HydroGeoSpectrum SOIL VAPOR CHAIN OF CUSTODY

PROJECT RD CLIENT Ogden DATE 8/9/97

SAMPLE ID - DEPTH	INSTALLED	SAMPLED	BULB ID	FLOW ml/min	TIME min	Purge Vol	MISC Leak Check ✓ all
RR052 / OCRV01S01 6'	May June	8/9/97 08:40	R6	150	11		
RR053 / EVRV01S02 10'		08:58	H5	100	14'		
RR054 / SPRP01S01 5'		0918	S2	150	11		
RR055 / BARV10S01 2'		0947	A9		11		
RR056 / BARV11S01 2'		1001	Y7		11		
RR057 / BARV01S01 5'		1018	Y4		11		
RR058 / AFRP03S02 11'		1042	L4		13		
RR059 / ILRV05S05 24'		1105	A2		~~12~~ 17		

SURROGATES: D6-Benzene___ D8-Toluene___ D-Chloroform___ D6-DMK___ D-DCM___

RELINQUISHED BY: [signature] RECEIVED BY [signature] DATE/TIME 8/9/97 12:00

RELINQUISHED BY ___ RECEIVED BY ___ DATE/TIME ___

Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY • CHEMICAL AND BIOLOGICAL ANALYSES

Client: Ogden
5510 Morehouse Drive
San Diego, CA 92121

Date Sampled: 11/02-07/00
Date Received: 11/09/00
Job Number: 17392

Project: Rocketdyne

CASE NARRATIVE

The following information applies to samples which were received on 11/09/00 :

The samples were received at the laboratory chilled. One VOA vial was received broken, the remaining sample containers were received intact.

An insufficient amount of sample was provided for samples RZ799, RZ801, and RZ803 so the Moisture Content analysis for these samples was cancelled.

The Dioxin analysis was subcontracted to ELAP Lab #1640. The original report is attached to, but is not part of, this report.

The Perchlorate analysis was subcontracted to ELAP Lab #1132. The original report is attached to, but is not part of, this report.

Unless otherwise noted below, the Quality Control acceptance criteria were met for all samples for every analysis requested.

Report approved by:

Robert R. Clark, Ph.D.
Laboratory Director

ELAP # 2419

DL : Detection Limit -- The lowest level at which the compound can reliably be detected under normal laboratory conditions.
ND : Not Detected -- The compound was analyzed for but was not found to be present at or above the detection limit.
NA : Not Analyzed -- Per client request, this analyte was not on the list of compounds to be analyzed for.

Printed on Recycled Paper

Centrum Analytical Laboratories, Inc.

290 TENNESSEE STREET
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www.centrum-labs.com

(909) 798-9336 ● (800) 798-9336
FAX (909) 793-1559
lab@centrum-labs.com

Chain of Custody Record

Centrum Job #

Page ____ of ____

Project No:	Project Name:
Project Manager:	Phone: Fax:
Client Name: (Report and Billing)	Address: (Report and Billing)

Please Circle **ALL** Analyses Requested

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	8015M: Diesel, Fuel Screen, Carbon Chain	8015M: Gasoline only	8021B: BTEX/MtBE Only by GC/PID	418.1 (TRPH), 413.2 (Oil & Grease)		GCMS: 8260B, 8021B, 624, 524.2	GCMS: Fuel Oxygenates	GCMS: MtBE Conf. Only	GCMS: 8270C, 625	8081A/8082: Pesticides, PCBs, Pest/PCB		Metals: Title 22 (CAM), RCRA, PP	pH, TDS, TSS, Conductivity			Remarks/Special Instructions

1) Relinquished by: (Sampler's Signature)	Date:	Time:	3) Relinquished by:	Date:	Time:
2) Received by:	Date:	Time:	4) Received by:	Date:	Time:
			5) Relinquished by:	Date:	Time:
			6) Received for Laboratory by:	Date:	Time:

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

Turn-Around Time

- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☐ Normal TAT

*Requires PRIOR approval, additional charges apply

Requested due date: _____

To be completed by Laboratory personnel:

Samples chilled? ☐ Yes ☐ No ☐ From Field

Custody seals? ☐ Yes ☐ No

All sample containers intact? ☐ Yes ☐ No

☐ Courier ☐ UPS/Fed Ex ☐ Hand carried

Sample Disposal

- ☐ Client will pick up
- ☐ Return to client
- ☐ Lab disposal

Laboratory Notes:

Sample Locator No.

v5.2 1/00 coc-temp.xls

White Copy - Original (Accompanies Samples) Yellow Copy - Centrum Files Pink Copy - Centrum duplicate Gold Copy - Client Copy

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lab@centrum-labs.com

Chain of Custody Record

Centrum Job #

Page _____ of _____

Project No:	Project Name:
Project Manager:	Phone: Fax:
Client Name: (Report and Billing)	Address: (Report and Billing)

Please Circle **ALL** Analyses Requested

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	8015M: Diesel, Fuel Screen, Carbon Chain	8015M: Gasoline only	8021B: BTEX/MtBE Only by GC/PID	418.1 (TRPH), 413.2 (Oil & Grease)		GCMS: 8260B, 8021B, 624, 524.2	GCMS: Fuel Oxygenates	GCMS: MtBE Conf. Only	GCMS: 8270C, 625	8081A/8082: Pesticides, PCBs, Pest/PCB		Metals: Title 22 (CAM), RCRA, PP	pH, TDS, TSS, Conductivity			Remarks/Special Instructions

Turn-Around Time

- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☒ Normal TAT

*Requires PRIOR approval, additional charges apply

Requested due date: _____

1) Relinquished by: (Sampler's Signature)	Date:	Time:	3) Relinquished by:	Date:	Time:
2) Received by:	Date:	Time:	4) Received by:	Date:	Time:
			5) Relinquished by:	Date:	Time:
			6) Received for Laboratory by:	Date:	Time:

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

To be completed by Laboratory personnel:

Samples chilled? ☐ Yes ☐ No ☐ From Field

Custody seals? ☐ Yes ☐ No

All sample containers intact? ☐ Yes ☐ No

☐ Courier ☐ UPS/Fed Ex ☐ Hand carried

Sample Disposal

- ☐ Client will pick up
- ☐ Return to client
- ☐ Lab disposal

Laboratory Notes:

Sample Locator No.

v5.2 1/00 coc-temp.xls

White Copy - Original (Accompanies Samples) Yellow Copy - Centrum Files Pink Copy - Centrum duplicate Gold Copy - Client Copy

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lab@centrum-labs.com

Chain of Custody Record

Centrum Job #

Page _____ of _____

Project No:	Project Name:
Project Manager:	Phone: Fax:
Client Name: (Report and Billing)	Address: (Report and Billing)

Please Circle **ALL** Analyses Requested

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	8015M: Diesel, Fuel Screen, Carbon Chain	8015M: Gasoline only	8021B: BTEX/MtBE Only by GC/PID	418.1 (TRPH), 413.2 (Oil & Grease)		GCMS: 8260B, 8021B, 624, 524.2	GCMS: Fuel Oxygenates	GCMS: MtBE Conf. Only	GCMS: 8270C, 625	8081A/8082: Pesticides, PCBs, Pest/PCB		Metals: Title 22 (CAM), RCRA, PP	pH, TDS, TSS, Conductivity			Remarks/Special Instructions

Turn-Around Time

- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☒ Normal TAT

*Requires PRIOR approval, additional charges apply

Requested due date: _____

Remarks/Special Instructions

1) Relinquished by: (Sampler's Signature)	Date:	Time:	3) Relinquished by:	Date:	Time:
2) Received by:	Date:	Time:	4) Received by:	Date:	Time:
			5) Relinquished by:	Date:	Time:
			6) Received for Laboratory by:	Date:	Time:

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

To be completed by Laboratory personnel:

Samples chilled? ☐ Yes ☐ No ☐ From Field

Custody seals? ☐ Yes ☐ No

All sample containers intact? ☒ Yes ☐ No

☐ Courier ☐ UPS/Fed Ex ☒ Hand carried

Sample Disposal

- ☐ Client will pick up
- ☐ Return to client
- ☐ Lab disposal

Laboratory Notes:

Sample Locator No.

v5.2 1/00 coc-temp.xls

White Copy - Original (Accompanies Samples) Yellow Copy - Centrum Files Pink Copy - Centrum duplicate Gold Copy - Client Copy

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FAX (909) 793-1559
lab@centrum-labs.com

Chain of Custody Record

Centrum Job #

Page 1 of 1

Project No:	Project Name:
17392	ROCKETDYNE
Project Manager:	**Phone:** / **Fax:**
MARILU ESCHER	
Client Name: (Report and Billing)	**Address:** (Report and Billing)
CENTRUM	

Please Circle **ALL** Analyses Requested

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	8015M: Diesel, Fuel Screen, Carbon Chain	8015M: Gasoline only	8021B: BTEX/MtBE Only by GC/PID	418.1 (TRPH), 413.2 (Oil & Grease)	8290 Dioxin	GCMS: 8260B, 8021B, 624, 524.2	GCMS: Fuel Oxygenates	GCMS: MtBE Conf. Only	GCMS: 8270C, 625	8081A/8082: Pesticides, PCBs, Pest/PCB		Metals: Title 22 (CAM), RCRA, PP	pH, TDS, TSS, Conductivity			Remarks/Special Instructions
	RZ7801	11/1		SOIL	17392-8	1oz					X											
	RZ776	↓		↓	-9	↓					X											

Turn-Around Time

- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☐ Normal TAT

*Requires PRIOR approval, additional charges apply

Requested due date: _____

1) Relinquished by: (Sampler's Signature)	Date:	Time:	3) Relinquished by:	Date:	Time:
2) Received by:	Date:	Time:	4) Received by:	Date:	Time:
			5) Relinquished by:	Date:	Time:
The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.			6) Received for Laboratory by: K. Flatt	Date: 11-15-05	Time: 1000

To be completed by Laboratory personnel:

Samples chilled? ☐ Yes ☐ No ☐ From Field

Custody seals? ☐ Yes ☐ No

All sample containers intact? ☐ Yes ☐ No

☐ Courier ☐ UPS/Fed Ex ☐ Hand carried

Sample Disposal

- ☐ Client will pick up
- ☐ Return to client
- ☒ Lab disposal

Laboratory Notes:

Sample Locator No.

v5.2 1/00 coc-temp.xls

White Copy - Original (Accompanies Samples) Yellow Copy - Centrum Files Pink Copy - Centrum duplicate Gold Copy - Client Copy

A008107-001

WECK

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FAX (909) 793-1559
lab@centrum-labs.com

Chain of Custody Record

Centrum Job #

Page 1 of 1

Project No: 17392

Project Name: ROCKETDYNE

Project Manager: MARILU ESCHER

Phone:

Fax:

Client Name: (Report and Billing) CENTRUM

Address: (Report and Billing)

Please Circle **ALL** Analyses Requested

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	8015M: Diesel, Fuel Screen, Carbon Chain	8015M: Gasoline only	8021B: BTEX/MtBE Only by GC/PID	418.1 (TRPH), 413.2 (Oil & Grease)	PERCLORATE	GCMS: 8260B, 8021B, 624, 524.2	GCMS: Fuel Oxygenates	GCMS: MtBE Conf. Only	GCMS: 8270C, 625	8081A/8082: Pesticides, PCBs, Pest/PCB		Metals: Title 22 (CAM), RCRA, PP	pH, TDS, TSS, Conductivity			Remarks/Special Instructions
	RZ784	11/2	7:00A	SOIL	17392-1	1					X											

Turn-Around Time

- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☒ Normal TAT

*Requires PRIOR approval, additional charges apply

Requested due date: _____

1) Relinquished by: (Sampler's Signature) R. Barnes	Date: 11/15	Time: 1200	3) Relinquished by:	Date:	Time:
2) Received by:	Date:	Time:	4) Received by:	Date:	Time:
			5) Relinquished by:	Date:	Time:
			6) Received for Laboratory by: [signature]	Date:	Time:

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

To be completed by Laboratory personnel: 8°C

Samples chilled? ☒ Yes ☐ No ☐ From Field

Custody seals? ☐ Yes ☐ No

All sample containers intact? ☒ Yes ☐ No

☐ Courier ☐ UPS/Fed Ex ☒ Hand carried

Sample Disposal

- ☐ Client will pick up
- ☐ Return to client
- ☐ Lab disposal

Laboratory Notes:

Sample Locator No.

RZ 784

OGDEN
5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC
Date 11/2/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	FED-EX
Comment:	

Cooler No:		
QC Level:	Level4	TAT: 14-day hardcopy summary 28-day full package

Preservatives: HCL, pH<2 4°C | HCL, pH<2 | 4°C | 4°C | 4°C | H2SO4, pH<2 4°C | 4°C | HNO3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	624/8260 VOC	8015/8260 TPH	8270/SIM SVOC	8270/8 SVOC	8260 DIOXIN	ASTM D16 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALS/RT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	PERCHLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RZ784	HVTS08S01	5	11/2	0700	106		X										X				X			X		HA			1
RZ788	HVSRTS02S01	41		1510	41						X	X					X				X					HA			1
RZ741	SRTS02S02	41		1540	41																					HA			1
RZ789	CSBS29S03	10	11/6	1550	96					X																SP			3
RZ801	CSBS29S05	18.5		1615	96					X																			3
RZ803	CSBS30S02	5.0		1645	37	2				X																			3
RZ812	~~CSBS30S03~~																												
RZ812	BVBS42S01	5.0	11/7	1425	53		X				X																		3
RZ780	OCTS24S02	6.5	11/1																							HA		X	1
RZ776	OCTS23S02	6.5	11/1																							HA		X	1
						LAB		ENTRY																					

Sample ID: RZ784, RZ788, RZ741, RZ789, RZ801, RZ803, RZ812, RZ812, RZ780, RZ776
ATTOC
AWSRE
5.12-5.15
pH 7.4

Sampler's Signature:	Date: 11/7	Time: 1700
Relinquished By:	Date: 11/8	Time: 1200
Received By:	Date:	Time:
Relinquished By:	Date:	Time:
Received By (LAB):	Date:	Time:

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

HOMOGENIZE ALL SAMPLES
RZ781 + RZ776 OFF HOLD per DAH (11/10/00).
Change all samples with Ogden ID's that begin with "CSBS..." to "CABS" per CD.

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

NOV-08NOV. 13. 2000 12:07PM 8586 OGDEN SAN DIEGO 18586480 2 TO:8185845809 NO. 5064 P. 3E:03

Centrum Analytical Laboratories, Inc.
CERTIFIED HAZARDOUS WASTE TESTING MOBILE & IN HOUSE LABORATORIES

T500

Client: Montgomery Watson
250 N. Madison Avenue
Pasadena, CA 91101

Date Sampled: 11/19/01
Date Received: 11/20/01
Job Number: 19592

Project: Boeing SSFL

CASE NARRATIVE

The following information applies to samples which were received on 11/20/01 :

The samples were received at the laboratory chilled and sample containers were intact.

The EPA 8290 Dioxins analysis was subcontracted to ELAP Lab #1640. The original report is attached to, but is not part of, this report.

Unless otherwise noted below, the Quality Control acceptance criteria were met for all samples for every analysis requested. The date of issue for this report is 12/20/01.

Report approved by:

Tom Wilson
Laboratory Director

Rodolfo Vergara, Jr.
Quality Assurance Manager

ELAP Lab# 2419

DL : Detection Limit -- The lowest level at which the compound can reliably be detected under normal laboratory conditions.
ND : Not Detected -- The compound was analyzed for but was not found to be present at or above the detection limit.
NA : Not Analyzed -- Per client request, this analyte was not on the list of compounds to be analyzed for

19592

MWH
MONTGOMERY WATSON HARZA

250 N. Madison Avenue
Pasadena, CA 91101
(626) 568-6310

Chain of Custody

Control Number: COC MC032

Date 11 / 19 / 01 Page 1 of 1

roject Manager:	Dixie Hambrick
roject Name:	Boeing SSFL
roject Number:	DOE Soils November 1890533.011607
eliver the results to the address above or as stated in contract	

Bill To:	Lowell Moffitt
Company:	MWH
Address:	250 N. Madison Avenue, Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

ooler No.	
IC Level:	TAT:

Preservatives: None

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC (HCL, pH<2 4°C)	8015BM TPH (HCL, pH<2 4°C)	8270CSIM SVOC (*added per Orion Tucker 11/20 (fax))	8270C SVOC (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	300M PERCHLORATES (4°C)	MOISTURE CONTENT	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MC032	OCBS28S01	7.4	0.5	11/19/01	1345	-		X					X		X											X	HA			1
MC034	OCBS29S01	7.4	0.5	11/19/01	1420	-		X										X								X	HA			1

mplers Signature:	Date	Time
elinquished By:	Date	Time
eceived By:	Date	Time
elinquished By: FEDEX	Date	Time
eceived By (LAB): [signature]	Date 11/20	Time 1000

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C 9

Comments:
*Homoginize samples before analysis.

ALTA

11/28/2001

Alta Project ID: 21362

Ms. Marilu Escher
Centrum Analytical Laboratories Inc
1401 Research Pk Dr.
Suite 100
Riverside, CA 92507

Dear Ms. Escher,

The samples listed in the sample inventory were received by Alta Analytical Laboratory on 11/28/2001.

Please find attached:

- Terms and Conditions (reverse side of letter)
- Sample Inventory Report
- Chain-of-Custody
- Additional sample documentation (if applicable).
- Sample Log-In Checklist

Analytical results are scheduled to be reported to you on: 12/19/2001. All sample containers and their contents will be disposed of 90 days subsequent to issuance of a final report.

If you have any questions regarding the status of the work associated with these samples, please contact me at (916) 933-1640.

Sincerely,

Martha M. Maier
Alta Analytical Laboratory

Alta Analytical Laboratory Inc.
5070 Robert J. Mathews Parkway
El Dorado Hills, CA 95762
FAX (916) 933-0940
(916) 933-1640

ALTA

Section I: Sample Inventory Report

Date Received: **11/28/2001**

Alta Lab. ID	Client Sample ID
21362-001	MC032

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 21362 Client/Protocol No. N/A

		YES	NO	NA
1.	Date Samples Arrived: 11/28/01 Initials: ~ Location:			
2.	Time / Date logged in: 11/28/01 14:00 Initials: ~ Location: R-1			
3.	Samples Arrived By: (circle) FedEx (UPS) World Courier Other:			
4.	Shipping Preservation: (circle) Ice / (Blue Ice) / Dry Ice / None Temp °C 3.09°C			
5.	Shipping Container(s) Intact"? If not, describe condition in comment section.	X		
6.	Shipping Container(s) Custody Seals Present?		X	
	Intact? If not intact, describe condition in comment section.			X
7.	Shipping Documentation Present? (circle) Shipping Label (Airbill) Tracking Number	X		
8.	Sample Custody Seal(s) Present? No. of Seals_____ or Seal No.		X	
	Intact? If not intact, describe condition in comment section.			X
9.	Sample Container Intact? If no, indicate sample condition in comment section.	X		
10.	Chain of Custody (COC) or other Sample Documentation Present?	X		
11.	COC/Documentation Acceptable? If no, complete COC Anomaly Form.	X		
12.	Shipping Container (circle): ALTA (Client) Retain or (Return) or Disposed			
13.	Container(s) and/or Bottle(s) Requested?		X	
14.	Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N			X
	Preservation Info From? (circle) COC or Sample Container or None Noted			
15.	Number of Samples Received:	N/A		

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

Comments:

ALTA Analytical Laboratory
5070 Robert J. Mathews Parkway
El Dorado Hills, CA 95762
FAX# (916) 933-0940 Phone (916) 933-1640

- ALIA -

Centrum Analytical Laboratories, Inc.

Chain of Custody Record

Centrum Job #

1401 Research Park Drive, Suite 100
Riverside, CA 92507
Voice: 909.779.0310 ● 800.798.9336
Fax: 909.779.0344

3299 Hill Street, Suite 305
Signal Hill, CA 90806
Voice: 562.498.7005
Fax: 562.498.8617

www.centrum-labs.com lab@centrum-labs.com

Project No:	Project Name:
19592	BOEING SSFL

Project Manager:	Phone:	Fax:
MARILU ESCHER		

Client Name: (Report and Billing)	Address: (Report and Billing)
CENTRUM	

Please Circle Analyses Requested

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	8015M: Diesel, Fuel Screen, Carbon Chain	8015M: Gas only	8021B: BTEX/MtBE Only	418.1 (TRPH), 413.2, 1664	8290 DIOXINS	GC or GCMS Volatiles by 5035*	GCMS: 8260B, 8021B, 624, 524.2	GCMS: MtBE Conf. Only, BTEX/Oxygenates Only	GCMS: 8270C, 625	8080: Pesticides, PCBs, Pest/PCB		Metals: Title 22 (CAM), RCRA, PP	pH, TDS, TSS, Conductivity	Flashpoint, Hex Cr		Remarks/Special Instructions
	MC032	11/9	1345	SOIL	19592-1						X											

Turn-Around Time

- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☒ Normal TAT

*Requires PRIOR approval, additional charges apply

Requested due date: _____

1) Relinquished by: (Sampler's Signature)	Date:	Time:	3) Relinquished by:	Date:	Time:
[signature]	11/27	2:45p			
2) Received by:	Date:	Time:	4) Received by:	Date:	Time:
GO FEDEX UPS			[signature]	11/28/14	1402
			5) Relinquished by:	Date:	Time:
			6) Received for Laboratory by:	Date:	Time:

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

To be completed by Laboratory personnel:

Samples chilled? ☐ Yes ☐ No ☐ From Field

Custody seals? ☐ Yes ☐ No

All sample containers intact? ☐ Yes ☐ No

☐ Courier ☐ UPS/Fed Ex ☐ Hand carried

Sample Disposal

- ☐ Client will pick up
- ☐ Return to client
- ☒ Lab disposal

Laboratory Notes:

Sample Locator No.

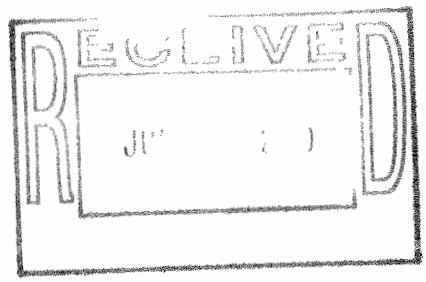
v5 0 1/01 coc-temp-both.xls

White Copy - Original (Accompanies Samples) Yellow Copy - Centrum Files Pink Copy - Centrum duplicate Gold Copy - Client Copy



SAMPLE DATA SUMMARY PACKAGE

SDG NO: 78305



SEVERN TRENT SERVICES

STL Burlington
Suite 1
208 South Park Drive
Colchester, VT 05446

Tel: 802 655 1203
Fax: 802 655 1248
www.stl-inc.com

July 18, 2000

Ms. Sue Scatolini
Ogden Environmental
5510 Morehouse Drive
San Diego, CA 92121

Re: Laboratory Project No. 20000
Case: ROCK; SDG 78305
Project: Rocketdyne

Dear Ms. Scatolini:

Enclosed are the analytical results of samples received intact by Severn Trent Laboratories (STL) on May 26, 27, and June 8, 2000. Laboratory numbers have been assigned and designated as follows:

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 05/26/00	ETR No: 78305	
419487	RB027	05/24/00	Water
419488	RB006	05/24/00	Water
	Received: 05/27/00	ETR No: 78323	
419622	RB003	05/25/00	Soil
419623	RB007	05/25/00	Water
419624	RB008	05/25/00	Water
419625	RB023	05/23/00	Soil
419625MS	RB023MS	05/23/00	Soil
419625MD	RB023MSD	05/23/00	Soil
419625DP	RB023REP	05/23/00	Soil
419626	RB077	05/24/00	Soil
419627	RB078	05/24/00	Soil
419628	RB004	05/25/00	Soil
419629	RB005	05/25/00	Soil
419630	RB079	05/25/00	Water
419631	RB024	05/24/00	Soil

SEVERN TRENT SERVICES

STL Burlington

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 05/27/00 ETR No: 78323 (Continued)		
419632	RB025	05/24/00	Soil
419633	RB029	05/25/00	Water
419634	RB043	05/24/00	Soil
419635	RB044	05/24/00	Soil
419636	RB046	05/24/00	Soil
419637	RB063	05/23/00	Soil
419639	RB028	05/25/00	Water
	Received: 06/08/00 ETR No: 78481		
420767	RB079	06/07/00	Water
420768	RB028	06/07/00	Water
420769	RB029	06/07/00	Water
420770	RB005	06/06/00	Soil
420771	RB080	06/06/00	Water

This data submittal contains results for the dioxin and PCB Congener analyses performed by Alta Analytical. If there are any questions regarding this submittal, please contact Lori Arnold at (802) 655-1203.

Sincerely,

Christopher A. Ouellette
Laboratory Director

CAO/rst
Enclosure

Cc: Elizabeth Wessling

SEVERN TRENT SERVICES

STL Burlington
Suite 1
208 South Park Drive
Colchester, VT 05446

Tel: 802 655 1203
Fax: 802 655 1248
www.stl-inc.com

July 7, 2000

Ms. Sue Scatolini
Ogden Environmental
5510 Morehouse Drive
San Diego, CA 92121

Re: Laboratory Project No. 20000
Case: ROCK; SDG 78305
Project: Rocketdyne

Dear Ms. Scatolini:

Enclosed are the analytical results of samples received intact by Severn Trent Laboratories (STL) on May 26, 27, and June 8, 2000. Laboratory numbers have been assigned and designated as follows:

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 05/26/00 ETR No: 78305		
419487	RB027	05/24/00	Water
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	Received: 05/27/00 ETR No: 78323		
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419623	RB007	05/25/00	Water
419624	RB008	05/25/00	Water
419625	RB023	05/23/00	Soil
419625MS	RB023MS	05/23/00	Soil
419625MD	RB023MSD	05/23/00	Soil
419625DP	RB023REP	05/23/00	Soil
419626	RB077	05/24/00	Soil
419627	RB078	05/24/00	Soil
419628	RB004	05/25/00	Soil
419629	RB005	05/25/00	Soil
419630	RB079	05/25/00	Water
419631	RB024	05/24/00	Soil

001

SEVERN TRENT SERVICES

STL Burlington

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 05/27/00 ETR No: 78323 (Continued)		
419632	RB025	05/24/00	Soil
419633	RB029	05/25/00	Water
419634	RB043	05/24/00	Soil
419635	RB044	05/24/00	Soil
419636	RB046	05/24/00	Soil
419637	RB063	05/23/00	Soil
419639	RB028	05/25/00	Water
	Received: 06/08/00 ETR No: 78481		
420767	RB079	06/07/00	Water
420768	RB028	06/07/00	Water
420769	RB029	06/07/00	Water
420770	RB005	06/06/00	Soil
420771	RB080	06/06/00	Water

Please note that samples requesting the analyses of Dioxins/Furans by Method 8290 and PCB Congeners by Method 1668 were subcontracted to Alta Analytical Laboratory in El Dorado Hills, California. These results are not currently available and will be submitted as a separate data package as soon as they become available.

