM	700	10	10/27/97	10/28/97	700			U	
Acenaphthylene	EPA 3550	8270SIM	700	10	10/27/97	10/28/97	700			U	
Acenaphthene	EPA 3550	8270SIM	700	10	10/27/97	10/28/97	700			U	
Diethyl Phthalate	EPA 3550	8270SIM	2300	10	10/27/97	10/28/97	2300			U	
Fluorene	EPA 3550	8270SIM	700	10	10/27/97	10/28/97	700			U	
Phenanthrene	EPA 3550	8270SIM	700	10	10/27/97	10/28/97	700			U	
Anthracene	EPA 3550	8270SIM	700	10	10/27/97	10/28/97	700			U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	2300	10	10/27/97	10/28/97	2300			U	
Fluoranthene	EPA 3550	8270SIM	700	10	10/27/97	10/28/97	700			U	
Pyrene	EPA 3550	8270SIM	700	10	10/27/97	10/28/97	700			U	
Benz(a)anthracene	EPA 3550	8270SIM	700	10	10/27/97	10/28/97	700			U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	2300	10	10/27/97	10/28/97	2300			U	
Chrysene	EPA 3550	8270SIM	700	10	10/27/97	10/28/97	700			U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	700	10	10/27/97	10/28/97	700			U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	700	10	10/27/97	10/28/97	700			U	
Benzo(a)pyrene	EPA 3550	8270SIM	700	10	10/27/97	10/28/97	700			U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	700	10	10/27/97	10/28/97	700			U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	700	10	10/27/97	10/28/97	700			U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	700	10	10/27/97	10/28/97	700			U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	700	10	10/27/97	10/28/97	700	C		U	

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

Approved By: *Eydie Lechman*

Date: *2/16/98*

1S22/020597p

03578SOA.AA7 - Sample (3) 2/16/98

LEVEL V

Page N: 1011-R

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703578
 Date Collected: 10/22/97
 Date Received: 10/22/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF675DL
 Lab Code: L9703578-012
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Rev Qual	Result Notes	Code
N-Nitrosodimethylamine	EPA 3550	8270SIM	20	10	10/27/97	10/28/97	20	C	U	
Naphthalene	EPA 3550	8270SIM	300	10	10/27/97	10/28/97	300		U	
Acenaphthylene	EPA 3550	8270SIM	300	10	10/27/97	10/28/97	300		U	
Acenaphthene	EPA 3550	8270SIM	300	10	10/27/97	10/28/97	300		U	
Diethyl Phthalate	EPA 3550	8270SIM	1000	10	10/27/97	10/28/97	1000		U	
Fluorene	EPA 3550	8270SIM	300	10	10/27/97	10/28/97	300		U	
Phenanthrene	EPA 3550	8270SIM	300	10	10/27/97	10/28/97	300		U	
Anthracene	EPA 3550	8270SIM	300	10	10/27/97	10/28/97	300		U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	1000	10	10/27/97	10/28/97	1000		U	
Fluoranthene	EPA 3550	8270SIM	300	10	10/27/97	10/28/97	300		U	
Pyrene	EPA 3550	8270SIM	300	10	10/27/97	10/28/97	300		U	
Benz(a)anthracene	EPA 3550	8270SIM	300	10	10/27/97	10/28/97	300		U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1000	10	10/27/97	10/28/97	1000		U	
Chrysene	EPA 3550	8270SIM	300	10	10/27/97	10/28/97	300		U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	300	10	10/27/97	10/28/97	300		U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	300	10	10/27/97	10/28/97	300		U	
Benzo(a)pyrene	EPA 3550	8270SIM	300	10	10/27/97	10/28/97	300		U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	300	10	10/27/97	10/28/97	300		U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	300	10	10/27/97	10/28/97	300		U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	300	10	10/27/97	10/28/97	300		U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	300	10	10/27/97	10/28/97	300		U	

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

Approved By: *Eydie Stewart*

Date: *2/16/98*

1S22/020597p

03578SOA.AA2 - Sample (4) 2/16/98

OGDEN VALIDATED

LEVEL V

Page No.: 1012-R

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703578
 Date Collected: 10/22/97
 Date Received: 10/22/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF676DL
 Lab Code: L9703578-013
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Q.C. Retd
N-Nitrosodimethylamine	EPA 3550	8270SIM	20	10	10/27/97	10/29/97	20	U	
Naphthalene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Acenaphthylene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Acenaphthene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Diethyl Phthalate	EPA 3550	8270SIM	1000	10	10/27/97	10/29/97	1000	U	
Fluorene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Phenanthrene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Anthracene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	1000	10	10/27/97	10/29/97	1000	U	
Fluoranthene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Pyrene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Benz(a)anthracene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1000	10	10/27/97	10/29/97	1000	U	
Chrysene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Benzo(a)pyrene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

Approved By:

Eydie Schwarz

Date:

2/16/98

1S22/020597p

03578SOA.AA2 - Sample (5) 2/16/98

LEVEL V

Page No: 103-6

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703578
 Date Collected: 10/22/97
 Date Received: 10/22/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF677DL
 Lab Code: L9703578-014
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Rev Qual	Result Notes	Qual Code
N-Nitrosodimethylamine	EPA 3550	8270SIM	21	10	10/27/97	10/29/97	21	C	U	
Naphthalene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310		U	
Acenaphthylene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310		U	
Acenaphthene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310		U	
Diethyl Phthalate	EPA 3550	8270SIM	1000	10	10/27/97	10/29/97	1000		U	
Fluorene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310		U	
Phenanthrene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310		U	
Anthracene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310		U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	1000	10	10/27/97	10/29/97	1000		U	
Fluoranthene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310		U	
Pyrene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310		U	
Benz(a)anthracene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310		U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1000	10	10/27/97	10/29/97	1000		U	
Chrysene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310		U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310		U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310		U	
Benzo(a)pyrene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310		U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310		U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310		U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310		U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	C	U	

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

Approved By: *Eydie Schwarz*

Date: *2/16/98*

1S22/020597p

03578SOA.AA2 - Sample (6) 2/16/98

LEVEL V

Page No: 1014-F

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703578
 Date Collected: 10/22/97
 Date Received: 10/22/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF678DL
 Lab Code: L9703578-015
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Code
N-Nitrosodimethylamine	EPA 3550	8270SIM	20	10	10/27/97	10/29/97	20	U	
Naphthalene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Acenaphthylene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Acenaphthene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Diethyl Phthalate	EPA 3550	8270SIM	1000	10	10/27/97	10/29/97	1000	U	
Fluorene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Phenanthrene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Anthracene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	1000	10	10/27/97	10/29/97	1000	U	
Fluoranthene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Pyrene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Benz(a)anthracene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1000	10	10/27/97	10/29/97	1000	U	
Chrysene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Benzo(a)pyrene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	310	10	10/27/97	10/29/97	310	U	

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

Approved By: Epidie Schuerg

Date: 2/16/98

1522/020597p

03578SOA.AA2 - Sample (7) 2/16/98

OGDEN VALIDATED

LEVEL V

Page No.: 125-R

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703578
 Date Collected: 10/22/97
 Date Received: 10/22/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF679DL
 Lab Code: L9703578-016
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodimethylamine	EPA 3550	8270SIM	20	10	10/27/97	10/29/97	20	U
Naphthalene	EPA 3550	8270SIM	300	10	10/27/97	10/29/97	300	U
Acenaphthylene	EPA 3550	8270SIM	300	10	10/27/97	10/29/97	300	U
Acenaphthene	EPA 3550	8270SIM	300	10	10/27/97	10/29/97	300	U
Diethyl Phthalate	EPA 3550	8270SIM	1000	10	10/27/97	10/29/97	1000	U
Fluorene	EPA 3550	8270SIM	300	10	10/27/97	10/29/97	300	U
Phenanthrene	EPA 3550	8270SIM	300	10	10/27/97	10/29/97	300	U
Anthracene	EPA 3550	8270SIM	300	10	10/27/97	10/29/97	300	U
Di-n-butyl Phthalate	EPA 3550	8270SIM	1000	10	10/27/97	10/29/97	1000	U
Fluoranthene	EPA 3550	8270SIM	300	10	10/27/97	10/29/97	300	U
Pyrene	EPA 3550	8270SIM	300	10	10/27/97	10/29/97	300	U
Benz(a)anthracene	EPA 3550	8270SIM	300	10	10/27/97	10/29/97	300	U
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1000	10	10/27/97	10/29/97	1000	U
Chrysene	EPA 3550	8270SIM	300	10	10/27/97	10/29/97	300	U
Benzo(b)fluoranthene	EPA 3550	8270SIM	300	10	10/27/97	10/29/97	300	U
Benzo(k)fluoranthene	EPA 3550	8270SIM	300	10	10/27/97	10/29/97	300	U
Benzo(a)pyrene	EPA 3550	8270SIM	300	10	10/27/97	10/29/97	300	U
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	300	10	10/27/97	10/29/97	300	U
Dibenz(a,h)anthracene	EPA 3550	8270SIM	300	10	10/27/97	10/29/97	300	U
Benzo(g,h,i)perylene	EPA 3550	8270SIM	300	10	10/27/97	10/29/97	300	U
N-Nitrosodiphenylamine	EPA 3550	8270SIM	300	10	10/27/97	10/29/97	300	U

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

Approved By: *Eydie Schwartz*

Date: *2/16/98*

IS22/020597p

03578SOA AA2 - Sample (8) 2/16/98

LEVEL V

Page No.: 10112-R

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703578
 Date Collected: 10/22/97
 Date Received: 10/22/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF680DL
 Lab Code: L9703578-017
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Rev	Good	Result Notes	g.
N-Nitrosodimethylamine	EPA 3550	8270SIM	38	10	10/27/97	10/29/97	38	U		U	
Naphthalene	EPA 3550	8270SIM	580	10	10/27/97	10/29/97	580	U		U	
Acenaphthylene	EPA 3550	8270SIM	580	10	10/27/97	10/29/97	580	U		U	
Acenaphthene	EPA 3550	8270SIM	580	10	10/27/97	10/29/97	580	U		U	
Diethyl Phthalate	EPA 3550	8270SIM	1900	10	10/27/97	10/29/97	1900	U		U	
Fluorene	EPA 3550	8270SIM	580	10	10/27/97	10/29/97	580	U		U	
* Phenanthrene	EPA 3550	8270SIM	580	10	10/27/97	10/29/97	4900	R		E	D
Anthracene	EPA 3550	8270SIM	580	10	10/27/97	10/29/97	990				
Di-n-butyl Phthalate	EPA 3550	8270SIM	1900	10	10/27/97	10/29/97	2400				
* Fluoranthene	EPA 3550	8270SIM	580	10	10/27/97	10/29/97	5300	R		E	D
* Pyrene	EPA 3550	8270SIM	580	10	10/27/97	10/29/97	5300	R		E	D
Benz(a)anthracene	EPA 3550	8270SIM	580	10	10/27/97	10/29/97	2800				
* Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1900	10	10/27/97	10/29/97	3500	R		E	D
Chrysene	EPA 3550	8270SIM	580	10	10/27/97	10/29/97	2300				
Benzo(b)fluoranthene	EPA 3550	8270SIM	580	10	10/27/97	10/29/97	2400				
Benzo(k)fluoranthene	EPA 3550	8270SIM	580	10	10/27/97	10/29/97	580	U		U	
Benzo(a)pyrene	EPA 3550	8270SIM	580	10	10/27/97	10/29/97	1200				
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	580	10	10/27/97	10/29/97	580	U		U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	580	10	10/27/97	10/29/97	580	U		U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	580	10	10/27/97	10/29/97	580	U		U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	580	10	10/27/97	10/29/97	580	U		U	

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

Approved By: *Eddie Schwartz*

Date: *2/16/98*

1S22/020597p

03578SOA AA3 - Sample 2/16/98

OGDEN VALIDATED

LEVEL V

Page No.: 1017-R

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703578
 Date Collected: 10/22/97
 Date Received: 10/22/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF680DLDL
 Lab Code: L9703578-017
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Res Qual	Result Notes	Qual Code
N-Nitrosodimethylamine	EPA 3550	8270SIM	190	50	10/27/97	11/6/97	190	R	U	D
Naphthalene	EPA 3550	8270SIM	2900	50	10/27/97	11/6/97	2900	↓	U	↓
Acenaphthylene	EPA 3550	8270SIM	2900	50	10/27/97	11/6/97	2900	↓	U	↓
Acenaphthene	EPA 3550	8270SIM	2900	50	10/27/97	11/6/97	2900	↓	U	↓
Diethyl Phthalate	EPA 3550	8270SIM	9600	50	10/27/97	11/6/97	9600	↓	U	↓
Fluorene	EPA 3550	8270SIM	2900	50	10/27/97	11/6/97	2900	↓	U	↓
Phenanthrene	EPA 3550	8270SIM	2900	50	10/27/97	11/6/97	4800			
Anthracene	EPA 3550	8270SIM	2900	50	10/27/97	11/6/97	2900	R	U	D
Di-n-butyl Phthalate	EPA 3550	8270SIM	9600	50	10/27/97	11/6/97	11000	R		D
Fluoranthene	EPA 3550	8270SIM	2900	50	10/27/97	11/6/97	6600			
Pyrene	EPA 3550	8270SIM	2900	50	10/27/97	11/6/97	6000			
Benz(a)anthracene	EPA 3550	8270SIM	2900	50	10/27/97	11/6/97	2900	R	U	D
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	9600	50	10/27/97	11/6/97	33000	R	E	D
Chrysene	EPA 3550	8270SIM	2900	50	10/27/97	11/6/97	2900	↓	U	↓
Benzo(b)fluoranthene	EPA 3550	8270SIM	2900	50	10/27/97	11/6/97	2900	↓	U	↓
Benzo(k)fluoranthene	EPA 3550	8270SIM	2900	50	10/27/97	11/6/97	2900	↓	U	↓
Benzo(a)pyrene	EPA 3550	8270SIM	2900	50	10/27/97	11/6/97	2900	↓	U	↓
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	2900	50	10/27/97	11/6/97	2900	↓	U	↓
Dibenz(a,h)anthracene	EPA 3550	8270SIM	2900	50	10/27/97	11/6/97	2900	↓	U	↓
Benzo(g,h,i)perylene	EPA 3550	8270SIM	2900	50	10/27/97	11/6/97	2900	↓	U	↓
N-Nitrosodiphenylamine	EPA 3550	8270SIM	2900	50	10/27/97	11/6/97	2900	R	U	D

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

Approved By: *Eydie Schwartz*

Date: *2/16/98*

1572020597p

03578SOA-AA3 - Sample (3) 2/16/98

LEVEL V

Page No.: 1018-R

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703578
 Date Collected: 10/22/97
 Date Received: 10/22/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF680DLDDL
 Lab Code: L9703578-017
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Rev	Qual	Result Notes	Qual Code
N-Nitrosodimethylamine	EPA 3550	8270SIM	770	200	10/27/97	11/8/97	770	R	U	U	D
Naphthalene	EPA 3550	8270SIM	12000	200	10/27/97	11/8/97	12000		U	U	
Acenaphthylene	EPA 3550	8270SIM	12000	200	10/27/97	11/8/97	12000		U	U	
Acenaphthene	EPA 3550	8270SIM	12000	200	10/27/97	11/8/97	12000		U	U	
Diethyl Phthalate	EPA 3550	8270SIM	38000	200	10/27/97	11/8/97	38000		U	U	
Fluorene	EPA 3550	8270SIM	12000	200	10/27/97	11/8/97	12000		U	U	
Phenanthrene	EPA 3550	8270SIM	12000	200	10/27/97	11/8/97	12000		U	U	
Anthracene	EPA 3550	8270SIM	12000	200	10/27/97	11/8/97	12000		U	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	38000	200	10/27/97	11/8/97	38000		U	U	
Fluoranthene	EPA 3550	8270SIM	12000	200	10/27/97	11/8/97	12000		U	U	
Pyrene	EPA 3550	8270SIM	12000	200	10/27/97	11/8/97	12000		U	U	
Benz(a)anthracene	EPA 3550	8270SIM	12000	200	10/27/97	11/8/97	12000	R	U	U	D
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	38000	200	10/27/97	11/8/97	32000	J	J	J	
Chrysene	EPA 3550	8270SIM	12000	200	10/27/97	11/8/97	12000	R	U	U	D
Benzo(b)fluoranthene	EPA 3550	8270SIM	12000	200	10/27/97	11/8/97	12000		U	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	12000	200	10/27/97	11/8/97	12000		U	U	
Benzo(a)pyrene	EPA 3550	8270SIM	12000	200	10/27/97	11/8/97	12000		U	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	12000	200	10/27/97	11/8/97	12000		U	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	12000	200	10/27/97	11/8/97	12000		U	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	12000	200	10/27/97	11/8/97	12000		U	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	12000	200	10/27/97	11/8/97	12000	R	U	U	D

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

Approved By: *Egidio Schwartz*

Date: *2/16/98*

1522/020597p

03578SOA.AA3 - Sample (4) 2/16/98

LEVEL V

Page No. 1017-R

Analytical Report

Service Request: L9703578
Date Collected: 10/22/97
Date Received: 10/22/97

Units: UG/KG
Basis: Dry

LEVEL V

Page No.:



550 South Wadsworth Blvd. Suite 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: EPA Method 8270-SIM

No. of Samples: 20 & 11DL

Date Reviewed: 08/04/98

Reviewer: K. McNeill

Reference: USEPA Contract Laboratory Program National Functional Guidelines For Organic Data Review (Feb. 1994), and Columbia Analytical Services SOP 97-SOA-SIM-00M (Revision 1, 10/14/97).

SDG: L9703547

Samples Reviewed: RF655, RF007, RF007DL, RF008, RF009, RF010, RF011, RF011DL, RF012, RF013, RF014, RF014DL, RF015, RF016, RF017, RF017DL, RF018, RF019, RF019DL, RF657, RF657DL, RF659, RF659DL, RF661, RF661DL, RF030, RF030DL, RF031, RF031DL, RF032, and RF032DL.

Matrix: Soil

EPA Level V- Polynuclear Aromatic Hydrocarbons Assessment Form

	Problems	Qualifications
1. Sample Management	Samples RF657, RF659, and RF661 were the only samples to have sample receipt information provided. The samples arrived intact, but no receipt temperature was noted. The sample receipt information was missing from the remaining samples; however, no qualifications were required. The samples upon completion of sampling were stored in a cooler or refrigerator, and delivered to the laboratory via courier.	No qualifications were required.
4. Method Blanks	Two soil method blanks were analyzed with this SDG. No target compounds were detected in the either method blank.	No qualifications were required for the samples based upon the method blank.
5. LCS/BS	Two soil LCSs were analyzed with this SDG. Both LCS samples had acceptable recovery values.	No qualifications were required.

	Problems	Qualifications
6. Surrogates	The original analyses had acceptable surrogate recoveries except RF661, which were diluted out due to the 50X analysis. The diluted reanalyses all had outlier %R values for all surrogate compounds. The associated surrogate recovery form was not provided in the package. All surrogate recovery values for the diluted analyses were hand-calculated.	No qualifications were required.
7. MS/MSDs Sample RF019 was the MS/MSD analysis associated with this package.	All recoveries were acceptable, except for Acenaphthene. Acenaphthene had %R values of 54% and 42% in the MS/MSDs, which is below the QC limit of 60%.	Acenaphthene was qualified "UJ" in sample RF019. No other qualifications were required.
8. Field QC Samples ER: RF020 (SDG L9703531), RF804 (L9703780), RF138 (L9703657), FB: RS682 (L9800210) Duplicates: None	Equipment rinsate RF020 had one detect for bis(2-ethylhexyl)phthalate. Equipment rinsate RF804 had nondetects for all compounds. Equipment rinsate RF138 had a detect for bis(2-ethylhexyl)phthalate. The field blank had nondetects for all compounds.	No qualifications were required. All samples with detects were above 10X the equipment rinsates detected levels.
9. Other	The following samples were initially analyzed at dilutions incorrectly because they reported nondetects for all compounds: RF014 (10x), RF017 (10x), RF657 (10x), RF661 (50x), RF030 (10x), RF031 (10x), and RF032 (10x). No other information was provided by the laboratory to determine if the analyses were properly diluted and the reason for the dilutions. Samples RF007, RF011, and RF019 had compound detects above the QC limits. The samples were reanalyzed at dilutions. Samples RF017DL, RF657DL, RF659DL, RF661DL, RF030DL, RF031DL, and RF031DL were rejected.	N/A The initial compounds that were above QC limits were rejected "R," and the outlier compound in the diluted analyses were retained.

Rocketdyne

Analysis: PAH

	Problems	Qualifications
	"R" and the analyses provided in the initial package provided were retained, because, it was determined by the reviewer they were the same analyses.	
<u>Comments</u>	N/A	N/A

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF007
 Lab Code: L9703547-002
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual	Final Note
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	10/22/97	10/22/97	2	U		C	
Naphthalene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U			
Acenaphthylene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U			
Acenaphthene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U			
Diethyl Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/22/97	110	U			
Fluorene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U			
Phenanthrene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U			
Anthracene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U			
Di-n-butyl Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/22/97	110	U			
Fluoranthene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U			
Pyrene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U			
Benz(a)anthracene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U			
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/22/97	270	E		R	D
Chrysene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U			
Benzo(b)fluoranthene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U			
Benzo(k)fluoranthene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U			
Benzo(a)pyrene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U			
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U			
Dibenz(a,h)anthracene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U			
Benzo(g,h,i)perylene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U			
N-Nitrosodiphenylamine	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U			

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED

LEVEL V

Approved By: _____

Date: _____

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF007DL
 Lab Code: L9703547-002
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
N-Nitrosodimethylamine	EPA 3550	8270SIM	4	2	10/22/97	10/22/97	4	U	R	↓
Naphthalene	EPA 3550	8270SIM	66	2	10/22/97	10/22/97	66	U		
Acenaphthylene	EPA 3550	8270SIM	66	2	10/22/97	10/22/97	66	U		
Acenaphthene	EPA 3550	8270SIM	66	2	10/22/97	10/22/97	66	U		
Diethyl Phthalate	EPA 3550	8270SIM	220	2	10/22/97	10/22/97	220	U		
Fluorene	EPA 3550	8270SIM	66	2	10/22/97	10/22/97	66	U		
Phenanthrene	EPA 3550	8270SIM	66	2	10/22/97	10/22/97	66	U		
Anthracene	EPA 3550	8270SIM	66	2	10/22/97	10/22/97	66	U		
Di-n-butyl Phthalate	EPA 3550	8270SIM	220	2	10/22/97	10/22/97	220	U		
Fluoranthene	EPA 3550	8270SIM	66	2	10/22/97	10/22/97	66	U		
Pyrene	EPA 3550	8270SIM	66	2	10/22/97	10/22/97	66	U		
Benz(a)anthracene	EPA 3550	8270SIM	66	2	10/22/97	10/22/97	66	U	↓	↓
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	220	2	10/22/97	10/22/97	200	J	J	
Chrysene	EPA 3550	8270SIM	66	2	10/22/97	10/22/97	66	U	R	↓
Benzo(b)fluoranthene	EPA 3550	8270SIM	66	2	10/22/97	10/22/97	66	U		
Benzo(k)fluoranthene	EPA 3550	8270SIM	66	2	10/22/97	10/22/97	66	U		
Benzo(a)pyrene	EPA 3550	8270SIM	66	2	10/22/97	10/22/97	66	U		
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	66	2	10/22/97	10/22/97	66	U		
Dibenz(a,h)anthracene	EPA 3550	8270SIM	66	2	10/22/97	10/22/97	66	U		
Benzo(g,h,i)perylene	EPA 3550	8270SIM	66	2	10/22/97	10/22/97	66	U		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	66	2	10/22/97	10/22/97	66	U	↓	↓

N-Nitrosodimethylamine Reported Method Detection Limit

C2A MRL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED LEVEL V

Approved By: _____

Date: 1/12/98

1522/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF008
 Lab Code: L9703547-003
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Out
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	10/22/97	10/22/97	2	U	U
Naphthalene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Acenaphthylene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Acenaphthene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Diethyl Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/22/97	110	U	
Fluorene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Phenanthrene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Anthracene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/22/97	110	U	
Fluoranthene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Pyrene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Benz(a)anthracene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/22/97	110	U	
Chrysene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Benzo(a)pyrene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED

LEVEL V

Approved By: _____

Date: 1/12/98

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF009
 Lab Code: L9703547-004
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	10/22/97	10/22/97	2	U	U
Naphthalene	EPA 3550	8270SIM	34	1	10/22/97	10/22/97	34	U	
Acenaphthylene	EPA 3550	8270SIM	34	1	10/22/97	10/22/97	34	U	
Acenaphthene	EPA 3550	8270SIM	34	1	10/22/97	10/22/97	34	U	
Diethyl Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/22/97	110	U	
Fluorene	EPA 3550	8270SIM	34	1	10/22/97	10/22/97	34	U	
Phenanthrene	EPA 3550	8270SIM	34	1	10/22/97	10/22/97	34	U	
Anthracene	EPA 3550	8270SIM	34	1	10/22/97	10/22/97	34	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/22/97	110	U	
Fluoranthene	EPA 3550	8270SIM	34	1	10/22/97	10/22/97	34	U	
Pyrene	EPA 3550	8270SIM	34	1	10/22/97	10/22/97	34	U	
Benz(a)anthracene	EPA 3550	8270SIM	34	1	10/22/97	10/22/97	34	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/22/97	110	U	
Chrysene	EPA 3550	8270SIM	34	1	10/22/97	10/22/97	34	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	34	1	10/22/97	10/22/97	34	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	34	1	10/22/97	10/22/97	34	U	
Benzo(a)pyrene	EPA 3550	8270SIM	34	1	10/22/97	10/22/97	34	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	34	1	10/22/97	10/22/97	34	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	34	1	10/22/97	10/22/97	34	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	34	1	10/22/97	10/22/97	34	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	34	1	10/22/97	10/22/97	34	U	

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED LEVEL V

Approved By: _____

Date: 1/12/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF010
 Lab Code: L9703547-005
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Key Qual
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	10/22/97	10/22/97	2	U	C
Naphthalene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Acenaphthylene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Acenaphthene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Diethyl Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/22/97	110	U	
Fluorene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Phenanthrene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Anthracene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/22/97	110	U	
Fluoranthene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Pyrene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Benz(a)anthracene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/22/97	110	U	
Chrysene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Benzo(a)pyrene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	33	1	10/22/97	10/22/97	33	U	

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED

LEVEL V

Approved By: _____

Date: _____

1522/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF011
 Lab Code: L9703547-006
 Test Notes:

Units: UG/KG
 Basis: Dry

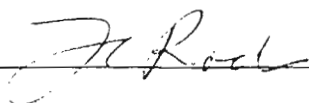
Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	10/22/97	10/23/97	2	U	U	
Naphthalene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U	U	
Acenaphthylene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U	U	
Acenaphthene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U	U	
Diethyl Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/23/97	110	U	U	
Fluorene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U	U	
Phenanthrene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U	U	
Anthracene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/23/97	110	U	U	
Fluoranthene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U	U	
Pyrene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U	U	
Benz(a)anthracene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/23/97	200	E	U	
Chrysene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U	U	
Benzo(a)pyrene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U	U	

N-Nitrosodimethylamine Reported Method Detection Limit

CODEN VALIDATED

LEVEL V

Approved By:



Date:

11/12/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF011DL
 Lab Code: L9703547-006
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
N-Nitrosodimethylamine	EPA 3550	8270SIM	4	2	10/22/97	10/23/97	4	U		
Naphthalene	EPA 3550	8270SIM	65	2	10/22/97	10/23/97	65	U		
Acenaphthylene	EPA 3550	8270SIM	65	2	10/22/97	10/23/97	65	U		
Acenaphthene	EPA 3550	8270SIM	65	2	10/22/97	10/23/97	65	U		
Diethyl Phthalate	EPA 3550	8270SIM	220	2	10/22/97	10/23/97	220	U		
Fluorene	EPA 3550	8270SIM	65	2	10/22/97	10/23/97	65	U		
Phenanthrene	EPA 3550	8270SIM	65	2	10/22/97	10/23/97	65	U		
Anthracene	EPA 3550	8270SIM	65	2	10/22/97	10/23/97	65	U		
Di-n-butyl Phthalate	EPA 3550	8270SIM	220	2	10/22/97	10/23/97	220	U		
Fluoranthene	EPA 3550	8270SIM	65	2	10/22/97	10/23/97	65	U		
Pyrene	EPA 3550	8270SIM	65	2	10/22/97	10/23/97	65	U		
Benz(a)anthracene	EPA 3550	8270SIM	65	2	10/22/97	10/23/97	65	U		
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	220	2	10/22/97	10/23/97	160	J	J	
Chrysene	EPA 3550	8270SIM	65	2	10/22/97	10/23/97	65	U	R	D
Benzo(b)fluoranthene	EPA 3550	8270SIM	65	2	10/22/97	10/23/97	65	U		
Benzo(k)fluoranthene	EPA 3550	8270SIM	65	2	10/22/97	10/23/97	65	U		
Benzo(a)pyrene	EPA 3550	8270SIM	65	2	10/22/97	10/23/97	65	U		
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	65	2	10/22/97	10/23/97	65	U		
Dibenz(a,h)anthracene	EPA 3550	8270SIM	65	2	10/22/97	10/23/97	65	U		
Benzo(g,h,i)perylene	EPA 3550	8270SIM	65	2	10/22/97	10/23/97	65	U		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	65	2	10/22/97	10/23/97	65	U	R	D

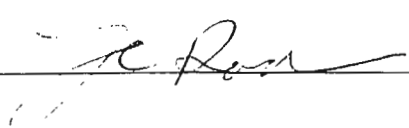
N-Nitrosodimethylamine Reported Method Detection Limit

C2A

MRL is elevated because of matrix interferences and because the sample required diluting.

KM
7.23.98

OGDEN VALIDATED LEVEL V

Approved By: 

Date: 1/12/98

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF012
 Lab Code: L9703547-007
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
N-Nitrosodimethylamine	EPA 3550	270SIM	3	1	10/22/97	10/23/97	3	U	C	
Naphthalene	EPA 3550	8270SIM	38	1	10/22/97	10/23/97	38	U		
Acenaphthylene	EPA 3550	8270SIM	38	1	10/22/97	10/23/97	38	U		
Acenaphthene	EPA 3550	8270SIM	38	1	10/22/97	10/23/97	38	U		
Diethyl Phthalate	EPA 3550	8270SIM	120	1	10/22/97	10/23/97	120	U		
Fluorene	EPA 3550	8270SIM	38	1	10/22/97	10/23/97	38	U		
Phenanthrene	EPA 3550	8270SIM	38	1	10/22/97	10/23/97	38	U		
Anthracene	EPA 3550	8270SIM	38	1	10/22/97	10/23/97	38	U		
Di-n-butyl Phthalate	EPA 3550	8270SIM	120	1	10/22/97	10/23/97	120	U		
Fluoranthene	EPA 3550	8270SIM	38	1	10/22/97	10/23/97	38	U		
Pyrene	EPA 3550	8270SIM	38	1	10/22/97	10/23/97	38	U		
Benz(a)anthracene	EPA 3550	8270SIM	38	1	10/22/97	10/23/97	38	U		
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	120	1	10/22/97	10/23/97	120	U		
Chrysene	EPA 3550	8270SIM	38	1	10/22/97	10/23/97	38	U		
Benzo(b)fluoranthene	EPA 3550	8270SIM	38	1	10/22/97	10/23/97	38	U		
Benzo(k)fluoranthene	EPA 3550	8270SIM	38	1	10/22/97	10/23/97	38	U		
Benzo(a)pyrene	EPA 3550	8270SIM	38	1	10/22/97	10/23/97	38	U		
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	38	1	10/22/97	10/23/97	38	U		
Dibenz(a,h)anthracene	EPA 3550	8270SIM	38	1	10/22/97	10/23/97	38	U		
Benzo(g,h,i)perylene	EPA 3550	8270SIM	38	1	10/22/97	10/23/97	38	U		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	38	1	10/22/97	10/23/97	38	U		

N-Nitrosodimethylamine Reported Method Detection Limit

OCCUPY VALIDATED

LEVEL V

Approved By: _____

Date: 1/12/98

1522/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF013
 Lab Code: L9703547-008
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Qual
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	10/22/97	10/23/97	2	U	U
Naphthalene	EPA 3550	8270SIM	32	1	10/22/97	10/23/97	32	U	
Acenaphthylene	EPA 3550	8270SIM	32	1	10/22/97	10/23/97	32	U	
Acenaphthene	EPA 3550	8270SIM	32	1	10/22/97	10/23/97	32	U	
Diethyl Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/23/97	110	U	
Fluorene	EPA 3550	8270SIM	32	1	10/22/97	10/23/97	32	U	
Phenanthrene	EPA 3550	8270SIM	32	1	10/22/97	10/23/97	32	U	
Anthracene	EPA 3550	8270SIM	32	1	10/22/97	10/23/97	32	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/23/97	110	U	
Fluoranthene	EPA 3550	8270SIM	32	1	10/22/97	10/23/97	32	U	
Pyrene	EPA 3550	8270SIM	32	1	10/22/97	10/23/97	32	U	
Benz(a)anthracene	EPA 3550	8270SIM	32	1	10/22/97	10/23/97	32	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/23/97	110	U	
Chrysene	EPA 3550	8270SIM	32	1	10/22/97	10/23/97	32	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	32	1	10/22/97	10/23/97	32	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	32	1	10/22/97	10/23/97	32	U	
Benzo(a)pyrene	EPA 3550	8270SIM	32	1	10/22/97	10/23/97	32	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	32	1	10/22/97	10/23/97	32	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	32	1	10/22/97	10/23/97	32	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	32	1	10/22/97	10/23/97	32	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	32	1	10/22/97	10/23/97	32	U	U

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED

LEVEL V

Approved By: _____



Date: _____

1/12/98

1522/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF014
 Lab Code: L9703547-009
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Qual	Method
N-Nitrosodimethylamine	EPA 3550	8270SEM	20	10	10/22/97	10/28/97	20	U	C	
Naphthalene	EPA 3550	8270SEM	310	10	10/22/97	10/28/97	310	U		
Acenaphthylene	EPA 3550	8270SEM	310	10	10/22/97	10/28/97	310	U		
Acenaphthene	EPA 3550	8270SEM	310	10	10/22/97	10/28/97	310	U		
Diethyl Phthalate	EPA 3550	8270SEM	1000	10	10/22/97	10/28/97	1000	U		
Fluorene	EPA 3550	8270SEM	310	10	10/22/97	10/28/97	310	U		
Phenanthrene	EPA 3550	8270SEM	310	10	10/22/97	10/28/97	310	U		
Anthracene	EPA 3550	8270SEM	310	10	10/22/97	10/28/97	310	U		
Di-n-butyl Phthalate	EPA 3550	8270SEM	1000	10	10/22/97	10/28/97	1000	U		
Fluoranthene	EPA 3550	8270SEM	310	10	10/22/97	10/28/97	310	U		
Pyrene	EPA 3550	8270SEM	310	10	10/22/97	10/28/97	310	U		
Benz(a)anthracene	EPA 3550	8270SEM	310	10	10/22/97	10/28/97	310	U		
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SEM	1000	10	10/22/97	10/28/97	1000	U		
Chrysene	EPA 3550	8270SEM	310	10	10/22/97	10/28/97	310	U		
Benzo(b)fluoranthene	EPA 3550	8270SEM	310	10	10/22/97	10/28/97	310	U		
Benzo(k)fluoranthene	EPA 3550	8270SEM	310	10	10/22/97	10/28/97	310	U		
Benzo(a)pyrene	EPA 3550	8270SEM	310	10	10/22/97	10/28/97	310	U		
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SEM	310	10	10/22/97	10/28/97	310	U		
Dibenz(a,h)anthracene	EPA 3550	8270SEM	310	10	10/22/97	10/28/97	310	U		
Benzo(g,h,i)perylene	EPA 3550	8270SEM	310	10	10/22/97	10/28/97	310	U		
N-Nitrosodiphenylamine	EPA 3550	8270SEM	310	10	10/22/97	10/28/97	310	U		

N-Nitrosodimethylamine Reported Method Detection Limit

C2A MRL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

LEVEL V

Approved By: _____

Date: 1/12/98

1522/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF014DL
 Lab Code: L9703547-009
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
N-Nitrosodimethylamine	EPA 3550	8270SIM	20	10	10/22/97	10/28/97	20	U	R	D
Naphthalene	EPA 3550	8270SIM	310	10	10/22/97	10/28/97	310	U		
Acenaphthylene	EPA 3550	8270SIM	310	10	10/22/97	10/28/97	310	U		
Acenaphthene	EPA 3550	8270SIM	310	10	10/22/97	10/28/97	310	U		
Diethyl Phthalate	EPA 3550	8270SIM	1000	10	10/22/97	10/28/97	1000	U		
Fluorene	EPA 3550	8270SIM	310	10	10/22/97	10/28/97	310	U		
Phenanthrene	EPA 3550	8270SIM	310	10	10/22/97	10/28/97	310	U		
Anthracene	EPA 3550	8270SIM	310	10	10/22/97	10/28/97	310	U		
Di-n-butyl Phthalate	EPA 3550	8270SIM	1000	10	10/22/97	10/28/97	1000	U		
Fluoranthene	EPA 3550	8270SIM	310	10	10/22/97	10/28/97	310	U		
Pyrene	EPA 3550	8270SIM	310	10	10/22/97	10/28/97	310	U		
Benz(a)anthracene	EPA 3550	8270SIM	310	10	10/22/97	10/28/97	310	U		
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1000	10	10/22/97	10/28/97	1000	U		
Chrysene	EPA 3550	8270SIM	310	10	10/22/97	10/28/97	310	U		
Benzo(b)fluoranthene	EPA 3550	8270SIM	310	10	10/22/97	10/28/97	310	U		
Benzo(k)fluoranthene	EPA 3550	8270SIM	310	10	10/22/97	10/28/97	310	U		
Benzo(a)pyrene	EPA 3550	8270SIM	310	10	10/22/97	10/28/97	310	U		
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	310	10	10/22/97	10/28/97	310	U		
Dibenz(a,h)anthracene	EPA 3550	8270SIM	310	10	10/22/97	10/28/97	310	U		
Benzo(g,h,i)perylene	EPA 3550	8270SIM	310	10	10/22/97	10/28/97	310	U		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	310	10	10/22/97	10/28/97	310	U	R	D

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

LEVEL V

Approved By: *Erika Letunoff*

Date: *2/16/98*

1522-027597p

63547ZLA AA2 - Sample 2/16/98

Page No.: 1011

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF015
 Lab Code: L9703547-010
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	10/22/97	10/23/97	2	U
Naphthalene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U
Acenaphthylene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U
Acenaphthene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U
Diethyl Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/23/97	110	U
Fluorene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U
Phenanthrene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U
Anthracene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U
Di-n-butyl Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/23/97	110	U
Fluoranthene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U
Pyrene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U
Benz(a)anthracene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/23/97	110	U
Chrysene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U
Benzo(b)fluoranthene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U
Benzo(k)fluoranthene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U
Benzo(a)pyrene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U
Dibenz(a,h)anthracene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U
Benzo(g,h,i)perylene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U
N-Nitrosodiphenylamine	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED **LEVEL V**

Approved By: _____

Date: 1/12/98

1522/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF016
 Lab Code: L9703547-011
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	10/22/97	10/24/97	2	U	C	
Naphthalene	EPA 3550	8270SIM	34	1	10/22/97	10/24/97	34	U		
Acenaphthylene	EPA 3550	8270SIM	34	1	10/22/97	10/24/97	34	U		
Acenaphthene	EPA 3550	8270SIM	34	1	10/22/97	10/24/97	34	U		
Diethyl Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/24/97	110	U		
Fluorene	EPA 3550	8270SIM	34	1	10/22/97	10/24/97	34	U		
Phenanthrene	EPA 3550	8270SIM	34	1	10/22/97	10/24/97	34	U		
Anthracene	EPA 3550	8270SIM	34	1	10/22/97	10/24/97	34	U		
Di-n-butyl Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/24/97	110	U		
Fluoranthene	EPA 3550	8270SIM	34	1	10/22/97	10/24/97	34	U		
Pyrene	EPA 3550	8270SIM	34	1	10/22/97	10/24/97	34	U		
Benz(a)anthracene	EPA 3550	8270SIM	34	1	10/22/97	10/24/97	34	U		
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/24/97	110	U		
Chrysene	EPA 3550	8270SIM	34	1	10/22/97	10/24/97	34	U		
Benzo(b)fluoranthene	EPA 3550	8270SIM	34	1	10/22/97	10/24/97	34	U		
Benzo(k)fluoranthene	EPA 3550	8270SIM	34	1	10/22/97	10/24/97	34	U		
Benzo(a)pyrene	EPA 3550	8270SIM	34	1	10/22/97	10/24/97	34	U		
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	34	1	10/22/97	10/24/97	34	U		
Dibenz(a,h)anthracene	EPA 3550	8270SIM	34	1	10/22/97	10/24/97	34	U		
Benzo(g,h,i)perylene	EPA 3550	8270SIM	34	1	10/22/97	10/24/97	34	U		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	34	1	10/22/97	10/24/97	34	U		

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED

LEVEL V

Approved By: _____

Date: 1/12/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF017
 Lab Code: L9703547-012
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Qm
N-Nitrosodimethylamine	EPA 3550	8270SIM	22	10	10/22/97	10/24/97	22	U	U
Naphthalene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Acenaphthylene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Acenaphthene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Diethyl Phthalate	EPA 3550	8270SIM	1100	10	10/22/97	10/24/97	1100	U	
Fluorene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Phenanthrene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Anthracene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	1100	10	10/22/97	10/24/97	1100	U	
Fluoranthene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Pyrene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Benz(a)anthracene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1100	10	10/22/97	10/24/97	1100	U	
Chrysene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Benzo(a)pyrene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	

N-Nitrosodimethylamine Reported Method Detection Limit

C2A MRL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

LEVEL V

Approved By: JL Road Date: 1/12/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF017DL
 Lab Code: L9703547-012
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REQUAL
N-Nitrosodimethylamine	EPA 3550	8270SIM	22	10	10/22/97	10/24/97	22	U	R
Naphthalene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Acenaphthylene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Acenaphthene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Diethyl Phthalate	EPA 3550	8270SIM	1100	10	10/22/97	10/24/97	1100	U	
Fluorene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Phenanthrene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Anthracene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	1100	10	10/22/97	10/24/97	1100	U	
Fluoranthene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Pyrene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Benz(a)anthracene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1100	10	10/22/97	10/24/97	1100	U	
Chrysene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Benzo(a)pyrene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	320	10	10/22/97	10/24/97	320	U	R

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz

Date: 2/16/98

1S22/020597p

0354730A AA2 - Sample (4) 2/16/98

Page No.: 14

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF018
 Lab Code: L9703547-013
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUA
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	10/22/97	10/23/97	2	U	C	
Naphthalene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U		
Acenaphthylene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U		
Acenaphthene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U		
Diethyl Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/23/97	110	U		
Fluorene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U		
Phenanthrene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U		
Anthracene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U		
Di-n-butyl Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/23/97	110	U		
Fluoranthene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U		
Pyrene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U		
Benz(a)anthracene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U		
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/23/97	130			
Chrysene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U		
Benzo(b)fluoranthene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U		
Benzo(k)fluoranthene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U		
Benzo(a)pyrene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U		
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U		
Dibenz(a,h)anthracene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U		
Benzo(g,h,i)perylene	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	33	1	10/22/97	10/23/97	33	U		

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED

LEVEL V

Approved By: _____

Date: 1/12/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF019
 Lab Code: L9703547-014
 Test Notes:

Units: UG/KG
 Basis: Dry

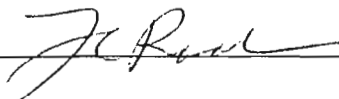
Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	10/22/97	10/24/97	2	U	C	
Naphthalene	EPA 3550	8270SIM	33	1	10/22/97	10/24/97	33	U	↓	
Acenaphthylene	EPA 3550	8270SIM	33	1	10/22/97	10/24/97	33	U	↓	
Acenaphthene	EPA 3550	8270SIM	33	1	10/22/97	10/24/97	33	U	UJ	G
Diethyl Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/24/97	110	U	E	
Fluorene	EPA 3550	8270SIM	33	1	10/22/97	10/24/97	33	U	↓	
Phenanthrene	EPA 3550	8270SIM	33	1	10/22/97	10/24/97	33	U	↓	
Anthracene	EPA 3550	8270SIM	33	1	10/22/97	10/24/97	33	U	↓	
Di-n-butyl Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/24/97	110	U	↓	
Fluoranthene	EPA 3550	8270SIM	33	1	10/22/97	10/24/97	46	U	↓	
Pyrene	EPA 3550	8270SIM	33	1	10/22/97	10/24/97	33	U	↓	
Benz(a)anthracene	EPA 3550	8270SIM	33	1	10/22/97	10/24/97	33	U	↓	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	110	1	10/22/97	10/24/97	380	E	B	D
Chrysene	EPA 3550	8270SIM	33	1	10/22/97	10/24/97	33	U	↓	
Benzo(b)fluoranthene	EPA 3550	8270SIM	33	1	10/22/97	10/24/97	33	U	↓	
Benzo(k)fluoranthene	EPA 3550	8270SIM	33	1	10/22/97	10/24/97	33	U	↓	
Benzo(a)pyrene	EPA 3550	8270SIM	33	1	10/22/97	10/24/97	33	U	↓	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	33	1	10/22/97	10/24/97	33	U	↓	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	33	1	10/22/97	10/24/97	33	U	↓	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	33	1	10/22/97	10/24/97	33	U	↓	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	33	1	10/22/97	10/24/97	33	U	↓	

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED

LEVEL V

Approved By: _____



Date: _____

11/2/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF019DL
 Lab Code: L9703547-014
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodimethylamine	EPA 3550	8270SIM	22	10	10/22/97	10/24/97	22	U
Naphthalene	EPA 3550	8270SIM	330	10	10/22/97	10/24/97	330	U
Acenaphthylene	EPA 3550	8270SIM	330	10	10/22/97	10/24/97	330	U
Acenaphthene	EPA 3550	8270SIM	330	10	10/22/97	10/24/97	330	U
Diethyl Phthalate	EPA 3550	8270SIM	1100	10	10/22/97	10/24/97	1100	U
Fluorene	EPA 3550	8270SIM	330	10	10/22/97	10/24/97	330	U
Phenanthrene	EPA 3550	8270SIM	330	10	10/22/97	10/24/97	330	U
Anthracene	EPA 3550	8270SIM	330	10	10/22/97	10/24/97	330	U
Di-n-butyl Phthalate	EPA 3550	8270SIM	1100	10	10/22/97	10/24/97	1100	U
Fluoranthene	EPA 3550	8270SIM	330	10	10/22/97	10/24/97	330	U
Pyrene	EPA 3550	8270SIM	330	10	10/22/97	10/24/97	330	U
Benz(a)anthracene	EPA 3550	8270SIM	330	10	10/22/97	10/24/97	330	U
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1100	10	10/22/97	10/24/97	1600	
Chrysene	EPA 3550	8270SIM	330	10	10/22/97	10/24/97	330	U
Benzo(b)fluoranthene	EPA 3550	8270SIM	330	10	10/22/97	10/24/97	330	U
Benzo(k)fluoranthene	EPA 3550	8270SIM	330	10	10/22/97	10/24/97	330	U
Benzo(a)pyrene	EPA 3550	8270SIM	330	10	10/22/97	10/24/97	330	U
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	330	10	10/22/97	10/24/97	330	U
Dibenz(a,h)anthracene	EPA 3550	8270SIM	330	10	10/22/97	10/24/97	330	U
Benzo(g,h,i)perylene	EPA 3550	8270SIM	330	10	10/22/97	10/24/97	330	U
N-Nitrosodiphenylamine	EPA 3550	8270SIM	330	10	10/22/97	10/24/97	330	U

N-Nitrosodimethylamine Reported Method Detection Limit

C2A MRL is elevated because of matrix interferences and because the sample required diluting.

KM
7.23.98

QUALIFIED VALIDATED LEVEL V

Approved By: J. Pool Date: 1/12/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/20/97
 Date Received: 10/20/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF030
 Lab Code: L9703547-018
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Qual
N-Nitrosodimethylamine	EPA 3550	8270SIM	22	10	10/23/97	10/24/97	22	U	U
Naphthalene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U	
Acenaphthylene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U	
Acenaphthene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U	
Diethyl Phthalate	EPA 3550	8270SIM	1100	10	10/23/97	10/24/97	1100	U	
Fluorene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U	
Phenanthrene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U	
Anthracene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	1100	10	10/23/97	10/24/97	1100	U	
Fluoranthene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U	
Pyrene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U	
Benz(a)anthracene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1100	10	10/23/97	10/24/97	1100	U	
Chrysene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U	
Benzo(a)pyrene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U	U

N-Nitrosodimethylamine Reported Method Detection Limit

C2A MRL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

LEVEL V

Approved By: J. R. Roul Date: 1/12/98

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/20/97
 Date Received: 10/20/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF030DL
 Lab Code: L9703547-018
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
N-Nitrosodimethylamine	EPA 3550	8270SIM	22	10	10/23/97	10/24/97	22	U	R	1
Naphthalene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U		
Acenaphthylene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U		
Acenaphthene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U		
Diethyl Phthalate	EPA 3550	8270SIM	1100	10	10/23/97	10/24/97	1100	U		
Fluorene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U		
Phenanthrene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U		
Anthracene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U		
Di-n-butyl Phthalate	EPA 3550	8270SIM	1100	10	10/23/97	10/24/97	1100	U		
Fluoranthene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U		
Pyrene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U		
Benz(a)anthracene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U		
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1100	10	10/23/97	10/24/97	1100	U		
Chrysene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U		
Benzo(b)fluoranthene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U		
Benzo(k)fluoranthene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U		
Benzo(a)pyrene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U		
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U		
Dibenz(a,h)anthracene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U		
Benzo(g,h,i)perylene	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	320	10	10/23/97	10/24/97	320	U	R	D

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

LEVEL V

Approved By: *Eyden Schmitt*

Date: *10/21/97*

1522/020597p

9354750A.AA3 - Sample (2) 2/16/98

Page No. *1021-1*

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703547
Date Collected: 10/20/97
Date Received: 10/20/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF031
Lab Code: L9703547-019
Test Notes: C2A

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Q
N-Nitrosodimethylamine	EPA 3550	8270SIM	22	10	10/23/97	10/28/97	22	U	U	
Naphthalene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U		
Acenaphthylene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U		
Acenaphthene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U		
Diethyl Phthalate	EPA 3550	8270SIM	1100	10	10/23/97	10/28/97	1100	U		
Fluorene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U		
Phenanthrene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U		
Anthracene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U		
Di-n-butyl Phthalate	EPA 3550	8270SIM	1100	10	10/23/97	10/28/97	1100	U		
Fluoranthene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U		
Pyrene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U		
Benz(a)anthracene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U		
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1100	10	10/23/97	10/28/97	1100	U		
Chrysene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U		
Benzo(b)fluoranthene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U		
Benzo(k)fluoranthene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U		
Benzo(a)pyrene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U		
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U		
Dibenz(a,h)anthracene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U		
Benzo(g,h,i)perylene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U		

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

LEVEL V

Approved By: JR Rod Date: 1/12/98

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/20/97
 Date Received: 10/20/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF031DL
 Lab Code: L9703547-019
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL	DATE
N-Nitrosodimethylamine	EPA 3550	8270SIM	22	10	10/23/97	10/28/97	22	U	BY	I	
Naphthalene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U			
Acenaphthylene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U			
Acenaphthene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U			
Diethyl Phthalate	EPA 3550	8270SIM	1100	10	10/23/97	10/28/97	1100	U			
Fluorene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U			
Phenanthrene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U			
Anthracene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U			
Di-n-butyl Phthalate	EPA 3550	8270SIM	1100	10	10/23/97	10/28/97	1100	U			
Fluoranthene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U			
Pyrene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U			
Benz(a)anthracene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U			
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1100	10	10/23/97	10/28/97	1100	U			
Chrysene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U			
Benzo(b)fluoranthene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U			
Benzo(k)fluoranthene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U			
Benzo(a)pyrene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U			
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U			
Dibenzo(a,h)anthracene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U			
Benzo(g,h,i)perylene	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U			
N-Nitrosodiphenylamine	EPA 3550	8270SIM	330	10	10/23/97	10/28/97	330	U			

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

KM
7-23-98

OGDEN VALIDATED

LEVEL V

Approved By: [Signature]

Date: 11/1/98

1522/02/59 *p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/20/97
 Date Received: 10/20/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF032
 Lab Code: L9703547-020
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Qual
N-Nitrosodimethylamine	EPA 3550	8270SIM	21	10	10/23/97	10/28/97	21	U	U
Naphthalene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U	U
Acenaphthylene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U	U
Acenaphthene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U	U
Diethyl Phthalate	EPA 3550	8270SIM	1000	10	10/23/97	10/28/97	1000	U	U
Fluorene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U	U
Phenanthrene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U	U
Anthracene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U	U
Di-n-butyl Phthalate	EPA 3550	8270SIM	1000	10	10/23/97	10/28/97	1000	U	U
Fluoranthene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U	U
Pyrene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U	U
Benz(a)anthracene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U	U
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1000	10	10/23/97	10/28/97	1000	U	U
Chrysene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U	U
Benzo(b)fluoranthene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U	U
Benzo(k)fluoranthene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U	U
Benzo(a)pyrene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U	U
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U	U
Dibenz(a,h)anthracene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U	U
Benzo(g,h,i)perylene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U	U
N-Nitrosodiphenylamine	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U	U

N-Nitrosodimethylamine Reported Method Detection Limit

C2A MRL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

LEVEL V

Approved By: J. R. Rood Date: 1/12/98

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/20/97
 Date Received: 10/20/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF032DL
 Lab Code: L9703547-020
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual	Case
N-Nitrosodimethylamine	EPA 3550	8270SIM	21	10	10/23/97	10/28/97	21	U	R		C
Naphthalene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U			
Acenaphthylene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U			
Acenaphthene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U			
Diethyl Phthalate	EPA 3550	8270SIM	1000	10	10/23/97	10/28/97	1000	U			
Fluorene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U			
Phenanthrene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U			
Anthracene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U			
Di-n-butyl Phthalate	EPA 3550	8270SIM	1000	10	10/23/97	10/28/97	1000	U			
Fluoranthene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U			
Pyrene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U			
Benz(a)anthracene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U			
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1000	10	10/23/97	10/28/97	1000	U			
Chrysene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U			
Benzo(b)fluoranthene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U			
Benzo(k)fluoranthene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U			
Benzo(a)pyrene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U			
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U			
Dibenz(a,h)anthracene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U			
Benzo(g,h,i)perylene	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U			
N-Nitrosodiphenylamine	EPA 3550	8270SIM	310	10	10/23/97	10/28/97	310	U	R		D

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

LEVEL V

Approved By: *[Signature]*

Date: *11/1/97*

1522/026597p

93547SOA.AA3 Sample (4) 2/16/98

Page No. 103-R

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF655
 Lab Code: L9703547-001
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual Code
N-Nitrosodimethylamine	EPA 3550	8270SIM	2	1	10/22/97	10/22/97	2	U	U	
Naphthalene	EPA 3550	8270SIM	35	1	10/22/97	10/22/97	35	U		
Acenaphthylene	EPA 3550	8270SIM	35	1	10/22/97	10/22/97	35	U		
Acenaphthene	EPA 3550	8270SIM	35	1	10/22/97	10/22/97	35	U		
Diethyl Phthalate	EPA 3550	8270SIM	120	1	10/22/97	10/22/97	120	U		
Fluorene	EPA 3550	8270SIM	35	1	10/22/97	10/22/97	35	U		
Phenanthrene	EPA 3550	8270SIM	35	1	10/22/97	10/22/97	35	U		
Anthracene	EPA 3550	8270SIM	35	1	10/22/97	10/22/97	35	U		
Di-n-butyl Phthalate	EPA 3550	8270SIM	120	1	10/22/97	10/22/97	120	U		
Fluoranthene	EPA 3550	8270SIM	35	1	10/22/97	10/22/97	35	U		
Pyrene	EPA 3550	8270SIM	35	1	10/22/97	10/22/97	35	U		
Benz(a)anthracene	EPA 3550	8270SIM	35	1	10/22/97	10/22/97	35	U		
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	120	1	10/22/97	10/22/97	120	U		
Chrysene	EPA 3550	8270SIM	35	1	10/22/97	10/22/97	35	U		
Benzo(b)fluoranthene	EPA 3550	8270SIM	35	1	10/22/97	10/22/97	35	U		
Benzo(k)fluoranthene	EPA 3550	8270SIM	35	1	10/22/97	10/22/97	35	U		
Benzo(a)pyrene	EPA 3550	8270SIM	35	1	10/22/97	10/22/97	35	U		
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	35	1	10/22/97	10/22/97	35	U		
Dibenz(a,h)anthracene	EPA 3550	8270SIM	35	1	10/22/97	10/22/97	35	U		
Benzo(g,h,i)perylene	EPA 3550	8270SIM	35	1	10/22/97	10/22/97	35	U		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	35	1	10/22/97	10/22/97	35	U		

N-Nitrosodimethylamine Reported Method Detection Limit

OGDEN VALIDATED

LEVEL V

Approved By: _____

Date: _____

1522/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/17/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF657
 Lab Code: L9703547-015
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
N-Nitrosodimethylamine	EPA 3550	8270SIM	21	10	10/23/97	10/28/97	21	U
Naphthalene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U
Acenaphthylene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U
Acenaphthene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U
Diethyl Phthalate	EPA 3550	8270SIM	1100	10	10/23/97	10/28/97	1100	U
Fluorene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U
Phenanthrene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U
Anthracene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U
Di-n-butyl Phthalate	EPA 3550	8270SIM	1100	10	10/23/97	10/28/97	1100	U
Fluoranthene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U
Pyrene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U
Benz(a)anthracene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1100	10	10/23/97	10/28/97	1100	U
Chrysene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U
Benzo(b)fluoranthene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U
Benzo(k)fluoranthene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U
Benzo(a)pyrene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U
Dibenz(a,h)anthracene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U
Benzo(g,h,i)perylene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U
N-Nitrosodiphenylamine	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U

N-Nitrosodimethylamine Reported Method Detection Limit

C2A MRL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

LEVEL V

Approved By: _____

J. Pool

Date: 1/12/98

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/17/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF657DL
 Lab Code: L9703547-015
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual	Anal
N-Nitrosodimethylamine	EPA 3550	8270SIM	21	10	10/23/97	10/28/97	21	U	R		
Naphthalene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U			
Acenaphthylene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U			
Acenaphthene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U			
Diethyl Phthalate	EPA 3550	8270SIM	1100	10	10/23/97	10/28/97	1100	U			
Fluorene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U			
Phenanthrene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U			
Anthracene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U			
Di-n-butyl Phthalate	EPA 3550	8270SIM	1100	10	10/23/97	10/28/97	1100	U			
Fluoranthene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U			
Pyrene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U			
Benz(a)anthracene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U			
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1100	10	10/23/97	10/28/97	1100	U			
Chrysene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U			
Benzo(b)fluoranthene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U			
Benzo(k)fluoranthene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U			
Benzo(a)pyrene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U			
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U			
Dibenz(a,h)anthracene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U			
Benzo(g,h,i)perylene	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U			
N-Nitrosodiphenylamine	EPA 3550	8270SIM	320	10	10/23/97	10/28/97	320	U	R		

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

LEVEL V

Approved By: *[Signature]*

Date: *10/16/98*

322/026597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/17/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF659
 Lab Code: L9703547-016
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QVAL	DATE
N-Nitrosodimethylamine	EPA 3550	8270SIM	29	10	10/23/97	10/28/97	29	U	U		
Naphthalene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U			
Acenaphthylene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U			
Acenaphthene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U			
Diethyl Phthalate	EPA 3550	8270SIM	1500	10	10/23/97	10/28/97	1500	U			
Fluorene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U			
Phenanthrene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U			
Anthracene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U			
Di-n-butyl Phthalate	EPA 3550	8270SIM	1500	10	10/23/97	10/28/97	1500	U			
Fluoranthene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U			
Pyrene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U			
Benz(a)anthracene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U			
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1500	10	10/23/97	10/28/97	1500	U			
Chrysene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U			
Benzo(b)fluoranthene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U			
Benzo(k)fluoranthene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U			
Benzo(a)pyrene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U			
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U			
Dibenz(a,h)anthracene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U			
Benzo(g,h,i)perylene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U			
N-Nitrosodiphenylamine	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U			

N-Nitrosodimethylamine Reported Method Detection Limit

C2A MRL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

LEVEL V

Approved By: _____

Date: 1/12/98

1S22/020597p

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/17/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF659DL
 Lab Code: L9703547-016
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Qual	Final Pass
N-Nitrosodimethylamine	EPA 3550	8270SIM	29	10	10/23/97	10/28/97	29	U	R	D
Naphthalene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U		
Acenaphthylene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U		
Acenaphthene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U		
Diethyl Phthalate	EPA 3550	8270SIM	1500	10	10/23/97	10/28/97	1500	U		
Fluorene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U		
Phenanthrene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U		
Anthracene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U		
Di-n-butyl Phthalate	EPA 3550	8270SIM	1500	10	10/23/97	10/28/97	1500	U		
Fluoranthene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U		
Pyrene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U		
Benz(a)anthracene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U		
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	1500	10	10/23/97	10/28/97	1500	U		
Chrysene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U		
Benzo(b)fluoranthene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U		
Benzo(k)fluoranthene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U		
Benzo(a)pyrene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U		
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U		
Dibenz(a,h)anthracene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U		
Benzo(g,h,i)perylene	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	440	10	10/23/97	10/28/97	440	U		

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

LEVEL V

Approved By: *Eyden [Signature]*

Date: *10/21/97*

1522/020597p

0354750A AA2 - Sample (8) 2/16/98

Page No. *107-R*

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/17/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF661
 Lab Code: L9703547-017
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
N-Nitrosodimethylamine	EPA 3550	8270SIM	100	50	10/23/97	10/26/97	100	U	C	
Naphthalene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U		
Acenaphthylene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U		
Acenaphthene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U		
Diethyl Phthalate	EPA 3550	8270SIM	5200	50	10/23/97	10/26/97	5200	U		
Fluorene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U		
Phenanthrene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1800	U		
Anthracene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U		
Di-n-butyl Phthalate	EPA 3550	8270SIM	5200	50	10/23/97	10/26/97	5200	U		
Fluoranthene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U		
Pyrene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U		
Benz(a)anthracene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U		
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	5200	50	10/23/97	10/26/97	5600	U		
Chrysene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U		
Benzo(b)fluoranthene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U		
Benzo(k)fluoranthene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U		
Benzo(a)pyrene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U		
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U		
Dibenz(a,h)anthracene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U		
Benzo(g,h,i)perylene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U		
N-Nitrosodiphenylamine	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U		

N-Nitrosodimethylamine Reported Method Detection Limit

C2A MRL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

LEVEL V

Approved By: _____

J. R. R.

Date: 1/12/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/17/97
 Date Received: 10/17/97

Selected Ion Monitoring (SIM)
 Base Neutral Semivolatile Organic Compounds

Sample Name: RF661DL
 Lab Code: L9703547-017
 Test Notes: C2A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Qval
N-Nitrosodimethylamine	EPA 3550	8270SIM	100	50	10/23/97	10/26/97	100	U	R
Naphthalene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U	
Acenaphthylene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U	
Acenaphthene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U	
Diethyl Phthalate	EPA 3550	8270SIM	5200	50	10/23/97	10/26/97	5200	U	
Fluorene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U	
Phenanthrene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1800		
Anthracene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U	
Di-n-butyl Phthalate	EPA 3550	8270SIM	5200	50	10/23/97	10/26/97	5200	U	
Fluoranthene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U	
Pyrene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U	
Benz(a)anthracene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U	
Bis(2-ethylhexyl) Phthalate	EPA 3550	8270SIM	5200	50	10/23/97	10/26/97	5600		
Chrysene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U	
Benzo(b)fluoranthene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U	
Benzo(k)fluoranthene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U	
Benzo(a)pyrene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U	
Indeno(1,2,3-cd)pyrene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U	
Dibenz(a,h)anthracene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U	
Benzo(g,h,i)perylene	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U	
N-Nitrosodiphenylamine	EPA 3550	8270SIM	1600	50	10/23/97	10/26/97	1600	U	R

N-Nitrosodimethylamine Reported Method Detection Limit

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED

LEVEL V

Approved By: *Eugene Schwartz*

Date: *11/16/98*

1522/010597p

03547SOA AA2 - Sample 2/16/98

Page No. 100

OGDEN

ENVIRONMENTAL AND ENERGY SERVICES



1

550 South Wadsworth Blvd. Ste. 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: 6010/7000

No. of Samples: 9

Date Completed: November 2, 1998

Reviewer: K. Okonzak-Lowry

Ref: USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994), Columbia Analytical Services, Inc. - Canoga Park, Determination of Trace Elements by Inductively Coupled Plasma, Optical Emission Spectrometry SOP ICP-OES, Revision 1.0 (8/96), Columbia Analytical Services, Inc. - Canoga Park, Graphite Furnace Atomic Absorption Spectrometry SOP GFA-GFAA, Revision 1.0 (8/96), Columbia Analytical Services, Inc. - Canoga Park, Mercury in Solid or Semisolid Waste SOP MET-7471, Revision 2.0 (3/98).