The jar containing the sample RB005 was broken upon receipt at the laboratory. The laboratory received the replacement sample on June 8, 2000.

The water samples labeled, RB079, RB029, and RB028, which should have been extracted for Polynuclear Aromatic Hydrocarbons (PAH) were extracted using the OLC Pesticide method. When this problem was discovered, the holding time for the samples had expired. The samples, RB079, RB029, and RB028 were recollected and resubmitted to STL on June 8, 2000.

In the inorganic analysis of the sample labeled RB023, the responses for several elements in the serial dilution analysis were outside the established control limits. The recovery of antimony in the matrix

002

SEVERN TRENT SERVICES

STL Burlington

spike and the responses for selenium and boron in the duplicate, which were performed on the same sample, were also outside the control limit. The data was qualified according to the method requirements.

Due to the matrix of the soil samples, large negative concentrations for boron were exhibited.

In the PAH analysis of the method blank labeled SBLKE3, several target analytes were detected at concentrations that were below the method reporting limit. The laboratory suspects that these concentrations may be attributed to carryover from a previous sample injection.

In the PCB analysis, the surrogates for the sample, RB078, were diluted out during the analysis of target analytes. The sample, RB077, exhibited zero percent recovery of the surrogate, decachlorobiphenyl, on both analytical columns. The laboratory suspects that the low recovery was sample matrix related. The recovery of tetrachloro-m-xylene was within control criteria on both columns. The surrogate recoveries in the associated method blank, PBLKM1 and Laboratory Control Sample, M1LCS, were well within the control criteria.

If there are any questions regarding this submittal, please contact Lori Arnold at (802) 655-1203.

Sincerely,

Christopher A. Ouellette
Laboratory Director

CAO/rst
Enclosure

Cc: Elizabeth Wessling

Severn Trent Laboratories
55 South Park Drive, Colchester, VT 05446 Tel: (802) 655-1203
Committed To Your Success

COC # RB003

CHAIN OF CUSTODY RECORD

Report to:	Invoice to
Company: Ogden	Company:
Address: 5510 Morehouse Dr	Address:
San Diego, CA 92121	
Contact: Sue Scatolini	Contact:
Phone: (858) 458-9044	Phone:
Fax: (858) 458-0943	PO/SO #: Cooler 200
Contract/ Quote #:	

Sampler's Name: Susan Scatolini
Sampler's Signature: Susan Scatolini

Proj. No.: 313150002
Project Name: Rocketdyne
No./Type of Containers[2]

ANALYSIS REQUESTED

Lab use only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Note: Prev. Arachlor detec
RB077 ~2 ppm
RB078 ~6 ppm

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s) (lab report)	(Ogden use)	VOA	A/G 1 Lt.	250 ml	P/O	Metals	PAHs NOAA S&T	Dioxins NOAA S&T	PCB Congeners 1668	PCB Aroclor 8082	TOC 9060	Grain size	MS MSD	Lab Sample ID (Lab Use Only)
S	5/25	1500	X		RB003	SNFS02S01			2					X		X	X		
W	5/25	1430		X	RB007	SNSW02S01		2						X					
W	5/25	1415		X	RB008	SNSW03S01		2						X					
S	5/23	1700	X		RB023	RZFS01D01			3		X	X	X					X	
S	5/24	1200	X		RB077	OCSS03S01	Sleeve		1					X	X				
S	5/24	1110	X		RB078	CTSS02S01	Sleeve		1					X	X				

5/26

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Susan Scatolini	5/26/00	1620			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date: 5/27/00	Time: 1045

Remarks
RB077, RB078 - only 1 sleeve for both PCB methods - homogenize each sleeve before send portion for 1668.

Client's delivery of samples constitutes acceptance of Severn Trent Laboratories terms and conditions contained in the Price Schedule.

[1] Matrix WW - Wastewater W - Water S - Soil SD - Solid L - Liquid A - Air Bag C - Charcoal tube SL - Sludge O - Oil
Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O Plastic or other

STL cannot accept verbal changes. Please Fax written changes to (802) 655-1248

Severn Trent Laboratories
55 South Park Drive, Colchester, VT 05446 Tel: (802) 655-1203
Committed To Your Success

COC # RB024

CHAIN OF CUSTODY RECORD

Report to:	Invoice to
Company: Ogden	Company:
Address: 5510 Morehouse Drive, San Diego, CA 92121	Address:
Contact: Sue Scatolini	Contact:
Phone: (858) 458-9044	Phone:
Fax: (858) 458-0943	PO/SO #: Cooler 300
Contract/ Quote #:	

Sampler's Name: Susan Scatolini
Sampler's Signature: Susan Scatolini

Proj. No.: 31315000.2
Project Name: Rocketdyne
No./Type of Containers[2]

ANALYSIS REQUESTED

Lab use only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

★ Note: HOLD RB064 (CLSS04D01) until further notice

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s) (Client / lab report / Ogden use)	Lab Sample ID (Lab Use Only)	VOA	A/G 1 Lt.	250 ml	P/O	Metals	NOAA S+T PAHs	NOAA S+T Dioxins 1613	PCB Congeners 1668	PCB Aroclors 8082	TOC	Grainsize	MS/MSD
S	5/24	1030	X		RB024	RZFS02S01			1		X	X	X			X		
S	5/24	1115	X		RB025	RZFS03S01			1+2@		X	X	X			X	X	
W	5/25	1200	~~X~~	X	RB029	RZSW03S01		4		1	X	X	X					
S	5/24	0850	X		RB043	BVSS05S01			2		X			X	X			
S	5/24	0935	X		RB044	BVSS06S01			2		X			X				
S	5/24	0920	X		RB046	BVSS08S01			2		X			X				
S	5/23	1350	X		RB063	CLSS07S01		sleeve	1			X	X					
S	5/23	1140	X		RB064	CLSS04D01		sleeve	1			X	X					

5/26/00

Hold sample RB064

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Susan Scatolini	5/26/00	1600			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
				5/27/00	1045

Remarks
RB063/RB064 - only 1 sleeve - low volume
Homogenize RB043 thoroughly prior to sending to Alta for 1668

Client's delivery of samples constitutes acceptance of Severn Trent Laboratories terms and conditions contained in the Price Schedule.

[1] Matrix WW Wastewater W - Water S - Soil SD - Solid L - Liquid A Air Bag C Charcoal tube SL - Sludge O - Oil

Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O Plastic or other

STL cannot accept verbal changes. Please Fax written changes to (802) 655-1248

Severn Trent Laboratories
208 South Park Drive, Suite 1, Colchester, VT 05446 Tel: (802) 655-1203

Control # RB079

CHAIN OF CUSTODY RECORD

Report to:	Invoice to
Company: Ogden Environmental	Company:
Address: 5510 Morehouse Dr.	Address:
San Diego, CA 92121	
Contact: Sue Scatolini	Contact:
Phone: (858) 458-9044	Phone:
Fax: (858) 458-0943	PO/SO #:
Contract/ Quote #:	

Sampler's Name: Susan Scatolini

Sampler's Signature: Susan Scatolini

Proj. No.: 313150002

Project Name: Rocketdyne

No /Type of Containers[2]

ANALYSIS REQUESTED: PAH NOAA S+T; PCB 1668; Lipids; Dioxins 1613; Metals NOAA S+T

Lab use only
Due Date:

Temp. of coolers when received (C°): 1: 4 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt	250 ml	P/O	PAH NOAA S+T	PCB 1668	Lipids	Dioxins 1613	Metals NOAA S+T	Lab Sample ID (Lab Use Only)
W	6/7/00	1050		X	RB079 / RZQW01E01		2			X					
W	6/7/00	1100		X	RB028 / RZSW02S01		2			X					
W	6/7/00	1110		X	RB029 / RZSW03S01		2			X					
T	5/22/00	1845		X	RB019 / SNFI03S01				1		X	X			
T	5/25/00	1700		X	RB017 / SNFI01S01				1		X	X			
T	5/23/00	1008		X	RB018 / SNFI02S01				1		X	X			
T	6/7/00	1000		X	RB034 / RZAI01S01				1	X		X	X	X	
T	6/7/00	1030		X	RB035 / RZAI02S01				1	X		X	X	X	
T	5/24	1600		X	RB040 / RZFI03S01				1	X		X	X	X	
~~T~~	~~5/25~~	~~1050~~		~~X~~	~~RB041~~ 11										

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Susan Scatolini	6/7/00	1300			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time	Received by: (Signature)	Date: 6/8/00	Time: 0930

Remarks
Hold RB019, RB017, RB018
RB040 - Split for DTSC

Client's delivery of samples constitutes acceptance of Severn Trent Laboratories terms and conditions contained in the Price Schedule.

Matrix: WW Wastewater W Water S - Soil SD Solid L - Liquid A Air Bag C Charcoal tube SL - Sludge O - Oil

Container: VOA 40 ml vial A/G Amber Or Glass 1 Liter 250 ml Glass wide mouth P/O Plastic or other

STL cannot accept verbal changes. Please Fax written changes to (802) 655-1248

Severn Trent Laboratories
208 South Park Drive, Suite 1, Colchester, VT 05446 Tel: (802) 655-1203

Control # RB080

CHAIN OF CUSTODY RECORD

Report to:		Invoice to	
Company:	Ogden Environmental	Company:	
Address:	5510 Morehouse Dr. San Diego, CA 92121	Address:	
Contact:	Sue Scatolini	Contact:	
Phone:	(858) 458-9044	Phone:	
Fax:	(858) 458-0943	PO/SO #:	
Contract/ Quote #:			

Sampler's Name: Susan Scatolini
Sampler's Signature: Susan Scatolini

Proj. No.: 313150002 0003 0004
Project Name: Rocketdyne
No./Type of Containers[2]

ANALYSIS REQUESTED

Lab use only
Due Date:

Temp. of coolers when received (C°): 1 12 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt	250 ml	P/O	Metals - NOAA S&T	PAH - NOAA S&T	PCB - 1668	Dioxins 1613			HOLD	SPLIT for DTSC as well see fax			Lab Sample ID (Lab Use Only)
W	6/6/00	1415		X	RB080 / RZQW01F01		6		1	X	X	X	X							
T	5/25/00	1600			RB009 / SNAP01S01				1			X				X				
T	5/25/00	1545			RB012 / SNAP04S01				1			X				X				
T	5/25/00	1200			RB030 / RZAP01S01				1	X	X		X				X			
T	5/25/00	1020			RB033 / RZAP04S01				1	X	X		X				X			

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Susan Scatolini	6/6/00	1800			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
			[signature]	6/8/00	0930

Remarks
RB030 & RB033 will be split for DTSC as well
RB009 & RB012 Hold until sediment results completed.

Client's delivery of samples constitutes acceptance of Severn Trent Laboratories terms and conditions contained in the Price Schedule.

Matrix: WW Wastewater W Water S - Soil SD - Solid L - Liquid A Air Bag C Charcoal tube SL - Sludge O Oil
Container: VOA 40 ml vial A/G Amber Or Glass 1 Liter 250 ml Glass wide mouth P/O Plastic or other

STL cannot accept verbal changes. Please Fax written changes to (802) 655-1248

Severn Trent Laboratories
Committed To Your Success
208 South Park Drive, Suite 1, Colchester, VT 05446 Tel: (802) 655-1203

CHAIN OF CUSTODY RECORD

Report to:	Invoice to
Company: STL	Company:
Address: 208 S. PARK DR COLCHESTER, VT 05446	Address:
Contact: LORI ARNOLD	Contact:
Phone:	Phone:
Fax:	PO/SO #:
Contract/ Quote #:	
Sampler's Name	Sampler's Signature

ANALYSIS REQUESTED

DIOXIN 1613
PCB CONGENERS 1668

Lab use only
Due Date:

Temp. of coolers when received (C°):

1	2	3	4	5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Proj. No. | Project Name | No./Type of Containers[2]

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt.	250 ml	P/O										Lab Sample ID (Lab Use Only)
W	5/25/00	1600			RB079		3				X	X							1015
	5/25/00	1120			RB028		2				X								
	5/25/00	1200			RB029		2				X								
	5/25/00	1415			RB068		2					X							
	5/25/00	1430			RB097 LTH 6/1/00		2					X							

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	5/27/00	1615			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Remarks
SDG : 78305
DUE : 6/22/00

Client's delivery of samples constitutes acceptance of Severn Trent Laboratories terms and conditions contained in the Price Schedule.

[1] Matrix WW - Wastewater W - Water S - Soil SD - Solid L - Liquid A - Air Bag C - Charcoal tube SL - Sludge O - Oil

[2] Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other _____

STL cannot accept verbal changes. Please Fax written changes to (802) 655-1248

Severn Trent Laboratories
208 South Park Drive, Suite 1, Colchester, VT 05446 Tel: (802) 655-1203

Committed To Your Success

CHAIN OF CUSTODY RECORD

Report to:	Invoice to
Company: STL	Company:
Address: 208 S. PARK DR COLCHESTER, VT 05446	Address:
Contact: LORI ARNOLD	Contact:
Phone:	Phone:
Fax:	PO/SO #:
Contract/ Quote #:	

Sampler's Name

Sampler's Signature

ANALYSIS REQUESTED: PCB CONGENER 1668; DIOXIN/FURAN 1613B

Lab use only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y

Intact N / Y

Screened For Radioactivity ☐

Proj. No.

Project Name: OGDEN

No /Type of Containers[2]

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt.	250 ml	P/O	Lab Sample ID (Lab Use Only)
S	6/6/00	1130			RB005			2		10157 Replacement for breakage.
W	↓	1415			RB080		4			10158

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	6/12/00	1630			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Remarks
SDG: 78305
DUE: 6/22/00

Client's delivery of samples constitutes acceptance of Severn Trent Laboratories terms and conditions contained in the Price Schedule.

[1] Matrix WW - Wastewater W - Water S - Soil SD - Solid L - Liquid A - Air Bag C - Charcoal tube SL - Sludge O - Oil

[2] Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other _____

STL cannot accept verbal changes. Please Fax written changes to (802) 655-1248

NARRATIVE

SEVERN TRENT SERVICES

STL Burlington
Suite 1
208 South Park Drive
Colchester, VT 05446

Tel: 802 655 1203
Fax: 802 655 1248
www.stl-inc.com

July 7, 2000

Ms. Sue Scatolini
Ogden Environmental
5510 Morehouse Drive
San Diego, CA 92121

Re: Laboratory Project No. 20000
Case: ROCK; SDG 78305
Project: Rocketdyne

Dear Ms. Scatolini:

Enclosed are the analytical results of samples received intact by Severn Trent Laboratories (STL) on May 26, 27, and June 8, 2000. Laboratory numbers have been assigned and designated as follows:

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	Received: 05/27/00 ETR No: 78323		
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419623	RB007	05/25/00	Water
419624	RB008	05/25/00	Water
419625	RB023	05/23/00	Soil
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419625MD	RB023MSD	05/23/00	Soil
419625DP	RB023REP	05/23/00	Soil
419626	RB077	05/24/00	Soil
419627	RB078	05/24/00	Soil
419628	RB004	05/25/00	Soil
419629	RB005	05/25/00	Soil
419630	RB079	05/25/00	Water
419631	RB024	05/24/00	Soil

001

SEVERN TRENT SERVICES

STL Burlington

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 05/27/00 ETR No: 78323 (Continued)		
419632	RB025	05/24/00	Soil
419633	RB029	05/25/00	Water
419634	RB043	05/24/00	Soil
419635	RB044	05/24/00	Soil
419636	RB046	05/24/00	Soil
419637	RB063	05/23/00	Soil
419639	RB028	05/25/00	Water
	Received: 06/08/00 ETR No: 78481		
420767	RB079	06/07/00	Water
420768	RB028	06/07/00	Water
420769	RB029	06/07/00	Water
420770	RB005	06/06/00	Soil
420771	RB080	06/06/00	Water

Please note that samples requesting the analyses of Dioxins/Furans by Method 8290 and PCB Congeners by Method 1668 were subcontracted to Alta Analytical Laboratory in El Dorado Hills, California. These results are not currently available and will be submitted as a separate data package as soon as they become available.

The jar containing the sample RB005 was broken upon receipt at the laboratory. The laboratory received the replacement sample on June 8, 2000.

The water samples labeled, RB079, RB029, and RB028, which should have been extracted for Polynuclear Aromatic Hydrocarbons (PAH) were extracted using the OLC Pesticide method. When this problem was discovered, the holding time for the samples had expired. The samples, RB079, RB029, and RB028 were recollected and resubmitted to STL on June 8, 2000.

In the inorganic analysis of the sample labeled RB023, the responses for several elements in the serial dilution analysis were outside the established control limits. The recovery of antimony in the matrix

002

SEVERN TRENT SERVICES

STL Burlington

spike and the responses for selenium and boron in the duplicate, which were performed on the same sample, were also outside the control limit. The data was qualified according to the method requirements.

Due to the matrix of the soil samples, large negative concentrations for boron were exhibited.

In the PAH analysis of the method blank labeled SBLKE3, several target analytes were detected at concentrations that were below the method reporting limit. The laboratory suspects that these concentrations may be attributed to carryover from a previous sample injection.

In the PCB analysis, the surrogates for the sample, RB078, were diluted out during the analysis of target analytes. The sample, RB077, exhibited zero percent recovery of the surrogate, decachlorobiphenyl, on both analytical columns. The laboratory suspects that the low recovery was sample matrix related. The recovery of tetrachloro-m-xylene was within control criteria on both columns. The surrogate recoveries in the associated method blank, PBLKM1 and Laboratory Control Sample, M1LCS, were well within the control criteria.

If there are any questions regarding this submittal, please contact Lori Arnold at (802) 655-1203.

Sincerely,

Christopher A. Ouellette
Laboratory Director

CAO/rst
Enclosure

Cc: Elizabeth Wessling

SEVERN TRENT SERVICES

STL Burlington

Metals Qualifiers

E (furnace) -	Analytical spike recovery is less than 40%. An explanatory note is included on the specific form to which applies.
E (ICP) -	The reported value is estimated because of the presence of interference
M-	Duplicate injection precision is not met.
N-	Matrix spiked sample recovery not within control limits.
S-	The reported value was determined by the Method of Standards Additions.
+-	Correlation coefficient for the MSA is less than 0.995.
W -	Post digestion for furnace AA analysis is out of control limits (85-115%), while sample concentration is less than 50% of spike concentration.
*-	Duplicate analysis not within control limits.

Concentration Qualifiers

B -	Entered if the report is less than the Contract Required Detection Limit (CRDL) but greater than the Instrument Detection Limit (IDL).
U-	Entered if the analyte was analyzed for but not detected, less than IDL.

Method Qualifiers

P-	for ICP
F-	for Furnace AA
CV-	for Manual Cold Vapor AA
AS-	for Semi-automated Spectrophotometric
NR-	if the analyte is not required to be analyzed

SEVERN TRENT SERVICES

STL Burlington

The following Qualifiers may be used when reporting any Organic Pa by Gas Chromatography (GC) or High Pressure Liquid Chromatography (HPLC). Any additional qualifiers used in the reports will be described in the case narrative. These flags are based on the EPA Contract Laboratory Program statement of work.

GC/HPLC Qualifiers

U - Indicates compound was analyzed for but not detected above the reporting limit.

J - Indicates an estimated value. This flag is used when the result is less than the reporting limit, but > ½ reporting limit.

P - This flag is used for a pesticide/Aroclor target analyte when there is greater than 25.0% difference for detected concentrations between the two analytical columns. The lower of the two values is reported on the Form I and flagged with a "P".

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS.

B - This flag is used when the analyte is found in the associated blank as well as in the sample. It indicated possible/probable blank contamination and warns the data user to take appropriate action. Only the samples get a "B" flag. The method blank does not.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor. This flag alerts data users that any discrepancies between the concentrations reported for the dilutions may be due to dilution of the sample or extract. It additionally indicates that spike recoveries may have been diluted below quantifiable levels.

E - This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis. If one or more compounds have a response greater than the upper level of calibration range, the extract shall be diluted and re-analyzed.

X,Y,Z - Laboratory defined flags. These flags must be fully described, and such description attached to the Sample Data Summary Package and the case Narrative. Begin by using "X" and go on to "Y" as necessary. These flags may also be used to combine several flags, as needed.

SAMPLE HANDLING

MARK THOMSON
OGDEN ENVIRONMENTAL
5510 MOREHOUSE DR
SAN DIEGO CA 92121
(858)458-9044

SHIP DATE: 25MAY00
ACC# 122142302

ACTUAL WGT: 47 LBS MAN-WT
DIMMED 23 X 13 X 15
(802)655-1203

TO:
SEVERN TRENT LABORATORIES
208 SOUTH PARK DRIVE
SUITE 1
COLCHESTER VT 05446

4746 9120 1933 FedEx.

REF: 31315000206063171 DON B.

PRIORITY OVERNIGHT FRI

CAD# 0013048 25MAY00

Deliver by:
26MAY00

TRK# 4746 9120 1933 Form 0201

BTV AA

05446 -VT-US XB BTVA

15303-077.SP G.H. 1/99.

5/26/00 0930

1996

FedEx

FedEx Tracking Number 821278693420

Form I.D. No 0200

1 From

Date

Sender's Name Phone

Company

Address

Dept. Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name Phone

Company

Address

We cannot deliver to P.O. boxes or P.O. ZIP codes

Dept./Floor/Suite/Room

To "HOLD" at FedEx location, print FedEx address here

City State ZIP

8212 7869 3420

5/27/00

1045

4a Express Package Service — *Packages up to 150 lbs.* Delivery commitment may be later in some areas

- [x] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day* — Second business day
- [ ] FedEx Express Saver* — Third business day

* FedEx Letter Rate not available. Minimum charge: One-pound rate

4b Express Freight Service — *Packages over 150 lbs.* Delivery commitment may be later in some areas

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation

5 Packaging * Declared value limit $500

- [ ] FedEx Letter*
- [ ] FedEx Pak*
- [x] Other Pkg. — Includes FedEx Box, FedEx Tube and customer pkg.

6 Special Handling

- [x] **Saturday Delivery** — Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] **Sunday Delivery** — Available for FedEx Priority Overnight to select ZIP codes
- [ ] **HOLD Weekday at FedEx Location** — Not available with FedEx First Overnight
- [ ] **HOLD Saturday at FedEx Location** — Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked

- [x] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous Goods cannot be shipped in FedEx packaging.

- [ ] Cargo Aircraft Only

7 Payment ***Bill to:*** Enter FedEx Acct. No. or Credit Card No. below. Obtain Recip. Acct.

- [x] Sender — Acct. No. in Section 1 will be billed
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Total Packages	Total Weight	Total Declared Value†	Total Charges
	1 LB	$ 00	

†Our liability is limited to $100 unless you declare a higher value. See back for details.

Credit Card Auth

8 Release Signature *Sign to authorize delivery without obtaining signature*

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Questions? Call 1·800·Go·FedEx® (800-463-3339)
Visit our Web site at www.fedex.com

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360

19969

FedEx

FedEx Tracking Number 821278694128

Form I.D. No 0200

1 From

Date 6/7/00

Sender's Name Sue Scatolin Phone [illegible]

Company [illegible]

Address 5510 [illegible]

Dept. Floor/Suite/Room

City [illegible] State [illegible] ZIP 72121

2 Your Internal Billing Reference

3 To

Recipient's Name [illegible] Phone [illegible]

Company [illegible]

Address [illegible]

We cannot deliver to PO boxes or PO ZIP codes

Dept. Floor/Suite/Room

To HOLD at FedEx location print FedEx address here

City [illegible] State VT ZIP [illegible]

8212 7869 4128

6/8/00 0930

4a Express Package Service — *Packages up to 150 lbs.* Delivery commitment may be later in some areas

- [X] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day* — Second business day
- [ ] FedEx Express Saver* — Third business day

* FedEx Letter Rate not available. Minimum charge: One-pound rate

4b Express Freight Service — *Packages over 150 lbs.* Delivery commitment may be later in some areas

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation

5 Packaging — Declared value limit $500

- [ ] FedEx Letter*
- [ ] FedEx Pak*
- [X] Other Pkg — includes FedEx Box, FedEx Tube and customer pkg

6 Special Handling

- [ ] **Saturday Delivery** — Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] **Sunday Delivery** — Available for FedEx Priority Overnight to select ZIP codes
- [ ] **HOLD Weekday at FedEx Location** — Not available with FedEx First Overnight
- [ ] **HOLD Saturday at FedEx Location** — Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked

- [X] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous Goods cannot be shipped in FedEx packaging

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below

- [X] Sender — Acct. No. in Section 1 will be billed
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Total Packages	Total Weight	Total Declared Value†	Total Charges
1	42	$ .00	Credit Card Auth

†Our liability is limited to $100 unless you declare a higher value. See back for details

8 Release Signature *Sign to authorize delivery without obtaining signature*

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Questions? Call 1·800·Go·FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

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360

1996C

SEVERN TRENT LABORATORIES LOG-IN SHEET - Form DC-1

Lab Name: Severn Trent Laboratories - VT Page 1 of 1

Received By (Print Name): DONALD C. DAWICKI JR. Log-in Date: 5/31/00

Received By (Signature):

Case Number: ROCK

Sample Delivery Group No: 78305

ETR Number: 78323

REMARKS:

1. **Custody Seal** ~~Present~~/~~Absent~~* ~~Intact~~/~~Broken~~
2. **Custody Seal Nos.:** N/A
3. **Chain-of-Custody Records** ~~Present~~/~~Absent~~*
4. **Sample Information Sheets** ~~Present~~/~~Absent~~*
5. **Airbill** ~~Airbill~~/~~Sticker~~ ~~Present~~/~~Absent~~*
6. **Airbill No.:** 8212 7869 3420
7. **Sample Tags** ~~Present~~/~~Absent~~* **Sample Tag Numbers** ~~Listed~~/Not Listed on Chain-of-Custody
8. **Sample Condition:** ~~Intact~~/~~Broken~~* ~~Leaking~~ SEE REMARKS
9. **Does information on the custody records, sample information sheets, sample tags and labels agree?** Yes/No*
10. **Date Received at Lab:** 5/27/00
11. **Time Received:** 1045
12. **Cooler Temperature:** 3.3, 5.4

Sample Transfer

Fraction: ALL

Area #: LRC 4 FRIDGE

By: DS

On: 5/27/00

CLIENT SAMPLE #	SAMPLE TAG #	ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC.
RB003	N/A	419622	Were air bubbles present
RB007	"	419623	in any VOA vials? N/A
RB008	"	419624	SAMPLES RECEIVED MOSTLY
RB023	"	419625	INTACT IN COOLERS
RB077	"	419626	W/ICE. COOLERS WERE
RB078	"	419627	INTACT AS WERE
RB004	"	419628	CUSTODY SEALS ON
RB005	"	419629	OUTSIDE OF COOLERS.
RB079	"	419630	1 OF 6 1L AMBER
RB024	"	419631	BOTTLES FOR RB079
RB025	"	419632	WAS BROKEN. SUFFICIENT
RB029	"	419633	VOLUME REMAINS.
RB043	"	419634	THE ONLY JAR FOR
RB044	"	419635	RB005 WAS BROKEN
RB046	"	419636	DURING SHIPMENT, ONLY
RB063	"	419637	A ZIPLOCK BAG FOR
RB064	"	419638	GRAIN SIZE REMAINS.
RB028	"	419639	TOC + GRAIN SIZE
			WILL BE ANALYZED
			FOR THIS SAMPLE.