SDG: L9800209

Samples Reviewed: RS667, RS669, RS672, RS673, RS674, RS675, RS676, RS679, RS680

EPA Level V- Metals Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	<p>The cooler temperatures were noted at 6 and 7°C; the specified control limits are 4°C 2°C. Sample condition questions were answered on the COCs.</p> <p>Samples were collected by Ogden personnel, placed in coolers containing ice, and hand delivered to the laboratory; therefore, the cooler temperatures did not have time to equilibrate. Some corrections to the COCs were made with multiple cross outs instead of single lines. Some corrections were initialled but not individually dated. No sample preservation or handling problems were noted.</p>	<p>Due to the nonvolatile nature of the analytes, the sample results were not qualified due to the high cooler temperature.</p>
2. <u>Method Blanks</u>	<p>None. All method blank results were below laboratory determined PQLs.</p>	<p>None</p>
3. <u>LCS</u>	<p>The LCS results were all within the</p>	<p>None</p>

	Problems	Qualifications
	laboratory established control limits of 75-125%R.	
4. <u>Duplicates</u>	None performed.	None
5. <u>MS/MSDs</u> Performed on soil sample RS676	Antimony: MS at 47%R/MSD at 55%R.	The antimony nondetects for the samples were qualified "UJ."
6. <u>Furnace Atomic Absorption QC</u> Post digestion spikes performed on sample RS672	The post digestion spike recoveries for the arsenic, selenium, and thallium analyses were within the 85-115%R control limit. The validator determined the post spike results by reviewing the GFAA raw data.	None
7. <u>ICP Serial Dilution</u> Performed on sample RS674	All serial dilution results greater than 10 the PQL were within the 10%D control limit with the exception of aluminum barium and zinc which had %Ds of 16.0%, 13.9%, and 22.2%, respectively. There was no ICP serial dilution form in the report. The validator determined the serial dilution results by reviewing the ICP raw data.	The aluminum, barium, and zinc detects in the samples were qualified "J."
8. <u>Field QC Samples</u> ER sample: RS665 FB sample: RS682 Field Duplicates: None identified for this SDG	There were detects in the field QC samples, but none at high enough levels to require qualifications to the site sample results.	None
9. <u>Other</u>	None	None
10. <u>Comments</u>	The zinc detect for sample RS667 was recalculated by the laboratory, and a corrected Form I for this sample was submitted for validation.	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800209
Date Collected: 1/26/98
Date Received: 1/26/98

Metals

Sample Name: RS667
Lab Code: L9800209-007
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result	Rev	Qual
								Notes	Qual	Code
Lead	EPA 3050	6010	6	1	2/25/98	2/26/98	20			

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz
1344/021397p

Date: 3/13/98

9002

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800209
Date Collected: 1/26/98
Date Received: 1/26/98

Metals

Sample Name: RS667
Lab Code: L9800209-007
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result	Rev	Qual
								Notes	Qual	Code
Zinc	EPA 3050	6010	1	1	2/25/98	2/26/98	110		J	A

OGDEN VALIDATED

LEVEL V

Approved By: _____
IS-44/021397p

Date: 9/14/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800209
Date Collected: 1/27/98
Date Received: 1/27/98

Metals

Sample Name: RS669
Lab Code: L9800209-009
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Lead	EPA 3050	6010	6	1	2/25/98	2/26/98	9			

CODEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz
IS44/021397p

Date: 3/13/98

9004

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800209
Date Collected: 1/27/98
Date Received: 1/27/98

Metals

Sample Name: RS669
Lab Code: L9800209-009
Test Notes:

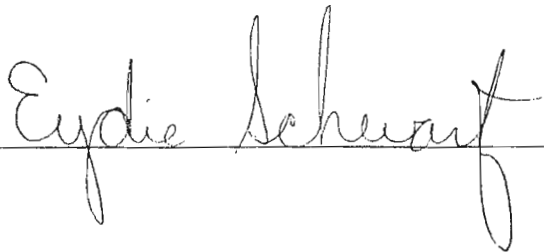
Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Silver	EPA 3050	6010	1	1	2/25/98	2/26/98	1	U	u	

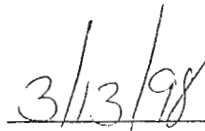
OGDEN VALIDATED

LEVEL V

Approved By:
1S44/021397p



Date:



9005

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9800209
 Date Collected: 1/27/98
 Date Received: 1/27/98

Metals

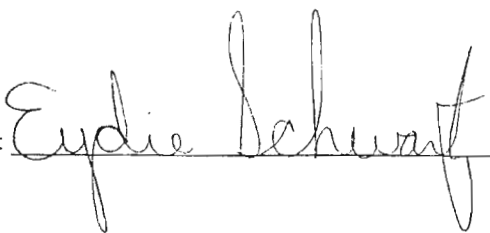
Sample Name: RS672
 Lab Code: L9800209-012
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Aluminum	EPA 3050	6010	11	1	2/25/98	2/26/98	7700		J	A
Antimony	EPA 3050	6010	11	1	2/25/98	2/26/98	11	U	uJ	Q
Arsenic	EPA 3050	7060	6	1	2/24/98	2/26/98	6	U	u	
Barium	EPA 3050	6010	1	1	2/25/98	2/26/98	51		J	A
Beryllium	EPA 3050	6010	0.6	1	2/25/98	2/26/98	0.6	U	u	
Boron	EPA 3050	6010	11	1	2/25/98	2/26/98	11	U	u	
Cadmium	EPA 3050	6010	1	1	2/25/98	2/26/98	1	U	u	
Chromium	EPA 3050	6010	2	1	2/25/98	2/26/98	12			
Cobalt	EPA 3050	6010	2	1	2/25/98	2/26/98	4			
Copper	EPA 3050	6010	2	1	2/25/98	2/26/98	6			
Lead	EPA 3050	6010	6	1	2/25/98	2/26/98	8			
Mercury	EPA 7471	7471	0.2	1	2/19/98	2/23/98	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	2/25/98	2/26/98	11	U	u	
Nickel	EPA 3050	6010	6	1	2/25/98	2/26/98	8			
Selenium	EPA 3050	7740	6	1	2/24/98	2/26/98	6	U	u	
Silver	EPA 3050	6010	1	1	2/25/98	2/26/98	1	U	u	
Thallium	EPA 3050	7841	6	1	2/24/98	2/25/98	6	U	u	
Vanadium	EPA 3050	6010	2	1	2/25/98	2/26/98	22			
Zinc	EPA 3050	6010	1	1	2/25/98	2/26/98	37		J	A

OGDEN VALIDATED

LEVEL V

Approved By: 
 1344/021397p

Date: 

9006

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9800209
 Date Collected: 1/27/98
 Date Received: 1/27/98

Metals

Sample Name: RS673
 Lab Code: L9800209-013
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Aluminum	EPA 3050	6010	12	1	2/25/98	2/26/98	7200		J	A
Antimony	EPA 3050	6010	12	1	2/25/98	2/26/98	12	U	u J	Q
Arsenic	EPA 3050	7060	6	1	2/24/98	2/26/98	6			
Barium	EPA 3050	6010	1	1	2/25/98	2/26/98	56		J	A
Beryllium	EPA 3050	6010	0.6	1	2/25/98	2/26/98	0.6	U	u	
Boron	EPA 3050	6010	12	1	2/25/98	2/26/98	12	U	u	
Cadmium	EPA 3050	6010	1	1	2/25/98	2/26/98	1	U	u	
Chromium	EPA 3050	6010	2	1	2/25/98	2/26/98	12			
Cobalt	EPA 3050	6010	2	1	2/25/98	2/26/98	5			
Copper	EPA 3050	6010	2	1	2/25/98	2/26/98	6			
Lead	EPA 3050	6010	6	1	2/25/98	2/26/98	9			
Mercury	EPA 7471	7471	0.2	1	2/19/98	2/23/98	0.2	U	u	
Molybdenum	EPA 3050	6010	12	1	2/25/98	2/26/98	12	U	u	
Nickel	EPA 3050	6010	6	1	2/25/98	2/26/98	7			
Selenium	EPA 3050	7740	6	1	2/24/98	2/26/98	6	U	u	
Silver	EPA 3050	6010	1	1	2/25/98	2/26/98	1	U	u	
Thallium	EPA 3050	7841	6	1	2/24/98	2/25/98	6	U	u	
Vanadium	EPA 3050	6010	2	1	2/25/98	2/26/98	22			
Zinc	EPA 3050	6010	1	1	2/25/98	2/26/98	59		J	A

ROBEN VALIDATED

LEVEL V

Approved By: Euphrasie Schwaef
 1S44/021397p

Date: 3/13/98

9007
 Page No.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9800209
 Date Collected: 1/27/98
 Date Received: 1/27/98

Metals

Sample Name: RS674
 Lab Code: L9800209-014
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Aluminum	EPA 3050	6010	11	1	2/25/98	2/26/98	5200		J	A
Antimony	EPA 3050	6010	11	1	2/25/98	2/26/98	11	U	u	Q
Arsenic	EPA 3050	7060	5	1	2/24/98	2/26/98	5	U	u	
Barium	EPA 3050	6010	1	1	2/25/98	2/26/98	57		J	A
Beryllium	EPA 3050	6010	0.5	1	2/25/98	2/26/98	0.5	U	u	
Boron	EPA 3050	6010	11	1	2/25/98	2/26/98	11	U	u	
Cadmium	EPA 3050	6010	1	1	2/25/98	2/26/98	2			
Chromium	EPA 3050	6010	2	1	2/25/98	2/26/98	28			
Cobalt	EPA 3050	6010	2	1	2/25/98	2/26/98	4			
Copper	EPA 3050	6010	2	1	2/25/98	2/26/98	22			
Lead	EPA 3050	6010	5	1	2/25/98	2/26/98	25			
Mercury	EPA 7471	7471	0.2	2	2/19/98	2/23/98	0.8			
Molybdenum	EPA 3050	6010	11	1	2/25/98	2/26/98	11	U	u	
Nickel	EPA 3050	6010	5	1	2/25/98	2/26/98	24			
Selenium	EPA 3050	7740	5	1	2/24/98	2/26/98	5	U	u	
Silver	EPA 3050	6010	1	1	2/25/98	2/26/98	1	U	u	
Thallium	EPA 3050	7841	5	1	2/24/98	2/25/98	5	U	u	
Vanadium	EPA 3050	6010	2	1	2/25/98	2/26/98	19			
Zinc	EPA 3050	6010	1	1	2/25/98	2/26/98	120		J	A

OGDEN VALIDATED

LEVEL V

Approved By:
 1S44/021397p

Euphie Schmitt

Date:

3/13/98

9008

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800209
Date Collected: 1/27/98
Date Received: 1/27/98

Metals

Sample Name: RS675
Lab Code: L9800209-015
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result	Rev	Qual Code
								Notes	Qual	
Arsenic	EPA 3050	7060	6	1	2/24/98	2/26/98	6	U	U	

CONFIDENTIAL

LEVEL V

Approved By:
1S44/021397p

Epidio Schwartz

Date:

3/13/98

9009

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800209
Date Collected: 1/27/98
Date Received: 1/27/98

Metals

Sample Name: RS675
Lab Code: L9800209-015
Test Notes:

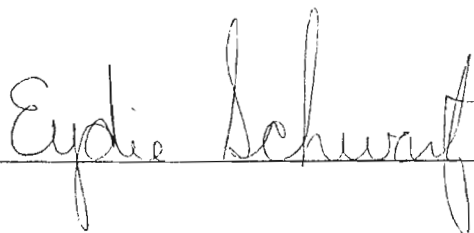
Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result	Rev	Qual
								Notes	Qual	Code
Lead	EPA 3050	6010	6	1	2/25/98	2/26/98	7			

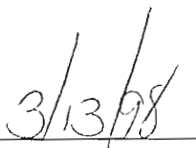
OPEN VALIDATED

LEVEL V

Approved By:
1S44/021397p



Date:



9010

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9800209
 Date Collected: 1/27/98
 Date Received: 1/27/98

Metals

Sample Name: RS676
 Lab Code: L9800209-016
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Aluminum	EPA 3050	6010	11	1	2/25/98	2/26/98	11000		J	A
Antimony	EPA 3050	6010	11	1	2/25/98	2/26/98	11	U	uJ	Q
Arsenic	EPA 3050	7060	6	1	2/24/98	2/26/98	11		J	A
Barium	EPA 3050	6010	1	1	2/25/98	2/26/98	54			
Beryllium	EPA 3050	6010	0.6	1	2/25/98	2/26/98	0.6			
Boron	EPA 3050	6010	11	1	2/25/98	2/26/98	11	U	u	
Cadmium	EPA 3050	6010	1	1	2/25/98	2/26/98	1	U	u	
Chromium	EPA 3050	6010	2	1	2/25/98	2/26/98	18			
Cobalt	EPA 3050	6010	2	1	2/25/98	2/26/98	7			
Copper	EPA 3050	6010	2	1	2/25/98	2/26/98	8			
Lead	EPA 3050	6010	6	1	2/25/98	2/26/98	7			
Mercury	EPA 7471	7471	0.2	1	2/19/98	2/23/98	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	2/25/98	2/26/98	11	U	u	
Nickel	EPA 3050	6010	6	1	2/25/98	2/26/98	14			
Selenium	EPA 3050	7740	6	1	2/24/98	2/26/98	6	U	u	
Silver	EPA 3050	6010	1	1	2/25/98	2/26/98	1	U	u	
Thallium	EPA 3050	7841	6	1	2/24/98	2/25/98	6	U	u	
Vanadium	EPA 3050	6010	2	1	2/25/98	2/26/98	31			
Zinc	EPA 3050	6010	1	1	2/25/98	2/26/98	48		J	A

NOT VALIDATED

LEVEL V

Approved By: Epidie Schwart
 1S44/021397p

Date: 3/13/98

9011

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800209
Date Collected: 1/27/98
Date Received: 1/27/98

Metals

Sample Name: RS679
Lab Code: L9800209-019
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Rev		Qual Code
								Notes	Qual	
Lead	EPA 3050	6010	6	1	2/25/98	2/26/98	15			

OCDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz
1544/021397p

Date: 3/13/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800209
Date Collected: 1/27/98
Date Received: 1/27/98

Metals

Sample Name: RS679
Lab Code: L9800209-019
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result	Rev	Qual
								Notes	Qual	Code
Barium	EPA 3050	6010	1	1	2/25/98	2/26/98	140	J		A

CODEN VALIDATED

LEVEL V

Approved By: Eydie Schmitt
1S44/021397p

Date: 3/13/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800209
Date Collected: 1/27/98
Date Received: 1/27/98

Metals

Sample Name: RS679
Lab Code: L9800209-019
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result	Rev	Qual Code
								Notes	Qual	
Silver	EPA 3050	6010	1	1	2/25/98	2/26/98	8			

OGDEN VALIDATION

LEVEL V

Approved By: Eydie Schwart
1544/021397p

Date: 3/13/98

9014

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800209
Date Collected: 1/27/98
Date Received: 1/27/98

Metals

Sample Name: RS679
Lab Code: L9800209-019
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Anal	Anal Code
Zinc	EPA 3050	6010	1	1	2/25/98	2/26/98	160		J	A

LEVEL V

Approved By: Eydie Schwart
1S44/021397p

Date: 3/13/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800209
Date Collected: 1/27/98
Date Received: 1/27/98

Metals

Sample Name: RS680
Lab Code: L9800209-020
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Lead	EPA 3050	6010	6	1	2/25/98	2/26/98	31			

Approved By: Eydie Schwartz
1S44/021397p

Date: 3/13/98

LEVEL V

9016

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800209
Date Collected: 1/27/98
Date Received: 1/27/98

Metals

Sample Name: RS680
Lab Code: L9800209-020
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Barium	EPA 3050	6010	1	1	2/25/98	2/26/98	160		J	A

COPIES VALIDATED

LEVEL V

Approved By: Eydie Schwartz
1S44/021397p

Date: 3/13/98

9017

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800209
Date Collected: 1/27/98
Date Received: 1/27/98

Metals

Sample Name: RS680
Lab Code: L9800209-020
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Silver	EPA 3050	6010	1	1	2/25/98	2/26/98	5			

Approved By: Eydie Schwart
1344/021397p

Date: 3/13/98

LEVEL V

9018

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800209
Date Collected: 1/27/98
Date Received: 1/27/98

Metals

Sample Name: RS680
Lab Code: L9800209-020
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Zinc	EPA 3050	6010	1	1	2/25/98	2/26/98	240		J	A

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz
1341/021397p

Date: 3/13/98

9019

OGDEN ENVIRONMENTAL AND ENERGY SERVICES



1

550 South Wadsworth Blvd. Ste. 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: 6010/7000

No. of Samples: 7

Date Completed: November 17, 1998

Reviewer: K. Okonzak-Lowry

Ref: USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994), Columbia Analytical Services, Inc. - Canoga Park, Determination of Trace Elements by Inductively Coupled Plasma, Optical Emission Spectrometry SOP ICP-OES, Revision 1.0 (8/96), Columbia Analytical Services, Inc. - Canoga Park, Graphite Furnace Atomic Absorption Spectrometry SOP GFA-GFAA, Revision 1.0 (8/96), Columbia Analytical Services, Inc. - Canoga Park, Mercury in Solid or Semisolid Waste SOP MET-7471, Revision 2.0 (3/98).

SDG: L9704318

Samples Reviewed: RS579, RS580, RS581, RS584, RS585, RS588, RS589

EPA Level V- Metals Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	<p>The cooler temperatures were noted at 11 and 4°C; the specified control limit is 4°C 2°C.</p> <p>Samples were collected by Ogden personnel, placed in coolers containing ice, and hand delivered to the laboratory; therefore, the cooler temperatures did not have time to equilibrate.</p> <p>A correction to the COC was not individually dated. A COC correction to the Ogden ID for sample RS584 was scribbled out instead of being crossed out with a single line. There was no signature on the line reserved for the laboratory, but it appears that laboratory personnel did sign the COC on one of the other signature lines.</p> <p>No sample preservation or handling problems were noted.</p>	<p>Due to the nonvolatile nature of the analytes, the sample results were not qualified due to the high cooler temperature.</p>
2. <u>Method Blanks</u>	None. All method blank results	None

	Problems	Qualifications
	were below laboratory determined POLs.	
3. LCS	The LCS results were all within the laboratory established control limits of 75-125%R.	None
4. Duplicates	None performed.	None
5. MS/MSDs Performed on soil sample RS579	Antimony: MS at 48%R/MSD at 51%R Selenium: MS at 67%R/MSD at 63%R	Nondetected antimony and selenium in the samples was qualified "UJ."
6. Furnace Atomic Absorption QC	The post digestion spike recoveries for the arsenic, selenium, and thallium analyses were within the 85-115%R control limit. The validator determined the post spike results by reviewing the GFAA raw data.	None
7. ICP Serial Dilution Performed on sample RS584	All serial dilution results greater than 10 the PQL were within the 10%D control limit and no qualifications were required. There was no ICP serial dilution form in the report. The validator determined the serial dilution results by reviewing the ICP raw data.	None
8. Field QC Samples ER sample: RS516 FB sample: RS682 Field Duplicates: None identified for this SDG	There were detects in the field QC samples but none at high enough levels to require sample qualifications.	None
9. Other	None	None
10. Comments	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9704318
 Date Collected: 12/16/97
 Date Received: 12/16/97

Metals

Sample Name: RS579
 Lab Code: L9704318-005
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev	Que Cols
Antimony	EPA 3050	6010	10	1	12/26/97	1/2/98	10	U	u	Q
Arsenic	EPA 3050	7060	5	1	12/26/97	12/29/97	5	U	u	
Barium	EPA 3050	6010	1	1	12/26/97	1/2/98	48			
Beryllium	EPA 3050	6010	0.5	1	12/26/97	1/2/98	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	12/26/97	1/2/98	1	U	u	
Chromium	EPA 3050	6010	2	1	12/26/97	1/2/98	10			
Cobalt	EPA 3050	6010	2	1	12/26/97	1/2/98	4			
Copper	EPA 3050	6010	2	1	12/26/97	1/2/98	5			
Lead	EPA 3050	6010	5	1	12/26/97	1/2/98	6			
Mercury	METHOD	7471	0.2	1	12/26/97	12/29/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	12/26/97	1/2/98	10	U	u	
Nickel	EPA 3050	6010	5	1	12/26/97	1/2/98	7			
Selenium	EPA 3050	7740	5	1	12/26/97	12/29/97	5	U	u	Q
Silver	EPA 3050	6010	1	1	12/26/97	1/2/98	1	U	u	
Thallium	EPA 3050	7841	5	1	12/26/97	12/29/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	12/26/97	1/2/98	21			
Zinc	EPA 3050	6010	1	1	12/26/97	1/2/98	38			

CODEN VALIDATED

LEVEL V

Approved By: Eydie Schunert
 1544/021397p

Date: 3/10/98

11002

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9704318
 Date Collected: 12/16/97
 Date Received: 12/16/97

Metals

Sample Name: RS580
 Lab Code: L9704318-006
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Quas Code
Antimony	EPA 3050	6010	11	1	12/26/97	1/2/98	11	U	u	Q
Arsenic	EPA 3050	7060	5	1	12/26/97	12/29/97	5	U	u	
Barium	EPA 3050	6010	1	1	12/26/97	1/2/98	55			
Beryllium	EPA 3050	6010	0.5	1	12/26/97	1/2/98	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	12/26/97	1/2/98	4			
Chromium	EPA 3050	6010	2	1	12/26/97	1/2/98	87			
Cobalt	EPA 3050	6010	2	1	12/26/97	1/2/98	6			
Copper	EPA 3050	6010	2	1	12/26/97	1/2/98	20			
Lead	EPA 3050	6010	5	1	12/26/97	1/2/98	47			
Mercury	METHOD	7471	0.2	1	12/26/97	12/29/97	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	12/26/97	1/2/98	11	U	u	
Nickel	EPA 3050	6010	5	1	12/26/97	1/2/98	69			
Selenium	EPA 3050	7740	5	1	12/26/97	12/29/97	5	U	u	Q
Silver	EPA 3050	6010	1	1	12/26/97	1/2/98	1	U	u	
Thallium	EPA 3050	7841	5	1	12/26/97	12/29/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	12/26/97	1/2/98	19			
Zinc	EPA 3050	6010	1	1	12/26/97	1/2/98	310			

OGDEN VALIDATED

LEVEL V

Approved By: Eyde Schurz
 1544/021397p

Date: 3/10/98

11003

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Sludge

Service Request: L9704318
Date Collected: 12/16/97
Date Received: 12/16/97

Metals

Sample Name: RS581
Lab Code: L9704318-007
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Aug Code
Silver	EPA 3050	6010	1	1	12/26/97	1/2/98	1	U	u	

OGDEN VALIDATED

LEVEL V

Approved By: Eupha Schwartz
1S44/021397p

Date: 3/10/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9704318
 Date Collected: 12/17/97
 Date Received: 12/17/97

Metals

Sample Name: RS584
 Lab Code: L9704318-009
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	16	1	12/26/97	1/2/98	16	U	uT	Q
Arsenic	EPA 3050	7060	8	1	12/26/97	12/29/97	9			
Barium	EPA 3050	6010	2	1	12/26/97	1/2/98	200			
Beryllium	EPA 3050	6010	0.8	1	12/26/97	1/2/98	1.4			
Cadmium	EPA 3050	6010	2	1	12/26/97	1/2/98	2			
Chromium	EPA 3050	6010	3	1	12/26/97	1/2/98	41			
Cobalt	EPA 3050	6010	3	1	12/26/97	1/2/98	15			
Copper	EPA 3050	6010	3	1	12/26/97	1/2/98	130			
Lead	EPA 3050	6010	8	1	12/26/97	1/2/98	58			
Mercury	METHOD	7471	0.3	5	12/26/97	12/29/97	1.2			
Molybdenum	EPA 3050	6010	16	1	12/26/97	1/2/98	16	U	u	
Nickel	EPA 3050	6010	8	1	12/26/97	1/2/98	24			
Selenium	EPA 3050	7740	8	1	12/26/97	12/29/97	8	U	uT	Q
Silver	EPA 3050	6010	2	1	12/26/97	1/2/98	2	U	u	
Thallium	EPA 3050	7841	8	1	12/26/97	12/29/97	8	U	u	
Vanadium	EPA 3050	6010	3	1	12/26/97	1/2/98	77			
Zinc	EPA 3050	6010	2	1	12/26/97	1/2/98	490			

OGDEN VALIDATED

LEVEL V

Approved By: Eydio Schwarz
 1S44/021397p

Date: 3/10/98

11005

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9704318
 Date Collected: 12/17/97
 Date Received: 12/17/97

Metals

Sample Name: RS585
 Lab Code: L9704318-010
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	13	1	12/26/97	1/2/98	13	U	uJ	Q
Arsenic	EPA 3050	7060	6	1	12/26/97	12/29/97	6	U	u	
Barium	EPA 3050	6010	1	1	12/26/97	1/2/98	69			
Beryllium	EPA 3050	6010	0.6	1	12/26/97	1/2/98	0.6	U	u	
Cadmium	EPA 3050	6010	1	1	12/26/97	1/2/98	1	U	u	
Chromium	EPA 3050	6010	3	1	12/26/97	1/2/98	16			
Cobalt	EPA 3050	6010	3	1	12/26/97	1/2/98	6			
Copper	EPA 3050	6010	3	1	12/26/97	1/2/98	18			
Lead	EPA 3050	6010	6	1	12/26/97	1/2/98	9			
Mercury	METHOD	7471	0.3	1	12/26/97	12/29/97	0.3	U	u	
Molybdenum	EPA 3050	6010	13	1	12/26/97	1/2/98	13	U	u	
Nickel	EPA 3050	6010	6	1	12/26/97	1/2/98	9			
Selenium	EPA 3050	7740	6	1	12/26/97	12/29/97	6	U	uJ	Q
Silver	EPA 3050	6010	1	1	12/26/97	1/2/98	1	U	u	
Thallium	EPA 3050	7841	6	1	12/26/97	12/29/97	6	U	u	
Vanadium	EPA 3050	6010	3	1	12/26/97	1/2/98	32			
Zinc	EPA 3050	6010	1	1	12/26/97	1/2/98	68			

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz
 1544/021397p

Date: 3/16/98

11006

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9704318
 Date Collected: 12/17/97
 Date Received: 12/17/97

Metals

Sample Name: RS588
 Lab Code: L9704318-013
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	17	1	12/26/97	1/2/98	17	U	u	Q
Arsenic	EPA 3050	7060	8	1	12/26/97	12/29/97	8	U	u	
Barium	EPA 3050	6010	2	1	12/26/97	1/2/98	76			
Beryllium	EPA 3050	6010	0.8	1	12/26/97	1/2/98	0.8	U	u	
Cadmium	EPA 3050	6010	2	1	12/26/97	1/2/98	3			
Chromium	EPA 3050	6010	3	1	12/26/97	1/2/98	25			
Cobalt	EPA 3050	6010	3	1	12/26/97	1/2/98	5			
Copper	EPA 3050	6010	3	1	12/26/97	1/2/98	25			
Lead	EPA 3050	6010	8	1	12/26/97	1/2/98	42			
Mercury	METHOD	7471	0.3	1	12/26/97	12/29/97	0.3	U	u	
Molybdenum	EPA 3050	6010	17	1	12/26/97	1/2/98	17	U	u	
Nickel	EPA 3050	6010	8	1	12/26/97	1/2/98	16			
Selenium	EPA 3050	7740	8	1	12/26/97	12/29/97	8	U	u	Q
Silver	EPA 3050	6010	2	1	12/26/97	1/2/98	2	U	u	
Thallium	EPA 3050	7841	8	1	12/26/97	12/29/97	8	U	u	
Vanadium	EPA 3050	6010	3	1	12/26/97	1/2/98	22			
Zinc	EPA 3050	6010	2	1	12/26/97	1/2/98	500			

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwarz
 IS44/021397p

Date: 3/10/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9704318
 Date Collected: 12/17/97
 Date Received: 12/17/97

Metals

Sample Name: RS589
 Lab Code: L9704318-014
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	12	1	12/26/97	1/2/98	12	U	u	Q
Arsenic	EPA 3050	7060	6	1	12/26/97	12/29/97	6	U	u	
Barium	EPA 3050	6010	1	1	12/26/97	1/2/98	50			
Beryllium	EPA 3050	6010	0.6	1	12/26/97	1/2/98	0.6	U	u	
Cadmium	EPA 3050	6010	1	1	12/26/97	1/2/98	1	U	u	
Chromium	EPA 3050	6010	2	1	12/26/97	1/2/98	15			
Cobalt	EPA 3050	6010	2	1	12/26/97	1/2/98	4			
Copper	EPA 3050	6010	2	1	12/26/97	1/2/98	9			
Lead	EPA 3050	6010	6	1	12/26/97	1/2/98	11			
Mercury	METHOD	7471	0.2	1	12/26/97	12/29/97	0.2	U	u	
Molybdenum	EPA 3050	6010	12	1	12/26/97	1/2/98	12	U	u	
Nickel	EPA 3050	6010	6	1	12/26/97	1/2/98	7			
Selenium	EPA 3050	7740	6	1	12/26/97	12/29/97	6	U	u	Q
Silver	EPA 3050	6010	1	1	12/26/97	1/2/98	1	U	u	
Thallium	EPA 3050	7841	6	1	12/26/97	12/29/97	6	U	u	
Vanadium	EPA 3050	6010	2	1	12/26/97	1/2/98	16			
Zinc	EPA 3050	6010	1	1	12/26/97	1/2/98	76			

OGDEN VALIDATED

LEVEL V

Approved By: Eddie Schwartz
 1544/021397p

Date: 3/10/98

11008

OGDEN

ENVIRONMENTAL AND ENERGY SERVICES



1

550 South Wadsworth Blvd. Ste. 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: 6010/7000

No. of Samples: 5

Date Completed: August 20, 1998

Reviewer: K. Okonzak-Lowry

Ref: USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994), Columbia Analytical Services, Inc. - Canoga Park, Determination of Trace Elements by Inductively Coupled Plasma, Optical Emission Spectrometry SOP ICP-OES, Revision 1.0 (8/96). Columbia Analytical Services, Inc. - Canoga Park, Graphite Furnace Atomic Absorption Spectrometry SOP GFA-GFAA, Revision 1.0 (8/96). Columbia Analytical Services, Inc. - Canoga Park, Mercury in Solid or Semisolid Waste SOP MET-7471, Revision 2.0 (3/98).

SDG: L9703713

Samples Reviewed: RF161, RF173, RF176, RF746, RF756

EPA Level V- Metals Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	The sample condition questions were answered on the applicable COCs. The sample cooler temperature upon receipt was noted on the COC at 8°C. The COCs were signed by the field and laboratory personnel. No cooler custody seals were present.	Due to the nonvolatile nature of the analytes, the samples were not qualified for the temperature blank.
2. <u>Method Blanks</u>	None. All method blank results were below laboratory determined PQLs.	None
3. <u>LCS</u>	The LCS results were all within the laboratory established control limits of 75-125%R.	None
4. <u>Duplicates</u>	None performed.	None
5. <u>MS/MSDs</u> Performed on soil sample RF161	Antimony: MS at 39%R/MSD at 41%R. Selenium: MS at 70%/MSD at 42%R and precision between	Antimony nondetects qualified "UJ" for the MS/MSD %Rs. Nondetected selenium qualified "UJ," and detected selenium qualified "J" for

	Problems	Qualifications
	MS/MSD aliquots high at 50%RPD Arsenic: precision between MS/MSD aliquots high at 22%RPD	the low MS/MSD %Rs Selenium and arsenic detects qualified “J” for the precision between the MS/MSD aliquots.
6. <u>Furnace Atomic Absorption QC</u> Post digestion spikes performed on sample RF176	The post digestion spike recoveries for the arsenic, selenium, and thallium analyses were within the 85-115%R control limit. The validator determined the post spike results by reviewing the GFAA raw data.	None
7. <u>ICP Serial Dilution</u> Performed on sample RF173	All serial dilution results greater than 10 the PQL were within the 10%D control limit with the exception of silver with a 15.4%D. There was no ICP serial dilution form in the report. The validator determined the serial dilution results by reviewing the ICP raw data.	Silver detected in sample RF173 was qualified “J.”
8. <u>Field QC Samples</u> ER samples: RF803, RF149, and RF020 FB sample: RS682 Field Duplicates: None identified for this SDG	Zinc was detected in equipment rinsate RF149 at 0.16 mg/L.	Zinc detected in site samples RF161 and RF176 was qualified “J.”
9. <u>Other</u> Sample RF173 is a performance evaluation sample	See attached table for the PE sample results	The laboratory result for silver is outside the Performance Acceptance Limit provided for this QC Standard. No sample qualifications were applied
10. <u>Comments</u>	None	None

Metals Results:

Sample RF173

Analyte	Certified Value (mg/kg)	Performance Acceptance Limits (mg/kg)	Laboratory Result (mg/kg)
Antimony	93.1	9.52 - 177	60*
Arsenic	60.6	43.0 - 78.2	58*
Barium	3160	2170 - 4150	2500
Beryllium	157	107 - 207	140
Cadmium	78.0	55.7 - 100	69
Chromium	183	134 - 232	170
Cobalt	113	89.7 - 136	110
Copper	110	85.4 - 135	110
Lead	85.9	64.1 - 108	80
Mercury	1.38	0.939 - 1.82	1.5
Nickel	108	84.9 - 132	100
Molybdenum	73.2	52.3 - 94.1	70
Selenium	75.4	49.8 - 101	63*
Silver	152	113 - 191	63* ^{\$}
Thallium	160	91.4 - 228	130
Vanadium	99.0	67.6 - 130	89
Zinc	721	507 - 936	670

* - Due to poor matrix spike performance, poor duplicate performance, or poor serial dilution precision, these analytes were qualified estimated, "J."

^{\$} - The laboratory result for silver is low outside the Performance Acceptance Limit provided for this QC Standard

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703713
 Date Collected: 10/31/97
 Date Received: 10/31/97

Metals

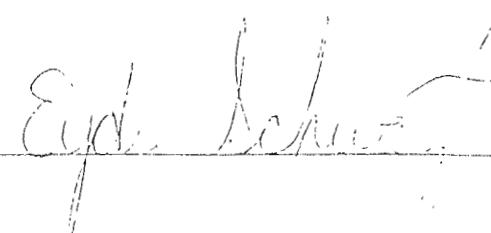
Sample Name: RF161
 Lab Code: L9703713-001
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	11	1	11/11/97	11/14/97	11	U	uJ	Q
Arsenic	EPA 3050	7060	5	1	11/11/97	11/12/97	6	U	u	
Barium	EPA 3050	6010	1	1	11/11/97	11/14/97	110			
Beryllium	EPA 3050	6010	3.6	1	11/11/97	11/14/97	0.7			
Cadmium	EPA 3050	6010	1	1	11/11/97	11/14/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/11/97	11/14/97	21			
Cobalt	EPA 3050	6010	2	1	11/11/97	11/14/97	8			
Copper	EPA 3050	6010	2	1	11/11/97	11/14/97	9			
Lead	EPA 3050	6010	6	1	11/11/97	11/14/97	9			
Mercury	METHOD	7471	2	1	11/11/97	11/11/97	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	11/11/97	11/14/97	11	U	u	
Nickel	EPA 3050	6010	5	1	11/11/97	11/14/97	14			
Selenium	EPA 3050	7740	5	1	11/11/97	11/12/97	6	U	uJ	Q
Silver	EPA 3050	6010	1	1	11/11/97	11/14/97	1	U	u	
Thallium	EPA 3050	7841	6	1	11/11/97	11/12/97	6	U	u	
Vanadium	EPA 3050	6010	2	1	11/11/97	11/14/97	45			
Zinc	EPA 3050	6010	1	1	11/11/97	11/14/97	73		J	F

OGDEN VALIDATED

LEVEL V

Approved By: 
 1544021197p

Date: 

5001

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703713

Date Collected: 10/31/97

Date Received: 10/31/97

Metals

Sample Name: RF173
 Lab Code: L9703713-007
 Test Notes:

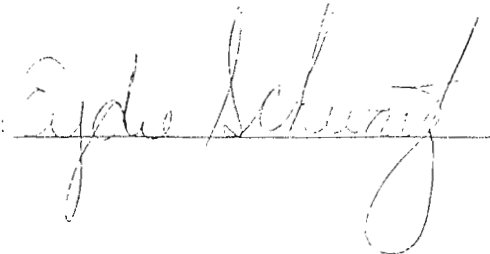
Units: MG/KG

Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/11/97	11/14/97	60	J	J	Q
Arsenic	EPA 3050	7060	5	5	11/11/97	11/12/97	58	J	J	E
Barium	EPA 3050	6010	1	1	11/11/97	11/14/97	2500			
Beryllium	EPA 3050	6010	0.5	1	11/11/97	11/14/97	140			
Cadmium	EPA 3050	6010	1	1	11/11/97	11/14/97	69			
Chromium	EPA 3050	6010	2	1	11/11/97	11/14/97	170			
Cobalt	EPA 3050	6010	2	1	11/11/97	11/14/97	110			
Copper	EPA 3050	6010	2	1	11/11/97	11/14/97	110			
Lead	EPA 3050	6010	5	1	11/11/97	11/14/97	80			
Mercury	METHOD	7471	0.2	5	11/11/97	11/11/97	1.5			
Molybdenum	EPA 3050	6010	10	1	11/11/97	11/14/97	70			
Nickel	EPA 3050	6010	5	1	11/11/97	11/14/97	100			
Selenium	EPA 3050	7740	5	5	11/11/97	11/12/97	63	J	J	Q, E
Silver	EPA 3050	6010	1	1	11/11/97	11/14/97	63	J	J	A
Thallium	EPA 3050	7841	5	5	11/11/97	11/12/97	130			
Vanadium	EPA 3050	6010	2	1	11/11/97	11/14/97	89			
Zinc	EPA 3050	6010	1	1	11/11/97	11/14/97	670			

OGDEN VALIDATED

LEVEL V

Approved By: 
 1844521397p

Date: 2/6/98

5000

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703713
 Date Collected: 11/3/97
 Date Received: 11/3/97

Metals

Sample Name: RF176
 Lab Code: L9703713-019
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/11/97	11/14/97	10	U	uJ	Q
Arsenic	EPA 3050	7960	5	1	11/11/97	11/12/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/11/97	11/14/97	96			
Beryllium	EPA 3050	6010	0.5	1	11/11/97	11/14/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/11/97	11/14/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/11/97	11/14/97	12			
Cobalt	EPA 3050	6010	2	1	11/11/97	11/14/97	7			
Copper	EPA 3050	6010	2	1	11/11/97	11/14/97	14			
Lead	EPA 3050	6010	5	1	11/11/97	11/14/97	7			
Mercury	METHOD	7471	0.2	1	11/11/97	11/11/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/11/97	11/14/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/11/97	11/14/97	8			
Selenium	EPA 3050	7740	5	1	11/11/97	11/12/97	5	U	uJ	Q
Silver	EPA 3050	6010	1	1	11/11/97	11/14/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/11/97	11/12/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/11/97	11/14/97	30			
Zinc	EPA 3050	6010	1	1	11/11/97	11/14/97	52		J	F

OGDEN VALIDATED

LEVEL V

Approved By: *Eyde Schumacher*
 1844021377p

Date: *2/6/98*

5005

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703713
 Date Collected: 10/31/97
 Date Received: 10/31/97

Metals

Sample Name: RF746
 Lab Code: L9703713-008
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Anal Code
Antimony	EPA 3050	6010	11	1	11/11/97	11/14/97	11	U	uJ	Q
Arsenic	EPA 3050	7060	5	1	11/11/97	11/12/97	5		J	Q E
Barium	EPA 3050	6010	1	1	11/11/97	11/14/97	100			
Beryllium	EPA 3050	6010	0.5	1	11/11/97	11/14/97	0.7			
Cadmium	EPA 3050	6010	1	1	11/11/97	11/14/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/11/97	11/14/97	28			
Cobalt	EPA 3050	6010	2	1	11/11/97	11/14/97	9			
Copper	EPA 3050	6010	2	1	11/11/97	11/14/97	18			
Lead	EPA 3050	6010	5	1	11/11/97	11/14/97	18			
Mercury	METHOD	7471	0.2	1	11/11/97	11/11/97	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	11/11/97	11/14/97	11	U	u	
Nickel	EPA 3050	6010	5	1	11/11/97	11/14/97	17			
Selenium	EPA 3050	7740	5	1	11/11/97	11/12/97	5	U	uJ	Q
Silver	EPA 3050	6010	1	1	11/11/97	11/14/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/11/97	11/12/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/11/97	11/14/97	38			
Zinc	EPA 3050	6010	1	1	11/11/97	11/14/97	85			

1002
 8/18/98

OGDEN VALIDATED

LEVEL V

Approved By: *Egidio Schuster*
 1547-021397p

Date: *2/6/98*

50003

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703713
Date Collected: 10/31/97
Date Received: 10/31/97

Metals

Sample Name: RF756
Lab Code: L9703713-016
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Aluminum	EPA 3050	6010	10	1	11/11/97	11/14/97	8300			
Boron	EPA 3050	6010	10	1	11/11/97	11/14/97	10	U	u	

OGDEN VALIDATED

LEVEL V

Approved By: Eydia Lechuga
10/31/97

Date: 11/1/97

5004

OGDEN

ENVIRONMENTAL AND ENERGY SERVICES



1

550 South Wadsworth Blvd. Ste. 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: 6010/7000

No. of Samples: 19

Date Completed: August 20, 1998

Reviewer: K. Okonczak-Lowry

Ref: USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994), Columbia Analytical Services, Inc. - Canoga Park, Determination of Trace Elements by Inductively Coupled Plasma, Optical Emission Spectrometry SOP ICP-OES, Revision 1.0 (8/96). Columbia Analytical Services, Inc. - Canoga Park, Graphite Furnace Atomic Absorption Spectrometry SOP GFA-GFAA, Revision 1.0 (8/96). Columbia Analytical Services, Inc. - Canoga Park, Mercury in Solid or Semisolid Waste SOP MET-7471, Revision 2.0 (3/98).

SDG: L9703698

Samples Reviewed: RF733, RF734, RF735, RF143, RF144, RF145, RF146, RF147, RF148, RF150, RF151, RF157, RF736, RF738, RF739, RF740, RF741, RF702, RF160

EPA Level V- Metals Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	The sample condition questions were answered on the applicable COCs. The sample cooler temperatures upon receipt were noted on the COCs at 14°C and 3°C. Some of the COCs were not signed by the laboratory personnel. No cooler custody seals were present.	Due to the nonvolatile nature of the analytes, the samples were not qualified for the temperature blanks.
2. <u>Method Blanks</u>	None. All method blank results were below laboratory determined PQLs.	None
3. <u>LCS</u>	The LCS results were all within the laboratory established control limits of 75-125%R.	None
4. <u>Duplicates</u>	None performed.	None
5. <u>MS/MSDs</u> Performed on soil sample RF739	Antimony: MS at 58%R/MSD at 60%R.	Antimony nondetects qualified "UJ" for the MS/MSD %Rs.

	Problems	Qualifications
	<p>Chromium: MS at 132%/MSD at 92%R, and precision between MS/MSD aliquot results is high at 36%RPD</p> <p>Nickel: MS at 184%R/MSD at 89%R, and precision between MS/MSD aliquot results is high at 70%RPD</p> <p>The MS/MSD %Rs for arsenic, beryllium, and cadmium were calculated incorrectly on the MS/MSD reporting form.</p>	Chromium and nickel detects qualified "J" for the high MS %Rs and for the precision between the MS/MSD aliquots
<p>6. <u>Furnace Atomic Absorption QC</u></p> <p>Post digestion spikes performed on samples RF147 and RF733</p>	<p>The post digestion spike recoveries for the arsenic, selenium, and thallium analyses were within the 85-115%R control limit.</p> <p>The validator determined the post spike results by reviewing the GFAA raw data.</p>	None
<p>7. <u>ICP Serial Dilution</u></p> <p>Performed on sample RF741</p>	<p>All serial dilution results greater than 10 the PQL were within the 10%D control limit with the exception of zinc with a 12.2%D.</p> <p>There was no ICP serial dilution form in the report. The validator determined the serial dilution results by reviewing the ICP raw data.</p>	Zinc detected in the samples was qualified "J."
<p>8. <u>Field QC Samples</u></p> <p>ER samples: RF803 and RF149 FB sample: RS682 Field Duplicates: None identified for this SDG</p>	Zinc was detected in equipment rinsate RF149 at 0.16 mg/L.	Zinc detected in site samples RF143, RF144, RF145, RF146, RF147, RF148, RF150, RF151, RF157, and RF160 was qualified "J."
<p>9. <u>Other</u></p>	None	None
<p>10. <u>Comments</u></p>	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne 313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF143
 Lab Code: L9703698-004
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	UJ	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	U	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	71			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	U	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	U	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	12		J	Q,E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	6			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	8			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	U	
Molybdenum	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	U	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	8		J	Q,E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	U	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	U	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	U	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	25			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	43		J	A,F

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1344/0213572

Date: 12/6/97

5006

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF144
 Lab Code: L9703698-005
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u J	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	130			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.9			
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	22		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	11			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	16			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	13			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	18		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	43			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	69		J	A, F

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1544/021397p

Date: 12/6/97

5007

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF145
 Lab Code: L9703698-006
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	uJ	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	55			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	8		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	4			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	4			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	5	U	u	
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	5	U	u	
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	20			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	50		J	A, F

OGDEN VALIDATED

LEVEL V

Approved By: J. R. R.
 1543021357p

Date: 12/6/97

5008

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF146
 Lab Code: L9703698-007
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	uJ	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	100			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.6			
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	18		J	Q,E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	8			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	11			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	10			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	13		J	Q,E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	36			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	51		J	A,F

CODEN VALIDATED

LEVEL V

Approved By: _____
 1544/021397p

Date: 12/6/97

5009

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF147
 Lab Code: L9703698-008
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	110			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.6			
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	18		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	7			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	13			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	10			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	12		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	35			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	48		J	A, F

NOT VALIDATED

LEVEL V

Approved By: _____
 1544/021397p

Date: 12/6/97

5010

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF148
 Lab Code: L9703698-009
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u J	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	69			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	9		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	8			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	6		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	22			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	60		J	A, F

OGDEN VALIDATED

LEVEL V

Approved By:
 1544/b21397p

Date: 12/6/97

5011

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne 313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/30/97
 Date Received: 10/30/97

Metals

Sample Name: RF150
 Lab Code: L9703698-010
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u J	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	64			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	9		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	4			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	7			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	6		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	21			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	58		J	A, I

CDDEN VALIDATED

LEVEL V

Approved By: _____
 1544/021397p

Date: _____

12/6/97

5018

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/30/97
 Date Received: 10/30/97

Metals

Sample Name: RF151
 Lab Code: L9703698-011
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u J	K Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	76			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	17		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	6			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	11			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	8			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	11		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	33			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	56		J	A, F

KRZ
 8/18/98

OGDEN VALIDATED

LEVEL V

Approved By: KRZ
 1540021397p

Date: 12/6/97

5013

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/30/97
 Date Received: 10/30/97

Metals

Sample Name: RF157
 Lab Code: L9703698-012
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Anal Code
Antimony	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	J Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	54			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	11		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	6			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	5	U	u	
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	8		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	25			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	46		J	A, F

OGDEN VALIDATED

LEVEL V

Approved By: J. R. Rouse
 13447021397p

Date: 12/6/97

5014

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/31/97
 Date Received: 10/31/97

Metals

Sample Name: RF160
 Lab Code: L9703698-020
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	35			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	13		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	6			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	6		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	25			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	42		J	A, F

OCCASIONALLY VALIDATED

LEVEL V

5022

Approved By: _____
 1544/021397p

Date: 12/6/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703698
 Date Collected: 10/27/97
 Date Received: 10/27/97

Metals

Sample Name: RF702
 Lab Code: L9703698-019
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Per Qual	Qual
Antimony	EPA 3050	6010	18	1	11/10/97	11/11/97	18	U	W	J
Arsenic	EPA 3050	7060	9	1	11/10/97	11/11/97	9	U	W	
Barium	EPA 3050	6010	2	1	11/10/97	11/11/97	57			
Beryllium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	W	
Cadmium	EPA 3050	6010	2	1	11/10/97	11/11/97	2	U	W	
Chromium	EPA 3050	6010	4	1	11/10/97	11/11/97	13		J	Q, E
Cobalt	EPA 3050	6010	4	1	11/10/97	11/11/97	4	U	W	
Copper	EPA 3050	6010	4	1	11/10/97	11/11/97	13			
Lead	EPA 3050	6010	9	1	11/10/97	11/11/97	14			
Mercury	METHOD	7471	0.4	1	11/10/97	11/11/97	0.4	U	W	
Molybdenum	EPA 3050	6010	18	1	11/10/97	11/11/97	18	U	W	
Nickel	EPA 3050	6010	9	1	11/10/97	11/11/97	9	U	W	
Selenium	EPA 3050	7740	9	1	11/10/97	11/11/97	9	U	W	
Silver	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Thallium	EPA 3050	7841	9	1	11/10/97	11/11/97	9	U	W	
Vanadium	EPA 3050	6010	4	1	11/10/97	11/11/97	15			
Zinc	EPA 3050	6010	2	1	11/10/97	11/11/97	56		J	A

DO NOT VALIDATE
 LEVEL V

11/21/99

Approved By: 
 1S44/021397p

Date: 9/17/98

5020-R

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Sludge

Service Request: L9703698
Date Collected: 10/27/97
Date Received: 10/27/97

Metals

Sample Name: RF702
Lab Code: L9703698-019
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Per Qual	Lab Col
Aluminum	EPA 3050	6010	18	1	11/10/97	11/11/97	5200			
Boron	EPA 3050	6010	18	1	11/10/97	11/11/97	18	U	u	

ORDER VALIDATED

LEVEL V

Revision #1
for 1/21/99

Approved By: 

1S44/021397p

Date: 9/17/98

5021-
R

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF733
 Lab Code: L9703698-001
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u J	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	69			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	13		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	8			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	11			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	9		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	26			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	99		J	A

CODEN VALIDATED

LEVEL V

Approved By: _____
 1544/0213/97

Date: 12/6/97

5003

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF734
 Lab Code: L9703698-002
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u	J Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	88			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	15		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	6			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	8			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	11			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	10		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	33			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	52		J	A

OGDEN VALIDATED

LEVEL V

Approved By: J. Paul
 1544/021397p

Date: 12/6/97

5004

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF735
 Lab Code: L9703698-003
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Aug Code
Antimony	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	U	J Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	U	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	57			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	U	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	U	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	12		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	6			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	8			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	7			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	U	
Molybdenum	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	U	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	10		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	U	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	U	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	U	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	27			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	46		J	A

OGDEN VALIDATED

LEVEL V

5005

Approved By:
 1544/021397p

Date: 12/6/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/30/97
 Date Received: 10/30/97

Metals

Sample Name: RF736
 Lab Code: L9703698-013
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u J	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	77			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	16		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	11			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	22			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	11		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	29			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	72		J	A

OGDEN VALIDATED

LEVEL V

5015

Approved By: _____
 1544021397p

Date: 12/6/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/30/97
 Date Received: 10/30/97

Metals

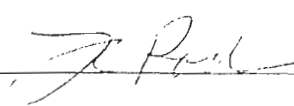
Sample Name: RF738
 Lab Code: L9703698-014
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qua Cal
Antimony	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u J	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	90			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	13		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	10			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	16			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	11		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	4			
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	27			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	57		J	A

OGDEN VALIDATED

LEVEL V

Approved By: 
 1544/021397p

Date: 12/6/97

5016

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/30/97
 Date Received: 10/30/97

Metals

Sample Name: RF739
 Lab Code: L9703698-015
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	uJ	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	36			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	9		J	Q,E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	9			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	19			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	7		J	Q,E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	15			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	46		J	A

CODEN VALIDATED

LEVEL V

Approved By:
 1544/021397p

Date: 12/6/97

5017

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/30/97
 Date Received: 10/30/97

Metals

Sample Name: RF740
 Lab Code: L9703698-016
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u J	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	88			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.6			
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	23		J	Q,E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	7			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	9			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	10			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	16		J	Q,E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	37			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	51		J	A

OGDEN VALIDATED

LEVEL V

Approved By: _____
 15447021397p

Date: 12/6/97

5018

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/30/97
 Date Received: 10/30/97

Metals

Sample Name: RF741
 Lab Code: L9703698-017
 Test Notes:

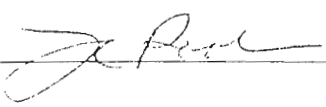
Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	uJ	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	44			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	3			
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	55		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	4			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	71			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	180			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	10		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	17			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	220		J	A

ODGEN VALIDATED

LEVEL V

5019

Approved By: 
 15-01-021397p

Date: 12/6/97



550 South Wadsworth Blvd. Suite 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: EPA Method 8015M

No. of Samples: 5

Date Reviewed: 12/16/98

Reviewer: M. Pokorny

Reference: *USEPA Contract Laboratory Program National Functional Guidelines For Organic Data Review (Feb. 1994); Columbia Analytical Services, SOP Number: SOH-DIES, Revision 1.2, 12/18/97*

SDG: L9704318

Samples Reviewed: RS573, RS577, RS578, RS581, RS594

Matrix: Soil

EPA Level V-Total Petroleum Hydrocarbons Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	According to the case narrative and COCs, samples were received chilled and intact. COC seals were not present. Actual cooler temperatures were listed on the COCs as 9 C and 11 C.	No qualifications were required. The samples were collected by Ogden personnel, placed in coolers containing ice, and hand delivered to the mobile Columbia laboratory. No custody seals were present on the coolers, but because they were transported directly to the laboratory by field personnel, this was acceptable.
2. <u>Method Blanks</u>	One method blank was analyzed with this SDG. No target compounds were detected in the method blank.	No qualifications were required.
3. <u>LCS/BS</u>	One blank spike was analyzed with the samples in this SDG. The recovery of the spiked compounds were within the QC limits of 41%-136%.	No qualifications were required.
4. <u>Surrogates</u>	According to the laboratory surrogate	All nondetects were qualified as

	Problems	Qualifications
	<p>report, the sample surrogate recoveries were within the QC limits of 50%-140% .</p> <p>However, it was determined during the Level IV data validation of another TFH data package that some of the laboratory surrogate results could not be reproduced from the raw data. This SDG was determined to be one of the data packages from which the surrogate recoveries could not be verified.</p> <p>On January 15, 1999, the laboratory resubmitted the surrogate summary report and reported in the attached narrative that the surrogate recoveries had been recalculated.</p>	<p>estimated nondetects, "UJ," and all detects were qualified as estimated, "J." No other qualifications were required.</p> <p>Since the laboratory did not provide the raw data for the revised surrogate summary, the qualification of the data did not change as verification was not possible.</p>
<p>5. <u>MS/MSDs</u></p> <p>RF494 (L9704312)</p>	<p>The recoveries of the spiked compounds were within the QC limits of 41%-136% in both the MS and MSD.</p>	<p>No qualifications were required.</p>
<p>6. <u>Field QC Samples</u></p> <p>ER: RS610 (L9704311)</p> <p>FB: RS682 (9800210)</p> <p>Field Duplicates: none</p>	<p>No target compounds were detected in the field blank or in the equipment rinsate.</p>	<p>No qualifications were required.</p>
<p>7. <u>Other</u></p>	<p>During a Level IV validation of another TFH package, it was noted that sample quantitation was not acceptable for samples analyzed at the mobile Columbia Analytical Services Laboratory. The samples of this SDG were analyzed at the mobile laboratory.</p>	<p>All nondetects were qualified as estimated nondetects, "UJ," and all detects were qualified as estimated, "J." No other qualifications were required.</p>
<p><u>Comments</u></p>	<p>None</p>	<p>None</p>

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil
 Batch Number: GC12121797S

Service Request: L9704318
 Date Collected: 12/16/97
 Date Received: 12/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS573
 Lab Code: L9704318-001
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	12/17/97	12/18/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	12/17/97	12/18/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	12/17/97	12/18/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	12/17/97	12/18/97	12	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

LEVEL V

Approved By: Eyde Schmitt Date: 3/10/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil
 Batch Number: GC12121797S

Service Request: L9704318
 Date Collected: 12/16/97
 Date Received: 12/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS577
 Lab Code: L9704318-003
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	18	1	12/17/97	12/18/97	18	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	18	1	12/17/97	12/18/97	18	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	18	1	12/17/97	12/18/97	18	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	18	1	12/17/97	12/18/97	18	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

LEVEL V

Approved By: Eyde Schwartz Date: 3/10/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC12121797S

Service Request: L9704318
Date Collected: 12/16/97
Date Received: 12/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS578
Lab Code: L9704318-004
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	12/17/97	12/18/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	12/17/97	12/18/97	12	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	12/17/97	12/18/97	29		J	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	12/17/97	12/18/97	12	U	UJ	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

LEVEL V

Approved By: Eugene Schwartz

Date: 3/10/98

1S22/020597p

04318SO11JC1 - Sample (3/3/10/98)

7004
Page No.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Sludge
Batch Number: GC12121797S

Service Request: L9704318
Date Collected: 12/16/97
Date Received: 12/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS581
Lab Code: L9704318-007
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	14	1	12/17/97	12/18/97	14	U	U5	S, *7
C11 - C14 KRO	EPA 3550M	8015M	14	1	12/17/97	12/18/97	14	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	14	1	12/17/97	12/18/97	14	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	14	1	12/17/97	12/18/97	14	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

LEVEL V

Approved By: Eyde Schwartz

Date: 3/10/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil
 Batch Number: GC12121797S

Service Request: L9704318
 Date Collected: 12/17/97
 Date Received: 12/17/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS594
 Lab Code: L9704318-019
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	12/17/97	12/18/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	12/17/97	12/18/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	12/17/97	12/18/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	12/17/97	12/18/97	11	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

LEVEL V

Approved By:

Eyde Schwartz

Date:

3/10/98



550 South Wadsworth Blvd. Suite 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: EPA Method 8015M

No. of Samples: 5

Date Reviewed: 12/02/98

Reviewer: T. Perrin

Reference: *USEPA Contract Laboratory Program National Functional Guidelines For Organic Data Review (Feb. 1994); Columbia Analytical Services, SOP Number: SOH-DIES, Revision 1.2, 12/18/97*

SDG: L9800209

Samples Reviewed: RS668, RS669, RS670, RS671DL and RS678.

Matrix: Soil

EPA Level V-Total Petroleum Hydrocarbons Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	According to the COCs, all samples were received at 7 °C and intact. COC seals were not present. All COCs were signed by laboratory and field personnel.	No qualifications were required since the samples of this SDG were transported, in ice-filled coolers, directly from the field to the laboratory by field personnel.
2. <u>Method Blanks</u>	One method blank (SBLK98012801) was analyzed with this SDG. No target compounds were detected in the method blanks.	No qualifications were required.
3. <u>LCS/BS</u>	One blank spike (SLCS98012801) was analyzed with the samples in this SDG. The recovery of the spiked diesel was within the data validation QC limits of 41%-136%. (Although the LCS summary form quotes laboratory QC limits of 50%-140%, limits of 41%-136% were quoted on the LCS summary forms earlier in the project and are quoted in the laboratory SOP.)	No qualifications were required.
4. <u>Surrogates</u>	All surrogate recoveries were within the	Diesel and lubricating oil range

	Problems	Qualifications
	QC limits of 50%-140% except for the recovery of p-terphenyl in sample RS671DL, which was above QC limits.	organics were qualified "J" in sample RS671DL. Analyses were performed after December 1997; therefore, surrogate information was archived by the laboratory and no other qualifications were required.
5. <u>MS/MSDs</u> RS164 (SDG: L9800225)	MS/MSD analyses were performed on sample RS164. The recoveries of the spiked diesel were within the data validation QC limits of 41%-136%. (Although the MS/MSD summary form quotes laboratory QC limits of 50%-140%, limits of 41%-136% were quoted on the MS/MSD summary forms earlier in the project and are quoted in the laboratory SOP.) The RPD was 10%, which was within the laboratory limits of 0%-40% for soils.	No qualifications were required.
6. <u>Field QC Samples</u> ER: RS697 (SDG: L9800210) FB: RS682 (SDG: L9800210) Field Duplicates: None	Equipment rinsate RS697 was free of target compound detects. Field blank RS682 was free of target compound detects.	No qualifications were required. No qualifications were required.
7. <u>Other</u>	<p>As a result of the discrepancies detailed in the following paragraphs, the data were reprocessed and Form Is were resubmitted for those samples that had detects. The revised Form Is were utilized for data validation but, at Level V validation, the reprocessed raw data were not reviewed. The resubmitted data was received from the laboratory on January 15, 1999.</p> <p>The diesel standard range used for quantitation did not correspond to the C14-C20 range specified by Ogden. In addition, the ranges used by the laboratory were inconsistent between the quantitation methods.</p>	All nondetects were qualified "UJ" and all detects were qualified "J."