* Contact Project Director

Reviewed by: _____ Logbook No.: _____

Date: _____ Logbook Page No.: 1998

** COOLER RECEIPT CHECKLIST **

WERE CUSTODY SEALS PRESENT ON THE COOLERS?

(YES) NO

IF SO, WERE THERE CUSTODY SEAL NUMBERS?

YES (NO)

LIST THE CUSTODY SEAL NUMBERS. _____ _____

WHAT TYPE OF COOLING WAS UTILIZED?

(ICE) MELTED ICE (PACKS) NONE

COOLER TEMPERATURE (degrees c): 4°

DATE AND TIME COOLER RECEIVED: 5/27/00 1045

DO SAMPLES APPEAR TO BE INTACT: (YES) NO

DO ANY SAMPLES HAVE SHORT HOLDING TIMES?
(less than seven days)

WET CHEM	YES	NO
EXTRACTABLES	YES	NO
UNPRES VOA	YES	NO
RADIATION SCREEN RESULTS <0.05 MR/HR	(YES)	NO

** COOLER RECEIPT CHECKLIST **

WERE CUSTODY SEALS PRESENT ON THE COOLERS?

(YES) NO

IF SO, WERE THERE CUSTODY SEAL NUMBERS?

YES (NO)

LIST THE CUSTODY SEAL NUMBERS. _____ _____

WHAT TYPE OF COOLING WAS UTILIZED?

ICE MELTED ICE (PACKS) NONE

COOLER TEMPERATURE (degrees c): 4°

DATE AND TIME COOLER RECEIVED: 6/8/00 0930

DO SAMPLES APPEAR TO BE INTACT: YES NO

DO ANY SAMPLES HAVE SHORT HOLDING TIMES?
(less than seven days)

WET CHEM	**YES**	**NO**
EXTRACTABLES	**YES**	**NO**
UNPRES VOA	**YES**	**NO**
RADIATION SCREEN RESULTS <0.05 MR/HR	(YES)	**NO**

ALTA

July 12, 2000

Alta Batch I.D.: 8554

Ms. Lori Arnold
Severn Trent Laboratory
208 South Park Dr.
Colchester, VT 05446

Dear Ms. Arnold,

Enclosed are the results for two aqueous sample received at Alta Analytical Laboratory on May 27, 2000. This work was identified as SDG #78305. Sample RB027 was analyzed using EPA Method 1613 for tetra to octa chlorinated dioxins and dibenzofurans. Sample RB006 was analyzed by EPA Method 1668 for selected PCB congeners. Routine turnaround time was requested for this work.

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

Alta Analytical Laboratory remains committed to serving you in the most effective manner. Should you have any questions or need additional information and technical support, please do not hesitate to contact me. Thank you for choosing Alta part of your analytical support team.

Sincerely,

Shelly A. Weagraff
HRMS Services Coordinator

Alta Analytical Laboratory Inc.
5070 Robert J. Mathews Parkway
El Dorado Hills, CA 95762
FAX (916) 933-0940
(916) 933-1640

Severn Trent Laboratories
208 South Park Drive, Suite 1, Colchester, VT 05446 Tel: (802) 655-1203

CHAIN OF CUSTODY RECORD

Report to:		Invoice to	
Company:	STL	Company:	
Address:	208 S. PARK DR COLCHESTER, VT 05446	Address:	
Contact:	LORI ARNOLD	Contact:	
Phone:		Phone:	
Fax:		PO/SO #:	42994
Contract/ Quote #:			

Sampler's Name

Sampler's Signature

Proj. No.

Project Name

No./Type of Containers[2]

ANALYSIS REQUESTED

Lab use only
Due Date:

Temp. of coolers when received (C°):

1	2	3	4	5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt	250 ml	P/O	DI OX IN 1613B	PCB CONGENERS 1668								Lab Sample ID (Lab Use Only)
W	5/24/00	1600			RB027		2			X									
↓	↓	1645			RB006		2				X								

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]	5/26/00	1650	[signature] KIFAH	5/30/00	1000
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Remarks
ATTN SHELLY WEAGRAFF
SDG: 78305 DUE: 6/21/00

Client's delivery of samples constitutes acceptance of Severn Trent Laboratories terms and conditions contained in the Price Schedule.

Matrix WW Wastewater W - Water S - Soil SD - Solid L - Liquid A - Air Bag C - Charcoal tube SL - Sludge O - Oil
Container VOA 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other _____

STL cannot accept verbal changes. Please Fax written changes to (802) 655-1248

ALTA

Section I: Sample Inventory Report

Date Received: 5/27/00

Alta Lab. ID	Client Sample ID
8554-001	RB027
8554-002	RB006

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 8554 **Client/Protocol No.** _____

		YES	NO	NA
1.	Date Samples Arrived: 5-27-00 Initials: [illegible] Location: WR-1			
2.	Time / Date logged in: 12:31p 5-30-00 Initials: [illegible] Location: R-1			
3.	Samples Arrived By: (circle) (FedEx) UPS World Courier Other: _____			
4.	Shipping Preservation: (circle) (Ice) / Blue Ice / Dry Ice / None **Temp** °C 6°			
5.	Shipping Container(s) Intact"? If not, describe condition in comment section.	✓		
6.	Shipping Container(s) Custody Seals Present? Intact? If not intact, describe condition in comment section.	✓ ✓		
7.	Shipping Documentation Present? (circle) (Shipping Label) Airbill Tracking Number 4560 3501 4645	✓		
8.	Sample Custody Seal(s) Present? No. of Seals ~~1~~ (3) or Seal No. _____ (3) Intact? If not intact, describe condition in comment section.	✓	X	(3) [illegible] 5-30-00
9.	Sample Container Intact? If no, indicate sample condition in comment section.	✓		
10.	Chain of Custody (COC) or other Sample Documentation Present?	✓		
11.	COC/Documentation Acceptable? If no, complete COC Anomaly Form.	✓		
12.	Shipping Container (circle): ALTA (Client) ~~Return~~ or (Return) or Disposed			
13.	Container(s) and/or Bottle(s) Requested?		✓	
14.	Sample Control Check In/Out Log Completed? (HRMS Only)	X		
15.	Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted			X
16.	Number of Samples Received: 4			

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

Comments:

ALTA

July 12, 2000

Alta Batch I.D.: 8562

Ms. Lori Arnold
Severn Trent Laboratory
208 South Park Dr.
Colchester, VT 05446

Dear Ms. Arnold,

Enclosed are the results for the five aqueous samples received at Alta Analytical Laboratory on May 31, 2000. This work was identified as SDG #78305. Samples RB079, RB028 and RB029 were analyzed using EPA Method 1613 for tetra to octa chlorinated dioxins and dibenzofurans. Samples RB079, RB008 and RB007 were analyzed using EPA Method 1668 for selected PCB congeners. Routine turnaround time was requested for this work.

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

Alta Analytical Laboratory remains committed to serving you in the most effective manner. Should you have any questions or need additional information and technical support, please do not hesitate to contact me. Thank you for choosing Alta part of your analytical support team.

Sincerely,

Shelly A. Weagraff
HRMS Services Coordinator

Alta Analytical Laboratory Inc.
5070 Robert J. Mathews Parkway
El Dorado Hills, CA 95762
FAX (916) 933-0940
(916) 933-1640

Severn Trent Laboratories
208 South Park Drive, Suite 1, Colchester, VT 05446 Tel: (802) 655-1203

Committed To Your Success

CHAIN OF CUSTODY RECORD

Report to:		Invoice to	
Company:	STL	Company:	
Address:	208 S. PARK DR COLCHESTER, VT 05446	Address:	
Contact:	LORI ARNOLD	Contact:	
Phone:		Phone:	
Fax:		PO/SO #:	
Contract/ Quote #:			

Sampler's Name

Sampler's Signature

Proj. No.

Project Name

No./Type of Containers[2]

ANALYSIS REQUESTED

Lab use only
Due Date:

Temp. of coolers when received (C°):

1	2	3	4	5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt	250 ml	P/O	DIOXIN 1613	PCB CONGENERS 1668	Lab Sample ID (Lab Use Only)
W	5/25/00	1600			RB079		3			X	X	
↓	5/25/00	1120			RB028		2			X		
	5/25/00	1200			RB029		2			X		
	5/25/00	1415			RB068		2				X	
↓	5/25/00	1430			~~RB009~~ ③ PH. 6.1-00 ALTA RB007		2				X	

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]	5/27/00	1615	[signature] K. FLETT ALTA	5/31/00	1000
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Remarks
SDG: 78305
DUE: 6/22/00

Client's delivery of samples constitutes acceptance of Severn Trent Laboratories terms and conditions contained in the Price Schedule.

[1] Matrix WW - Wastewater W - Water S - Soil SD - Solid L - Liquid A - Air Bag C - Charcoal tube SL - Sludge O - Oil
[2] Container VOA 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other _____

STL cannot accept verbal changes. Please Fax written changes to (802) 655-1248

ALTA

Section I: Sample Inventory Report

Date Received: 5/31/00

Alta Lab. ID	Client Sample ID
8562-001	RB079
8562-002	RB028
8562-003	RB029
8562-004	RB007
8562-005	RB008

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 8562 **Client/Protocol No.** _____

1. Date Samples Arrived: 5-31-00 Initials: JM Location: WR-1			
2. Time / Date logged in: 5-31-00 1100 Initials: JM Location: WR-1			
3. Samples Arrived By: (circle) FedEx UPS World Courier Other: _____			
4. Shipping Preservation: (circle) Ice / ~~Blue Ice~~ / Dry Ice / None **Temp** °C _____			
	YES	**NO**	**NA**
5. Shipping Container(s) Intact"? If not, describe condition in comment section.	X		
6. Shipping Container(s) Custody Seals Present?	X		
Intact? If not intact, describe condition in comment section.	X		
7. Shipping Documentation Present? (circle) Shipping Label ~~Airbill~~ Tracking Number _____ 4560 3501 4667 _____	X		
8. Sample Custody Seal(s) Present? No. of Seals _____ or Seal No. _____		X	
Intact? If not intact, describe condition in comment section.			X
9. Sample Container Intact? If no, indicate sample condition in comment section.	X		
10. Chain of Custody (COC) or other Sample Documentation Present?	X		
11. COC/Documentation Acceptable? If no, complete COC Anomaly Form.	X		
12. Shipping Container (circle): ALTA Client Retain or Return or Disposed			
13. Container(s) and/or Bottle(s) Requested?		X	
14. Sample Control Check In/Out Log Completed? (HRMS Only)	X		
15. Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N			
Preservation Info From? (circle) COC or Sample Container or None Noted			X
16. Number of Samples Received: _____			

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

Comments: COC shows RB009 Should Be RB007 Per client FAX

ALTA

July 13, 2000

Alta Batch I.D.: 8621

Ms. Lori Arnold
Severn Trent Laboratory
208 South Park Dr.
Colchester, VT 05446

Dear Ms. Arnold,

Enclosed are the results for the two aqueous samples received at Alta Analytical Laboratory on June 13, 2000. This work was identified as SDG #78305. Sample RB080 was analyzed using EPA Method 1613 for tetra to octa chlorinated dioxins and dibenzofurans and EPA Method 1668 for selected PCB congeners. Sample RB005 was analyzed for selected PCB congeners only. Routine turnaround time was requested for this work.

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

Alta Analytical Laboratory remains committed to serving you in the most effective manner. Should you have any questions or need additional information and technical support, please do not hesitate to contact me. Thank you for choosing Alta part of your analytical support team.

Sincerely,

Shelly A. Weagraff
HRMS Services Coordinator

Alta Analytical Laboratory Inc.
5070 Robert J. Mathews Parkway
El Dorado Hills, CA 95762
FAX (916) 933-0940
(916) 933-1640

Severn Trent Laboratories
208 South Park Drive, Suite 1, Colchester, VT 05446 Tel: (802) 655-1203

Committed To Your Success

CHAIN OF CUSTODY RECORD

Report to:
Company: STL
Address: 208 S. PARK DR
COLCHESTER, VT 05446
Contact: LORI ARNOLD
Phone:
Fax:
Contract/ Quote #:

Invoice to
Company:
Address:
Contact:
Phone:
PO/SO #:

Sampler's Name
Sampler's Signature

Lab use only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Proj. No.
Project Name: OGDEN

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	No./Type of Containers[2] VOA	A/G 1 Lt	250 ml	P/O	ANALYSIS REQUESTED: PCB CONGENER 1668	DIOXIN/FURAN 1613B	Lab Sample ID (Lab Use Only)
S	6/6/00	1130			RB005			2		X		
W	↓	1415			RB080		4			X	X	

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	6/12/00	1630		6/13/00	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date: 6/13/00	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Remarks
SDG: 78305
DUE: 6/22/00

Client's delivery of samples constitutes acceptance of Severn Trent Laboratories terms and conditions contained in the Price Schedule.

[1] Matrix WW Wastewater W - Water S - Soil SD - Solid L - Liquid A - Air Bag C - Charcoal tube SL - Sludge O - Oil

[2] Container VOA 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other

STL cannot accept verbal changes. Please Fax written changes to (802) 655-1248

Section I: Sample Inventory Report

Date Received: **6/13/00**

Alta Lab. ID	Client Sample ID
8621-001	RB005
8621-002	RB080

NEEDS QA REVIEW

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 8621 **Client/Protocol No.** _____

1. Date Samples Arrived: 6-13-00 Initials: [illegible] Location: R-1			
2. Time / Date logged in: 6-13-00 Initials: [illegible] Location: R-1			
3. Samples Arrived By: (circle) (FedEx) UPS World Courier Other: _____			
4. Shipping Preservation: (circle) (Ice) Blue Ice / Dry Ice / None **Temp** °C 1°			
	YES	**NO**	**NA**
5. Shipping Container(s) Intact"? If not, describe condition in comment section.	✓		
6. Shipping Container(s) Custody Seals Present?	✓		
Intact? If not intact, describe condition in comment section.			
7. Shipping Documentation Present? (circle) Shipping Label (Airbill)	✓		
Tracking Number 4560 3501 5516			
8. Sample Custody Seal(s) Present? No. of Seals_____ or Seal No._____		✓	
Intact? If not intact, describe condition in comment section.			
9. Sample Container Intact? If no, indicate sample condition in comment section.	✓		
10. Chain of Custody (COC) or other Sample Documentation Present?	✓		
11. COC/Documentation Acceptable? If no, complete COC Anomaly Form.	✓		
12. Shipping Container (circle): ALTA (Client) Retain or ~~Return~~ or Disposed			
13. Container(s) and/or Bottle(s) Requested?		✓	
14. Sample Control Check In/Out Log Completed? (HRMS Only)	✓		
15. Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N		✓	
Preservation Info From? (circle) COC or Sample Container or None Noted			
16. Number of Samples Received: 2			

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

Comments:

ALTA

July 12, 2000

Alta Batch I.D.: 8587

Ms. Lori Arnold
Severn Trent Laboratory
208 South Park Dr.
Colchester, VT 05446

Dear Ms. Arnold,

Enclosed are the results for the eleven soil samples received at Alta Analytical Laboratory on June 3 15, 2000. This work was identified as SDG #78305. Samples RB023, RB024, RB025 and RB063 were analyzed using EPA Method 1613 for tetra to octa chlorinated dioxins and dibenzofurans. All other samples were analyzed using EPA Method 1668 for selected PCB congeners. A MS/MSD was run on RB023. Routine turnaround time was requested for this work.

The OCDD result reported on some samples exceeded the calibration limit but did not saturate the detector. These results are being reported with a "*" qualifier to indicate that the result is outside the calibration range.

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

Alta Analytical Laboratory remains committed to serving you in the most effective manner. Should you have any questions or need additional information and technical support, please do not hesitate to contact me. Thank you for choosing Alta part of your analytical support team.

Sincerely,

Shelly A. Weagraff
HRMS Services Coordinator

Alta Analytical Laboratory Inc.
5070 Robert J. Mathews Parkway
El Dorado Hills, CA 95762
FAX (916) 933-0940
(916) 933-1640

Severn Trent Laboratories
208 South Park Drive, Suite 1, Colchester, VT 05446 Tel: (802) 655-1203
Committed To Your Success

CHAIN OF CUSTODY RECORD

Report to:	Invoice to
Company: STL	Company:
Address: 208 S. PARK DR COLCHESTER, VT 05446	Address:
Contact: LORI ARNOLD	Contact:
Phone:	Phone:
Fax:	PO/SO #: 42994
Contract/ Quote #:	

Sampler's Name | Sampler's Signature

Lab use only
Due Date:

Temp. of coolers when received (C°): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

ANALYSIS REQUESTED

Proj. No. | Project Name | No./Type of Containers[2]

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt	250 ml	P/O	Dioxin 1613	PCB Congener 1668	Lab Sample ID (Lab Use Only)
S	5/25/00	1500			RB003						X	(A) Rec'd Broken 6-3-00
	5/23/00	1700			RB023 MS/MSD					X		
	5/24/00	1200			RB077						X	(A) Missing 6-3-00
	5/24/00	1110			RB078						X	
	5/25/00	1520			RB004						X	
	5/24/00	1030			RB024					X	X (M 6/2/00)	
	5/24/00	1115			RB025					X		
	5/24/00	0850			RB043						X	
	5/24/00	0935			RB044						X	
	5/24/00	0920			RB046						X	
↓	5/23/00	1350			RB063					X		

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	6/2/00	1625			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Remarks
SDG: 78305
DUE: 6/22/00

Client's delivery of samples constitutes acceptance of Severn Trent Laboratories terms and conditions contained in the Price Schedule.

Matrix WW Wastewater W - Water S - Soil SD - Solid L - Liquid A - Air Bag C - Charcoal tube SL - Sludge O - Oil
Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other

STL cannot accept verbal changes. Please Fax written changes to (802) 655-1248

Severn Trent Laboratories
208 South Park Drive, Suite 1, Colchester, VT 05446 Tel: (802) 655-1203

Committed To Your Success

CHAIN OF CUSTODY RECORD

Report to:	Invoice to
Company: STL	Company:
Address: 208 S. PARK DR. COLCHESTER, VT 05446	Address:
Contact: LORI ARNOLD	Contact:
Phone:	Phone:
Fax:	PO/SO #:
Contract/ Quote #:	

Sampler's Name

Sampler's Signature

Proj. No.

Project Name

No./Type of Containers[2]

ANALYSIS REQUESTED: PCB CONGENER 1668

Lab use only
Due Date:

Temp. of coolers when received (C°): 1 2 3 4 5

Custody Seal N / Y

Intact N / Y

Screened For Radioactivity ☐

Matrix[1]	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	VOA	A/G 1 Lt	250 ml	P/O	PCB CONGENER 1668	Lab Sample ID (Lab Use Only)
S	5/25/00	1500			RB003				1	X	
↓	5/24/00	1200			RB077				1	X	

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]	6/14/00	1630	[signature] K. Kitt ALTA	6/15/00	1100
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time	Received by: (Signature)	Date:	Time:

Remarks

SDG: 78305
DUE: 6/22/00

REPLACEMENT SAMPLES.

Client's delivery of samples constitutes acceptance of Severn Trent Laboratories terms and conditions contained in the Price Schedule.

[1] Matrix WW - Wastewater W - Water S - Soil SD - Solid L - Liquid A - Air Bag C - Charcoal tube SL - Sludge O - Oil

Container VOA - 40 ml vial A/G - Amber / Or Glass 1 Liter 250 ml - Glass wide mouth P/O - Plastic or other 60 ml GLASS JAR

STL cannot accept verbal changes. Please Fax written changes to (802) 655-1248

Section I: Sample Inventory Report

Date Received: 6/15/00

Alta Lab. ID	Client Sample ID
8587-001	RB003
8587-002	RB023
8587-003	RB077
8587-004	RB078
8587-005	RB004
8587-006	RB024
8587-007	RB025
8587-008	RB043
8587-009	RB044
8587-010	RB046
8587-011	RB063

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 8587 **Client/Protocol No.** _____

		YES	NO	NA
1.	Date Samples Arrived: 6-15-00 Initials: [illegible] Location: R-1			
2.	Time / Date logged in: 6-15-00 1600 Initials: [illegible] Location: R-1			
3.	Samples Arrived By: (circle) (FedEx) UPS World Courier Other: _____			
4.	Shipping Preservation: (circle) (Ice) / Blue Ice / Dry Ice / None **Temp** °C 4			
5.	Shipping Container(s) Intact"? If not, describe condition in comment section.	X		
6.	Shipping Container(s) Custody Seals Present?	X		
	Intact? If not intact, describe condition in comment section.	X		
7.	Shipping Documentation Present? (circle) Shipping Label (Airbill) Tracking Number 4560 3501 5674	X		
8.	Sample Custody Seal(s) Present? No. of Seals_____ or Seal No._____		X	
	Intact? If not intact, describe condition in comment section.			X
9.	Sample Container Intact? If no, indicate sample condition in comment section.	X		
10.	Chain of Custody (COC) or other Sample Documentation Present?	X		
11.	COC/Documentation Acceptable? If no, complete COC Anomaly Form.	X		
12.	Shipping Container (circle): ALTA (Client) Retain or (Return) or Disposed			
13.	Container(s) and/or Bottle(s) Requested?		X	
14.	Sample Control Check In/Out Log Completed? (HRMS Only)	X		
15.	Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N			X
	Preservation Info From? (circle) COC or Sample Container or None Noted			
16.	Number of Samples Received: _____			

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

Comments: Sample > RB003 & RB077

Attachment 10.B.1

SAMPLE LOG-IN CHECKLIST

ALTA Project No.: 8587 **Client/Protocol No.**_____

		YES	NO	NA
1.	Date Samples Arrived: 6-3-00 Initials: [illegible] Location: WK-1			
2.	Time / Date logged in: 6-7-00 1100 Initials: [illegible] Location: R-1			
3.	Samples Arrived By: (circle) FedEx UPS World Courier Other:_____			
4.	Shipping Preservation: (circle) Ice / Blue Ice / Dry Ice / None **Temp** °C 1			
5.	Shipping Container(s) Intact"? If not, describe condition in comment section.	X		
6.	Shipping Container(s) Custody Seals Present?	X		
	Intact? If not intact, describe condition in comment section.	X		
7.	Shipping Documentation Present? (circle) Shipping Label Airbill Tracking Number 456035014895	X		
8.	Sample Custody Seal(s) Present? No. of Seals_____ or Seal No._____		X	
	Intact? If not intact, describe condition in comment section.			X
9.	Sample Container Intact? If no, indicate sample condition in comment section.		X	
10.	Chain of Custody (COC) or other Sample Documentation Present?	X		
11.	COC/Documentation Acceptable? If no, complete COC Anomaly Form.	X		
12.	Shipping Container (circle): ALTA Client Retain or Return or Disposed			
13.	Container(s) and/or Bottle(s) Requested?		X	
14.	Sample Control Check In/Out Log Completed? (HRMS Only)	X		
15.	Drinking Water Sample? (HRMS Only) If yes, Acceptable Preservation? Y or N Preservation Info From? (circle) COC or Sample Container or None Noted			X
16.	Number of Samples Received:_____			

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

Comments: RB003 Rec'd Broken
RB077 Missing From Shipment.

SAMPLE HANDLING

1995



MARK THOMSON
OGDEN ENVIRONMENTAL
5510 MOREHOUSE DR
SAN DIEGO CA 92121
(858)458-9044

SHIP DATE: 25MAY00
ACC# 122142302

ACTUAL WGT: 47 LBS MAN-WT
DIMMED 23 X 13 X 15
(802)655-1203

TO:
SEVERN TRENT LABORATORIES
208 SOUTH PARK DRIVE
SUITE 1
COLCHESTER VT 05446

4746 9120 1933 FedEx.

REF: 31315000206063171 DON B.

PRIORITY OVERNIGHT FRI

CAD# 0013048 25MAY00

Deliver by:
26MAY00

TRK# 4746 9120 1933 Form 0201

BTV

AA

05446 -VT-US XB BTVA

15307 077/SP G.H. 11/99

5/26/00 0930

1996

FedEx

FedEx Tracking Number 821278693420

Form ID No 0200

1 From

Date

Sender's Name Phone

Company

Address Dept./Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name Phone

Company

Address Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

To HOLD at FedEx location, print FedEx address here

City State ZIP

821278693420

4a Express Package Service — *Packages up to 150 lbs.* Delivery commitment may be later in some areas

- [X] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day* — Second business day
- [ ] FedEx Express Saver* — Third business day

* FedEx Letter Rate not available. Minimum charge: One-pound rate

4b Express Freight Service — *Packages over 150 lbs.* Delivery commitment may be later in some areas

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation

5 Packaging — * Declared value limit $500

- [ ] FedEx Letter*
- [ ] FedEx Pak*
- [X] Other Pkg — Includes FedEx Box, FedEx Tube and customer pkg

6 Special Handling

- [X] **Saturday Delivery** — Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- [ ] **Sunday Delivery** — Available for FedEx Priority Overnight to select ZIP codes
- [ ] **HOLD Weekday at FedEx Location** — Not available with FedEx First Overnight
- [ ] **HOLD Saturday at FedEx Location** — Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked

- [X] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous Goods cannot be shipped in FedEx packaging

- [ ] Cargo Aircraft Only

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below

- [ ] Obtain Recip. Acct. No.
- [X] Sender — Acct. No. in Section 1 will be billed
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Total Packages	Total Weight	Total Declared Value†	Total Charges
1	18	$ 00	

Credit Card Auth

†Our liability is limited to $100 unless you declare a higher value. See back for details.

8 Release Signature *Sign to authorize delivery without obtaining signature*

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

5/27/00

1045

360

Questions? Call 1·800·Go·FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

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19464

FedEx

FedEx Tracking Number 821751554520

Form ID No 0200

1 From

Date 6/9/

Sender's Name

Phone

Company

Address

Dept/Floor/Suite/Room

City State ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name

Phone

Company

Address

Dept/Floor/Suite/Room

City State VT ZIP

8217 5155 4520

6/8/00 0930

4a Express Package Service — *Packages up to 150 lbs*

Delivery commitment may be later in some areas

- X FedEx Priority Overnight — Next business morning
- FedEx Standard Overnight — Next business afternoon
- FedEx First Overnight — Earliest next business morning delivery to select locations
- FedEx 2Day* — Second business day
- FedEx Express Saver* — Third business day

* FedEx Letter Rate not available. Minimum charge: One-pound rate

4b Express Freight Service — *Packages over 150 lbs.*

Delivery commitment may be later in some areas

- FedEx 1Day Freight* — Next business day
- FedEx 2Day Freight — Second business day
- FedEx 3Day Freight — Third business day

* Call for Confirmation

5 Packaging

* Declared value limit $500

- FedEx Letter*
- FedEx Pak*
- X Other Pkg — Includes FedEx Box, FedEx Tube and customer pkg.

6 Special Handling

- **Saturday Delivery** — Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- **Sunday Delivery** — Available for FedEx Priority Overnight to select ZIP codes
- **HOLD Weekday at FedEx Location** — Not available with FedEx First Overnight
- **HOLD Saturday at FedEx Location** — Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods?

One box must be checked.

- X No
- Yes — As per attached Shipper's Declaration
- Yes — Shipper's Declaration not required
- Dry Ice — Dry Ice, 9, UN 1845 — x kg

Dangerous Goods cannot be shipped in FedEx packaging — Cargo Aircraft Only

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below.

- Sender — Acct. No. in Section 7 will be billed
- Recipient
- Third Party
- Credit Card
- Cash/Check

Obtain Recip. Acct. No.

Total Packages	Total Weight	Total Declared Value†	Total Charges
		$ 00	

†Our liability is limited to $100 unless you declare a higher value. See back for details.

Credit Card Auth.

8 Release Signature Sign to authorize delivery without obtaining signature

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Questions? Call 1·800·Go·FedEx 1-800-463-3339

Visit our Web site at www.fedex.com

Rev. Date 98 Part # 150 PRINTED IN U.S.A. GBFE 5/00

360

1996

FedEx

FedEx Tracking Number 821278694128

Form I.D. No. 0200

1 From

[redacted]

Date [illegible]

Sender's Name [illegible] Phone [illegible]

Company [illegible]

Address [illegible] Dept./Floor/Suite/Room

City [illegible] State [illegible] ZIP 72121

2 Your Internal Billing Reference [illegible]

3 To

Recipient's Name [illegible] Phone [illegible]

Company [illegible]

Address [illegible] Dept./Floor/Suite/Room

City [illegible] State [illegible] ZIP [illegible]

8212 7869 4128

4a Express Package Service — *Packages up to 150 lbs.* Delivery commitment may be later in some areas

- [X] FedEx Priority Overnight — Next business morning
- [ ] FedEx Standard Overnight — Next business afternoon
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations
- [ ] FedEx 2Day* — Second business day
- [ ] FedEx Express Saver* — Third business day

* FedEx Letter Rate not available. Minimum charge: One-pound rate

4b Express Freight Service — *Packages over 150 lbs.* Delivery commitment may be later in some areas

- [ ] FedEx 1Day Freight* — Next business day
- [ ] FedEx 2Day Freight — Second business day
- [ ] FedEx 3Day Freight — Third business day

* Call for Confirmation

5 Packaging — Declared value limit $500

- [ ] FedEx Letter*
- [ ] FedEx Pak*
- [X] Other Pkg — Includes FedEx Box, FedEx Tube and customer pkg

6 Special Handling

- **Saturday Delivery** — Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
- **Sunday Delivery** — Available for FedEx Priority Overnight to select ZIP codes
- **HOLD Weekday at FedEx Location** — Not available with FedEx First Overnight
- **HOLD Saturday at FedEx Location** — Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One [illegible] must be checked

- [X] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous Goods cannot be shipped in FedEx packaging

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below. Obtain Rec. Acct. No.

- [X] Sender — Acct. No. in Section 1 will be billed
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

[redacted]

Total Packages	Total Weight	Total Declared Value†	Total Charges
1	42	$ 00	Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See back for details.

8 Release Signature *Sign to authorize delivery without obtaining signature*

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Questions? Call 1·800·Go·FedEx (800-463-3339)

Visit our Web site at www.fedex.com

Rev. Date 98•Par. # 54815•©1994-98 FedEx•PRINTED IN U.S.A. GBFE 4/00

360

6/8/00 0930

1996C

SEVERN TRENT LABORATORIES LOG-IN SHEET - Form DC-1

Lab Name: Severn Trent Laboratories - VT Page 1 of 1

Received By (Print Name): DONALD C. DAWICKI SR. Log-in Date: 5/27/00

Received By (Signature):

Case Number: ROCK

Sample Delivery Group No: 78305

ETR Number: 78305

REMARKS:

1. **Custody Seal** ~~Present~~/~~Absent~~* ~~Intact~~/~~Broken~~
2. **Custody Seal Nos.:** N/A
3. **Chain-of-Custody Records** ~~Present~~/~~Absent~~*
4. **Sample Information Sheets** ~~Present~~/~~Absent~~*
5. **Airbill** ~~Airbill Sticker~~ ~~Present~~/~~Absent~~*
6. **Airbill No.:** 4746 9120 1933
7. **Sample Tags** ~~Present~~/~~Absent~~* **Sample Tag Numbers** ~~Listed~~/~~Not Listed~~ on Chain-of-Custody
8. **Sample Condition:** ~~Intact~~/~~Broken~~* Leaking
9. **Does information on the custody records, sample information sheets, sample tags and labels agree?** Yes/No*
10. **Date Received at Lab:** 5/26/00
11. **Time Received:** 0930
12. **Cooler Temperature:** 3°C

Sample Transfer

Fraction: ALL

Area #: LVL 4 FUTURE

By: DJD

On: 5/26/00

CORRESPONDING			
CLIENT SAMPLE #	SAMPLE TAG #	ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC.
RB027	N/A	419487	Were air bubbles present
RB006	4	419488	in any VOA vials? N/A
			SAMPLES RECEIVED INTACT IN COOLER W/ICE. COOLER WAS INTACT & W/NO CUSTODY SEALS.
			DJD 5/26/00

* Contact Project Director

Reviewed by: _____ Logbook No.: _____

Date: _____ Logbook Page No.: 1997

SEVERN TRENT LABORATORIES LOG-IN SHEET - Form DC-1

Lab Name: Severn Trent Laboratories - VT Page 1 of 1

Received By (Print Name): DONALD C. DAWICKI JR. Log-in Date: 5/31/00

Received By (Signature): [signature]

Case Number: ROCK

Sample Delivery Group No: 78305

ETR Number: 78323

REMARKS:

1. **Custody Seal** ~~Present~~/~~Absent~~* ~~Intact~~/~~Broken~~
2. **Custody Seal Nos.:** N/A
3. **Chain-of-Custody Records** ~~Present~~/~~Absent~~*
4. **Sample Information Sheets** ~~Present~~/~~Absent~~*
5. **Airbill** ~~Airbill~~/~~Sticker~~ ~~Present~~/~~Absent~~*
6. **Airbill No.:** 8212 7869 3420
7. **Sample Tags** ~~Present~~/~~Absent~~*
8. **Sample Tag Numbers** ~~Listed~~/Not Listed on Chain-of-Custody
9. **Sample Condition:** ~~Intact~~/~~Broken~~* ~~Leaking~~ SEE REMARKS
10. **Does information on the custody records, sample information sheets, sample tags and labels agree?** Yes/No*
11. **Date Received at Lab:** 5/27/00
12. **Time Received:** 1045
13. **Cooler Temperature:** 3.3, 5.4

Sample Transfer

Fraction: ALL

Area #: LVC 4 FRIDGE

By: DS

On: 5/27/00

* Contact Project Director

Reviewed by: _____ Logbook No.: _____

Date: _____ Logbook Page No.: 1998

CORRESPONDING			
CLIENT SAMPLE #	SAMPLE TAG #	ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC.
RB003	N/A	419622	Were air bubbles present
RB007	"	419623	in any VOA vials? N/A
RB008	"	419624	SAMPLES RECEIVED NO
RB023	"	419625	INTACT IN COOLERS
RB077	"	419626	W/ICE. COOLERS WERE
RB078	"	419627	INTACT AS WERE
RB004	"	419628	CUSTODY SEALS ON
RB005	"	419629	OUTSIDE OF COOLERS.
RB079	"	419630	1 OF 6 1L AMBER
RB024	"	419631	BOTTLES FOR RB079
RB025	"	419632	WAS BROKEN. SUFFICIENT
RB029	"	419633	VOLUME REMAINS.
RB043	"	419634	THE ONLY JAR FOR
RB044	"	419635	RB005 WAS BROKEN
RB046	"	419636	DURING SHIPMENT, ONLY
RB063	"	419637	A ZIPLOCK BAG FOR
RB064	"	419638	GRAIN SIZE REMAINS.
RB028	"	419639	TOC + GRAIN SIZE
			WILL BE ANALYZED
			FOR THIS SAMPLE.

SEVERN TRENT LABORATORIES LOG-IN SHEET - Form DC-1

Lab Name: Severn Trent Laboratories - VT Page 1 of 1

Received By (Print Name): DONALD C. DAWICKI JR. Log-in Date: 6/8/00

Received By (Signature):

Case Number: ROCK

Sample Delivery Group No: 28305

ETR Number: 28481

REMARKS:

1. **Custody Seal** ~~Present~~/~~Absent~~* ~~Intact~~/~~Broken~~
2. **Custody Seal Nos.:** N/A
3. **Chain-of-Custody Records** ~~Present~~/~~Absent~~*
4. **Sample Information Sheets** ~~Present~~/~~Absent~~*
5. **Airbill** ~~Airbill~~/~~Sticker~~ ~~Present~~/~~Absent~~*
6. **Airbill No.:** 821751554520 8212 7369 4128
7. **Sample Tags** ~~Present~~/~~Absent~~* **Sample Tag Numbers** ~~Listed~~/~~Not Listed~~ on Chain-of-Custody
8. **Sample Condition:** ~~Intact~~/~~Broken~~* ~~Leaking~~
9. **Does information on the custody records, sample information sheets, sample tags and labels agree?** Yes/No* SEE * REMARKS
10. **Date Received at Lab:** 6/8/00
11. **Time Received:** 0930
12. **Cooler Temperature:** 12, 4, 5

Sample Transfer

Fraction: ALL

Area #: LVL 4 FREEZER

By: DJS

On: 6/8/00

CORRESPONDING			
CLIENT SAMPLE #	SAMPLE TAG #	ASSIGNED LAB #	REMARKS: CONDITION OF SAMPLE SHIPMENT, ETC.
RB079	N/A	420767	Were air bubbles present
RB028	"	420768	in any VOA vials? N/A
RB029	"	420769	SAMPLES RECEIVED
RB005	"	420770	INTACT IN COOLER
RB080	"	420771	W/ICE. COOLERS
			INTACT AS WELL
			CUSTODY SEALS
			ON OUTSIDE OF
			COOLERS.
			* COOLER TEMP
			OF 12°C AFFECT
			SAMPLE RB080.
			OK TO PROCEED
			PER LAB/CLIENT TEL
			6/8/00.
			TOC REQUESTED
			ON COC FOR RB0
			HOWEVER TOC WA
			ALREADY ANALYZ
			W/SAMPLE VOLUME
			RECEIVED 5/27/00.
			*ALL TISSUE SAMPLE
			WERE FROZEN UNTIL
			FURTHER
			NOTICE.
			LTH 6/8
			DJS
			6/8/00

* Contact Project Director

Reviewed by: _____ Logbook No.: _____

Date: _____ Logbook Page No.: 1999

** COOLER RECEIPT CHECKLIST **

WERE CUSTODY SEALS PRESENT ON THE COOLERS?

YES (NO)

IF SO, WERE THERE CUSTODY SEAL NUMBERS?

YES (NO)

LIST THE CUSTODY SEAL NUMBERS. / /

WHAT TYPE OF COOLING WAS UTILIZED?

(ICE) MELTED ICE PACKS NONE

COOLER TEMPERATURE (degrees c): 3°C

DATE AND TIME COOLER RECEIVED: 5-26-00 0930

DO SAMPLES APPEAR TO BE INTACT: YES NO

DO ANY SAMPLES HAVE SHORT HOLDING TIMES?
(less than seven days)

WET CHEM YES NO

EXTRACTABLES YES NO

UNPRES VOA YES NO

RADIATION SCREEN RESULTS <0.05 MR/HR (YES) NO

** COOLER RECEIPT CHECKLIST **

WERE CUSTODY SEALS PRESENT ON THE COOLERS?

(YES) NO

IF SO, WERE THERE CUSTODY SEAL NUMBERS?

YES (NO)

LIST THE CUSTODY SEAL NUMBERS. ____ ____

WHAT TYPE OF COOLING WAS UTILIZED?

(ICE) MELTED ICE (PACKS) NONE

COOLER TEMPERATURE (degrees c): 3

DATE AND TIME COOLER RECEIVED: 5/27/00 1045

DO SAMPLES APPEAR TO BE INTACT: (YES) NO

DO ANY SAMPLES HAVE SHORT HOLDING TIMES?
(less than seven days)

WET CHEM	YES	NO
EXTRACTABLES	YES	NO
UNPRES VOA	YES	NO
RADIATION SCREEN RESULTS <0.05 MR/HR	(YES)	NO

** COOLER RECEIPT CHECKLIST **

WERE CUSTODY SEALS PRESENT ON THE COOLERS?

(YES) NO

IF SO, WERE THERE CUSTODY SEAL NUMBERS?

YES (NO)

LIST THE CUSTODY SEAL NUMBERS. — —

WHAT TYPE OF COOLING WAS UTILIZED?

(ICE) MELTED ICE (PACKS) NONE

COOLER TEMPERATURE (degrees c): 3°

DATE AND TIME COOLER RECEIVED: 5/27/00 1045

DO SAMPLES APPEAR TO BE INTACT: (YES) NO

DO ANY SAMPLES HAVE SHORT HOLDING TIMES?
(less than seven days)

WET CHEM	YES	NO
EXTRACTABLES	YES	NO
UNPRES VOA	YES	NO

RADIATION SCREEN RESULTS <0.05 MR/HR (YES) NO

** COOLER RECEIPT CHECKLIST **

WERE CUSTODY SEALS PRESENT ON THE COOLERS?

(YES) NO

IF SO, WERE THERE CUSTODY SEAL NUMBERS?

YES (NO)

LIST THE CUSTODY SEAL NUMBERS. ——— ———

WHAT TYPE OF COOLING WAS UTILIZED?

ICE (MELTED ICE) PACKS NONE

COOLER TEMPERATURE (degrees c): 5°C

DATE AND TIME COOLER RECEIVED: 5/27/00 1045

DO SAMPLES APPEAR TO BE INTACT: (YES) NO

DO ANY SAMPLES HAVE SHORT HOLDING TIMES?
(less than seven days)

WET CHEM	YES	NO
EXTRACTABLES	YES	NO
UNPRES VOA	YES	NO

RADIATION SCREEN RESULTS <0.05 MR/HR (YES) NO

** COOLER RECEIPT CHECKLIST **

WERE CUSTODY SEALS PRESENT ON THE COOLERS?

(YES) NO

IF SO, WERE THERE CUSTODY SEAL NUMBERS?

YES (NO)

LIST THE CUSTODY SEAL NUMBERS. _____ _____

WHAT TYPE OF COOLING WAS UTILIZED?

(ICE) MELTED ICE (PACKS) NONE

COOLER TEMPERATURE (degrees c): 4°

DATE AND TIME COOLER RECEIVED: 5/27/00 1045

DO SAMPLES APPEAR TO BE INTACT: (YES) NO

DO ANY SAMPLES HAVE SHORT HOLDING TIMES?
(less than seven days)

WET CHEM	YES	NO
EXTRACTABLES	YES	NO
UNPRES VOA	YES	NO
RADIATION SCREEN RESULTS <0.05 MR/HR	(YES)	NO

** COOLER RECEIPT CHECKLIST **

WERE CUSTODY SEALS PRESENT ON THE COOLERS?

(YES) NO

IF SO, WERE THERE CUSTODY SEAL NUMBERS?

YES (NO)

LIST THE CUSTODY SEAL NUMBERS. —— ——

WHAT TYPE OF COOLING WAS UTILIZED?

ICE (MELTED ICE) (PACKS) NONE

COOLER TEMPERATURE (degrees c): 12°

DATE AND TIME COOLER RECEIVED: 6/8/00 0930

DO SAMPLES APPEAR TO BE INTACT: YES NO

DO ANY SAMPLES HAVE SHORT HOLDING TIMES?
(less than seven days)

WET CHEM	YES	NO
EXTRACTABLES	YES	NO
UNPRES VOA	YES	NO

RADIATION SCREEN RESULTS <0.05 MR/HR (YES) NO

** COOLER RECEIPT CHECKLIST **

WERE CUSTODY SEALS PRESENT ON THE COOLERS?

(YES) NO

IF SO, WERE THERE CUSTODY SEAL NUMBERS?

YES (NO)

LIST THE CUSTODY SEAL NUMBERS. ____ ____

WHAT TYPE OF COOLING WAS UTILIZED?

ICE MELTED ICE (PACKS) NONE

COOLER TEMPERATURE (degrees c): 4°

DATE AND TIME COOLER RECEIVED: 6/8/00 0930

DO SAMPLES APPEAR TO BE INTACT: YES NO

DO ANY SAMPLES HAVE SHORT HOLDING TIMES?
(less than seven days)

WET CHEM	**YES**	**NO**
EXTRACTABLES	**YES**	**NO**
UNPRES VOA	**YES**	**NO**

RADIATION SCREEN RESULTS <0.05 MR/HR (YES) NO

** COOLER RECEIPT CHECKLIST **

WERE CUSTODY SEALS PRESENT ON THE COOLERS?

(YES) NO

IF SO, WERE THERE CUSTODY SEAL NUMBERS?

YES (NO)

LIST THE CUSTODY SEAL NUMBERS. _____ _____

WHAT TYPE OF COOLING WAS UTILIZED?

ICE MELTED ICE (PACKS) NONE

COOLER TEMPERATURE (degrees c): 5°

DATE AND TIME COOLER RECEIVED: 6/8/00 0930

DO SAMPLES APPEAR TO BE INTACT: YES NO

DO ANY SAMPLES HAVE SHORT HOLDING TIMES?
(less than seven days)

WET CHEM YES NO

EXTRACTABLES YES NO

UNPRES VOA YES NO

RADIATION SCREEN RESULTS <0.05 MR/HR (YES) NO

Severn Trent Laboratories
55 South Park Drive, Colchester, VT 05446 Tel: (802) 655-1203

COC # RB004
CHAIN OF CUSTODY RECORD

Report to:	Invoice to
Company: Ogden	Company:
Address: 5510 Morehouse Drive	Address:
San Diego, CA	
Contact: Sue Scatolini	Contact:
Phone: (858) 458-9044	Phone:
Fax: (858) 458-0943	PO/SO #:
Contract/ Quote #:	cooler # 100

Sampler's Name: Susan Scatolini
Sampler's Signature: Susan Scatolini

Proj. No.: 313150002
Project Name: Rocketdyne
No./Type of Containers²

ANALYSIS REQUESTED: Metals NOAA S&T; PAHs NOAA S&T; Dioxins 1613; PCB congeners 1668; PCB Aroclor 8082; TOC @ 9060; Grainsize; MS/MSD

Lab use only
Due Date:

Temp. of coolers when received (C): 1 | 2 | 3 | 4 | 5

Custody Seal N / Y
Intact N / Y

Screened For Radioactivity ☐

Matrix¹	Date	Time	Comp	Grab	Identifying Marks of Sample(s) (lab report)	(ogden use)	VOA	A/G 1 Lt	250 ml	P/O	Metals	PAHs	Dioxins	PCB congeners	PCB Aroclor	TOC	Grainsize	MS/MSD	Lab Sample ID (Lab Use Only)
WS	5/25	1520	X		RB004	SNFS03501			2					X	X	X	X		
S	5/25	1540	X		RB005	SNFS04501			1+Zip					X		X	X		
WS	5/25	1600		X	RB079	RZQW01E01		6		1	X	X	X	X					

5/26/00

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Susan Scatolini	5/26/00	1620			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time	Received by: (Signature)	Date	Time
				5/27/00	1045

Remarks

Client's delivery of samples constitutes acceptance of Severn Trent Laboratories terms and conditions contained in the Price Schedule

¹ Matrix: WW Wastewater; W - Water; S - Soil; SD Solid; L Liquid; A Air Bag; C Charcoal tube; SL Sludge; O Oil

² Container: VOA 40 ml vial; A/G Amber Or Glass 1 Liter; 250 ml Glass wide mouth; P/O Plastic or other

STL cannot accept verbal changes. Please Fax written changes to (802) 655-1248

Del Mar Analytical

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

LABORATORY REPORT

Prepared For: MWH-San Diego
1230 Columbia Street, Suite 750
San Diego, CA 92101
Attention: Lisa J. Tucker

Project: SSFL Transformer Sampling
Boeing SSFL

Sampled: 09/10/03-09/11/03
Received: 09/11/03
Issued: 09/28/03

NELAP #01108CA CA ELAP #1197

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.
This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IMI0666-01	MT800	Soil
IMI0666-02	MT801	Soil
IMI0666-03	MT802	Soil
IMI0666-04	MT803	Soil
IMI0666-05	MT804	Soil
IMI0666-06	MT805	Soil
IMI0666-07	MT806	Soil
IMI0666-08	MT807	Soil
IMI0666-09	MT808	Soil



Del Mar Analytical, Irvine
Michele Harper
Project Manager

Del Mar Analytical

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MWH-San Diego
1230 Columbia Street, Suite 750
San Diego, CA 92101
Attention: Lisa J. Tucker

Project ID: SSFL Transformer Sampling
Boeing SSFL
Report Number: IMI0666

Sampled: 09/10/03-09/11/03
Received: 09/11/03

INORGANICS

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IMI0666-01 (MT800 - Soil)				**Sampled: 09/10/03**				
Reporting Units: %								
Percent Solids	EPA 160.3 MOD	3I15088	0.010	**99**	1	9/15/2003	9/15/2003	
Sample ID: IMI0666-02 (MT801 - Soil)				**Sampled: 09/10/03**				
Reporting Units: %								
Percent Solids	EPA 160.3 MOD	3I15088	0.010	**98**	1	9/15/2003	9/15/2003	
Sample ID: IMI0666-03 (MT802 - Soil)				**Sampled: 09/10/03**				
Reporting Units: %								
Percent Solids	EPA 160.3 MOD	3I15088	0.010	**99**	1	9/15/2003	9/15/2003	
Sample ID: IMI0666-04 (MT803 - Soil)				**Sampled: 09/11/03**				
Reporting Units: %								
Percent Solids	EPA 160.3 MOD	3I19081	0.010	**97**	1	9/19/2003	9/19/2003	
Sample ID: IMI0666-05 (MT804 - Soil)				**Sampled: 09/11/03**				
Reporting Units: %								
Percent Solids	EPA 160.3 MOD	3I19081	0.010	**95**	1	9/19/2003	9/19/2003	
Sample ID: IMI0666-06 (MT805 - Soil)				**Sampled: 09/11/03**				
Reporting Units: %								
Percent Solids	EPA 160.3 MOD	3I19081	0.010	**97**	1	9/19/2003	9/19/2003	
Sample ID: IMI0666-07 (MT806 - Soil)				**Sampled: 09/11/03**				
Reporting Units: %								
Percent Solids	EPA 160.3 MOD	3I19081	0.010	**98**	1	9/19/2003	9/19/2003	
Sample ID: IMI0666-08 (MT807 - Soil)				**Sampled: 09/11/03**				
Reporting Units: %								
Percent Solids	EPA 160.3 MOD	3I19081	0.010	**97**	1	9/19/2003	9/19/2003	
Sample ID: IMI0666-09 (MT808 - Soil)				**Sampled: 09/11/03**				
Reporting Units: %								
Percent Solids	EPA 160.3 MOD	3I19081	0.010	**88**	1	9/19/2003	9/19/2003	

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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MWH-San Diego
1230 Columbia Street, Suite 750
San Diego, CA 92101
Attention: Lisa J. Tucker

Project ID: SSFL Transformer Sampling
Boeing SSFL
Report Number: IMI0666

Sampled: 09/10/03-09/11/03
Received: 09/11/03

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IMI0666-01 (MT800 - Soil)				**Sampled: 09/10/03**				
Reporting Units: ug/kg dry								
Aroclor 1016	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1221	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1232	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1242	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1248	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1254	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1260	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Surrogate: Decachlorobiphenyl (45-125%)				*76 %*				
Sample ID: IMI0666-02 (MT801 - Soil)				**Sampled: 09/10/03**				
Reporting Units: ug/kg dry								
Aroclor 1016	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1221	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1232	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1242	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1248	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1254	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1260	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Surrogate: Decachlorobiphenyl (45-125%)				*78 %*				
Sample ID: IMI0666-03 (MT802 - Soil)				**Sampled: 09/10/03**				
Reporting Units: ug/kg dry								
Aroclor 1016	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1221	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1232	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1242	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1248	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1254	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1260	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Surrogate: Decachlorobiphenyl (45-125%)				*64 %*				

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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MWH-San Diego
1230 Columbia Street, Suite 750
San Diego, CA 92101
Attention: Lisa J. Tucker

Project ID: SSFL Transformer Sampling
Boeing SSFL
Report Number: IMI0666

Sampled: 09/10/03-09/11/03
Received: 09/11/03

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IMI0666-04 (MT803 - Soil)				**Sampled: 09/11/03**				
Reporting Units: ug/kg dry								
Aroclor 1016	EPA 3545/8082	3I15043	52	ND	1	9/15/2003	9/18/2003	
Aroclor 1221	EPA 3545/8082	3I15043	52	ND	1	9/15/2003	9/18/2003	
Aroclor 1232	EPA 3545/8082	3I15043	52	ND	1	9/15/2003	9/18/2003	
Aroclor 1242	EPA 3545/8082	3I15043	52	ND	1	9/15/2003	9/18/2003	
Aroclor 1248	EPA 3545/8082	3I15043	52	ND	1	9/15/2003	9/18/2003	
Aroclor 1254	EPA 3545/8082	3I15043	52	ND	1	9/15/2003	9/18/2003	
Aroclor 1260	EPA 3545/8082	3I15043	52	ND	1	9/15/2003	9/18/2003	
Surrogate: Decachlorobiphenyl (45-125%)				*65 %*				
Sample ID: IMI0666-05 (MT804 - Soil)				**Sampled: 09/11/03**				
Reporting Units: ug/kg dry								
Aroclor 1016	EPA 3545/8082	3I15043	53	ND	1	9/15/2003	9/18/2003	
Aroclor 1221	EPA 3545/8082	3I15043	53	ND	1	9/15/2003	9/18/2003	
Aroclor 1232	EPA 3545/8082	3I15043	53	ND	1	9/15/2003	9/18/2003	
Aroclor 1242	EPA 3545/8082	3I15043	53	ND	1	9/15/2003	9/18/2003	
Aroclor 1248	EPA 3545/8082	3I15043	53	ND	1	9/15/2003	9/18/2003	
Aroclor 1254	EPA 3545/8082	3I15043	53	ND	1	9/15/2003	9/18/2003	
Aroclor 1260	EPA 3545/8082	3I15043	53	ND	1	9/15/2003	9/18/2003	
Surrogate: Decachlorobiphenyl (45-125%)				*79 %*				
Sample ID: IMI0666-06 (MT805 - Soil)				**Sampled: 09/11/03**				
Reporting Units: ug/kg dry								
Aroclor 1016	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1221	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1232	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1242	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1248	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1254	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1260	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Surrogate: Decachlorobiphenyl (45-125%)				*86 %*				

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Michele Harper
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
1230 Columbia Street, Suite 750
San Diego, CA 92101
Attention: Lisa J. Tucker