	Problems	Qualifications
	<p>The raw data indicated that the sample ranges integrated did not correspond to the Ogden specified carbon ranges. In addition, the ranges used by the laboratory were inconsistent between the quantitation methods.</p> <p>The samples and standards were integrated in a different manner than the standards. Also, the integration methods were not always consistent from sample to sample and from standard to standard.</p> <p>The laboratory did not correctly adjust for the baseline rise. Some sample and standard areas include areas attributable to the instrument baseline rise which would over-estimate the total area. In other cases, the laboratory over adjusted for the baseline, which eliminated the area attributable to the unresolved mass of the hydrocarbons, underestimating the total area.</p>	
<u>Comments</u>	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06012898S

Service Request: L9800209
Date Collected: 1/27/98
Date Received: 1/27/98

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS668
Lab Code: L9800209-008
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
C8 - C11 GRO	EPA 3550M	8015M	13	1	1/28/98	1/29/98	13	U	UJ	*7
C11 - C14 KRO	EPA 3550M	8015M	13	1	1/28/98	1/29/98	13	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	13	1	1/28/98	1/29/98	13	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	13	1	1/28/98	1/29/98	13	U	↓	↓

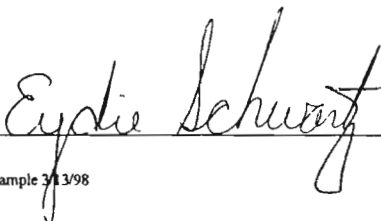
OGDEN VALIDATED**LEVEL V****LEVEL V**

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

REV 1

1.26.99
WJ

Approved By:



Date:

3/13/98

1S22/020597p

00209SOH.SC1 - Sample 3/13/98

5002

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil
 Batch Number: GC06012898S

Service Request: L9800209
 Date Collected: 1/27/98
 Date Received: 1/27/98

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS669
 Lab Code: L9800209-009
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Qual	Qual Cond
C8 - C11 GRO	EPA 3550M	8015M	12	1	1/28/98	1/29/98	12	U	UJ	*7
C11 - C14 KRO	EPA 3550M	8015M	12	1	1/28/98	1/29/98	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	1/28/98	1/29/98	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	1/28/98	1/29/98	12	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

REV 1
 1-26-99
 nup

Approved By:

Eydie Schantz

Date:

3/13/98

1S22/020597p

00209SOH.SCI - Sample (2) 3/13/98

5003

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06012898S

Service Request: L9800209
Date Collected: 1/27/98
Date Received: 1/27/98

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS670
Lab Code: L9800209-010
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result	Rev	Qual
								Notes	Qual	Code
C8 - C11 GRO	EPA 3550M	8015M	11	1	1/28/98	1/29/98	11	U	UJ	*7
C11 - C14 KRO	EPA 3550M	8015M	11	1	1/28/98	1/29/98	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	1/28/98	1/29/98	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	1/28/98	1/29/98	11	U	↓	↓

OGDEN VALIDATED**LEVEL V**

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

REV 1

1-26-99

MAP

Approved By: Eydie SchwartzDate: 3/13/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06012898S

Service Request: L9800209
Date Collected: 1/27/98
Date Received: 1/27/98

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS671DL
Lab Code: L9800209-011
Test Notes: X /C2A

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
C8 - C11 GRO	EPA 3550M	8015M	109	10	1/28/98	1/31/98	109	U	UJ	*7
C11 - C14 KRO	EPA 3550M	8015M	109	10	1/28/98	1/31/98	109	U	UJ	
C14 - C20 DRO	EPA 3550M	8015M	109	10	1/28/98	1/31/98	1100		J	S
C20 - C30 LORO	EPA 3550M	8015M	109	10	1/28/98	1/31/98	8300		J	S

OGDEN VALIDATED**LEVEL V**

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

C2A PQL is elevated because of matrix interferences and because the sample required diluting.

REV 1

1-26-99
MP

Approved By: _____

Date: _____

9/14/98

Analytical Report

Service Request: L9800209
Date Collected: 1/27/98
Date Received: 1/27/98

Units: MG/KG
Basis: Dry

QGDEN VALIDATED

12EV

1.26.99

LEVEL V

GRO	Gasoline Range Organics
KRO	Kerosene Range Organics
DRO	Diesel Range Organics
LRO	Lubricating Oil Range Organics
X	Quantified with diesel fuel

John

Date: 9/14/98

5006R
Page No

**DATA ASSESSMENT FORM**

Project Title: Rocketdyne SSFL RFI
Project Manager: D. Hambrick
Analysis/Method: Aromatic and Halogenated Volatiles by GC/EPA Method 8021B
QC Level: V¹
SDG: L9902750
Matrix: Soil
No. of Samples: 3
No. of Reanalyses/Dilutions: 0
Date Reviewed: April 17, 2001
Reviewer: H. Chang
Reference: National Functional Guidelines for Organic Data Review (2/94)
Samples Reviewed: RS302, RS304, and RS305

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	According to the COCs, there were no broken sample containers and the COCs match the samples. All samples were received within 4°C ± 2°C. All samples were analyzed within 14 days of sample collection.	No qualifications were required.
3. <u>Method Blanks</u>	Three soil method blanks, two on a primary column and one on a confirmation column, were analyzed in this SDG. No target analyte detects were reported in any of the method blanks.	No qualifications were required.
4. <u>LCS/BS</u>	Two soil LCSs were analyzed in this SDG. All%Rs were within the laboratory QC limits.	No qualifications were required.
5. <u>Surrogates</u>	The surrogate recoveries for all samples were within the laboratory QC limits of 60-135% for 4-bromochlorobenzene and 61-150% for fluorobenzene.	No qualifications were required.
6. <u>MS/MSDs</u>	No MS/MSD analyses were performed on the samples in this SDG. No evaluation was made on this basis.	No qualifications were required.

	Findings	Qualifications
<p>7. <u>Field QC Samples</u></p> <p>ER: RS300 (SDG L9902687) TB: RS308 (SDG L9902687) FB: None FD: RS304/RS305</p>	<p>No associated field blank was identified for the samples this SDG. Equipment rinsate, RS300, had detects for chloroform and bromodichloromethane; however, they were not present in the site samples. There were no detects reported in trip blank RS308.</p> <p>Field duplicate pair RS304 and RS305 were in agreement with no reported detects in either samples.</p>	No qualifications were required.
<p>8. <u>Other</u></p>	<p>The laboratory performed confirmation analysis for sample RS302. The laboratory reported the confirmation analysis results on a separate Form I. The Form I for the confirmation analysis was used for validation since the concentration of the reported detect was lower in the confirmation analysis. Also, the primary column analysis was done at 2× dilution and confirmation analysis was done without any dilution.</p>	No qualifications were required.
<u>Comments</u>	None	None

¹ Level V validation consists of cursory review of the summary forms only. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9902750
 Date Collected: 6/18/99
 Date Received: 6/18/99

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RS302
 Lab Code: L9902750-001
 Test Notes: Confirmation

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev. Qual	Qual. Code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8260B	12	1	NA	6/24/99	12	U	u	
Chloromethane	EPA 5030	8260B	12	1	NA	6/24/99	12	U		
Vinyl Chloride	EPA 5030	8260B	12	1	NA	6/24/99	12	U		
Bromomethane	EPA 5030	8260B	12	1	NA	6/24/99	12	U		
Chloroethane	EPA 5030	8260B	12	1	NA	6/24/99	12	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
1,1-Dichloroethene	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
Methylene Chloride	EPA 5030	8260B	24	1	NA	6/24/99	24	U		
trans-1,2-Dichloroethene	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
cis-1,2-Dichloroethene	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
1,1-Dichloroethane	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
Chloroform	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
Carbon Tetrachloride	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
Benzene	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
1,2-Dichloroethane	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
Trichloroethene (TCE)	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
1,2-Dichloropropane	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
Bromodichloromethane	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8260B	60	1	NA	6/24/99	60	U		
Toluene	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
trans-1,3-Dichloropropene	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
cis-1,3-Dichloropropene	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
1,1,2-Trichloroethane	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
Tetrachloroethene (PCE)	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8260B	24	1	NA	6/24/99	24	U		
Chlorobenzene	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
Ethylbenzene	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
m,p-Xylenes	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
o-Xylene	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
Bromoform	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8260B	6	1	NA	6/24/99	6	U		
1,3-Dichlorobenzene	EPA 5030	8260B	12	1	NA	6/24/99	12	U		
1,4-Dichlorobenzene	EPA 5030	8260B	12	1	NA	6/24/99	12	U		
1,2-Dichlorobenzene	EPA 5030	8260B	12	1	NA	6/24/99	12	U		
Chlorotrifluoroethene	EPA 5030	8260B	24	1	NA	6/24/99	24	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8260B	24	1	NA	6/24/99	24	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8260B	24	1	NA	6/24/99	24	U		
2-Butanone (MEK)	EPA 5030	8260B	60	1	NA	6/24/99	60	U		
Acetone	EPA 5030	8260B	60	1	NA	6/24/99	110	U		
1,2,4-Trimethylbenzene	EPA 5030	8260B	24	1	NA	6/24/99	24	U	u	
1,3,5-Trimethylbenzene	EPA 5030	8260B	24	1	NA	6/24/99	24	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8260B	24	1	NA	6/24/99	24	U		

Approved By
 1544/021397p

Date: 7/19/99

OGDEN VALIDATED

LEVEL V

5011

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

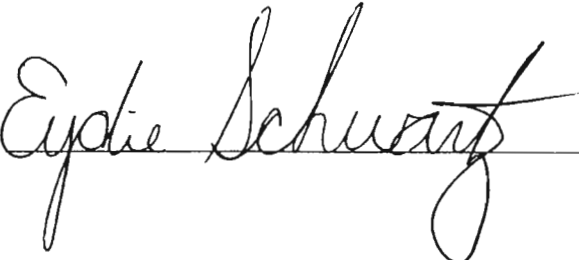
Service Request: L9902750
Date Collected: 6/18/99
Date Received: 6/18/99

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RS304
Lab Code: L9902750-003
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual	Qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021B	12	1	NA	6/19/99	12	U	u		
Chloromethane	EPA 5030	8021B	12	1	NA	6/19/99	12	U			
Vinyl Chloride	EPA 5030	8021B	12	1	NA	6/19/99	12	U			
Bromomethane	EPA 5030	8021B	12	1	NA	6/19/99	12	U			
Chloroethane	EPA 5030	8021B	12	1	NA	6/19/99	12	U			
Trichlorofluoromethane (CFC 11)	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
1,1-Dichloroethene	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
Methylene Chloride	EPA 5030	8021B	24	1	NA	6/19/99	24	U			
trans-1,2-Dichloroethene	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
cis-1,2-Dichloroethene	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
1,1-Dichloroethane	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
Chloroform	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
1,1,1-Trichloroethane (TCA)	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
Carbon Tetrachloride	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
Benzene	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
1,2-Dichloroethane	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
Trichloroethene (TCE)	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
1,2-Dichloropropane	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
Bromodichloromethane	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
2-Chloroethyl Vinyl Ether	EPA 5030	8021B	60	1	NA	6/19/99	60	U			
Toluene	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
trans-1,3-Dichloropropene	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
cis-1,3-Dichloropropene	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
1,1,2-Trichloroethane	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
Tetrachloroethene (PCE)	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021B	24	1	NA	6/19/99	24	U			
Chlorobenzene	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
Ethylbenzene	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
m,p-Xylenes	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
o-Xylene	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
Bromoform	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
1,1,2,2-Tetrachloroethane	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
1,3-Dichlorobenzene	EPA 5030	8021B	12	1	NA	6/19/99	12	U			
1,4-Dichlorobenzene	EPA 5030	8021B	12	1	NA	6/19/99	12	U			
1,2-Dichlorobenzene	EPA 5030	8021B	12	1	NA	6/19/99	12	U			
Chlorotrifluoroethene	EPA 5030	8021B	24	1	NA	6/19/99	24	U			
1,1,1,2-Tetrachloroethane	EPA 5030	8021B	24	1	NA	6/19/99	24	U			
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021B	24	1	NA	6/19/99	24	U			
2-Butanone (MEK)	EPA 5030	8021B	60	1	NA	6/19/99	60	U			
Acetone	EPA 5030	8021B	60	1	NA	6/19/99	60	U			
1,2,4-Trimethylbenzene	EPA 5030	8021B	24	1	NA	6/19/99	24	U			
1,3,5-Trimethylbenzene	EPA 5030	8021B	24	1	NA	6/19/99	24	U			
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021B	24	1	NA	6/19/99	24	U			

Approved By: 
1544/021397p

Date: 8/2/99

5003

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

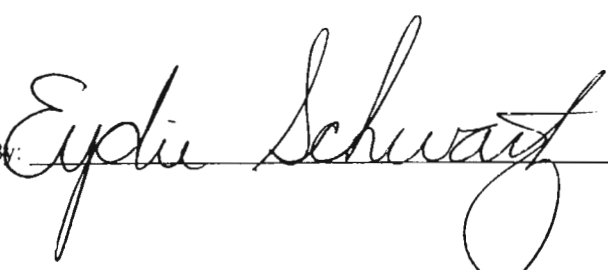
Service Request: L9902750
Date Collected: 6/18/99
Date Received: 6/18/99

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RS305
Lab Code: L9902750-004
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual	Qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021B	12	1	NA	6/19/99	12	U	u		
Chloromethane	EPA 5030	8021B	12	1	NA	6/19/99	12	U			
Vinyl Chloride	EPA 5030	8021B	12	1	NA	6/19/99	12	U			
Bromomethane	EPA 5030	8021B	12	1	NA	6/19/99	12	U			
Chloroethane	EPA 5030	8021B	12	1	NA	6/19/99	12	U			
Trichlorofluoromethane (CFC 11)	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
1,1-Dichloroethene	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
Methylene Chloride	EPA 5030	8021B	24	1	NA	6/19/99	24	U			
trans-1,2-Dichloroethene	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
cis-1,2-Dichloroethene	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
1,1-Dichloroethane	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
Chloroform	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
1,1,1-Trichloroethane (TCA)	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
Carbon Tetrachloride	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
Benzene	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
1,2-Dichloroethane	EPA 5030	8021B	6	1	NA	5/19/99	6	U			
Trichloroethene (TCE)	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
1,2-Dichloropropane	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
Bromodichloromethane	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
2-Chloroethyl Vinyl Ether	EPA 5030	8021B	60	1	NA	6/19/99	60	U			
Toluene	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
trans-1,3-Dichloropropene	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
cis-1,3-Dichloropropene	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
1,1,2-Trichloroethane	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
Tetrachloroethene (PCE)	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021B	24	1	NA	6/19/99	24	U			
Chlorobenzene	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
Ethylbenzene	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
m,p-Xylenes	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
o-Xylene	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
Bromoform	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
1,1,2,2-Tetrachloroethane	EPA 5030	8021B	6	1	NA	6/19/99	6	U			
1,3-Dichlorobenzene	EPA 5030	8021B	12	1	NA	6/19/99	12	U			
1,4-Dichlorobenzene	EPA 5030	8021B	12	1	NA	6/19/99	12	U			
1,2-Dichlorobenzene	EPA 5030	8021B	12	1	NA	6/19/99	12	U			
Chlorotrifluoroethene	EPA 5030	8021B	24	1	NA	6/19/99	24	U			
1,1,1,2-Tetrachloroethane	EPA 5030	8021B	24	1	NA	6/19/99	24	U			
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021B	24	1	NA	6/19/99	24	U			
2-Butanone (MEK)	EPA 5030	8021B	60	1	NA	6/19/99	60	U			
Acetone	EPA 5030	8021B	60	1	NA	6/19/99	60	U			
1,2,4-Trimethylbenzene	EPA 5030	8021B	24	1	NA	6/19/99	24	U			
1,3,5-Trimethylbenzene	EPA 5030	8021B	24	1	NA	6/19/99	24	U			
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021B	24	1	NA	6/19/99	24	U			

Approved By: 
1544/021397p

Date: 8/2/99

5004



DATA ASSESSMENT FORM

Project Title: Rocketdyne
Project Manager: D. Hambrick
Analysis/Method: Dioxins and Furans/EPA Method 8290
QC Level: V¹
SDG: 19592
Matrix: Soil
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Date Reviewed: September 19, 2002
Reviewer: L. Calvin
References: National Functional Guidelines for Organic Data Review (2/94) and SW-846 Method 8290 (9/94).
Samples Reviewed: MC032

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>Two sets of COCs, one from the field to Centrum Analytical Laboratories and the other from Centrum to Alta Analytical Laboratory, were available for review. Both sets had appropriate relinquish and receipt signatures. The sample was received at both laboratories in good condition; however, cooler temperatures exceeded the limits of 4°C \pm 2°C upon receipt at Centrum. The cooler temperature upon receipt at Alta was within limits.</p> <p>The sample was extracted within 30 days of collection and analyzed within 45 days of extraction.</p>	Due to the nonvolatile nature of the Method 8290 target analytes, no qualifications were required for the elevated cooler temperature.
4. <u>Method Blanks</u>	One soil method blank was extracted and analyzed with the sample in this SDG. There were no reported target compound detects in the method blank.	No qualifications were required.

	Findings	Qualifications
5. <u>LCS/BS</u>	One soil OPR was extracted and analyzed with the sample in this SDG. All percent recoveries were within the laboratory QC limits of 70-130.	No qualifications were required.
6. <u>MS/MSDs</u>	No MS/MSD analyses were performed in this SDG. Evaluation of method accuracy was based on the LCS results.	No qualifications were required.
7. <u>Field QC Samples</u> ER: None FB: None FD: None	No field blanks or equipment rinsates were identified for the samples in this SDG. No evaluation of possible field contamination was performed.	No qualifications were required.
9. <u>Internal Standards</u>	All internal standard recoveries were within the method QC limits of 40-135%.	No qualifications were required.
10. <u>Other</u>	<p>Any individual congener results reported as EMPCs were considered nondetects.</p> <p>Some total results which included individual congener results were also reported as EMPCs.</p> <p>Results reported with the laboratory qualifier "A," were concentrations below the lower calibration level, and the laboratory qualifier "D" indicated possible diphenylether interference.</p> <p>The sample results were reported on a dry-weight basis.</p>	<p>The sample result for 2,3,7,8-TCDD was qualified as an estimated nondetect, "UJ."</p> <p>Any reported totals also including individual congener concentrations were qualified as estimated, "J."</p> <p>Any results with the "A" and/or "D" laboratory qualifiers were qualified as estimated, "J."</p>
<u>Comments</u>	The laboratory made modifications to the method. The laboratory used 16 labeled compounds as the internal standards instead of the nine compounds specified in the method.	No qualifications were required.

¹ Level V validation consists of cursory review of the summary forms only. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed.

Sample ID: MC032

EPA METHOD 8290

Client Data				Sample Data	
Name:	Centrum Analytical Laboratories Inc			Matrix:	Soil
Project:	19592			Sample Size:	10.57 g
Date Collected:	19-Nov-01			%Solids:	95.5
Analyte	Conc. (pg/g)	DL ^a	EMPC ^b	MDL ^c	Qualifiers
2,3,7,8-TCDD	ND	0.125	0.0889		
1,2,3,7,8-PeCDD	0.812		0.262		A
1,2,3,4,7,8-HxCDD	3.01		0.820		
1,2,3,6,7,8-HxCDD	6.21		0.818		
1,2,3,7,8,9-HxCDD	3.73		0.528		
1,2,3,4,6,7,8-HpCDD	206		0.347		
OCDD	1440		2.03		
2,3,7,8-TCDF	ND	0.663	0.0940		
1,2,3,7,8-PeCDF	0.751		0.294		A, D
2,3,4,7,8-PeCDF	2.67		0.245		
1,2,3,4,7,8-HxCDF	5.59		0.270		
1,2,3,6,7,8-HxCDF	2.79		0.201		D
2,3,4,6,7,8-HxCDF	1.42		0.273		A
1,2,3,7,8,9-HxCDF	0.814		0.297		
1,2,3,4,6,7,8-HpCDF	24.5		0.232		
1,2,3,4,7,8,9-HpCDF	2.66		0.295		
OCDF	90.8		0.512		
Totals					
Total TCDD	1.74	1.87			
Total PeCDD	8.80	9.89			
Total HxCDD	82.9				
Total HpCDD	599				
Total TCDF	17.4				D
Total PeCDF	22.9				D
Total HxCDF	47.7				D
Total HpCDF	88.6				D

see qual
level below

Laboratory Data			
Lab Sample:	21362-001	Date Received:	28-Nov-01
QC Batch No.:	2446	Date Extracted:	30-Nov-01
Date Analyzed DB-5:	4-Dec-01	Date Analyzed DB-225:	NA
Labeled Standard	%R	LCI-UCL ^d	Qualifiers
1S 13C-2,3,7,8-TCDD	83.4	40 - 135	
13C-1,2,3,7,8-PeCDD	81.7	40 - 135	
13C-1,2,3,4,7,8-HxCDD	90.8	40 - 135	
13C-1,2,3,6,7,8-HxCDD	94.6	40 - 135	
13C-1,2,3,4,6,7,8-HpCDD	86.4	40 - 135	
13C-OCDD	79.9	40 - 135	
13C-2,3,7,8-TCDF	86.9	40 - 135	
13C-1,2,3,7,8-PeCDF	79.7	40 - 135	
13C-2,3,4,7,8-PeCDF	76.8	40 - 135	
13C-1,2,3,4,7,8-HxCDF	86.7	40 - 135	
13C-1,2,3,6,7,8-HxCDF	88.1	40 - 135	
13C-2,3,4,6,7,8-HxCDF	88.8	40 - 135	
13C-1,2,3,7,8,9-HxCDF	84.3	40 - 135	
13C-1,2,3,4,6,7,8-HpCDF	79.1	40 - 135	
13C-1,2,3,4,7,8,9-HpCDF	74.9	40 - 135	
13C-OCDF	68.2	40 - 135	
CRS 37Cl-2,3,7,8-TCDD	78.8	40 - 135	
TEQ Data ^e			
TEQ (Min-Max): 7.99 - 8.18			

a. Sample specific estimated detection limit.
b. Estimated maximum possible concentration.
c. Method detection limit.
d. Lower control limit - upper control limit.
e. Toxic Equivalent Quotient (TEQ) based on International Toxic Equivalent Factors (TEF).

Analyst: EW

Approved By:

Martha M. Maier

09-Dec-2001 11:16

AMEC VALIDATED

LEVEL V

+



ENVIRONMENTAL AND ENERGY SERVICES

550 South Wadsworth Blvd., Suite 500, Lakewood, CO 80226
303/935-6505, Fax 303/935-6575

DATA ASSESSMENT FORM

Project Title: Rocketdyne
Project Manager: D. Hambrick
Analysis/Method: Dioxins and Furans/EPA Method 8290
QC Level: V¹
SDG: 17392
Matrix: Soil
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Date Reviewed: April 26, 2001
Reviewer: H. Chang
References: National Functional Guidelines for Organic Data Review (2/94) and SW-846 Method 8290 (9/94).
Samples Reviewed: RZ776 and RZ781

Data Validation Findings

	Findings	Qualifications
I. <u>Sample Management</u>	<p>Two set of COCs, one from the field to Centrum Analytical Laboratories and the other from Centrum to Alta Analytical Laboratory, were available for review. Both sets had appropriate relinquish and receipt signatures. No cooler temperatures or sample receipt conditions were recorded at Centrum; however, the case narrative stated that the samples were received chilled and intact. The samples were received in good condition and at a cooler temperature of 6°C at Alta.</p> <p>All samples were extracted within 30 days of collection. No analysis date was available for review but the report was generated 6 days after extraction; therefore, it was concluded that the analysis was completed within the holding times 45 days.</p>	No qualifications were required.

	Findings	Qualifications
4. <u>Method Blanks</u>	One soil method blank was extracted and analyzed with the samples in this SDG. OCDD was detected in the blank at 1.2 pg/g. OCDD detects in the samples were greater than five times the amount in the blank.	No qualifications were required.
5. <u>LCS/BS</u>	One soil LCS was extracted and analyzed with the samples in this SDG. All percent recoveries were within the laboratory QC limits.	No qualifications were required.
6. <u>MS/MSDs</u>	No MS/MSD analyses were performed in this SDG. No evaluation was made on this basis.	No qualifications were required.
7. <u>Field QC Samples</u> ER: None FB: None FD: None	No field QC samples were identified for the samples in this SDG.	No qualifications were required.
9. <u>Internal Standards</u>	All internal standard recoveries were within the method QC limits of 40-135%.	No qualifications were required.
10. <u>Other</u>	All samples were reported on a dry-weight basis. Detects below the method calibration limit were noted with a laboratory qualifier of "A."	All detects with the laboratory qualifier of "A" were qualified as estimated "J."
<u>Comments</u>	The laboratory made modifications to the method. The laboratory used 16 labeled compounds as the internal standards instead of the nine compounds specified in the method.	None

¹ Level V validation consists of cursory review of the summary forms only. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed.



PCDD & PCDF
EPA METHOD 8290

Sample ID: RZ776

Lab ID: 9435-002

Project: Rocketdyne

OC Set: 1,164

Matrix: Soil

Date Received: 11/15/00

%Solids: 92.9

Sample Amount: 10.83 g

Date Extracted: 11/29/00

Units: pg/g

^a TEQ (Min-Max): 1.01 - 1.06

Compound	Conc.	DL ^b	EMPC ^c	MDL ^d	Qualifier	Rev Qual	Qual Code
2,3,7,8-TCDD	ND	0.0482		0.0889		u	
1,2,3,7,8-PeCDD	ND		0.213	0.262		u	
1,2,3,4,7,8-HxCDD	0.233			0.820	A	J	*10
1,2,3,6,7,8-HxCDD	0.716			0.818	A	J	*10
1,2,3,7,8,9-HxCDD	0.457			0.528	A	J	*10
1,2,3,4,6,7,8-HpCDD	7.97			0.347			
OCDD	103			2.03	B		
2,3,7,8-TCDF	0.498			0.0940	A	J	*10
1,2,3,7,8-PeCDF	0.501			0.294	A		
2,3,4,7,8-PeCDF	0.727			0.245	A		
1,2,3,4,7,8-HxCDF	1.12			0.270	A		
1,2,3,6,7,8-HxCDF	0.621			0.201	A		
2,3,4,6,7,8-HxCDF	0.442			0.273	A		
1,2,3,7,8,9-HxCDF	ND	0.0681		0.297		u	
1,2,3,4,6,7,8-HpCDF	2.31			0.232	A	J	*10
1,2,3,4,7,8,9-HpCDF	0.155			0.295	A		
OCDF	3.14			0.512	A		
Total TCDD	4.09						
Total PeCDD	4.55		4.76				
Total HxCDD	6.96						
Total HpCDD	17.1						
Total TCDF	12.3						
Total PeCDF	7.93						
Total HxCDF	5.72						
Total HpCDF	4.13						

OGDEN VALIDATED

Page 1 of 2

LEVEL V

Rev. 1
11/1/02
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PCDD & PCDF
EPA METHOD 8290

Sample ID: RZ781
Project: Rocketdyne
Matrix: Soil
Sample Amount: 10.74 g

Date Received: 11/15/00
Date Extracted: 11/29/00

Lab ID: 9435-001
OC Set: 1,164
%Solids: 93.9
Units: pg/g

^a TEQ (Min-Max): 3.70 - 3.70

Compound	Conc.	DL ^b	EMPC ^c	MDL ^d	Qualifier	Rev Qual	Qual Code
2,3,7,8-TCDD	0.239			0.0889	A	J	ND
1,2,3,7,8-PeCDD	0.863			0.262	A		
1,2,3,4,7,8-HxCDD	0.782			0.820	A		
1,2,3,6,7,8-HxCDD	1.89			0.818	A		
1,2,3,7,8,9-HxCDD	1.53			0.528	A		
1,2,3,4,6,7,8-HpCDD	21.5			0.347			
OCDD	105			2.03	B		
2,3,7,8-TCDF	1.44			0.0940			
1,2,3,7,8-PeCDF	1.50			0.294	A	J	ND
2,3,4,7,8-PeCDF	2.76			0.245			
1,2,3,4,7,8-HxCDF	2.26			0.270	A	J	ND
1,2,3,6,7,8-HxCDF	1.53			0.201	A		
2,3,4,6,7,8-HxCDF	1.43			0.273	A		
1,2,3,7,8,9-HxCDF	0.532			0.297	A		
1,2,3,4,6,7,8-HpCDF	5.35			0.232			
1,2,3,4,7,8,9-HpCDF	0.510			0.295	A	J	ND
OCDF	4.66			0.512	A	J	ND
Total TCDD	13.8						
Total PeCDD	14.1						
Total HxCDD	21.4						
Total HpCDD	44.3						
Total TCDF	58.0						
Total PeCDF	28.8						
Total HxCDF	14.7						
Total HpCDF	9.13						

OGDEN VALIDATED

LEVEL V



550 South Wadsworth Blvd., Suite 500
 Denver, CO 80226
 (303) 935-6505

RocketdyneAnalysis/Method: EPA Method 8260No. of Samples: 3Date Reviewed: December 30, 1998Reviewer: L. CalvinReference: *National Functional Guidelines For Organic Data Review (2/94)*SDG: 1Samples Reviewed: RC001, RC002, and RC003Matrix: Soil and water**EPA Level V-GC Volatiles Assessment Form**

	Problems	Qualifications
1. <u>Sample Management</u>	According to the case narrative and COCs, the samples were received chilled and intact, though actual cooler temperatures upon receipt were not recorded. COC seals were not present. Some crossouts on the COCs were missing initials and/or dates. All sample analyses were performed within 14 days of sample collection.	No custody seals were present on the coolers, but because they were transported directly to the laboratory by field personnel, this was acceptable. No qualifications were required.
3. <u>Method Blanks</u> 9710202147 9710212226	Two method blanks, one water and one soil, were analyzed with this SDG. No target analytes were reported in either method blank.	No qualifications were required.
4. <u>LCS/BS</u> Batch 8260W1085: LCS Batch 8260S1086: LCS/LCSD	One water LCS, and one soil LCS/LCSD were analyzed with the samples of this SDG. All percent recoveries were within the laboratory QC limits, and RPDs for the LCS/LCSD were within the laboratory QC limits as well.	No qualifications were required.
5. <u>Surrogates</u>	All sample surrogate recoveries were within laboratory QC limits of 80–130%.	No qualifications were required.

	Problems	Qualifications
6. MS/MSDs Batch 8260W1085	The MS/MSD analyses were performed on a different client's sample associated with the same QC batch. Percent recoveries and RPDs were all within the laboratory QC limits.	No qualifications were required.
7. Field QC Samples TB: RC002 ER: None FB: None FD: None	Sample RC002 was a trip blank associated only with site sample RC001. There were no target analytes reported in the trip blank. No further evaluation of site samples was made based on field QC.	No qualifications were required.
8. Other	None	None
Comments	None	None

EPA 8260 - Volatile Organics

Client: Ogden
 Project: Rocketdyne
 Job No.: 12273
 Matrix: Soil
 Analyst: TPW

Date Sampled: 10/15/97
 Date Received: 10/17/97
 Date Analyzed: 10/21/97
 Batch Number: 8260S1086

Sample Number Blank 12273-1
 Dilution Factor 1 1
 Date & Time Run 9710212226 9710212333

Sample ID:		Blank		RC001		rel qual	qual code
Compounds	DL	mg/Kg	Q	mg/Kg	Q		
1,1,1,2-Tetrachloroethane	0.001	ND	IC	ND	IC	u ↓	
1,1,1-Trichloroethane	0.001	ND	IC	ND	IC		
1,1,2,2-Tetrachloroethane	0.002	ND	IC	ND	IC		
1,1,2-Trichloroethane	0.003	ND	IC	ND	IC		
1,1-Dichloroethane	0.001	ND	IC	ND	IC		
1,1-Dichloroethene	0.005	ND	IC	ND	IC		
1,2-Dibromo-3-chloropropane	0.020	ND	IC	ND	IC		
1,1,2-Trichloro-1,2,2-trifluoroet	0.020	ND	IC	ND	IC		
1,2-Dichlorobenzene	0.001	ND	IC	ND	IC		
1,2-Dichloroethane	0.001	ND	IC	ND	IC		
1,3-Dichlorobenzene	0.002	ND	IC	ND	IC		
1,4-Dichlorobenzene	0.002	ND	IC	ND	IC		
2-Butanone	0.005	ND	IC	ND	IC		
2-Chloroethyl vinyl ether	0.020	ND	IC	ND	IC		
Acetone	0.050	ND	IC	ND	IC		
Benzene	0.001	ND	IC	ND	IC		
Bromodichloromethane	0.001	ND	IC	ND	IC		
Bromoform	0.005	ND	IC	ND	IC		
Bromomethane	0.005	ND	IC	ND	IC		
Carbon tetrachloride	0.001	ND	IC	ND	IC		
Chlorobenzene	0.001	ND	IC	ND	IC		
Chloroethane	0.005	ND	IC	ND	IC		
Chloroform	0.002	ND	IC	ND	IC		
Chloromethane	0.001	ND	IC	ND	IC		
Chlorotrifluoroethane	0.050	ND	IC	ND	IC		
Chlorotrifluoroethene	0.050	ND	IC	ND	IC		
Dichlorodifluoromethane	0.005	ND	IC	ND	IC		
Ethylbenzene	0.001	ND	IC	ND	IC		
Methylene chloride	0.010	ND	IC	ND	IC		
Tetrachloroethene	0.001	ND	IC	ND	IC		
Toluene	0.001	ND	IC	ND	IC		
Trichloroethene	0.001	ND	IC	ND	IC		
Trichlorofluoromethane	0.001	ND	IC	ND	IC		
Vinyl chloride	0.001	ND	IC	ND	IC		
cis-1,2-Dichloroethene	0.002	ND	IC	ND	IC		
trans-1,2-Dichloroethene	0.002	ND	IC	ND	IC		
trans-1,3-Dichloropropene	0.001	ND	IC	ND	IC		
1,2,4-Trimethylbenzene	0.001	ND	IC	ND	IC		
1,3,5-Trimethylbenzene	0.001	ND	IC	ND	IC		
m,p-Xylene	0.002	ND	IC	ND	IC		
o-Xylene	0.001	ND	IC	ND	IC		

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	Blank	RC001
Dibromofluoromethane	111	112
Toluene-d8	99	101
Bromofluorobenzene	99	99

OGDEN VALIDATED

LEVEL V

EPA 8260 - Volatile Organics

Client: Ogden
 Project: Rocketdyne
 Job No.: 12273
 Matrix: Water
 Analyst: TPW

Date Sampled: 10/15/97
 Date Received: 10/17/97
 Date Analyzed: 10/20/97
 Batch Number: 8260W1085

Sample Number Blank 12273-2
 Dilution Factor 1 1
 Date & Time Run 9710202147 9710210238

Sample ID:		Blank		RC002		rel qual	qual code
Compounds	DL	ug/L	Q	ug/L	Q		
1,1,1,2-Tetrachloroethane	1	ND	IC	ND	IC	u ↓	
1,1,1-Trichloroethane	1	ND	IC	ND	IC		
1,1,2,2-Tetrachloroethane	1	ND	IC	ND	IC		
1,1,2-Trichloroethane	1	ND	IC	ND	IC		
1,1-Dichloroethane	1	ND	IC	ND	IC		
1,1-Dichloroethene	1	ND	IC	ND	IC		
1,2-Dibromo-3-chloropropane	1	ND	IC	ND	IC		
1,1,2-Trichloro-1,2,2-trifluoroethane	1	ND	IC	ND	IC		
1,2-Dichlorobenzene	1	ND	IC	ND	IC		
1,2-Dichloroethane	1	ND	IC	ND	IC		
1,3-Dichlorobenzene	1	ND	IC	ND	IC		
1,4-Dichlorobenzene	1	ND	IC	ND	IC		
2-Butanone	10	ND	IC	ND	IC		
2-Chloroethyl vinyl ether	1	ND	IC	ND	IC		
Acetone	20	ND	IC	ND	IC		
Benzene	1	ND	IC	ND	IC		
Bromodichloromethane	1	ND	IC	ND	IC		
Bromoform	1	ND	IC	ND	IC		
Bromomethane	1	ND	IC	ND	IC		
Carbon tetrachloride	1	ND	IC	ND	IC		
Chlorobenzene	1	ND	IC	ND	IC		
Chloroethane	1	ND	IC	ND	IC		
Chloroform	1	ND	IC	ND	IC		
Chloromethane	1	ND	IC	ND	IC		
Chlorotrifluoroethane	1	ND	IC	ND	IC		
Chlorotrifluoroethene	1	ND	IC	ND	IC		
Dichlorodifluoromethane	1	ND	IC	ND	IC		
Ethylbenzene	1	ND	IC	ND	IC		
Methylene chloride	10	ND	IC	ND	IC		
Tetrachloroethene	1	ND	IC	ND	IC		
Toluene	1	ND	IC	ND	IC		
Trichloroethene	1	ND	IC	ND	IC		
Trichlorofluoromethane	1	ND	IC	ND	IC		
Vinyl chloride	1	ND	IC	ND	IC		
cis-1,2-Dichloroethene	1	ND	IC	ND	IC		
trans-1,2-Dichloroethene	1	ND	IC	ND	IC		
trans-1,3-Dichloropropene	1	ND	IC	ND	IC		
1,2,4-Trimethylbenzene	1	ND	IC	ND	IC		
1,3,5-Trimethylbenzene	1	ND	IC	ND	IC		
m,p-Xylene	1	ND	IC	ND	IC		
o-Xylene	1	ND	IC	ND	IC		

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	Blank	RC002
Dibromofluoromethane	109	106
Toluene-d8	100	102
Bromofluorobenzene	98	98

OGDEN VALIDATED

LEVEL V

EPA 8260 - Volatile Organics

Client: Ogden
 Project: Rocketdyne
 Job No.: 12272
 Matrix: Soil
 Analyst: TPW

Date Sampled: 10/15/97
 Date Received: 10/17/97
 Date Analyzed: 10/21/97
 Batch Number: 8260S1086

Sample Number Blank 12272-1
 Dilution Factor 1 1
 Date & Time Run 9710212220 9710212301

Sample ID:		Blank		RC003		Res	Qual
Compounds	DL	mg/Kg	Q	mg/Kg	Q	qual	code
1,1,1,2-Tetrachloroethane	0.001	ND	IC	ND	IC	u	
1,1,1-Trichloroethane	0.001	ND	IC	ND	IC		
1,1,2,2-Tetrachloroethane	0.002	ND	IC	ND	IC		
1,1,2-Trichloroethane	0.003	ND	IC	ND	IC		
1,1-Dichloroethane	0.001	ND	IC	ND	IC		
1,1-Dichloroethane	0.005	ND	IC	ND	IC		
1,2-Dibromo-3-chloropropane	0.020	ND	IC	ND	IC		
1,1,2-Trichloro-1,2,2-trifluoroeth	0.020	ND	IC	ND	IC		
1,2-Dichlorobenzene	0.001	ND	IC	ND	IC		
1,2-Dichloroethane	0.001	ND	IC	ND	IC		
1,3-Dichlorobenzene	0.002	ND	IC	ND	IC		
1,4-Dichlorobenzene	0.002	ND	IC	ND	IC		
2-Butanone	0.005	ND	IC	ND	IC		
2-Chloroethyl vinyl ether	0.020	ND	IC	ND	IC		
Acetone	0.050	ND	IC	ND	IC		
Benzene	0.001	ND	IC	ND	IC		
Bromodichloromethane	0.001	ND	IC	ND	IC		
Bromoform	0.005	ND	IC	ND	IC		
Bromomethane	0.005	ND	IC	ND	IC		
Carbon tetrachloride	0.001	ND	IC	ND	IC		
Chlorobenzene	0.001	ND	IC	ND	IC		
Chloroethane	0.005	ND	IC	ND	IC		
Chloroform	0.002	ND	IC	ND	IC		
Chloromethane	0.001	ND	IC	ND	IC		
Chlorotrifluoroethane	0.050	ND	IC	ND	IC		
Chlorotrifluoroethane	0.050	ND	IC	ND	IC		
Dichlorodifluoromethane	0.005	ND	IC	ND	IC		
Ethylbenzene	0.001	ND	IC	ND	IC		
Methylene chloride	0.010	ND	IC	ND	IC		
Tetrachloroethene	0.001	ND	IC	ND	IC		
Toluene	0.001	ND	IC	ND	IC		
Trichloroethene	0.001	ND	IC	ND	IC		
Trichlorofluoromethane	0.001	ND	IC	ND	IC		
Vinyl chloride	0.001	ND	IC	ND	IC		
cis-1,2-Dichloroethene	0.002	ND	IC	ND	IC		
trans-1,2-Dichloroethene	0.002	ND	IC	ND	IC		
trans-1,3-Dichloropropene	0.001	ND	IC	ND	IC		
1,2,4-Trimethylbenzene	0.001	ND	IC	ND	IC		
1,3,5-Trimethylbenzene	0.001	ND	IC	ND	IC		
m,p-Xylene	0.002	ND	IC	ND	IC		
o-Xylene	0.001	ND	IC	ND	IC		

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	Blank	RC003
Dibromofluoromethane	111	125
Toluene-d8	99	93
Bromofluorobenzene	99	82

OGDEN VALIDATED
LEVEL V



550 South Wadsworth Blvd. Suite 500
 Denver, CO 80226
 (303) 935-6505

RocketdyneAnalysis/Method: EPA Method 8015MNo. of Samples: 2Date Reviewed: 12/30/98Reviewer: T. PerrinReference: USEPA Contract Laboratory Program National Functional Guidelines For Organic Data Review (Feb. 1994)SDG: 1Samples Reviewed: RC001 and RC003Matrix: Soil**EPA Level V-Total Petroleum Hydrocarbons Assessment Form**

	Problems	Qualifications
1. Sample Management	According to the case narrative, both samples were received chilled and intact. No temperature of receipt was recorded. COC seals were not present. The COCs were signed by laboratory and field personnel.	No qualifications were required since the samples were described as chilled in the case narrative.
2. Method Blanks	One method blank (9710172238) was analyzed with this SDG. No target compounds were detected in the method blank.	No qualifications were required.
3. LCS/BS	One blank spike and blank spike duplicate were analyzed with the samples in this SDG. The recovery of the spiked diesel was within the laboratory QC limits of 70%-130% for both blank spikes. The RPD was acceptable at 1%.	No qualifications were required.
4. Surrogates	All surrogate recoveries were within the laboratory QC limits of 80%-130%. (Although there was a discrepancy between the QC limits shown on the	No qualifications were required.

	Problems	Qualifications
	results summary form versus the surrogate summary form, laboratory personnel confirmed that the QC limits of 80-130% were utilized. This discrepancy only occurred in this data package.)	
5. MS/MSDs	No MS/MSD were performed with this SDG.	No qualifications were required.
6. Field QC Samples ER: N/A FB: N/A Field Duplicates: None	There were no field blanks, equipment rinsates or field duplicates associated with these samples.	No qualifications were required.
7. Other	None	None
Comments	None	None

EPA m8015 - Carbon Ranges

Client: Ogden
 Project: Rocketdyne
 Job No.: 12273
 Matrix: Soil
 Analyst: GR

Date Sampled: 10/15/97
 Date Received: 10/17/97
 Date Extracted: 10/17/97
 Date Analyzed: 10/17/97
 Batch Number: 8015DS1187

Sample Number Blank 12273-1
 Dilution Factor 1 1
 Date & Time Run 9710172238 9710180244

Sample ID:		Blank		RC001		Rev Qual	Qual Code
Compounds	DL	mg/Kg	Q	mg/Kg	Q		
C08-C11 (Gasoline Range)	10	ND	<u>U</u>	ND	<u>U</u>	U ↓	
C11-C14 (Kerosene Range)	10	ND	<u>U</u>	ND	<u>U</u>		
C14-C20 (Diesel Range)	10	ND	<u>U</u>	ND	<u>U</u>		
C20-C30 (Lubricant Oil Range)	10	ND	<u>U</u>	ND	<u>U</u>		

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	Blank		RC001	
OTP	96	*	100	*

*Analysis Not Valid

OGDEN VALIDATED

LEVEL V

EPA m8015 - Carbon Ranges

Client: Ogden
Project: Rocketdyne
Job No.: 12272
Matrix: Soil
Analyst: GR

Date Sampled: 10/15/97
Date Received: 10/17/97
Date Extracted: 10/17/97
Date Analyzed: 10/17/97
Batch Number: 8015DS1187

Sample Number 12272-1
Dilution Factor 1 1
Date& Time Run 9710172238 9710180222

Sample ID:	Blank	RC003	Rev Qual	Qual Code	
Compounds	DL	mg/Kg Q	mg/Kg Q		
C08-C11 (Gasoline Range)	10	ND <u>U</u>	ND <u>U</u>	U	
C11-C14 (Kerosene Range)	10	ND <u>U</u>	ND <u>U</u>	↓	
C14-C20 (Diesel Range)	10	ND <u>U</u>	ND <u>U</u>		
C20-C30 (Lubricant Oil Range)	10	ND <u>U</u>	ND <u>U</u>		

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	Blank	RC003
OTP	100 *	96 *

*Analysis Not Validated

OGDEN VALIDATED

LEVEL V

OGDEN

ENVIRONMENTAL AND ENERGY SERVICES



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550 South Wadsworth Blvd. Ste. 500

Denver, CO 80226

(303) 935-6505

Rocketdyne

Project Manager: D. Hambrick

Analysis/Method: Hexavalent chromium, pH

No. of Samples: 12

Date Completed: October 20, 1998

Reviewer: K. Chapman

Ref: *USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994)*, *Columbia Analytical Services SOP 96-WET-PHS-00* (Revision 1, 7/26/96), and *Columbia Analytical Services SOP 96-WET-Cr6S-00M* (Revision 1, 7/26/96)

SDG: L9800238

Samples Reviewed: RS683, RS684, RS685, RS686, RS688, RS689, RS690, RS691, RS692, RS693, RS694, RS696

EPA Level V- General Minerals Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	The holding time for the pH analysis was exceeded. All other holding times were met. The temperature upon receipt at the laboratory was 7 C.	The pH result for sample RS683 was qualified as estimated, "J." As the target analytes are not volatile, qualifications were not deemed necessary.
2. <u>Method Blanks</u>	Acceptable as reviewed.	None
3. <u>LCS/BS</u>	Acceptable as reviewed.	None
4. <u>Duplicates</u> Performed on sample RS683	Acceptable as reviewed. (pH only)	None
5. <u>MS/MSDs</u> Performed on sample RS688	Acceptable as reviewed.	None
6. <u>Field QC Samples</u> ER: RF724 FB: RF848 Field duplicates: none	No detects were reported for either field QC sample.	None

7. <u>Other</u>	None	None
8. <u>Comments</u>	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name: RS683
Lab Code: L9800238-003
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	1/30/98	1/30/98	7.2	Rev J H

LEVEL V**OGDEN VALIDATED**

Approved By: Eydie Schwartz
1S44/021397p

Date: 3/16/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name: RS684
Lab Code: L9800238-004
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Q
Chromium, Hexavalent	MG/KG	7196	0.2	5	1/30/98	1/30/98	1	U	u	

LEVEL V

OGDEN VALIDATED

Approved By:
1S44/021397p

Eydie Schwarz

Date:

3/16/98

7003

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name: RS685
Lab Code: L9800238-005
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev'd
Chromium, Hexavalent	MG/KG	7196	0.2	5	1/30/98	1/30/98	1	U	U

LEVEL V**OGDEN VALIDATED**

Approved By: Eydis Schumf
IS44/021397p

Date: 3/16/98

7004

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Sludge

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name: RS686
Lab Code: L9800238-006
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chromium, Hexavalent	MG/KG	7196	0.2	5	1/30/98	1/30/98	1	U u

LEVEL V

OGDEN VALIDATED

Approved By:
IS44/021397p

Eydie Schwartz

Date:

3/16/98

7005

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name: RS688
Lab Code: L9800238-008
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Per Gm/L
Chromium, Hexavalent	MG/KG	7196	0.2	1	1/30/98	1/30/98	0.2	U	u

LEVEL V

OGDEN VALIDATED

Approved By: Eydie Schurdt
 1S44/021397p

Date: 3/16/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name: RS689
Lab Code: L9800238-009
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
Chromium, Hexavalent	MG/KG	7196	0.2	5	1/30/98	1/30/98	1	U	h	h

LEVEL V**OGDEN VALIDATED**

Approved By: Eydis Schwartz
1544/021397p

Date: 3/16/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name: RS690
Lab Code: L9800238-010
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qd
Chromium, Hexavalent	MG/KG	7196	0.2	10	1/30/98	1/30/98	2	U	h	

LEVEL V

OGDEN VALIDATED

Approved By: Eydie Schuyt
 1544/021397p

Date: 3/16/98

7008

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name: RS691
Lab Code: L9800238-011
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual	Cert
Chromium, Hexavalent	MG/KG	7196	0.2	25	1/30/98	1/30/98	5	U	h		

LEVEL V**OGDEN VALIDATED**

Approved By: Eydie Schmitt
1544/021397p

Date: 3/16/98

7009

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

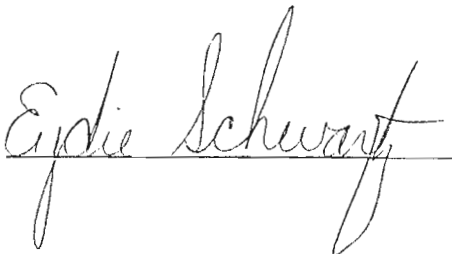
Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name: RS692
Lab Code: L9800238-012
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chromium, Hexavalent	MG/KG	7196	0.2	10	1/30/98	1/30/98	2	U u

LEVEL V**OGDEN VALIDATED**Approved By: 
1344/021397pDate: 

7010

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name: RS693
Lab Code: L9800238-013
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chromium, Hexavalent	MG/KG	7196	0.2	10	1/30/98	1/30/98	2	U u

LEVEL V**OGDEN VALIDATED**

Approved By: Eydie Schunert
1544/021397p

Date: 3/16/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Sludge

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name: RS694
Lab Code: L9800238-014
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chromium, Hexavalent	MG/KG	7196	0.2	25	1/30/98	1/30/98	5	U <i>Rev 1/6/98</i>

LEVEL V

UGDEN VALIDATED

Approved By: *Euphie Schurdt*
1544/021397p

Date: *3/16/98*

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name: RS696
Lab Code: L9800238-017
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chromium, Hexavalent	MG/KG	7196	0.2	1	1/30/98	1/30/98	0.2	U ^{Key} _{Qual}

LEVEL V**OGDEN VALIDATED**Approved By: Eydie SchwartzDate: 3/16/98

OGDEN ENVIRONMENTAL AND ENERGY SERVICES



0

550 South Wadsworth Blvd. Ste. 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Project Manager: D. Hambrick

Analysis/Method: General Mineral

No. of Samples: 13

Date Completed: July 2, 1998

Reviewer: K. Chapman

Ref: *USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994)*, Columbia Analytical Services SOP 96-WET-IC-00M (Revision 1, 7/26/96), Columbia Analytical Services SOP 96-WET-FISE-00M (Revision 1, 7/26/96), and Columbia Analytical Services SOP 96-WET-PHS-00 (Revision 1, 7/26/96)

SDG: L9703713

Samples Reviewed: RF161, RF746, RF749, RF750, RF751, RF752, RF753, RF754, RF756, RF174, RF175, RF176, and RF182

EPA Level V- General Minerals Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	Holding time exceeded for pH, nitrite and nitrate analyses.	All site sample pH results qualified as estimated, "J." Nitrite and nitrate results for samples RF750, RF751, RF752, RF753, RF754, and RF756 qualified as estimated, "J" for detects and "UJ" for nondetects.
2. <u>Method Blanks</u>	Acceptable as reviewed.	None
3. <u>LCS/BS</u>	Acceptable as reviewed.	None
4. <u>Duplicates</u> Performed on samples RF160 (SDG:3698) and RF757 (SDG:3734)	Acceptable as reviewed. (pH only)	None
5. <u>MS/MSDs</u> Performed on samples RF757 (SDG:3734) and RF176	The chloride MS/MSD percent recoveries were calculated incorrectly, but were within limits when done	None

	correctly.	
6. <u>Field QC Samples</u> ER: RF158 and RF810 FB: RF848 and RH020	No detects were noted in any of the field QC samples.	None
7. <u>Other</u>	None	None
8. <u>Comments</u>	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703713
Date Collected: 10/31/97
Date Received: 10/31/97

Inorganic Parameters

Sample Name: RF161
Lab Code: L9703713-001
Test Notes:

Basis: Dry

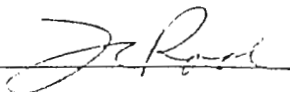
Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	7.8	

Rev Anal
 Check Code
 H

LEVEL V

OGDEN VALIDATED

7001

Approved By:  Date: 12/8/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

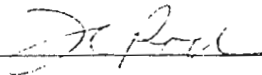
Service Request: L9703713
Date Collected: 11/3/97
Date Received: 11/3/97

Inorganic Parameters

Sample Name: RF174
Lab Code: L9703713-017
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual Code
Chloride	MG/KG	300.0	11	1	11/4/97	11/5/97	15			
Fluoride	MG/KG	340.2	2.0	1	11/4/97	11/6/97	9.1			
Nitrate as Nitrate	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U	u	
Nitrite as Nitrite	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U	u	

LEVEL V**OGDEN VALIDATED**Approved By: 
154462.597p

Date: 12/8/97

7010

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703713
Date Collected: 11/3/97
Date Received: 11/3/97

Inorganic Parameters

Sample Name: RF175
Lab Code: L9703713-018
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chloride	MG/KG	300.0	11	1	11/4/97	11/5/97	18	
Fluoride	MG/KG	340.2	2.0	1	11/4/97	11/6/97	9.9	
Nitrate as Nitrate	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U u
Nitrite as Nitrite	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U u

LEVEL V**OGDEN VALIDATED**Approved By: _____
1544-021397p

Date: _____

12/5/97

7011

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703713
Date Collected: 11/3/97
Date Received: 11/3/97

Inorganic Parameters

Sample Name: RF176
Lab Code: L9703713-019
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual Code
pH	pH UNITS	9045	0.1	1	11/4/97	11/4/97	7.9		H
Chloride	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U	3
Fluoride	MG/KG	340.2	2.0	1	11/4/97	11/6/97	3.1		
Nitrate as Nitrate	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U	3
Nitrite as Nitrite	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U	3

LEVEL V**OGDEN VALIDATED**

Approved By:

Date:

12/5/97

7012

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703713
Date Collected: 11/3/97
Date Received: 11/3/97

Inorganic Parameters

Sample Name:
Lab Code:
Test Notes:

RF182
L9703713-020

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Level	Qual Code
pH	pH UNITS	9045	0.1	1	11/4/97	11.4.97	6.7		1	H
Chloride	MG/KG	300.0	11	1	11/4/97	11.5.97	32			
Fluoride	MG/KG	340.2	2.0	1	11/4/97	11.6.97	9.4			
Nitrate as Nitrate	MG/KG	300.0	11	1	11/4/97	11.5.97	11	U	2	
Nitrite as Nitrite	MG/KG	300.0	11	1	11/4/97	11.5.97	11	U	2	

LEVEL V**OGDEN VALIDATED**

7013

Approved By: _____
1544/0211/97p

Date: 12/8/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703713
Date Collected: 10/31/97
Date Received: 10/31/97

Inorganic Parameters

Sample Name: RF746
Lab Code: L9703713-008
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	7.5	

Rev Date: J
Qual Code: H

LEVEL V**OGDEN VALIDATED**

Approved By: J. Rain
1344921397

Date: 12/8/97

7000

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703713
Date Collected: 10/31/97
Date Received: 10/31/97

Inorganic Parameters

Sample Name: RF749
Lab Code: L9703713-010
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	7.9	

Qual Code
Rev Code
LT H

LEVEL V**OGDEN VALIDATED**Approved By: _____
1544.021397p

Date: _____

12/8/97

7003

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703713
Date Collected: 10/31/97
Date Received: 10/31/97

Inorganic Parameters

Sample Name: RF750
Lab Code: L9703713-011
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual Code
Chloride	MG/KG	300.0	11	1	11/4/97	11.5.97	15			
Fluoride	MG/KG	340.2	2.0	1	11/4/97	11.6.97	6.8			
Nitrate as Nitrate	MG/KG	300.0	11	1	11/4/97	11.5.97	29	8	J	H
Nitrite as Nitrite	MG/KG	300.0	11	1	11/4/97	11.5.97	11	U	uJ	H

KEC
1/2/98

LEVEL V**OGDEN VALIDATED**

Approved By:
1544-021347p



Date: 12/8/97

7004

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703713
Date Collected: 10/31/97
Date Received: 10/31/97

Inorganic Parameters

Sample Name:
Lab Code:
Test Notes:

RF751
L9703713-012

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Qual	Unit Code
Chloride	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U	u	
Fluoride	MG/KG	340.2	2.0	1	11/4/97	11/6/97	2.0	U	u	
Nitrate as Nitrate	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U	u	#
Nitrite as Nitrite	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U	u	#

LEVEL V**OGDEN VALIDATED**

Approved By: _____
1544021197p

Date: 12/8/97

7000

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703713
Date Collected: 10/31/97
Date Received: 10/31/97

Inorganic Parameters

Sample Name: RF752
Lab Code: L9703713-013
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	5.0		J	H
Chloride	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U	U	
Fluoride	MG/KG	340.2	2.0	1	11/4/97	11/6/97	3.6			
Nitrate as Nitrate	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U	U	H
Nitrite as Nitrite	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U	U	H

LEVEL V**OGDEN VALIDATED**

Approved By:

1944921975

Date: 12/5/97

7000

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703713
 Date Collected: 10/31/97
 Date Received: 10/31/97

Inorganic Parameters

Sample Name: RF753
 Lab Code: L9703713-014
 Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual Code
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	6.1		J	H
Chloride	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U	u	
Fluoride	MG/KG	340.2	2.0	1	11/4/97	11/5/97	2.6			
Nitrate as Nitrate	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U	u	H
Nitrite as Nitrite	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U	u	H

LEVEL V**OGDEN VALIDATED**

Approved By: _____

Date: 12/8/97

15440213/97p

700.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703713
Date Collected: 10/31/97
Date Received: 10/31/97

Inorganic Parameters

Sample Name: RF754
Lab Code: L9703713-015
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual Code
Chloride	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U	2
Fluoride	MG/KG	340.2	2.0	1	11/4/97	11/6/97	2.7		
Nitrate as Nitrate	MG/KG	300.0	11	1	11/4/97	11/5/97	32		5
Nitrite as Nitrite	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U	3

LEVEL V**OGDEN VALIDATED**

Approved By: _____
15/11/02/1972

Date: 12/8/97

7008

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703713
Date Collected: 10/31/97
Date Received: 10/31/97

Inorganic Parameters

Sample Name: RF756
Lab Code: L9703713-016
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual Code
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	6.6		5	H
Chloride	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U	5	H
Fluoride	MG/KG	340.2	2.0	1	11/4/97	11/6/97	5.0		5	H
Nitrate as Nitrate	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U	5	H
Nitrite as Nitrite	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U	5	H

LEVEL V
OGDEN VALIDATED

Approved By: _____
1544-0213/97p

Date: 12/8/97

7009

OGDEN

ENVIRONMENTAL AND ENERGY SERVICES



0

550 South Wadsworth Blvd. Ste. 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Project Manager: D. Hambrick

Analysis/Method: General Mineral

No. of Samples: 19

Date Completed: July 1, 1998

Reviewer: K. Chapman

Ref: *USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994)*, Columbia Analytical Services SOP 96-WET-IC-00M (Revision 1, 7/26/96), Columbia Analytical Services SOP 96-WET-FISE-00M (Revision 1, 7/26/96), and Columbia Analytical Services SOP 96-WET-PHS-00 (Revision 1, 7/26/96)

SDG: L9703698

Samples Reviewed: RF733, RF734, RF735, RF143, RF144, RF145, RF146, RF147, RF148, RF150, RF151, RF157, RF736, RF738, RF739, RF740, RF741, RF702, and RF160

EPA Level V- General Minerals Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	Holding time exceeded for pH, nitrite, and nitrate analyses.	All site sample pH results qualified as estimated, "J." Nitrate and nitrite results for sample RF738 qualified as estimated, "UJ."
2. <u>Method Blanks</u>	Acceptable as reviewed.	None
3. <u>LCS/BS</u>	Acceptable as reviewed.	None
4. <u>Duplicates</u> Performed on samples RF143, RF702, and RF750	Acceptable as reviewed. (pH only)	None
5. <u>MS/MSDs</u> Performed on samples RF143 and RF750(SDG:3713)	Acceptable as reviewed.	None
6. <u>Field QC Samples</u>	No detects were reported in the field QC samples. Not applicable to the	None

ER: RF810 FB: RF848	pH analysis.	
7. <u>Other</u>	None	None
8. <u>Comments</u>	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703698
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name: RF143
Lab Code: L9703698-004
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	8.5	

Qual Code
Rev Qual
J H

LEVEL V
OGDEN VALIDATED

Approved By: _____
1544/021397p

J. P. Paul

Date: _____

12/6/97

7004

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703698
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name: RF144
Lab Code: L9703698-005
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual Code
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	7.6		5	H

LEVEL V
OGDEN VALIDATED

Approved By: _____
1544/021397p

Jc Pool

Date: 12/6/97

7005

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703698
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name: RF145
Lab Code: L9703698-006
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual Lab
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	7.7		RF

LEVEL V
OGDEN VALIDATED

Approved By: _____
15:44/021397p

Date: 12/6/97

7006

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703698
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name: RF146
Lab Code: L9703698-007
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	7.5		J	H

LEVEL V
OGDEN VALIDATED

Approved By: *J. Rod* Date: 12/6/97

7007

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703698
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name: RF147
Lab Code: L9703698-008
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Chal
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	7.0		1	H

LEVEL V

OGDEN VALIDATED

Approved By: _____
IS44/021397p

J. Pool

Date: 12/6/97

7008

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703698
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name:
Lab Code:
Test Notes:

RF148
L9703698-009

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Client Code	Rev
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	8.0		J	H

LEVEL V

OGDEN VALIDATED

Approved By: _____
1544/021397p

J. Reed

Date: _____

12/6/97

7009

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703698
Date Collected: 10/30/97
Date Received: 10/30/97

Inorganic Parameters

Sample Name: RF150
Lab Code: L9703698-010
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual Code	Rev
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	7.6		T	#

LEVEL V

OGDEN VALIDATED

Approved By: _____
1544/021397p

Date: 12/6/97

7010

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703698
Date Collected: 10/30/97
Date Received: 10/30/97

Inorganic Parameters

Sample Name: RF151
Lab Code: L9703698-011
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual Code
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	7.4		J	H

LEVEL V

OGDEN VALIDATED

Approved By: _____
IS44/021397p

JC Reed

Date: 12/6/97

7011

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703698
Date Collected: 10/30/97
Date Received: 10/30/97

Inorganic Parameters

Sample Name: RF157
Lab Code: L9703698-012
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	8.3		L	H

LEVEL V
OGDEN VALIDATED

Approved By: _____
1544/021397p

[Signature]

Date: 12/6/97

7012

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703698
Date Collected: 10/31/97
Date Received: 10/31/97

Inorganic Parameters

Sample Name: RF160
Lab Code: L9703698-020
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual Code	Rev Code
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	6.4		J	H

LEVEL V
OGDEN VALIDATED

Approved By: _____
1544/021397p

Date: 12/6/97

7019

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Sludge

Service Request: L9703698
Date Collected: 10/27/97
Date Received: 10/27/97

Inorganic Parameters

Sample Name: RF702
Lab Code: L9703698-019
Test Notes:

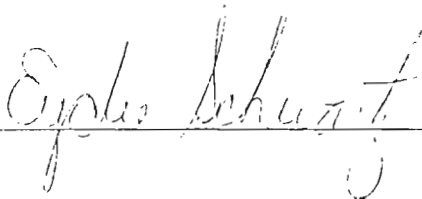
Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	7.5	

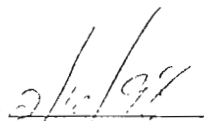
Qual Code
Rev Date
J H

LEVEL V**OGDEN VALIDATED**

Approved By:



Date:



7018

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703698
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name:
Lab Code:
Test Notes:

RF733
L9703698-001

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Date	Excel Code
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	7.5		17	11

LEVEL V

OGDEN VALIDATED

Approved By:
1544/021397p

J. P. Paul

Date:

12/6/97

7001

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne:313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/29/97
 Date Received: 10/29/97

Inorganic Parameters

Sample Name: RF734
 Lab Code: L9703698-002
 Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	6.6	

Rev Date: 1/1/98
 Qual Code: H

LEVEL V
OGDEN VALIDATED

Approved By: *JC Reed* Date: 12/6/97

7002

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703698
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name: RF735
Lab Code: L9703698-003
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual Code
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	7.2		J	H

LEVEL V
UGDEN VALIDATED

Approved By: *JK Ford* Date: 12/6/97

7003

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703698
Date Collected: 10/30/97
Date Received: 10/30/97

Inorganic Parameters

Sample Name:
Lab Code:
Test Notes:

RF736
L9703698-013

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/31/97	10.31.97	7.1	

Lab Code
Row One 1
H

LEVEL V

OGDEN VALIDATED

Approved By:
1544/021397p

J. P. ...

Date:

12/6/97

7013

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703698
Date Collected: 10/30/97
Date Received: 10/30/97

Inorganic Parameters

Sample Name:
Lab Code:
Test Notes:

RF738
L9703698-014

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	7.0	
Chloride	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U
Nitrate as Nitrate	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U
Nitrite as Nitrite	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U
Fluoride	MG/KG	340.2	2.0	1	11/4/97	11/6/97	2.0	U

Qual Code
Rev Qual

#

LEVEL V
OGDEN VALIDATED

Approved By:

1544/021397p

Date:

12/6/97

7014

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703698
Date Collected: 10/30/97
Date Received: 10/30/97

Inorganic Parameters

Sample Name:
Lab Code:
Test Notes:

RF739
L9703698-015

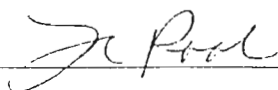
Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Run Code
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	7.7	J	#

LEVEL V
OGDEN VALIDATED

7015

Approved By:
1544/021397p



Date: 12/6/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703698
Date Collected: 10/30/97
Date Received: 10/30/97

Inorganic Parameters

Sample Name: RF740
Lab Code: L9703698-016
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	8.0	

Qual Code
 Raw Qual
 J H

LEVEL V

OGDEN VALIDATED

Approved By: _____
1543/021397p

J. Radt

Date: 12/6/97

7016

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703698
Date Collected: 10/30/97
Date Received: 10/30/97

Inorganic Parameters

Sample Name: RF741
Lab Code: L9703698-017
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	7.2	

Qual Code
Rev Date
J H

LEVEL V

OGDEN VALIDATED

Approved By: _____
1544021397p

[Signature]

Date: 12/6/97

7017

OGDEN

ENVIRONMENTAL AND ENERGY SERVICES



0

550 South Wadsworth Blvd. Ste. 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Project Manager: D. Hambrick

Analysis/Method: General Mineral

No. of Samples: 11

Date Completed: June 26, 1998

Reviewer: K. Chapman

Ref: *USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994)*, Columbia Analytical Services SOP 96-WET-PHS-00 (Revision 1, 7/26/96), Columbia Analytical Services SOP 96-WET-IC-00M (Revision 1, 7/26/96), Columbia Analytical Services SOP 96-WET-FISE-00M (Revision 1, 7/26/96), and Columbia Analytical Services SOP 96-WET-Cr6S-00M (Revision 1, 7/26/96)

SDG: L9703679

Samples Reviewed: RF713, RF714, RF715, RF716, RF717, RF718, RF719, RF720, RF728, RF731, and RF732

EPA Level V- General Minerals Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	Holding time exceeded for pH analysis.	All site sample pH results qualified as estimated, "J."
2. <u>Method Blanks</u>	Acceptable as reviewed.	None
3. <u>LCS/BS</u>	Acceptable as reviewed.	None
4. <u>Duplicates</u> Performed on samples RF713 and RF728	Acceptable as reviewed. (pH only)	None
5. <u>MS/MSDs</u> Performed on samples RF715	Acceptable as reviewed.	None
6. <u>Field QC Samples</u> ER: RF810 and RF724 FB: RF848	No detects were reported for the field QC samples.	None

7. <u>Other</u>	None	None
8. <u>Comments</u>	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703679
Date Collected: 10/28/97
Date Received: 10/28/97

Inorganic Parameters

Sample Name: RF713
Lab Code: L9703679-001
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/29/97	10/29/97	7.4	

Qual Lab
Rev Date
H
J

LEVEL V**OGDEN VALIDATED**

Approved By: *Eydie Schwartz*
1544/021197p

Date: *10/28/97*

7001

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703679
Date Collected: 10/28/97
Date Received: 10/28/97

Inorganic Parameters

Sample Name: RF714
Lab Code: L9703679-002
Test Notes:

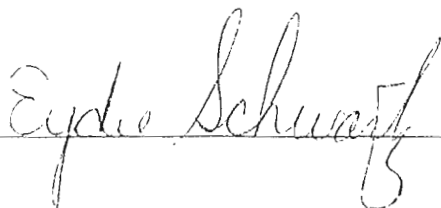
Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/29/97	10/29/97	6.7	

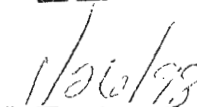
Check Label
Rev Qual
J H

LEVEL V**OGDEN VALIDATED**

Approved By:



Date:



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Sludge

Service Request: L9703679
Date Collected: 10/18/97
Date Received: 10/28/97

Inorganic Parameters

Sample Name: RF715
Lab Code: L9703679-003
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Visual	Lab
pH	pH UNITS	9045	0.1	1	10/29/97	10/29/97	7.2			
Chloride	MG/KG	300.0	39	1	10/30/97	10/30/97	380			
Fluoride	MG/KG	340.2	4.0	1	10/30/97	10/30/97	24			
Nitrate as Nitrate	MG/KG	300.0	39	1	10/30/97	10/30/97	39	U		
Nitrite as Nitrite	MG/KG	300.0	39	1	10/30/97	10/30/97	39	U		

LEVEL V

OGDEN VALIDATED

Approved By:

Eddie Schwartz

Date:

11/26/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Sludge

Service Request: L9703679
Date Collected: 10/28/97
Date Received: 10/28/97

Inorganic Parameters

Sample Name: RF716
Lab Code: L9703679-004
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chromium, Hexavalent	MG/KG	7196	0.5	1	10/29/97	10/30/97	0.5	U

Handwritten notes on the right margin: "Per Qual" and "Check Lab" with checkmarks.