Project ID: SSFL Transformer Sampling
Boeing SSFL
Report Number: IMI0666

Sampled: 09/10/03-09/11/03
Received: 09/11/03

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IMI0666-07 (MT806 - Soil)				**Sampled: 09/11/03**				
Reporting Units: ug/kg dry								
Aroclor 1016	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1221	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1232	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1242	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1248	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1254	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1260	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Surrogate: Decachlorobiphenyl (45-125%)				*69 %*				
Sample ID: IMI0666-08 (MT807 - Soil)				**Sampled: 09/11/03**				
Reporting Units: ug/kg dry								
Aroclor 1016	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1221	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1232	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1242	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1248	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1254	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Aroclor 1260	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	
Surrogate: Decachlorobiphenyl (45-125%)				*86 %*				
Sample ID: IMI0666-09 (MT808 - Soil)				**Sampled: 09/11/03**				
Reporting Units: ug/kg dry								
Aroclor 1016	EPA 3545/8082	3I15043	57	ND	1	9/15/2003	9/18/2003	
Aroclor 1221	EPA 3545/8082	3I15043	57	ND	1	9/15/2003	9/18/2003	
Aroclor 1232	EPA 3545/8082	3I15043	57	ND	1	9/15/2003	9/18/2003	
Aroclor 1242	EPA 3545/8082	3I15043	57	ND	1	9/15/2003	9/18/2003	
Aroclor 1248	EPA 3545/8082	3I15043	57	ND	1	9/15/2003	9/18/2003	
Aroclor 1254	EPA 3545/8082	3I15043	57	ND	1	9/15/2003	9/18/2003	
Aroclor 1260	EPA 3545/8082	3I15043	57	ND	1	9/15/2003	9/18/2003	
Surrogate: Decachlorobiphenyl (45-125%)				*77 %*				

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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MWH-San Diego
1230 Columbia Street, Suite 750
San Diego, CA 92101
Attention: Lisa J. Tucker

Project ID: SSFL Transformer Sampling
Boeing SSFL
Report Number: IMI0666

Sampled: 09/10/03-09/11/03
Received: 09/11/03

METHOD BLANK/QC DATA

INORGANICS

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 3I15088 Extracted: 09/15/03										
Blank Analyzed: 09/15/03 (3I15088-BLK1)										
Percent Solids	ND	0.010	%							
Duplicate Analyzed: 09/15/03 (3I15088-DUP1)					**Source: IMI0125-02**					
Percent Solids	96.7	0.010	%		96			1	20	
Batch: 3I19081 Extracted: 09/19/03										
Blank Analyzed: 09/19/03 (3I19081-BLK1)										
Percent Solids	ND	0.010	%							
Duplicate Analyzed: 09/19/03 (3I19081-DUP1)					**Source: IMI0666-05**					
Percent Solids	95.5	0.010	%		95			1	20	

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Michele Harper
Project Manager

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MWH-San Diego
1230 Columbia Street, Suite 750
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Attention: Lisa J. Tucker

Project ID: SSFL Transformer Sampling
Boeing SSFL
Report Number: IMI0666

Sampled: 09/10/03-09/11/03
Received: 09/11/03

METHOD BLANK/QC DATA

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 3I15043 Extracted: 09/15/03										
Blank Analyzed: 09/17/03 (3I15043-BLK2)										
Aroclor 1016	ND	50	ug/kg wet							
Aroclor 1221	ND	50	ug/kg wet							
Aroclor 1232	ND	50	ug/kg wet							
Aroclor 1242	ND	50	ug/kg wet							
Aroclor 1248	ND	50	ug/kg wet							
Aroclor 1254	ND	50	ug/kg wet							
Aroclor 1260	ND	50	ug/kg wet							
Surrogate: Decachlorobiphenyl	*26.4*		*ug/kg wet*	*33.3*		*79*	*45-125*			
LCS Analyzed: 09/17/03 (3I15043-BS2)										
Aroclor 1016	215	50	ug/kg wet	267		81	70-115			
Aroclor 1260	219	50	ug/kg wet	267		82	65-115			
Surrogate: Decachlorobiphenyl	*27.3*		*ug/kg wet*	*33.3*		*82*	*45-125*			
LCS Dup Analyzed: 09/17/03 (3I15043-BSD2)										
Aroclor 1016	193	50	ug/kg wet	267		72	70-115	11	20	
Aroclor 1260	203	50	ug/kg wet	267		76	65-115	8	20	
Surrogate: Decachlorobiphenyl	*25.4*		*ug/kg wet*	*33.3*		*76*	*45-125*			
Matrix Spike Analyzed: 09/17/03 (3I15043-MS2)					**Source: IMI0638-14**					
Aroclor 1016	239	50	ug/kg wet	267	ND	90	65-120			
Aroclor 1260	260	50	ug/kg wet	267	ND	97	60-125			
Surrogate: Decachlorobiphenyl	*30.1*		*ug/kg wet*	*33.3*		*90*	*45-125*			
Matrix Spike Dup Analyzed: 09/17/03 (3I15043-MSD2)					**Source: IMI0638-14**					
Aroclor 1016	231	50	ug/kg wet	267	ND	87	65-120	3	20	
Aroclor 1260	257	50	ug/kg wet	267	ND	96	60-125	1	25	
Surrogate: Decachlorobiphenyl	*30.3*		*ug/kg wet*	*33.3*		*91*	*45-125*			

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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MWH-San Diego
1230 Columbia Street, Suite 750
San Diego, CA 92101
Attention: Lisa J. Tucker

Project ID: SSFL Transformer Sampling
Boeing SSFL
Report Number: IMI0666

Sampled: 09/10/03-09/11/03
Received: 09/11/03

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.

RPD Relative Percent Difference

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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MWH-San Diego
1230 Columbia Street, Suite 750
San Diego, CA 92101
Attention: Lisa J. Tucker

Project ID: SSFL Transformer Sampling
Boeing SSFL
Report Number: IMI0666

Sampled: 09/10/03-09/11/03
Received: 09/11/03

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	NELAP	CA
EPA 160.3 MOD	Soil	N/A	N/A
EPA 3545/8082	Soil	X	X

NV and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com.

Del Mar Analytical, Irvine
Michele Harper
Project Manager

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IM10666

MWH
MONTGOMERY WATSON HARZA

250 N. Madison Avenue
Pasadena, CA 91101
(626) 568-6310

Chain of Custody

Control Number: COC

Date 09/11/03 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowell Moffitt
Company:	MWH
Address:	250 N. Madison Avenue, Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

Cooler No.
QC Level:
TAT: normal add

Preservatives: HCL, pH<2 4°C; HCL, pH<2 4°C; 4°C; 4°C; 4°C; H2SO4, pH<2 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

Sample Data

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Matrix: Soil	Matrix: Water	Matrix: Product	8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	300M PERCHLORATES		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
	PUBS135Ø1		0.5'	9/10/03	0930			X												X										
	OCBS305Ø1		0.5'	9/10/03	1255			X												X										
	OCBS315Ø1		0.5'	9/10/03	1310			X												X										
	AABS435Ø1		0.5'	9/11/03	0915			X												X										
	AABS445Ø1		0.5'	9/11/03	0925			X												X										
	CABS315Ø1		0.5'	9/11/03	1000			X												X										
	CABS325Ø1		0.5'	9/11/03	1015			X												X										
	SAB5015Ø1		0.5'	9/11/03	1105			X												X										
	SAB5025Ø1		0.5	9/11/03	1120			X												X										

	Date	Time
Samplers Signature: [signature]	9/11/03	1515
Relinquished By:		
Received By: [signature]	9-11-03	1515
Relinquished By: [signature]	9-11-03	1720
Received By (LAB): [signature] Intact	9-11-03	1720

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C 10°C

Comments: Aerochlor only.

Del Mar Analytical

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

CASE NARRATIVE

Client:	MWH	**Date Sampled:**	09/10/03-09/11/03
Project:	SSFL Transformer Sampling Boeing SSFL	**Date Received:**	09/11/03
Lab:	IMI0666		

SAMPLE RECEIPT: Samples were received intact on ice and with chain of custody documentation. The sample temperature was measured at 10°C upon receipt at the laboratory.

HOLDING TIMES: All samples were analyzed within holding times.

PROBLEMS ENCOUNTERED: No additional problems were encountered during sample analysis.

QA/QC CRITERIA: QA/QC parameters met acceptance limits.

OBSERVATIONS: No significant observations were made.

DEL MAR ANALYTICAL

Michele Harper
Project Manager

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F A X

MWH

1230 Columbia Street, Suite 750
San Diego, California 92101-8536

Tel: 619-699-4124
Fax: 619-239-3895

Date: 09/11/2003

To: Michele Harper / Del Mar Analytical **Fax No:** 949-261-1228

From: Sumiko Tanaka
sign:

Subject: **Chain-of-Custody Form Analytical Request Change**

No. of Pages: 2 **(including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	Original EPA Sample ID	Original MWH Sample ID	Date Collected	Change (s) and Method (s) Now Requested
MT800	N/A	PUBS13S01	9/10/2003	Add EPA ID **"MT800"**
MT800	N/A	OCBS30S01	9/10/2003	Add EPA ID **"MT801"**
MT800	N/A	OCBS31S01	9/10/2003	Add EPA ID **"MT802"**
MT800	N/A	AABS43S01	9/11/2003	Add EPA ID **"MT803"**
MT800	N/A	AABS44S01	9/11/2003	Add EPA ID **"MT804"**
MT800	N/A	CABS21S01	9/11/2003	Add EPA ID **"MT805"**
MT800	N/A	CABS32S01	9/11/2003	Add EPA ID **"MT806"**
MT800	N/A	SABS01S01	9/11/2003	Add EPA ID **"MT807"**
MT800	N/A	SABS02S01	09/11/2003	Add EPA ID **"MT808"**

The reason for these changes:

Incorrectly marked on COC form	*X*
Lack of sample volume	
MWH office personnel require this change	*X*
Other: Containers mislabeled	

Thank you.

5

SSFL Transformer Sampling

MWH
MONTGOMERY WATSON HARZA

250 N. Madison Avenue
Pasadena, CA 91101
(626) 568-6310

Chain of Custody

Control Number: COC MT 800

Date 09/11/03 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowell Moffitt
Company:	MWH
Address:	250 N. Madison Avenue, Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comments:	

Cooler No.
QC Level:
TAT:

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | 4°C | H2SO4, pH<2 4°C | 4°C | HNO3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270C/SIM SVOC	8270C SVOC	8250 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	300M PERCHLORATES		Sampling Method	Extra Volume	MS/MSD	HOLD
MT 800	PUBS135Ø1		0.5'	9/11/03	0930			X												X										
MT 801	OCBS305Ø1		0.5'	9/11/03	1255			X												X										
MT 802	OCBS315Ø1		0.5'	9/11/03	1016			X												X										
MT 803	AABS435Ø1		0.5'	9/11/03	0915			X												X										
MT 804	AABS445Ø1		0.5'	9/11/03	0925			X												X										
MT 805	CABS315Ø1		0.5'	9/11/03	1000			X												X										
MT 806	CABS325Ø1		0.5'	9/11/03	1015			X												X										
MT 807	SABS015Ø1		0.5'	9/11/03	1105			X												X										
MT 808	SABS025Ø1		0.5'	9/11/03	1120			X												X										

Samplers Signature:	Date 9/11/03	Time 1515
Relinquished By:	Date	Time
Received By:	Date 9/11/03	Time 1515
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: / /
Temperature °C

Comments: Aeroclor only.

PAGE:02 TO:8161923938395 18185866142 FROM:80200162 SEP-11 03 15:44

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

LABORATORY REPORT

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

Project: SSFL Group 6
Data Gap

Sampled: 02/21/06
Received: 02/22/06
Issued: 03/08/06 20:31

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.
This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IPB2004-01	MJ720	Soil
IPB2004-02	MJ721	Soil
IPB2004-03	MJ722	Soil

Reviewed By:



Del Mar Analytical, Irvine
Michele Chamberlin
Project Manager

Del Mar Analytical

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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: IPB2004

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

DATA QUALIFIERS AND DEFINITIONS

J	Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
M-HA	Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
Z3	The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

ADDITIONAL COMMENTS

For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.

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: IPB2004

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

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
EPA 160.3 MOD	Soil	N/A	N/A
EPA 8015 MOD.	Soil	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

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.

C of C

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

IPB 2004

Chain of Custody

Project: Groupe Detachment

Control Number: COC MJ720

Date 2/21/06 **Page** 1 **of** 1

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

Cooler No.	
QC Level:	TAT: NORMAL

Preservatives: NONE

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ720	OCBS43S01		3.5'	2-21-06	0811			X				X															HA			1
MJ721	OCBS57S01		7'	2-21-06	0922			X				X															HA			1
MJ722	OCBS58S01		7'	2-21-06	1001			X				X															HA			1

Samplers Signature:	Date 2/21/06	Time 1549
Relinquished By:	Date 2/22/06	Time 1017
Received By:	Date 2/22/06	Time 1017
Relinquished By:	Date 2/22/06	Time 11:54
Received By (LAB):	Date 2.22.06	Time 11:54

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:	Comments:
Does COC match samples: (Y) or N	
Broken container: Y or (N)	
Received within holding time: Y or N	
COC Seal intact: Y or N	
Any other problems: Y or N	
If any YES, MWH contacted: Y or N	
Date Contacted : / /	
Temperature °C 7.-	

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

LABORATORY REPORT

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

Project: SSFL Group 6
Data Gap

Sampled: 02/17/06
Received: 02/17/06
Revised: 06/28/06 08:30

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 6 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT:	Samples were received intact, at 5°C, on ice and with chain of custody documentation.
HOLDING TIMES:	All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.
PRESERVATION:	Samples requiring preservation were verified prior to sample analysis.
QA/QC CRITERIA:	All analyses met method criteria, except as noted in the report with data qualifiers.
COMMENTS:	Results that fall between the MDL and RL are 'J' flagged.
SUBCONTRACTED:	Refer to the last page for specific subcontract laboratory information included in this report.
ADDITIONAL INFORMATION:	The report was revised to remove the DPA 1613 Dioxin data.

LABORATORY ID	CLIENT ID	MATRIX
IPB1791-01	MJ687	Soil
IPB1791-02	MJ691	Soil
IPB1791-03	MJ695	Soil
IPB1791-04	MJ696	Soil
IPB1791-05	MJ697	Soil
IPB1791-06	MJ698	Soil
IPB1791-07	MJ699	Soil
IPB1791-08	MJ700	Soil
IPB1791-09	MJ701	Soil
IPB1791-10	MJ702	Soil

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

Del Mar Analytical

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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

LABORATORY ID	CLIENT ID	MATRIX
IPB1791-11	MJ703	Soil
IPB1791-12	MJ704	Soil
IPB1791-13	MJ705	Soil
IPB1791-15	MJ707	Soil
IPB1791-16	MJ708	Soil
IPB1791-18	MJ710	Soil
IPB1791-19	MJ711	Soil
IPB1791-20	MJ715	Soil
IPB1791-22	MJ718	Soil

Reviewed By:

Michele Chamberlin

Del Mar Analytical - Irvine
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: IPB1791

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

DATA QUALIFIERS AND DEFINITIONS

A-01	Sample result might be biased high due to coelution of Aroclors 1248 and 1260.
J	Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
M1	The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
M2	The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
M-HA	Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
RL-1	Reporting limit raised due to sample matrix effects.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

ADDITIONAL COMMENTS

For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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Del Mar Analytical

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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

Certification Summary

Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
Dry Weight	Soil	N/A	N/A
EPA 160.3 MOD	Soil	N/A	N/A
EPA 3545/8082	Soil	X	X
EPA 6010B	Soil	X	X
EPA 6020	Soil	X	X
EPA 7471A	Soil	X	X
EPA 8015 MOD.	Soil	X	X
EPA 8270C	Soil	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Subcontracted Laboratories

Calscience-SUB *California Cert #1230*

7440 Lincoln Way - Garden Grove, CA 92841

Analysis Performed: 8270C (SIM)

Samples: IPB1791-03, IPB1791-08, IPB1791-09, IPB1791-10, IPB1791-11, IPB1791-12, IPB1791-13, IPB1791-15, IPB1791-16, IPB1791-18

Analysis Performed: Dry Wt

Samples: IPB1791-03, IPB1791-08, IPB1791-09, IPB1791-10, IPB1791-11, IPB1791-12, IPB1791-13, IPB1791-15, IPB1791-16, IPB1791-18

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

1PB1771

SSFL Groups MC 2/18/06

Chain of Custody

Control Number: COC MJ687

Date 2/17/06 Page 1 of 3

Project Manager:	Dixie Hambrick MW 1/7 MC 2/18/06
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:	
QC Level:	TAT: Normal

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H_2SO_4,pH<2 4°C	4°C	HNO_3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C					

Sample Data							Matrix				8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC PAH	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROMIE	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Alkalinity		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product																					
MJ687	OCBS40 S70		2-17-06				X																X							Ø
MJ688	OCBS40 S01	4.5	2-17-06	826			X																X				HA		X	1
MJ689	OCBS40 S02	4.5		831			X																X				HA		X	1
MJ690	OCBS40 S03	4.5		843			X																X				HA		X	1
MJ691	OCBS40 S80																						X							Ø
MJ692	OCBS40 S04	7.5		828			X																X				HA		X	1
MJ693	OCBS40 S05	7.5		835			X																X				HA		X	1
MJ694	OCBS40 S06	7.5		846			X																X				HA		X	1
MJ695	OCBS41 S01	7		918			X							X				X									HA			1
MJ696	OCBS42 S01	6.5		926			X																				HA			1
MJ697	OCBS43 S01	7		944			X																		X		HA			1
MJ698	OCBS44 S01	7	↓	1000			X																		X		HA			1

Samplers Signature: Burgan Burton	Date: 2-17-06	Time: 1400
Relinquished By:	Date: 2/17/06	Time: 1800
Received By:	Date: 2/17/06	Time: 1800
Relinquished By:	Date: 2/17/06	Time: 1900
Received By (LAB):	Date: 2/17/06	Time: 1900

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: (Y) or N

Broken container: Y or (N)

Received within holding time: (Y) or N

COC seal intact: (Y) or N

Any other problems: Y or (N)

If any YES, Ogden contacted: Y or N

Date contacted: __/__/__

Temperature °C 5

Please homogenize MJ688, 689, 690 individually, then take a composite of them as ~~MJ687~~ MJ687. Hold MJ688-690 pending result of MJ687. Homogenize MJ692, 693, 694 individually, then take a composite of them as MJ691. Hold MJ692-694 pending result of MJ691.

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

SSFL Groups MC2118106

Control Number: COC MJ699

Date 2/17/06 Page 2 of 3

Project Manager:	Dixie Hambrick / MWH
Project Name:	Rocketdyne MC-2118106
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal	
Shipment Method:	Courier
Comment:	

Cooler No:	
QC Level:	TAT: Normal

Preservatives: None

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ699	OCBS45 S01	3	2-17-06	1013			X			HA			1
MJ700	OCBS46 S01	0.5		1024			X			G			1
MJ701	OCBS47 S01	0.5		1026			X			G			1
MJ702	OCBS48 S01	0.5		1036			X			G			1
MJ703	OCBS49 S01	0.5		1039			X			G			1
MJ704	OCBS50 S01	0.5		1111			X			G			2
MJ705	OCBS51 S01	0.5		1117			X			G			2
MJ706	OCBS51 S02	3		1120			X			HA		X	2
MJ707	OCBS52 S01	0.5		1128			X			G			2
MJ708	OCBS53 S01	0.5		1137			X			G			2
MJ709	OCBS54 S01	0.5		1139			X			G		X	2
MJ710	OCBS55 S01	0.5	↓	1148			X			G			2

Samplers Signature: Bryan Burton		Date: 2-17-06	Time: 1401
Relinquished By:		Date: 2/17/06	Time: 1800
Received By:		Date: 2/17/06	Time: 1800
Relinquished By:		Date: 2/17/06	Time: 1900
Received By (LAB):		Date: 2/17/06	Time: 1900

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC seal intact: (Y) or N
Any other problems: Y or (N)
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 5

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Tetra Tech 2/18/06

Control Number: COC MJ711

Date 2/17/06 Page 3 of 3

Project Manager:	Dixie Hambrick / MWH 2/18/06
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Courier
Comment:

Cooler No:	
QC Level:	TAT: Normal

Preservatives: None

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC HCL, pH<2 4°C	8015OG TPH HCL, pH<2 4°C	8270SIM SVOC 4°C	8270R SVOC 4°C	8290 DIOXIN 4°C	ASTM D19 FORMALDEHYDE H_2SO_4,pH<2 4°C	8330 ORDINANCE 4°C	1LM02.IRT METALSRT HNO_3, pH<2 4°C	7196 HEX CHROME 4°C	340.2 FLUORIDE 4°C	300 ANIONS 4°C	9045/9040 pH 4°C	8082 PCBs 4°C	IC HYDRAZ 4°C	Thallium		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ711	OCBS 56 ~~B~~ 570		2-17-06																			X							1
MJ712	OCBS 56 501	0.5	|	1212																		X				G		X	1
MJ713	OCBS 56 502	0.5	|	1218																		X				G		X	1
MJ714	OCBS 56 503	0.5	|	1224																		X				G		X	1
MJ715	OCBS 56 580		|																			X							
MJ716	OCBS 56 504	3	|	1226																		X				HA		X	1
MJ717	OCBS 56 505	3	|	1228																		X				HA		X	1
MJ718	OCBS 32 502	3.5	|	1319										X									X			HA			1
MJ719	OCBS 32 ~~B~~02	3.5	↓	1319										X												HA			1
←																													
													5	8															

Samplers Signature: Bryan Burton	Date: 2-17-06	Time: 1401
Relinquished By:	Date: 2/17/06	Time: 1800
Received By:	Date: 2/17/06	Time: 1800
Relinquished By:	Date: 2/17/06	Time: 1900
Received By (LAB):	Date: 2/17/06	Time: 1900

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 5

Please homogenize MJ712, 713, 714 individually, then take a composite of them as MJ711. Hold MJ712-714 pending result of MJ711. Homogenize MJ716, 717 ~~718~~, individually, then take a composite of them as MJ715. Hold MJ716-718 pending result of MJ715. # Hold dioxins on MJ718 and 719.

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92606 (949) 261-1022 FAX (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
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

ADDITIONAL ANALYSIS REQUEST FORM

Today's Date: 2/23/06 Del Mar Analytical Project Manager: MC

Request via: ____ telephone ____ chain of custody form ____ fax transmission X E-mail ____ other

Client: MWH - San Diego Contact: Lisa Tucker

Project: SFL Group 6 / Data Gap

Date Sampled: 2/17/06 Date Received: 2/17/06

Status: X in progress ____ completed ____ received today ____ received yesterday ____ on hold ____ other

SAMPLE NUMBER	SAMPLE DESCRIPTION	ANALYSIS REQUESTED	SPECIAL REQUIREMENTS
ITPB1791-04	MJ696	8015 - Diesel	
-05	MJ697	↓	
-06	MJ698		

* Add-in to original workorder

TURNAROUND STATUS: _____Same Day _____24hr _____48hr _____3days

_____ 5days ___X___Standard _____No Rush Charge

due 3/3/06

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: 02/23/06

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ687	MJ696	OCBS42S01	2/17/06	Alluminum Standard TAT.	Same analysis and add TPH by method 8015/BM. Standard TAT.
MJ687	MJ697	OCBS43S01	2/17/06	Alluminum Standard TAT.	Same analysis and add TPH by method 8015/BM. Standard TAT.
MJ687	MJ698	OCBS44S01	2/23/06	Alluminum Standard TAT.	Same analysis and add TPH by method 8015/BM. Standard TAT.

The reason for these changes:

Incorrectly marked on COC form _____
Lack of sample volume _____
MWH office personnel require this change X
Other: Containers mislabeled _____

Thank you

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: COC MJ687
Date 2/17/06 Page 1 of 3

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No:	
QC Level:	TAT: Normal

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | 4°C | H_2SO_4, pH<2 4°C | 4°C | HNO_3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

Sample Data							Matrix				8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC PAH	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Alkalinity		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product																					
MJ687	OCBS40 S70		2-17-06																				X							Ø
MJ688	OCBS40 S01	4.5	2-17-06	826			X																X				HA		X	1
MJ689	OCBS40 S02	4.5		831			X																X				HA		X	1
MJ690	OCBS40 S03	4.5		843			X																X				HA		X	1
MJ691	OCBS40 S80																													Ø
MJ692	OCBS40 S04	7.5		828			X																X				HA		X	1
MJ693	OCBS40 S05	7.5		835			X																X				HA		X	1
MJ694	OCBS40 S06	7.5		841			X																X				HA		X	1
MJ695	OCBS41 S01	7		918			X							X				X									HA			1
MJ696	OCBS42 S01	6.5		926			X				X														X		HA			1
MJ697	OCBS43 S01	7		944			X				X														X		HA			1
MJ698	OCBS44 S01	7	↓	1000			X				X														X		HA			1

Samplers Signature: Burgan Burton	Date: 2-17-06	Time: 1400
Relinquished By:	Date: 2/17/06	Time: 1800
Received By:	Date: 2/17/06	Time: 1800
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

Please homogenize MJ688, 689, 690 individually, then take a composite of them as ~~MJ687~~ MJ687. Hold MJ688-690 pending result of MJ687. Homogenize MJ692, 693, 694 individually, then take a composite of them as MJ691. Hold MJ692-694 pending result of MJ691.

BS * Turn on MJ696, 697, 698 for TPH.

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

Calscience Environmental Laboratories, Inc.

February 28, 2006

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

Subject: **Calscience Work Order No.: 06-02-1154**
Client Reference: IPB1791

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 2/21/2006 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of any subcontracted analysis is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Steven L. Lane
Laboratory Director

Calscience Environmental Laboratories, Inc.

Case Narrative for 06-02-1154

Sample Condition on Receipt

Ten soil samples were received as part of this Work Order on February 21, 2006. All samples were transferred to the laboratory in an ice-chest following strict chain-of-custody procedures. The temperature (3.9°C) of the samples was measured upon arrival in the laboratory and was within acceptable limits. The samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers, and stored in refrigeration units pending analysis.

The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in it entirety.

Data Summary

The samples included in this report were analyzed in accordance with the attached chain-of-custody (COC) records. Data is presented on a dry weight basis.

Holding Times

All holding time requirements were met.

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

The method blank data showed non-detectable levels for all constituents.

Matrix Spikes

Matrix Spikes (MS) and Matrix Spike Duplicates (MSD) were performed at required frequencies. All recoveries were within acceptable limits, with the exception of specific analytes by EPA Method 8270C SIM. Please see Table B below for details.

Calscience Environmental Laboratories, Inc.

Case Narrative for 06-02-1154

Table B: Matrix Spike / Matrix Spike Duplicate outside acceptable limits	
EPA Method 827C SIM	
Batch #	Analytes(s)
060221S08	Pyrene‡

‡: As a direct result of the unacceptable recoveries for the MS and/or MSD, the relative percent difference was also outside acceptable limits. These recoveries have been flagged with a "4" qualifier.