LEVEL V**OGDEN VALIDATED**

Approved By: *Eyden Schwartz*
15440213/97

Date: *11/26/98*

7004

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703679
Date Collected: 10/28/97
Date Received: 10/28/97

Inorganic Parameters

Sample Name: RF717
Lab Code: L9703679-005
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/29/97	10/29/97	7.0	
Chromium, Hexavalent	MG/KG	7196	1.0	5	10/29/97	10/30/97	1.0	U

Handwritten: Qual Code
 Rev Qual
 H
 U

LEVEL V

OGDEN VALIDATED

Approved By: Eydie Schwartz Date: 11/26/98
1544021197p

7005

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703679
Date Collected: 10/28/97
Date Received: 10/28/97

Inorganic Parameters

Sample Name: RF718
Lab Code: L9703679-006
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Lab Code
pH	pH UNITS	9045	0.1	1	10/29/97	10/29/97	7.0		1	#
Chromium, Hexavalent	MG/KG	7196	0.5	5	10/29/97	10/30/97	0.5	U	2	

LEVEL V

OGDEN VALIDATED

Approved By: *Eydie Schwartz*
 15440213972

Date: *1/26/98*

7006

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703679
Date Collected: 10/28/97
Date Received: 10/28/97

Inorganic Parameters

Sample Name: RF719
Lab Code: L9703679-007
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual Code
pH	pH UNITS	9045	0.1	1	10/29/97	10/29/97	7.1		H
Chromium, Hexavalent	MG/KG	7196	0.2	2	10/29/97	10/30/97	0.2	U	H

LEVEL V**ODDEN VALIDATED**

Approved By: Eydie Schantz
1544/021397p

Date: 11/26/98

7007

Analytical Report

Service Request: L9703679
Date Collected: 10/28/97
Date Received: 10/28/97

Sample Name: RF720
Lab Code: L9703679-008
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/29/97	10/29/97	6.3	
Chromium, Hexavalent	MG/KG	7196	1.0	5	10/29-30/9	10/30/97	1.0	U

Ques / Ques	Ans
Ques 1	Ans 1

OGDEN VALIDATED

KEC
6/30/98

LEVEL V

Approved By:
IS440213972

Date:

7008

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Sludge

Service Request: L9703679
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name: RF728
Lab Code: L9703679-017
Test Notes:

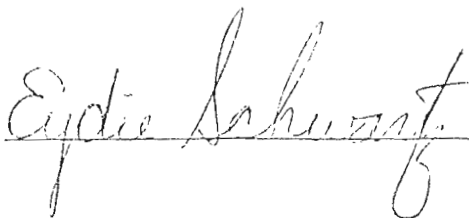
Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	7.9	
Chloride	MG/KG	300.0	13	1	10/30/97	10/30/97	29	
Fluoride	MG/KG	300.0	2.0	1	10/30/97	10/30/97	2.0	U
Nitrate as Nitrate	MG/KG	300.0	13	1	10/30/97	10/30/97	13	U
Nitrite as Nitrite	MG/KG	300.0	13	1	10/30/97	10/30/97	13	U

Qual Lab #
Rev Date
J

LEVEL V**OGDEN VALIDATED**

Approved By:



Date:



1544-021397p

7009

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703679
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name: RF731
Lab Code: L9703679-019
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	6.9	

Qual Check
 Rev Qual
 J
 H

LEVEL V

OGDEN VALIDATED

Approved By: Eyde Schwartz Date: 11/26/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703679
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name: RF732
Lab Code: L9703679-020
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	7.7	

Final Gold #
Rev 2/1/98

LEVEL V

OGDEN VALIDATED

Approved By:
1544/021397p

Eydie Schwartz

Date:

11/26/98

OGDEN

ENVIRONMENTAL AND ENERGY SERVICES



0

550 South Wadsworth Blvd. Ste. 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Project Manager: D. Hambrick

Analysis/Method: General Mineral

No. of Samples: 16

Date Completed: June 26, 1998

Reviewer: K. Chapman

Ref: *USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994)*,
Columbia Analytical Services SOP 96-WET-PHS-00 (Revision 1, 7/26/96), Columbia Analytical Services SOP 96-
WET-Cr6S-00M (Revision 1, 7/26/96)

SDG: L9703578

Samples Reviewed: RF033, RF662, RF664, RF665, RF666, RF667, RF671, RF672, RF673, RF674, RF677, RF679,
RF680, RF681, RF682, and RF088

EPA Level V- General Minerals Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	Holding time exceeded for pH analysis.	All site sample pH results qualified as estimated, "J."
2. <u>Method Blanks</u>	Acceptable as reviewed.	None
3. <u>LCS/BS</u>	Acceptable as reviewed.	None
4. <u>Duplicates</u> Performed on sample RF671	Acceptable as reviewed. (pH only)	None
5. <u>MS/MSDs</u> Performed on samples RF007 (SDG:3547) and RF681	Acceptable as reviewed.	None
6. <u>Field QC Samples</u> ER: RF810, RF724, RH020, RF388 FB: RF848	No detects were reported for any of the field QC samples.	None

7. <u>Other</u>	The hexavalent chromium background reading for samples RF682 and RF088 was above the calibration range of the instrument.	Hexavalent chromium results rejected in samples RF682 and RF088.
8. <u>Comments</u>	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703578
Date Collected: 10/20/97
Date Received: 10/20/97

Inorganic Parameters

Sample Name: RF033
Lab Code: L9703578-001
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Level	Qual Code
pH	pH UNITS	9045	0.1	1	10/21/97	10/21/97	7.6		1	7
Chloride	MG/KG	300.0	12	1	10/22/97	10/22/97	12	U	5	
Fluoride	MG/KG	340.2	2.0	1	10/22/97	10/22/97	4.4			
Nitrate as Nitrate	MG/KG	300.0	12	1	10/22/97	10/22/97	12	U	3	
Nitrite	MG/KG	300.0	12	1	10/22/97	10/22/97	12	U	3	

LEVEL V

ODDEN VALIDATED

Approved By: _____
1544/021397p

Date: _____

7001

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703578
Date Collected: 10/22/97
Date Received: 10/22/97

Inorganic Parameters

Sample Name: RF088
Lab Code: L9703578-020
Test Notes: B

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
pH	pH UNITS	9045	0.1	1	10/23/97	10/23/97	7.0		J	H
Chromium, Hexavalent	MG/KG	7196	0.5	1	10/23/97	10/24/97	0.5	U	MR	#7

KEC
6/26/98

LEVEL V

OGDEN VALIDATED

B

The PQL is elevated because of matrix interferences.

Approved By: _____
1544/021397p

Joe Pouch

Date: 12/6/97

7016

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Sludge

Service Request: L9703578
Date Collected: 10/20/97
Date Received: 10/20/97

Inorganic Parameters

Sample Name: RF662
Lab Code: L9703578-002
Test Notes:

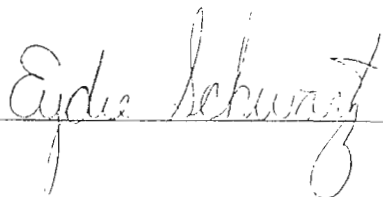
Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/21/97	10/21/97	7.2	

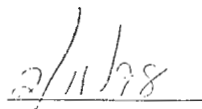
Qual Code
Rev Code
L

LEVEL V**OGDEN VALIDATED**

Approved By:



Date:



13440213972

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703578
Date Collected: 10/20/97
Date Received: 10/20/97

Inorganic Parameters

Sample Name: RF664
Lab Code: L9703578-004
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual	Qnt	Code
pH	pH UNITS	9045	0.1	1	10/21/97	10/21/97	6.7		J	H		

LEVEL V

OGDEN VALIDATED

Approved By: _____
1544/021397p

J. R. Rood

Date: 12/6/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703578
Date Collected: 10/20/97
Date Received: 10/20/97

Inorganic Parameters

Sample Name: RF665
Lab Code: L9703578-005
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual Code
pH	pH UNITS	9045	0.1	1	10/21/97	10/21/97	7.6		J	H

LEVEL V

OGDEN VALIDATED

Approved By: Eynia Schwaef
1344/021397p

Date: 2/11/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703578
Date Collected: 10/20/97
Date Received: 10/20/97

Inorganic Parameters

Sample Name: RF666
Lab Code: L9703578-006
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual Code	Rev Code
pH	pH UNITS	9045	0.1	1	10/21/97	10/21/97	7.2		J	H

LEVEL V

OGDEN VALIDATED

Approved By:

Euphie Schuraf

Date:

2/11/98

7005

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703578
Date Collected: 10/20/97
Date Received: 10/20/97

Inorganic Parameters

Sample Name: RF667
Lab Code: L9703578-007
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual	Code
pH	pH UNITS	9045	0.1	1	10/21/97	10/21/97	6.3		J	H	

LEVEL V

OGDEN VALIDATED

Approved By:
TS44/021397p

Eyde Schwartz

Date: 5/11/98

7006

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Sludge

Service Request: L9703578
Date Collected: 10/21/97
Date Received: 10/21/97

Inorganic Parameters

Sample Name: RF671
Lab Code: L9703578-008
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	File
pH	pH UNITS	9045	0.1	1	10/22/97	10/22/97	7.7		J	H

LEVEL V

OGDEN VALIDATED

Approved By: Eydie Schwartz
1544/021397p

Date: 2/11/98

7007

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Sludge

Service Request: L9703578
Date Collected: 10/21/97
Date Received: 10/21/97

Inorganic Parameters

Sample Name: RF672
Lab Code: L9703578-009
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/22/97	10/22/97	7.9	

Check
Rev
Date
J
H

LEVEL V**OGDEN VALIDATED**

Approved By: Eydis Schmitt
1844/021397p

Date: 2/11/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Sludge

Service Request: L9703578
Date Collected: 10/21/97
Date Received: 10/21/97

Inorganic Parameters

Sample Name: RF673
Lab Code: L9703578-010
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Code
pH	pH UNITS	9045	0.1	1	10/22/97	10/22/97	7.7		J	H

LEVEL V**OGDEN VALIDATED**Approved By: Eylee SchwartzDate: 2/11/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Sludge

Service Request: L9703578
Date Collected: 10/21/97
Date Received: 10/21/97

Inorganic Parameters

Sample Name: RF674
Lab Code: L9703578-011
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual Code
pH	pH UNITS	9045	0.1	1	10/22/97	10/22/97	7.3		J	#

LEVEL V

OGDEN VALIDATED

Approved By:
1344/021397p

Euphie Scheraga

Date:

11/1/98

7010

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703578
Date Collected: 10/22/97
Date Received: 10/22/97

Inorganic Parameters

Sample Name: RF677
Lab Code: L9703578-014
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual Code
pH	pH UNITS	9045	0.1	1	10/23/97	10/23/97	7.8		5	H

LEVEL V

OGDEN VALIDATED

Approved By:
1544/021397p

Eugene Schwartz

Date:

2/11/98

7011

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703578
Date Collected: 10/22/97
Date Received: 10/22/97

Inorganic Parameters

Sample Name: RF679
Lab Code: L9703578-016
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Chal Code
pH	pH UNITS	9045	0.1	1	10/23/97	10/23/97	7.0		J	#

LEVEL V**OGDEN VALIDATED**

Approved By: Eyde Schwartz
IS44/021397p

Date: 2/11/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Sludge

Service Request: L9703578
Date Collected: 10/22/97
Date Received: 10/22/97

Inorganic Parameters

Sample Name: RF680
Lab Code: L9703578-017
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/23/97	10/23/97	7.6	

Qual Code
Res Qual
I H

LEVEL V

OGDEN VALIDATED

Approved By:
10/24/97 10:13 AM

Eydie Schwartz

Date:

10/24/97

7013

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Sludge

Service Request: L9703578
Date Collected: 10/22/97
Date Received: 10/22/97

Inorganic Parameters

Sample Name:
Lab Code:
Test Notes:

RF681
L9703578-018

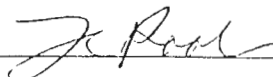
Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual Code
pH	pH UNITS	9045	0.1	1	10/23/97	10/23.97	8.3		1	H
Chromium, Hexavalent	MG/KG	7196	0.2	1	10/23/97	10/24 97	0.2	U	5	

LEVEL V

OGDEN VALIDATED

Approved By:
1544/021397p



Date: 12/6/97

7014

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Sludge

Service Request: L9703578
Date Collected: 10/22/97
Date Received: 10/22/97

Inorganic Parameters

Sample Name: RF682
Lab Code: L9703578-019
Test Notes: B

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Client Code
Chromium, Hexavalent	MG/KG	7196	0.5	1	10/23/97	10/24/97	0.5	U	KEC 6/26/98 KR#7

KEC
6/26/98

LEVEL V

OGDEN VALIDATED

B

The PQL is elevated because of matrix interferences.

Approved By: _____

Date: 12/6/97

7010

DATA VALIDATION REPORT

Rocketdyne
SSFL RFI Program

ANALYSIS: GENERAL MINERALS

SAMPLE DELIVERY GROUP: L9703547

Prepared by

Ogden—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: Rocketdyne, SSFL RFI Program
Contract Task Order #: 313150002
Sample Delivery Group #: L9703547
Project Manager: D. Hambrick
Matrix: Soil
Analysis: General Minerals
QC Level: Level IV
No. of Samples: 17
Reviewer: K. Chapman
Date of Review: June 25, 1998

The samples listed in Table 1 were validated based on the guidelines outlined in the Ogden *Data Validation Procedures* SOP DVP-6, Rev. 2, Wet Chemistry Analysis revised for Level IV, Columbia Analytical Services SOP 96-WET-IC-00M (Revision 1, 7/26/96), Columbia Analytical Services SOP 96-WET-FISE-00M (Revision 1, 7/26/96), Columbia Analytical Services SOP 96-WET-PHS-00 (Revision 1, 7/26/96) and validation guidelines outlined in the USEPA *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (2/94)*, and USEPA *Contract Laboratory Program National Functional Guidelines for Organic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
RF007	ILBS01S01	L9703547-002	soil	gen. min
RF008	ILBS01S02	L9703547-003	soil	gen. min.
RF009	ILBS01S03	L9703547-004	soil	gen. min
RF010	ILBS01S04	L9703547-005	soil	gen. min.
RF011	ILBS01S05	L9703547-006	soil	gen. min
RF012	ILBS01S06	L9703547-007	soil	gen. min.
RF013	ILBS01S07	L9703547-008	soil	gen. min
RF014	ILBS02S01	L9703547-009	soil	gen. min.
RF015	ILBS02S02	L9703547-010	soil	gen. min
RF016	ILBS02S03	L9703547-011	soil	gen. min.
RF017	ILBS02S04	L9703547-012	soil	gen. min
RF018	ILBS02S05	L9703547-013	soil	gen. min.
RF019	ILBS02S06	L9703547-014	soil	gen. min
RF661	EVBS10S01	L9703547-017	soil	gen. min.
RF030	OCBS07S01	L9703547-018	soil	gen. min
RF031	OCBS07S02	L9703547-019	soil	gen. min.
RF032	OCBS08S01	L9703547-020	soil	gen. min

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

No sample preservation, handling, or transport problems were noted, and no qualifications were required.

2.1.2 Chain of Custody

The COCs were signed by both the field and laboratory personnel, and accounted for the analyses presented in this data validation report. These samples were collected by Odgen personnel, placed in coolers containing ice, and hand delivered to the mobil Columbia laboratory onsite. If the samples required analyses not performed by the mobil laboratory, they were transported by Columbia personnel to the fixed laboratory site. No temperatures were recorded on the COCs and no custody seals were present on the coolers, but as no shipping was involved in the transportation of the samples, this was acceptable. No qualifications were required. No qualifications were necessary.

2.1.3 Holding Times

Holding times were assessed by comparing the dates of collection with the dates of analysis. The 28 day holding time for the fluoride, chloride, nitrate, and nitrite analyses were met. As the pH samples were not analyzed immediately, all site sample pH results were qualified as estimated, "J." No further qualifications were required.

2.2 CALIBRATION

The instrument readings corresponding to the fluoride calibration standards were not recorded on the analysis worksheet, so the validator was unable to attempt duplication of the fluoride calibration curve. However, all the ICV and CCV recoveries were within 90% to 110%, and no qualifications were deemed necessary. The pH calibration check standards were within the control limit of .05 pH units, and no qualifications were required.

2.3 BLANKS

All results reported on the summary forms and in the raw data for blank analyses associated with these samples were nondetects at the reporting limit, and no qualifications were necessary.

2.4 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory control sample recoveries for the chloride (103%), fluoride (105%), nitrate (95%), and nitrite (98%), were all within the control limits of 80% to 120%, and no qualifications were necessary. The LCS is not applicable to the pH analysis. No qualifications were required.

2.5 LABORATORY DUPLICATES

The laboratory duplicate analysis was performed for the pH analysis on soil samples RF007, RF014, RF661, and RF030. The duplicate control limit is 20% relative percent difference. The results for all duplicate samples were within the control limit, and no qualifications were necessary. No laboratory duplicate analysis was performed in association with the chloride, nitrate, or nitrite analyses for the samples in this data validation report, so no assessment was made with respect to this criteria for these analytes. Although not listed on the summary form, a duplicate analysis was performed on sample RF007 for the fluoride analysis. Both fluoride results for RF007 and its duplicate were nondetects. No qualifications were necessary.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

The matrix spike analysis was performed for all but the pH analysis on soil sample RF007. The matrix spike control limit is 75-125 percent; this control limit does not apply if the sample concentration exceeds the spike concentration by a factor of 4 or more. The control limit for the RPD between the matrix spike/matrix spike duplicate pair is 20%. The recoveries for the matrix spike/matrix spike duplicate for the analyses in this data validation report are as follows: chloride 98%/98%, fluoride 93%/91%, nitrate 98%/100%, and nitrite 90%/90%. All recoveries and RPDs were within control limits, and no qualifications were required. The matrix spike analysis is not applicable to the pH analysis.

2.8 SAMPLE RESULT VERIFICATION

An EPA Level IV review was performed for all samples in this data package. Where possible, calculations were verified, and sample results reported on the Form Is were verified against the raw data, and no transcription errors or calculations errors were noted. Although the pH result for sample RF007 was above the high LCS check standard, qualification were not deemed necessary. No qualifications were necessary.

2.9 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified only on method blanks. Any remaining detects are used to evaluate the associated samples. The following are findings associated with field QC samples:

2.9.1 Field Blanks and Equipment Rinsates

Samples RF020, RF810, and RF848 were the equipment rinsates (ER) and field blanks (FB) associated with these samples. No detects were reported for the field QC samples, and no qualifications were required. Field QC contamination is not applicable to the pH analysis. No qualifications were required.

2.9.2 Field Duplicates

There were no field duplicate pairs associated with this package. Field duplicates are required at a rate of 10% per matrix for site samples; consequently, field duplicates are not required in every package.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

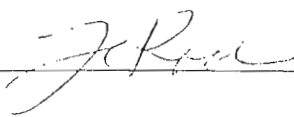
Service Request: L9703547
Date Collected: 10/16/97
Date Received: 10/17/97

Inorganic Parameters

Sample Name: RF007
Lab Code: L9703547-002
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Run 1	Final Date
pH	pH UNITS	9045	0.1	1	10/17/97	10 17 97	10.8		U	H
Chloride	MG/KG	300.0	12	1	10/21/97	10 22 97	12	U	U	
Fluoride	MG/KG	340.2	2.0	1	10/21/97	10 22 97	2.0	U	U	
Nitrate as Nitrate	MG/KG	300.0	12	1	10/21/97	10 22 97	43			
Nitrite	MG/KG	300.0	12	1	10/21/97	10 22 97	12	U	U	

LEVEL IV**OGDEN VALIDATED**Approved By: 

Date: 12/6/97

7001

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703547
Date Collected: 10/16/97
Date Received: 10/17/97

Inorganic Parameters

Sample Name:
Lab Code:
Test Notes:

RF008
L9703547-003

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual Code
pH	pH UNITS	9045	0.1	1	10/17/97	10/17/97	6.4		J
Chloride	MG/KG	300.0	11	1	10/21/97	10/22/97	11	U	u
Fluoride	MG/KG	340.2	2.0	1	10/21/97	10/22/97	3.1		
Nitrate as Nitrate	MG/KG	300.0	11	1	10/21/97	10/22/97	12		
Nitrite	MG/KG	300.0	11	1	10/21/97	10/22/97	11	U	u

LEVEL IV

OGDEN VALIDATED

Approved By:
LS44021397p

Date: 12/6/97

7002

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703547
Date Collected: 10/16/97
Date Received: 10/17/97

Inorganic Parameters

Sample Name:
Lab Code:
Test Notes:

RF009
L9703547-004

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual Code
pH	pH UNITS	9045	0.1	1	10/17/97	10/17/97	6.2		H
Chloride	MG/KG	300.0	12	1	10/21/97	10/22/97	18		U
Fluoride	MG/KG	340.2	2.0	1	10/21/97	10/22/97	2.0	U	U
Nitrate as Nitrate	MG/KG	300.0	12	1	10/21/97	10/22/97	12	U	U
Nitrite	MG/KG	300.0	12	1	10/21/97	10/22/97	12	U	U

LEVEL IV

OGDEN VALIDATED

Approved By: _____
1544/021397p

Date: 12/6/97

7003

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703547
Date Collected: 10/16/97
Date Received: 10/17/97

Inorganic Parameters

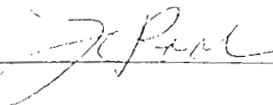
Sample Name: RF010
Lab Code: L9703547-005
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual Code
pH	pH UNITS	9045	0.1	1	10/17/97	10/17/97	6.3		1	H
Chloride	MG/KG	300.0	11	1	10/21/97	10/22/97	13			
Fluoride	MG/KG	340.2	2.0	1	10/21/97	10/22/97	2.0	U	U	
Nitrate as Nitrate	MG/KG	300.0	11	1	10/21/97	10/22/97	11	U	U	
Nitrite	MG/KG	300.0	11	1	10/21/97	10/22/97	11	U	U	

LEVEL IV**OGDEN VALIDATED**

Approved by:



Date:

12/6/97

7004

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703547
Date Collected: 10/16/97
Date Received: 10/17/97

Inorganic Parameters

Sample Name: RF011
Lab Code: L9703547-006
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Lab
pH	pH UNITS	9045	0.1	1	10/17/97	10/17/97	6.5		5	H
Chloride	MG/KG	300.0	11	1	10/21/97	10/22/97	13			
Fluoride	MG/KG	340.2	2.0	1	10/21/97	10/22/97	2.1			
Nitrate as Nitrate	MG/KG	300.0	11	1	10/21/97	10/22/97	11	U	u	
Nitrite	MG/KG	300.0	11	1	10/21/97	10/22/97	11	U	u	

LEVEL IV**OGDEN VALIDATED**

Approved By: _____

Date: 12/6/97

7005

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703547
Date Collected: 10/16/97
Date Received: 10/17/97

Inorganic Parameters

Sample Name: RF012
Lab Code: L9703547-007
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rel Data 1	Rel Data 2
pH	pH UNITS	9045	0.1	1	10/17/97	10/17/97	6.8		5	H
Chloride	MG/KG	300.0	13	1	10/21/97	10/22/97	14			
Fluoride	MG/KG	340.2	2.0	1	10/21/97	10/22/97	3.6			
Nitrate as Nitrate	MG/KG	300.0	13	1	10/21/97	10/22/97	13	U	U	
Nitrite	MG/KG	300.0	13	1	10/21/97	10/22/97	13	U	U	

LEVEL IV

OGDEN VALIDATED

Approved By

Date:

12/6/97

7006

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703547
Date Collected: 10/16/97
Date Received: 10/17/97

Inorganic Parameters

Sample Name: RF013
Lab Code: L9703547-008
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual Code
pH	pH UNITS	9045	0.1	1	10/17/97	10/17/97	6.1		J
Chloride	MG/KG	300.0	11	1	10/21/97	10/22/97	13		H
Fluoride	MG/KG	340.2	2.0	1	10/21/97	10/22/97	2.0	U	U
Nitrate as Nitrate	MG/KG	300.0	11	1	10/21/97	10/22/97	11	U	U
Nitrite	MG/KG	300.0	11	1	10/21/97	10/22/97	11	U	U

LEVEL IV

ORDER VALIDATED

Approved By: _____
1544/021397p

Date: 12/1/97

7007

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703547
 Date Collected: 10/16/97
 Date Received: 10/17/97

Inorganic Parameters

Sample Name: RF014
 Lab Code: L9703547-009
 Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Run 1	Final Code
pH	pH UNITS	9045	0.1	1	10/17/97	10-17-97	7.8			H
Calcide	MG/KG	300.0	11	1	10/21/97	10-22-97	11	U	5	
Fluoride	MG/KG	340.2	2.0	1	10/21/97	10-22-97	2.0	U	5	
Nitrate as Nitrate	MG/KG	300.0	11	1	10/21/97	10-22-97	11	U	5	
Nitrite	MG/KG	300.0	11	1	10/21/97	10-22-97	11	U	5	

LEVEL IV

OGDEN VALIDATED

Approved By:

De Ruel

Date:

12/6/97

7008

Analytical Report

Service Request: L9703547
Date Collected: 10/16/97
Date Received: 10/17/97

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Initials	Signature
pH	pH UNITS	9045	0.1	1	10/17/97	10/17/97	6.0		J	H
Chloride	MG/KG	300.0	11	1	10/21/97	10/22/97	11	U	U	
Fluoride	MG/KG	340.2	2.0	1	10/21/97	10/22/97	23			
Nitrate as Nitrate	MG/KG	300.0	11	1	10/21/97	10/22/97	11			
Nitrite	MG/KG	300.0	11	1	10/21/97	10/22/97	11	U	U	

LEVEL IV

OGDEN VALIDATED

Date: 12/6/97

7009

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703547
Date Collected: 10/16/97
Date Received: 10/17/97

Inorganic Parameters

Sample Name: RF016
Lab Code: L9703547-011
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual	Anal Code
pH	pH UNITS	9045	0.1	1	10/17/97	10/17/97	6.8				H
Chloride	MG/KG	300.0	12	1	10/21/97	10/22/97	12	U			FM
Fluoride	MG/KG	340.2	2.0	1	10/21/97	10/22/97	5.5				
Nitrate as Nitrate	MG/KG	300.0	12	1	10/21/97	10/22/97	15				
Nitrite	MG/KG	300.0	12	1	10/21/97	10/22/97	12	U			W

LEVEL IV**OGDEN VALIDATED**

Approved By: _____
10/21/97

Date: 12/10/97

7010

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703547
Date Collected: 10/16/97
Date Received: 10/17/97

Inorganic Parameters

Sample Name: RF017
Lab Code: L9703547-012
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual	Final
pH	pH UNITS	9045	0.1	1	10/17/97	10/17/97	7.1				
Chloride	MG KG	300.0	11	1	10/21/97	10/22/97	11	U	5		
Fluoride	MG KG	340.2	2.0	1	10/21/97	10/22/97	4.4				
Nitrate as Nitrate	MG KG	300.0	11	1	10/21/97	10/22/97	11	U	5		
Nitrite	MG KG	300.0	11	1	10/21/97	10/22/97	11	U	5		

LEVEL IV

OGDEN VALIDATED

Approved By: _____
1544/021397p

Date: 12/6/97

7011

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703547
Date Collected: 10/16/97
Date Received: 10/17/97

Inorganic Parameters

Sample Name: RF018
Lab Code: L9703547-013
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Qm (Unit Code
pH	pH UNITS	9045	0.1	1	10/17/97	10/17/97	7.1			
Chloride	MG/KG	300.0	11	1	10/21/97	10/22/97	11	U	U	H
Fluoride	MG/KG	340.2	2.0	1	10/21/97	10/22/97	20			
Nitrate as Nitrate	MG/KG	300.0	11	1	10/21/97	10/22/97	11	U	U	
Nitrite	MG/KG	300.0	11	1	10/21/97	10/22/97	11	U	U	

LEVEL IV

UNDEVELOPED

Approved For:
10/16/97

Date: 12/6/97

7012

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703547
Date Collected: 10/16/97
Date Received: 10/17/97

Inorganic Parameters

Sample Name: RF019
Lab Code: L9703547-014
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual Code
pH	pH UNITS	9045	0.1	1	10/17/97	10/17/97	7.1		#
Chloride	MG/KG	300.0	12	1	10/21/97	10/22/97	20		17
Fluoride	MG/KG	340.2	2.0	1	10/21/97	10/22/97	6.0		
Nitrate as Nitrate	MG/KG	300.0	12	1	10/21/97	10/22/97	12	U	33
Nitrite	MG/KG	300.0	12	1	10/21/97	10/22/97	12	U	

LEVEL IV

OGDEN VALIDATED

Approved By: _____

Date: 12/16/97

7013

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703547
Date Collected: 10/20/97
Date Received: 10/20/97

Inorganic Parameters

Sample Name: RF030
Lab Code: L9703547-018
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/21/97	10/21/97	7.7	
Chloride	MG/KG	300.0	11	1	10/21/97	10/22/97	11	U
Fluoride	MG/KG	340.2	2.0	1	10/21/97	10/22/97	2.9	
Nitrate as Nitrate	MG/KG	300.0	11	1	10/21/97	10/22/97	11	U
Nitrite	MG/KG	300.0	11	1	10/21/97	10/22/97	11	U

Final Code #
Rev Anal 1
15
3
3

LEVEL IV**OGDEN VALIDATED**

Approved By: _____
1544/021397p

Date: 12/10/97

7015

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703547
Date Collected: 10/20/97
Date Received: 10/20/97

Inorganic Parameters

Sample Name: RF031
Lab Code: L9703547-019
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual	Lab
pH	pH UNITS	9045	0.1	1	10/21/97	10/21/97	6.9		1	2	2
Chloride	MG/KG	300.0	11	1	10/21/97	10/22/97	11	U	2	2	2
Fluoride	MG/KG	340.2	2.0	1	10/21/97	10/22/97	4.2				
Nitrate as Nitrate	MG/KG	300.0	11	1	10/21/97	10/22/97	11	U	2	2	2
Nitrite	MG/KG	300.0	11	1	10/21/97	10/22/97	11	U	2	2	2

LEVEL IV

OGDEN VALIDATED

Approved By: J. R. R. R.Date: 12/6/97

7016

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703547
Date Collected: 10/20/97
Date Received: 10/20/97

Inorganic Parameters

Sample Name:
Lab Code:
Test Notes:

RF032
L9703547-020

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Anal	Ude
pH	pH UNITS	9045	0.1	1	10/21/97	10/21/97	7.9		5		#
Chloride	MG/KG	300.0	11	1	10/21/97	10/22/97	36				
Fluoride	MG/KG	340.2	2.0	1	10/21/97	10/22/97	4.2				
Nitrate as Nitrate	MG/KG	300.0	11	1	10/21/97	10/22/97	11	U	2		
Nitrite	MG/KG	300.0	11	1	10/21/97	10/22/97	11	U	3		

LEVEL IV

OGDEN VALIDATED

Approved By:
10/21/97

Date: 12/15/97

7017

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703547
Date Collected: 10/17/97
Date Received: 10/17/97

Inorganic Parameters

Sample Name: RF661
Lab Code: L9703547-017
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
pH	pH UNITS	9045	0.1	1	10/18/97	10/18/97	6.4		J	H
Chloride	MG/KG	300.0	11	1	10/22/97	10/22/97	26			
Fluoride	MG/KG	340.2	2.0	1	10/22/97	10/22/97	7.0			
Nitrate as Nitrate	MG/KG	300.0	11	1	10/22/97	10/22/97	21			
Nitrate	MG/KG	300.0	11	1	10/22/97	10/22/97	11	U	W	

LEVEL IV**OGDEN VALIDATED**

Approved By: _____

Date: 12/1/97

7014

OGDEN ENVIRONMENTAL AND ENERGY SERVICES



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550 South Wadsworth Blvd., Suite 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: SW846 Method 8021A

No. of Samples: 69 Samples, 19 Dilutions, and 4 Reanalyses

Date Reviewed: 08/03/98

Reviewer: L. Calvin

Reference: Ogden Data Validation Procedures for Halogenated Volatiles by GC and Aromatic Volatiles by GC (DVPs-7 and -9, Rev. 2).

SDG: L9703479

Samples Reviewed: RD001, RD002, RD003, RD004, RD005, RD005DL, RD006, RD007, RD008, RD008DL, RD010, RD011, RD011DL, RD012, RD013, RD014, RD015, RD016, RD017, RD018, RD019, RD022, RD023, RD023RE, RD024, RD025, RD027, RD028, RD028DL, RD033, RD034, RD034RE, RD035, RD035RE, RD037, RD037DL, RD038, RD038RE, RD040, RD041, RD042, RD043, RD044, RD045, RD046, RD047, RD048, RD049, RD050, RD051, RD052, RD624, RD625, RD628, RD629, RD631, RD632, RD633, RD633DL, RD635, RD635DL, RD636, RD636DL, RD639, RD639DL, RD640, RD640DL, RD641, RD641DL, RD642, RD642DL, RD647, RD647DL, RD648, RD648DL, RD649, RD650, RD651, RD651DL, RD652, RD652DL, RD653, RD653DL, RD654, RD654DL, RD655, RD656, RD657, RD658, RD659, RD660, and RD660DL.

Matrix: Soil

EPA Level V-GC Volatiles Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	According to the case narrative and COCs, samples were received chilled and intact. COC seals were not present. Actual temperature of sample receipt was not recorded. Some corrections were scribbled rather than lined out, and some crossouts on the COCs were missing dates.	No qualifications were required.
3. <u>Method Blanks</u> VBLK97101301 VBLK97101401 VBLK97101501 VBLK97101601 VBLK97101701 VBLK97101801 VBLK97102001 VBLK97102101 VBLK97102201	Ten method blanks were analyzed with this SDG. No target compounds were reported in the method blanks.	No qualifications were required.

	Problems	Qualifications
VBLK97102301		
4. <u>LCS/BS</u> VLCS97101401 VLCS97101402 VLCS97101601 VLCS97101602 VLCS97101701 VLCS97101801 VLCS97102101 VLCS97102102 VLCS97102201 VLCS97102301	Nine blank spikes were analyzed with the samples of this SDG. All percent recoveries were within the laboratory QC limits.	No qualifications were required.
5. <u>Surrogates</u>	All surrogate recoveries were within laboratory QC limits on the ELCD and PID detectors with the exception of the 4-bromofluorobenzene recovery for sample RD011 from the PID detector which was above the laboratory QC limits of 57%-143%.	The detect for cis-1,2-dichloroethene reported from the PID in sample RD011 was qualified as estimated, "J."
6. <u>MS/MSDs</u> Performed on RD006, RD016, RD035, RD047, and RD625	Five MS/MSDs were analyzed with this SDG. All recoveries and RPDs were within the laboratory QC limits.	No qualifications were required.
7. <u>Field QC Samples</u> ER: RD138 RD666 FB: RD856 (SDG L9703803) FD: RD033 and RD034 RD635 and RD636	<p>There were no target compounds reported in the equipment rinsates or the field blank.</p> <p>Field duplicates RD033 and RD034 were analyzed at 2 dilutions initially, and RD034 was reanalyzed at a 1 dilution. Methylene chloride was detected in both samples, at concentrations greater than 2 the CRQL and with an RPD of less than 100% for the values from the 2 dilutions.</p> <p>Field duplicates RD635 and RD636 were both analyzed at 1 and 5 dilutions, with methylene chloride detected in all analyses at greater than 2 the CRQL and with an RPD of less than 100% for the values from the 5</p>	<p>No qualifications were required.</p> <p>The field duplicates were considered to be in agreement; therefore, no qualifications were required.</p>

	Problems	Qualifications
	dilutions.	
8. <u>Other</u>	<p>The following samples were analyzed at dilutions and only the dilution analyses were provided: RD012, RD013, RD014, RD019, RD022, RD033, RD034, RD040, RD044, RD046, RD050, RD052, RD628, RD629, RD631, RD633, RD636, RD640, RD641, RD642, RD647, RD648, RD652 and RD656--2 ; RD023, RD027, RD028, RD650, and RD655--5 ; RD649, and RD660--100 ; and RD010, and RD011--1000 . Reporting limits were raised accordingly.</p> <p>Two diluted samples (RD023 and RD034) were reanalyzed undiluted: RD023RE and RD034RE.</p> <p>The following samples were dilutions analyzed for acetone detected above the linear range of the calibration in the undiluted or less diluted analyses: RD653DL--5 ; and RD633DL--10 .</p> <p>The dilutions of RD028, RD647, and RD652 were unnecessary, as all reported values were within calibration range.</p> <p>The following samples were dilutions analyzed for methylene chloride detected above the linear range of the calibration in the undiluted or less diluted analyses: RD651DL--2 ; RD037DL, RD635DL, RD636DL, RD639DL, RD640DL, RD641DL, RD642DL, RD648DL, and RD654DL--5 .</p> <p>Samples RD035 and RD038, with detects for methylene chloride above the linear range of the calibration, were reanalyzed undiluted, with a nondetect result for methylene chloride in sample RD035, and a detect within linear range for sample RD038.</p>	<p>Concentrations of target compounds or matrix interferences in aforementioned dilutions were sufficient to justify the dilutions. No qualifications were assigned based on dilutions.</p> <p>Results for RD023 and RD034 were rejected “R,” in favor of the undiluted reanalyses.</p> <p>Acetone was rejected “R,” in the original analyses in favor of the diluted values for acetone, and the remaining target compounds were rejected in the dilutions in favor of the undiluted or less diluted analyses.</p> <p>All results for RD028DL, RD647DL, and RD652DL were rejected in favor of the less diluted analyses.</p> <p>Methylene chloride was rejected “R,” in the original analyses in favor of the diluted values for methylene chloride, and the remaining target compounds were rejected in the dilutions in favor of the undiluted or less diluted analyses.</p> <p>Results for samples RD035 and RD038 were rejected, “R,” in favor of the reanalyses results, RD035RE and RD038RE.</p>

	Problems	Qualifications
8. <u>Other</u> (cont.)	<p>The following samples were dilutions analyzed for trichloroethene detected above the linear range of the calibration in the undiluted or less diluted analyses: RD005DL--5 ; RD008DL--50 ; RD660DL--1000 ; and RD011DL--5000 .</p> <p>The following reported target compounds were not confirmed by the confirmation analyses: cis-1,2-dichloroethene in samples RD003, RD004, RD005, RD008, RD010, RD011, RD014, RD015, RD019, RD624, and RD631; methylene chloride in samples RD023RE, RD025, RD045, RD651DL, RD652, RD653, RD654DL, and RD655; acetone in samples RD025, RD027, RD632, RD642, and RD648; 1,1,1-trichloroethane in samples RD052 and RD660; trichloroethene in samples RD046 and RD052; tetrachloroethene in sample RD052; and o-xylene in sample RD008.</p> <p>The result for o-xylene was incorrect on the result summary for sample RD008.</p>	<p>Trichloroethene was rejected "R," in the original analysis in favor of the diluted value for trichloroethene, and the remaining target compounds were rejected in the dilution in favor of the undiluted analyses.</p> <p>Unconfirmed detects were qualified as estimated, "J," for previously characterized contaminants of concern, and tentatively identified "NJ," for remaining unconfirmed detects. Raw data was not examined at Level V validation to determine the presence of those unconfirmed detects which should have been detected on both the ELCD and PID detectors in the original analysis.</p> <p>The result for o-xylene was corrected on the result summary for sample RD008 based on an initial calibration average RRF error discovered in the level IV validation of SDG L9704260, which affected quantitation of all of the xylenes isomers. No qualifications were required.</p>
<u>Comments</u>	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil

Service Request: L9703479
 Date Collected: 10/13/97
 Date Received: 10/13/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD001
 Lab Code: L9703479-001
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/13/97	10/13/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/13/97	10/13/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/13/97	10/13/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/13/97	10/13/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/13/97	10/13/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/13/97	10/13/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
Benzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/13/97	10/13/97	45	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	56	1	10/13/97	10/13/97	56	U
Toluene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
Chlorotrifluoroethane	EPA 5030	8021A	23	1	10/13/97	10/13/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/13/97	10/13/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/13/97	10/13/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/13/97	10/13/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/13/97	10/13/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/13/97	10/13/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/13/97	10/13/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/13/97	10/13/97	57	U
Acetone	EPA 5030	8021A	57	1	10/13/97	10/13/97	57	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/13/97	10/13/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/13/97	10/13/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/13/97	10/13/97	23	U

Approved By: Thomas A. Arbery

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3011

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD002
Lab Code: L9703479-002
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	ver	qua	code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/13/97	10/13/97	12	U	u		
Chloromethane	EPA 5030	8021A	12	1	10/13/97	10/13/97	12	U			
Vinyl Chloride	EPA 5030	8021A	12	1	10/13/97	10/13/97	12	U			
Bromomethane	EPA 5030	8021A	12	1	10/13/97	10/13/97	12	U			
Chloroethane	EPA 5030	8021A	12	1	10/13/97	10/13/97	12	U			
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
Methylene Chloride	EPA 5030	8021A	23	1	10/13/97	10/13/97	23	U			
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
Chloroform	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
Benzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/13/97	10/13/97	8	U			
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
Bromodichloromethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/13/97	10/13/97	57	U			
Toluene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
Chlorotrifluoroethane	EPA 5030	8021A	23	1	10/13/97	10/13/97	23	U			
Chlorobenzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
Ethylbenzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
m,p-Xylenes	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
o-Xylene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
Bromoform	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U			
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/13/97	10/13/97	12	U			
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/13/97	10/13/97	12	U			
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/13/97	10/13/97	12	U			
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/13/97	10/13/97	23	U			
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/13/97	10/13/97	23	U			
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/13/97	10/13/97	23	U			
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/13/97	10/13/97	57	U			
Acetone	EPA 5030	8021A	57	1	10/13/97	10/13/97	57	U			
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/13/97	10/13/97	23	U			
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/13/97	10/13/97	23	U			
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/13/97	10/13/97	23	U			

Approved By: Thomas R. Riving
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3012

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil

Service Request: L9703479
 Date Collected: 10/13/97
 Date Received: 10/13/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD003
 Lab Code: L9703479-003
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u
Chloromethane	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u
Vinyl Chloride	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u
Bromomethane	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u
Chloroethane	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
Methylene Chloride	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97 NC	6	U	u
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
Chloroform	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
Benzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/13/97	10/13/97	23	U	u
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
Bromodichloromethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/13/97	10/13/97	55	U	u
Toluene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u
Chlorobenzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
Ethylbenzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
m,p-Xylenes	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
o-Xylene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
Bromoform	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/13/97	10/13/97	55	U	u
Acetone	EPA 5030	8021A	55	1	10/13/97	10/13/97	55	U	u
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u

Approved By: Thomas A. Main

Date: 11/17/97

OGDEN VALIDATED

LEVEL 1

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD004
Lab Code: L9703479-004
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qua	qua code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u	
Chloromethane	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U		
Vinyl Chloride	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U		
Bromomethane	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U		
Chloroethane	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
Methylene Chloride	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	8	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/13/97	10/13/97	80	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
Bromodichloromethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/13/97	10/13/97	54	U		
Toluene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U		
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U		
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/13/97	10/13/97	54	U		
Acetone	EPA 5030	8021A	54	1	10/13/97	10/13/97	54	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U		

Approved By: Thomas P. Robins
1544/0213979

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD005
L9703479-005

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u	
Chloromethane	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u	
Vinyl Chloride	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u	
Bromomethane	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u	
Chloroethane	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
Methylene Chloride	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u	
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97 NC	89	U	u	* 2
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
Chloroform	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
Benzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/13/97	10/13/97	760	U	u	D
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
Bromodichloromethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/13/97	10/13/97	55	U	u	
Toluene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u	
Chlorobenzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
Ethylbenzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
m,p-Xylenes	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
o-Xylene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
Bromoform	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u	
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u	
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u	
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u	
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/13/97	10/13/97	55	U	u	
Acetone	EPA 5030	8021A	55	1	10/13/97	10/13/97	55	U	u	
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u	
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u	

Approved By: Thomas K. McG...
ISA4/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL W

3015

MC 8-5-98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD005DL
L9703479-005DL

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	55	5	10/14/97	10/14/97	55	U
Chloromethane	EPA 5030	8021A	55	5	10/14/97	10/14/97	55	U
Vinyl Chloride	EPA 5030	8021A	55	5	10/14/97	10/14/97	55	U
Bromomethane	EPA 5030	8021A	55	5	10/14/97	10/14/97	55	U
Chloroethane	EPA 5030	8021A	55	5	10/14/97	10/14/97	55	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
1,1-Dichloroethene	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
Methylene Chloride	EPA 5030	8021A	110	5	10/14/97	10/14/97	110	U
trans-1,2-Dichloroethene	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
cis-1,2-Dichloroethene	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
1,1-Dichloroethane	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
Chloroform	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
Carbon Tetrachloride	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
Benzene	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
1,2-Dichloroethane	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
Trichloroethene (TCE)	EPA 5030	8021A	28	5	10/14/97	10/14/97	290	U
1,2-Dichloropropane	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
Bromodichloromethane	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	280	5	10/14/97	10/14/97	280	U
Toluene	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
trans-1,3-Dichloropropene	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
cis-1,3-Dichloropropene	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
1,1,2-Trichloroethane	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
Tetrachloroethene (PCE)	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
Chlorotrifluoroethane	EPA 5030	8021A	110	5	10/14/97	10/14/97	110	U
Chlorobenzene	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
Ethylbenzene	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
m,p-Xylenes	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
o-Xylene	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
Bromoform	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	28	5	10/14/97	10/14/97	28	U
1,3-Dichlorobenzene	EPA 5030	8021A	55	5	10/14/97	10/14/97	55	U
1,4-Dichlorobenzene	EPA 5030	8021A	55	5	10/14/97	10/14/97	55	U
1,2-Dichlorobenzene	EPA 5030	8021A	55	5	10/14/97	10/14/97	55	U
Chlorotrifluoroethene	EPA 5030	8021A	110	5	10/14/97	10/14/97	110	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	110	5	10/14/97	10/14/97	110	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	110	5	10/14/97	10/14/97	110	U
2-Butanone (MEK)	EPA 5030	8021A	280	5	10/14/97	10/14/97	280	U
Acetone	EPA 5030	8021A	280	5	10/14/97	10/14/97	280	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	110	5	10/14/97	10/14/97	110	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	110	5	10/14/97	10/14/97	110	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	110	5	10/14/97	10/14/97	110	U

Approved By: Thomas A. Babin
1344/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3016

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil

Service Request: L9703479
 Date Collected: 10/13/97
 Date Received: 10/13/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD006
 Lab Code: L9703479-006
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	ver	qua
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u	
Chloromethane	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U		
Vinyl Chloride	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U		
Bromomethane	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U		
Chloroethane	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
Methylene Chloride	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/13/97	10/13/97	54	U		
Toluene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U		
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U		
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/13/97	10/13/97	54	U		
Acetone	EPA 5030	8021A	54	1	10/13/97	10/13/97	54	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U		

Approved By: Thomas A. Blum
 IS44/021397p

Date: 11/17/97

QUALITY VALIDATED

LEVEL V

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil

Service Request: L9703479
 Date Collected: 10/13/97
 Date Received: 10/13/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD007
 Lab Code: L9703479-007
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
Benzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/13/97	10/13/97	55	U
Toluene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/13/97	10/13/97	55	U
Acetone	EPA 5030	8021A	55	1	10/13/97	10/13/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U

Approved By: Thomas A. Boring

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD008
Lab Code: L9703479-008
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rel qua	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u	
Chloromethane	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u	
Vinyl Chloride	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u	
Bromomethane	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u	
Chloroethane	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
Methylene Chloride	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u	
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/13/97	10/13/97	240	U	u	*8
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
Chloroform	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
Benzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/13/97	10/13/97	930	U	u	D
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
Bromodichloromethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	53	1	10/13/97	10/13/97	53	U	u	
Toluene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u	
Chlorobenzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
Ethylbenzene	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
m,p-Xylenes	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
o-Xylene	EPA 5030	8021A	6	1	10/13/97	10/13/97	MC 4.5.98	U	u	*8
Bromoform	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/13/97	10/13/97	6	U	u	
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u	
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u	
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/13/97	10/13/97	11	U	u	
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u	
2-Butanone (MEK)	EPA 5030	8021A	53	1	10/13/97	10/13/97	53	U	u	
Acetone	EPA 5030	8021A	53	1	10/13/97	10/13/97	53	U	u	
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u	
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/13/97	10/13/97	22	U	u	

Approved By: Thomas B. Robinson
1544/021397p

Date: 11/17/97

ACCREDITED

LEVEL V

3019

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD008 DL *MC 6.3.98*
L9703479-008DL

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rel qua	qua code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	530	50	10/14/97	10/14/97	530	U	R	D
Chloromethane	EPA 5030	8021A	530	50	10/14/97	10/14/97	530	U		
Vinyl Chloride	EPA 5030	8021A	530	50	10/14/97	10/14/97	530	U		
Bromomethane	EPA 5030	8021A	530	50	10/14/97	10/14/97	530	U		
Chloroethane	EPA 5030	8021A	530	50	10/14/97	10/14/97	530	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
1,1-Dichloroethene	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
Methylene Chloride	EPA 5030	8021A	1100	50	10/14/97	10/14/97	1100	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
1,1-Dichloroethane	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
Chloroform	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
Carbon Tetrachloride	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
Benzene	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
1,2-Dichloroethane	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
Trichloroethene (TCE)	EPA 5030	8021A	260	50	10/14/97	10/14/97	1300			
1,2-Dichloropropane	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U	R	D
Bromodichloromethane	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	2600	50	10/14/97	10/14/97	2600	U		
Toluene	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
1,1,2-Trichloroethane	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
Chlorotrifluoroethane	EPA 5030	8021A	1100	50	10/14/97	10/14/97	1100	U		
Chlorobenzene	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
Ethylbenzene	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
m,p-Xylenes	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
o-Xylene	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
Bromoform	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	260	50	10/14/97	10/14/97	260	U		
1,3-Dichlorobenzene	EPA 5030	8021A	530	50	10/14/97	10/14/97	530	U		
1,4-Dichlorobenzene	EPA 5030	8021A	530	50	10/14/97	10/14/97	530	U		
1,2-Dichlorobenzene	EPA 5030	8021A	530	50	10/14/97	10/14/97	530	U		
Chlorotrifluoroethene	EPA 5030	8021A	1100	50	10/14/97	10/14/97	1100	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	1100	50	10/14/97	10/14/97	1100	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	1100	50	10/14/97	10/14/97	1100	U		
2-Butanone (MEK)	EPA 5030	8021A	2600	50	10/14/97	10/14/97	2600	U		
Acetone	EPA 5030	8021A	2600	50	10/14/97	10/14/97	2600	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	1100	50	10/14/97	10/14/97	1100	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	1100	50	10/14/97	10/14/97	1100	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	1100	50	10/14/97	10/14/97	1100	U		

Approved By: Thomas D. Arbin
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

EVERETT

3020

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD010
Lab Code: L9703479-010
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11000	1000	10/14/97	10/14/97	11000	U	u	
Chloromethane	EPA 5030	8021A	11000	1000	10/14/97	10/14/97	11000	U		
Vinyl Chloride	EPA 5030	8021A	11000	1000	10/14/97	10/14/97	11000	U		
Bromomethane	EPA 5030	8021A	11000	1000	10/14/97	10/14/97	11000	U		
Chloroethane	EPA 5030	8021A	11000	1000	10/14/97	10/14/97	11000	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U		
1,1-Dichloroethene	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U		
Methylene Chloride	EPA 5030	8021A	22000	1000	10/14/97	10/14/97	22000	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	6200	U		*S
1,1-Dichloroethane	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U	u	
Chloroform	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U		
Carbon Tetrachloride	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U		
Benzene	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U		
1,2-Dichloroethane	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U		
Trichloroethene (TCE)	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	3300000	U		
1,2-Dichloropropane	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U	u	
Bromodichloromethane	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54000	1000	10/14/97	10/14/97	54000	U		
Toluene	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U		
1,1,2-Trichloroethane	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U		
Chlorotrifluoroethane	EPA 5030	8021A	22000	1000	10/14/97	10/14/97	22000	U		
Chlorobenzene	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U		
Ethylbenzene	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U		
m,p-Xylenes	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U		
o-Xylene	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U		
Bromoform	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	5400	1000	10/14/97	10/14/97	5400	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11000	1000	10/14/97	10/14/97	11000	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11000	1000	10/14/97	10/14/97	11000	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11000	1000	10/14/97	10/14/97	11000	U		
Chlorotrifluoroethene	EPA 5030	8021A	22000	1000	10/14/97	10/14/97	22000	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22000	1000	10/14/97	10/14/97	22000	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22000	1000	10/14/97	10/14/97	22000	U		
2-Butanone (MEK)	EPA 5030	8021A	54000	1000	10/14/97	10/14/97	54000	U		
Acetone	EPA 5030	8021A	54000	1000	10/14/97	10/14/97	54000	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	22000	1000	10/14/97	10/14/97	22000	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	22000	1000	10/14/97	10/14/97	22000	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22000	1000	10/14/97	10/14/97	22000	U		

Approved By: Thomas P. Moring
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479

Date Collected: 10/13/97

Date Received: 10/13/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD011
L9703479-011

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11000	1000	10/14/97	10/14/97	11000	U	U
Chloromethane	EPA 5030	8021A	11000	1000	10/14/97	10/14/97	11000	U	U
Vinyl Chloride	EPA 5030	8021A	11000	1000	10/14/97	10/14/97	11000	U	U
Bromomethane	EPA 5030	8021A	11000	1000	10/14/97	10/14/97	11000	U	U
Chloroethane	EPA 5030	8021A	11000	1000	10/14/97	10/14/97	11000	U	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
1,1-Dichloroethene	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
Methylene Chloride	EPA 5030	8021A	22000	1000	10/14/97	10/14/97	22000	U	U
trans-1,2-Dichloroethene	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
cis-1,2-Dichloroethene	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	NC 8400	U	U
1,1-Dichloroethane	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
Chloroform	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
Carbon Tetrachloride	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
Benzene	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
1,2-Dichloroethane	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
Trichloroethene (TCE)	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	580000	U	U
1,2-Dichloropropane	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
Bromodichloromethane	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55000	1000	10/14/97	10/14/97	55000	U	U
Toluene	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
trans-1,3-Dichloropropene	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
cis-1,3-Dichloropropene	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
1,1,2-Trichloroethane	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
Tetrachloroethene (PCE)	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
Chlorotrifluoroethane	EPA 5030	8021A	22000	1000	10/14/97	10/14/97	22000	U	U
Chlorobenzene	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
Ethylbenzene	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
m,p-Xylenes	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
o-Xylene	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
Bromoform	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	5500	1000	10/14/97	10/14/97	5500	U	U
1,3-Dichlorobenzene	EPA 5030	8021A	11000	1000	10/14/97	10/14/97	11000	U	U
1,4-Dichlorobenzene	EPA 5030	8021A	11000	1000	10/14/97	10/14/97	11000	U	U
1,2-Dichlorobenzene	EPA 5030	8021A	11000	1000	10/14/97	10/14/97	11000	U	U
Chlorotrifluoroethane	EPA 5030	8021A	22000	1000	10/14/97	10/14/97	22000	U	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22000	1000	10/14/97	10/14/97	22000	U	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22000	1000	10/14/97	10/14/97	22000	U	U
2-Butanone (MEK)	EPA 5030	8021A	55000	1000	10/14/97	10/14/97	55000	U	U
Acetone	EPA 5030	8021A	55000	1000	10/14/97	10/14/97	55000	U	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22000	1000	10/14/97	10/14/97	22000	U	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22000	1000	10/14/97	10/14/97	22000	U	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22000	1000	10/14/97	10/14/97	22000	U	U

Approved By: Thomas A. Brown
IS44/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3022
Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD011 DL WC
L9703479-011DL 8.12.98

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev	qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	55000	5000	10/14/97	10/14/97	55000	U	R	A
Chloromethane	EPA 5030	8021A	55000	5000	10/14/97	10/14/97	55000	U		
Vinyl Chloride	EPA 5030	8021A	55000	5000	10/14/97	10/14/97	55000	U		
Bromomethane	EPA 5030	8021A	55000	5000	10/14/97	10/14/97	55000	U		
Chloroethane	EPA 5030	8021A	55000	5000	10/14/97	10/14/97	55000	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
1,1-Dichloroethene	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
Methylene Chloride	EPA 5030	8021A	110000	5000	10/14/97	10/14/97	110000	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
1,1-Dichloroethane	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
Chloroform	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
Carbon Tetrachloride	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
Benzene	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
1,2-Dichloroethane	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
Trichloroethene (TCE)	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	910000	U	R	D
1,2-Dichloropropane	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
Bromodichloromethane	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	270000	5000	10/14/97	10/14/97	270000	U		
Toluene	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
1,1,2-Trichloroethane	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
Chlorotrifluoroethane	EPA 5030	8021A	110000	5000	10/14/97	10/14/97	110000	U		
Chlorobenzene	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
Ethylbenzene	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
m,p-Xylenes	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
o-Xylene	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
Bromoform	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	27000	5000	10/14/97	10/14/97	27000	U		
1,3-Dichlorobenzene	EPA 5030	8021A	55000	5000	10/14/97	10/14/97	55000	U		
1,4-Dichlorobenzene	EPA 5030	8021A	55000	5000	10/14/97	10/14/97	55000	U		
1,2-Dichlorobenzene	EPA 5030	8021A	55000	5000	10/14/97	10/14/97	55000	U		
Chlorotrifluoroethane	EPA 5030	8021A	110000	5000	10/14/97	10/14/97	110000	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	110000	5000	10/14/97	10/14/97	110000	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	110000	5000	10/14/97	10/14/97	110000	U		
2-Butanone (MEK)	EPA 5030	8021A	270000	5000	10/14/97	10/14/97	270000	U		
Acetone	EPA 5030	8021A	270000	5000	10/14/97	10/14/97	270000	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	110000	5000	10/14/97	10/14/97	110000	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	110000	5000	10/14/97	10/14/97	110000	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	110000	5000	10/14/97	10/14/97	110000	U		

Approved By: Thomas D. Brown
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3023

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD012
Lab Code: L9703479-012
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	ver. qua	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	21	2	10/14/97	10/14/97	21	U	u	
Chloromethane	EPA 5030	8021A	21	2	10/14/97	10/14/97	21	U		
Vinyl Chloride	EPA 5030	8021A	21	2	10/14/97	10/14/97	21	U		
Bromomethane	EPA 5030	8021A	21	2	10/14/97	10/14/97	21	U		
Chloroethane	EPA 5030	8021A	21	2	10/14/97	10/14/97	21	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
Methylene Chloride	EPA 5030	8021A	42	2	10/14/97	10/14/97	42	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
Chloroform	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
Benzene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/14/97	10/14/97	28	U		
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u	
Bromodichloromethane	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	105	2	10/14/97	10/14/97	105	U		
Toluene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
Chlorotrifluoroethane	EPA 5030	8021A	42	2	10/14/97	10/14/97	42	U		
Chlorobenzene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
Ethylbenzene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
m,p-Xylenes	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
o-Xylene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
Bromoform	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U		
1,3-Dichlorobenzene	EPA 5030	8021A	21	2	10/14/97	10/14/97	21	U		
1,4-Dichlorobenzene	EPA 5030	8021A	21	2	10/14/97	10/14/97	21	U		
1,2-Dichlorobenzene	EPA 5030	8021A	21	2	10/14/97	10/14/97	21	U		
Chlorotrifluoroethene	EPA 5030	8021A	42	2	10/14/97	10/14/97	42	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	42	2	10/14/97	10/14/97	42	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	42	2	10/14/97	10/14/97	42	U		
2-Butanone (MEK)	EPA 5030	8021A	105	2	10/14/97	10/14/97	105	U		
Acetone	EPA 5030	8021A	105	2	10/14/97	10/14/97	105	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	42	2	10/14/97	10/14/97	42	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	42	2	10/14/97	10/14/97	42	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	42	2	10/14/97	10/14/97	42	U		

Approved By: Thomas B. Riving
1544/021397p

Date: 11/17/97

QC DEN VALIDATED

LEVEL V

3024

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD013
L9703479-013

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	vel qua	qua code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	22	2	10/14/97	10/14/97	22	U	U	
Chloromethane	EPA 5030	8021A	22	2	10/14/97	10/14/97	22	U	U	
Vinyl Chloride	EPA 5030	8021A	22	2	10/14/97	10/14/97	22	U	U	
Bromomethane	EPA 5030	8021A	22	2	10/14/97	10/14/97	22	U	U	
Chloroethane	EPA 5030	8021A	22	2	10/14/97	10/14/97	22	U	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
Methylene Chloride	EPA 5030	8021A	44	2	10/14/97	10/14/97	44	U	U	
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/14/97	10/14/97	97	U	U	
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
Chloroform	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
Benzene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/14/97	10/14/97	670	U	U	
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
Bromodichloromethane	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	110	2	10/14/97	10/14/97	110	U	U	
Toluene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
Chlorotrifluoroethane	EPA 5030	8021A	44	2	10/14/97	10/14/97	44	U	U	
Chlorobenzene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
Ethylbenzene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
m,p-Xylenes	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
o-Xylene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
Bromoform	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	U	
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	10/14/97	10/14/97	22	U	U	
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	10/14/97	10/14/97	22	U	U	
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	10/14/97	10/14/97	22	U	U	
Chlorotrifluoroethene	EPA 5030	8021A	44	2	10/14/97	10/14/97	44	U	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	44	2	10/14/97	10/14/97	44	U	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	44	2	10/14/97	10/14/97	44	U	U	
2-Butanone (MEK)	EPA 5030	8021A	110	2	10/14/97	10/14/97	110	U	U	
Acetone	EPA 5030	8021A	110	2	10/14/97	10/14/97	110	U	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	44	2	10/14/97	10/14/97	44	U	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	44	2	10/14/97	10/14/97	44	U	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	44	2	10/14/97	10/14/97	44	U	U	

Approved By: Thomas P. Nelson
IS44/021397p

Date: 11/17/97

CCDEN VALIDATED

LEVEL V

3025

Page No.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD014
Lab Code: L9703479-014
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	vel	qua	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	22	2	10/14/97	10/14/97	22	U	u		
Chloromethane	EPA 5030	8021A	22	2	10/14/97	10/14/97	22	U	u		
Vinyl Chloride	EPA 5030	8021A	22	2	10/14/97	10/14/97	22	U	u		
Bromomethane	EPA 5030	8021A	22	2	10/14/97	10/14/97	22	U	u		
Chloroethane	EPA 5030	8021A	22	2	10/14/97	10/14/97	22	U	u		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
Methylene Chloride	EPA 5030	8021A	43	2	10/14/97	10/14/97	43	U	u		
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/14/97	10/14/97	320	U	u		
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
Chloroform	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
Benzene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/14/97	10/14/97	340	U	u		
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
Bromodichloromethane	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	107	2	10/14/97	10/14/97	107	U	u		
Toluene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
Chlorotrifluoroethane	EPA 5030	8021A	43	2	10/14/97	10/14/97	43	U	u		
Chlorobenzene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
Ethylbenzene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
m,p-Xylenes	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
o-Xylene	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
Bromoform	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/14/97	10/14/97	11	U	u		
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	10/14/97	10/14/97	22	U	u		
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	10/14/97	10/14/97	22	U	u		
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	10/14/97	10/14/97	22	U	u		
Chlorotrifluoroethene	EPA 5030	8021A	43	2	10/14/97	10/14/97	43	U	u		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	43	2	10/14/97	10/14/97	43	U	u		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	43	2	10/14/97	10/14/97	43	U	u		
2-Butanone (MEK)	EPA 5030	8021A	107	2	10/14/97	10/14/97	107	U	u		
Acetone	EPA 5030	8021A	107	2	10/14/97	10/14/97	107	U	u		
1,2,4-Trimethylbenzene	EPA 5030	8021A	43	2	10/14/97	10/14/97	43	U	u		
1,3,5-Trimethylbenzene	EPA 5030	8021A	43	2	10/14/97	10/14/97	43	U	u		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	43	2	10/14/97	10/14/97	43	U	u		

Approved By: Theresa A. Blum
1544/021397p

Date: 11/17/97

LABORATORY VALIDATED

LEVEL V

3026

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD015
Lab Code: L9703479-019
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qua	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U	U	
Chloromethane	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U		
Vinyl Chloride	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U		
Bromomethane	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U		
Chloroethane	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Methylene Chloride	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/16/97	10/16/97	9	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/16/97	10/16/97	85	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/16/97	10/16/97	57	U		
Toluene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Chlorotrifluoroethane	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U		
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U		
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U		
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U		
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/16/97	10/16/97	57	U		
Acetone	EPA 5030	8021A	57	1	10/16/97	10/16/97	57	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U		

Approved By: Thomas P. Robison
1544/021397p

Date: 11/17/97

ORIGIN VALIDATED

LEVEL V

3029

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD016
Lab Code: L9703479-020
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U
Chloromethane	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
Benzene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/16/97	10/16/97	55	U
Toluene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/16/97	10/16/97	55	U
Acetone	EPA 5030	8021A	55	1	10/16/97	10/16/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U

Approved By: Thomas D. Nohring
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3030

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD017
Lab Code: L9703479-021
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U
Chloromethane	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
Benzene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/16/97	10/16/97	55	U
Toluene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/16/97	10/16/97	55	U
Acetone	EPA 5030	8021A	55	1	10/16/97	10/16/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U

Approved By: Thomas P. Brown
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3031

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD018
Lab Code: L9703479-022
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rel qua	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U	u	
Chloromethane	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U		
Vinyl Chloride	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U		
Bromomethane	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U		
Chloroethane	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Methylene Chloride	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/16/97	10/16/97	30	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
Bromodichloromethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/16/97	10/16/97	57	U		
Toluene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Chlorotrifluoroethane	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U		
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U		
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U		
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U		
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/16/97	10/16/97	57	U		
Acetone	EPA 5030	8021A	57	1	10/16/97	10/16/97	57	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U		

Approved By: Thomas R. Robinson
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3032

Page No.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD019
Lab Code: L9703479-023
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	view	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
Chloromethane	EPA 5030	8021A	23	2	10/16/97	10/16/97	23	U	U	
Vinyl Chloride	EPA 5030	8021A	23	2	10/16/97	10/16/97	23	U	U	
Bromomethane	EPA 5030	8021A	23	2	10/16/97	10/16/97	23	U	U	
Chloroethane	EPA 5030	8021A	23	2	10/16/97	10/16/97	23	U	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
1,1-Dichloroethene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
Methylene Chloride	EPA 5030	8021A	45	2	10/16/97	10/16/97	45	U	U	
trans-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/16/97	10/16/97	16	U	U	
1,1-Dichloroethane	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
Chloroform	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
Carbon Tetrachloride	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
Benzene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
1,2-Dichloroethane	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
Trichloroethene (TCE)	EPA 5030	8021A	12	2	10/16/97	10/16/97	160	U	U	
1,2-Dichloropropane	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
Bromodichloromethane	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	113	2	10/16/97	10/16/97	113	U	U	
Toluene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
1,1,2-Trichloroethane	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
Chlorotrifluoroethane	EPA 5030	8021A	45	2	10/16/97	10/16/97	45	U	U	
Chlorobenzene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
Ethylbenzene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
m,p-Xylenes	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
o-Xylene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
Bromoform	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	U	
1,3-Dichlorobenzene	EPA 5030	8021A	23	2	10/16/97	10/16/97	23	U	U	
1,4-Dichlorobenzene	EPA 5030	8021A	23	2	10/16/97	10/16/97	23	U	U	
1,2-Dichlorobenzene	EPA 5030	8021A	23	2	10/16/97	10/16/97	23	U	U	
Chlorotrifluoroethene	EPA 5030	8021A	45	2	10/16/97	10/16/97	45	U	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	45	2	10/16/97	10/16/97	45	U	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	45	2	10/16/97	10/16/97	45	U	U	
2-Butanone (MEK)	EPA 5030	8021A	113	2	10/16/97	10/16/97	113	U	U	
Acetone	EPA 5030	8021A	113	2	10/16/97	10/16/97	113	U	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	45	2	10/16/97	10/16/97	45	U	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	45	2	10/16/97	10/16/97	45	U	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	45	2	10/16/97	10/16/97	45	U	U	

Approved By: Thomas B. Boring
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3033
Page No:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD022
Lab Code: L9703479-033
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	22	2	10/16/97	10/16/97	22	U
Chloromethane	EPA 5030	8021A	22	2	10/16/97	10/16/97	22	U
Vinyl Chloride	EPA 5030	8021A	22	2	10/16/97	10/16/97	22	U
Bromomethane	EPA 5030	8021A	22	2	10/16/97	10/16/97	22	U
Chloroethane	EPA 5030	8021A	22	2	10/16/97	10/16/97	22	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
Methylene Chloride	EPA 5030	8021A	44	2	10/16/97	10/16/97	44	U
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
Chloroform	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
Benzene	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/16/97	10/16/97	80	U
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
Bromodichloromethane	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	108	2	10/16/97	10/16/97	108	U
Toluene	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
Chlorotrifluoroethane	EPA 5030	8021A	44	2	10/16/97	10/16/97	44	U
Chlorobenzene	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
Ethylbenzene	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
m,p-Xylenes	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
o-Xylene	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
Bromoform	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/16/97	10/16/97	11	U
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	10/16/97	10/16/97	22	U
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	10/16/97	10/16/97	22	U
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	10/16/97	10/16/97	22	U
Chlorotrifluoroethene	EPA 5030	8021A	44	2	10/16/97	10/16/97	44	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	44	2	10/16/97	10/16/97	44	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	44	2	10/16/97	10/16/97	44	U
2-Butanone (MEK)	EPA 5030	8021A	108	2	10/16/97	10/16/97	108	U
Acetone	EPA 5030	8021A	108	2	10/16/97	10/16/97	108	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	44	2	10/16/97	10/16/97	44	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	44	2	10/16/97	10/16/97	44	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	44	2	10/16/97	10/16/97	44	U

Approved By: Thomas A. Bobbing
1544/021397p

Date: 11/7/97

OGDEN VALIDATED

LEVEL V

3040

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD023
Lab Code: L9703479-034
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	56	5	10/16/97	10/16/97	56	U		
Chloromethane	EPA 5030	8021A	56	5	10/16/97	10/16/97	56	U		
Vinyl Chloride	EPA 5030	8021A	56	5	10/16/97	10/16/97	56	U		
Bromomethane	EPA 5030	8021A	56	5	10/16/97	10/16/97	56	U		
Chloroethane	EPA 5030	8021A	56	5	10/16/97	10/16/97	56	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
1,1-Dichloroethene	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
Methylene Chloride	EPA 5030	8021A	112	5	10/16/97	10/16/97	140	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
1,1-Dichloroethane	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
Chloroform	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
Carbon Tetrachloride	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
Benzene	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
1,2-Dichloroethane	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
Trichloroethene (TCE)	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
1,2-Dichloropropane	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
Bromodichloromethane	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	278	5	10/16/97	10/16/97	278	U		
Toluene	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
1,1,2-Trichloroethane	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
Chlorotrifluoroethane	EPA 5030	8021A	112	5	10/16/97	10/16/97	112	U		
Chlorobenzene	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
Ethylbenzene	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
m,p-Xylenes	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
o-Xylene	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
Bromoform	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	28	5	10/16/97	10/16/97	28	U		
1,3-Dichlorobenzene	EPA 5030	8021A	56	5	10/16/97	10/16/97	56	U		
1,4-Dichlorobenzene	EPA 5030	8021A	56	5	10/16/97	10/16/97	56	U		
1,2-Dichlorobenzene	EPA 5030	8021A	56	5	10/16/97	10/16/97	56	U		
Chlorotrifluoroethene	EPA 5030	8021A	112	5	10/16/97	10/16/97	112	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	112	5	10/16/97	10/16/97	112	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	112	5	10/16/97	10/16/97	112	U		
2-Butanone (MEK)	EPA 5030	8021A	278	5	10/16/97	10/16/97	278	U		
Acetone	EPA 5030	8021A	278	5	10/16/97	10/16/97	278	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	112	5	10/16/97	10/16/97	112	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	112	5	10/16/97	10/16/97	112	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	112	5	10/16/97	10/16/97	112	U		

Approved By: Thomas A. Robinson
IS44/021397p

Date: 11/17/97

LOGDEN VALIDATED

LEVEL V

3041

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD023RE
Lab Code: L9703479-034RE
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev	qua	code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/17/97	10/17/97	12	U	U		
Chloromethane	EPA 5030	8021A	12	1	10/17/97	10/17/97	12	U			
Vinyl Chloride	EPA 5030	8021A	12	1	10/17/97	10/17/97	12	U			
Bromomethane	EPA 5030	8021A	12	1	10/17/97	10/17/97	12	U			
Chloroethane	EPA 5030	8021A	12	1	10/17/97	10/17/97	12	U			
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
Methylene Chloride	EPA 5030	8021A	23	1	10/17/97	10/17/97	88	U			
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
Chloroform	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
Benzene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
Bromodichloromethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	56	1	10/17/97	10/17/97	56	U			
Toluene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
Chlorotrifluoroethane	EPA 5030	8021A	23	1	10/17/97	10/17/97	23	U			
Chlorobenzene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
Ethylbenzene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
m,p-Xylenes	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
o-Xylene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
Bromoform	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U			
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/17/97	10/17/97	12	U			
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/17/97	10/17/97	12	U			
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/17/97	10/17/97	12	U			
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/17/97	10/17/97	23	U			
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/17/97	10/17/97	23	U			
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/17/97	10/17/97	23	U			
2-Butanone (MEK)	EPA 5030	8021A	56	1	10/17/97	10/17/97	56	U			
Acetone	EPA 5030	8021A	56	1	10/17/97	10/17/97	56	U			
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/17/97	10/17/97	23	U			
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/17/97	10/17/97	23	U			
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/17/97	10/17/97	23	U			

Approved By: Thomas A. Robinson
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3042

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD024
Lab Code: L9703479-035
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rel qua	qua code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U	
Chloromethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Vinyl Chloride	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Bromomethane	EPA 5030	8021A	55	1	10/18/97	10/18/97	55	U		
Chloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Methylene Chloride	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/18/97	10/18/97	55	U		
Toluene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U		
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U		
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/18/97	10/18/97	55	U		
Acetone	EPA 5030	8021A	55	1	10/18/97	10/18/97	55	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U		

Approved By: Thomas A. Brown

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3043

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD025
Lab Code: L9703479-036
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Chloromethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Vinyl Chloride	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Bromomethane	EPA 5030	8021A	54	1	10/18/97	10/18/97	54	U
Chloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/18/97	10/18/97 NC	56	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Benzene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/18/97	10/18/97	54	U
Toluene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/18/97	10/18/97	54	U
Acetone	EPA 5030	8021A	54	1	10/18/97	10/18/97 NC	75	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U

Approved By: Thomas A. Blum
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3044

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD027
Lab Code: L9703479-038
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
Chloromethane	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
Vinyl Chloride	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
Bromomethane	EPA 5030	8021A	275	5	10/17/97	10/17/97	275	U
Chloroethane	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
1,1-Dichloroethene	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
Methylene Chloride	EPA 5030	8021A	110	5	10/17/97	10/17/97	110	U
trans-1,2-Dichloroethene	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
cis-1,2-Dichloroethene	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
1,1-Dichloroethane	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
Chloroform	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
Carbon Tetrachloride	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
Benzene	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
1,2-Dichloroethane	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
Trichloroethene (TCE)	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
1,2-Dichloropropane	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
Bromodichloromethane	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	275	5	10/17/97	10/17/97	275	U
Toluene	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
trans-1,3-Dichloropropene	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
cis-1,3-Dichloropropene	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
1,1,2-Trichloroethane	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
Tetrachloroethene (PCE)	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
Chlorotrifluoroethane	EPA 5030	8021A	110	5	10/17/97	10/17/97	110	U
Chlorobenzene	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
Ethylbenzene	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
m,p-Xylenes	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
o-Xylene	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
Bromoform	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U
1,3-Dichlorobenzene	EPA 5030	8021A	55	5	10/17/97	10/17/97	55	U
1,4-Dichlorobenzene	EPA 5030	8021A	55	5	10/17/97	10/17/97	55	U
1,2-Dichlorobenzene	EPA 5030	8021A	55	5	10/17/97	10/17/97	55	U
Chlorotrifluoroethene	EPA 5030	8021A	110	5	10/17/97	10/17/97	110	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	110	5	10/17/97	10/17/97	110	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	110	5	10/17/97	10/17/97	110	U
2-Butanone (MEK)	EPA 5030	8021A	275	5	10/17/97	10/17/97	275	U
Acetone	EPA 5030	8021A	275	5	10/17/97	10/17/97 NC	790	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	110	5	10/17/97	10/17/97	110	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	110	5	10/17/97	10/17/97	110	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	110	5	10/17/97	10/17/97	110	U

Approved By: Thomas P. Brown
1344/021397p

Date: 11/17/97

OGDEN VALIDATED

11/17/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD028
Lab Code: L9703479-039
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qua	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U	u	
Chloromethane	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
Vinyl Chloride	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
Bromomethane	EPA 5030	8021A	275	5	10/17/97	10/17/97	275	U		
Chloroethane	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
1,1-Dichloroethene	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
Methylene Chloride	EPA 5030	8021A	110	5	10/17/97	10/17/97	110	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
1,1-Dichloroethane	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
Chloroform	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
Carbon Tetrachloride	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
Benzene	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
1,2-Dichloroethane	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
Trichloroethene (TCE)	EPA 5030	8021A	28	5	10/17/97	10/17/97	1500	U		
1,2-Dichloropropane	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U	u	
Bromodichloromethane	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	275	5	10/17/97	10/17/97	275	U		
Toluene	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
1,1,2-Trichloroethane	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
Chlorotrifluoroethane	EPA 5030	8021A	110	5	10/17/97	10/17/97	110	U		
Chlorobenzene	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
Ethylbenzene	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
m,p-Xylenes	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
o-Xylene	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
Bromoform	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	28	5	10/17/97	10/17/97	28	U		
1,3-Dichlorobenzene	EPA 5030	8021A	55	5	10/17/97	10/17/97	55	U		
1,4-Dichlorobenzene	EPA 5030	8021A	55	5	10/17/97	10/17/97	55	U		
1,2-Dichlorobenzene	EPA 5030	8021A	55	5	10/17/97	10/17/97	55	U		
Chlorotrifluoroethene	EPA 5030	8021A	110	5	10/17/97	10/17/97	110	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	110	5	10/17/97	10/17/97	110	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	110	5	10/17/97	10/17/97	110	U		
2-Butanone (MEK)	EPA 5030	8021A	275	5	10/17/97	10/17/97	275	U		
Acetone	EPA 5030	8021A	275	5	10/17/97	10/17/97	1300	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	110	5	10/17/97	10/17/97	110	U	u	
1,3,5-Trimethylbenzene	EPA 5030	8021A	110	5	10/17/97	10/17/97	110	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	110	5	10/17/97	10/17/97	110	U		

Approved By: Thomas X. Albany
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3046

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD028DL
Lab Code: L9703479-039DL
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
Chloromethane	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
Vinyl Chloride	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
Bromomethane	EPA 5030	8021A	550	10	10/18/97	10/18/97	550	U
Chloroethane	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
1,1-Dichloroethene	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
Methylene Chloride	EPA 5030	8021A	220	10	10/18/97	10/18/97	220	U
trans-1,2-Dichloroethene	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
cis-1,2-Dichloroethene	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
1,1-Dichloroethane	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
Chloroform	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
Carbon Tetrachloride	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
Benzene	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
1,2-Dichloroethane	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
Trichloroethene (TCE)	EPA 5030	8021A	55	10	10/18/97	10/18/97	360	U
1,2-Dichloropropane	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
Bromodichloromethane	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	550	10	10/18/97	10/18/97	550	U
Toluene	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
trans-1,3-Dichloropropene	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
cis-1,3-Dichloropropene	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
1,1,2-Trichloroethane	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
Tetrachloroethene (PCE)	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
Chlorotrifluoroethane	EPA 5030	8021A	220	10	10/18/97	10/18/97	220	U
Chlorobenzene	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
Ethylbenzene	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
m,p-Xylenes	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
o-Xylene	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
Bromoform	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	55	10	10/18/97	10/18/97	55	U
1,3-Dichlorobenzene	EPA 5030	8021A	110	10	10/18/97	10/18/97	110	U
1,4-Dichlorobenzene	EPA 5030	8021A	110	10	10/18/97	10/18/97	110	U
1,2-Dichlorobenzene	EPA 5030	8021A	110	10	10/18/97	10/18/97	110	U
Chlorotrifluoroethene	EPA 5030	8021A	220	10	10/18/97	10/18/97	220	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	220	10	10/18/97	10/18/97	220	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	220	10	10/18/97	10/18/97	220	U
2-Butanone (MEK)	EPA 5030	8021A	550	10	10/18/97	10/18/97	550	U
Acetone	EPA 5030	8021A	550	10	10/18/97	10/18/97	1400	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	220	10	10/18/97	10/18/97	220	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	220	10	10/18/97	10/18/97	220	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	220	10	10/18/97	10/18/97	220	U

Approved By: Thomas R. Boring
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3047

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD033
L9703479-044

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rel qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U	u	
Chloromethane	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Vinyl Chloride	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Bromomethane	EPA 5030	8021A	103	2	10/17/97	10/17/97	103	U		
Chloroethane	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Methylene Chloride	EPA 5030	8021A	41	2	10/17/97	10/17/97	88	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U	u	
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Chloroform	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Benzene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Bromodichloromethane	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	103	2	10/17/97	10/17/97	103	U		
Toluene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Chlorotrifluoroethane	EPA 5030	8021A	41	2	10/17/97	10/17/97	41	U		
Chlorobenzene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Ethylbenzene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
m,p-Xylenes	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
o-Xylene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Bromoform	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,3-Dichlorobenzene	EPA 5030	8021A	21	2	10/17/97	10/17/97	21	U		
1,4-Dichlorobenzene	EPA 5030	8021A	21	2	10/17/97	10/17/97	21	U		
1,2-Dichlorobenzene	EPA 5030	8021A	21	2	10/17/97	10/17/97	21	U		
Chlorotrifluoroethene	EPA 5030	8021A	41	2	10/17/97	10/17/97	41	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	41	2	10/17/97	10/17/97	41	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	41	2	10/17/97	10/17/97	41	U		
2-Butanone (MEK)	EPA 5030	8021A	103	2	10/17/97	10/17/97	103	U		
Acetone	EPA 5030	8021A	103	2	10/17/97	10/17/97	103	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	41	2	10/17/97	10/17/97	41	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	41	2	10/17/97	10/17/97	41	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	41	2	10/17/97	10/17/97	41	U		

Approved By: Thomas P. R. [Signature]
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3048

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479

Date Collected: 10/15/97

Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD034
Lab Code: L9703479-045
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	view qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	21	2	10/17/97	10/17/97	21	U	R	V
Chloromethane	EPA 5030	8021A	21	2	10/17/97	10/17/97	21	U		
Vinyl Chloride	EPA 5030	8021A	21	2	10/17/97	10/17/97	21	U		
Bromomethane	EPA 5030	8021A	21	2	10/17/97	10/17/97	21	U		
Chloroethane	EPA 5030	8021A	21	2	10/17/97	10/17/97	21	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Methylene Chloride	EPA 5030	8021A	41	2	10/17/97	10/17/97	130	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Chloroform	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Benzene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Bromodichloromethane	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	103	2	10/17/97	10/17/97	103	U		
Toluene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Chlorotrifluoroethane	EPA 5030	8021A	41	2	10/17/97	10/17/97	41	U		
Chlorobenzene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Ethylbenzene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
m,p-Xylenes	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
o-Xylene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Bromoform	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,3-Dichlorobenzene	EPA 5030	8021A	21	2	10/17/97	10/17/97	21	U		
1,4-Dichlorobenzene	EPA 5030	8021A	21	2	10/17/97	10/17/97	21	U		
1,2-Dichlorobenzene	EPA 5030	8021A	21	2	10/17/97	10/17/97	21	U		
Chlorotrifluoroethene	EPA 5030	8021A	41	2	10/17/97	10/17/97	41	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	41	2	10/17/97	10/17/97	41	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	41	2	10/17/97	10/17/97	41	U		
2-Butanone (MEK)	EPA 5030	8021A	103	2	10/17/97	10/17/97	103	U		
Acetone	EPA 5030	8021A	103	2	10/17/97	10/17/97	103	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	41	2	10/17/97	10/17/97	41	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	41	2	10/17/97	10/17/97	41	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	41	2	10/17/97	10/17/97	41	U		

Approved By: Thomas E. R. King
IS44021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3049
Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD034RE
Lab Code: L9703479-045RE
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	view qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U	u	
Chloromethane	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U		
Vinyl Chloride	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U		
Bromomethane	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U		
Chloroethane	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
Methylene Chloride	EPA 5030	8021A	21	1	10/21/97	10/21/97	20			
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	u	
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	52	1	10/21/97	10/21/97	52	U		
Toluene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
Chlorotrifluoroethane	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U		
Chlorotrifluoroethene	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U		
2-Butanone (MEK)	EPA 5030	8021A	52	1	10/21/97	10/21/97	52	U		
Acetone	EPA 5030	8021A	52	1	10/21/97	10/21/97	52	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U		

Approved By: Shirley A. Blum
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479

Date Collected: 10/15/97

Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:

RD035

Lab Code:

L9703479-046

Test Notes:

Units: UG/KG

Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	ver qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
Chloromethane	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
Vinyl Chloride	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
Bromomethane	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
Chloroethane	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Methylene Chloride	EPA 5030	8021A	21	1	10/17/97	10/17/97	140	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	53	1	10/17/97	10/17/97	53	U		
Toluene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Chlorotrifluoroethane	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
Chlorotrifluoroethene	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U		
2-Butanone (MEK)	EPA 5030	8021A	53	1	10/17/97	10/17/97	53	U		
Acetone	EPA 5030	8021A	53	1	10/17/97	10/17/97	53	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U		

Approved By: Thomas A. Abbey

1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V 3051

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479

Date Collected: 10/15/97

Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:

RD035RE

Lab Code:

L9703479-046RE

Test Notes:

Units: UG/KG

Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
Methylene Chloride	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
Benzene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	53	1	10/21/97	10/21/97	53	U
Toluene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
Chlorotrifluoroethane	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U
Chlorobenzene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U
2-Butanone (MEK)	EPA 5030	8021A	53	1	10/21/97	10/21/97	53	U
Acetone	EPA 5030	8021A	53	1	10/21/97	10/21/97	53	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U

Approved By: Thomas B. Brown

IS44/021397p

Date: 11/17/97

OCCUPATIONAL VALIDATED

LEVEL V

3052

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD037
Lab Code: L9703479-047
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev	qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U	u	
Chloromethane	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
Vinyl Chloride	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
Bromomethane	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
Chloroethane	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Methylene Chloride	EPA 5030	8021A	21	1	10/17/97	10/17/97	190	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u	
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	52	1	10/17/97	10/17/97	52	U		
Toluene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Chlorotrifluoroethane	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
Chlorotrifluoroethene	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U		
2-Butanone (MEK)	EPA 5030	8021A	52	1	10/17/97	10/17/97	52	U		
Acetone	EPA 5030	8021A	52	1	10/17/97	10/17/97	52	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U		

Approved By: Thomas E. Robins

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3053

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD037DL
L9703479-047DL

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qua	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U		
Chloromethane	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U		
Vinyl Chloride	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U		
Bromomethane	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U		
Chloroethane	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
1,1-Dichloroethene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
Methylene Chloride	EPA 5030	8021A	104	5	10/21/97	10/21/97	140	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
1,1-Dichloroethane	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
Chloroform	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
Carbon Tetrachloride	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
Benzene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
1,2-Dichloroethane	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
Trichloroethene (TCE)	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
1,2-Dichloropropane	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
Bromodichloromethane	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	258	5	10/21/97	10/21/97	258	U		
Toluene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
1,1,2-Trichloroethane	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
Chlorotrifluoroethane	EPA 5030	8021A	104		10/21/97	10/21/97	104	U		
Chlorobenzene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
Ethylbenzene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
m,p-Xylenes	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
o-Xylene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
Bromoform	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
1,3-Dichlorobenzene	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U		
1,4-Dichlorobenzene	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U		
1,2-Dichlorobenzene	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U		
Chlorotrifluoroethane	EPA 5030	8021A	104	5	10/21/97	10/21/97	104	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	104	5	10/21/97	10/21/97	104	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	104	5	10/21/97	10/21/97	104	U		
2-Butanone (MEK)	EPA 5030	8021A	258	5	10/21/97	10/21/97	258	U		
Acetone	EPA 5030	8021A	258	5	10/21/97	10/21/97	258	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	104	5	10/21/97	10/21/97	104	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	104	5	10/21/97	10/21/97	104	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	104	5	10/21/97	10/21/97	104	U		

Approved By: Thomas B. R. King
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3054

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil

Service Request: L9703479
 Date Collected: 10/15/97
 Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD038
 Lab Code: L9703479-048
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	ver qual	anal code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
Chloromethane	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
Vinyl Chloride	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
Bromomethane	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
Chloroethane	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Methylene Chloride	EPA 5030	8021A	21	1	10/17/97	10/17/97	250	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	53	1	10/17/97	10/17/97	53	U		
Toluene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Chlorotrifluoroethane	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U		
Chlorotrifluoroethene	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U		
2-Butanone (MEK)	EPA 5030	8021A	53	1	10/17/97	10/17/97	53	U		
Acetone	EPA 5030	8021A	53	1	10/17/97	10/17/97	53	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U		

Approved By: Thomas A. Arling
 1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3055

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD038RE
Lab Code: L9703479-048RE
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
Methylene Chloride	EPA 5030	8021A	21	1	10/21/97	10/21/97	31	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
Benzene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	53	1	10/21/97	10/21/97	53	U
Toluene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
Chlorotrifluoroethane	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U
Chlorobenzene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U
2-Butanone (MEK)	EPA 5030	8021A	53	1	10/21/97	10/21/97	53	U
Acetone	EPA 5030	8021A	53	1	10/21/97	10/21/97	53	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	21	1	10/21/97	10/21/97	21	U

Approved By: Thomas A. Boring
1544021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3056

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD040
Lab Code: L9703479-060
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	23	2	10/18/97	10/18/97	23	U
Chloromethane	EPA 5030	8021A	23	2	10/18/97	10/18/97	23	U
Vinyl Chloride	EPA 5030	8021A	23	2	10/18/97	10/18/97	23	U
Bromomethane	EPA 5030	8021A	23	2	10/18/97	10/18/97	23	U
Chloroethane	EPA 5030	8021A	23	2	10/18/97	10/18/97	23	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
1,1-Dichloroethene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Methylene Chloride	EPA 5030	8021A	45	2	10/18/97	10/18/97	45	U
trans-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
cis-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
1,1-Dichloroethane	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Chloroform	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Carbon Tetrachloride	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Benzene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
1,2-Dichloroethane	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Trichloroethene (TCE)	EPA 5030	8021A	12	2	10/18/97	10/18/97	49	U
1,2-Dichloropropane	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Bromodichloromethane	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	113	2	10/18/97	10/18/97	113	U
Toluene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
trans-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
cis-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
1,1,2-Trichloroethane	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Tetrachloroethene (PCE)	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Chlorotrifluoroethane	EPA 5030	8021A	45	2	10/18/97	10/18/97	45	U
Chlorobenzene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Ethylbenzene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
m,p-Xylenes	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
o-Xylene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Bromoform	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
1,3-Dichlorobenzene	EPA 5030	8021A	23	2	10/18/97	10/18/97	23	U
1,4-Dichlorobenzene	EPA 5030	8021A	23	2	10/18/97	10/18/97	23	U
1,2-Dichlorobenzene	EPA 5030	8021A	23	2	10/18/97	10/18/97	23	U
Chlorotrifluoroethene	EPA 5030	8021A	45	2	10/18/97	10/18/97	45	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	45	2	10/18/97	10/18/97	45	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	45	2	10/18/97	10/18/97	45	U
2-Butanone (MEK)	EPA 5030	8021A	113	2	10/18/97	10/18/97	113	U
Acetone	EPA 5030	8021A	113	2	10/18/97	10/18/97	113	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	45	2	10/18/97	10/18/97	45	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	45	2	10/18/97	10/18/97	45	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	45	2	10/18/97	10/18/97	45	U

Approved By: Thomas K. Niboy
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3069

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD041
Lab Code: L9703479-061
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Benzene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/18/97	10/18/97	55	U
Toluene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/18/97	10/18/97	55	U
Acetone	EPA 5030	8021A	55	1	10/18/97	10/18/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U

Approved By: Thomas D. Blum
1544/021397p

Date: 11/12/97

OGDEN VALIDATED

LEVEL V

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD042
Lab Code: L9703479-062
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/18/97	10/18/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/18/97	10/18/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/18/97	10/18/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/18/97	10/18/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/18/97	10/18/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/18/97	10/18/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Benzene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/18/97	10/18/97	57	U
Toluene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Chlorotrifluoroethane	EPA 5030	8021A	23	1	10/18/97	10/18/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/18/97	10/18/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/18/97	10/18/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/18/97	10/18/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/18/97	10/18/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/18/97	10/18/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/18/97	10/18/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/18/97	10/18/97	57	U
Acetone	EPA 5030	8021A	57	1	10/18/97	10/18/97	57	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/18/97	10/18/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/18/97	10/18/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/18/97	10/18/97	23	U

Approved By: Theresa B. King
1544/021397p

Date: 11/12/97

OGDEN VALIDATED

LEVEL V

3071
Page No.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD043
Lab Code: L9703479-063
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual Code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U	U
Chloromethane	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U	U
Bromomethane	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U	U
Chloroethane	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
Methylene Chloride	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
Chloroform	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
Benzene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/18/97	10/18/97	55	U	U
Toluene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U	U
Chlorobenzene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
Ethylbenzene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
o-Xylene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
Bromoform	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/18/97	10/18/97	55	U	U
Acetone	EPA 5030	8021A	55	1	10/18/97	10/18/97	55	U	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U	U

Approved By: Thomas P. Brown
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3072

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD044
Lab Code: L9703479-064
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	24	2	10/18/97	10/18/97	24	U
Chloromethane	EPA 5030	8021A	24	2	10/18/97	10/18/97	24	U
Vinyl Chloride	EPA 5030	8021A	24	2	10/18/97	10/18/97	24	U
Bromomethane	EPA 5030	8021A	24	2	10/18/97	10/18/97	24	U
Chloroethane	EPA 5030	8021A	24	2	10/18/97	10/18/97	24	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
1,1-Dichloroethene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Methylene Chloride	EPA 5030	8021A	47	2	10/18/97	10/18/97	49	U
trans-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
cis-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
1,1-Dichloroethane	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Chloroform	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Carbon Tetrachloride	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Benzene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
1,2-Dichloroethane	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Trichloroethene (TCE)	EPA 5030	8021A	12	2	10/18/97	10/18/97	20	U
1,2-Dichloropropane	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Bromodichloromethane	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	117	2	10/18/97	10/18/97	117	U
Toluene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
trans-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
cis-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
1,1,2-Trichloroethane	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Tetrachloroethene (PCE)	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Chlorotrifluoroethane	EPA 5030	8021A	47	2	10/18/97	10/18/97	47	U
Chlorobenzene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Ethylbenzene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
m,p-Xylenes	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
o-Xylene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Bromoform	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
1,3-Dichlorobenzene	EPA 5030	8021A	24	2	10/18/97	10/18/97	24	U
1,4-Dichlorobenzene	EPA 5030	8021A	24	2	10/18/97	10/18/97	24	U
1,2-Dichlorobenzene	EPA 5030	8021A	24	2	10/18/97	10/18/97	24	U
Chlorotrifluoroethene	EPA 5030	8021A	47	2	10/18/97	10/18/97	47	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	47	2	10/18/97	10/18/97	47	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	47	2	10/18/97	10/18/97	47	U
2-Butanone (MEK)	EPA 5030	8021A	117	2	10/18/97	10/18/97	117	U
Acetone	EPA 5030	8021A	117	2	10/18/97	10/18/97	117	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	47	2	10/18/97	10/18/97	47	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	47	2	10/18/97	10/18/97	47	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	47	2	10/18/97	10/18/97	47	U

Approved By: Thomas A. Robin
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3073

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD045
Lab Code: L9703479-065
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	new qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/18/97	10/18/97	12	U	u	
Chloromethane	EPA 5030	8021A	12	1	10/18/97	10/18/97	12	U		
Vinyl Chloride	EPA 5030	8021A	12	1	10/18/97	10/18/97	12	U		
Bromomethane	EPA 5030	8021A	12	1	10/18/97	10/18/97	12	U		
Chloroethane	EPA 5030	8021A	12	1	10/18/97	10/18/97	12	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Methylene Chloride	EPA 5030	8021A	23	1	10/18/97	10/18/97	33	U	NT	*8
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U	u	
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/18/97	10/18/97	57	U		
Toluene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Chlorotrifluoroethane	EPA 5030	8021A	23	1	10/18/97	10/18/97	23	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/18/97	10/18/97	12	U		
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/18/97	10/18/97	12	U		
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/18/97	10/18/97	12	U		
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/18/97	10/18/97	23	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/18/97	10/18/97	23	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/18/97	10/18/97	23	U		
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/18/97	10/18/97	57	U		
Acetone	EPA 5030	8021A	57	1	10/18/97	10/18/97	57	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/18/97	10/18/97	23	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/18/97	10/18/97	23	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/18/97	10/18/97	23	U		

Approved By: Thomas D. Nelson
1544/021397p

Date: 11/17/97

GGDEN VALIDATED

LEVEL V

3074

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD046
Lab Code: L9703479-066
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rel qua	qua code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	22	2	10/18/97	10/18/97	22	U	u	
Chloromethane	EPA 5030	8021A	22	2	10/18/97	10/18/97	22	U		
Vinyl Chloride	EPA 5030	8021A	22	2	10/18/97	10/18/97	22	U		
Bromomethane	EPA 5030	8021A	22	2	10/18/97	10/18/97	22	U		
Chloroethane	EPA 5030	8021A	22	2	10/18/97	10/18/97	22	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
Methylene Chloride	EPA 5030	8021A	44	2	10/18/97	10/18/97	75			
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U	u	
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
Chloroform	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
Benzene	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/18/97	10/18/97	15	U		* 8
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U	u	
Bromodichloromethane	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	108	2	10/18/97	10/18/97	108	U		
Toluene	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
Chlorotrifluoroethane	EPA 5030	8021A	44	2	10/18/97	10/18/97	44	U		
Chlorobenzene	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
Ethylbenzene	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
m,p-Xylenes	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
o-Xylene	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
Bromoform	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	10/18/97	10/18/97	22	U		
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	10/18/97	10/18/97	22	U		
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	10/18/97	10/18/97	22	U		
Chlorotrifluoroethene	EPA 5030	8021A	44	2	10/18/97	10/18/97	44	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	44	2	10/18/97	10/18/97	44	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	44	2	10/18/97	10/18/97	44	U		
2-Butanone (MEK)	EPA 5030	8021A	108	2	10/18/97	10/18/97	108	U		
Acetone	EPA 5030	8021A	108	2	10/18/97	10/18/97	108	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	44	2	10/18/97	10/18/97	44	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	44	2	10/18/97	10/18/97	44	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	44	2	10/18/97	10/18/97	44	U		

Approved By: Thomas B. Rabin
ISA4/b21397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3075

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD047
Lab Code: L9703479-067
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Benzene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/18/97	10/18/97	55	U
Toluene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/18/97	10/18/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/18/97	10/18/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/18/97	10/18/97	55	U
Acetone	EPA 5030	8021A	55	1	10/18/97	10/18/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/18/97	10/18/97	22	U

Approved By: Thomas A. Blum
1544/021397p

Date: 11/17/97

LOGDEN VALIDATED

LEVEL V

3076

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD048
Lab Code: L9703479-068
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
Benzene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/19/97	10/19/97	55	U
Toluene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/19/97	10/19/97	55	U
Acetone	EPA 5030	8021A	55	1	10/19/97	10/19/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U

Approved By: Thomas B. King
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3077

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD049
Lab Code: L9703479-069
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U	u
Chloromethane	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U	
Vinyl Chloride	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U	
Bromomethane	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U	
Chloroethane	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
Methylene Chloride	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U	
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
Chloroform	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
Benzene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
Bromodichloromethane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/19/97	10/19/97	55	U	
Toluene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U	
Chlorobenzene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
Ethylbenzene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
m,p-Xylenes	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
o-Xylene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
Bromoform	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U	
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U	
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U	
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U	
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/19/97	10/19/97	55	U	
Acetone	EPA 5030	8021A	55	1	10/19/97	10/19/97	55	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U	

Approved By: Thomas D. Reilly
1544/021397p

Date: 11/17/97

QGDEN VALIDATED

LEVEL V

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD050
Lab Code: L9703479-070
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U
Chloromethane	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U
Vinyl Chloride	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U
Bromomethane	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U
Chloroethane	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U
Methylene Chloride	EPA 5030	8021A	44	2	10/19/97	10/19/97	49	U
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U
Chloroform	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/19/97	10/19/97	26	U
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U
Benzene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/19/97	10/19/97	150	U
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U
Bromodichloromethane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	109	2	10/19/97	10/19/97	109	U
Toluene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/19/97	10/19/97	55	U
Chlorotrifluoroethane	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U
Chlorobenzene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U
Ethylbenzene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U
m,p-Xylenes	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U
o-Xylene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U
Bromoform	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U
Chlorotrifluoroethene	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U
2-Butanone (MEK)	EPA 5030	8021A	109	2	10/19/97	10/19/97	109	U
Acetone	EPA 5030	8021A	109	2	10/19/97	10/19/97	109	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U

Approved By: Thomas A. Robin Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3079

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD051
Lab Code: L9703479-071
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
Benzene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/19/97	10/19/97	55	U
Toluene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/19/97	10/19/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/19/97	10/19/97	55	U
Acetone	EPA 5030	8021A	55	1	10/19/97	10/19/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/19/97	10/19/97	22	U

Approved By: Thomas A. Blum
1544021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3080

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD052
Lab Code: L9703479-072
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qua	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U	u	
Chloromethane	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U		
Vinyl Chloride	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U		
Bromomethane	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U		
Chloroethane	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
Methylene Chloride	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
Chloroform	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/19/97	10/19/97	12	U		*8
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
Benzene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/19/97	10/19/97	210	U		*8
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
Bromodichloromethane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	109	2	10/19/97	10/19/97	109	U		
Toluene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/19/97	10/19/97	37	U		*8
Chlorotrifluoroethane	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U		
Chlorobenzene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
Ethylbenzene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
m,p-Xylenes	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
o-Xylene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
Bromoform	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U		
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U		
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U		
Chlorotrifluoroethene	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U		
2-Butanone (MEK)	EPA 5030	8021A	109	2	10/19/97	10/19/97	109	U		
Acetone	EPA 5030	8021A	109	2	10/19/97	10/19/97	109	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U		

Approved By: Thomas B. King

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3081

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD624
Lab Code: L9703479-016
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev	qua
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U	u	
Chloromethane	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U	u	
Vinyl Chloride	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U	u	
Bromomethane	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U	u	
Chloroethane	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U	u	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
Methylene Chloride	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U	u	
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/16/97	10/16/97	11	U	u	* 4
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
Chloroform	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
Benzene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/16/97	10/16/97	47	U	u	
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
Bromodichloromethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/16/97	10/16/97	57	U	u	
Toluene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
Chlorotrifluoroethane	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U	u	
Chlorobenzene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
Ethylbenzene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
m,p-Xylenes	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
o-Xylene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
Bromoform	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U	u	
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U	u	
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/16/97	10/16/97	12	U	u	
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U	u	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U	u	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U	u	
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/16/97	10/16/97	57	U	u	
Acetone	EPA 5030	8021A	57	1	10/16/97	10/16/97	57	U	u	
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U	u	
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U	u	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/16/97	10/16/97	23	U	u	

Approved By: Thomas D. Blum
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3027

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil

Service Request: L9703479
 Date Collected: 10/13/97
 Date Received: 10/13/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD625
 Lab Code: L9703479-017
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/15/97	10/15/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/15/97	10/15/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/15/97	10/15/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/15/97	10/15/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/15/97	10/15/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
Methylene Chloride	EPA 5030	8021A	24	1	10/15/97	10/15/97	24	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
Benzene	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	59	1	10/15/97	10/15/97	59	U
Toluene	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
Chlorotrifluoroethane	EPA 5030	8021A	24	1	10/15/97	10/15/97	24	U
Chlorobenzene	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/15/97	10/15/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/15/97	10/15/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/15/97	10/15/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/15/97	10/15/97	12	U
Chlorotrifluoroethane	EPA 5030	8021A	24	1	10/15/97	10/15/97	24	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	24	1	10/15/97	10/15/97	24	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	24	1	10/15/97	10/15/97	24	U
2-Butanone (MEK)	EPA 5030	8021A	59	1	10/15/97	10/15/97	59	U
Acetone	EPA 5030	8021A	59	1	10/15/97	10/15/97	59	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	24	1	10/15/97	10/15/97	24	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	24	1	10/15/97	10/15/97	24	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	24	1	10/15/97	10/15/97	24	U

Approved By: Thomas D. Boring
 1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3028

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD628
Lab Code: L9703479-025
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
Chloromethane	EPA 5030	8021A	23	2	10/16/97	10/16/97	23	U	u
Vinyl Chloride	EPA 5030	8021A	23	2	10/16/97	10/16/97	23	U	u
Bromomethane	EPA 5030	8021A	23	2	10/16/97	10/16/97	23	U	u
Chloroethane	EPA 5030	8021A	23	2	10/16/97	10/16/97	23	U	u
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
1,1-Dichloroethene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
Methylene Chloride	EPA 5030	8021A	45	2	10/16/97	10/16/97	45	U	u
trans-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
cis-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
1,1-Dichloroethane	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
Chloroform	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
Carbon Tetrachloride	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
Benzene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
1,2-Dichloroethane	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
Trichloroethene (TCE)	EPA 5030	8021A	12	2	10/16/97	10/16/97	420	U	u
1,2-Dichloropropane	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
Bromodichloromethane	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	112	2	10/16/97	10/16/97	112	U	u
Toluene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
trans-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
cis-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
1,1,2-Trichloroethane	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
Tetrachloroethene (PCE)	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
Chlorotrifluoroethane	EPA 5030	8021A	45	2	10/16/97	10/16/97	45	U	u
Chlorobenzene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
Ethylbenzene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
m,p-Xylenes	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
o-Xylene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
Bromoform	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u
1,3-Dichlorobenzene	EPA 5030	8021A	23	2	10/16/97	10/16/97	23	U	u
1,4-Dichlorobenzene	EPA 5030	8021A	23	2	10/16/97	10/16/97	23	U	u
1,2-Dichlorobenzene	EPA 5030	8021A	23	2	10/16/97	10/16/97	23	U	u
Chlorotrifluoroethene	EPA 5030	8021A	45	2	10/16/97	10/16/97	45	U	u
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	45	2	10/16/97	10/16/97	45	U	u
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	45	2	10/16/97	10/16/97	45	U	u
2-Butanone (MEK)	EPA 5030	8021A	112	2	10/16/97	10/16/97	112	U	u
Acetone	EPA 5030	8021A	112	2	10/16/97	10/16/97	230	U	u
1,2,4-Trimethylbenzene	EPA 5030	8021A	45	2	10/16/97	10/16/97	45	U	u
1,3,5-Trimethylbenzene	EPA 5030	8021A	45	2	10/16/97	10/16/97	45	U	u
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	45	2	10/16/97	10/16/97	45	U	u

Approved By: Thomas A. R. King
1544/021397p

Date: 11/17/97

UGDEN VALIDATED

LEVEL V

3034

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD629
L9703479-026

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	23	2	10/18/97	10/18/97	23	U
Chloromethane	EPA 5030	8021A	23	2	10/18/97	10/18/97	23	U
Vinyl Chloride	EPA 5030	8021A	23	2	10/18/97	10/18/97	23	U
Bromomethane	EPA 5030	8021A	23	2	10/18/97	10/18/97	23	U
Chloroethane	EPA 5030	8021A	23	2	10/18/97	10/18/97	23	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
1,1-Dichloroethene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Methylene Chloride	EPA 5030	8021A	45	2	10/18/97	10/18/97	45	U
trans-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
cis-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/18/97	10/18/97	14	U
1,1-Dichloroethane	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Chloroform	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Carbon Tetrachloride	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Benzene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
1,2-Dichloroethane	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Trichloroethene (TCE)	EPA 5030	8021A	12	2	10/18/97	10/18/97	220	U
1,2-Dichloropropane	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Bromodichloromethane	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	112	2	10/18/97	10/18/97	112	U
Toluene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
trans-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
cis-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
1,1,2-Trichloroethane	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Tetrachloroethene (PCE)	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Chlorotrifluoroethane	EPA 5030	8021A	45	2	10/18/97	10/18/97	45	U
Chlorobenzene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Ethylbenzene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
m,p-Xylenes	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
o-Xylene	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
Bromoform	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	12	2	10/18/97	10/18/97	12	U
1,3-Dichlorobenzene	EPA 5030	8021A	23	2	10/18/97	10/18/97	23	U
1,4-Dichlorobenzene	EPA 5030	8021A	23	2	10/18/97	10/18/97	23	U
1,2-Dichlorobenzene	EPA 5030	8021A	23	2	10/18/97	10/18/97	23	U
Chlorotrifluoroethene	EPA 5030	8021A	45	2	10/18/97	10/18/97	45	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	45	2	10/18/97	10/18/97	45	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	45	2	10/18/97	10/18/97	45	U
2-Butanone (MEK)	EPA 5030	8021A	112	2	10/18/97	10/18/97	112	U
Acetone	EPA 5030	8021A	112	2	10/18/97	10/18/97	112	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	45	2	10/18/97	10/18/97	45	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	45	2	10/18/97	10/18/97	45	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	45	2	10/18/97	10/18/97	45	U

Approved By: Thomas D. Nelson
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3035
Page No.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD631
Lab Code: L9703479-028
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	verigua	qua code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	21	2	10/18/97	10/18/97	21	U	u	
Chloromethane	EPA 5030	8021A	21	2	10/18/97	10/18/97	21	U		
Vinyl Chloride	EPA 5030	8021A	21	2	10/18/97	10/18/97	21	U		
Bromomethane	EPA 5030	8021A	21	2	10/18/97	10/18/97	21	U		
Chloroethane	EPA 5030	8021A	21	2	10/18/97	10/18/97	21	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
Methylene Chloride	EPA 5030	8021A	41	2	10/18/97	10/18/97	41	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
Chloroform	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
Benzene	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/18/97	10/18/97	140	U		
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
Bromodichloromethane	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	103	2	10/18/97	10/18/97	103	U		
Toluene	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
Chlorotrifluoroethane	EPA 5030	8021A	41	2	10/18/97	10/18/97	41	U		
Chlorobenzene	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
Ethylbenzene	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
m,p-Xylenes	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
o-Xylene	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
Bromoform	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/18/97	10/18/97	11	U		
1,3-Dichlorobenzene	EPA 5030	8021A	21	2	10/18/97	10/18/97	21	U		
1,4-Dichlorobenzene	EPA 5030	8021A	21	2	10/18/97	10/18/97	21	U		
1,2-Dichlorobenzene	EPA 5030	8021A	21	2	10/18/97	10/18/97	21	U		
Chlorotrifluoroethene	EPA 5030	8021A	41	2	10/18/97	10/18/97	41	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	41	2	10/18/97	10/18/97	41	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	41	2	10/18/97	10/18/97	41	U		
2-Butanone (MEK)	EPA 5030	8021A	103	2	10/18/97	10/18/97	103	U		
Acetone	EPA 5030	8021A	103	2	10/18/97	10/18/97	103	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	41	2	10/18/97	10/18/97	41	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	41	2	10/18/97	10/18/97	41	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	41	2	10/18/97	10/18/97	41	U		

Approved By: Thomas X. Blum
1544621397p

Date: 11/17/97

OGDEN VALIDATED

03479VOA.BK4 - Sample (2) 11/17/97

LEVEL V

3036

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD632
L9703479-029

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rel qua	qua code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U	u	
Chloromethane	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U		
Vinyl Chloride	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U		
Bromomethane	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U		
Chloroethane	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Methylene Chloride	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/16/97	10/16/97	23	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U	u	
Bromodichloromethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/16/97	10/16/97	55	U		
Toluene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/16/97	10/16/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/16/97	10/16/97	11	U		
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U		
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/16/97	10/16/97	55	U		
Acetone	EPA 5030	8021A	55	1	10/16/97	10/16/97	100	U	NT	*8
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U	u	
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/16/97	10/16/97	22	U		

Approved By: Thomas R. Brown
1544/021397p

Date: 11/17/97

ORDER VALIDATED

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD633
Lab Code: L9703479-030
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	view	qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	24	2	10/16/97	10/16/97	24	U	u	
Chloromethane	EPA 5030	8021A	24	2	10/16/97	10/16/97	24	U		
Vinyl Chloride	EPA 5030	8021A	24	2	10/16/97	10/16/97	24	U		
Bromomethane	EPA 5030	8021A	24	2	10/16/97	10/16/97	24	U		
Chloroethane	EPA 5030	8021A	24	2	10/16/97	10/16/97	24	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U		
1,1-Dichloroethene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U		
Methylene Chloride	EPA 5030	8021A	47	2	10/16/97	10/16/97	47	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/16/97	10/16/97	40			
1,1-Dichloroethane	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u	
Chloroform	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U		
Carbon Tetrachloride	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U		
Benzene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U		
1,2-Dichloroethane	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U		
Trichloroethene (TCE)	EPA 5030	8021A	12	2	10/16/97	10/16/97	360			
1,2-Dichloropropane	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U	u	
Bromodichloromethane	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	117	2	10/16/97	10/16/97	117	U		
Toluene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U		
1,1,2-Trichloroethane	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U		
Chlorotrifluoroethane	EPA 5030	8021A	47	2	10/16/97	10/16/97	47	U		
Chlorobenzene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U		
Ethylbenzene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U		
m,p-Xylenes	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U		
o-Xylene	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U		
Bromoform	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	12	2	10/16/97	10/16/97	12	U		
1,3-Dichlorobenzene	EPA 5030	8021A	24	2	10/16/97	10/16/97	24	U		
1,4-Dichlorobenzene	EPA 5030	8021A	24	2	10/16/97	10/16/97	24	U		
1,2-Dichlorobenzene	EPA 5030	8021A	24	2	10/16/97	10/16/97	24	U		
Chlorotrifluoroethene	EPA 5030	8021A	47	2	10/16/97	10/16/97	47	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	47	2	10/16/97	10/16/97	47	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	47	2	10/16/97	10/16/97	47	U		
2-Butanone (MEK)	EPA 5030	8021A	117	2	10/16/97	10/16/97	117	U		
Acetone	EPA 5030	8021A	117	2	10/16/97	10/16/97	2800			
1,2,4-Trimethylbenzene	EPA 5030	8021A	47	2	10/16/97	10/16/97	47	U	u	
1,3,5-Trimethylbenzene	EPA 5030	8021A	47	2	10/16/97	10/16/97	47	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	47	2	10/16/97	10/16/97	47	U		

Approved By: Thomas D. Reising
1544/021397p

Date: 11/7/97

OGDEN VALIDATED

LEVEL V

3038

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD633DL
Lab Code: L9703479-030DL
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	ver qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	117	10	10/22/97	10/22/97	117	U	R	D
Chloromethane	EPA 5030	8021A	117	10	10/22/97	10/22/97	117	U		
Vinyl Chloride	EPA 5030	8021A	117	10	10/22/97	10/22/97	117	U		
Bromomethane	EPA 5030	8021A	117	10	10/22/97	10/22/97	117	U		
Chloroethane	EPA 5030	8021A	117	10	10/22/97	10/22/97	117	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
1,1-Dichloroethene	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
Methylene Chloride	EPA 5030	8021A	233	10	10/22/97	10/22/97	233	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
1,1-Dichloroethane	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
Chloroform	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
Carbon Tetrachloride	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
Benzene	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
1,2-Dichloroethane	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
Trichloroethene (TCE)	EPA 5030	8021A	59	10	10/22/97	10/22/97	160	U		
1,2-Dichloropropane	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
Bromodichloromethane	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	582	10	10/22/97	10/22/97	582	U		
Toluene	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
1,1,2-Trichloroethane	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
Chlorotrifluoroethane	EPA 5030	8021A	233	10	10/22/97	10/22/97	233	U		
Chlorobenzene	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
Ethylbenzene	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
m,p-Xylenes	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
o-Xylene	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
Bromoform	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	59	10	10/22/97	10/22/97	59	U		
1,3-Dichlorobenzene	EPA 5030	8021A	117	10	10/22/97	10/22/97	117	U		
1,4-Dichlorobenzene	EPA 5030	8021A	117	10	10/22/97	10/22/97	117	U		
1,2-Dichlorobenzene	EPA 5030	8021A	117	10	10/22/97	10/22/97	117	U		
Chlorotrifluoroethene	EPA 5030	8021A	233	10	10/22/97	10/22/97	233	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	233	10	10/22/97	10/22/97	233	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	233	10	10/22/97	10/22/97	233	U		
2-Butanone (MEK)	EPA 5030	8021A	582	10	10/22/97	10/22/97	582	U		
Acetone	EPA 5030	8021A	582	10	10/22/97	10/22/97	2300	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	233	10	10/22/97	10/22/97	233	U	R	D
1,3,5-Trimethylbenzene	EPA 5030	8021A	233	10	10/22/97	10/22/97	233	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	233	10	10/22/97	10/22/97	233	U		

Approved By: Thomas A. King
1544/021397p

Date: 11/17/97

UGDEN VALIDATED

LEVEL V

3039

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD635
Lab Code: L9703479-050
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U	u
Chloromethane	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U	u
Vinyl Chloride	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U	u
Bromomethane	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U	u
Chloroethane	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U	u
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
Methylene Chloride	EPA 5030	8021A	21	1	10/17/97	10/17/97	150	U	u
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
Chloroform	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
Benzene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
Bromodichloromethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	52	1	10/17/97	10/17/97	52	U	u
Toluene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
Chlorotrifluoroethane	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U	u
Chlorobenzene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
Ethylbenzene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
m,p-Xylenes	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
o-Xylene	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
Bromoform	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/17/97	10/17/97	6	U	u
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U	u
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U	u
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/17/97	10/17/97	11	U	u
Chlorotrifluoroethene	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U	u
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U	u
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U	u
2-Butanone (MEK)	EPA 5030	8021A	52	1	10/17/97	10/17/97	52	U	u
Acetone	EPA 5030	8021A	52	1	10/17/97	10/17/97	70	U	u
1,2,4-Trimethylbenzene	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U	u
1,3,5-Trimethylbenzene	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U	u
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	21	1	10/17/97	10/17/97	21	U	u

Approved By: Thomas B. Rabin Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3057

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD635 DL
L9703479-050DL

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U R
Chloromethane	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U
Vinyl Chloride	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U
Bromomethane	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U
Chloroethane	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
1,1-Dichloroethene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
Methylene Chloride	EPA 5030	8021A	103	5	10/21/97	10/21/97	180	U
trans-1,2-Dichloroethene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
cis-1,2-Dichloroethene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
1,1-Dichloroethane	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
Chloroform	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
Carbon Tetrachloride	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
Benzene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
1,2-Dichloroethane	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
Trichloroethene (TCE)	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
1,2-Dichloropropane	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
Bromodichloromethane	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	256	5	10/21/97	10/21/97	256	U
Toluene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
trans-1,3-Dichloropropene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
cis-1,3-Dichloropropene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
1,1,2-Trichloroethane	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
Tetrachloroethene (PCE)	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
Chlorotrifluoroethane	EPA 5030	8021A	103	5	10/21/97	10/21/97	103	U
Chlorobenzene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
Ethylbenzene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
m,p-Xylenes	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
o-Xylene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
Bromoform	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U
1,3-Dichlorobenzene	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U
1,4-Dichlorobenzene	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U
1,2-Dichlorobenzene	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U
Chlorotrifluoroethane	EPA 5030	8021A	103	5	10/21/97	10/21/97	103	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	103	5	10/21/97	10/21/97	103	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	103	5	10/21/97	10/21/97	103	U
2-Butanone (MEK)	EPA 5030	8021A	256	5	10/21/97	10/21/97	256	U
Acetone	EPA 5030	8021A	256	5	10/21/97	10/21/97	256	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	103	5	10/21/97	10/21/97	103	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	103	5	10/21/97	10/21/97	103	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	103	5	10/21/97	10/21/97	103	U

Approved By: Thomas R. Brown

Date: 11/17/97

UGDEN VALIDATED

LEVEL V

3058

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD636
Lab Code: L9703479-051
Test Notes:

Units: UG/KG.
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	new qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	21	2	10/17/97	10/17/97	21	U	u	
Chloromethane	EPA 5030	8021A	21	2	10/17/97	10/17/97	21	U		
Vinyl Chloride	EPA 5030	8021A	21	2	10/17/97	10/17/97	21	U		
Bromomethane	EPA 5030	8021A	21	2	10/17/97	10/17/97	21	U		
Chloroethane	EPA 5030	8021A	21	2	10/17/97	10/17/97	21	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Methylene Chloride	EPA 5030	8021A	42	2	10/17/97	10/17/97	260	U	R	D
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U	u	
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Chloroform	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Benzene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Bromodichloromethane	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	104	2	10/17/97	10/17/97	104	U		
Toluene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Chlorotrifluoroethane	EPA 5030	8021A	42	2	10/17/97	10/17/97	42	U		
Chlorobenzene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Ethylbenzene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
m,p-Xylenes	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
o-Xylene	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
Bromoform	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/17/97	10/17/97	11	U		
1,3-Dichlorobenzene	EPA 5030	8021A	21	2	10/17/97	10/17/97	21	U		
1,4-Dichlorobenzene	EPA 5030	8021A	21	2	10/17/97	10/17/97	21	U		
1,2-Dichlorobenzene	EPA 5030	8021A	21	2	10/17/97	10/17/97	21	U		
Chlorotrifluoroethene	EPA 5030	8021A	42	2	10/17/97	10/17/97	42	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	42	2	10/17/97	10/17/97	42	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	42	2	10/17/97	10/17/97	42	U		
2-Butanone (MEK)	EPA 5030	8021A	104	2	10/17/97	10/17/97	104	U		
Acetone	EPA 5030	8021A	104	2	10/17/97	10/17/97	104	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	42	2	10/17/97	10/17/97	42	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	42	2	10/17/97	10/17/97	42	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	42	2	10/17/97	10/17/97	42	U		

Approved By: Thomas A. Blum
1544/021397p

Date: 11/17/97

QUANTITATIVE VALIDATED

LEVEL V

3059

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD636 DL
L9703479-051DL

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qua	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U	R	D
Chloromethane	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U		
Vinyl Chloride	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U		
Bromomethane	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U		
Chloroethane	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
1,1-Dichloroethene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
Methylene Chloride	EPA 5030	8021A	104	5	10/21/97	10/21/97	100	U	R	D
trans-1,2-Dichloroethene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
1,1-Dichloroethane	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
Chloroform	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
Carbon Tetrachloride	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
Benzene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
1,2-Dichloroethane	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
Trichloroethene (TCE)	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
1,2-Dichloropropane	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
Bromodichloromethane	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	260	5	10/21/97	10/21/97	260	U		
Toluene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
1,1,2-Trichloroethane	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
Chlorotrifluoroethane	EPA 5030	8021A	104	5	10/21/97	10/21/97	104	U		
Chlorobenzene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
Ethylbenzene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
m,p-Xylenes	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
o-Xylene	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
Bromoform	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	26	5	10/21/97	10/21/97	26	U		
1,3-Dichlorobenzene	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U		
1,4-Dichlorobenzene	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U		
1,2-Dichlorobenzene	EPA 5030	8021A	52	5	10/21/97	10/21/97	52	U		
Chlorotrifluoroethene	EPA 5030	8021A	104	5	10/21/97	10/21/97	104	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	104	5	10/21/97	10/21/97	104	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	104	5	10/21/97	10/21/97	104	U		
2-Butanone (MEK)	EPA 5030	8021A	260	5	10/21/97	10/21/97	260	U		
Acetone	EPA 5030	8021A	260	5	10/21/97	10/21/97	260	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	104	5	10/21/97	10/21/97	104	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	104	5	10/21/97	10/21/97	104	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	104	5	10/21/97	10/21/97	104	U		

Approved By: Johnny D. Robins

Date: 11/17/97

ODDEN VALIDATED

LEVEL V

3060

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD639
Lab Code: L9703479-052
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	14	1	10/17/97	10/17/97	14	U
Chloromethane	EPA 5030	8021A	14	1	10/17/97	10/17/97	14	U
Vinyl Chloride	EPA 5030	8021A	14	1	10/17/97	10/17/97	14	U
Bromomethane	EPA 5030	8021A	14	1	10/17/97	10/17/97	14	U
Chloroethane	EPA 5030	8021A	14	1	10/17/97	10/17/97	14	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
1,1-Dichloroethene	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
Methylene Chloride	EPA 5030	8021A	27	1	10/17/97	10/17/97	160	U
trans-1,2-Dichloroethene	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
cis-1,2-Dichloroethene	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
1,1-Dichloroethane	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
Chloroform	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
Carbon Tetrachloride	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
Benzene	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
1,2-Dichloroethane	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
Trichloroethene (TCE)	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
1,2-Dichloropropane	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
Bromodichloromethane	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	66	1	10/17/97	10/17/97	66	U
Toluene	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
trans-1,3-Dichloropropene	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
cis-1,3-Dichloropropene	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
1,1,2-Trichloroethane	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
Tetrachloroethene (PCE)	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
Chlorotrifluoroethane	EPA 5030	8021A	27	1	10/17/97	10/17/97	27	U
Chlorobenzene	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
Ethylbenzene	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
m,p-Xylenes	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
o-Xylene	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
Bromoform	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	7	1	10/17/97	10/17/97	7	U
1,3-Dichlorobenzene	EPA 5030	8021A	14	1	10/17/97	10/17/97	14	U
1,4-Dichlorobenzene	EPA 5030	8021A	14	1	10/17/97	10/17/97	14	U
1,2-Dichlorobenzene	EPA 5030	8021A	14	1	10/17/97	10/17/97	14	U
Chlorotrifluoroethene	EPA 5030	8021A	27	1	10/17/97	10/17/97	27	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	27	1	10/17/97	10/17/97	27	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	27	1	10/17/97	10/17/97	27	U
2-Butanone (MEK)	EPA 5030	8021A	66	1	10/17/97	10/17/97	66	U
Acetone	EPA 5030	8021A	66	1	10/17/97	10/17/97	66	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	27	1	10/17/97	10/17/97	27	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	27	1	10/17/97	10/17/97	27	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	27	1	10/17/97	10/17/97	27	U

Approved By: Thomas A. Blinn
15447021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3061

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD639 DL
L9703479-052DL

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	66	5	10/21/97	10/21/97	66	U
Chloromethane	EPA 5030	8021A	66	5	10/21/97	10/21/97	66	U
Vinyl Chloride	EPA 5030	8021A	66	5	10/21/97	10/21/97	66	U
Bromomethane	EPA 5030	8021A	66	5	10/21/97	10/21/97	66	U
Chloroethane	EPA 5030	8021A	66	5	10/21/97	10/21/97	66	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
1,1-Dichloroethene	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
Methylene Chloride	EPA 5030	8021A	130	5	10/21/97	10/21/97	130	U
trans-1,2-Dichloroethene	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
cis-1,2-Dichloroethene	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
1,1-Dichloroethane	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
Chloroform	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
Carbon Tetrachloride	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
Benzene	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
1,2-Dichloroethane	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
Trichloroethene (TCE)	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
1,2-Dichloropropane	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
Bromodichloromethane	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	330	5	10/21/97	10/21/97	330	U
Toluene	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
trans-1,3-Dichloropropene	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
cis-1,3-Dichloropropene	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
1,1,2-Trichloroethane	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
Tetrachloroethene (PCE)	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
Chlorotrifluoroethane	EPA 5030	8021A	130	5	10/21/97	10/21/97	130	U
Chlorobenzene	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
Ethylbenzene	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
m,p-Xylenes	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
o-Xylene	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
Bromoform	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	33	5	10/21/97	10/21/97	33	U
1,3-Dichlorobenzene	EPA 5030	8021A	66	5	10/21/97	10/21/97	66	U
1,4-Dichlorobenzene	EPA 5030	8021A	66	5	10/21/97	10/21/97	66	U
1,2-Dichlorobenzene	EPA 5030	8021A	66	5	10/21/97	10/21/97	66	U
Chlorotrifluoroethane	EPA 5030	8021A	130	5	10/21/97	10/21/97	130	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	130	5	10/21/97	10/21/97	130	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	130	5	10/21/97	10/21/97	130	U
2-Butanone (MEK)	EPA 5030	8021A	330	5	10/21/97	10/21/97	330	U
Acetone	EPA 5030	8021A	330	5	10/21/97	10/21/97	330	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	130	5	10/21/97	10/21/97	130	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	130	5	10/21/97	10/21/97	130	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	130	5	10/21/97	10/21/97	130	U

Approved By: Thomas A. Riving
154/021397p

Date: 11/17/97

QUADEN VALIDATED

LEVEL V 3062

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD640
Lab Code: L9703479-053
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	31	2	10/17/97	10/17/97	31	U	U	
Chloromethane	EPA 5030	8021A	31	2	10/17/97	10/17/97	31	U	U	
Vinyl Chloride	EPA 5030	8021A	31	2	10/17/97	10/17/97	31	U	U	
Bromomethane	EPA 5030	8021A	31	2	10/17/97	10/17/97	31	U	U	
Chloroethane	EPA 5030	8021A	31	2	10/17/97	10/17/97	31	U	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
1,1-Dichloroethene	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
Methylene Chloride	EPA 5030	8021A	62	2	10/17/97	10/17/97	450	U	R	D
trans-1,2-Dichloroethene	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
1,1-Dichloroethane	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
Chloroform	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
Carbon Tetrachloride	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
Benzene	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
1,2-Dichloroethane	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
Trichloroethene (TCE)	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
1,2-Dichloropropane	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
Bromodichloromethane	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	160	2	10/17/97	10/17/97	160	U	U	
Toluene	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
1,1,2-Trichloroethane	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
Chlorotrifluoroethane	EPA 5030	8021A	62	2	10/17/97	10/17/97	62	U	U	
Chlorobenzene	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
Ethylbenzene	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
m,p-Xylenes	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
o-Xylene	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
Bromoform	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U	U	
1,3-Dichlorobenzene	EPA 5030	8021A	31	2	10/17/97	10/17/97	31	U	U	
1,4-Dichlorobenzene	EPA 5030	8021A	31	2	10/17/97	10/17/97	31	U	U	
1,2-Dichlorobenzene	EPA 5030	8021A	31	2	10/17/97	10/17/97	31	U	U	
Chlorotrifluoroethane	EPA 5030	8021A	62	2	10/17/97	10/17/97	62	U	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	62	2	10/17/97	10/17/97	62	U	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	62	2	10/17/97	10/17/97	62	U	U	
2-Butanone (MEK)	EPA 5030	8021A	160	2	10/17/97	10/17/97	160	U	U	
Acetone	EPA 5030	8021A	160	2	10/17/97	10/17/97	160	U	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	62	2	10/17/97	10/17/97	62	U	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	62	2	10/17/97	10/17/97	62	U	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	62	2	10/17/97	10/17/97	62	U	U	

Approved By: Thomas A. Rhine
1544/021397p

Date: 11/17/97

OGDEN VALIDATED
CHROM. SPECTRO. SPECTRO. SPECTRO.