Laboratory Control Samples

The Laboratory Control Sample (LCS) analyses were performed at the required frequencies. All recoveries were within acceptable limits.

Surrogates

Surrogate recoveries for all samples were within acceptable control limits.

CALSCIENCE ENVIRONMENTAL LABORATORIES, INC.
Sample Summary Report

WORK ORDER #: **06-02-1154** **QAPP:** **0000**

#	*Client Sample ID*	*Matrix*	*Date Collected*	*NoC*	*Comment*
1	IPB1791-03	S	02/17/2006	1	
2	IPB1791-08	S	02/17/2006	1	
3	IPB1791-09	S	02/17/2006	1	
4	IPB1791-10	S	02/17/2006	1	
5	IPB1791-11	S	02/17/2006	1	
6	IPB1791-12	S	02/17/2006	1	
7	IPB1791-13	S	02/17/2006	1	
8	IPB1791-15	S	02/17/2006	1	
9	IPB1791-16	S	02/17/2006	1	
10	IPB1791-18	S	02/17/2006	1	

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 06 - 02 - 1154

Cooler 1 **of** 1

SAMPLE RECEIPT FORM

CLIENT: DelMar Analytical **DATE:** 2-21-06

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_____ Chilled, cooler with temperature blank provided.
_____ Chilled, cooler without temperature blank.
_____ Chilled and placed in cooler with wet ice.
_____ Ambient and placed in cooler with wet ice.
_____ Ambient temperature.
_____ °C Temperature blank.

LABORATORY (Other than Calscience Courier):

_____ °C Temperature blank.
3.9 °C IR thermometer.
_____ Ambient temperature.

Initial: _____

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: _____ No (Not Intact) : _____ Not Applicable (N/A): ✓

Initial: _____

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers for analyses requested	✓		
Proper preservation noted on sample label(s)			✓
VOA vial(s) free of headspace.			✓
Tedlar bag(s) free of condensation			✓

Initial: _____

COMMENTS:

Del Mar Analytical

17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IPB1791

1154 (13)

SENDING LABORATORY:
Del Mar Analytical, Irvine
17461 Derian Avenue. Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 261-1228
Project Manager: Michele Chamberlin

RECEIVING LABORATORY:
Calscience-SUB
7440 Lincoln Way
Garden Grove, CA 92841
Phone :714-895-5494
Fax: 714-894-7501

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date:_____ Initials:_____

Analysis	Expiration	Comments
Sample ID: IPB1791-03 Soil	**Sampled: 02/17/06 09:18**	
(1) 8270C (SIM)-OUT	03/03/06 09:18	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	03/17/06 09:18	% solids, sub to Calscience, $10/sample
Containers Supplied: 4 oz Jar (IPB1791-03B)		
Sample ID: IPB1791-08 Soil	**Sampled: 02/17/06 10:24**	
(2) 8270C (SIM)-OUT	03/03/06 10:24	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	03/17/06 10:24	% solids, sub to Calscience, $10/sample
Containers Supplied: 4 oz Jar (IPB1791-08B)		
Sample ID: IPB1791-09 Soil	**Sampled: 02/17/06 10:26**	
(3) 8270C (SIM)-OUT	03/03/06 10:26	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	03/17/06 10:26	% solids, sub to Calscience, $10/sample
Containers Supplied: 4 oz Jar (IPB1791-09B)		
Sample ID: IPB1791-10 Soil	**Sampled: 02/17/06 10:36**	
(4) 8270C (SIM)-OUT	03/03/06 10:36	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	03/17/06 10:36	% solids, sub to Calscience, $10/sample
Containers Supplied: 4 oz Jar (IPB1791-10B)		
Sample ID: IPB1791-11 Soil	**Sampled: 02/17/06 10:39**	
(5) 8270C (SIM)-OUT	03/03/06 10:39	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	03/17/06 10:39	% solids, sub to Calscience, $10/sample
Containers Supplied: 4 oz Jar (IPB1791-11B)		

Released By	Date	Time	Received By	Date	Time
			Fed-Ex	2-21-06	
Via Bank	2/21/06	1824		2.21.06	1824

Del Mar Analytical

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

SUBCONTRACT ORDER - PROJECT # IPB1791 (1154)(2/3)

SENDING LABORATORY:
Del Mar Analytical, Irvine
17461 Derian Avenue. Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 261-1228
Project Manager: Michele Chamberlin

RECEIVING LABORATORY:
Calscience-SUB
7440 Lincoln Way
Garden Grove, CA 92841
Phone :714-895-5494
Fax: 714-894-7501

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date:_____ **Initials:**_____

Analysis	Expiration	Comments
Sample ID: IPB1791-12 Soil	**Sampled: 02/17/06 11:11**	
8270C (SIM)-OUT	03/03/06 11:11	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	03/17/06 11:11	% solids, sub to Calscience, $10/sample
Containers Supplied: 4 oz Jar (IPB1791-12C)		
Sample ID: IPB1791-13 Soil	**Sampled: 02/17/06 11:17**	
8270C (SIM)-OUT	03/03/06 11:17	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	03/17/06 11:17	% solids, sub to Calscience, $10/sample
Containers Supplied: 4 oz Jar (IPB1791-13C)		
Sample ID: IPB1791-15 Soil	**Sampled: 02/17/06 11:28**	
8270C (SIM)-OUT	03/03/06 11:28	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	03/17/06 11:28	% solids, sub to Calscience, $10/sample
Containers Supplied: 4 oz Jar (IPB1791-15C)		
Sample ID: IPB1791-16 Soil	**Sampled: 02/17/06 11:37**	
8270C (SIM)-OUT	03/03/06 11:37	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	03/17/06 11:37	% solids, sub to Calscience, $10/sample
Containers Supplied: 4 oz Jar (IPB1791-16C)		
Sample ID: IPB1791-18 Soil	**Sampled: 02/17/06 11:48**	
8270C (SIM)-OUT	03/03/06 11:48	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	03/17/06 11:48	% solids, sub to Calscience, $10/sample
Containers Supplied: 4 oz Jar (IPB1791-18C)		

Released By	Date	Time	Received By	Date	Time
[signature]			Fed-Ex	2.21.06	
[signature]	2/21/06	18:24	[signature]	2-21-06	1824

Del Mar Analytical

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

SUBCONTRACT ORDER - PROJECT # IPB1791 (1154)(313)

SAMPLE INTEGRITY:

All containers intact: ☐ Yes ☐ No	Sample labels/COC agree: ☐ Yes ☐ No	Samples Received On Ice:: ☐ Yes ☐ No
Custody Seals Present: ☐ Yes ☐ No	Samples Preserved Properly: ☐ Yes ☐ No	Samples Received at (temp): _____

Released By	Date	Time	Received By	Date	Time
			Fed - Ex	2.21.06	
Released By	Date	Time	Received By	Date	Time
	2/21/06	18:24		2.21.06	1824

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 06-02-1154

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
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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

LABORATORY REPORT

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

Project: SSFL Group 6
Data Gap

Sampled: 02/16/06
Received: 02/16/06
Issued: 03/09/06 15:45

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 5 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

LABORATORY ID	CLIENT ID	MATRIX
IPB1719-01	MJ661	Soil
IPB1719-02	MJ662	Soil
IPB1719-03	MJ663	Soil
IPB1719-04	MJ664	Soil
IPB1719-05	MJ665	Soil
IPB1719-06	MJ666	Soil
IPB1719-08	MJ668	Soil
IPB1719-10	MJ676	Soil
IPB1719-11	MJ677	Soil
IPB1719-12	MJ678	Soil
IPB1719-13	MJ679	Soil
IPB1719-14	MJ680	Soil
IPB1719-15	MJ681	Soil
IPB1719-16	MJ682	Soil
IPB1719-17	MJ683	Soil
IPB1719-18	MJ684	Soil
IPB1719-19	MJ685	Soil
IPB1719-20	MJ686	Soil

Reviewed By:



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
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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

DATA QUALIFIERS AND DEFINITIONS

A-01	Sample result might be biased high due to coelution of Aroclors 1254 and 1260 .
A-01a	Sample result might be biased high due to coelution of Aroclors 1254 and 1260. Only two peaks available for quantitation due to co-elution.
B	Analyte was detected in the associated Method Blank.
J	Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
M2	The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
M-HA	Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
M-NR	No results were reported for the MS/MSD. The sample used for the MS/MSD required dilution due to the sample matrix. Because of this, the spike compounds were diluted below the detection limit.
RL-1	Reporting limit raised due to sample matrix effects.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

ADDITIONAL COMMENTS

For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.

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.

Del Mar Analytical

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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

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	Nelac	California
1613A/1613B	Soil		
Dry Weight	Soil	N/A	N/A
EDD + Level 4	Soil		
EPA 160.3 MOD	Soil	N/A	N/A
EPA 1625C-CI Mod	Soil		
EPA 3545/8082	Soil	X	X
EPA 6010B	Soil	X	X
EPA 6020	Soil	X	X
EPA 7471A	Soil	X	X
EPA 8015 MOD.	Soil	X	X
EPA 8270C	Soil	X	X
Level 3	Soil		

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Subcontracted Laboratories

Alta Analytical *NELAC Cert #02102CA, California Cert #1640, Nevada Cert #CA-413*
1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR-Alta
Samples: IPB1719-05, IPB1719-11, IPB1719-12, IPB1719-13, IPB1719-14

Analysis Performed: Level 4 + EDD
Samples: IPB1719-05

Calscience-SUB *California Cert #1230*
7440 Lincoln Way - Garden Grove, CA 92841

Analysis Performed: 8270C (SIM)
Samples: IPB1719-15, IPB1719-16, IPB1719-17, IPB1719-18

Analysis Performed: Dry Wt
Samples: IPB1719-15, IPB1719-16, IPB1719-17, IPB1719-18

Analysis Performed: Level 3 Data Package
Samples: IPB1719-15

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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LPB 17.19

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 6 Data Gap

Control Number: COC MJ661

Date 2/16/06 Page 1 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	courier
Comment:	

Cooler No.	
QC Level:	TAT: Standard

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | 4°C | H2SO4, pH<2 4°C | 4°C | HNO3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

Sample Data								Matrix				8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product																					
MJ661	~~OCBS34 TB~~	~~7.4~~	1	2/16/06	0910			X					X															HA			1
MJ662	SRBS71 S01		1		0924			X					X															↓			1
MJ663	SRBS72 S01		1		0929			X					X															↓			1
MJ664	SRBS73 S01	↓	0.5		0949			X					X						X		X							G			2
MJ665	OCBS32 S01	7.4	0.5		1028			X								X			X												2
MJ666	OCBS33 S01		0.5		1040			X								X			X												2
MJ667	OCBS33 D01		0.5		1045			X								X												↓			1
MJ668	OCBS34 S70		0.5		—			X													X										0
MJ669	OCBS34 S01		0.5		1121			X													X							G		X	1
MJ670	OCBS34 S02		0.5		1127			X													X							↓		X	1
MJ671	OCBS34 S03		0.5		1130			X													X							↓		X	1
MJ672	OCBS34 S80	↓	0.5	↓	—			X													X									X	0

Samplers Signature: Bryan Bruton	Date 2-16-06	Time 1430
Relinquished By: Bryan Bruton	Date 2-16-06	Time 1430
Received By: [signature]	Date 2/16/06	Time 1430
Relinquished By: [signature]	Date 2/16/06	Time 1900
Received By (LAB): [signature]	Date 2/16/06	Time 1910

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC Seal intact: Y or N

Any other problems: Y or N

If any YES, MWH contacted: Y or N

Date Contacted : / /

Temperature °C 3

Comments:
Create composite MJ668 from MJ669, 670, and 671. Run MJ668 & hold other 3 pending analysis.
Hold MJ672 pending analysis of MJ668
(Create MJ672 from MJ673-675)
- Run Thallium only on MJ665-~~67~~66
- Hold dioxins on MJ666 and 667

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 6 Data Gap
Control Number: COC MJ673
Date 2/16/06 Page 2 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

Cooler No.
QC Level:
TAT:

Preservatives: None

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC (HCL, pH<2 4°C)	8015BM TPH (HCL, pH<2 4°C)	8270CSIM SVOC PAH (4°C)	8270C SVOC (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)	Ag, Tl	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ673	OCBS34S04	7.4	3	2/16/06	1133			X												X						HA	G			1
MJ674	OCBS34S05		3		1139			X												X							G			1
MJ675	OCBS34S06		3		1145			X												X							G			1
MJ676	OCBS29S01		0.5		1158			X											TB	X						*	G			1
MJ677	OCBS35S01		0.5		1159			X							X			X	TB	X					TB					1
MJ678	OCBS36S01		0.5		1210			X							X			X												1
MJ679	OCBS37S01		0.5		1215			X							X			X												1
MJ680	OCBS38S01		0.5		1219			X							X			X												1
MJ681	OCBS39S01		1		1349			X					X		TB			TB									HA			1
MJ682	OCSS03S01		0		1351			X					X														G			2
		TB		TB																										

Samplers Signature: Bryan Burton	Date 2-16-06	Time 1430
Relinquished By: Bryan Burton	Date 2-16-06	Time 1431
Received By: [signature]	Date 2/16/06	Time 1431
Relinquished By: [signature]	Date 2/16/06	Time 1910
Received By (LAB): [signature]	Date 2/16/06	Time 1910

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: / /
Temperature °C 3

Comments:
* Analyze for silver + thallium

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 6 Data Dup
Control Number: COC MJ 683
Date 2/16/06 Page 3 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No.
QC Level:
TAT: Standard

Preservatives: HCL, pH<2 4°C; HCL, pH<2 4°C; 4°C; 4°C; 4°C; H2SO4, pH<2 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM PAH	8270C SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ683	OCBS1C501	7.4	0.5	2-16-06	1358			X				X	X							*~~88~~	X							G			2
MJ684	OCBS1C001	↓	0.5	↓	1402			X				X	X							X		X						G			2
MJ685	OCBS24501		0.5		1409			X												X		X						G			1
MJ686	OCBS32502	↓	3	↓	1047			X												*								HA			2

J.S. 2/16/06

Samplers Signature:	Date	Time
Bryan Burton	2-16-06	1433
Relinquished By: Bryan Burton	Date 2-16-06	Time 1433
Received By:	Date 2/16/06	Time 1433
Relinquished By:	Date 2/16/06	Time 1910
Received By (LAB):	Date 2/16/06	Time 19:10

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted : / /
Temperature °C 3

Comments:
* Analyze for thallium only

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: 02/21/06

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ673	MJ673	OCBS34S04	2/16/06	PCB by Method 8082. Standard TAT.	Hold PCB analysis.
MJ673	MJ674	OCBS34S05	2/16/06	PCB by Method 8082. Standard TAT.	Hold PCB analysis.
MJ673	MJ675	OCBS34S06	2/16/06	PCB by Method 8082. Standard TAT.	Hold PCB analysis.

The reason for these changes:

Incorrectly marked on COC form X
Lack of sample volume ____
MWH office personnel require this change X
Other. Containers mislabeled ____

Thank you

MWH
MONTGOMERY WATSON HARZA
300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 1 Data Gap
Control Number: COC MJ673
Date 2/16/06 Page 2 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowell Moffitt
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

Cooler No.
QC Level:
TAT:

Preservatives: None

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	U.S. Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM PAH	8270C SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE	Ag, Tl	Sampling Method	Extra Volume MS/MSD	MOLD	Total # of Bottles
MJ673	OCBS34 504	7.4	3	2/16/06	1133			X													X						HA	G	X	1
MJ674	OCBS34 505		3		1139			X													X						HA	G	X	1
MJ675	OCBS34 506		3		1145			X													X						HA	G	X	1
MJ676	OCBS29 501		0.5		1158			X													X						*	G	AB 02/21/06	1
MJ677	OCBS35 501		0.5		1159			X								X			X		X						*	G		1
MJ678	OCBS36 501		0.5		1210			X								X			X		X						*	G		1
MJ679	OCBS37 501		0.5		1215			X								X			X								*	G		1
MJ680	OCBS38 501		0.5		1219			X								X			X								*	G		1
MJ681	OCBS39 501		1		1349			X					X			X			X									HA		1
MJ682	OC SS03 501		0		1351			X					X															G		2

Samplers Signature: Bryan Burton		Date: 2-16-06	Time: 1430
Relinquished By: Bryan Burton		Date: 2-16-06	Time: 1431
Received By:		Date	Time
Relinquished By:		Date	Time
Received By (LAB):		Date	Time

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C

Comments: * Analyze for silver + thallium

FEB-16 06 16:29 FROM:BOEING/SSFL 18184668730 TO:8587511201 PAGE:02

Calscience Environmental Laboratories, Inc.

March 02, 2006

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

Subject: **Calscience Work Order No.: 06-02-1328**
Client Reference: IPB1719

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 2/24/2006 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of any subcontracted analysis is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Steven L. Lane
Laboratory Director

Calscience Environmental Laboratories, Inc.

Case Narrative for 06-02-1328

Sample Condition on Receipt

Four soil samples were received as part of this Work Order on February 24, 2006. All samples were transferred to the laboratory in an ice-chest following strict chain-of-custody procedures. The temperature (3.3°C) of the samples was measured upon arrival in the laboratory and was within acceptable limits. The samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers, and stored in refrigeration units pending analysis.

The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in it entirety.

Data Summary

The samples included in this report were analyzed in accordance with the attached chain-of-custody (COC) records. Data is presented on a dry weight basis.

Holding Times

All holding time requirements were met.

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

The method blank data showed non-detectable levels for all constituents.

Matrix Spikes

Matrix Spikes (MS) and Matrix Spike Duplicates (MSD) were performed at required frequencies. All recoveries were within acceptable limits, with the exception of specific analytes by EPA Method 8270C SIM. Please see Table B below for details.

Calscience Environmental Laboratories, Inc.

Case Narrative for 06-02-1328

Table B: Matrix Spike / Matrix Spike Duplicate outside acceptable limits	
EPA Method 827C SIM	
Batch #	Analytes(s)
060223S09	Pyrene

Laboratory Control Samples

The Laboratory Control Sample (LCS) analyses were performed at the required frequencies. All recoveries were within acceptable limits.

Surrogates

Surrogate recoveries for all samples were within acceptable control limits.

CALSCIENCE ENVIRONMENTAL LABORATORIES, INC.
Sample Summary Report

WORK ORDER #: **06-02-1328** **QAPP:** **0000**

#	*Client Sample ID*	*Matrix*	*Date Collected*	*NoC*	*Comment*
1	IPB1719-15	S	02/16/2006	1	
2	IPB1719-16	S	02/16/2006	1	
3	IPB1719-17	S	02/16/2006	1	
4	IPB1719-18	S	02/16/2006	1	

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 06 - 12 - 1318

Cooler 1 **of** 1

SAMPLE RECEIPT FORM

CLIENT: Del Mar Analytical **DATE:** 12/14/06

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_____ Chilled, cooler with temperature blank provided.
_____ Chilled, cooler without temperature blank.
_____ Chilled and placed in cooler with wet ice.
_____ Ambient and placed in cooler with wet ice.
_____ Ambient temperature.
_____ °C Temperature blank.

LABORATORY (Other than Calscience Courier):

_____ °C Temperature blank.
3.3 °C IR thermometer.
_____ Ambient temperature.

Initial: TL

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: ✓ No (Not Intact) : _____ Not Applicable (N/A): X (TV)

Initial: TL

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers for analyses requested	✓		
Proper preservation noted on sample label(s)			✓
VOA vial(s) free of headspace.			✓
Tedlar bag(s) free of condensation			✓

Initial: TL

COMMENTS:

Del Mar Analytical

1328

1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IPB1719

SENDING LABORATORY:

Del Mar Analytical, Irvine
17461 Derian Avenue. Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 261-1228
Project Manager: Michele Chamberlin

RECEIVING LABORATORY:

Calscience-SUB
7440 Lincoln Way
Garden Grove, CA 92841
Phone :714-895-5494
Fax: 714-894-7501

27312
0.2°C

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date:_____ Initials:_____

	Analysis	Expiration	Comments
1	**Sample ID: IPB1719-15 Soil**	**Sampled: 02/16/06 13:49**	
	8270C (SIM)-OUT	03/02/06 13:49	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
	Dry Wt-OUT	03/16/06 13:49	% solids, sub to Calscience, $10/sample
	Containers Supplied:		
	4 oz Jar (IPB1719-15B)		
2	**Sample ID: IPB1719-16 Soil**	**Sampled: 02/16/06 13:51**	
	8270C (SIM)-OUT	03/02/06 13:51	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
	Dry Wt-OUT	03/16/06 13:51	% solids, sub to Calscience, $10/sample
	Containers Supplied:		
	Brass Sleeve (IPB1719-16B)		
3	**Sample ID: IPB1719-17 Soil**	**Sampled: 02/16/06 13:58**	
	8270C (SIM)-OUT	03/02/06 13:58	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
	Dry Wt-OUT	03/16/06 13:58	% solids, sub to Calscience, $10/sample
	Containers Supplied:		
	Brass Sleeve (IPB1719-17B)		
4	**Sample ID: IPB1719-18 Soil**	**Sampled: 02/16/06 14:02**	
	8270C (SIM)-OUT	03/02/06 14:02	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
	Dry Wt-OUT	03/16/06 14:02	% solids, sub to Calscience, $10/sample
	Containers Supplied:		
	Brass Sleeve (IPB1719-18B)		

SAMPLE INTEGRITY:

All containers intact: ☐ Yes ☐ No Sample labels/COC agree: ☐ Yes ☐ No Samples Received On Ice:: ☐ Yes ☐ No
Custody Seals Present: ☐ Yes ☐ No Samples Preserved Properly: ☐ Yes ☐ No Samples Received at (temp): _____

Released By	Date	Time	Received By	Date	Time
[illegible]	2-20-06	1700	Bettina J. Benedict	2/21/06	0910
Bettina J. Benedict	2/23/06	1600	[illegible]	2/24/06	1030

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 06-02-1328

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

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

Del Mar Analytical

LABORATORY REPORT

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

Project: SSFL Group 6
Data Gap

Sampled: 02/16/06
Received: 02/16/06
Issued: 04/20/06 19:13

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 10 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT:	Samples were received intact, at 3°C, on ice and with chain of custody documentation.
HOLDING TIMES:	All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.
PRESERVATION:	Samples requiring preservation were verified prior to sample analysis.
QA/QC CRITERIA:	All analyses met method criteria, except as noted in the report with data qualifiers.
COMMENTS:	Results that fall between the MDL and RL are 'J' flagged.
SUBCONTRACTED:	There were no subcontracted analyses in this report.
ADDITIONAL INFORMATION:	Enclosed are results for additional analyses only.

LABORATORY ID	CLIENT ID	MATRIX
IPB1719-16	MJ682	Soil

Reviewed By:

Michele Chamberlin

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
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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

DATA QUALIFIERS AND DEFINITIONS

A-01	Sample result might be biased high due to coelution of Aroclors 1254 and 1260
C	Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.
H	Sample analysis performed past method-specified holding time.
H-1	Sample analysis performed past the method-specified holding time per client's approval.
H4	Sample was extracted past holding time, but analyzed within analysis holding time.
J	Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
M2	The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
M-HA	Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

ADDITIONAL COMMENTS

For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.

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.

Del Mar Analytical

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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

Certification Summary

Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
EPA 160.3 MOD	Soil	N/A	N/A
EPA 3545/8082	Soil	X	X
EPA 6010B	Soil	X	X
EPA 6020	Soil	X	X
EPA 7471A	Soil	X	X
EPA 8015 MOD.	Soil	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

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.

165

LPB 17.19

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 6 Data Gap

Control Number: COC MJ661

Date 2/16/06 Page 1 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	courier
Comment:	

Cooler No.	
QC Level:	TAT: Standard

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | 4°C | H2SO4, pH<2 4°C | 4°C | HNO3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

Sample Data								Matrix				8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product																					
MJ661	~~OCBS34 TB~~	~~7.4~~	1	2/16/06	0910			X					X															HA			1
MJ662	SRBS71 S01		1		0924			X					X															↓			1
MJ663	SRBS72 S01		1		0929			X					X															↓			1
MJ664	SRBS73 S01	↓	0.5		0949			X					X						X		X							G			2
MJ665	OCBS32 S01	7.4	0.5		1028			X								X			X												2
MJ666	OCBS33 S01		0.5		1040			X								X			X												2
MJ667	OCBS33 D01		0.5		1045			X								X												↓			1
MJ668	OCBS34 S70		0.5		—			X													X										0
MJ669	OCBS34 S01		0.5		1121			X													X							G		X	1
MJ670	OCBS34 S02		0.5		1127			X													X							↓		X	1
MJ671	OCBS34 S03		0.5		1130			X													X							↓		X	1
MJ672	OCBS34 S80	↓	0.5	↓	—			X													X									X	0

Samplers Signature: Bryan Bruton	Date 2-16-06	Time 1430
Relinquished By: Bryan Bruton	Date 2-16-06	Time 1430
Received By: [signature]	Date 2/16/06	Time 1430
Relinquished By: [signature]	Date 2/16/06	Time 1900
Received By (LAB): [signature]	Date 2/16/06	Time 1910

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC Seal intact: Y or N

Any other problems: Y or N

If any YES, MWH contacted: Y or N

Date Contacted : / /

Temperature °C 3

Comments:
Create composite MJ668 from MJ669, 670, and 671. Run MJ668 & hold other 3 pending analysis.
Hold MJ672 pending analysis of MJ668
(Create MJ672 from MJ673-675)
- Run Thallium only on MJ665-~~67~~66
- Hold dioxins on MJ666 and 667

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 6 Data Gap
Control Number: COC MJ673
Date 2/16/06 Page 2 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

Cooler No.
QC Level:
TAT:

Preservatives: None

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC (HCL, pH<2 4°C)	8015BM TPH (HCL, pH<2 4°C)	8270CSIM SVOC PAH (4°C)	8270C SVOC (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)	Ag, Tl	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ673	OCBS34S04	7.4	3	2/16/06	1133			X												X						HA	G			1
MJ674	OCBS34S05		3		1139			X												X							G			1
MJ675	OCBS34S06		3		1145			X												X							G			1
MJ676	OCBS29S01		0.5		1158			X											TB	X						*	G			1
MJ677	OCBS35S01		0.5		1159			X							X			X	TB	X					TB					1
MJ678	OCBS36S01		0.5		1210			X							X			X												1
MJ679	OCBS37S01		0.5		1215			X							X			X												1
MJ680	OCBS38S01		0.5		1219			X							X			X												1
MJ681	OCBS39S01		1		1349			X					X		TB			TB									HA			1
MJ682	OCSS03S01		0		1351			X					X														G			2
		TB		TB																										

Samplers Signature: Bryan Burton	Date 2-16-06	Time 1430
Relinquished By: Bryan Burton	Date 2-16-06	Time 1431
Received By: [signature]	Date 2/16/06	Time 1431
Relinquished By: [signature]	Date 2/16/06	Time 1910
Received By (LAB): [signature]	Date 2/16/06	Time 1910

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: / /
Temperature °C 3

Comments:
* Analyze for silver + thallium

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 6 Data Dup
Control Number: COC MJ 683
Date 2/16/06 Page 3 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No.
QC Level:
TAT: Standard

Preservatives: HCL, pH<2 4°C; HCL, pH<2 4°C; 4°C; 4°C; 4°C; H2SO4, pH<2 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM PAH	8270C SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ683	OCBS1C501	7.4	0.5	2-16-06	1358			X				X	X							*~~88~~	X							G			2
MJ684	OCBS1C001	↓	0.5	↓	1402			X				X	X							X		X						G			2
MJ685	OCBS24501		0.5		1409			X												X		X						G			1
MJ686	OCBS32502	↓	3	↓	1047			X												*								HA			2

J.S. 2/16/06

Samplers Signature:	Date	Time
Bryan Burton	2-16-06	1433
Relinquished By: Bryan Burton	Date 2-16-06	Time 1433
Received By:	Date 2/16/06	Time 1433
Relinquished By:	Date 2/16/06	Time 1910
Received By (LAB):	Date 2/16/06	Time 19:10

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted : / /
Temperature °C 3

Comments:
* Analyze for thallium only

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92606 (949) 261-1022 FAX (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
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

ADDITIONAL ANALYSIS REQUEST FORM

Today's Date: 3/22 Del Mar Analytical Project Manager: LIC

Request via: ____ telephone ____ chain of custody form ____ fax transmission X E-mail X other change form

Client: MWH-San Diego Contact: Lisa Tucker

Project: SSFL Group 6

Date Sampled: 2/16/06 Date Received: 2/16/06

Status: ____ in progress X completed ____ received today ____ received yesterday ____ on hold ____ other

SAMPLE NUMBER	SAMPLE DESCRIPTION	ANALYSIS REQUESTED	SPECIAL REQUIREMENTS
1PB1719-1L	MW682	8082-dry weight, 8015-dry weight, Metals (CAM-6020 + Al + B)	

- Add-in to original workorder ✓
- Due 4/4/06
- okay to analyze past holdtime

TURNAROUND STATUS: _____Same Day _____24hr _____48hr _____3days

_____ 5days _____Standard _____No Rush Charge

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: 03/21/06

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign: _____

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ673	MJ682	OCSS03S01	2/16/06	PAH by 8270CSIM. Standard TAT.	Turn on PCB's analysis by Method 8082. Standard TAT.