LEVEL V

3063

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD640 DL
L9703479-053DL

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	ver	qual	code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	77	5	10/21/97	10/21/97	77	U	R		
Chloromethane	EPA 5030	8021A	77	5	10/21/97	10/21/97	77	U			
Vinyl Chloride	EPA 5030	8021A	77	5	10/21/97	10/21/97	77	U			
Bromomethane	EPA 5030	8021A	77	5	10/21/97	10/21/97	77	U			
Chloroethane	EPA 5030	8021A	77	5	10/21/97	10/21/97	77	U			
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
1,1-Dichloroethene	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
Methylene Chloride	EPA 5030	8021A	160	5	10/21/97	10/21/97	170	U			
trans-1,2-Dichloroethene	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U	R		
cis-1,2-Dichloroethene	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
1,1-Dichloroethane	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
Chloroform	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
Carbon Tetrachloride	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
Benzene	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
1,2-Dichloroethane	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
Trichloroethene (TCE)	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
1,2-Dichloropropane	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
Bromodichloromethane	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	385	5	10/21/97	10/21/97	385	U			
Toluene	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
trans-1,3-Dichloropropene	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
cis-1,3-Dichloropropene	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
1,1,2-Trichloroethane	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
Tetrachloroethene (PCE)	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
Chlorotrifluoroethane	EPA 5030	8021A	160	5	10/21/97	10/21/97	160	U			
Chlorobenzene	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
Ethylbenzene	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
m,p-Xylenes	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
o-Xylene	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
Bromoform	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U			
1,3-Dichlorobenzene	EPA 5030	8021A	77	5	10/21/97	10/21/97	77	U			
1,4-Dichlorobenzene	EPA 5030	8021A	77	5	10/21/97	10/21/97	77	U			
1,2-Dichlorobenzene	EPA 5030	8021A	77	5	10/21/97	10/21/97	77	U			
Chlorotrifluoroethene	EPA 5030	8021A	160	5	10/21/97	10/21/97	160	U			
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	160	5	10/21/97	10/21/97	160	U			
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	160	5	10/21/97	10/21/97	160	U			
2-Butanone (MEK)	EPA 5030	8021A	385	5	10/21/97	10/21/97	385	U			
Acetone	EPA 5030	8021A	385	5	10/21/97	10/21/97	385	U			
1,2,4-Trimethylbenzene	EPA 5030	8021A	160	5	10/21/97	10/21/97	160	U			
1,3,5-Trimethylbenzene	EPA 5030	8021A	160	5	10/21/97	10/21/97	160	U			
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	160	5	10/21/97	10/21/97	160	U			

Approved By: Thomas A. Robbins
1544021397p

Date: 11/17/97

UGDEN VALIDATED

LEVEL V 3064

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Sludge

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD641
Lab Code: L9703479-054
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qual	anal code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	31	2	10/17/97	10/17/97	31	U	u	
Chloromethane	EPA 5030	8021A	31	2	10/17/97	10/17/97	31	U		
Vinyl Chloride	EPA 5030	8021A	31	2	10/17/97	10/17/97	31	U		
Bromomethane	EPA 5030	8021A	31	2	10/17/97	10/17/97	31	U		
Chloroethane	EPA 5030	8021A	31	2	10/17/97	10/17/97	31	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
1,1-Dichloroethene	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
Methylene Chloride	EPA 5030	8021A	62	2	10/17/97	10/17/97	340	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
1,1-Dichloroethane	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
Chloroform	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
Carbon Tetrachloride	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
Benzene	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
1,2-Dichloroethane	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
Trichloroethene (TCE)	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
1,2-Dichloropropane	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
Bromodichloromethane	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	160	2	10/17/97	10/17/97	160	U		
Toluene	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
1,1,2-Trichloroethane	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
Chlorotrifluoroethane	EPA 5030	8021A	62	2	10/17/97	10/17/97	62	U		
Chlorobenzene	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
Ethylbenzene	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
m,p-Xylenes	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
o-Xylene	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
Bromoform	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	16	2	10/17/97	10/17/97	16	U		
1,3-Dichlorobenzene	EPA 5030	8021A	31	2	10/17/97	10/17/97	31	U		
1,4-Dichlorobenzene	EPA 5030	8021A	31	2	10/17/97	10/17/97	31	U		
1,2-Dichlorobenzene	EPA 5030	8021A	31	2	10/17/97	10/17/97	31	U		
Chlorotrifluoroethene	EPA 5030	8021A	62	2	10/17/97	10/17/97	62	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	62	2	10/17/97	10/17/97	62	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	62	2	10/17/97	10/17/97	62	U		
2-Butanone (MEK)	EPA 5030	8021A	160	2	10/17/97	10/17/97	160	U		
Acetone	EPA 5030	8021A	160	2	10/17/97	10/17/97	160	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	62	2	10/17/97	10/17/97	62	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	62	2	10/17/97	10/17/97	62	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	62	2	10/17/97	10/17/97	62	U		

Approved By: Thomson B. King Date: 11/17/97

1544/021397p

OGDEN VALIDATED

LEVEL V 3065

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Sludge

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD641 DL
L9703479-054DL

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qual	ana code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	77	5	10/21/97	10/21/97	77	U		
Chloromethane	EPA 5030	8021A	77	5	10/21/97	10/21/97	77	U		
Vinyl Chloride	EPA 5030	8021A	77	5	10/21/97	10/21/97	77	U		
Bromomethane	EPA 5030	8021A	77	5	10/21/97	10/21/97	77	U		
Chloroethane	EPA 5030	8021A	77	5	10/21/97	10/21/97	77	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
1,1-Dichloroethene	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
Methylene Chloride	EPA 5030	8021A	160	5	10/21/97	10/21/97	280	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
1,1-Dichloroethane	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
Chloroform	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
Carbon Tetrachloride	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
Benzene	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
1,2-Dichloroethane	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
Trichloroethene (TCE)	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
1,2-Dichloropropane	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
Bromodichloromethane	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	385	5	10/21/97	10/21/97	385	U		
Toluene	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
1,1,2-Trichloroethane	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
Chlorotrifluoroethane	EPA 5030	8021A	160	5	10/21/97	10/21/97	160	U		
Chlorobenzene	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
Ethylbenzene	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
m,p-Xylenes	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
o-Xylene	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
Bromoform	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	39	5	10/21/97	10/21/97	39	U		
1,3-Dichlorobenzene	EPA 5030	8021A	77	5	10/21/97	10/21/97	77	U		
1,4-Dichlorobenzene	EPA 5030	8021A	77	5	10/21/97	10/21/97	77	U		
1,2-Dichlorobenzene	EPA 5030	8021A	77	5	10/21/97	10/21/97	77	U		
Chlorotrifluoroethene	EPA 5030	8021A	160	5	10/21/97	10/21/97	160	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	160	5	10/21/97	10/21/97	160	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	160	5	10/21/97	10/21/97	160	U		
2-Butanone (MEK)	EPA 5030	8021A	385	5	10/21/97	10/21/97	385	U		
Acetone	EPA 5030	8021A	385	5	10/21/97	10/21/97	385	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	160	5	10/21/97	10/21/97	160	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	160	5	10/21/97	10/21/97	160	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	160	5	10/21/97	10/21/97	160	U		

Approved By: Thomas K. Robing
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3066

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Sludge

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD642
Lab Code: L9703479-055
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	view	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	33	2	10/17/97	10/17/97	33	U	u	
Chloromethane	EPA 5030	8021A	33	2	10/17/97	10/17/97	33	U		
Vinyl Chloride	EPA 5030	8021A	33	2	10/17/97	10/17/97	33	U		
Bromomethane	EPA 5030	8021A	33	2	10/17/97	10/17/97	33	U		
Chloroethane	EPA 5030	8021A	33	2	10/17/97	10/17/97	33	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
1,1-Dichloroethene	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
Methylene Chloride	EPA 5030	8021A	66	2	10/17/97	10/17/97	160	U	R	D
trans-1,2-Dichloroethene	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U	u	
cis-1,2-Dichloroethene	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
1,1-Dichloroethane	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
Chloroform	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
Carbon Tetrachloride	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
Benzene	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
1,2-Dichloroethane	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
Trichloroethene (TCE)	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
1,2-Dichloropropane	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
Bromodichloromethane	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	170	2	10/17/97	10/17/97	170	U		
Toluene	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
1,1,2-Trichloroethane	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
Chlorotrifluoroethane	EPA 5030	8021A	66	2	10/17/97	10/17/97	66	U		
Chlorobenzene	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
Ethylbenzene	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
m,p-Xylenes	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
o-Xylene	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
Bromoform	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	17	2	10/17/97	10/17/97	17	U		
1,3-Dichlorobenzene	EPA 5030	8021A	33	2	10/17/97	10/17/97	33	U		
1,4-Dichlorobenzene	EPA 5030	8021A	33	2	10/17/97	10/17/97	33	U		
1,2-Dichlorobenzene	EPA 5030	8021A	33	2	10/17/97	10/17/97	33	U		
Chlorotrifluoroethane	EPA 5030	8021A	66	2	10/17/97	10/17/97	66	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	66	2	10/17/97	10/17/97	66	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	66	2	10/17/97	10/17/97	66	U		
2-Butanone (MEK)	EPA 5030	8021A	170	2	10/17/97	10/17/97	170	U		
Acetone	EPA 5030	8021A	170	2	10/17/97	10/17/97	560	U	NT	*8
1,2,4-Trimethylbenzene	EPA 5030	8021A	66	2	10/17/97	10/17/97	66	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	66	2	10/17/97	10/17/97	66	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	66	2	10/17/97	10/17/97	66	U		

Approved By: Thomas X. Robing
154/621397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3067

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Sludge

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD642 DL
L9703479-055DL

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	view qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	82	5	10/21/97	10/21/97	82	U		
Chloromethane	EPA 5030	8021A	82	5	10/21/97	10/21/97	82	U		
Vinyl Chloride	EPA 5030	8021A	82	5	10/21/97	10/21/97	82	U		
Bromomethane	EPA 5030	8021A	82	5	10/21/97	10/21/97	82	U		
Chloroethane	EPA 5030	8021A	82	5	10/21/97	10/21/97	82	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
1,1-Dichloroethene	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
Methylene Chloride	EPA 5030	8021A	160	5	10/21/97	10/21/97	280			
trans-1,2-Dichloroethene	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
1,1-Dichloroethane	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
Chloroform	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
Carbon Tetrachloride	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
Benzene	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
1,2-Dichloroethane	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
Trichloroethene (TCE)	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
1,2-Dichloropropane	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
Bromodichloromethane	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	410	5	10/21/97	10/21/97	410	U		
Toluene	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
1,1,2-Trichloroethane	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
Chlorotrifluoroethane	EPA 5030	8021A	160	5	10/21/97	10/21/97	160	U		
Chlorobenzene	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
Ethylbenzene	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
m,p-Xylenes	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
o-Xylene	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
Bromoform	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	41	5	10/21/97	10/21/97	41	U		
1,3-Dichlorobenzene	EPA 5030	8021A	82	5	10/21/97	10/21/97	82	U		
1,4-Dichlorobenzene	EPA 5030	8021A	82	5	10/21/97	10/21/97	82	U		
1,2-Dichlorobenzene	EPA 5030	8021A	82	5	10/21/97	10/21/97	82	U		
Chlorotrifluoroethene	EPA 5030	8021A	160	5	10/21/97	10/21/97	160	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	160	5	10/21/97	10/21/97	160	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	160	5	10/21/97	10/21/97	160	U		
2-Butanone (MEK)	EPA 5030	8021A	410	5	10/21/97	10/21/97	410	U		
Acetone	EPA 5030	8021A	410	5	10/21/97	10/21/97	410	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	160	5	10/21/97	10/21/97	160	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	160	5	10/21/97	10/21/97	160	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	160	5	10/21/97	10/21/97	160	U		

Approved By: Thomas A. Robing
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3068

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD647
Lab Code: L9703479-073
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rel qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U	u	
Chloromethane	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U		
Vinyl Chloride	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U		
Bromomethane	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U		
Chloroethane	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
Methylene Chloride	EPA 5030	8021A	44	2	10/19/97	10/19/97	130	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	u	
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
Chloroform	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
Benzene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
Bromodichloromethane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	108	2	10/19/97	10/19/97	108	U		
Toluene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
Chlorotrifluoroethane	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U		
Chlorobenzene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
Ethylbenzene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
m,p-Xylenes	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
o-Xylene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
Bromoform	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U		
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U		
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U		
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U		
Chlorotrifluoroethane	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U		
2-Butanone (MEK)	EPA 5030	8021A	108	2	10/19/97	10/19/97	108	U		
Acetone	EPA 5030	8021A	108	2	10/19/97	10/19/97	380	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U	u	
1,3,5-Trimethylbenzene	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U		

Approved By: Thomas P. Roby
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3082

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD647DL
Lab Code: L9703479-073DL
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	view qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	54	5	10/21/97	10/21/97	54	U	✓	✓
Chloromethane	EPA 5030	8021A	54	5	10/21/97	10/21/97	54	U		
Vinyl Chloride	EPA 5030	8021A	54	5	10/21/97	10/21/97	54	U		
Bromomethane	EPA 5030	8021A	54	5	10/21/97	10/21/97	54	U		
Chloroethane	EPA 5030	8021A	54	5	10/21/97	10/21/97	54	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
1,1-Dichloroethene	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
Methylene Chloride	EPA 5030	8021A	108	5	10/21/97	10/21/97	108	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
1,1-Dichloroethane	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
Chloroform	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
Carbon Tetrachloride	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
Benzene	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
1,2-Dichloroethane	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
Trichloroethene (TCE)	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
1,2-Dichloropropane	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
Bromodichloromethane	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	269	5	10/21/97	10/21/97	269	U		
Toluene	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
1,1,2-Trichloroethane	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
Chlorotrifluoroethane	EPA 5030	8021A	108	5	10/21/97	10/21/97	108	U		
Chlorobenzene	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
Ethylbenzene	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
m,p-Xylenes	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
o-Xylene	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
Bromoform	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
1,3-Dichlorobenzene	EPA 5030	8021A	54	5	10/21/97	10/21/97	54	U		
1,4-Dichlorobenzene	EPA 5030	8021A	54	5	10/21/97	10/21/97	54	U		
1,2-Dichlorobenzene	EPA 5030	8021A	54	5	10/21/97	10/21/97	54	U		
Chlorotrifluoroethene	EPA 5030	8021A	108	5	10/21/97	10/21/97	108	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	108	5	10/21/97	10/21/97	108	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	108	5	10/21/97	10/21/97	108	U		
2-Butanone (MEK)	EPA 5030	8021A	269	5	10/21/97	10/21/97	269	U		
Acetone	EPA 5030	8021A	269	5	10/21/97	10/21/97	340	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	108	5	10/21/97	10/21/97	108	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	108	5	10/21/97	10/21/97	108	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	108	5	10/21/97	10/21/97	108	U		

Approved By: Theresa K. Rabin
1546/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3083

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD648
Lab Code: L9703479-074
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rel qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U	U	
Chloromethane	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U	U	
Vinyl Chloride	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U	U	
Bromomethane	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U	U	
Chloroethane	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
Methylene Chloride	EPA 5030	8021A	44	2	10/19/97	10/19/97	240	U	U	
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
Chloroform	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
Benzene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
Bromodichloromethane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	110	2	10/19/97	10/19/97	110	U	U	
Toluene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
Chlorotrifluoroethane	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U	U	
Chlorobenzene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
Ethylbenzene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
m,p-Xylenes	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
o-Xylene	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
Bromoform	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/19/97	10/19/97	11	U	U	
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U	U	
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U	U	
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	10/19/97	10/19/97	22	U	U	
Chlorotrifluoroethane	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U	U	
2-Butanone (MEK)	EPA 5030	8021A	110	2	10/19/97	10/19/97	110	U	U	
Acetone	EPA 5030	8021A	110	2	10/19/97	10/19/97	300	U	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	44	2	10/19/97	10/19/97	44	U	U	

Approved By: Thomas B. Boring
1544/021397p

Date: 11/17/97

CHROMA VALIDATED

LEVEL V

3084

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD648DL
Lab Code: L9703479-074DL
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	55	5	10/21/97	10/21/97	55	U		
Chloromethane	EPA 5030	8021A	55	5	10/21/97	10/21/97	55	U		
Vinyl Chloride	EPA 5030	8021A	55	5	10/21/97	10/21/97	55	U		
Bromomethane	EPA 5030	8021A	55	5	10/21/97	10/21/97	55	U		
Chloroethane	EPA 5030	8021A	55	5	10/21/97	10/21/97	55	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
1,1-Dichloroethene	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
Methylene Chloride	EPA 5030	8021A	110	5	10/21/97	10/21/97	190	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
1,1-Dichloroethane	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
Chloroform	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
Carbon Tetrachloride	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
Benzene	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
1,2-Dichloroethane	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
Trichloroethene (TCE)	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
1,2-Dichloropropane	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
Bromodichloromethane	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	275	5	10/21/97	10/21/97	275	U		
Toluene	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
1,1,2-Trichloroethane	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
Chlorotrifluoroethane	EPA 5030	8021A	110	5	10/21/97	10/21/97	110	U		
Chlorobenzene	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
Ethylbenzene	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
m,p-Xylenes	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
o-Xylene	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
Bromoform	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
1,3-Dichlorobenzene	EPA 5030	8021A	55	5	10/21/97	10/21/97	55	U		
1,4-Dichlorobenzene	EPA 5030	8021A	55	5	10/21/97	10/21/97	55	U		
1,2-Dichlorobenzene	EPA 5030	8021A	55	5	10/21/97	10/21/97	55	U		
Chlorotrifluoroethene	EPA 5030	8021A	110	5	10/21/97	10/21/97	110	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	110	5	10/21/97	10/21/97	110	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	110	5	10/21/97	10/21/97	110	U		
2-Butanone (MEK)	EPA 5030	8021A	275	5	10/21/97	10/21/97	275	U		
Acetone	EPA 5030	8021A	275	5	10/21/97	10/21/97	275	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	110	5	10/21/97	10/21/97	110	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	110	5	10/21/97	10/21/97	110	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	110	5	10/21/97	10/21/97	110	U		

Approved By: Therese A. Robing
1544621397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3085

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD649
Lab Code: L9703479-075
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	val qua	qua code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	1200	100	10/22/97	10/22/97	1200	U	u	
Chloromethane	EPA 5030	8021A	1200	100	10/22/97	10/22/97	1200	U		
Vinyl Chloride	EPA 5030	8021A	1200	100	10/22/97	10/22/97	1200	U		
Bromomethane	EPA 5030	8021A	1200	100	10/22/97	10/22/97	1200	U		
Chloroethane	EPA 5030	8021A	1200	100	10/22/97	10/22/97	1200	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
1,1-Dichloroethene	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
Methylene Chloride	EPA 5030	8021A	2400	100	10/22/97	10/22/97	2400	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
1,1-Dichloroethane	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
Chloroform	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
Carbon Tetrachloride	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
Benzene	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
1,2-Dichloroethane	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
Trichloroethene (TCE)	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
1,2-Dichloropropane	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
Bromodichloromethane	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	5700	100	10/22/97	10/22/97	5700	U		
Toluene	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
1,1,2-Trichloroethane	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
Chlorotrifluoroethane	EPA 5030	8021A	2400	100	10/22/97	10/22/97	2400	U		
Chlorobenzene	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
Ethylbenzene	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
m,p-Xylenes	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
o-Xylene	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
Bromoform	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	600	100	10/22/97	10/22/97	600	U		
1,3-Dichlorobenzene	EPA 5030	8021A	1200	100	10/22/97	10/22/97	1200	U		
1,4-Dichlorobenzene	EPA 5030	8021A	1200	100	10/22/97	10/22/97	1200	U		
1,2-Dichlorobenzene	EPA 5030	8021A	1200	100	10/22/97	10/22/97	1200	U		
Chlorotrifluoroethene	EPA 5030	8021A	2400	100	10/22/97	10/22/97	2400	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	2400	100	10/22/97	10/22/97	2400	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	2400	100	10/22/97	10/22/97	2400	U		
2-Butanone (MEK)	EPA 5030	8021A	5700	100	10/22/97	10/22/97	5700	U		
Acetone	EPA 5030	8021A	5700	100	10/22/97	10/22/97	5700	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	2400	100	10/22/97	10/22/97	2400	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	2400	100	10/22/97	10/22/97	2400	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	2400	100	10/22/97	10/22/97	2400	U		

Approved By: Thomaz A. Blum
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3086

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD650
Lab Code: L9703479-076
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qua	qua code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	57	5	10/23/97	10/23/97	57	U	u	
Chloromethane	EPA 5030	8021A	57	5	10/23/97	10/23/97	57	U		
Vinyl Chloride	EPA 5030	8021A	57	5	10/23/97	10/23/97	57	U		
Bromomethane	EPA 5030	8021A	57	5	10/23/97	10/23/97	57	U		
Chloroethane	EPA 5030	8021A	57	5	10/23/97	10/23/97	57	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
1,1-Dichloroethene	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
Methylene Chloride	EPA 5030	8021A	114	5	10/23/97	10/23/97	310			
trans-1,2-Dichloroethene	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U	u	
cis-1,2-Dichloroethene	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
1,1-Dichloroethane	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
Chloroform	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
Carbon Tetrachloride	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
Benzene	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
1,2-Dichloroethane	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
Trichloroethene (TCE)	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
1,2-Dichloropropane	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
Bromodichloromethane	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	285	5	10/23/97	10/23/97	285	U		
Toluene	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
1,1,2-Trichloroethane	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
Chlorotrifluoroethane	EPA 5030	8021A	114	5	10/23/97	10/23/97	114	U		
Chlorobenzene	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
Ethylbenzene	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
m,p-Xylenes	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
o-Xylene	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
Bromoform	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	29	5	10/23/97	10/23/97	29	U		
1,3-Dichlorobenzene	EPA 5030	8021A	57	5	10/23/97	10/23/97	57	U		
1,4-Dichlorobenzene	EPA 5030	8021A	57	5	10/23/97	10/23/97	57	U		
1,2-Dichlorobenzene	EPA 5030	8021A	57	5	10/23/97	10/23/97	57	U		
Chlorotrifluoroethene	EPA 5030	8021A	114	5	10/23/97	10/23/97	114	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	114	5	10/23/97	10/23/97	114	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	114	5	10/23/97	10/23/97	114	U		
2-Butanone (MEK)	EPA 5030	8021A	285	5	10/23/97	10/23/97	285	U		
Acetone	EPA 5030	8021A	285	5	10/23/97	10/23/97	285	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	114	5	10/23/97	10/23/97	114	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	114	5	10/23/97	10/23/97	114	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	114	5	10/23/97	10/23/97	114	U		

Approved By: Thomas A. King
1544/021397p

Date: 11/17/97

QUANTIFIED

LEVEL V

3087

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD651
Lab Code: L9703479-077
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	ver qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/19/97	10/19/97	12	U	u	
Chloromethane	EPA 5030	8021A	12	1	10/19/97	10/19/97	12	U		
Vinyl Chloride	EPA 5030	8021A	12	1	10/19/97	10/19/97	12	U		
Bromomethane	EPA 5030	8021A	12	1	10/19/97	10/19/97	12	U		
Chloroethane	EPA 5030	8021A	12	1	10/19/97	10/19/97	12	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
Methylene Chloride	EPA 5030	8021A	23	1	10/19/97	10/19/97	NC 300	U	R	D
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U	u	
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/19/97	10/19/97	57	U		
Toluene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
Chlorotrifluoroethane	EPA 5030	8021A	23	1	10/19/97	10/19/97	23	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/19/97	10/19/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/19/97	10/19/97	12	U		
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/19/97	10/19/97	12	U		
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/19/97	10/19/97	12	U		
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/19/97	10/19/97	23	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/19/97	10/19/97	23	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/19/97	10/19/97	23	U		
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/19/97	10/19/97	57	U		
Acetone	EPA 5030	8021A	57	1	10/19/97	10/19/97	57	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/19/97	10/19/97	23	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/19/97	10/19/97	23	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/19/97	10/19/97	23	U		

Approved By: Thomas J. Boring
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3088

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD651DL
L9703479-077DL

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	23	2	10/21/97	10/21/97	23	U	✓
Chloromethane	EPA 5030	8021A	23	2	10/21/97	10/21/97	23	U	✓
Vinyl Chloride	EPA 5030	8021A	23	2	10/21/97	10/21/97	23	U	✓
Bromomethane	EPA 5030	8021A	23	2	10/21/97	10/21/97	23	U	✓
Chloroethane	EPA 5030	8021A	23	2	10/21/97	10/21/97	23	U	✓
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
1,1-Dichloroethene	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
Methylene Chloride	EPA 5030	8021A	46	2	10/21/97	10/21/97	44	U	✓
trans-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
cis-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
1,1-Dichloroethane	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
Chloroform	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
Carbon Tetrachloride	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
Benzene	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
1,2-Dichloroethane	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
Trichloroethene (TCE)	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
1,2-Dichloropropane	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
Bromodichloromethane	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	114	2	10/21/97	10/21/97	114	U	✓
Toluene	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
trans-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
cis-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
1,1,2-Trichloroethane	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
Tetrachloroethene (PCE)	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
Chlorotrifluoroethane	EPA 5030	8021A	46	2	10/21/97	10/21/97	46	U	✓
Chlorobenzene	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
Ethylbenzene	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
m,p-Xylenes	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
o-Xylene	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
Bromoform	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	12	2	10/21/97	10/21/97	12	U	✓
1,3-Dichlorobenzene	EPA 5030	8021A	23	2	10/21/97	10/21/97	23	U	✓
1,4-Dichlorobenzene	EPA 5030	8021A	23	2	10/21/97	10/21/97	23	U	✓
1,2-Dichlorobenzene	EPA 5030	8021A	23	2	10/21/97	10/21/97	23	U	✓
Chlorotrifluoroethane	EPA 5030	8021A	46	2	10/21/97	10/21/97	46	U	✓
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	46	2	10/21/97	10/21/97	46	U	✓
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	46	2	10/21/97	10/21/97	46	U	✓
2-Butanone (MEK)	EPA 5030	8021A	114	2	10/21/97	10/21/97	114	U	✓
Acetone	EPA 5030	8021A	114	2	10/21/97	10/21/97	114	U	✓
1,2,4-Trimethylbenzene	EPA 5030	8021A	46	2	10/21/97	10/21/97	46	U	✓
1,3,5-Trimethylbenzene	EPA 5030	8021A	46	2	10/21/97	10/21/97	46	U	✓
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	46	2	10/21/97	10/21/97	46	U	✓

Approved By: Thomas P. Robin
IS44/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3089

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD652
Lab Code: L9703479-078
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev	qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	60	5	10/21/97	10/21/97	60	U	u	
Chloromethane	EPA 5030	8021A	60	5	10/21/97	10/21/97	60	U		
Vinyl Chloride	EPA 5030	8021A	60	5	10/21/97	10/21/97	60	U		
Bromomethane	EPA 5030	8021A	60	5	10/21/97	10/21/97	60	U		
Chloroethane	EPA 5030	8021A	60	5	10/21/97	10/21/97	60	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
1,1-Dichloroethene	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
Methylene Chloride	EPA 5030	8021A	120	5	10/21/97	10/21/97	260	U	NT	*8
trans-1,2-Dichloroethene	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U	u	
cis-1,2-Dichloroethene	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
1,1-Dichloroethane	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
Chloroform	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
Carbon Tetrachloride	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
Benzene	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
1,2-Dichloroethane	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
Trichloroethene (TCE)	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
1,2-Dichloropropane	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
Bromodichloromethane	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	300	5	10/21/97	10/21/97	300	U		
Toluene	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
1,1,2-Trichloroethane	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
Chlorotrifluoroethane	EPA 5030	8021A	120	5	10/21/97	10/21/97	120	U		
Chlorobenzene	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
Ethylbenzene	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
m,p-Xylenes	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
o-Xylene	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
Bromoform	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	30	5	10/21/97	10/21/97	30	U		
1,3-Dichlorobenzene	EPA 5030	8021A	60	5	10/21/97	10/21/97	60	U		
1,4-Dichlorobenzene	EPA 5030	8021A	60	5	10/21/97	10/21/97	60	U		
1,2-Dichlorobenzene	EPA 5030	8021A	60	5	10/21/97	10/21/97	60	U		
Chlorotrifluoroethene	EPA 5030	8021A	120	5	10/21/97	10/21/97	120	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	120	5	10/21/97	10/21/97	120	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	120	5	10/21/97	10/21/97	120	U		
2-Butanone (MEK)	EPA 5030	8021A	300	5	10/21/97	10/21/97	300	U		
Acetone	EPA 5030	8021A	300	5	10/21/97	10/21/97	1300	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	120	5	10/21/97	10/21/97	120	U	u	
1,3,5-Trimethylbenzene	EPA 5030	8021A	120	5	10/21/97	10/21/97	120	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	120	5	10/21/97	10/21/97	120	U		

Approved By: Theresa A. Blum
1544/021397p

Date: 11/17/97

UGDEN VALIDATED

LEVEL V
LEVEL

3090

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD652DL
Lab Code: L9703479-078DL
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev	qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	120	10	10/21/97	10/21/97	120	U			
Chloromethane	EPA 5030	8021A	120	10	10/21/97	10/21/97	120	U			
Vinyl Chloride	EPA 5030	8021A	120	10	10/21/97	10/21/97	120	U			
Bromomethane	EPA 5030	8021A	120	10	10/21/97	10/21/97	120	U			
Chloroethane	EPA 5030	8021A	120	10	10/21/97	10/21/97	120	U			
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
1,1-Dichloroethene	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
Methylene Chloride	EPA 5030	8021A	240	10	10/21/97	10/21/97	240	U			
trans-1,2-Dichloroethene	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
cis-1,2-Dichloroethene	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
1,1-Dichloroethane	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
Chloroform	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
Carbon Tetrachloride	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
Benzene	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
1,2-Dichloroethane	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
Trichloroethene (TCE)	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
1,2-Dichloropropane	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
Bromodichloromethane	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	600	10	10/21/97	10/21/97	600	U			
Toluene	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
trans-1,3-Dichloropropene	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
cis-1,3-Dichloropropene	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
1,1,2-Trichloroethane	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
Tetrachloroethene (PCE)	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
Chlorotrifluoroethane	EPA 5030	8021A	240	10	10/21/97	10/21/97	240	U			
Chlorobenzene	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
Ethylbenzene	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
m,p-Xylenes	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
o-Xylene	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
Bromoform	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	60	10	10/21/97	10/21/97	60	U			
1,3-Dichlorobenzene	EPA 5030	8021A	120	10	10/21/97	10/21/97	120	U			
1,4-Dichlorobenzene	EPA 5030	8021A	120	10	10/21/97	10/21/97	120	U			
1,2-Dichlorobenzene	EPA 5030	8021A	120	10	10/21/97	10/21/97	120	U			
Chlorotrifluoroethane	EPA 5030	8021A	240	10	10/21/97	10/21/97	240	U			
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	240	10	10/21/97	10/21/97	240	U			
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	240	10	10/21/97	10/21/97	240	U			
2-Butanone (MEK)	EPA 5030	8021A	600	10	10/21/97	10/21/97	600	U			
Acetone	EPA 5030	8021A	600	10	10/21/97	10/21/97	1100	U			
1,2,4-Trimethylbenzene	EPA 5030	8021A	240	10	10/21/97	10/21/97	240	U			
1,3,5-Trimethylbenzene	EPA 5030	8021A	240	10	10/21/97	10/21/97	240	U			
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	240	10	10/21/97	10/21/97	240	U			

Approved By: Thomas D. Albright
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3091

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD653
L9703479-079

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	view qua	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U	U	
Chloromethane	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U	U	
Vinyl Chloride	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U	U	
Bromomethane	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U	U	
Chloroethane	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
Methylene Chloride	EPA 5030	8021A	22	1	10/21/97	10/21/97	NC 47	U	U	* S
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
Chloroform	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
Benzene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
Bromodichloromethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/21/97	10/21/97	55	U	U	
Toluene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/21/97	10/21/97	22	U	U	
Chlorobenzene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
Ethylbenzene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
m,p-Xylenes	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
o-Xylene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
Bromoform	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U	U	
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U	U	
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/21/97	10/21/97	11	U	U	
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/21/97	10/21/97	22	U	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/21/97	10/21/97	22	U	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/21/97	10/21/97	22	U	U	
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/21/97	10/21/97	55	U	U	
Acetone	EPA 5030	8021A	55	1	10/21/97	10/21/97	600	U	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/21/97	10/21/97	22	U	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/21/97	10/21/97	22	U	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/21/97	10/21/97	22	U	U	

Approved By: Thomas B. Abbey
IS44/021397p

Date: 11/17/97

UGDEN VALIDATED

LEVEL V

3092

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD653DL
Lab Code: L9703479-079DL
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	review	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	55	5	10/21/97	10/21/97	55	U	R	D
Chloromethane	EPA 5030	8021A	55	5	10/21/97	10/21/97	55	U		
Vinyl Chloride	EPA 5030	8021A	55	5	10/21/97	10/21/97	55	U		
Bromomethane	EPA 5030	8021A	55	5	10/21/97	10/21/97	55	U		
Chloroethane	EPA 5030	8021A	55	5	10/21/97	10/21/97	55	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
1,1-Dichloroethene	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
Methylene Chloride	EPA 5030	8021A	110	5	10/21/97	10/21/97	110	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
1,1-Dichloroethane	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
Chloroform	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
Carbon Tetrachloride	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
Benzene	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
1,2-Dichloroethane	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
Trichloroethene (TCE)	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
1,2-Dichloropropane	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
Bromodichloromethane	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	280	5	10/21/97	10/21/97	280	U		
Toluene	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
1,1,2-Trichloroethane	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
Chlorotrifluoroethane	EPA 5030	8021A	110	5	10/21/97	10/21/97	110	U		
Chlorobenzene	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
Ethylbenzene	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
m,p-Xylenes	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
o-Xylene	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
Bromoform	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	28	5	10/21/97	10/21/97	28	U		
1,3-Dichlorobenzene	EPA 5030	8021A	55	5	10/21/97	10/21/97	55	U		
1,4-Dichlorobenzene	EPA 5030	8021A	55	5	10/21/97	10/21/97	55	U		
1,2-Dichlorobenzene	EPA 5030	8021A	55	5	10/21/97	10/21/97	55	U		
Chlorotrifluoroethene	EPA 5030	8021A	110	5	10/21/97	10/21/97	110	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	110	5	10/21/97	10/21/97	110	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	110	5	10/21/97	10/21/97	110	U		
2-Butanone (MEK)	EPA 5030	8021A	280	5	10/21/97	10/21/97	280	U		
Acetone	EPA 5030	8021A	280	5	10/21/97	10/21/97	570	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	110	5	10/21/97	10/21/97	110	U	R	D
1,3,5-Trimethylbenzene	EPA 5030	8021A	110	5	10/21/97	10/21/97	110	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	110	5	10/21/97	10/21/97	110	U		

Approved By: Thomas P. Robinson
1544621397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3093

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD654
Lab Code: L9703479-080
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/21/97	10/21/97	12	U	U	
Chloromethane	EPA 5030	8021A	12	1	10/21/97	10/21/97	12	U	U	
Vinyl Chloride	EPA 5030	8021A	12	1	10/21/97	10/21/97	12	U	U	
Bromomethane	EPA 5030	8021A	12	1	10/21/97	10/21/97	12	U	U	
Chloroethane	EPA 5030	8021A	12	1	10/21/97	10/21/97	12	U	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
Methylene Chloride	EPA 5030	8021A	23	1	10/21/97	10/21/97	150	U	U	
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
Chloroform	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
Benzene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
Bromodichloromethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/21/97	10/21/97	57	U	U	
Toluene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
Chlorotrifluoroethane	EPA 5030	8021A	23	1	10/21/97	10/21/97	23	U	U	
Chlorobenzene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
Ethylbenzene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
m,p-Xylenes	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
o-Xylene	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
Bromoform	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/21/97	10/21/97	6	U	U	
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/21/97	10/21/97	12	U	U	
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/21/97	10/21/97	12	U	U	
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/21/97	10/21/97	12	U	U	
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/21/97	10/21/97	23	U	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/21/97	10/21/97	23	U	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/21/97	10/21/97	23	U	U	
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/21/97	10/21/97	57	U	U	
Acetone	EPA 5030	8021A	57	1	10/21/97	10/21/97	57	U	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/21/97	10/21/97	23	U	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/21/97	10/21/97	23	U	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/21/97	10/21/97	23	U	U	

Approved By: Thomas D. Blum
1544/021397p

Date: 11/17/97

UGDEN VALIDATED

LEVEL V

3094
Page No.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD654DL
Lab Code: L9703479-080DL
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	new qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	57	5	10/21/97	10/21/97	57	U		
Chloromethane	EPA 5030	8021A	57	5	10/21/97	10/21/97	57	U		
Vinyl Chloride	EPA 5030	8021A	57	5	10/21/97	10/21/97	57	U		
Bromomethane	EPA 5030	8021A	57	5	10/21/97	10/21/97	57	U		
Chloroethane	EPA 5030	8021A	57	5	10/21/97	10/21/97	57	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
1,1-Dichloroethene	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
Methylene Chloride	EPA 5030	8021A	114	5	10/21/97	10/21/97	190	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
1,1-Dichloroethane	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
Chloroform	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
Carbon Tetrachloride	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
Benzene	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
1,2-Dichloroethane	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
Trichloroethene (TCE)	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
1,2-Dichloropropane	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
Bromodichloromethane	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	285	5	10/21/97	10/21/97	285	U		
Toluene	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
1,1,2-Trichloroethane	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
Chlorotrifluoroethane	EPA 5030	8021A	114	5	10/21/97	10/21/97	114	U		
Chlorobenzene	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
Ethylbenzene	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
m,p-Xylenes	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
o-Xylene	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
Bromoform	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	29	5	10/21/97	10/21/97	29	U		
1,3-Dichlorobenzene	EPA 5030	8021A	57	5	10/21/97	10/21/97	57	U		
1,4-Dichlorobenzene	EPA 5030	8021A	57	5	10/21/97	10/21/97	57	U		
1,2-Dichlorobenzene	EPA 5030	8021A	57	5	10/21/97	10/21/97	57	U		
Chlorotrifluoroethene	EPA 5030	8021A	114	5	10/21/97	10/21/97	114	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	114	5	10/21/97	10/21/97	114	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	114	5	10/21/97	10/21/97	114	U		
2-Butanone (MEK)	EPA 5030	8021A	285	5	10/21/97	10/21/97	285	U		
Acetone	EPA 5030	8021A	285	5	10/21/97	10/21/97	285	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	114	5	10/21/97	10/21/97	114	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	114	5	10/21/97	10/21/97	114	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	114	5	10/21/97	10/21/97	114	U		

Approved By: Thomas A. Brown

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3095

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD655
Lab Code: L9703479-081
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	ver qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	54	5	10/21/97	10/21/97	54	U	U	
Chloromethane	EPA 5030	8021A	54	5	10/21/97	10/21/97	54	U		
Vinyl Chloride	EPA 5030	8021A	54	5	10/21/97	10/21/97	54	U		
Bromomethane	EPA 5030	8021A	54	5	10/21/97	10/21/97	54	U		
Chloroethane	EPA 5030	8021A	54	5	10/21/97	10/21/97	54	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
1,1-Dichloroethene	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
Methylene Chloride	EPA 5030	8021A	108	5	10/21/97	10/21/97	180	U	NT	*8
trans-1,2-Dichloroethene	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
1,1-Dichloroethane	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
Chloroform	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
Carbon Tetrachloride	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
Benzene	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
1,2-Dichloroethane	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
Trichloroethene (TCE)	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
1,2-Dichloropropane	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
Bromodichloromethane	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	270	5	10/21/97	10/21/97	270	U		
Toluene	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
1,1,2-Trichloroethane	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
Chlorotrifluoroethane	EPA 5030	8021A	108	5	10/21/97	10/21/97	108	U		
Chlorobenzene	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
Ethylbenzene	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
m,p-Xylenes	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
o-Xylene	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
Bromoform	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	27	5	10/21/97	10/21/97	27	U		
1,3-Dichlorobenzene	EPA 5030	8021A	54	5	10/21/97	10/21/97	54	U		
1,4-Dichlorobenzene	EPA 5030	8021A	54	5	10/21/97	10/21/97	54	U		
1,2-Dichlorobenzene	EPA 5030	8021A	54	5	10/21/97	10/21/97	54	U		
Chlorotrifluoroethene	EPA 5030	8021A	108	5	10/21/97	10/21/97	108	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	108	5	10/21/97	10/21/97	108	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	108	5	10/21/97	10/21/97	108	U		
2-Butanone (MEK)	EPA 5030	8021A	270	5	10/21/97	10/21/97	270	U		
Acetone	EPA 5030	8021A	270	5	10/21/97	10/21/97	270	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	108	5	10/21/97	10/21/97	108	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	108	5	10/21/97	10/21/97	108	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	108	5	10/21/97	10/21/97	108	U		

Approved By: Theresa D. Robey
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3096

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD656
Lab Code: L9703479-082
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qua	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	22	2	10/21/97	10/21/97	22	U	u	
Chloromethane	EPA 5030	8021A	22	2	10/21/97	10/21/97	22	U		
Vinyl Chloride	EPA 5030	8021A	22	2	10/21/97	10/21/97	22	U		
Bromomethane	EPA 5030	8021A	22	2	10/21/97	10/21/97	22	U		
Chloroethane	EPA 5030	8021A	22	2	10/21/97	10/21/97	22	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
Methylene Chloride	EPA 5030	8021A	44	2	10/21/97	10/21/97	68			
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U	u	
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
Chloroform	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
Benzene	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
Bromodichloromethane	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	108	2	10/21/97	10/21/97	108	U		
Toluene	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
Chlorotrifluoroethane	EPA 5030	8021A	44	2	10/21/97	10/21/97	44	U		
Chlorobenzene	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
Ethylbenzene	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
m,p-Xylenes	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
o-Xylene	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
Bromoform	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/21/97	10/21/97	11	U		
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	10/21/97	10/21/97	22	U		
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	10/21/97	10/21/97	22	U		
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	10/21/97	10/21/97	22	U		
Chlorotrifluoroethane	EPA 5030	8021A	44	2	10/21/97	10/21/97	44	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	44	2	10/21/97	10/21/97	44	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	44	2	10/21/97	10/21/97	44	U		
2-Butanone (MEK)	EPA 5030	8021A	108	2	10/21/97	10/21/97	108	U		
Acetone	EPA 5030	8021A	108	2	10/21/97	10/21/97	108	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	44	2	10/21/97	10/21/97	44	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	44	2	10/21/97	10/21/97	44	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	44	2	10/21/97	10/21/97	44	U		

Approved By: Theresa A. Robin
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3097

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil

Service Request: L9703479
 Date Collected: 10/17/97
 Date Received: 10/17/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD657
 Lab Code: L9703479-084
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	vel	qua	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/22/97	10/22/97	11	U	u		
Chloromethane	EPA 5030	8021A	11	1	10/22/97	10/22/97	11	U			
Vinyl Chloride	EPA 5030	8021A	11	1	10/22/97	10/22/97	11	U			
Bromomethane	EPA 5030	8021A	11	1	10/22/97	10/22/97	11	U			
Chloroethane	EPA 5030	8021A	11	1	10/22/97	10/22/97	11	U			
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
Methylene Chloride	EPA 5030	8021A	22	1	10/22/97	10/22/97	27	U			
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
Chloroform	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
Benzene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/22/97	10/22/97	11	U			
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
Bromodichloromethane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/22/97	10/22/97	55	U			
Toluene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/22/97	10/22/97	22	U			
Chlorobenzene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
Ethylbenzene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
m,p-Xylenes	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
o-Xylene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
Bromoform	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U			
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/22/97	10/22/97	11	U			
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/22/97	10/22/97	11	U			
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/22/97	10/22/97	11	U			
Chlorotrifluoroethane	EPA 5030	8021A	22	1	10/22/97	10/22/97	22	U			
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/22/97	10/22/97	22	U			
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/22/97	10/22/97	22	U			
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/22/97	10/22/97	55	U			
Acetone	EPA 5030	8021A	55	1	10/22/97	10/22/97	130	U			
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/22/97	10/22/97	22	U			
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/22/97	10/22/97	22	U			
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/22/97	10/22/97	22	U			

Approved By: Thomas P. Brown
 1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3098

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/17/97
Date Received: 10/17/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD658
Lab Code: L9703479-085
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	13	1	10/22/97	10/22/97	13	U
Chloromethane	EPA 5030	8021A	13	1	10/22/97	10/22/97	13	U
Vinyl Chloride	EPA 5030	8021A	13	1	10/22/97	10/22/97	13	U
Bromomethane	EPA 5030	8021A	13	1	10/22/97	10/22/97	13	U
Chloroethane	EPA 5030	8021A	13	1	10/22/97	10/22/97	13	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
1,1-Dichloroethene	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
Methylene Chloride	EPA 5030	8021A	26	1	10/22/97	10/22/97	26	U
trans-1,2-Dichloroethene	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
cis-1,2-Dichloroethene	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
1,1-Dichloroethane	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
Chloroform	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
Carbon Tetrachloride	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
Benzene	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
1,2-Dichloroethane	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
Trichloroethene (TCE)	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
1,2-Dichloropropane	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
Bromodichloromethane	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	65	1	10/22/97	10/22/97	65	U
Toluene	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
trans-1,3-Dichloropropene	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
cis-1,3-Dichloropropene	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
1,1,2-Trichloroethane	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
Tetrachloroethene (PCE)	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
Chlorotrifluoroethane	EPA 5030	8021A	26	1	10/22/97	10/22/97	26	U
Chlorobenzene	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
Ethylbenzene	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
m,p-Xylenes	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
o-Xylene	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
Bromoform	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	7	1	10/22/97	10/22/97	7	U
1,3-Dichlorobenzene	EPA 5030	8021A	13	1	10/22/97	10/22/97	13	U
1,4-Dichlorobenzene	EPA 5030	8021A	13	1	10/22/97	10/22/97	13	U
1,2-Dichlorobenzene	EPA 5030	8021A	13	1	10/22/97	10/22/97	13	U
Chlorotrifluoroethene	EPA 5030	8021A	26	1	10/22/97	10/22/97	26	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	26	1	10/22/97	10/22/97	26	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	26	1	10/22/97	10/22/97	26	U
2-Butanone (MEK)	EPA 5030	8021A	65	1	10/22/97	10/22/97	65	U
Acetone	EPA 5030	8021A	65	1	10/22/97	10/22/97	65	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	26	1	10/22/97	10/22/97	26	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	26	1	10/22/97	10/22/97	26	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	26	1	10/22/97	10/22/97	26	U

Approved By: Thomas A. Robinson
1544/021397p

Date: 11/17/97

OGDEN VALIDATED
EPA/DOH/USEPA/DOH/USEPA

LEVEL V

3099

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil

Service Request: L9703479
 Date Collected: 10/17/97
 Date Received: 10/17/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD659
 Lab Code: L9703479-086
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	vel qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/22/97	10/22/97	12	U	u	
Chloromethane	EPA 5030	8021A	12	1	10/22/97	10/22/97	12	U		
Vinyl Chloride	EPA 5030	8021A	12	1	10/22/97	10/22/97	12	U		
Bromomethane	EPA 5030	8021A	12	1	10/22/97	10/22/97	12	U		
Chloroethane	EPA 5030	8021A	12	1	10/22/97	10/22/97	12	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
Methylene Chloride	EPA 5030	8021A	23	1	10/22/97	10/22/97	23	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/22/97	10/22/97	57	U		
Toluene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
Chlorotrifluoroethane	EPA 5030	8021A	23	1	10/22/97	10/22/97	23	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/22/97	10/22/97	12	U		
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/22/97	10/22/97	12	U		
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/22/97	10/22/97	12	U		
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/22/97	10/22/97	23	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/22/97	10/22/97	23	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/22/97	10/22/97	23	U		
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/22/97	10/22/97	57	U		
Acetone	EPA 5030	8021A	57	1	10/22/97	10/22/97	110	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/22/97	10/22/97	23	U	u	
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/22/97	10/22/97	23	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/22/97	10/22/97	23	U		

Approved By: Thomas A. Brown
 IS44/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3100

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/17/97
Date Received: 10/17/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD660
Lab Code: L9703479-087
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	1100	100	10/22/97	10/22/97	1100	U	U	
Chloromethane	EPA 5030	8021A	1100	100	10/22/97	10/22/97	1100	U	U	
Vinyl Chloride	EPA 5030	8021A	1100	100	10/22/97	10/22/97	1100	U	U	
Bromomethane	EPA 5030	8021A	1100	100	10/22/97	10/22/97	1100	U	U	
Chloroethane	EPA 5030	8021A	1100	100	10/22/97	10/22/97	1100	U	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
1,1-Dichloroethene	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
Methylene Chloride	EPA 5030	8021A	2200	100	10/22/97	10/22/97	2200	U	U	
trans-1,2-Dichloroethene	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
1,1-Dichloroethane	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
Chloroform	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	550	100	10/22/97	10/22/97 NC	2200	U	U	*3
Carbon Tetrachloride	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
Benzene	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
1,2-Dichloroethane	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
Trichloroethene (TCE)	EPA 5030	8021A	550	100	10/22/97	10/22/97	33000	U	U	D
1,2-Dichloropropane	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
Bromodichloromethane	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	5500	100	10/22/97	10/22/97	5500	U	U	
Toluene	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
1,1,2-Trichloroethane	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
Chlorotrifluoroethane	EPA 5030	8021A	2200	100	10/22/97	10/22/97	2200	U	U	
Chlorobenzene	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
Ethylbenzene	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
m,p-Xylenes	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
o-Xylene	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
Bromoform	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	550	100	10/22/97	10/22/97	550	U	U	
1,3-Dichlorobenzene	EPA 5030	8021A	1100	100	10/22/97	10/22/97	1100	U	U	
1,4-Dichlorobenzene	EPA 5030	8021A	1100	100	10/22/97	10/22/97	1100	U	U	
1,2-Dichlorobenzene	EPA 5030	8021A	1100	100	10/22/97	10/22/97	1100	U	U	
Chlorotrifluoroethene	EPA 5030	8021A	2200	100	10/22/97	10/22/97	2200	U	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	2200	100	10/22/97	10/22/97	2200	U	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	2200	100	10/22/97	10/22/97	2200	U	U	
2-Butanone (MEK)	EPA 5030	8021A	5500	100	10/22/97	10/22/97	5500	U	U	
Acetone	EPA 5030	8021A	5500	100	10/22/97	10/22/97	5500	U	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	2200	100	10/22/97	10/22/97	2200	U	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	2200	100	10/22/97	10/22/97	2200	U	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	2200	100	10/22/97	10/22/97	2200	U	U	

Approved By: Thomas D. R. R. R.
1544/b21397p

Date: 11/17/97

UGDEN VALIDATED

LEVEL V

3101

Page No.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703479
Date Collected: 10/17/97
Date Received: 10/17/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD660DL
L9703479-087DL

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11000	1000	10/23/97	10/23/97	11000	U
Chloromethane	EPA 5030	8021A	11000	1000	10/23/97	10/23/97	11000	U
Vinyl Chloride	EPA 5030	8021A	11000	1000	10/23/97	10/23/97	11000	U
Bromomethane	EPA 5030	8021A	11000	1000	10/23/97	10/23/97	11000	U
Chloroethane	EPA 5030	8021A	11000	1000	10/23/97	10/23/97	11000	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
1,1-Dichloroethene	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
Methylene Chloride	EPA 5030	8021A	22000	1000	10/23/97	10/23/97	22000	U
trans-1,2-Dichloroethene	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
cis-1,2-Dichloroethene	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
1,1-Dichloroethane	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
Chloroform	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
Carbon Tetrachloride	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
Benzene	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
1,2-Dichloroethane	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
Trichloroethene (TCE)	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	33000	U
1,2-Dichloropropane	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
Bromodichloromethane	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55000	1000	10/23/97	10/23/97	55000	U
Toluene	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
trans-1,3-Dichloropropene	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
cis-1,3-Dichloropropene	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
1,1,2-Trichloroethane	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
Tetrachloroethene (PCE)	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
Chlorotrifluoroethane	EPA 5030	8021A	22000	1000	10/23/97	10/23/97	22000	U
Chlorobenzene	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
Ethylbenzene	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
m,p-Xylenes	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
o-Xylene	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
Bromoform	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	5500	1000	10/23/97	10/23/97	5500	U
1,3-Dichlorobenzene	EPA 5030	8021A	11000	1000	10/23/97	10/23/97	11000	U
1,4-Dichlorobenzene	EPA 5030	8021A	11000	1000	10/23/97	10/23/97	11000	U
1,2-Dichlorobenzene	EPA 5030	8021A	11000	1000	10/23/97	10/23/97	11000	U
Chlorotrifluoroethene	EPA 5030	8021A	22000	1000	10/23/97	10/23/97	22000	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22000	1000	10/23/97	10/23/97	22000	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22000	1000	10/23/97	10/23/97	22000	U
2-Butanone (MEK)	EPA 5030	8021A	55000	1000	10/23/97	10/23/97	55000	U
Acetone	EPA 5030	8021A	55000	1000	10/23/97	10/23/97	55000	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22000	1000	10/23/97	10/23/97	22000	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22000	1000	10/23/97	10/23/97	22000	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22000	1000	10/23/97	10/23/97	22000	U

Approved By: Thomas A. Brown
1544/021397p

Date: 11/17/97

OGDEN VALIDATED

LEVEL V

3102

Page No.

OGDEN ENVIRONMENTAL AND ENERGY SERVICES



0

550 South Wadsworth Blvd., Suite 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: SW846 Method 8021A

No. of Samples: 68 Samples, 8 Dilutions, and 4 Reanalyses

Date Reviewed: 07/22/98

Reviewer: L. Calvin

Reference: *Ogden Data Validation Procedures for Halogenated Volatiles by GC and Aromatic Volatiles by GC*
(DVPs-7 and -9, Rev. 2).

SDG: L9703643

Samples Reviewed: RD111, RD112, RD113, RD114, RD115, RD116, RD116DL, RD117, RD118, RD119, RD120, RD120DL, RD124, RD125, RD126, RD128, RD129, RD133, RD134, RD135, RD136, RD137, RD138, RD139, RD140, RD140DL, RD143, RD144, RD145, RD146, RD147, RD148, RD150, RD151, RD152, RD153, RD154, RD155, RD155DL, RD157, RD159, RD159DL, RD160, RD162, RD164, RD164RE, RD165, RD166, RD167, RD168, RD171, RD702, RD703, RD704, RD705, RD705DL, RD706, RD707, RD708, RD709, RD723, RD724, RD726, RD727, RD733, RD733DL, RD735, RD735DL, RD736, RD738, RD739, RD740, RD741, RD742, RD750, RD750RE, RD751, RD751RE, RD754, and RD754RE.