The reason for these changes:

Incorrectly marked on COC form _____
Lack of sample volume _____
MWH office personnel require this change X
Other: Containers mislabeled _____
Note: PCB's analysis added per T.B. 03/17/06.

Thank you

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group Data Gap
Control Number: COC MJ 673
Date 2/16/06 Page 2 of 3

Project Manager	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

Cooler No.
QC Level:
TAT:

Preservatives: None

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM PAH	SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	8000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE	Ag, Tl	Sampling Method	Extra Volume	MS/MSD	HOLD	Total # of Bottles
											HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C	4°C						
MJ 673	OCBS34 S04	7.4	3	2/16/06	1133			X													X						HA	G			X	1
MJ674	OCBS34 S05		3		1139			X													X							G			X	1
MJ675	OCBS34 S06		3		1145			X													X							G			X	1
MJ676	OCBS29 S01		0.5		1158			X													X						*	G		AB 02/21/06		1
MJ677	OCBS35 S01		0.5		1159			X								X			X		X											1
MJ678	OCBS36 S01		0.5		1210			X								X			X													1
MJ679	OCBS37 S01		0.5		1215			X								X			X													1
MJ680	OCBS38 S01		0.5		1219			X								X			X													1
MJ681	OCBS39 S01		1		1349			X						X		X			X									HA				1
MJ682	OC SS03 S01		0		1351			X						X							X	AB 03/21/06						G				2

Samplers Signature: Bryan Burton	Date 2-16-06	Time 1430
Relinquished By: Bryan Burton	Date 2-16-06	Time 1431
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C

Comments:
* Analyze for silver + thallium

White Copy:Original Yellow:Lab Copy Pink:Field Copy

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: 03/22/06

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ673	MJ682	OCSS03S01	2/16/06	PAH by 8270CSIM and PCB's by Method 8082. Standard TAT.	New MWH_ID = OCSS04S01 Turn on TPH, by 8015/BM and Metals by 6010B/7000 analysis. Standard TAT.

The reason for these changes:

Incorrectly marked on COC form ____
Lack of sample volume ____
MWH office personnel require this change X
Other: Containers mislabeled ____

Thank you

MWH
MONTGOMERY WATSON HARZA
300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 1 & Grp 2
Control Number: COC MJ673
Date 2/16/06 Page 2 of 3

Project Manager:	Obie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowell Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

Cooler No.	
QC Level:	TAT:

Preservatives: None

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	6015BM TPH	8270CSIM PAH	SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE	Ag, Tl	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ673	OCBS34 504	7.4	3	2/16/06	1133			X													X						*	G	AB 02/21/06	X	1
MJ674	OCBS34 505		3		1139			X													X							G		X	1
MJ675	OCBS34 506		3		1145			X													X							G		X	1
MJ676	OCBS29 501		0.5		1158			X													X						*	G			1
MJ677	OCBS35 501		0.5		1159			X								X			X												1
MJ678	OCBS36 501		0.5		1210			X								X			X												1
MJ679	OCBS37 501		0.5		1815			X								X			X												1
MJ680	OCBS38 501		0.5		1219			X								X			X												1
MJ681	OCBS39 501		1		1349			X								X			X									HA			1
MJ682	~~OCSS03 501~~ OCSS04 501		0		1351			X			X		X	X		AB 03/21/06			X		X		AB 03/21/06					G			2

AB 03/22/06

AB 03/22/06

Samplers Signature: Bryan Burton		Date: 2-16-06	Time: 1430
Relinquished By: Bryan Burton		Date: 2-16-06	Time: 1431
Received By:		Date:	Time:
Relinquished By:		Date:	Time:
Received By (LAB):		Date:	Time:

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC Seal Intact: Y or N

Any other problems: Y or N

If any YES, MWH contacted: Y or N

Date Contacted: __/__/__

Temperature °C

Comments:
* Analyze for silver + thallium

FEB-15 05 16:29 FROM:BOEING/SSFL 18184668730 TO:8587511201 PAGE:02

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: 02/21/06

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ673	MJ673	OCBS34S04	2/16/06	PCB by Method 8082. Standard TAT.	Hold PCB analysis.
MJ673	MJ674	OCBS34S05	2/16/06	PCB by Method 8082. Standard TAT.	Hold PCB analysis.
MJ673	MJ675	OCBS34S06	2/16/06	PCB by Method 8082. Standard TAT.	Hold PCB analysis.

The reason for these changes:

Incorrectly marked on COC form X
Lack of sample volume ____
MWH office personnel require this change X
Other. Containers mislabeled ____

Thank you

MWH
MONTGOMERY WATSON HARZA
300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 1 Data Gap
Control Number: COC MJ673
Date 2/16/06 Page 2 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowell Moffitt
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

Cooler No.
QC Level:
TAT:

Preservatives: None

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	U.S. Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM PAH	8270C SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE	Ag, Tl	Sampling Method	Extra Volume MS/MSD	MOLD	Total # of Bottles
MJ673	OCBS34 504	7.4	3	2/16/06	1133			X													X						HA	G	X	1
MJ674	OCBS34 505		3		1139			X													X						HA	G	X	1
MJ675	OCBS34 506		3		1145			X													X						HA	G	X	1
MJ676	OCBS29 501		0.5		1158			X													X						*	G	AB 02/21/06	1
MJ677	OCBS35 501		0.5		1159			X								X			X		X						*	G		1
MJ678	OCBS36 501		0.5		1210			X								X			X		X						*	G		1
MJ679	OCBS37 501		0.5		1215			X								X			X								*	G		1
MJ680	OCBS38 501		0.5		1219			X								X			X								*	G		1
MJ681	OCBS39 501		1		1349			X					X			X			X									HA		1
MJ682	OC SS03 501		0		1351			X					X															G		2

Samplers Signature: Bryan Burton		Date: 2-16-06	Time: 1430
Relinquished By: Bryan Burton		Date: 2-16-06	Time: 1431
Received By:		Date	Time
Relinquished By:		Date	Time
Received By (LAB):		Date	Time

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C

Comments: * Analyze for silver + thallium

FEB-16 06 16:29 FROM:BOEING/SSFL 18184668730 TO:8587511201 PAGE:02

Near E Street & G Street ~~Burbank~~

MWH MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: Transformer Sampling Area II

Control Number: COC ~~WA0S6~~ WD086

Date 8/25/04 Page 1 of 1

Manager:	Dixie Hambrick
Name:	Boeing SSFL
Number:	WESOILS 1890864-011608
...ive results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	COOLER
Comment:	Lab Pickup

...No.	
...vel:	Normal
TAT:	Standard

Preservatives: None

Sample Data

...mple ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7198A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
...086	XFBS22S01		1.0	8/25/4	1045			/												/								/	1
...087	XFBS22S02		1.0		1050			/												/								/	1
...088	XFBS22S03		1.0		1055			/												/								/	1
...089	XFBS22S70		/		—			/												/									0
...090	XFBS23S01		1.25		1105			/												/								/	1
	~~XFBS23S02~~																												
...091	XFBS23S03		1.0		1110			/												/								/	1
...092	XFBS23S70		/		—			/												/									0

SV 8/25/04

...ers Signature:	Date 8/25/4	Time 1515
...uished By:	Date 8/25/4	Time
...red By:	Date	Time
...uished By:	Date	Time
...red By (LAB):	Date	Time

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC Seal intact: Y or N

Any other problems: Y or N

If any YES, MWH contacted: Y or N

Date Contacted: __/__/__

Temperature °C

Comments:
- WD086, WD087, & WD088 to be composited after sleeve is homogenized. WD089 will be the composite.
- WD090 & WD091 to be composited after sleeve is homogenized. WD092 will be the composite.
- Hold individual sleeves pending analysis of composites.

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

LABORATORY REPORT

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

Project: SSFL Group 6
Data Gap

Sampled: 02/14/06-02/17/06
Received: 03/13/06
Issued: 04/20/06 12:52

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 9 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 5°C, on ice and with chain of custody documentation.

HOLDING TIMES: Not all holding times were met. Results were qualified where the sample analysis did not occur within method specified holding time requirements.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Results that fall between the MDL and RL are 'J' flagged.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID	CLIENT ID	MATRIX
IPC1562-01	MJ623	Soil
IPC1562-02	MJ624	Soil
IPC1562-03	MJ625	Soil
IPC1562-04	MJ626	Soil
IPC1562-05	MJ627	Soil
IPC1562-06	MJ669	Soil
IPC1562-07	MJ670	Soil
IPC1562-08	MJ671	Soil
IPC1562-09	MJ672	Soil
IPC1562-10	MJ688	Soil
IPC1562-11	MJ689	Soil

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
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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: IPC1562

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

LABORATORY ID	CLIENT ID	MATRIX
IPC1562-12	MJ690	Soil
IPC1562-13	MJ709	Soil

Reviewed By:

Michele Chamberlin

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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Del Mar Analytical

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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: IPC1562

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

DATA QUALIFIERS AND DEFINITIONS

A-01	Sample result might be biased high due to coelution of Aroclors 1248 and 1260.
A-01a	Sample result might be biased high due to coelution of Aroclors 1254 and 1260.
H-1	Sample analysis performed past the method-specified holding time per client's approval.
H4	Sample was extracted past holding time, but analyzed within analysis holding time.
J	Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
M-NR	No results were reported for the MS/MSD. The sample used for the MS/MSD required dilution due to the sample matrix. Because of this, the spike compounds were diluted below the detection limit.
R-10	The RPD between the primary and confirmatory analysis exceeded 40%. Per method 8000B, the lower value was reported due to apparent chromatographic problems.
RL-1	Reporting limit raised due to sample matrix effects.
Z3	The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.
Z5	Due to sample matrix effects, the surrogate recovery was outside acceptance limits. Secondary surrogate recovery was within the acceptance limits.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

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: IPC1562

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

Certification Summary

Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
EPA 160.3 MOD	Solid	N/A	N/A
EPA 3545/8082	Soil	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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Del Mar Analytical

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1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
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

IPC1562

ADDITIONAL ANALYSIS REQUEST FORM

Today's Date: 3/13/06 Del Mar Analytical Project Manager: NC

Request via: ____ telephone ____ chain of custody form ____ fax transmission X E-mail X other change orders

Client: [illegible] - San Diego Contact: Lisa Tucker

Project: SSIL Group 6 / Data Gap

Date Sampled: see below Date Received: see below

Status: ____ in progress ____ completed ____ received today ____ received yesterday X on hold ____ other

SAMPLE NUMBER	SAMPLE DESCRIPTION	ANALYSIS REQUESTED	SPECIAL REQUIREMENTS
IPB1429-14	MJ623	% solids, PCB's	okay to analyze past hold time
IPB1429-14	MJ624		
IPB1429-14	MJ625		
IPB1429-14	MJ626		
IPB1429-15	MJ627		
IPB1719-08	MJ669		
IPB1719-08	MJ670		
IPB1719-08	MJ671		
IPB1719-09	MJ672		
IPB1791-01	MJ688		
IPB1791-01	MJ689		
IPB1791-01	MJ690		
IPB1791-17	MJ709		

add on, new workorder

VB

TURNAROUND STATUS: ____ Same Day ____ 24hr ____ 48hr ____ 3days

____ 5days X Standard ____ No Rush Charge

g:\dmai\misc\forms\add-req.doc

F A X

MWH

9444 Farnham St., Suite 300
San Diego. California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: 03/13/06

To: Michele C lamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ620	MJ623	SRBS54S01	2/14/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.
MJ620	MJ624	SRBS54S02	2/14/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.
MJ620	MJ625	SRBS54S03	2/14/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.
MJ620	MJ626	SRBS54S04	2/14/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.
MJ620	MJ627	SRBS54S05	2/14/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.

The reason for these changes:

Incorrectly marked on COC form _____
Lack of sample volume _____
MWH office personnel require this change X
Other: Containers mislabeled _____

Thank you

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL G[illegible]
Control Number: COC MJ6[illegible]
Date 2/14/06 Page 2 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	[illegible]
Comment:	

Cooler No.
QC Level:
TAT: [illegible]

Preservatives: W[illegible] HNO[illegible]

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM SVOC (PAH)	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
													HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C	4°C				
MJ6[illegible]	NCSS06S01	7.10	0.5	2-14-06	938			X					X		X			X								G			2
MJ621	NCSS08S01		0.5		1003			X					X		X			X								G			2
MJ622	SRBS51S70	[illegible]	0.5		—			X												X									
MJ623	SRBS54S01		0.5		1049			X												X						G		X	1
MJ624	SRBS54S02		0.5		1050			X												X						G		X	1
MJ625	SRBS54S03		0.5		1100			X												X						G		X	1
MJ626	SRBS54S04		0.5		1109			X												X						G		X	1
MJ627	SRBS54S05		2.5		1102			X												X						G		X	1
MJ62[illegible]	SRBS55S01		0.5		1130			X												X						G			1
MJ62[illegible]	SRBS56S01		0.5		1145			X												X						G			1
[illegible]	[illegible]58S01		0.5		[illegible]			X				X						X		X						G			
MJ[illegible]	SRBS[illegible]S01		0.5		1335			X				X						X		X						G			2

TB 2/23/06

54

AB 03/14/06

Samplers Signature:	Date	Time
Brian Lunton	2-14-06	954
Relinquished By: [signature]	2-14-06	1610
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWR contacted: Y or N
Date Contacted: __/__/__
Temperature

Comments:
MJ622 is a composite of MJ623-626. [illegible]
[illegible]
[illegible]
[illegible]
[illegible] MJ628 - run for PCBs.

Copy:Original Yellow:Lab Copy Pink:Field Copy

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: 03/13/06

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ661	MJ669	OCBS34S01	2/16/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.
MJ661	MJ670	OCBS34S02	2/16/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.
MJ661	MJ671	OCBS34S03	2/16/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.
MJ661	MJ672	OCBS34S80	2/16/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.

The reason for these changes:

Incorrectly marked on COC form _____
Lack of sample volume _____
MWH office personnel require this change X
Other: Containers mislabeled _____

Thank you

MWH
MONTGOMERY WATSON HARZA
300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: SSFL Group 1 Data Gap
Control Number: COC MJ661
Date 2/16/06 Page 1 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowell Mallitt
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No.
QC Level:
TAT: Standard

Preservatives: HCL pH<2 4°C; HCL pH<2 4°C; 0-4°C; 0-4°C; 0-4°C; H2SO4, pH<2 4°C; 0-4°C; HNO3, pH<2 4°C; 0-4°C; 0-4°C; 0-4°C; 0-4°C; 0-4°C; 0-4°C; 0-4°C; 0-4°C

| Sample Data | | | | | | | | Matrix | | | Analysis | | | | | | | |

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date 03/13/06

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:_____

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ687	MJ688	OCBS40S01	2/17/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.
MJ687	MJ689	OCBS40S02	2/17/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.
MJ687	MJ690	OCBS40S03	2/17/06	PCB analysis on HOLD.	Take off HOLD PCB analysis. Standard TAT.

The reason for these changes:

Incorrectly marked on COC form _____
Lack of sample volume _____
MWH office personnel require this change X
Other: Containers mislabeled _____

Thank you

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: COC MJ687
Date 2/17/06 Page 1 of 3

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No:	
QC Level:	TAT: Normal

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | 4°C | H_2SO_4, pH<2 4°C | 4°C | HNO_3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

Sample Data						Matrix				8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC PAH	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDNANCE	1LM02JRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Aluminum		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product																				
MJ687	OCBS40 S70		2-17-06																			X							Ø
MJ688	OCBS40 S01	4.5	2-17-06	826			X															X				HA			1
MJ689	OCBS40 S02	4.5		831			X															X				HA			1
MJ690	OCBS40 S03	4.5		843			X															X				HA			1
MJ691	OCBS40 S80																					X							Ø
MJ692	OCBS40 S04	7.5		828			X															X				HA		X	1
MJ693	OCBS40 S05	7.5		835			X															X				HA		X	1
MJ694	OCBS40 S06	7.5		841			X															X				HA		X	1
MJ695	OCBS41 S01	7		918			X						X					X								HA			1
MJ696	OCBS42 S01	6.5		926			X																	X		HA			1
MJ697	OCBS43 S01	7		944			X															X		X		HA			1
MJ698	OCBS44 S01	7	↓	1000			X																	X		HA			1

Samplers Signature: Bryan Burton	Date: 2-17-06	Time: 1400
Relinquished By:	Date: 2/17/06	Time: 1800
Received By:	Date: 2/17/06	Time: 1800
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

Please homogenize MJ688, 689, 690 individually, then take a composite of them as ~~MJ687~~ MJ687. Hold MJ688-690 pending result of MJ687. Homogenize MJ692, 693, 694 individually, then take a composite of them as MJ691. Hold MJ692-694 pending result of MJ691.

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: 03/13/06

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ699	MJ709	OCES54S01	2/17/06	PCB, TPH, PAH and Metals on HOLD.	Take off HOLD PCB analysis. Standard TAT.

The reason for these changes:

Incorrectly marked on COC form	
Lack of sample volume	
MWH office personnel require this change	X
Other: Containers mislabeled	

Thank you

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: COC MJ699

Date 2/17/06 Page 2 of 3

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No:	
QC Level:	TAT: Normal

Preservatives: None

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID
MJ699	OCBS 45 SO1	3	2-17-06	1013		
MJ700	OCBS 46 SO1	0.5		1024		
MJ701	OCBS 47 SO1	0.5		1026		
MJ702	OCBS 48 SO1	0.5		1036		
MJ703	OCBS 49 SO1	0.5		1039		
MJ704	OCBS 50 SO1	0.5		1111		
MJ705	OCBS 51 SO1	0.5		1117		
MJ706	OCBS 51 SO2	3		1128		
MJ707	OCBS 52 SO1	0.5		1128		
MJ708	OCBS 53 SO1	0.5		1137		
MJ709	OCBS 54 SO1	0.5		1139		
MJ710	OCBS 55 SO1	0.5		1148		

Matrix	Soil	Water	Product	
MJ699	X			
MJ700	X			
MJ701	X			
MJ702	X			
MJ703	X			
MJ704	X			
MJ705	X			
MJ706	X			
MJ707	X			
MJ708	X			
MJ709	X			
MJ710	X			

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H_2SO_4, pH<2 4°C	4°C	HNO_3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
8021 VOC																				
8015OG TPH	X	X																		
8270SIM (PAH) SVOC			X	X	X															
8270R SVOC			X	X	X															
8290 DIOXIN			X	X	X															
ASTM D19 FORMALDEHYDE																				
8330 ORDINANCE																				
1LM02.IRT METALSRT	X	X	X	X	X															
7196 HEX CHROMIE																				
340.2 FLUORIDE																				
300 ANIONS																				
9045/9040 pH																				
8082 PCBs	X	X	X	X	X															
IC HYDRAZ																				
Alcohols															X					
Sampling Method	HA	G	G	G	G	G	G	G	G	HA	G	G	G	G						
Extra Volume MS/MSD																				
HOLD										X										
Total # of Bottles	1	1	1	1	1	2	2	2	2	2	2	2	2	2						

Samplers Signature: Bryan Burton	Date: 2-17-06	Time: 1401
Relinquished By:	Date: 2/17/06	Time: 1800
Received By:	Date: 2/17/06	Time: 1800
Relinquished By:	Date:	Time:
Received By (LAB):	Date:	Time:

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

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

LABORATORY REPORT

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

Project: SSFL Group 6
Data Gap

Sampled: 04/10/06
Received: 04/10/06
Issued: 04/25/06 13:50

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 5 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

SUBCONTRACTED: Refer to the last page for specific subcontract laboratory information included in this report.

LABORATORY ID	CLIENT ID	MATRIX
IPD1011-01	MJ775	Soil
IPD1011-02	MJ724	Soil
IPD1011-06	MJ728	Soil
IPD1011-07	MJ729	Soil
IPD1011-08	MJ730	Soil
IPD1011-12	MJ734	Soil
IPD1011-13	MJ735	Soil
IPD1011-14	MJ736	Soil

Reviewed By:



Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

Del Mar Analytical

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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: IPD1011

Sampled: 04/10/06
Received: 04/10/06

DATA QUALIFIERS AND DEFINITIONS

C	Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.
J	Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
RL-1	Reporting limit raised due to sample matrix effects.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

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: IPD1011

Sampled: 04/10/06
Received: 04/10/06

Certification Summary

Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
1613A/1613B	Soil		
EDD + Level 4	Soil		
EPA 160.3 MOD	Solid	N/A	N/A
EPA 160.3 MOD	Water		
EPA 3545/8082	Soil	X	X
EPA 6020	Soil	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Subcontracted Laboratories

Alta Analytical *NELAC Cert #02102CA, California Cert #1640, Nevada Cert #CA-413*

1104 Windfield Way - El Dorado Hills, CA 95762

Analysis Performed: 1613-Dioxin-HR-Alta
Samples: IPD1011-01, IPD1011-02, IPD1011-07, IPD1011-08, IPD1011-13, IPD1011-14

Analysis Performed: Level 4 + EDD
Samples: IPD1011-01

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.

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: 04/14/06

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ775	MJ775	NCBS18S01	4/10/06	Dioxin analysis. 14 days TAT.	Add PCB's analysis. Standard TAT. Same analysis
MJ775	MJ724	NCBS19S01	4/10/06	Dioxin analysis. 14 days TAT.	Add PCB's analysis. Standard TAT. Same analysis.
MJ775	MJ734	NCSS06S01	4/10/06	Hold PCB's analysis. Analyze Pb only.	Turn on PCB's analysis. Standard TAT. Same analysis.

The reason for these changes:

Incorrectly marked on COC form _____
Lack of sample volume _____
MWH office personnel require this change X
Other: Containers mislabeled _____

Thank you

MW II

Group 6 Data Gap Stepoo B

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: COC ~~MJ723~~ MJ775 AB 04/12/06

Date 4/10/06 Page 1 of 2

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No:

QC Level:

TAT: 2 weeks for Dioxins

Preservatives: HCL, pH<2 4°C; HCL, pH<2 4°C; 4°C; 4°C; 4°C; H2SO4, pH<2 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

Sample Data

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LMOLIRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	8045/0040 pH	8082 PCBs	IC HYDRAZ	Lead Pb		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
~~MJ723~~	NCBS18S01	0.5	4/10/06	1155			X							X								X							1
MJ724	NCBS19S01	0.5		1200			X							X								X							1
MJ725	NCBS20S01	0.5		1205			X							X														X	1
MJ726	NCBS21S01	0.5		1210			X							X														X	1
MJ727	NCBS19S02	2.5		1215			X							X														X	1
MJ728	NCSS07S01	0'		1220			X															X							1
MJ729	NCBS22S01	0.5		1225			X							X										X					1
MJ730	NCBS23S01	0.5		1225			X							X										X					1
MJ731	NCBS22S02	2.5		1230			X							X										X				X	1
MJ732	NCBS24S01	0.5		1235			X							X										X				X	1
MJ733	NCBS25S01	0.5		1240			X							X										X				X	1
MJ734	NCSS06S01	0'		1255			X															X		X				X	1

MJ 775 AB 04/12/06

AB 04/14/06

AB 04/14/06

Samplers Signature: [signature]	Date	Time
Relinquished By:	Date	Time
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

MJ 734: Hold PCBs, analyze Pb

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

MWH OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

IPD1011

Group 6 Data Gap Step out 5

Chain of Custody

#006

Control Number: COC MJ723

Date 4/10/06 Page 1 of 2

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No:	
QC Level:	TAT: 2 weeks, for Dioxins

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H_2SO_4, pH<2 4°C	4°C	HNO_3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						

Sample Data							Matrix				8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	~~8290~~ 1613 DIOXIN mc 4/12/06	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Lead Pb		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product																					
MJ723	NCBS18 S01	0.5	4/10/06	1155			X								X															1
MJ724	NCBS19 S01	0.5		1200			X								X															1
MJ725	NCBS20 S01	0.5		1205			X								X														X	1
MJ726	NCBS21 S01	0.5		1210			X								X														X	1
MJ727	NCBS19 S02	2.5		1215			X								X														X	1
MJ728	NCSS07 S01	0'		1220			X																X							1
MJ729	NCBS22 S01	0.5		1225			X								X										X					1
MJ730	NCBS23 S01	0.5		1225			X								X										X					1
MJ731	NCBS22 S02	2.5		1230			X								X										X				X	1
MJ732	NCBS24 S01	0.5		1235			X								X										X				X	1
MJ733	NCBS25 S01	0.5		1240			X								X										X				X	1
MJ734	NCSS06 S01	0'		1255			X																X		X				X	1

Samplers Signature:	Date 4/10/06	Time 1145
Relinquished By:	Date 4/10/06	Time 1545
Received By:	Date 4/10/06	Time 1545
Relinquished By:	Date 4/10/06	Time 1810
Received By (LAB):	Date 4/10/06	Time 1810

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: __/__/__

Temperature °C 6°C

MJ734: Hold PCBs, analyze Pb

VB 4/11 1355

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

Group 6 Data Gap Step outs

MWH OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: COC MJ735

Date 4/10/06 Page 1 of 2

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Courier
Comment:

Cooler No:	
QC Level:	TAT: Dioxins = 2 weeks

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H_2SO_4, pH<2 4°C	4°C	HNO_3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						

Sample Data							Matrix																								
Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product		8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ735	OCBS10 S01	0.5	4/10/06	1320			X								X														1
MJ736	OCBS24 S01	0.5		1325			X								X														1
MJ737	SRBS60 S02	2		1400			X								X													X	1
MJ738	SRBS60 S02	2		1400			X																X					X	1
						JB			4/10/06																				

Samplers Signature		Date 4/10/06	Time 1315
Relinquished By:		Date 4/10/06	Time 1545
Received By:		Date 4/10/06	Time 1545
Relinquished By:		Date 4/10/06	Time 1810
Received By (LAB):		Date 4/10/06	Time 1810

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: (Y) or N

Broken container: Y or (N)

Received within holding time: (Y) or N

COC seal intact: Y or N

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: ___/___/___

Temperature °C 6.0

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: 04/12/06

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ723	MJ723	NCBS18S01	4/10/06	Dioxin by method 8290. 14 days TAT.	New COC No. = MJ775 New EPA_ID = MJ775 Same analysis.