Matrix: Soil and Water

EPA Level V-GC Volatiles Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	According to the case narrative and COCs, samples were received chilled and intact. COC seals were not present. Actual temperature of sample receipt was not recorded. Some corrections were scribbled rather than lined out, and some crossouts on the COCs were missing dates.	No qualifications were required.
3. <u>Method Blanks</u> VBLK97102701 VBLK97102801 VBLK97102901 VBLK97103001 VBLK97103101 VBLK97110301 VBLK97110401 VBLK97110701	Nine method blanks were analyzed with this SDG. No target compounds were reported in the method blanks.	No qualifications were required.

	Problems	Qualifications
VBLK97110801		
4. <u>LCS/BS</u> VLCS97102701 VLCS97102801 VLCS97102901 VLCS97103001 VLCS97103101 VLCS97110301 VLCS97110401 VLCS97110701 VLCS97110801	Nine blank spikes were analyzed with the samples of this SDG. All percent recoveries were within the laboratory QC limits.	No qualifications were required.
5. <u>Surrogates</u>	<p>All surrogate recoveries were within laboratory QC limits on the ELCD detector with the exception of the recoveries in samples RD159 and RD751RE which were above and below the laboratory QC limits of 60%-140%, respectively.</p> <p>All surrogate recoveries were within laboratory QC limits on the PID detector with the exception of the recoveries in samples RD115 and RD723, which were above and below the QC limits of 57%-143%, respectively.</p>	<p>There were no reportable detects in samples RD159 or RD751RE to qualify. Nondetects in RD159 required no qualification for a high surrogate recovery. Nondetects for all ELCD compounds in sample RD751RE were qualified as estimated, "UJ."</p> <p>Detects reported from the PID in sample RD115 were qualified as estimated, "J." There were no detects in sample RD723. Nondetects for all PID compounds in sample RD723 were qualified as estimated, "UJ."</p>
6. <u>MS/MSDs</u> Performed on RD111, RD125, RD160, RD166, and RD739	Five MS/MSDs were analyzed with this SDG. All recoveries and RPDs were within the laboratory QC limits.	No qualifications were required.
7. <u>Field QC Samples</u> ER: RD138 RD249 (SDG L9703803) RD724 RD801 (SDG L9703719) FB: RD856 (SDG L9703803) FD: RD702 and RD671 (SDG L9703563) RD703 and RF662 (SDG L9703578)	<p>There were no target compounds reported in the equipment rinsates or the field blank.</p> <p>Field duplicates RD702 and RD671 were analyzed at 5 and 1 dilutions respectively, with no target analyte detects (at higher reporting limits in RD702), and were considered to be in agreement.</p> <p>RF662 and RF772 were not analyzed by Method 8021.</p>	No qualifications were required.

	Problems	Qualifications
RD704 and RF672 (SDG L9703578)		
8. <u>Other</u>	<p>The following samples were analyzed at dilutions and only the dilution analyses were provided: RD116, RD119, RD120, RD140, RD164, RD750, and RD754-2 ; RD136, RD137, RD165, RD171, RD702, and RD735--5 ; RD703--50 ; RD115--100 ; and RD133, RD134, and RD135--1000 . Reporting limits were raised accordingly.</p> <p>Four diluted samples (RD164, RD750, RD751, and RD754) were reanalyzed undiluted: RD164RE, RD750RE, RD751RE, and RD754RE.</p> <p>The following samples were dilutions analyzed for acetone detected above the linear range of the calibration in the undiluted or less diluted analyses: RD705DL-2 ; RD116DL-5 ; RD155DL, RD159DL and RD735DL-10 ; and RD120DL, RD159DL and RD733DL--50 .</p> <p>Sample RD140DL (10) was a dilution analyzed for trichloroethene detected above the linear range of the calibration in the undiluted analysis.</p> <p>No confirmation was analyzed for sample RD708. The following reported target compounds were not confirmed by the confirmation analyses: acetone in samples RD114, RD116DL, RD120DL, RD705DL, RD706, and RD740; methylene chloride in samples RD136 and RD137; tetrachloroethene, 1,1-dichloroethene, and 1,1,1-trichloroethane in sample RD140; trichloroethene in sample RD162; ethylbenzene and o-xylene in RD115; m&p-xylenes in RD115, RD134, and RD135; and 1,1-</p>	<p>Concentrations of target compounds or matrix interferences in aforementioned dilutions were sufficient to justify the dilutions. No qualifications were assigned based on dilutions.</p> <p>Results for RD164, RD750, RD751, and RD754 were rejected "R," in favor of the undiluted reanalyses.</p> <p>Acetone was rejected "R," in the original analyses in favor of the diluted values for acetone, and the remaining target compounds were rejected in the dilutions in favor of the undiluted or less diluted analyses.</p> <p>Trichloroethene was rejected "R," in the original analysis in favor of the diluted value for trichloroethene, and the remaining target compounds were rejected in the dilution in favor of the undiluted analysis.</p> <p>Unconfirmed detects were qualified as estimated, "J," for previously characterized contaminants of concern, and tentatively identified "NJ," for remaining unconfirmed detects. Raw data was not examined at Level V validation to determine the presence of those unconfirmed detects which should have been detected on both the ELCD and PID detectors in the original analysis.</p>

	Problems	Qualifications
	dichloroethane and trans-1,2-dichloroethene in RD171.	
8. <u>Other</u> (cont.)	<p>The results for m&p-xylenes and/or o-xylenes were incorrect on the result summaries for samples RD115, RD134, RD135, and RD171.</p> <p>The confirmation analysis of sample RD165 indicated that cis-1,2-dichloroethene was present and did not confirm the presence of trichloroethene, originally reported in the sample. A review of the raw data showed that TCE was reported in error and cis-1,2-dichloroethene should have been reported at the same concentration.</p>	<p>The results for m&p-xylenes and/or o-xylenes were corrected on the result summaries for samples RD115, RD134, RD135, and RD171 based on an initial calibration average RRF error discovered in the level IV validation of SDG L9704260, which affected quantitation of all of the xylenes isomers. No qualifications were required.</p> <p>The trichloroethene result in sample RD165 was changed to a nondetect, and cis-1,2-dichloroethene was reported at the correct concentration. No qualifications were required.</p>
<u>Comments</u> PE Sample: RD171	Dry weight values reported by the laboratory were less than the wet weight values obtained from the quantitation report, indicating that the laboratory incorrectly calculated the dry weight results. PE sample results are presented in the following table.	Because % moisture data was unavailable, the reviewer did not recalculate the dry weight values for sample RD171.

Volatile Results: Sample RD171

Analyte	Certified Value (µg/Kg)	Advisory Range (µg/Kg)	*Laboratory Results (µg/Kg)	**Reported Laboratory Results (µg/Kg)
Benzene	71.7	44.9 - 100	61	56
Bromodichloromethane	150	72.7 - 206	120	110
Bromoform	80.2	21.8 - 118	100	95
Carbon tetrachloride	171	76.7 - 247	150	140
Chlorobenzene	17.0	7.89 - 23.0	16J	15J
Chlorodibromomethane	24.2	10.7 - 33.7	NA	NA
Chloroform	50.2	16.3 - 69.3	70	65
1,2-Dichlorobenzene	46.9	21.1 - 67.5	56	52
1,3-Dichlorobenzene	47.2	15.8 - 68.9	52	49
1,4-Dichlorobenzene	120	48.1 - 170	110	100
1,1-Dichloroethane	100	71.3 - 135	110	100
1,2-Dichloroethane	177	61.5 - 250	230	210
Ethylbenzene	52.5	19.6 - 74.5	42	39
Methylene chloride	36.2	7.52 - 54.6	ND	ND
4-Methyl-2-pentanone	80.6	41.8 - 133	NA	NA
Tetrachloroethylene	94.5	28.7 - 136	75	69
Toluene	30.1	14.3 - 40.3	22J	20J
1,1,1-Trichloroethane	70.7	25.6 - 98.3	74	68
1,1,2-Trichloroethane	61.4	39.5 - 85.4	53	49
Trichloroethylene	105	28.4 - 142	120	110
Xylenes, total	104	64.1 - 150	72	65

* Wet weight values from raw data.

** Dry weight values reported by laboratory. (Appear to have been incorrectly calculated; dry weight values should be greater than wet weight values.)

NA = Not Applicable (Spiked PE analytes which were not included on client's analyte list.)

ND = Not detected

J = Estimated value reported below the reporting limit

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD111
Lab Code: L9703643-006
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Benzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/27/97	10/27/97	57	U
Toluene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/27/97	10/27/97	57	U
Acetone	EPA 5030	8021A	57	1	10/27/97	10/27/97	57	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U

Approved By: Thomas P. Mooney
1544/021397p

Date: 12/23/97

LEVEL V

003012

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD112
Lab Code: L9703643-007
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Benzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	58	1	10/27/97	10/27/97	58	U
Toluene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	58	1	10/27/97	10/27/97	58	U
Acetone	EPA 5030	8021A	58	1	10/27/97	10/27/97	58	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U

Approved By: Thomas P. Albion
1544/021397p

Date: 12/23/97

UGDEN VALIDATED

LEVEL V 003013

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD113
Lab Code: L9703643-008
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Benzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	58	1	10/27/97	10/27/97	58	U
Toluene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	58	1	10/27/97	10/27/97	58	U
Acetone	EPA 5030	8021A	58	1	10/27/97	10/27/97	58	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U

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Anal code

Approved By: Thomas A. Albion
1544021397p

Date: 12/23/97

LEVEL V

003014

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD114
Lab Code: L9703643-009
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/27/97	10/27/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Benzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/27/97	10/27/97	54	U
Toluene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/27/97	10/27/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/27/97	10/27/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/27/97	10/27/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/27/97	10/27/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/27/97	10/27/97	54	U
Acetone	EPA 5030	8021A	54	1	10/27/97	10/27/97	120	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/27/97	10/27/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/27/97	10/27/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/27/97	10/27/97	22	U

Approved By: Thomas A. Nelson
1544/b21397p

Date: 12/23/97

RODEN VALMATECH

LEVEL V

003015

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643

Date Collected: 10/27/97

Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:

RD115

Lab Code:

L9703643-010

Test Notes:

Units: UG/KG

Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	1110	100	10/30/97	10/30/97	1110	U
Chloromethane	EPA 5030	8021A	1110	100	10/30/97	10/30/97	1110	U
Vinyl Chloride	EPA 5030	8021A	1110	100	10/30/97	10/30/97	1110	U
Bromomethane	EPA 5030	8021A	1110	100	10/30/97	10/30/97	1110	U
Chloroethane	EPA 5030	8021A	1110	100	10/30/97	10/30/97	1110	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
1,1-Dichloroethene	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
Methylene Chloride	EPA 5030	8021A	2220	100	10/30/97	10/30/97	2220	U
trans-1,2-Dichloroethene	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
cis-1,2-Dichloroethene	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
1,1-Dichloroethane	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
Chloroform	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
Carbon Tetrachloride	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
Benzene	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
1,2-Dichloroethane	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
Trichloroethene (TCE)	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
1,2-Dichloropropane	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
Bromodichloromethane	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	5560	100	10/30/97	10/30/97	5560	U
Toluene	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
trans-1,3-Dichloropropene	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
cis-1,3-Dichloropropene	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
1,1,2-Trichloroethane	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
Tetrachloroethene (PCE)	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	2220	100	10/30/97	10/30/97	2220	U
Chlorobenzene	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
Ethylbenzene	EPA 5030	8021A	556	100	10/30/97	10/30/97	600	U
m,p-Xylenes	EPA 5030	8021A	556	100	10/30/97	10/30/97	560	U
o-Xylene	EPA 5030	8021A	556	100	10/30/97	10/30/97	3500	U
Bromoform	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
1,3-Dichlorobenzene	EPA 5030	8021A	1110	100	10/30/97	10/30/97	1110	U
1,4-Dichlorobenzene	EPA 5030	8021A	1110	100	10/30/97	10/30/97	1110	U
1,2-Dichlorobenzene	EPA 5030	8021A	1110	100	10/30/97	10/30/97	1110	U
Chlorotrifluoroethene	EPA 5030	8021A	2220	100	10/30/97	10/30/97	2220	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	2220	100	10/30/97	10/30/97	2220	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	2220	100	10/30/97	10/30/97	2220	U
2-Butanone (MEK)	EPA 5030	8021A	5560	100	10/30/97	10/30/97	5560	U
Acetone	EPA 5030	8021A	5560	100	10/30/97	10/30/97	5560	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	2220	100	10/30/97	10/30/97	2220	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	2220	100	10/30/97	10/30/97	2220	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	2220	100	10/30/97	10/30/97	2220	U

Approved By: Thomas B. Rubin
IS44/021397p

Date: 12/23/97

003016

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD116
Lab Code: L9703643-011
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Initial
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	23	2	10/30/97	10/30/97	23	U	U
Chloromethane	EPA 5030	8021A	23	2	10/30/97	10/30/97	23	U	U
Vinyl Chloride	EPA 5030	8021A	23	2	10/30/97	10/30/97	23	U	U
Bromomethane	EPA 5030	8021A	23	2	10/30/97	10/30/97	23	U	U
Chloroethane	EPA 5030	8021A	23	2	10/30/97	10/30/97	23	U	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
1,1-Dichloroethene	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
Methylene Chloride	EPA 5030	8021A	45	2	10/30/97	10/30/97	45	U	U
trans-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
cis-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
1,1-Dichloroethane	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
Chloroform	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
Carbon Tetrachloride	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
Benzene	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
1,2-Dichloroethane	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
Trichloroethene (TCE)	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
1,2-Dichloropropane	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
Bromodichloromethane	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	112	2	10/30/97	10/30/97	112	U	U
Toluene	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
trans-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
cis-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
1,1,2-Trichloroethane	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
Tetrachloroethene (PCE)	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	45	2	10/30/97	10/30/97	45	U	U
Chlorobenzene	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
Ethylbenzene	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
m,p-Xylenes	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
o-Xylene	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
Bromoform	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	U
1,3-Dichlorobenzene	EPA 5030	8021A	23	2	10/30/97	10/30/97	23	U	U
1,4-Dichlorobenzene	EPA 5030	8021A	23	2	10/30/97	10/30/97	23	U	U
1,2-Dichlorobenzene	EPA 5030	8021A	23	2	10/30/97	10/30/97	23	U	U
Chlorotrifluoroethene	EPA 5030	8021A	45	2	10/30/97	10/30/97	45	U	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	45	2	10/30/97	10/30/97	45	U	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	45	2	10/30/97	10/30/97	45	U	U
2-Butanone (MEK)	EPA 5030	8021A	112	2	10/30/97	10/30/97	112	U	U
Acetone	EPA 5030	8021A	112	2	10/30/97	10/30/97	610	U	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	45	2	10/30/97	10/30/97	45	U	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	45	2	10/30/97	10/30/97	45	U	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	45	2	10/30/97	10/30/97	45	U	U

Approved By: Thomas K. Blum
1544021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V 03017

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD116DL
Lab Code: L9703643-011DL
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	56	5	10/31/97	10/31/97	56	U
Chloromethane	EPA 5030	8021A	56	5	10/31/97	10/31/97	56	U
Vinyl Chloride	EPA 5030	8021A	56	5	10/31/97	10/31/97	56	U
Bromomethane	EPA 5030	8021A	56	5	10/31/97	10/31/97	56	U
Chloroethane	EPA 5030	8021A	56	5	10/31/97	10/31/97	56	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
1,1-Dichloroethene	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
Methylene Chloride	EPA 5030	8021A	112	5	10/31/97	10/31/97	112	U
trans-1,2-Dichloroethene	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
cis-1,2-Dichloroethene	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
1,1-Dichloroethane	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
Chloroform	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
Carbon Tetrachloride	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
Benzene	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
1,2-Dichloroethane	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
Trichloroethene (TCE)	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
1,2-Dichloropropane	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
Bromodichloromethane	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	278	5	10/31/97	10/31/97	278	U
Toluene	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
trans-1,3-Dichloropropene	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
cis-1,3-Dichloropropene	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
1,1,2-Trichloroethane	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
Tetrachloroethene (PCE)	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	112	5	10/31/97	10/31/97	112	U
Chlorobenzene	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
Ethylbenzene	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
m,p-Xylenes	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
o-Xylene	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
Bromoform	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	28	5	10/31/97	10/31/97	28	U
1,3-Dichlorobenzene	EPA 5030	8021A	56	5	10/31/97	10/31/97	56	U
1,4-Dichlorobenzene	EPA 5030	8021A	56	5	10/31/97	10/31/97	56	U
1,2-Dichlorobenzene	EPA 5030	8021A	56	5	10/31/97	10/31/97	56	U
Chlorotrifluoroethene	EPA 5030	8021A	112	5	10/31/97	10/31/97	112	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	112	5	10/31/97	10/31/97	112	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	112	5	10/31/97	10/31/97	112	U
2-Butanone (MEK)	EPA 5030	8021A	278	5	10/31/97	10/31/97	278	U
Acetone	EPA 5030	8021A	278	5	10/31/97	10/31/97	920	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	112	5	10/31/97	10/31/97	112	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	112	5	10/31/97	10/31/97	112	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	112	5	10/31/97	10/31/97	112	U

Approved By: Thomas B. Riving
1544021397p

Date: 12/23/97

ORDER VALIDATED

LEVEL V

003018

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD117
Lab Code: L9703643-012
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U u
Chloromethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Benzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/28/97	10/28/97	54	U
Toluene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/28/97	10/28/97	54	U
Acetone	EPA 5030	8021A	54	1	10/28/97	10/28/97	54	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U

Approved By: Thomas D. Morris
1344/021397p

Date: 12/23/97

LEVEL V

003019

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD118
L9703643-013

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Benzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/28/97	10/28/97	55	U
Toluene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/28/97	10/28/97	55	U
Acetone	EPA 5030	8021A	55	1	10/28/97	10/28/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U

Approved By: Thomas R. Nelson
1544/021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V

003020

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD119
Lab Code: L9703643-014
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U	u	
Chloromethane	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U		
Vinyl Chloride	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U		
Bromomethane	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U		
Chloroethane	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
Methylene Chloride	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
Chloroform	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
Benzene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/28/97	10/28/97	270			
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	u	
Bromodichloromethane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	110	2	10/28/97	10/28/97	110	U		
Toluene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U		
Chlorobenzene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
Ethylbenzene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
m,p-Xylenes	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
o-Xylene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
Bromoform	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U		
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U		
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U		
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U		
Chlorotrifluoroethene	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U		
2-Butanone (MEK)	EPA 5030	8021A	110	2	10/28/97	10/28/97	110	U		
Acetone	EPA 5030	8021A	110	2	10/28/97	10/28/97	110	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U		

Approved By: Thomas D. Blain
1544621397p

Date: 12/23/97

UGDEN VALIDATION

LEVEL V003021

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD120
Lab Code: L9703643-015
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U
Chloromethane	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U
Vinyl Chloride	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U
Bromomethane	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U
Chloroethane	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
Methylene Chloride	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
Chloroform	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
Benzene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
Bromodichloromethane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	110	2	10/28/97	10/28/97	110	U
Toluene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U
Chlorobenzene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
Ethylbenzene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
m,p-Xylenes	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
o-Xylene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
Bromoform	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U
Chlorotrifluoroethene	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U
2-Butanone (MEK)	EPA 5030	8021A	110	2	10/28/97	10/28/97	110	U
Acetone	EPA 5030	8021A	110	2	10/28/97	10/28/97	770	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U

Approved By: Thomas R. Blum
1544/021397p

Date: 12/23/97

UNC
7.24.98

LEVEL V003022

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD120DL
L9703643-015DL

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	qual	code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	550	50	10/30/97	10/30/97	550	U	✓	Δ
Chloromethane	EPA 5030	8021A	550	50	10/30/97	10/30/97	550	U		
Vinyl Chloride	EPA 5030	8021A	550	50	10/30/97	10/30/97	550	U		
Bromomethane	EPA 5030	8021A	550	50	10/30/97	10/30/97	550	U		
Chloroethane	EPA 5030	8021A	550	50	10/30/97	10/30/97	550	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
1,1-Dichloroethene	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
Methylene Chloride	EPA 5030	8021A	1100	50	10/30/97	10/30/97	1100	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
1,1-Dichloroethane	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
Chloroform	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
Carbon Tetrachloride	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
Benzene	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
1,2-Dichloroethane	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
Trichloroethene (TCE)	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
1,2-Dichloropropane	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
Bromodichloromethane	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	2750	50	10/30/97	10/30/97	2750	U		
Toluene	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
1,1,2-Trichloroethane	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	1100	50	10/30/97	10/30/97	1100	U		
Chlorobenzene	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
Ethylbenzene	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
m,p-Xylenes	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
o-Xylene	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
Bromoform	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U		
1,3-Dichlorobenzene	EPA 5030	8021A	550	50	10/30/97	10/30/97	550	U		
1,4-Dichlorobenzene	EPA 5030	8021A	550	50	10/30/97	10/30/97	550	U		
1,2-Dichlorobenzene	EPA 5030	8021A	550	50	10/30/97	10/30/97	550	U		
Chlorotrifluoroethene	EPA 5030	8021A	1100	50	10/30/97	10/30/97	1100	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	1100	50	10/30/97	10/30/97	1100	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	1100	50	10/30/97	10/30/97	1100	U		
2-Butanone (MEK)	EPA 5030	8021A	2750	50	10/30/97	10/30/97	2750	U		
Acetone	EPA 5030	8021A	2750	50	10/30/97	10/30/97	3400	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	1100	50	10/30/97	10/30/97	1100	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	1100	50	10/30/97	10/30/97	1100	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	1100	50	10/30/97	10/30/97	1100	U		

Approved By: Thomaz D. Riving
1344/021397p

Date: 12/23/97

DATA VALIDATED

LEVEL V 003023

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD124
Lab Code: L9703643-025
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Benzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/28/97	10/28/97	57	U
Toluene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/28/97	10/28/97	57	U
Acetone	EPA 5030	8021A	57	1	10/28/97	10/28/97	57	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U

Approved By:

Thomas D. Rebray

Date:

12/23/97

1344/021397p

LEVEL V3030

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD125
Lab Code: L9703643-026
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	view qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U	u	
Chloromethane	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U		
Vinyl Chloride	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U		
Bromomethane	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U		
Chloroethane	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
Methylene Chloride	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	58	1	10/28/97	10/28/97	58	U		
Toluene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U		
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U		
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U		
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U		
2-Butanone (MEK)	EPA 5030	8021A	58	1	10/28/97	10/28/97	58	U		
Acetone	EPA 5030	8021A	58	1	10/28/97	10/28/97	58	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U		

Approved By: James N. Nelson
1344621397p

Date: 12/23/97

LEVEL V 003031

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD126
Lab Code: L9703643-027
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Benzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/28/97	10/28/97	55	U
Toluene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/28/97	10/28/97	55	U
Acetone	EPA 5030	8021A	55	1	10/28/97	10/28/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U

Approved By: Thomas P. Nelson
1544/021397p

Date: 12/23/97

LEVEL V 003032

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD128
Lab Code: L9703643-028
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U	U	
Chloromethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U	U	
Vinyl Chloride	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U	U	
Bromomethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U	U	
Chloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
Methylene Chloride	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U	U	
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
Chloroform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
Benzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
Bromodichloromethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/28/97	10/28/97	54	U	U	
Toluene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U	U	
Chlorobenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
Ethylbenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
m,p-Xylenes	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
o-Xylene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
Bromoform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U	U	
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U	U	
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U	U	
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U	U	
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U	U	
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/28/97	10/28/97	54	U	U	
Acetone	EPA 5030	8021A	54	1	10/28/97	10/28/97	54	U	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U	U	

Approved By: Thomas P. Rubin
1544/021397p

Date: 12/23/97

DECEMBER 23, 1997

LEVEL V 03033

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD129
Lab Code: L9703643-029
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	veig qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U	u	
Chloromethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
Vinyl Chloride	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
Bromomethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
Chloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
Methylene Chloride	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/28/97	10/28/97	55	U		
Toluene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U		
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/28/97	10/28/97	55	U		
Acetone	EPA 5030	8021A	55	1	10/28/97	10/28/97	55	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U		

Approved By: Thomas D. Moring
1844/021397p

Date: 12/23/97

UNDEVELOPED VALIDATED

LEVEL V 003034

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD133
Lab Code: L9703643-033
Test Notes: C2A

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400
Chloromethane	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400
Vinyl Chloride	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400
Bromomethane	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400
Chloroethane	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
1,1-Dichloroethene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
Methylene Chloride	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800
trans-1,2-Dichloroethene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
cis-1,2-Dichloroethene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
1,1-Dichloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
Chloroform	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
Carbon Tetrachloride	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
Benzene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
1,2-Dichloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
Trichloroethene (TCE)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
1,2-Dichloropropane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
Bromodichloromethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57000	1000	10/30/97	10/30/97	57000
Toluene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
trans-1,3-Dichloropropene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
cis-1,3-Dichloropropene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
1,1,2-Trichloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
Tetrachloroethene (PCE)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800
Chlorobenzene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
Ethylbenzene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
m,p-Xylenes	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
o-Xylene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
Bromoform	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700
1,3-Dichlorobenzene	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400
1,4-Dichlorobenzene	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400
1,2-Dichlorobenzene	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400
Chlorotrifluoroethene	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800
2-Butanone (MEK)	EPA 5030	8021A	57000	1000	10/30/97	10/30/97	57000
Acetone	EPA 5030	8021A	57000	1000	10/30/97	10/30/97	57000
1,2,4-Trimethylbenzene	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800
1,3,5-Trimethylbenzene	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800

Result
Notes

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C2A

MRL is elevated because of matrix interferences and because the sample required diluting.

Approved By: Thomas A. Riving
1544/021397p

Date: 10/23/97

LEVEL V

003035

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD134
Lab Code: L9703643-034
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual Code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U
Chloromethane	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U
Vinyl Chloride	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U
Bromomethane	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U
Chloroethane	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
1,1-Dichloroethene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
Methylene Chloride	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U
trans-1,2-Dichloroethene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
cis-1,2-Dichloroethene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
1,1-Dichloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
Chloroform	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
Carbon Tetrachloride	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
Benzene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
1,2-Dichloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
Trichloroethene (TCE)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
1,2-Dichloropropane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
Bromodichloromethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57000	1000	10/30/97	10/30/97	57000	U	U
Toluene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
trans-1,3-Dichloropropene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
cis-1,3-Dichloropropene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
1,1,2-Trichloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
Tetrachloroethene (PCE)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U
Chlorobenzene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
Ethylbenzene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
m,p-Xylenes	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
o-Xylene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
Bromoform	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U
1,3-Dichlorobenzene	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U
1,4-Dichlorobenzene	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U
1,2-Dichlorobenzene	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U
Chlorotrifluoroethene	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U
2-Butanone (MEK)	EPA 5030	8021A	57000	1000	10/30/97	10/30/97	57000	U	U
Acetone	EPA 5030	8021A	57000	1000	10/30/97	10/30/97	57000	U	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U

Approved By: Thomas P. Rubin
1544/021397p

Date: 12/23/97

LEVEL V 003036

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD135
Lab Code: L9703643-035
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev	qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U	
Chloromethane	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U	
Vinyl Chloride	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U	
Bromomethane	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U	
Chloroethane	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
1,1-Dichloroethene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
Methylene Chloride	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U	
trans-1,2-Dichloroethene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
1,1-Dichloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
Chloroform	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
Carbon Tetrachloride	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
Benzene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
1,2-Dichloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
Trichloroethene (TCE)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
1,2-Dichloropropane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
Bromodichloromethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57000	1000	10/30/97	10/30/97	57000	U	U	
Toluene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
1,1,2-Trichloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U	
Chlorobenzene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
Ethylbenzene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
m,p-Xylenes	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	6300	3200	U	\$, * 5
o-Xylene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
Bromoform	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
1,3-Dichlorobenzene	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U	
1,4-Dichlorobenzene	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U	
1,2-Dichlorobenzene	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U	
Chlorotrifluoroethene	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U	
2-Butanone (MEK)	EPA 5030	8021A	57000	1000	10/30/97	10/30/97	57000	U	U	
Acetone	EPA 5030	8021A	57000	1000	10/30/97	10/30/97	57000	U	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U	

Approved By: Thomas A. King
1544021397p

Date: 12/23/97

LEVEL V

LEVEL V 003037

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD136
Lab Code: L9703643-037
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	57	5	10/29/97	10/29/97	57	U
Chloromethane	EPA 5030	8021A	57	5	10/29/97	10/29/97	57	U
Vinyl Chloride	EPA 5030	8021A	57	5	10/29/97	10/29/97	57	U
Bromomethane	EPA 5030	8021A	57	5	10/29/97	10/29/97	57	U
Chloroethane	EPA 5030	8021A	57	5	10/29/97	10/29/97	57	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
1,1-Dichloroethene	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
Methylene Chloride	EPA 5030	8021A	114	5	10/29/97	10/29/97	250	U
trans-1,2-Dichloroethene	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
cis-1,2-Dichloroethene	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
1,1-Dichloroethane	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
Chloroform	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
Carbon Tetrachloride	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
Benzene	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
1,2-Dichloroethane	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
Trichloroethene (TCE)	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
1,2-Dichloropropane	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
Bromodichloromethane	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	285	5	10/29/97	10/29/97	285	U
Toluene	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
trans-1,3-Dichloropropene	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
cis-1,3-Dichloropropene	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
1,1,2-Trichloroethane	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
Tetrachloroethene (PCE)	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	114	5	10/29/97	10/29/97	114	U
Chlorobenzene	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
Ethylbenzene	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
m,p-Xylenes	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
o-Xylene	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
Bromoform	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
1,3-Dichlorobenzene	EPA 5030	8021A	57	5	10/29/97	10/29/97	57	U
1,4-Dichlorobenzene	EPA 5030	8021A	57	5	10/29/97	10/29/97	57	U
1,2-Dichlorobenzene	EPA 5030	8021A	57	5	10/29/97	10/29/97	57	U
Chlorotrifluoroethene	EPA 5030	8021A	114	5	10/29/97	10/29/97	114	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	114	5	10/29/97	10/29/97	114	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	114	5	10/29/97	10/29/97	114	U
2-Butanone (MEK)	EPA 5030	8021A	285	5	10/29/97	10/29/97	285	U
Acetone	EPA 5030	8021A	285	5	10/29/97	10/29/97	285	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	114	5	10/29/97	10/29/97	114	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	114	5	10/29/97	10/29/97	114	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	114	5	10/29/97	10/29/97	114	U

Approved By: Theresa A. Rubing
1544/021397p

Date: 12/23/97

COVEN VALIDATED

LEVEL V 003039

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD137
Lab Code: L9703643-038
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	59	5	10/29/97	10/29/97	59	U	u
Chloromethane	EPA 5030	8021A	59	5	10/29/97	10/29/97	59	U	u
Vinyl Chloride	EPA 5030	8021A	59	5	10/29/97	10/29/97	59	U	u
Bromomethane	EPA 5030	8021A	59	5	10/29/97	10/29/97	59	U	u
Chloroethane	EPA 5030	8021A	59	5	10/29/97	10/29/97	59	U	u
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
1,1-Dichloroethene	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
Methylene Chloride	EPA 5030	8021A	117	5	10/29/97	10/29/97	190	U	u
trans-1,2-Dichloroethene	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
cis-1,2-Dichloroethene	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
1,1-Dichloroethane	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
Chloroform	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
Carbon Tetrachloride	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
Benzene	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
1,2-Dichloroethane	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
Trichloroethene (TCE)	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
1,2-Dichloropropane	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
Bromodichloromethane	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	291	5	10/29/97	10/29/97	291	U	u
Toluene	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
trans-1,3-Dichloropropene	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
cis-1,3-Dichloropropene	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
1,1,2-Trichloroethane	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
Tetrachloroethene (PCE)	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	117	5	10/29/97	10/29/97	117	U	u
Chlorobenzene	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
Ethylbenzene	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
m,p-Xylenes	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
o-Xylene	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
Bromoform	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U	u
1,3-Dichlorobenzene	EPA 5030	8021A	59	5	10/29/97	10/29/97	59	U	u
1,4-Dichlorobenzene	EPA 5030	8021A	59	5	10/29/97	10/29/97	59	U	u
1,2-Dichlorobenzene	EPA 5030	8021A	59	5	10/29/97	10/29/97	59	U	u
Chlorotrifluoroethene	EPA 5030	8021A	117	5	10/29/97	10/29/97	117	U	u
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	117	5	10/29/97	10/29/97	117	U	u
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	117	5	10/29/97	10/29/97	117	U	u
2-Butanone (MEK)	EPA 5030	8021A	291	5	10/29/97	10/29/97	291	U	u
Acetone	EPA 5030	8021A	291	5	10/29/97	10/29/97	291	U	u
1,2,4-Trimethylbenzene	EPA 5030	8021A	117	5	10/29/97	10/29/97	117	U	u
1,3,5-Trimethylbenzene	EPA 5030	8021A	117	5	10/29/97	10/29/97	117	U	u
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	117	5	10/29/97	10/29/97	117	U	u

Approved By: Thomas A. Rubin
1544021397p

Date: 12/23/97

UNDEVELOPED

LEVEL V

003040

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Water

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD138
Lab Code: L9703643-039
Test Notes:

Units: UG/L
Basis: NA

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Chloromethane	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Vinyl Chloride	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Bromomethane	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Chloroethane	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,1-Dichloroethene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Methylene Chloride	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
trans-1,2-Dichloroethene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
cis-1,2-Dichloroethene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,1-Dichloroethane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Chloroform	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Carbon Tetrachloride	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Benzene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,2-Dichloroethane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Trichloroethene (TCE)	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,2-Dichloropropane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Bromodichloromethane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	50	1	10/29/97	10/29/97	50	U
Toluene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
trans-1,3-Dichloropropene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
cis-1,3-Dichloropropene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,1,2-Trichloroethane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Tetrachloroethene (PCE)	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
Chlorobenzene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Ethylbenzene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
m,p-Xylenes	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
o-Xylene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Bromoform	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,3-Dichlorobenzene	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
1,4-Dichlorobenzene	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
1,2-Dichlorobenzene	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Chlorotrifluoroethene	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
2-Butanone (MEK)	EPA 5030	8021A	50	1	10/29/97	10/29/97	50	U
Acetone	EPA 5030	8021A	50	1	10/29/97	10/29/97	50	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U

Approved By: Thomas X. Moring
1544/021397p

Date: 12/23/97

NOT VALIDATED

LEVEL V

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD139
Lab Code: L9703643-036
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Benzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/28/97	10/28/97	57	U
Toluene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/28/97	10/28/97	57	U
Acetone	EPA 5030	8021A	57	1	10/28/97	10/28/97	57	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U

Approved By: Thomas P. Murray
1544/021397p

Date: 12/23/97

ORDER VALIDATED

LEVEL V

003038

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD140
Lab Code: L9703643-045
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rel qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	23	2	10/29/97	10/29/97	23	U	U	
Chloromethane	EPA 5030	8021A	23	2	10/29/97	10/29/97	23	U	U	
Vinyl Chloride	EPA 5030	8021A	23	2	10/29/97	10/29/97	23	U	U	
Bromomethane	EPA 5030	8021A	23	2	10/29/97	10/29/97	23	U	U	
Chloroethane	EPA 5030	8021A	23	2	10/29/97	10/29/97	23	U	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U	U	
1,1-Dichloroethene	EPA 5030	8021A	12	2	10/29/97	10/29/97	31	U	J	*8
Methylene Chloride	EPA 5030	8021A	45	2	10/29/97	10/29/97	45	U	U	
trans-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U	U	
1,1-Dichloroethane	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U	U	
Chloroform	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	12	2	10/29/97	10/29/97	190	MC	XJ	*8
Carbon Tetrachloride	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U	U	
Benzene	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U	U	
1,2-Dichloroethane	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U	U	
Trichloroethene (TCE)	EPA 5030	8021A	12	2	10/29/97	10/29/97	1100	U	R	D
1,2-Dichloropropane	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U	U	
Bromodichloromethane	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	113	2	10/29/97	10/29/97	113	U	U	
Toluene	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U	U	
1,1,2-Trichloroethane	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	12	2	10/29/97	10/29/97	13	U	J	*8
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	45	2	10/29/97	10/29/97	45	U	U	
Chlorobenzene	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U	U	
Ethylbenzene	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U	U	
m,p-Xylenes	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U	U	
o-Xylene	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U	U	
Bromoform	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U	U	
1,3-Dichlorobenzene	EPA 5030	8021A	23	2	10/29/97	10/29/97	23	U	U	
1,4-Dichlorobenzene	EPA 5030	8021A	23	2	10/29/97	10/29/97	23	U	U	
1,2-Dichlorobenzene	EPA 5030	8021A	23	2	10/29/97	10/29/97	23	U	U	
Chlorotrifluoroethene	EPA 5030	8021A	45	2	10/29/97	10/29/97	45	U	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	45	2	10/29/97	10/29/97	45	U	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	45	2	10/29/97	10/29/97	45	U	U	
2-Butanone (MEK)	EPA 5030	8021A	113	2	10/29/97	10/29/97	113	U	U	
Acetone	EPA 5030	8021A	113	2	10/29/97	10/29/97	113	U	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	45	2	10/29/97	10/29/97	45	U	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	45	2	10/29/97	10/29/97	45	U	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	45	2	10/29/97	10/29/97	45	U	U	

Approved By: Thomas R. Rubin Date: 12/23/97

1344/b21397p

LEVEL V

003044

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rockeddyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD140DL
Lab Code: L9703643-045DL
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	qual	code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	113	10	10/30/97	10/30/97	113	U	R	D
Chloromethane	EPA 5030	8021A	113	10	10/30/97	10/30/97	113	U		
Vinyl Chloride	EPA 5030	8021A	113	10	10/30/97	10/30/97	113	U		
Bromomethane	EPA 5030	8021A	113	10	10/30/97	10/30/97	113	U		
Chloroethane	EPA 5030	8021A	113	10	10/30/97	10/30/97	113	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
1,1-Dichloroethene	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
Methylene Chloride	EPA 5030	8021A	225	10	10/30/97	10/30/97	225	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
1,1-Dichloroethane	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
Chloroform	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	57	10	10/30/97	10/30/97	94			
Carbon Tetrachloride	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
Benzene	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
1,2-Dichloroethane	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
Trichloroethene (TCE)	EPA 5030	8021A	57	10	10/30/97	10/30/97	520			
1,2-Dichloropropane	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U	R	D
Bromodichloromethane	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	562	10	10/30/97	10/30/97	562	U		
Toluene	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
1,1,2-Trichloroethane	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	225	10	10/30/97	10/30/97	225	U		
Chlorobenzene	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
Ethylbenzene	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
m,p-Xylenes	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
o-Xylene	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
Bromoform	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
1,3-Dichlorobenzene	EPA 5030	8021A	113	10	10/30/97	10/30/97	113	U		
1,4-Dichlorobenzene	EPA 5030	8021A	113	10	10/30/97	10/30/97	113	U		
1,2-Dichlorobenzene	EPA 5030	8021A	113	10	10/30/97	10/30/97	113	U		
Chlorotrifluoroethene	EPA 5030	8021A	225	10	10/30/97	10/30/97	225	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	225	10	10/30/97	10/30/97	225	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	225	10	10/30/97	10/30/97	225	U		
2-Butanone (MEK)	EPA 5030	8021A	562	10	10/30/97	10/30/97	562	U		
Acetone	EPA 5030	8021A	562	10	10/30/97	10/30/97	562	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	225	10	10/30/97	10/30/97	225	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	225	10	10/30/97	10/30/97	225	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	225	10	10/30/97	10/30/97	225	U		

Approved By: Thomas R. Reising

Date: 12/23/97

IGDEN VALIDATED

LEVEL V

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD143
L9703643-048

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Benzene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	56	1	10/29/97	10/29/97	56	U
Toluene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	56	1	10/29/97	10/29/97	56	U
Acetone	EPA 5030	8021A	56	1	10/29/97	10/29/97	56	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U

Approved By: Thomas J. Anthony
1544/021397p

Date: 12/23/97

LEVEL V 003046

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD144
Lab Code: L9703643-049
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Benzene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/29/97	10/29/97	57	U
Toluene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/29/97	10/29/97	57	U
Acetone	EPA 5030	8021A	57	1	10/29/97	10/29/97	57	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U

Approved By: Thomas P. Blum
1544/021397p

Date: 10/23/97

LEVEL V 003047

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD145
Lab Code: L9703643-050
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U	U	
Chloromethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
Vinyl Chloride	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
Bromomethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
Chloroethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Methylene Chloride	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U		
Toluene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U		
Acetone	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		

Approved By: Thomas D. Arbing
1544/021397p

Date: 12/23/97

LEVEL V

003048

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD146
Lab Code: L9703643-051
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Methylene Chloride	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Benzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	52	1	10/30/97	10/30/97	52	U
Toluene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U
Chlorobenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U
2-Butanone (MEK)	EPA 5030	8021A	52	1	10/30/97	10/30/97	52	U
Acetone	EPA 5030	8021A	52	1	10/30/97	10/30/97	52	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U

Approved By: Thomas P. Nelson
1544021397p

Date: 12/23/97

LEVEL V

003049

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD147
Lab Code: L9703643-052
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Benzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U
Toluene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U
Acetone	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U

Approved By: Thomas P. Nelson
1544/021397p

Date: 12/23/97

100% PAID

LEVEL V

003050

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD148
Lab Code: L9703643-053
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	review	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U	u	
Chloromethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
Vinyl Chloride	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
Bromomethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
Chloroethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Methylene Chloride	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U		
Toluene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U		
Acetone	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		

Approved By: Thomas B. Albright
1544/021397p

Date: 12/23/97

GOVERNMENT VALIDATED

LEVEL V

003051

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD150
L9703643-068

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/31/97	10/31/97	55	U
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/31/97	10/31/97	55	U
Acetone	EPA 5030	8021A	55	1	10/31/97	10/31/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U

Approved By: Thomas D. Riving
1544/621397p

Date: 12/23/97

ORDER VALIDATED

LEVEL V

003062

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD151
L9703643-069

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	56	1	10/31/97	10/31/97	56	U
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	56	1	10/31/97	10/31/97	56	U
Acetone	EPA 5030	8021A	56	1	10/31/97	10/31/97	56	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U

Approved By: Thomas K. Abing
1544/021397p

Date: 12/23/97

LEVEL V
003063

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD152
Lab Code: L9703643-070
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U
Acetone	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U

review
qual code

Approved By: Thomas A. Rhine
1544/021397p

Date: 12/23/97

VOIDED VALUE

LEVEL V
003064

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD153
Lab Code: L9703643-071
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U
Acetone	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U

Approved By: Thomas B. Nelson
1544/021397p

Date: 12/23/97

ADDITIONAL VALIDATION

LEVEL V

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD154
Lab Code: L9703643-076
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rel qua	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U	u	
Chloromethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U		
Vinyl Chloride	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U		
Bromomethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U		
Chloroethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Methylene Chloride	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U		
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U		
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U		
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U		
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U		
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U		
Acetone	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U		

Approved By: Thomas A. Rubin
IS44/021397p

Date: 12/23/97

COVENANT VALIDATED

LEVEL V

003068

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD155
Lab Code: L9703643-077
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev	qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U	u	
Chloromethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U		
Vinyl Chloride	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U		
Bromomethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U		
Chloroethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Methylene Chloride	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U		
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U		
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U		
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U		
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U		
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U		
Acetone	EPA 5030	8021A	57	1	10/31/97	10/31/97	210	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U		

Approved By: Thomas A. Abing
1544/021397p

Date: 12/23/97

LEVEL V

LEVEL V

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD155DL
Lab Code: L9703643-077DL
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rel qua	qua code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	113	10	11/3/97	11/3/97	113	U	✓	✓
Chloromethane	EPA 5030	8021A	113	10	11/3/97	11/3/97	113	U	✓	✓
Vinyl Chloride	EPA 5030	8021A	113	10	11/3/97	11/3/97	113	U	✓	✓
Bromomethane	EPA 5030	8021A	113	10	11/3/97	11/3/97	113	U	✓	✓
Chloroethane	EPA 5030	8021A	113	10	11/3/97	11/3/97	113	U	✓	✓
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
1,1-Dichloroethene	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
Methylene Chloride	EPA 5030	8021A	225	10	11/3/97	11/3/97	225	U	✓	✓
trans-1,2-Dichloroethene	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
cis-1,2-Dichloroethene	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
1,1-Dichloroethane	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
Chloroform	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
Carbon Tetrachloride	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
Benzene	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
1,2-Dichloroethane	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
Trichloroethene (TCE)	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
1,2-Dichloropropane	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
Bromodichloromethane	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	570	10	11/3/97	11/3/97	570	U	✓	✓
Toluene	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
trans-1,3-Dichloropropene	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
cis-1,3-Dichloropropene	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
1,1,2-Trichloroethane	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
Tetrachloroethene (PCE)	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	225	10	11/3/97	11/3/97	225	U	✓	✓
Chlorobenzene	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
Ethylbenzene	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
m,p-Xylenes	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
o-Xylene	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
Bromoform	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
1,3-Dichlorobenzene	EPA 5030	8021A	113	10	11/3/97	11/3/97	113	U	✓	✓
1,4-Dichlorobenzene	EPA 5030	8021A	113	10	11/3/97	11/3/97	113	U	✓	✓
1,2-Dichlorobenzene	EPA 5030	8021A	113	10	11/3/97	11/3/97	113	U	✓	✓
Chlorotrifluoroethene	EPA 5030	8021A	225	10	11/3/97	11/3/97	225	U	✓	✓
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	225	10	11/3/97	11/3/97	225	U	✓	✓
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	225	10	11/3/97	11/3/97	225	U	✓	✓
2-Butanone (MEK)	EPA 5030	8021A	570	10	11/3/97	11/3/97	570	U	✓	✓
Acetone	EPA 5030	8021A	570	10	11/3/97	11/3/97	1700	U	✓	✓
1,2,4-Trimethylbenzene	EPA 5030	8021A	225	10	11/3/97	11/3/97	225	U	✓	✓
1,3,5-Trimethylbenzene	EPA 5030	8021A	225	10	11/3/97	11/3/97	225	U	✓	✓
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	225	10	11/3/97	11/3/97	225	U	✓	✓

Approved By: Thomas A. Murray
1544/021397p

Date: 12/23/97

LEVEL V

003070

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD157
Lab Code: L9703643-079
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/31/97	10/31/97	55	U
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/31/97	10/31/97	55	U
Acetone	EPA 5030	8021A	55	1	10/31/97	10/31/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U

Approved By: Thomas P. Albion
1544/621397p

Date: 12/23/97

ANALYST VALIDATED

LEVEL V

003071

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD159
Lab Code: L9703643-080
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	56	1	10/31/97	10/31/97	56	U
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	56	1	10/31/97	10/31/97	56	U
Acetone	EPA 5030	8021A	56	1	10/31/97	10/31/97	530	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U

Approved By: Thomas A. Robison
1344/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

003072

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD159DL
Lab Code: L9703643-080DL
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	view qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	556	50	11/3/97	11/3/97	556	U	↓	↓
Chloromethane	EPA 5030	8021A	556	50	11/3/97	11/3/97	556	U	↓	↓
Vinyl Chloride	EPA 5030	8021A	556	50	11/3/97	11/3/97	556	U	↓	↓
Bromomethane	EPA 5030	8021A	556	50	11/3/97	11/3/97	556	U	↓	↓
Chloroethane	EPA 5030	8021A	556	50	11/3/97	11/3/97	556	U	↓	↓
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
1,1-Dichloroethene	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
Methylene Chloride	EPA 5030	8021A	1110	50	11/3/97	11/3/97	1110	U	↓	↓
trans-1,2-Dichloroethene	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
cis-1,2-Dichloroethene	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
1,1-Dichloroethane	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
Chloroform	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
Carbon Tetrachloride	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
Benzene	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
1,2-Dichloroethane	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
Trichloroethene (TCE)	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
1,2-Dichloropropane	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
Bromodichloromethane	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	2780	50	11/3/97	11/3/97	2780	U	↓	↓
Toluene	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
trans-1,3-Dichloropropene	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
cis-1,3-Dichloropropene	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
1,1,2-Trichloroethane	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
Tetrachloroethene (PCE)	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	1110	50	11/3/97	11/3/97	1110	U	↓	↓
Chlorobenzene	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
Ethylbenzene	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
m,p-Xylenes	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
o-Xylene	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
Bromoform	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U	↓	↓
1,3-Dichlorobenzene	EPA 5030	8021A	556	50	11/3/97	11/3/97	556	U	↓	↓
1,4-Dichlorobenzene	EPA 5030	8021A	556	50	11/3/97	11/3/97	556	U	↓	↓
1,2-Dichlorobenzene	EPA 5030	8021A	556	50	11/3/97	11/3/97	556	U	↓	↓
Chlorotrifluoroethene	EPA 5030	8021A	1110	50	11/3/97	11/3/97	1110	U	↓	↓
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	1110	50	11/3/97	11/3/97	1110	U	↓	↓
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	1110	50	11/3/97	11/3/97	1110	U	↓	↓
2-Butanone (MEK)	EPA 5030	8021A	2780	50	11/3/97	11/3/97	2780	U	↓	↓
Acetone	EPA 5030	8021A	2780	50	11/3/97	11/3/97	2300	U	↓	↓
1,2,4-Trimethylbenzene	EPA 5030	8021A	1110	50	11/3/97	11/3/97	1110	U	↓	↓
1,3,5-Trimethylbenzene	EPA 5030	8021A	1110	50	11/3/97	11/3/97	1110	U	↓	↓
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	1110	50	11/3/97	11/3/97	1110	U	↓	↓

Approved By: Thomas A. Brown
1344/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

003073

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD160
Lab Code: L9703643-081
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/31/97	10/31/97	55	U
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/31/97	10/31/97	55	U
Acetone	EPA 5030	8021A	55	1	10/31/97	10/31/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U

Approved By: Thomas A. Nelson
1544/021397p

Date: 10/23/97

OGDEN VALIDATED

LEVEL V003074

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD162
Lab Code: L9703643-082
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	11/3/97	11/3/97	11	U
Chloromethane	EPA 5030	8021A	11	1	11/3/97	11/3/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	11/3/97	11/3/97	11	U
Bromomethane	EPA 5030	8021A	11	1	11/3/97	11/3/97	11	U
Chloroethane	EPA 5030	8021A	11	1	11/3/97	11/3/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	11/3/97	11/3/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Chloroform	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Benzene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	11/3/97	11/3/97	12	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	11/3/97	11/3/97	55	U
Toluene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	11/3/97	11/3/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
o-Xylene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Bromoform	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	11/3/97	11/3/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	11/3/97	11/3/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	11/3/97	11/3/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	11/3/97	11/3/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	11/3/97	11/3/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	11/3/97	11/3/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	11/3/97	11/3/97	55	U
Acetone	EPA 5030	8021A	55	1	11/3/97	11/3/97	84	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	11/3/97	11/3/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	11/3/97	11/3/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	11/3/97	11/3/97	22	U

Approved By: Thomas D. Morris

Date: 12/23/97

1S44/021397p

OGDEN VALIDATED

LEVEL V003075

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD164
Lab Code: L9703643-084
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	21	2	11/3/97	11/3/97	21	U
Chloromethane	EPA 5030	8021A	21	2	11/3/97	11/3/97	21	U
Vinyl Chloride	EPA 5030	8021A	21	2	11/3/97	11/3/97	21	U
Bromomethane	EPA 5030	8021A	21	2	11/3/97	11/3/97	21	U
Chloroethane	EPA 5030	8021A	21	2	11/3/97	11/3/97	21	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,1-Dichloroethene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Methylene Chloride	EPA 5030	8021A	41	2	11/3/97	11/3/97	41	U
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,1-Dichloroethane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Chloroform	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Carbon Tetrachloride	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Benzene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,2-Dichloroethane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Trichloroethene (TCE)	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,2-Dichloropropane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Bromodichloromethane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	103	2	11/3/97	11/3/97	103	U
Toluene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	41	2	11/3/97	11/3/97	41	U
Chlorobenzene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Ethylbenzene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
m,p-Xylenes	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
o-Xylene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Bromoform	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,3-Dichlorobenzene	EPA 5030	8021A	21	2	11/3/97	11/3/97	21	U
1,4-Dichlorobenzene	EPA 5030	8021A	21	2	11/3/97	11/3/97	21	U
1,2-Dichlorobenzene	EPA 5030	8021A	21	2	11/3/97	11/3/97	21	U
Chlorotrifluoroethene	EPA 5030	8021A	41	2	11/3/97	11/3/97	41	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	41	2	11/3/97	11/3/97	41	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	41	2	11/3/97	11/3/97	41	U
2-Butanone (MEK)	EPA 5030	8021A	103	2	11/3/97	11/3/97	103	U
Acetone	EPA 5030	8021A	103	2	11/3/97	11/3/97	103	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	41	2	11/3/97	11/3/97	41	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	41	2	11/3/97	11/3/97	41	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	41	2	11/3/97	11/3/97	41	U

MC
7.28.98

Approved By: Thomas A. Reising

Date: 12/23/97

OGDEN VALIDATED

LEVEL V003076

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketsdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD164RE
Lab Code: L9703643-084RE
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	11/4/97	11/4/97	11	U
Chloromethane	EPA 5030	8021A	11	1	11/4/97	11/4/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	11/4/97	11/4/97	11	U
Bromomethane	EPA 5030	8021A	11	1	11/4/97	11/4/97	11	U
Chloroethane	EPA 5030	8021A	11	1	11/4/97	11/4/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Methylene Chloride	EPA 5030	8021A	21	1	11/4/97	11/4/97	21	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Chloroform	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Benzene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	52	1	11/4/97	11/4/97	52	U
Toluene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	21	1	11/4/97	11/4/97	21	U
Chlorobenzene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
o-Xylene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Bromoform	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	11/4/97	11/4/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	11/4/97	11/4/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	11/4/97	11/4/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	21	1	11/4/97	11/4/97	21	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	21	1	11/4/97	11/4/97	21	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	21	1	11/4/97	11/4/97	21	U
2-Butanone (MEK)	EPA 5030	8021A	52	1	11/4/97	11/4/97	52	U
Acetone	EPA 5030	8021A	52	1	11/4/97	11/4/97	52	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	21	1	11/4/97	11/4/97	21	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	21	1	11/4/97	11/4/97	21	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	21	1	11/4/97	11/4/97	21	U

Approved By: Thomas A. Babin
ISA/b21397p

Date: 12/23/97

LEVEL V003077

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD165
Lab Code: L9703643-085
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	52	5	11/4/97	11/4/97	52	U U
Chloromethane	EPA 5030	8021A	52	5	11/4/97	11/4/97	52	U
Vinyl Chloride	EPA 5030	8021A	52	5	11/4/97	11/4/97	52	U
Bromomethane	EPA 5030	8021A	52	5	11/4/97	11/4/97	52	U
Chloroethane	EPA 5030	8021A	52	5	11/4/97	11/4/97	52	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
1,1-Dichloroethene	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
Methylene Chloride	EPA 5030	8021A	103	5	11/4/97	11/4/97	103	U
trans-1,2-Dichloroethene	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
cis-1,2-Dichloroethene	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
1,1-Dichloroethane	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
Chloroform	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
Carbon Tetrachloride	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
Benzene	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
1,2-Dichloroethane	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
Trichloroethene (TCE)	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
1,2-Dichloropropane	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
Bromodichloromethane	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	256	5	11/4/97	11/4/97	256	U
Toluene	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
trans-1,3-Dichloropropene	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
cis-1,3-Dichloropropene	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
1,1,2-Trichloroethane	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
Tetrachloroethene (PCE)	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	103	5	11/4/97	11/4/97	103	U
Chlorobenzene	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
Ethylbenzene	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
m,p-Xylenes	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
o-Xylene	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
Bromoform	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
1,3-Dichlorobenzene	EPA 5030	8021A	52	5	11/4/97	11/4/97	52	U
1,4-Dichlorobenzene	EPA 5030	8021A	52	5	11/4/97	11/4/97	52	U
1,2-Dichlorobenzene	EPA 5030	8021A	52	5	11/4/97	11/4/97	52	U
Chlorotrifluoroethene	EPA 5030	8021A	103	5	11/4/97	11/4/97	103	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	103	5	11/4/97	11/4/97	103	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	103	5	11/4/97	11/4/97	103	U
2-Butanone (MEK)	EPA 5030	8021A	256	5	11/4/97	11/4/97	256	U
Acetone	EPA 5030	8021A	256	5	11/4/97	11/4/97	256	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	103	5	11/4/97	11/4/97	103	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	103	5	11/4/97	11/4/97	103	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	103	5	11/4/97	11/4/97	103	U

Approved By: Thomas D. Rebray
1544/021397p

Date: 12/23/97

LEVEL V 003078

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD166
Lab Code: L9703643-091
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	11/3/97	11/3/97	12	U
Chloromethane	EPA 5030	8021A	12	1	11/3/97	11/3/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	11/3/97	11/3/97	12	U
Bromomethane	EPA 5030	8021A	12	1	11/3/97	11/3/97	12	U
Chloroethane	EPA 5030	8021A	12	1	11/3/97	11/3/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	11/3/97	11/3/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Chloroform	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Benzene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	58	1	11/3/97	11/3/97	58	U
Toluene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	11/3/97	11/3/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
o-Xylene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Bromoform	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	11/3/97	11/3/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	11/3/97	11/3/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	11/3/97	11/3/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	11/3/97	11/3/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	11/3/97	11/3/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	11/3/97	11/3/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	58	1	11/3/97	11/3/97	58	U
Acetone	EPA 5030	8021A	58	1	11/3/97	11/3/97	58	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	11/3/97	11/3/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	11/3/97	11/3/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	11/3/97	11/3/97	23	U

Approved By: Thomas R. Aubrey
1544/021397p

Date: 12/23/97

2008 VALIDATED

LEVEL V⁰⁰³⁰⁸⁵

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rockeddyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD167
Lab Code: L9703643-092
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Chloromethane	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Bromomethane	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Chloroethane	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Chloroform	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Benzene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	58	1	11/4/97	11/4/97	58	U
Toluene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
o-Xylene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Bromoform	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	58	1	11/4/97	11/4/97	58	U
Acetone	EPA 5030	8021A	58	1	11/4/97	11/4/97	58	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U

Approved By: Theresa P. Riving
1544/021397p

Date: 12/23/97

COPIES VALIDATED

LEVEL V003086

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD168
Lab Code: L9703643-093
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Chloromethane	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Bromomethane	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Chloroethane	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Chloroform	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Benzene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	11/4/97	11/4/97	57	U
Toluene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
o-Xylene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Bromoform	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	57	1	11/4/97	11/4/97	57	U
Acetone	EPA 5030	8021A	57	1	11/4/97	11/4/97	140	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U

Approved By: Thomas A. Aubrey
1844/021397p

Date: 12/23/97

UAC
7-28-98

OPEN VALIDATION

LEVEL V 003087

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD171
Lab Code: L9703643-096
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	view qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	53	5	11/3/97	11/3/97	53	U	U	
Chloromethane	EPA 5030	8021A	53	5	11/3/97	11/3/97	53	U	U	
Vinyl Chloride	EPA 5030	8021A	53	5	11/3/97	11/3/97	53	U	U	
Bromomethane	EPA 5030	8021A	53	5	11/3/97	11/3/97	53	U	U	
Chloroethane	EPA 5030	8021A	53	5	11/3/97	11/3/97	53	U	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U	U	
1,1-Dichloroethene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U	U	
Methylene Chloride	EPA 5030	8021A	106	5	11/3/97	11/3/97	106	U	U	
trans-1,2-Dichloroethene	EPA 5030	8021A	27	5	11/3/97	11/3/97	76	U	U	*g
cis-1,2-Dichloroethene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U	U	
1,1-Dichloroethane	EPA 5030	8021A	27	5	11/3/97	11/3/97	100	U	U	*g
Chloroform	EPA 5030	8021A	27	5	11/3/97	11/3/97	65			
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	27	5	11/3/97	11/3/97	68			
Carbon Tetrachloride	EPA 5030	8021A	27	5	11/3/97	11/3/97	140			
Benzene	EPA 5030	8021A	27	5	11/3/97	11/3/97	56			
1,2-Dichloroethane	EPA 5030	8021A	27	5	11/3/97	11/3/97	210			
Trichloroethene (TCE)	EPA 5030	8021A	27	5	11/3/97	11/3/97	110			
1,2-Dichloropropane	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U	U	
Bromodichloromethane	EPA 5030	8021A	27	5	11/3/97	11/3/97	110			
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	270	5	11/3/97	11/3/97	270	U	U	
Toluene	EPA 5030	8021A	27	5	11/3/97	11/3/97	20	J	J	
trans-1,3-Dichloropropene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U	U	
1,1,2-Trichloroethane	EPA 5030	8021A	27	5	11/3/97	11/3/97	49			
Tetrachloroethene (PCE)	EPA 5030	8021A	27	5	11/3/97	11/3/97	69			
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	106	5	11/3/97	11/3/97	106	U	U	
Chlorobenzene	EPA 5030	8021A	27	5	11/3/97	11/3/97	15	J	J	
Ethylbenzene	EPA 5030	8021A	27	5	11/3/97	11/3/97	39			
m,p-Xylenes	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U	U	
o-Xylene	EPA 5030	8021A	27	5	11/3/97	11/3/97	130	U	U	*g
Bromoform	EPA 5030	8021A	27	5	11/3/97	11/3/97	95			
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U	U	
1,3-Dichlorobenzene	EPA 5030	8021A	53	5	11/3/97	11/3/97	49			
1,4-Dichlorobenzene	EPA 5030	8021A	53	5	11/3/97	11/3/97	100			
1,2-Dichlorobenzene	EPA 5030	8021A	53	5	11/3/97	11/3/97	52			
Chlorotrifluoroethene	EPA 5030	8021A	106	5	11/3/97	11/3/97	106	U	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	106	5	11/3/97	11/3/97	106	U	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	106	5	11/3/97	11/3/97	106	U	U	
2-Butanone (MEK)	EPA 5030	8021A	270	5	11/3/97	11/3/97	270	U	U	
Acetone	EPA 5030	8021A	270	5	11/3/97	11/3/97	270	U	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	106	5	11/3/97	11/3/97	106	U	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	106	5	11/3/97	11/3/97	106	U	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	106	5	11/3/97	11/3/97	106	U	U	

Approved By: Thomas A. Murray
1544/021397p

Date: 12/23/97

LEVEL V 003088

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Sludge

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD702
Lab Code: L9703643-001
Test Notes: C2A

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	79	5	10/29/97	10/29/97	79	U
Chloromethane	EPA 5030	8021A	79	5	10/29/97	10/29/97	79	U
Vinyl Chloride	EPA 5030	8021A	79	5	10/29/97	10/29/97	79	U
Bromomethane	EPA 5030	8021A	79	5	10/29/97	10/29/97	79	U
Chloroethane	EPA 5030	8021A	79	5	10/29/97	10/29/97	79	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
1,1-Dichloroethene	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
Methylene Chloride	EPA 5030	8021A	157	5	10/29/97	10/29/97	157	U
trans-1,2-Dichloroethene	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
cis-1,2-Dichloroethene	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
1,1-Dichloroethane	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
Chloroform	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
Carbon Tetrachloride	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
Benzene	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
1,2-Dichloroethane	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
Trichloroethene (TCE)	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
1,2-Dichloropropane	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
Bromodichloromethane	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	391	5	10/29/97	10/29/97	391	U
Toluene	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
trans-1,3-Dichloropropene	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
cis-1,3-Dichloropropene	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
1,1,2-Trichloroethane	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
Tetrachloroethene (PCE)	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	157	5	10/29/97	10/29/97	157	U
Chlorobenzene	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
Ethylbenzene	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
m,p-Xylenes	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
o-Xylene	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
Bromoform	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
1,3-Dichlorobenzene	EPA 5030	8021A	79	5	10/29/97	10/29/97	79	U
1,4-Dichlorobenzene	EPA 5030	8021A	79	5	10/29/97	10/29/97	79	U
1,2-Dichlorobenzene	EPA 5030	8021A	79	5	10/29/97	10/29/97	79	U
Chlorotrifluoroethene	EPA 5030	8021A	157	5	10/29/97	10/29/97	157	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	157	5	10/29/97	10/29/97	157	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	157	5	10/29/97	10/29/97	157	U
2-Butanone (MEK)	EPA 5030	8021A	391	5	10/29/97	10/29/97	391	U
Acetone	EPA 5030	8021A	391	5	10/29/97	10/29/97	391	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	157	5	10/29/97	10/29/97	157	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	157	5	10/29/97	10/29/97	157	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	157	5	10/29/97	10/29/97	157	U

C2A

MRL is elevated because of matrix interferences and because the sample required diluting.

Approved By: Thomas A. Brown
1544021397p

Date: 12/23/97

LEVEL V
003009

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Sludge

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD703
L9703643-002
C2A

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	910	50	10/29/97	10/29/97	910	U	u
Chloromethane	EPA 5030	8021A	910	50	10/29/97	10/29/97	910	U	
Vinyl Chloride	EPA 5030	8021A	910	50	10/29/97	10/29/97	910	U	
Bromomethane	EPA 5030	8021A	910	50	10/29/97	10/29/97	910	U	
Chloroethane	EPA 5030	8021A	910	50	10/29/97	10/29/97	910	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
1,1-Dichloroethene	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
Methylene Chloride	EPA 5030	8021A	1820	50	10/29/97	10/29/97	1820	U	
trans-1,2-Dichloroethene	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
1,1-Dichloroethane	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
Chloroform	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
Carbon Tetrachloride	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
Benzene	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
1,2-Dichloroethane	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
Trichloroethene (TCE)	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
1,2-Dichloropropane	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
Bromodichloromethane	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	4550	50	10/29/97	10/29/97	4550	U	
Toluene	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
1,1,2-Trichloroethane	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	1820	50	10/29/97	10/29/97	1820	U	
Chlorobenzene	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
Ethylbenzene	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
m,p-Xylenes	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
o-Xylene	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
Bromoform	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U	
1,3-Dichlorobenzene	EPA 5030	8021A	910	50	10/29/97	10/29/97	910	U	
1,4-Dichlorobenzene	EPA 5030	8021A	910	50	10/29/97	10/29/97	910	U	
1,2-Dichlorobenzene	EPA 5030	8021A	910	50	10/29/97	10/29/97	910	U	
Chlorotrifluoroethene	EPA 5030	8021A	1820	50	10/29/97	10/29/97	1820	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	1820	50	10/29/97	10/29/97	1820	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	1820	50	10/29/97	10/29/97	1820	U	
2-Butanone (MEK)	EPA 5030	8021A	4550	50	10/29/97	10/29/97	4550	U	
Acetone	EPA 5030	8021A	4550	50	10/29/97	10/29/97	4550	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	1820	50	10/29/97	10/29/97	1820	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	1820	50	10/29/97	10/29/97	1820	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	1820	50	10/29/97	10/29/97	1820	U	

C2A

MRL is elevated because of matrix interferences and because the sample required diluting.

Approved By: Thomas D. Nelson
IS44021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

003010

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Sludge

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD704
Lab Code: L9703643-003
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	20	1	10/30/97	10/30/97	20	U
Chloromethane	EPA 5030	8021A	20	1	10/30/97	10/30/97	20	U
Vinyl Chloride	EPA 5030	8021A	20	1	10/30/97	10/30/97	20	U
Bromomethane	EPA 5030	8021A	20	1	10/30/97	10/30/97	20	U
Chloroethane	EPA 5030	8021A	20	1	10/30/97	10/30/97	20	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
1,1-Dichloroethene	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
Methylene Chloride	EPA 5030	8021A	40	1	10/30/97	10/30/97	40	U
trans-1,2-Dichloroethene	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
cis-1,2-Dichloroethene	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
1,1-Dichloroethane	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
Chloroform	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
Carbon Tetrachloride	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
Benzene	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
1,2-Dichloroethane	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
Trichloroethene (TCE)	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
1,2-Dichloropropane	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
Bromodichloromethane	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	99	1	10/30/97	10/30/97	99	U
Toluene	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
trans-1,3-Dichloropropene	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
cis-1,3-Dichloropropene	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
1,1,2-Trichloroethane	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
Tetrachloroethene (PCE)	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	40	1	10/30/97	10/30/97	40	U
Chlorobenzene	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
Ethylbenzene	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
m,p-Xylenes	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
o-Xylene	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
Bromoform	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
1,3-Dichlorobenzene	EPA 5030	8021A	20	1	10/30/97	10/30/97	20	U
1,4-Dichlorobenzene	EPA 5030	8021A	20	1	10/30/97	10/30/97	20	U
1,2-Dichlorobenzene	EPA 5030	8021A	20	1	10/30/97	10/30/97	20	U
Chlorotrifluoroethene	EPA 5030	8021A	40	1	10/30/97	10/30/97	40	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	40	1	10/30/97	10/30/97	40	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	40	1	10/30/97	10/30/97	40	U
2-Butanone (MEK)	EPA 5030	8021A	99	1	10/30/97	10/30/97	99	U
Acetone	EPA 5030	8021A	99	1	10/30/97	10/30/97	99	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	40	1	10/30/97	10/30/97	40	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	40	1	10/30/97	10/30/97	40	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	40	1	10/30/97	10/30/97	40	U

rev qua
anal code

Approved By: Thomas D. Robin

Date: 12/23/97

UNOFFICIAL

LEVEL V

003011

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD705
Lab Code: L9703643-016
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	19	1	10/28/97	10/28/97	19	U
Chloromethane	EPA 5030	8021A	19	1	10/28/97	10/28/97	19	U
Vinyl Chloride	EPA 5030	8021A	19	1	10/28/97	10/28/97	19	U
Bromomethane	EPA 5030	8021A	19	1	10/28/97	10/28/97	19	U
Chloroethane	EPA 5030	8021A	19	1	10/28/97	10/28/97	19	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
1,1-Dichloroethene	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
Methylene Chloride	EPA 5030	8021A	38	1	10/28/97	10/28/97	38	U
trans-1,2-Dichloroethene	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
cis-1,2-Dichloroethene	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
1,1-Dichloroethane	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
Chloroform	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
Carbon Tetrachloride	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
Benzene	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
1,2-Dichloroethane	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
Trichloroethene (TCE)	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
1,2-Dichloropropane	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
Bromodichloromethane	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	95	1	10/28/97	10/28/97	95	U
Toluene	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
trans-1,3-Dichloropropene	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
cis-1,3-Dichloropropene	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
1,1,2-Trichloroethane	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
Tetrachloroethene (PCE)	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	38	1	10/28/97	10/28/97	38	U
Chlorobenzene	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
Ethylbenzene	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
m,p-Xylenes	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
o-Xylene	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
Bromoform	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
1,3-Dichlorobenzene	EPA 5030	8021A	19	1	10/28/97	10/28/97	19	U
1,4-Dichlorobenzene	EPA 5030	8021A	19	1	10/28/97	10/28/97	19	U
1,2-Dichlorobenzene	EPA 5030	8021A	19	1	10/28/97	10/28/97	19	U
Chlorotrifluoroethene	EPA 5030	8021A	38	1	10/28/97	10/28/97	38	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	38	1	10/28/97	10/28/97	38	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	38	1	10/28/97	10/28/97	38	U
2-Butanone (MEK)	EPA 5030	8021A	95	1	10/28/97	10/28/97	95	U
Acetone	EPA 5030	8021A	95	1	10/28/97	10/28/97	490	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	38	1	10/28/97	10/28/97	38	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	38	1	10/28/97	10/28/97	38	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	38	1	10/28/97	10/28/97	38	U

Approved By: Thomas P. Blum

Date: 12/23/97

LEVEL V

003024

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD705DL
L9703643-016DL

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	view qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	38	2	10/29/97	10/29/97	38	U	✓	✓
Chloromethane	EPA 5030	8021A	38	2	10/29/97	10/29/97	38	U	✓	✓
Vinyl Chloride	EPA 5030	8021A	38	2	10/29/97	10/29/97	38	U	✓	✓
Bromomethane	EPA 5030	8021A	38	2	10/29/97	10/29/97	38	U	✓	✓
Chloroethane	EPA 5030	8021A	38	2	10/29/97	10/29/97	38	U	✓	✓
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
1,1-Dichloroethene	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
Methylene Chloride	EPA 5030	8021A	76	2	10/29/97	10/29/97	76	U	✓	✓
trans-1,2-Dichloroethene	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
cis-1,2-Dichloroethene	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
1,1-Dichloroethane	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
Chloroform	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
Carbon Tetrachloride	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
Benzene	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
1,2-Dichloroethane	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
Trichloroethene (TCE)	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
1,2-Dichloropropane	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
Bromodichloromethane	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	190	2	10/29/97	10/29/97	190	U	✓	✓
Toluene	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
trans-1,3-Dichloropropene	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
cis-1,3-Dichloropropene	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
1,1,2-Trichloroethane	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
Tetrachloroethene (PCE)	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	76	2	10/29/97	10/29/97	76	U	✓	✓
Chlorobenzene	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
Ethylbenzene	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
m,p-Xylenes	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
o-Xylene	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
Bromoform	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U	✓	✓
1,3-Dichlorobenzene	EPA 5030	8021A	38	2	10/29/97	10/29/97	38	U	✓	✓
1,4-Dichlorobenzene	EPA 5030	8021A	38	2	10/29/97	10/29/97	38	U	✓	✓
1,2-Dichlorobenzene	EPA 5030	8021A	38	2	10/29/97	10/29/97	38	U	✓	✓
Chlorotrifluoroethene	EPA 5030	8021A	76	2	10/29/97	10/29/97	76	U	✓	✓
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	76	2	10/29/97	10/29/97	76	U	✓	✓
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	76	2	10/29/97	10/29/97	76	U	✓	✓
2-Butanone (MEK)	EPA 5030	8021A	190	2	10/29/97	10/29/97	190	U	✓	✓
Acetone	EPA 5030	8021A	190	2	10/29/97	10/29/97	280	U	✓	✓
1,2,4-Trimethylbenzene	EPA 5030	8021A	76	2	10/29/97	10/29/97	76	U	✓	✓
1,3,5-Trimethylbenzene	EPA 5030	8021A	76	2	10/29/97	10/29/97	76	U	✓	✓
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	76	2	10/29/97	10/29/97	76	U	✓	✓

Approved By: Thomas P. Brown
1344/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

003025

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil

Service Request: L9703643
 Date Collected: 10/27/97
 Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD706
 Lab Code: L9703643-017
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Chloromethane	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Vinyl Chloride	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Bromomethane	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Chloroethane	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1-Dichloroethene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Methylene Chloride	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
trans-1,2-Dichloroethene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
cis-1,2-Dichloroethene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1-Dichloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloroform	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Carbon Tetrachloride	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Benzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,2-Dichloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Trichloroethene (TCE)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,2-Dichloropropane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Bromodichloromethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	105	1	10/28/97	10/28/97	105	U
Toluene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
trans-1,3-Dichloropropene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
cis-1,3-Dichloropropene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1,2-Trichloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Tetrachloroethene (PCE)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
Chlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Ethylbenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
m,p-Xylenes	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
o-Xylene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Bromoform	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,3-Dichlorobenzene	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
1,4-Dichlorobenzene	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
1,2-Dichlorobenzene	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Chlorotrifluoroethene	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
2-Butanone (MEK)	EPA 5030	8021A	105	1	10/28/97	10/28/97	105	U
Acetone	EPA 5030	8021A	105	1	10/28/97	10/28/97	140	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U

Approved By: Thomas B. Nelson
 1344/021397p

Date: 12/23/97

ORDER VALIDATED

LEVEL V 003026

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD707
Lab Code: L9703643-018
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Chloromethane	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Vinyl Chloride	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Bromomethane	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Chloroethane	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1-Dichloroethene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Methylene Chloride	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
trans-1,2-Dichloroethene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
cis-1,2-Dichloroethene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1-Dichloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloroform	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Carbon Tetrachloride	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Benzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,2-Dichloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Trichloroethene (TCE)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,2-Dichloropropane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Bromodichloromethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	105	1	10/28/97	10/28/97	105	U
Toluene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
trans-1,3-Dichloropropene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
cis-1,3-Dichloropropene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1,2-Trichloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Tetrachloroethene (PCE)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
Chlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Ethylbenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
m,p-Xylenes	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
o-Xylene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Bromoform	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,3-Dichlorobenzene	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
1,4-Dichlorobenzene	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
1,2-Dichlorobenzene	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Chlorotrifluoroethene	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
2-Butanone (MEK)	EPA 5030	8021A	105	1	10/28/97	10/28/97	105	U
Acetone	EPA 5030	8021A	105	1	10/28/97	10/28/97	105	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U

Approved By: Thomas R. Blum
1544021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V 003027

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD708
Lab Code: L9703643-019
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Chloromethane	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Vinyl Chloride	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Bromomethane	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Chloroethane	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1-Dichloroethene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Methylene Chloride	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
trans-1,2-Dichloroethene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
cis-1,2-Dichloroethene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1-Dichloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloroform	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Carbon Tetrachloride	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Benzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,2-Dichloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Trichloroethene (TCE)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,2-Dichloropropane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Bromodichloromethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	105	1	10/28/97	10/28/97	105	U
Toluene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
trans-1,3-Dichloropropene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
cis-1,3-Dichloropropene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1,2-Trichloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Tetrachloroethene (PCE)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
Chlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Ethylbenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
m,p-Xylenes	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
o-Xylene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Bromoform	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,3-Dichlorobenzene	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
1,4-Dichlorobenzene	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
1,2-Dichlorobenzene	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Chlorotrifluoroethene	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
2-Butanone (MEK)	EPA 5030	8021A	105	1	10/28/97	10/28/97	105	U
Acetone	EPA 5030	8021A	105	1	10/28/97	10/28/97	240	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U

Approved By: Thomas P. Riving
ISA/021397p

Date: 12/23/97

ORIGINAL VALIDATED

LEVEL V 003028

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD709
Lab Code: L9703643-020
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Benzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/28/97	10/28/97	54	U
Toluene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/28/97	10/28/97	54	U
Acetone	EPA 5030	8021A	54	1	10/28/97	10/28/97	54	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U

Approved By: Thomas W. Pelham
1544021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V03029

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD723
Lab Code: L9703643-040
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/29/97	10/29/97	11	U U	
Chloromethane	EPA 5030	8021A	11	1	10/29/97	10/29/97	11	U U	
Vinyl Chloride	EPA 5030	8021A	11	1	10/29/97	10/29/97	11	U U	
Bromomethane	EPA 5030	8021A	11	1	10/29/97	10/29/97	11	U U	
Chloroethane	EPA 5030	8021A	11	1	10/29/97	10/29/97	11	U U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
Methylene Chloride	EPA 5030	8021A	21	1	10/29/97	10/29/97	21	U U	
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
Chloroform	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
Benzene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
Bromodichloromethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	52	1	10/29/97	10/29/97	52	U U	
Toluene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	21	1	10/29/97	10/29/97	21	U U	
Chlorobenzene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
Ethylbenzene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
m,p-Xylenes	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
o-Xylene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
Bromoform	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U	
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/29/97	10/29/97	11	U U	
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/29/97	10/29/97	11	U U	
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/29/97	10/29/97	11	U U	
Chlorotrifluoroethene	EPA 5030	8021A	21	1	10/29/97	10/29/97	21	U U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	21	1	10/29/97	10/29/97	21	U U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	21	1	10/29/97	10/29/97	21	U U	
2-Butanone (MEK)	EPA 5030	8021A	52	1	10/29/97	10/29/97	52	U U	
Acetone	EPA 5030	8021A	52	1	10/29/97	10/29/97	52	U U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	21	1	10/29/97	10/29/97	21	U U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	21	1	10/29/97	10/29/97	21	U U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	21	1	10/29/97	10/29/97	21	U U	

Approved By: Thurman R. Albion
1544/021397p

Date: 12/23/97

OPEN VALIDATED

LEVEL V 003042

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Water

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD724
Lab Code: L9703643-043
Test Notes:

Units: UG/L
Basis: NA

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Chloromethane	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Vinyl Chloride	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Bromomethane	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Chloroethane	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,1-Dichloroethene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Methylene Chloride	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
trans-1,2-Dichloroethene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
cis-1,2-Dichloroethene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,1-Dichloroethane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Chloroform	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Carbon Tetrachloride	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Benzene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,2-Dichloroethane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Trichloroethene (TCE)	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,2-Dichloropropane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Bromodichloromethane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	50	1	10/29/97	10/29/97	50	U
Toluene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
trans-1,3-Dichloropropene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
cis-1,3-Dichloropropene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,1,2-Trichloroethane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Tetrachloroethene (PCE)	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
Chlorobenzene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Ethylbenzene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
m,p-Xylenes	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
o-Xylene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Bromoform	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,3-Dichlorobenzene	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
1,4-Dichlorobenzene	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
1,2-Dichlorobenzene	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Chlorotrifluoroethene	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
2-Butanone (MEK)	EPA 5030	8021A	50	1	10/29/97	10/29/97	50	U
Acetone	EPA 5030	8021A	50	1	10/29/97	10/29/97	50	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U

Approved By: Thomas A. Albright
1344/021397p

Date: 12/23/97

OPEN VALIDATED

LEVEL V

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD726
Lab Code: L9703643-054
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	review	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U	u	
Chloromethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U		
Vinyl Chloride	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U		
Bromomethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U		
Chloroethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Methylene Chloride	EPA 5030	8021A	21	1	10/31/97	10/31/97	21	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	52	1	10/31/97	10/31/97	52	U		
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	21	1	10/31/97	10/31/97	21	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U		
Chlorotrifluoroethene	EPA 5030	8021A	21	1	10/31/97	10/31/97	21	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	21	1	10/31/97	10/31/97	21	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	21	1	10/31/97	10/31/97	21	U		
2-Butanone (MEK)	EPA 5030	8021A	52	1	10/31/97	10/31/97	52	U		
Acetone	EPA 5030	8021A	52	1	10/31/97	10/31/97	52	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	21	1	10/31/97	10/31/97	21	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	21	1	10/31/97	10/31/97	21	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	21	1	10/31/97	10/31/97	21	U		

Approved By: Thomas P. Brown
1544/021397p

Date: 12/23/97

LEVEL V

003052

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD727
Lab Code: L9703643-055
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Benzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U
Toluene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U
Acetone	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U

rev qual
qual code

Approved By: Thomas D. Albright
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V 003053

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD733
Lab Code: L9703643-060
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rel qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U	U	
Chloromethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U	U	
Vinyl Chloride	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U	U	
Bromomethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U	U	
Chloroethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
Methylene Chloride	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U	U	
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
Chloroform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
Benzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
Bromodichloromethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	53	1	10/30/97	10/30/97	53	U	U	
Toluene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U	U	
Chlorobenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
Ethylbenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
m,p-Xylenes	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
o-Xylene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
Bromoform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U	U	
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U	U	
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U	U	
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U	U	
Chlorotrifluoroethene	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U	U	
2-Butanone (MEK)	EPA 5030	8021A	53	1	10/30/97	10/30/97	53	U	U	
Acetone	EPA 5030	8021A	53	1	10/30/97	10/30/97	2700	U	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U	U	

Approved By: Thomas A. Moring
1544/021397p

Date: 12/23/97

CGCEN VALIDATED

LEVEL V 003054

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD733DL
Lab Code: L9703643-060DL
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	veg	qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	520	50	11/3/97	11/3/97	520	U		
Chloromethane	EPA 5030	8021A	520	50	11/3/97	11/3/97	520	U		
Vinyl Chloride	EPA 5030	8021A	520	50	11/3/97	11/3/97	520	U		
Bromomethane	EPA 5030	8021A	520	50	11/3/97	11/3/97	520	U		
Chloroethane	EPA 5030	8021A	520	50	11/3/97	11/3/97	520	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
1,1-Dichloroethene	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
Methylene Chloride	EPA 5030	8021A	1040	50	11/3/97	11/3/97	1040	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
1,1-Dichloroethane	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
Chloroform	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
Carbon Tetrachloride	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
Benzene	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
1,2-Dichloroethane	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
Trichloroethene (TCE)	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
1,2-Dichloropropane	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
Bromodichloromethane	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	2600	50	11/3/97	11/3/97	2600	U		
Toluene	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
1,1,2-Trichloroethane	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	1040	50	11/3/97	11/3/97	1040	U		
Chlorobenzene	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
Ethylbenzene	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
m,p-Xylenes	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
o-Xylene	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
Bromoform	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
1,3-Dichlorobenzene	EPA 5030	8021A	520	50	11/3/97	11/3/97	520	U		
1,4-Dichlorobenzene	EPA 5030	8021A	520	50	11/3/97	11/3/97	520	U		
1,2-Dichlorobenzene	EPA 5030	8021A	520	50	11/3/97	11/3/97	520	U		
Chlorotrifluoroethene	EPA 5030	8021A	1040	50	11/3/97	11/3/97	1040	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	1040	50	11/3/97	11/3/97	1040	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	1040	50	11/3/97	11/3/97	1040	U		
2-Butanone (MEK)	EPA 5030	8021A	2600	50	11/3/97	11/3/97	2600	U		
Acetone	EPA 5030	8021A	2600	50	11/3/97	11/3/97	2500	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	1040	50	11/3/97	11/3/97	1040	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	1040	50	11/3/97	11/3/97	1040	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	1040	50	11/3/97	11/3/97	1040	U		

Approved By: Theresa X. Murray
1544021397p

Date: 12/23/97

OPEN VOA

LEVEL V 003055

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD735
Lab Code: L9703643-062
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	VeriQual	Qual Code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	54	5	10/30/97	10/30/97	54	U	U	
Chloromethane	EPA 5030	8021A	54	5	10/30/97	10/30/97	54	U		
Vinyl Chloride	EPA 5030	8021A	54	5	10/30/97	10/30/97	54	U		
Bromomethane	EPA 5030	8021A	54	5	10/30/97	10/30/97	54	U		
Chloroethane	EPA 5030	8021A	54	5	10/30/97	10/30/97	54	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
1,1-Dichloroethene	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
Methylene Chloride	EPA 5030	8021A	107	5	10/30/97	10/30/97	107	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
1,1-Dichloroethane	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
Chloroform	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
Carbon Tetrachloride	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
Benzene	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
1,2-Dichloroethane	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
Trichloroethene (TCE)	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
1,2-Dichloropropane	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
Bromodichloromethane	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	266	5	10/30/97	10/30/97	266	U		
Toluene	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
1,1,2-Trichloroethane	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	107	5	10/30/97	10/30/97	107	U		
Chlorobenzene	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
Ethylbenzene	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
m,p-Xylenes	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
o-Xylene	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
Bromoform	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U		
1,3-Dichlorobenzene	EPA 5030	8021A	54	5	10/30/97	10/30/97	54	U		
1,4-Dichlorobenzene	EPA 5030	8021A	54	5	10/30/97	10/30/97	54	U		
1,2-Dichlorobenzene	EPA 5030	8021A	54	5	10/30/97	10/30/97	54	U		
Chlorotrifluoroethene	EPA 5030	8021A	107	5	10/30/97	10/30/97	107	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	107	5	10/30/97	10/30/97	107	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	107	5	10/30/97	10/30/97	107	U		
2-Butanone (MEK)	EPA 5030	8021A	266	5	10/30/97	10/30/97	266	U		
Acetone	EPA 5030	8021A	266	5	10/30/97	10/30/97	790	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	107	5	10/30/97	10/30/97	107	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	107	5	10/30/97	10/30/97	107	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	107	5	10/30/97	10/30/97	107	U		

Approved By: Thomas P. Hubing Date: 12/23/97

1544/021397p

OPEN VALIDATED

LEVEL V 003056

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD735DL
Lab Code: L9703643-062DL
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	vev	qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	107	10	10/31/97	10/31/97	107	U	R	D
Chloromethane	EPA 5030	8021A	107	10	10/31/97	10/31/97	107	U		
Vinyl Chloride	EPA 5030	8021A	107	10	10/31/97	10/31/97	107	U		
Bromomethane	EPA 5030	8021A	107	10	10/31/97	10/31/97	107	U		
Chloroethane	EPA 5030	8021A	107	10	10/31/97	10/31/97	107	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
1,1-Dichloroethene	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
Methylene Chloride	EPA 5030	8021A	213	10	10/31/97	10/31/97	213	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
1,1-Dichloroethane	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
Chloroform	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
Carbon Tetrachloride	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
Benzene	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
1,2-Dichloroethane	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
Trichloroethene (TCE)	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
1,2-Dichloropropane	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
Bromodichloromethane	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	540	10	10/31/97	10/31/97	540	U		
Toluene	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
1,1,2-Trichloroethane	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	213	10	10/31/97	10/31/97	213	U		
Chlorobenzene	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
Ethylbenzene	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
m,p-Xylenes	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
o-Xylene	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
Bromoform	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
1,1,2,2-Tetrahaloroethane	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
1,3-Dichlorobenzene	EPA 5030	8021A	107	10	10/31/97	10/31/97	107	U		
1,4-Dichlorobenzene	EPA 5030	8021A	107	10	10/31/97	10/31/97	107	U		
1,2-Dichlorobenzene	EPA 5030	8021A	107	10	10/31/97	10/31/97	107	U		
Chlorotrifluoroethene	EPA 5030	8021A	213	10	10/31/97	10/31/97	213	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	213	10	10/31/97	10/31/97	213	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	213	10	10/31/97	10/31/97	213	U		
2-Butanone (MEK)	EPA 5030	8021A	540	10	10/31/97	10/31/97	540	U		
Acetone	EPA 5030	8021A	540	10	10/31/97	10/31/97	760	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	213	10	10/31/97	10/31/97	213	U	R	D
1,3,5-Trimethylbenzene	EPA 5030	8021A	213	10	10/31/97	10/31/97	213	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	213	10	10/31/97	10/31/97	213	U		

Approved By: Thomas A. Albright
ISL/b21397p

Date: 12/23/97

RODEN VALLEY

LEVEL V 002057

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD736
Lab Code: L9703643-063
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Benzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U
Toluene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U
Acetone	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U

Approved By: Theresa B. Nelson
1544021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V 003058

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD738
Lab Code: L9703643-065
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U	u	
Chloromethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
Vinyl Chloride	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
Bromomethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
Chloroethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Methylene Chloride	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U		
Toluene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U		
Acetone	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		

Approved By: Thomas B. Rubing
ISA/021397p

Date: 12/23/97

DATA VALIDATED

LEVEL V 003059

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD739
Lab Code: L9703643-066
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Benzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U
Toluene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U
Acetone	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U

Approved By: Thomas R. Albright
154621397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V 003060

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD740
Lab Code: L9703643-067
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	view qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U	u	
Chloromethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
Vinyl Chloride	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
Bromomethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
Chloroethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Methylene Chloride	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U		
Toluene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U		
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U		
Acetone	EPA 5030	8021A	55	1	10/30/97	10/30/97	91	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U		

Approved By: Thomas B. Nelson
1544/021397p

Date: 12/23/97

DATA VALIDATED

LEVEL V 003061

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD741
Lab Code: L9703643-072
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	view qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U	u	
Chloromethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U		
Vinyl Chloride	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U		
Bromomethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U		
Chloroethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Methylene Chloride	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/31/97	10/31/97	54	U		
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U		
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U		
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/31/97	10/31/97	54	U		
Acetone	EPA 5030	8021A	54	1	10/31/97	10/31/97	54	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U		

Approved By: Thomas R. Albion
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

003066

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD742
Lab Code: L9703643-073
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	53	1	10/31/97	10/31/97	53	U
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	53	1	10/31/97	10/31/97	53	U
Acetone	EPA 5030	8021A	53	1	10/31/97	10/31/97	53	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U

Approved By: Theresa A. Rubin
1844/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

003067

veig
qual
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code

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD750
Lab Code: L9703643-088
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	22	2	11/3/97	11/3/97	22	U
Chloromethane	EPA 5030	8021A	22	2	11/3/97	11/3/97	22	U
Vinyl Chloride	EPA 5030	8021A	22	2	11/3/97	11/3/97	22	U
Bromomethane	EPA 5030	8021A	22	2	11/3/97	11/3/97	22	U
Chloroethane	EPA 5030	8021A	22	2	11/3/97	11/3/97	22	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,1-Dichloroethene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Methylene Chloride	EPA 5030	8021A	43	2	11/3/97	11/3/97	43	U
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,1-Dichloroethane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Chloroform	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Carbon Tetrachloride	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Benzene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,2-Dichloroethane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Trichloroethene (TCE)	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,2-Dichloropropane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Bromodichloromethane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	107	2	11/3/97	11/3/97	107	U
Toluene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	43	2	11/3/97	11/3/97	43	U
Chlorobenzene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Ethylbenzene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
m,p-Xylenes	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
o-Xylene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Bromoform	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	11/3/97	11/3/97	22	U
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	11/3/97	11/3/97	22	U
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	11/3/97	11/3/97	22	U
Chlorotrifluoroethene	EPA 5030	8021A	43	2	11/3/97	11/3/97	43	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	43	2	11/3/97	11/3/97	43	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	43	2	11/3/97	11/3/97	43	U
2-Butanone (MEK)	EPA 5030	8021A	107	2	11/3/97	11/3/97	107	U
Acetone	EPA 5030	8021A	107	2	11/3/97	11/3/97	107	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	43	2	11/3/97	11/3/97	43	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	43	2	11/3/97	11/3/97	43	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	43	2	11/3/97	11/3/97	43	U

Approved By: Thomas D. Rubin
1544/021397p

Date: 12/23/97

GGDEN VALIDATED

LEVEL V 003079

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD750RE
L9703643-088RE

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	11/8/97	11/8/97	11	U
Chloromethane	EPA 5030	8021A	11	1	11/8/97	11/8/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	11/8/97	11/8/97	11	U
Bromomethane	EPA 5030	8021A	11	1	11/8/97	11/8/97	11	U
Chloroethane	EPA 5030	8021A	11	1	11/8/97	11/8/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	11/8/97	11/8/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
Chloroform	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
Benzene	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	11/8/97	11/8/97	54	U
Toluene	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	11/8/97	11/8/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
o-Xylene	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
Bromoform	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	11/8/97	11/8/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	11/8/97	11/8/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	11/8/97	11/8/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	11/8/97	11/8/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	11/8/97	11/8/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	11/8/97	11/8/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	54	1	11/8/97	11/8/97	54	U
Acetone	EPA 5030	8021A	54	1	11/8/97	11/8/97	54	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	11/8/97	11/8/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	11/8/97	11/8/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	11/8/97	11/8/97	22	U

Approved By: Thomas R. Albion
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V003080

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD751
Lab Code: L9703643-089
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	view qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	54	5	11/3/97	11/3/97	54	U	R	S
Chloromethane	EPA 5030	8021A	54	5	11/3/97	11/3/97	54	U		
Vinyl Chloride	EPA 5030	8021A	54	5	11/3/97	11/3/97	54	U		
Bromomethane	EPA 5030	8021A	54	5	11/3/97	11/3/97	54	U		
Chloroethane	EPA 5030	8021A	54	5	11/3/97	11/3/97	54	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
1,1-Dichloroethene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
Methylene Chloride	EPA 5030	8021A	108	5	11/3/97	11/3/97	108	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
1,1-Dichloroethane	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
Chloroform	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
Carbon Tetrachloride	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
Benzene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
1,2-Dichloroethane	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
Trichloroethene (TCE)	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
1,2-Dichloropropane	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
Bromodichloromethane	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	270	5	11/3/97	11/3/97	270	U		
Toluene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
1,1,2-Trichloroethane	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	108	5	11/3/97	11/3/97	108	U		
Chlorobenzene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
Ethylbenzene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
m,p-Xylenes	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
o-Xylene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
Bromoform	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U		
1,3-Dichlorobenzene	EPA 5030	8021A	54	5	11/3/97	11/3/97	54	U		
1,4-Dichlorobenzene	EPA 5030	8021A	54	5	11/3/97	11/3/97	54	U		
1,2-Dichlorobenzene	EPA 5030	8021A	54	5	11/3/97	11/3/97	54	U		
Chlorotrifluoroethene	EPA 5030	8021A	108	5	11/3/97	11/3/97	108	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	108	5	11/3/97	11/3/97	108	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	108	5	11/3/97	11/3/97	108	U		
2-Butanone (MEK)	EPA 5030	8021A	270	5	11/3/97	11/3/97	270	U		
Acetone	EPA 5030	8021A	270	5	11/3/97	11/3/97	270	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	108	5	11/3/97	11/3/97	108	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	108	5	11/3/97	11/3/97	108	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	108	5	11/3/97	11/3/97	108	U		

Approved By: Thomas B. Rubin
1544/b21397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V003081

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD751RE
Lab Code: L9703643-089RE
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev equal	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	11/7/97	11/7/97	11	U UT		S
Chloromethane	EPA 5030	8021A	11	1	11/7/97	11/7/97	11	U UT		S
Vinyl Chloride	EPA 5030	8021A	11	1	11/7/97	11/7/97	11	U UT		S
Bromomethane	EPA 5030	8021A	11	1	11/7/97	11/7/97	11	U UT		S
Chloroethane	EPA 5030	8021A	11	1	11/7/97	11/7/97	11	U UT		S
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U UT		S
1,1-Dichloroethene	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U U		S
Methylene Chloride	EPA 5030	8021A	22	1	11/7/97	11/7/97	22	U UT		S
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U UT		S
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U U		S
1,1-Dichloroethane	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U UT		S
Chloroform	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U UT		S
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U UT		S
Carbon Tetrachloride	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U UT		S
Benzene	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U U		S
1,2-Dichloroethane	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U UT		S
Trichloroethene (TCE)	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U U		S
1,2-Dichloropropane	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U UT		S
Bromodichloromethane	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U UT		S
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	11/7/97	11/7/97	54	U U		S
Toluene	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U U		S
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U U		S
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U U		S
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U UT		S
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U U		S
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	11/7/97	11/7/97	22	U UT		S
Chlorobenzene	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U U		S
Ethylbenzene	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U U		S
m,p-Xylenes	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U U		S
o-Xylene	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U U		S
Bromoform	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U UT		S
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U UT		S
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	11/7/97	11/7/97	11	U U		S
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	11/7/97	11/7/97	11	U U		S
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	11/7/97	11/7/97	11	U U		S
Chlorotrifluoroethene	EPA 5030	8021A	22	1	11/7/97	11/7/97	22	U UT		S
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	11/7/97	11/7/97	22	U UT		S
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	11/7/97	11/7/97	22	U UT		S
2-Butanone (MEK)	EPA 5030	8021A	54	1	11/7/97	11/7/97	54	U U		S
Acetone	EPA 5030	8021A	54	1	11/7/97	11/7/97	54	U U		S
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	11/7/97	11/7/97	22	U U		S
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	11/7/97	11/7/97	22	U U		S
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	11/7/97	11/7/97	22	U UT		S

Approved By: Thomas N. Robin

Date: 10/23/97

OGDEN VALIDATED

03643VOA.B10 - Sample (8) 12/19/97

003082
LEVEL V

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD754
Lab Code: L9703643-090
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	23	2	11/3/97	11/3/97	23	U
Chloromethane	EPA 5030	8021A	23	2	11/3/97	11/3/97	23	U
Vinyl Chloride	EPA 5030	8021A	23	2	11/3/97	11/3/97	23	U
Bromomethane	EPA 5030	8021A	23	2	11/3/97	11/3/97	23	U
Chloroethane	EPA 5030	8021A	23	2	11/3/97	11/3/97	23	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
1,1-Dichloroethene	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
Methylene Chloride	EPA 5030	8021A	45	2	11/3/97	11/3/97	45	U
trans-1,2-Dichloroethene	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
cis-1,2-Dichloroethene	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
1,1-Dichloroethane	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
Chloroform	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
Carbon Tetrachloride	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
Benzene	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
1,2-Dichloroethane	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
Trichloroethene (TCE)	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
1,2-Dichloropropane	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
Bromodichloromethane	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	112	2	11/3/97	11/3/97	112	U
Toluene	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
trans-1,3-Dichloropropene	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
cis-1,3-Dichloropropene	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
1,1,2-Trichloroethane	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
Tetrachloroethene (PCE)	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	45	2	11/3/97	11/3/97	45	U
Chlorobenzene	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
Ethylbenzene	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
m,p-Xylenes	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
o-Xylene	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
Bromoform	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
1,3-Dichlorobenzene	EPA 5030	8021A	23	2	11/3/97	11/3/97	23	U
1,4-Dichlorobenzene	EPA 5030	8021A	23	2	11/3/97	11/3/97	23	U
1,2-Dichlorobenzene	EPA 5030	8021A	23	2	11/3/97	11/3/97	23	U
Chlorotrifluoroethene	EPA 5030	8021A	45	2	11/3/97	11/3/97	45	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	45	2	11/3/97	11/3/97	45	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	45	2	11/3/97	11/3/97	45	U
2-Butanone (MEK)	EPA 5030	8021A	112	2	11/3/97	11/3/97	112	U
Acetone	EPA 5030	8021A	112	2	11/3/97	11/3/97	112	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	45	2	11/3/97	11/3/97	45	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	45	2	11/3/97	11/3/97	45	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	45	2	11/3/97	11/3/97	45	U

Approved By: Thomas A. Robison

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

003083

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD754RE
L9703643-090RE

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	11/5/97	11/5/97	12	U
Chloromethane	EPA 5030	8021A	12	1	11/5/97	11/5/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	11/5/97	11/5/97	12	U
Bromomethane	EPA 5030	8021A	12	1	11/5/97	11/5/97	12	U
Chloroethane	EPA 5030	8021A	12	1	11/5/97	11/5/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	11/5/97	11/5/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
Chloroform	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
Benzene	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	56	1	11/5/97	11/5/97	56	U
Toluene	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	11/5/97	11/5/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
o-Xylene	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
Bromoform	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	11/5/97	11/5/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	11/5/97	11/5/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	11/5/97	11/5/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	11/5/97	11/5/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	11/5/97	11/5/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	11/5/97	11/5/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	56	1	11/5/97	11/5/97	56	U
Acetone	EPA 5030	8021A	56	1	11/5/97	11/5/97	56	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	11/5/97	11/5/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	11/5/97	11/5/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	11/5/97	11/5/97	23	U

Approved By: Thomas D. Albright
1544/021397p

Date: 10/23/97

OGDEN VALIDATED

LEVEL V 003084

OGDEN ENVIRONMENTAL AND ENERGY SERVICES



0

550 South Wadsworth Blvd., Suite 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: SW846 Method 8021A

No. of Samples: 45 and 4 dilutions

Date Reviewed: 07/14/98

Reviewer: L. Calvin

Reference: *Ogden Data Validation Procedures for Halogenated Volatiles by GC and Aromatic Volatiles by GC* (DVPs-7 and -9, Rev. 2).

SDG: L9703563

Samples Reviewed: RD063, RD063DL, RD064, RD077, RD078, RD080, RD084, RD084DL, RD089, RD090, RD091, RD093, RD095, RD096, RD097, RD098, RD099, RD100, RD101, RD102, RD103, RD104, RD661, RD666, RD667, RD671, RD672, RD673, RD674, RD675, RD675DL, RD676, RD676DL, RD677, RD678, RD681, RD683, RD684, RD686, RD687, RD688, RD690, RD691, RD695, RD697, RD698, RD696, RD699, RD700

Matrix: Soil and Water

EPA Level V-GC Volatiles Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	According to the case narrative and COCs, samples were received chilled and intact. COC seals were not present. Actual temperature of sample receipt was not recorded. Crossouts on the COCs were missing dates.	No qualifications were required.
3. <u>Method Blanks</u> VBLK97102201 VBLK97102301 VBLK97102401 VBLK97102501 VBLK97102701 VBLK97110401	Six method blanks were analyzed with this SDG. No target compounds were reported in the method blanks.	No qualifications were required.
4. <u>LCS/BS</u> VLCS97102201 VLCS97102301 VLCS97102401 VLCS97102501	Six blank spikes were analyzed with the samples of this SDG. All percent recoveries were within the laboratory QC limits.	No qualifications were required.

	Problems	Qualifications
VLCS97102701 VLCS97110401		
5. Surrogates	All surrogate recoveries were within laboratory QC limits on both the ELCD and PID detectors with the exception of recoveries for samples RD676 and RD691 on the PID, which were below the QC limits of 57%-143%.	No detects were reported from the PID detector for sample RD676; therefore, no qualifications were required. In sample RD691, cis-1,2-dichloroethene and trichloroethene were qualified as estimated, "J."
6. MS/MSDs Performed on RD166 (SDG L9703643), RD661, RD673, and RD700	Four MS/MSDs were analyzed with this SDG. All recoveries and RPDs were within the laboratory QC limits.	No qualifications were required.
7. Field QC Samples ER: RD138 (SDG L9703643) RD666 RD724 (SDG L9703643) FB: RD856 (SDG L9703803) There were no field duplicates.	There were no target compounds reported in any of the equipment rinsates or the field blank.	No qualifications were required.
8. Other	<p>Several samples were run at dilutions and only the dilution analyses were provided. Dilutions were as follows: RD078, RD093, RD095, RD096, RD097, RD098, RD099, RD100, RD675, RD677, RD678, RD683, RD684, RD687, RD688, and RD690--analyzed at 2 ; RD064 and RD691--analyzed at 5 ; RD084 and RD676--analyzed at 10 ; RD077--analyzed at 100 ; RD080--analyzed at 500 ; and RD674--analyzed at 1000 . Reporting limits were raised accordingly.</p> <p>The following samples were dilutions analyzed for acetone detected above the linear range of the calibration in the undiluted or less diluted analyses: RD675DL--10 ; RD063DL and RD676DL--50 ; and RD084DL--500 .</p> <p>No confirmation was analyzed for sample RD683. The following reported target</p>	<p>Concentrations of target compounds or matrix interferences in aforementioned dilutions were sufficient to justify the dilutions. No qualifications were assigned based on dilutions.</p> <p>Acetone was rejected "R," in the original analyses in favor of the diluted values for acetone, and the remaining target compounds were rejected in the dilutions in favor of the undiluted or less diluted analyses.</p> <p>Unconfirmed detects were qualified</p>

	Problems	Qualifications
	<p>compounds were not confirmed by the confirmation analyses: methylene chloride in samples RD063, RD096, RD097, RD098, RD099, RD100, RD675, RD677, RD684, RD687, RD688, RD690, RD691, RD698; m&p-xylenes and o-xylenes in sample RD077; acetone in sample RD084; 1,1,1-trichloroethane in samples RD093, RD096, RD098, RD099, RD100; trichloroethene in samples RD097, RD098, RD099, RD100, RD688; and cis-1,2-dichloroethene in sample RD691.</p> <p>The results for m&p-xylenes and o-xylenes were incorrect on the result summary for sample RD077.</p>	<p>as estimated, "J," for previously characterized contaminants of concern, and tentatively identified, "NJ," for remaining unconfirmed detects.</p> <p>Raw data was not examined at Level V validation to determine the presence of those unconfirmed detects which should have been detected on both the ELCD and PID detectors in the original analysis.</p> <p>The results for m&p-xylenes and o-xylenes were corrected on the result summary for sample RD077 based on an initial calibration average RRF error discovered in the Level IV validation of SDG L9704260, which affected quantitation of all of the xylenes isomers. No qualifications were required.</p>
Comments	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703563
Date Collected: 10/20/97
Date Received: 10/20/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD063
Lab Code: L9703563-006
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	requal	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/22/97	10/22/97	11	U	u	
Chloromethane	EPA 5030	8021A	11	1	10/22/97	10/22/97	11	U	u	
Vinyl Chloride	EPA 5030	8021A	11	1	10/22/97	10/22/97	11	U	u	
Bromomethane	EPA 5030	8021A	11	1	10/22/97	10/22/97	11	U	u	
Chloroethane	EPA 5030	8021A	11	1	10/22/97	10/22/97	11	U	u	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
Methylene Chloride	EPA 5030	8021A	22	1	10/22/97	10/22/97	26	U	u	*8
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
Chloroform	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
Benzene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
Bromodichloromethane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/22/97	10/22/97	55	U	u	
Toluene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/22/97	10/22/97	22	U	u	
Chlorobenzene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
Ethylbenzene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
m,p-Xylenes	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
o-Xylene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
Bromoform	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U	u	
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/22/97	10/22/97	11	U	u	
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/22/97	10/22/97	11	U	u	
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/22/97	10/22/97	11	U	u	
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/22/97	10/22/97	22	U	u	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/22/97	10/22/97	22	U	u	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/22/97	10/22/97	22	U	u	
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/22/97	10/22/97	55	U	u	
Acetone	EPA 5030	8021A	55	1	10/22/97	10/22/97	2700	U	u	
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/22/97	10/22/97	22	U	u	
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/22/97	10/22/97	22	U	u	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/22/97	10/22/97	22	U	u	

Approved By: Thomaz P. Rabin
1544/021397p

Date: 12/4/97

VALIDATED

LEVEL V 3007

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703563
Date Collected: 10/20/97
Date Received: 10/20/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD063DL
Lab Code: L9703563-006DL
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	ver qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	550	50	10/22/97	10/22/97	550	U	NR	D
Chloromethane	EPA 5030	8021A	550	50	10/22/97	10/22/97	550	U		
Vinyl Chloride	EPA 5030	8021A	550	50	10/22/97	10/22/97	550	U		
Bromomethane	EPA 5030	8021A	550	50	10/22/97	10/22/97	550	U		
Chloroethane	EPA 5030	8021A	550	50	10/22/97	10/22/97	550	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
1,1-Dichloroethene	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
Methylene Chloride	EPA 5030	8021A	1100	50	10/22/97	10/22/97	1100	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
1,1-Dichloroethane	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
Chloroform	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
Carbon Tetrachloride	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
Benzene	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
1,2-Dichloroethane	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
Trichloroethene (TCE)	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
1,2-Dichloropropane	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
Bromodichloromethane	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	2750	50	10/22/97	10/22/97	2750	U		
Toluene	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
1,1,2-Trichloroethane	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	1100	50	10/22/97	10/22/97	1100	U		
Chlorobenzene	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
Ethylbenzene	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
m,p-Xylenes	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
o-Xylene	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
Bromoform	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	275	50	10/22/97	10/22/97	275	U		
1,3-Dichlorobenzene	EPA 5030	8021A	550	50	10/22/97	10/22/97	550	U		
1,4-Dichlorobenzene	EPA 5030	8021A	550	50	10/22/97	10/22/97	550	U		
1,2-Dichlorobenzene	EPA 5030	8021A	550	50	10/22/97	10/22/97	550	U		
Chlorotrifluoroethene	EPA 5030	8021A	1100	50	10/22/97	10/22/97	1100	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	1100	50	10/22/97	10/22/97	1100	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	1100	50	10/22/97	10/22/97	1100	U		
2-Butanone (MEK)	EPA 5030	8021A	2750	50	10/22/97	10/22/97	2750	U		
Acetone	EPA 5030	8021A	2750	50	10/22/97	10/22/97	2400	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	1100	50	10/22/97	10/22/97	1100	U	NR	D
1,3,5-Trimethylbenzene	EPA 5030	8021A	1100	50	10/22/97	10/22/97	1100	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	1100	50	10/22/97	10/22/97	1100	U		

Approved By: Thomas P. Murray
IS44/021397p

Date: 12/4/97

NOT VALIDATED

LEVEL V

3008

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703563
Date Collected: 10/20/97
Date Received: 10/20/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD064
Lab Code: L9703563-007
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	new qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	54	5	10/23/97	10/23/97	54	U	u	
Chloromethane	EPA 5030	8021A	54	5	10/23/97	10/23/97	54	U		
Vinyl Chloride	EPA 5030	8021A	54	5	10/23/97	10/23/97	54	U		
Bromomethane	EPA 5030	8021A	54	5	10/23/97	10/23/97	54	U		
Chloroethane	EPA 5030	8021A	54	5	10/23/97	10/23/97	54	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
1,1-Dichloroethene	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
Methylene Chloride	EPA 5030	8021A	108	5	10/23/97	10/23/97	108	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
1,1-Dichloroethane	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
Chloroform	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
Carbon Tetrachloride	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
Benzene	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
1,2-Dichloroethane	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
Trichloroethene (TCE)	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
1,2-Dichloropropane	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
Bromodichloromethane	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	270	5	10/23/97	10/23/97	270	U		
Toluene	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
1,1,2-Trichloroethane	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	108	5	10/23/97	10/23/97	108	U		
Chlorobenzene	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
Ethylbenzene	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
m,p-Xylenes	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
o-Xylene	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
Bromoform	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	27	5	10/23/97	10/23/97	27	U		
1,3-Dichlorobenzene	EPA 5030	8021A	54	5	10/23/97	10/23/97	54	U		
1,4-Dichlorobenzene	EPA 5030	8021A	54	5	10/23/97	10/23/97	54	U		
1,2-Dichlorobenzene	EPA 5030	8021A	54	5	10/23/97	10/23/97	54	U		
Chlorotrifluoroethene	EPA 5030	8021A	108	5	10/23/97	10/23/97	108	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	108	5	10/23/97	10/23/97	108	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	108	5	10/23/97	10/23/97	108	U		
2-Butanone (MEK)	EPA 5030	8021A	270	5	10/23/97	10/23/97	270	U		
Acetone	EPA 5030	8021A	270	5	10/23/97	10/23/97	330	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	108	5	10/23/97	10/23/97	108	U	u	
1,3,5-Trimethylbenzene	EPA 5030	8021A	108	5	10/23/97	10/23/97	108	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	108	5	10/23/97	10/23/97	108	U		

Approved By: Thomas A. Kirby
1544/021397p

Date: 12/4/97

OGDEN VALIDATED

LEVEL V

3009

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil

Service Request: L9703563
 Date Collected: 10/21/97
 Date Received: 10/21/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD077
 Lab Code: L9703563-031
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	1150	100	11/4/97	11/4/97	1150	U	U
Chloromethane	EPA 5030	8021A	1150	100	11/4/97	11/4/97	1150	U	
Vinyl Chloride	EPA 5030	8021A	1150	100	11/4/97	11/4/97	1150	U	
Bromomethane	EPA 5030	8021A	1150	100	11/4/97	11/4/97	1150	U	
Chloroethane	EPA 5030	8021A	1150	100	11/4/97	11/4/97	1150	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
1,1-Dichloroethene	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
Methylene Chloride	EPA 5030	8021A	2300	100	11/4/97	11/4/97	2300	U	
trans-1,2-Dichloroethene	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
1,1-Dichloroethane	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
Chloroform	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
Carbon Tetrachloride	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
Benzene	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
1,2-Dichloroethane	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
Trichloroethene (TCE)	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
1,2-Dichloropropane	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
Bromodichloromethane	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	5750	100	11/4/97	11/4/97	5750	U	
Toluene	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
1,1,2-Trichloroethane	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	2300	100	11/4/97	11/4/97	2300	U	
Chlorobenzene	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
Ethylbenzene	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
m,p-Xylenes	EPA 5030	8021A	575	100	11/4/97	11/4/97	1300-450	U	
o-Xylene	EPA 5030	8021A	575	100	11/4/97	11/4/97	2200-1100	U	
Bromoform	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	575	100	11/4/97	11/4/97	575	U	
1,3-Dichlorobenzene	EPA 5030	8021A	1150	100	11/4/97	11/4/97	1150	U	
1,4-Dichlorobenzene	EPA 5030	8021A	1150	100	11/4/97	11/4/97	1150	U	
1,2-Dichlorobenzene	EPA 5030	8021A	1150	100	11/4/97	11/4/97	1150	U	
Chlorotrifluoroethene	EPA 5030	8021A	2300	100	11/4/97	11/4/97	2300	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	2300	100	11/4/97	11/4/97	2300	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	2300	100	11/4/97	11/4/97	2300	U	
2-Butanone (MEK)	EPA 5030	8021A	5750	100	11/4/97	11/4/97	5750	U	
Acetone	EPA 5030	8021A	5750	100	11/4/97	11/4/97	8500	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	2300	100	11/4/97	11/4/97	2300	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	2300	100	11/4/97	11/4/97	2300	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	2300	100	11/4/97	11/4/97	2300	U	

Approved By: Thomson A. Anthony Date: 12/4/97

1544/021397p

3017

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703563
Date Collected: 10/21/97
Date Received: 10/21/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD078
Lab Code: L9703563-032
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	22	2	11/4/97	11/4/97	22	U
Chloromethane	EPA 5030	8021A	22	2	11/4/97	11/4/97	22	U
Vinyl Chloride	EPA 5030	8021A	22	2	11/4/97	11/4/97	22	U
Bromomethane	EPA 5030	8021A	22	2	11/4/97	11/4/97	22	U
Chloroethane	EPA 5030	8021A	22	2	11/4/97	11/4/97	22	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
1,1-Dichloroethene	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
Methylene Chloride	EPA 5030	8021A	43	2	11/4/97	11/4/97	43	U
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
1,1-Dichloroethane	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
Chloroform	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
Carbon Tetrachloride	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
Benzene	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
1,2-Dichloroethane	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
Trichloroethene (TCE)	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
1,2-Dichloropropane	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
Bromodichloromethane	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	106	2	11/4/97	11/4/97	106	U
Toluene	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	43	2	11/4/97	11/4/97	43	U
Chlorobenzene	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
Ethylbenzene	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
m,p-Xylenes	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
o-Xylene	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
Bromoform	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	11/4/97	11/4/97	11	U
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	11/4/97	11/4/97	22	U
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	11/4/97	11/4/97	22	U
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	11/4/97	11/4/97	22	U
Chlorotrifluoroethene	EPA 5030	8021A	43	2	11/4/97	11/4/97	43	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	43	2	11/4/97	11/4/97	43	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	43	2	11/4/97	11/4/97	43	U
2-Butanone (MEK)	EPA 5030	8021A	106	2	11/4/97	11/4/97	106	U
Acetone	EPA 5030	8021A	106	2	11/4/97	11/4/97	330	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	43	2	11/4/97	11/4/97	43	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	43	2	11/4/97	11/4/97	43	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	43	2	11/4/97	11/4/97	43	U

Approved By: Thomas R. Moring
IS44/021397p

Date: 12/4/97

VALIDATED

LEVEL V 3018

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703563
Date Collected: 10/21/97
Date Received: 10/21/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD080
Lab Code: L9703563-034
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	new qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	5200	500	11/4/97	11/4/97	5200	U	U	
Chloromethane	EPA 5030	8021A	5200	500	11/4/97	11/4/97	5200	U		
Vinyl Chloride	EPA 5030	8021A	5200	500	11/4/97	11/4/97	5200	U		
Bromomethane	EPA 5030	8021A	5200	500	11/4/97	11/4/97	5200	U		
Chloroethane	EPA 5030	8021A	5200	500	11/4/97	11/4/97	5200	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
1,1-Dichloroethene	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
Methylene Chloride	EPA 5030	8021A	10000	500	11/4/97	11/4/97	10000	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
1,1-Dichloroethane	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
Chloroform	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
Carbon Tetrachloride	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
Benzene	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
1,2-Dichloroethane	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
Trichloroethene (TCE)	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
1,2-Dichloropropane	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
Bromodichloromethane	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	26000	500	11/4/97	11/4/97	26000	U		
Toluene	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
1,1,2-Trichloroethane	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	10000	500	11/4/97	11/4/97	10000	U		
Chlorobenzene	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
Ethylbenzene	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
m,p-Xylenes	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
o-Xylene	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
Bromoform	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	2600	500	11/4/97	11/4/97	2600	U		
1,3-Dichlorobenzene	EPA 5030	8021A	5200	500	11/4/97	11/4/97	5200	U		
1,4-Dichlorobenzene	EPA 5030	8021A	5200	500	11/4/97	11/4/97	5200	U		
1,2-Dichlorobenzene	EPA 5030	8021A	5200	500	11/4/97	11/4/97	5200	U		
Chlorotrifluoroethene	EPA 5030	8021A	10000	500	11/4/97	11/4/97	10000	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	10000	500	11/4/97	11/4/97	10000	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	10000	500	11/4/97	11/4/97	10000	U		
2-Butanone (MEK)	EPA 5030	8021A	26000	500	11/4/97	11/4/97	26000	U		
Acetone	EPA 5030	8021A	26000	500	11/4/97	11/4/97	66000	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	10000	500	11/4/97	11/4/97	10000	U	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	10000	500	11/4/97	11/4/97	10000	U	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	10000	500	11/4/97	11/4/97	10000	U	U	

Approved By: Thomas A. Albion
1544/021397p

Date: 12/4/97

NOT VALIDATED

LEVEL V 3019

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703563
Date Collected: 10/21/97
Date Received: 10/21/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD084
Lab Code: L9703563-038
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	109	10	10/23/97	10/23/97	109	U
Chloromethane	EPA 5030	8021A	109	10	10/23/97	10/23/97	109	U
Vinyl Chloride	EPA 5030	8021A	109	10	10/23/97	10/23/97	109	U
Bromomethane	EPA 5030	8021A	109	10	10/23/97	10/23/97	109	U
Chloroethane	EPA 5030	8021A	109	10	10/23/97	10/23/97	109	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
1,1-Dichloroethene	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
Methylene Chloride	EPA 5030	8021A	218	10	10/23/97	10/23/97	218	U
trans-1,2-Dichloroethene	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
cis-1,2-Dichloroethene	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
1,1-Dichloroethane	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
Chloroform	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
Carbon Tetrachloride	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
Benzene	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
1,2-Dichloroethane	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
Trichloroethene (TCE)	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
1,2-Dichloropropane	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
Bromodichloromethane	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	544	10	10/23/97	10/23/97	544	U
Toluene	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
trans-1,3-Dichloropropene	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
cis-1,3-Dichloropropene	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
1,1,2-Trichloroethane	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
Tetrachloroethene (PCE)	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	218	10	10/23/97	10/23/97	218	U
Chlorobenzene	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
Ethylbenzene	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
m,p-Xylenes	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
o-Xylene	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
Bromoform	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	55	10	10/23/97	10/23/97	55	U
1,3-Dichlorobenzene	EPA 5030	8021A	109	10	10/23/97	10/23/97	109	U
1,4-Dichlorobenzene	EPA 5030	8021A	109	10	10/23/97	10/23/97	109	U
1,2-Dichlorobenzene	EPA 5030	8021A	109	10	10/23/97	10/23/97	109	U
Chlorotrifluoroethene	EPA 5030	8021A	218	10	10/23/97	10/23/97	218	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	218	10	10/23/97	10/23/97	218	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	218	10	10/23/97	10/23/97	218	U
2-Butanone (MEK)	EPA 5030	8021A	544	10	10/23/97	10/23/97	544	U
Acetone	EPA 5030	8021A	544	10	10/23/97	10/23/97	68000	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	218	10	10/23/97	10/23/97	218	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	218	10	10/23/97	10/23/97	218	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	218	10	10/23/97	10/23/97	218	U

Approved By: Thomas A. Robin
1544/021397p

Date: 12/4/97

OGDEN VALIDATED

LEVEL V

3020

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703563
Date Collected: 10/21/97
Date Received: 10/21/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD084DL
Lab Code: L9703563-038DL
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	5400	500	10/23/97	10/23/97	5400	U	NR	D
Chloromethane	EPA 5030	8021A	5400	500	10/23/97	10/23/97	5400	U		
Vinyl Chloride	EPA 5030	8021A	5400	500	10/23/97	10/23/97	5400	U		
Bromomethane	EPA 5030	8021A	5400	500	10/23/97	10/23/97	5400	U		
Chloroethane	EPA 5030	8021A	5400	500	10/23/97	10/23/97	5400	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
1,1-Dichloroethene	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
Methylene Chloride	EPA 5030	8021A	11000	500	10/23/97	10/23/97	11000	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
1,1-Dichloroethane	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
Chloroform	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
Carbon Tetrachloride	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
Benzene	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
1,2-Dichloroethane	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
Trichloroethene (TCE)	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
1,2-Dichloropropane	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
Bromodichloromethane	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	27000	500	10/23/97	10/23/97	27000	U		
Toluene	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
1,1,2-Trichloroethane	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	11000	500	10/23/97	10/23/97	11000	U		
Chlorobenzene	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
Ethylbenzene	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
m,p-Xylenes	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
o-Xylene	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
Bromoform	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	2700	500	10/23/97	10/23/97	2700	U		
1,3-Dichlorobenzene	EPA 5030	8021A	5400	500	10/23/97	10/23/97	5400	U		
1,4-Dichlorobenzene	EPA 5030	8021A	5400	500	10/23/97	10/23/97	5400	U		
1,2-Dichlorobenzene	EPA 5030	8021A	5400	500	10/23/97	10/23/97	5400	U		
Chlorotrifluoroethene	EPA 5030	8021A	11000	500	10/23/97	10/23/97	11000	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	11000	500	10/23/97	10/23/97	11000	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	11000	500	10/23/97	10/23/97	11000	U		
2-Butanone (MEK)	EPA 5030	8021A	27000	500	10/23/97	10/23/97	27000	U		
Acetone	EPA 5030	8021A	27000	500	10/23/97	10/23/97	66000	U	NT	*8
1,2,4-Trimethylbenzene	EPA 5030	8021A	11000	500	10/23/97	10/23/97	11000	U	NR	D
1,3,5-Trimethylbenzene	EPA 5030	8021A	11000	500	10/23/97	10/23/97	11000	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	11000	500	10/23/97	10/23/97	11000	U		

Approved By: Thomas R. Robey

Date: 12/4/97

OGDEN VALIDATED

LEVEL V 3021

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil

Service Request: L9703563
 Date Collected: 10/23/97
 Date Received: 10/23/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD089
 Lab Code: L9703563-051
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/24/97	10/24/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/24/97	10/24/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/24/97	10/24/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/24/97	10/24/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/24/97	10/24/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/24/97	10/24/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
Benzene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/24/97	10/24/97	57	U
Toluene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/24/97	10/24/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/24/97	10/24/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/24/97	10/24/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/24/97	10/24/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/24/97	10/24/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/24/97	10/24/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/24/97	10/24/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/24/97	10/24/97	57	U
Acetone	EPA 5030	8021A	57	1	10/24/97	10/24/97	57	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/24/97	10/24/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/24/97	10/24/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/24/97	10/24/97	23	U

Approved By: Thomas P. Brown
 1544/021397p

Date: 12/4/97

PROCESSED BY: DAVID

LEVEL V 3029

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703563
Date Collected: 10/23/97
Date Received: 10/23/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD090
Lab Code: L9703563-052
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev	qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/24/97	10/24/97	11	U	u	
Chloromethane	EPA 5030	8021A	11	1	10/24/97	10/24/97	11	U		
Vinyl Chloride	EPA 5030	8021A	11	1	10/24/97	10/24/97	11	U		
Bromomethane	EPA 5030	8021A	11	1	10/24/97	10/24/97	11	U		
Chloroethane	EPA 5030	8021A	11	1	10/24/97	10/24/97	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Methylene Chloride	EPA 5030	8021A	22	1	10/24/97	10/24/97	22	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/24/97	10/24/97	54	U		
Toluene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/24/97	10/24/97	22	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/24/97	10/24/97	11	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/24/97	10/24/97	11	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/24/97	10/24/97	11	U		
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/24/97	10/24/97	22	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/24/97	10/24/97	22	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/24/97	10/24/97	22	U		
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/24/97	10/24/97	54	U		
Acetone	EPA 5030	8021A	54	1	10/24/97	10/24/97	54	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/24/97	10/24/97	22	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/24/97	10/24/97	22	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/24/97	10/24/97	22	U		

Approved By: Thomas R. Nelson
1544/021397p

Date: 12/4/97

OGDEN VALIDATED

LEVEL V 3030