The reason for these changes:

Incorrectly marked on COC form _____
Lack of sample volume _____
MWH office personnel require this change X
Other: Containers mislabeled _____

Thank you

ALTA

April 19, 2006

Alta Project I.D.: 27582

Ms. Michele Chamberlin
Del Mar Analytical, Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614

Dear Ms. Chamberlin,

Enclosed are the results for the six soil samples received at Alta Analytical Laboratory on April 12, 2006 under your Project Name "IPD1011". These samples were extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A rush turnaround time was provided for this work.

The results flagged with an asterisk were taken from a dilution of the extract.

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

Alta Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-933-1640 or by email at mmaier@altalab.com. Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Martha M. Maier
Director of HRMS Services

Alta Analytical Laboratory Inc.
1104 Windfield Way
El Dorado Hills, CA 95762
FAX (916) 673-0106
(916) 933-1640

Section I: Sample Inventory Report

Date Received: **4/12/2006**

Alta Lab. ID	Client Sample ID
27582-001	IPD1011-01
27582-002	IPD1011-02
27582-003	IPD1011-07
27582-004	IPD1011-08
27582-005	IPD1011-13
27582-006	IPD1011-14

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
E	The reported value exceeds the calibration range of the instrument.
H	The signal-to-noise ratio is greater than 10:1.
I	Chemical interference
J	The amount detected is below the Lower Calibration Limit of the instrument.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated Detection Limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit – concentrations that corresponds to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

CERTIFICATIONS

Accrediting Authority	Certificate Number
State of Alaska, DEC	CA413-02
State of Arizona	AZ0639
State of Arkansas, DEQ	05-013-0
State of Arkansas, DOH	Reciprocity through CA
State of California – NELAP Primary AA	02102CA
State of Colorado	
State of Connecticut	PH-0182
State of Florida, DEP	E87777
Commonwealth of Kentucky	90063
State of Louisiana, Health and Hospitals	LA050001
State of Louisiana, DEQ	01977
State of Maine	CA0413
State of Michigan	81178087
State of Mississippi	Reciprocity through CA
Naval Facilities Engineering Service Center	
State of Nevada	CA413
State of New Jersey	CA003
State of New Mexico	Reciprocity through CA
State of New York, DOH	11411
State of North Carolina	06700
State of North Dakota, DOH	R-078
State of Oklahoma	D9919
State of Oregon	CA200001-002
State of Pennsylvania	68-00490
State of South Carolina	87002001
State of Tennessee	02996
State of Texas	TX247-2005A
U.S. Army Corps of Engineers	
State of Utah	9169330940
Commonwealth of Virginia	00013
State of Washington	C1285
State of Wisconsin	998036160
State of Wyoming	8TMS-Q

Del Mar Analytical

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9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IPD1011

SENDING LABORATORY:

Del Mar Analytical - Irvine
17461 Derian Avenue. Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 261-1228
Project Manager: Michele Chamberlin

RECEIVING LABORATORY:

Alta Analytical - SUB
1104 Windfield Way
El Dorado Hills, CA 95762
Phone :(916) 933-1640
Fax: (916) 673-0106

27582
0.2°C

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date:_____ Initials:_____

Analysis	Expiration	Comments
Sample ID: IPD1011-01 Soil	**Sampled: 04/10/06 11:55**	
1613-Dioxin-HR-Alta	04 17/06 11:55	Sub to Alta, 17 congeners, rpt in dry wt if soil
Containers Supplied: 8 oz Jar (IPD1011-01A)		
Sample ID: IPD1011-02 Soil	**Sampled: 04/10/06 12:00**	
1613-Dioxin-HR-Alta	04 17/06 12:00	Sub to Alta, 17 congeners, rpt in dry wt if soil
Containers Supplied: 8 oz Jar (IPD1011-02A)		
Sample ID: IPD1011-07 Soil	**Sampled: 04/10/06 12:25**	
1613-Dioxin-HR-Alta	04 17/06 12:25	Sub to Alta, 17 congeners, rpt in dry wt if soil
Containers Supplied: 2 oz jar (IPD1011-07B)		
Sample ID: IPD1011-08 Soil	**Sampled: 04/10/06 12:25**	
1613-Dioxin-HR-Alta	04 17/06 12:25	Sub to Alta, 17 congeners, rpt in dry wt if soil
Containers Supplied: 2 oz jar (IPD1011-08B)		
Sample ID: IPD1011-13 Soil	**Sampled: 04/10/06 13:20**	
1613-Dioxin-HR-Alta	04 17/06 13:20	Sub to Alta, 17 congeners, rpt in dry wt if soil
Containers Supplied: 8 oz Jar (IPD1011-13A)		
Sample ID: IPD1011-14 Soil	**Sampled: 04/10/06 13:25**	
1613-Dioxin-HR-Alta	04 17/06 13:25	Sub to Alta, 17 congeners, rpt in dry wt if soil
Containers Supplied: 8 oz Jar (IPD1011-14A)		

Released By	Date	Time	Received By	Date	Time
Vin Banh	4/11/06		Bettina Y. Benedict	4/12/06	0900

Del Mar Analytical

17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IPD1011

YBJB, 4/12/06

27582
0.2°C

SAMPLE INTEGRITY:

All containers intact:	☐ Yes	☐ No	Sample labels/COC agree:	☐ Yes	☐ No	Samples Received On Ice::	☐ Yes	☐ No
Custody Seals Present:	☐ Yes	☐ No	Samples Preserved Properly:	☐ Yes	☐ No	Samples Received at (temp):		

Released By	Date	Time	Received By	Date	Time
Vn Bank	4/11/06		Bettina O. Benedict	4/12/06	0900

SAMPLE LOG-IN CHECKLIST

Alta Project #: 27582

Samples Arrival	Date/Time: 4/12/06 0900	Initials: BSB	Location: WR-2 Shelf/Rack:
Logged In:	Date/Time: 4/12/06 1055	Initials: BSB	Location: WR-2 Shelf/Rack: D-3

Delivered By:	(FedEx)	UPS	Cal	DHL	Hand Delivered	Other
Preservation:	(Ice)	Blue Ice		Dry Ice	None	
Temp °C 0.2°C	Time: 0910			Thermometer ID: DT-20		

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill — Trk # 7903 9045 6085	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?			
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓

$Na_2S_2O_3$ Preservation Documented?			COC	Sample Container	(None)
Shipping Container	Alta	(Client)	Retain	Return	(Dispose)

Comments:

All sample containers are clear jars

Del Mar Analytical

17461 Derian Ave. Suite 100, Irvine, CA 92 261-1 Fax: (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IPD1011 #27582

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical - Irvine 17461 Derian Avenue, Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Alta Analytical - SUB 1104 Windfield Way El Dorado Hills, CA 95762 Phone :(916) 933-1640 Fax: (916) 673-0106

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => * Due Date: 4/25/06 (2 weeks) Initials: MC

Analysis	Expiration	Comments
Sample ID: IPD1011-01 Soil	**Sampled: 04/10/06 11:55**	
1613-Dioxin-HR-Alta	04/17/06 11:55	Sub to Alta, 17 congeners, rpt in dry wt if soil
* Level 4 - EDD-OUT	05/08/06 11:55	Sub to Alta, EDD=Access 7
Containers Supplied:		
8 oz Jar (IPD1011-01A)		
Sample ID: IPD1011-02 Soil	**Sampled: 04/10/06 12:00**	
1613-Dioxin-HR-Alta	04/17/06 12:00	Sub to Alta, 17 congeners, rpt in dry wt if soil
Containers Supplied:		
8 oz Jar (IPD1011-02A)		
Sample ID: IPD1011-07 Soil	**Sampled: 04/10/06 12:25**	
1613-Dioxin-HR-Alta	04/17/06 12:25	Sub to Alta, 17 congeners, rpt in dry wt if soil
Containers Supplied:		
2 oz jar (IPD1011-07B)		
Sample ID: IPD1011-08 Soil	**Sampled: 04/10/06 12:25**	
1613-Dioxin-HR-Alta	04/17/06 12:25	Sub to Alta, 17 congeners, rpt in dry wt if soil
Containers Supplied:		
2 oz jar (IPD1011-08B)		
Sample ID: IPD1011-13 Soil	**Sampled: 04/10/06 13:20**	
1613-Dioxin-HR-Alta	04/17/06 13:20	Sub to Alta, 17 congeners, rpt in dry wt if soil
Containers Supplied:		
8 oz Jar (IPD1011-13A)		
Sample ID: IPD1011-14 Soil	**Sampled: 04/10/06 13:25**	
1613-Dioxin-HR-Alta	04/17/06 13:25	Sub to Alta, 17 congeners, rpt in dry wt if soil
Containers Supplied:		
8 oz Jar (IPD1011-14A)		

* Revised MC 4/12/06

Released By	Date	Time	Received By	Date	Time
Released By	Date	Time	Received By	Date	Time

Columbia Analytical Services inc.

Wednesday, February 11, 1998

Anne Freed
Ogden
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9703578

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on 10/20-22/97.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296, expiration August 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Leo Raab
Project Chemist

Eydie Schwartz for
Stuart Sigman
Quality Assurance Chemist

xc:
Elizabeth Wessling
Ogden
550 S. Wadsworth Blvd., Suite 500
Lakewood, CO 80226

001

CAS CSR #L9703578

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Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9703578
Project:	Rocketdyne SSFL 313150002	**Date Received:**	10/20-22/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Sample Delivery Group Assignment" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses. Any tests marked under the grey-shaded parameters to the far right of this form were sub-contracted to the following laboratories:

Tributyltin	Columbia Analytical Services, Kelso, WA.
Dioxins/Furans/EPA 8290	Triangle Lab, Durham, NC.

Subcontracted test results, case narratives and data packages are included as an appendix to this report.

The following changes were requested via fax from Lisa Arrasmith on 10/24/97:
Take RF663 off hold for Dioxins.

Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

Cooler temperatures were recorded on COCs except for Control Nos. RF021, RF623 & RF638.

The following difficulties were experienced during analysis of this batch: For samples RF667 & RF671 8270SIM analysis, sample matrix interfered with Nitrobenzene-d5 surrogate recovery. For sample RF033MSD 8270SIM analysis, Pyrene MS & MSD recoveries were outside of range. Since all other spike compounds were within limits and LCS data was within range, data was accepted. For sample RF682 8080PCB analysis, sample matrix interfered with Tetrachloro-m-xylene surrogate recovery. Sample required dilution such that the surrogate was diluted below reporting limit. For RF682 & RF088 Hexavalent Chromium analysis, the background absorbance was above the calibration range and was not diluted into range (see Nonconformity and Corrective Action Report enclosed). One of three pH duplicates analyzed on RF030 from SDG L9703547. MS/MSD for Anions were performed on RF030 from SDG L9703547.

Data Qualifier Flags are: U = Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: _____ Date: 1/12/98

COLUMBIA ANALYTICAL SERVICES, INC.

Nonconformity and Corrective Action Report

SAMPLES/SYSTEM/JOB/CLIENT AFFECTED

L9703578-019, -020 / OGDEN

NONCONFORMITY

Analysis/Event: DI Water Leached Hexavalent Chromium in Soil

Instrument/System: Milton Roy Spectronic 21D Date: 10/24/97

Detailed Description:

Although the soil leachate was filtered through a 0.45µm syringe filter, the background sample absorbances at 540 nanometers were above the highest standard on the standard calibration curve. After adding the coloring reagent, the absorbances increased at an insignificant level, thus giving an apparent value/result of <0.01 mg/L.

10/31/97

Originator: Sue Anderson Date: 10/31/97

Supervisor Verification: Mary Peaks Date: 10/31/97*

CORRECTIVE ACTION AND OUTCOME

Detailed Description: (Re-establishment of conformity must be demonstrated and documented: Describe the steps that were taken, or are planned to be taken, to correct the problem. Describe the outcome.)

The chemist attempted to analyze the samples without elevating the PQL. Besides the absorbance being over the curve, a background absorbance that high is not acceptable and should have been diluted ~4-5X. This was discussed with all involved personnel in order to prevent this nonconformity from re-occurring.

Supervisor verify that subsequent samples follow these protocols

10/

Person Responsible: Sue Anderson Date: 10/31/97

Supervisor Verification: Mary Peaks Date: 10/31/97

NOTIFICATION - CUSTOMER/CLIENT - INTERNAL/EXTERNAL

Project Chemist Notified? No/(Yes) → Date: 10/28/97

Customer Notification Necessary? (Attach telephone record) No/(Yes) → Date: 10/31/97

Notifier: J. Rock & D. Hambrick Date: 10/31/97

11/4 Discussed w/ E. Wessling / Ogden -- Note in Case Narrative

ACCEPTANCE OF CORRECTIVE ACTION

QA Coordinator: Stuart Date: 11/5/97

Original: Client File Photocopies: Supervisor and QA Coordinator Filename: CORACTRP/11-17-94

* Note: Immediately discussed with involved personnel on 10/28/97.

6925 CANOGA AVENUE ■ CANOGA PARK, CA 91304

LIQUID / SOLID

Service Request #: 03578 Method: SM 3500-CrD / 3060/7196

Analysis For: HEXAVALENT CHROMIUM

Note: Method 7196 on Di water extracted soil

TIME	Sample #	DILUTION	ABSORBANCE AT 540 nm. BKGD	ABS.	TRUE	RESULT mg/L	QA / QC %RECOVERY	%RPD
08:55	0	0/10	0.000	0.000	0.000			
08:56	0.01	0.1/10	0.000	0.012	0.012			
08:57	0.05	0.5/10	0.000	0.054	0.054	CC = 0.9999391		
08:58	0.10	1.0/10	0.000	0.108	0.108			
08:59	ICB		0.000	0.00	0.000	<0.01		
09:00	ICV REF#710 @10x T.V=0.036PPM		0.000	0.039	0.039	0.0358108	99%	
09:01	MB		0.000	0.000	0.000	<0.01		
09:02	LCS 0.05PPM		0.000	0.050	0.050	0.046051	92%	
09:03	03578-18		0.000	0.003	0.003	<0.01	<0.1 mg/kg	
09:04	-18MS 0.05PPM		0.000	0.055	0.055	0.0507057	101%	5 %RPD
09:05	-18MSD 0.05PPM		0.000	0.057	0.057	0.0525675	105%	
09:06	-19		0.122	0.124	0.002	<0.01	<0.1 mg/kg	
09:07	-20		0.116	0.117	0.001	<0.01	<0.1 mg/kg	
09:08	CCV 0.036PPM		0.000	0.039	0.039	0.0358108	99%	
09:09	CLB		0.000	0.000	0.000	<0.01	~~<0.1 mg/kg~~ 10/24/97	

LCS, MS/MSD SPIKED W/ 0.5ml stock #698 @ 1/10

Comments: REF# 710 - T.V=0.36 0.33-0.39

Date extracted: @ 10/23/97 @ 8:15A.M OFF: 10/24/97 @ 8:15A.M 005

Weighed 7.5g : 75ml Di

Prepared By		Date 10/24/97	TIME: 8:45A.M
Analyzed By		Date 10/24/97	TIME 8:55A.M
APPROVED* By	* Corrective action needed	Date 10/28/97	

SAMPLE DELIVERY GROUP ASSIGNMENT

CLIENT: **OGDEN**
PROJECT MANAGER: **DIXIE HAMBRICK**
PROJECT NAME: **ROCKETDYNE SSFL**
PROJECT NUMBER: **313150002**

SDG NUMBER: **L9703578**
LABORATORY: COLUMBIA ANALYTICAL SRV.
SDG CLOSING DATE: 10/24/97 * See Note
SUMMARY / FINAL DUE: 11/7/97 / 11/21/97

#	SAMPLE NAME	SAMPLE DATE	RECEIVED DATE	MATRIX	MS/MSD or MS/DUP	MOISTURE	8260 VOC	8015OG TEPH	8270 SIM	8270 R	METALS (CAM-17)	METALS (CAM-17 + AL + B)	7196 HEXAVALENT CHROMIUM	340.2 FLUORIDE	300.0M ANIONS (CL NO3 NO2)	9040 / 9045 PH	8080 PCB	Hg CVAA 7471			ASTM D19 FORMALDEHYDE	PERCHLORATE	TRIBUTYLTIN	8290 DIOXIN/FURAN	HYDRAZINES	8330 EXPLOSIVES
1	**RF033**	10/20/97	10/20/97	SOLID		X			X		X			X	X	X										
2	**RF662**	10/20/97	10/20/97	SOLID		X			X		X					X										
3	**RF663**	10/20/97	10/20/97	SOLID		X			X															X		
4	**RF664**	10/20/97	10/20/97	SOLID		X			X		X					X										
5	**RF665**	10/20/97	10/20/97	SOLID		X			X		X					X										
6	**RF666**	10/20/97	10/20/97	SOLID		X			X		X					X										
7	**RF667**	10/20/97	10/20/97	SOLID		X			X		X					X										
8	**RF671**	10/21/97	10/21/97	SOLID		X			X		X					X										
9	**RF672**	10/21/97	10/21/97	SOLID		X			X		X					X										
10	**RF673**	10/21/97	10/21/97	SOLID		X			X		X					X										
11	**RF674**	10/21/97	10/21/97	SOLID		X			X		X					X										
12	**RF675**	10/22/97	10/22/97	SOLID		X			X															X		
13	**RF676**	10/22/97	10/22/97	SOLID		X			X															H		
14	**RF677**	10/22/97	10/22/97	SOLID		X			X							X								X		
15	**RF678**	10/22/97	10/22/97	SOLID		X			X								X									
16	**RF679**	10/22/97	10/22/97	SOLID		X			X		X					X										
17	**RF680**	10/22/97	10/22/97	SOLID		X			X		X					X										
18	**RF681**	10/22/97	10/22/97	SOLID		X			X		X		X			X							X				
19	**RF682**	10/22/97	10/22/97	SOLID		X							X				X										
20	**RF088**	10/22/97	10/22/97	SOLID		X					X		X			X											

Dioxin off hold 10/24

L9703578

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RF30

Date 10/20/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal

Shipment Method: Federal Express

Comment:

* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:

QC Level: Level4 TAT: 35 - Day

Preservatives

Sample ID	Description (for Ogden use only)	Date Collected	Time Collected	Lab ID	Soil	Water	Product	8260M VOC (HCL, pH<2 4°C)	8015OG HYDROCARBON (HCL, pH<2 4°C)	8270SIM PAH (4°C)	8290 DICXIN (4°C)	3315 ALDEHYDE (4°C)	8330 ORDINANCE (4°C)	6010/7000 METALSRT (HNO3, pH<2 4°C)	7196 CrVI (4°C)	340.2 FLUORIDE (4°C)	218.6/300 NITRATE * (4°C)	325 CHLORIDE * (4°C)	9045/9040 pH (4°C)	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RF030	OCBS07S01D1.0	10-20-97	1540		X					X				X		X	X	X	X	B			
RF031	OCBS07S02D5.0	10-20-97	1550		X					X				X		X	X	X	X	B			
RF032	OCBS08S01D1.0	"	1610		X					X				X		X	X	X	X	B			
RF033	OCBS08S02D5.0	"	1620		X					X				X		X	X	X	X	B			

NAS
10-20-97

Samplers Signature	Date	Time
A. S[illegible]	10-20-97	17-30
Relinquished By:	**Date**	**Time**
A. S[illegible]	10-20-97	17-30
Received By:	**Date**	**Time**
[illegible]	10/20/97	7:45
Relinquished By:	**Date**	**Time**
Received By (LAB):	**Date**	**Time**

For Lab Use

Lab Number:

Do COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: __ /__ /__

Temperature C

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

00

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9703578

Chain of Custody

Control Number: COC RF 662
Date 10/20/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No: CP9737
QC Level: Level4 TAT: 35 - Day

Preservatives: HCL, pH<2 4°C; HCL, pH<2 4°C; 4°C; 4°C; H2SO4, pH<2 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

Sample Data

Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Matrix: Soil	Matrix: Water	Matrix: Product	Matrix: SLUDGE	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH	SAMPLE TYPE	Extra Volume MS/MSD	HOLD	Total # of Bottles
RF 662	SNBS01S01	0.5	10/20/97	0915					X			1				1					1	G			1
RF 663	CDBS02S02	0.5		1100		X						1	1									HA		*	1
RF 664	SNBS02S01	0.5		1240		X						1				1					1	HA			1
RF 665	SNBS03S01	0.5		1400		X						1				1					1	HA			1
RF 666	SNBS03S01	5.0		1450		X						1				1					1	HA			1
RF 667	SNBS04S01	0.5		1635		X						1				1					1	HA			1

K Jamieson 10/20/97

	Date	Time
Samplers Signature: K Jamieson	10/20/97	0915
Relinquished By: K Jamieson	10/29/97	1720
Received By: [signature]	10/20/97	7:45 pm
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

* HOLD PCDD (DIOXIN) TEST UNTIL OGDEN AUTHORIZES ONE.

1 Original, 2 Lab Copy, 3 Field Copy

REV 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9703578

Chain of Custody

Control Number: COC RF 671
Date 10/21/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No: HEC
QC Level: Level4
TAT: 35 - Day

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	H_2SO_4, pH<2 4°C	4°C	HNO_3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C

Sample Data						Matrix				8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH	SAMPLE METHOD	Extra Volume MS/MSD	HOLD	Total # of Bottles
Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Soil	Water	Product	SLUDGE																
RF 671	SNBS05S01	0.5	10/21/97	1145	8				X			1				1					1	G		*	1
RF672	SNBS06S01	0.5	↓	1215	9				X			1				1					1	G			1
RF 673	SNBS07S01	0.5		1430	10				X			1				1					1	G			1
RF 674	SNBS08S01	0.5	↓	1615	11		X		X			1				1					1	G			1

K Jamieson 10/21/97

Samplers Signature	Date	Time
K Jamieson J. Bu	10/21/97	1200
Relinquished By:	Date	Time
	10/21/97	1840
Received By:	Date	Time
	10/21/97	1840
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number:

7°/Intact

* SAMPLE FROM TOP OF CONTAINER.

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9703578

Chain of Custody

Control Number: COC RF 675
Date 10/22/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Federal Express
Comment:	* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:			
QC Level:	Level4	TAT:	35 - Day

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	H_2SO_4,pH<2 4°C	4°C	HNO_3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C

Sample Data						Matrix				8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH	Tributyl/Sn	PCB's			SAMPLING METHOD	Extra Volume MS/MSD	HOLD	Total # of Bottles
	Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Soil	Water	Product	SLUDGE																				
ULS 17	RF675	CNBSØ1SØ1	0.5'	10/22/97	0845	12	X					1									9					HA			1
ULS 16	RF676	CNBSØ2SØ1	0.5'		0850	13	X					1	1													HA		*	1
ULS 7	RF677	CNBSØ3SØ1	0.5'		1000	14	X					1	1								9					HA		*	1
ULS 8	RF678	CNBSØ4SØ1	0.5'		1025	15	X					1	X		X								1			HA		*	1
18	RF679	LFSSØ3SØ1	0'		1145	16	X			SB		1				1					1					G			1
6	RF680	LFSSØ2SØ1	0'		1230	17				X		1				1					1					G			1
ULS 3	RF681	PUSUØ1SØ1	10.5'		1500	18				X		1				1	1				1	1				G			1
15	RF682	LFSSØ3SØ1 SU	0'		1630	19				X		1									1		1			G			1

K Jamieson 10/22/97

Samplers Signature	K Jamieson	Date	10/22/97
		Time	0930
Relinquished By:	K Jamieson	Date	10/22/97
		Time	1930
Received By:		Date	10/22/97
		Time	1930
Relinquished By:		Date	
		Time	
Received By (LAB):		Date	
		Time	

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use	
Lab Number:	* HOLD DIOXIN TEST UNTIL OGDEN AUTHORIZES ONE.
Do COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N	
Any other problems: Y or N	
If any YES, Ogden contacted: Y or N	
Date contacted: ___/___/___	
Temperature °C	

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9703578

Chain of Custody

Control Number: COC RFØ87
Date 10/22/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No: CP9739
QC Level: Level4 TAT: 35 - Day

Preservatives: HCL, pH<2 4°C; HCL, pH<2 4°C; 4°C; 4°C; H2SO4,pH<2 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

Sample Data

	Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Soil	Water	Product	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH	SAMPLE METHOD	Extra Volume MS/MSD	HOLD	Total # of Bottles
ULS10	RFØ87	LFBSØ2SØ1	~~0.5~~	10/22/97	1220	~~-20~~	X														1	B			1
ULS27	RFØ88	HVBSØ29SØ2 27	1.Ø 1.Ø	10/22/97	1600	-20	X									1	1				1	B			1

K Jamieson 10/22/97

	Date	Time
Samplers Signature: K Jamieson	10/22/97	1615
Relinquished By: K Jamieson	10/22/97	1930
Received By: Leo C Road	10/22/97	1930
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN ENVIRONMENTAL AND ENERGY SERVICE

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Mr. Leo Raab/Columbia Analytical Services
Fax No.: (818) 587-5555

From: Lisa L. Arrasmith *sign:* Lisa L Arrasmith

Date: 10/24/97 There is 1 Page to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]	
RF638	RF638	10/16/97	S, D (hold)	S, D	3503 L9703~~607~~-12
RF638	RF642	10/16/97	S, D (hold)	S, D	-14
RF657	RF657	10/17/97	S	S, D	L9703547-15
RF657	RF659	10/17/97	S	S, D	-16
RF662	RF663	10/20/97	S, D (hold)	S, D	L9703578-3
RF675	RF675	10/22/97	S	S, D	-12
RF675	RF677	10/22/97	S, D (hold), pH	S, D, pH	-14

[a] D= 8290, Dioxin/furan
S= 8270 SIM, semi-volatile organics

The reason for these changes is:

Incorrectly marked on COC form ____
Lack of sample volume ____
Ogden office personnel require this change X
Other: Containers mislabeled ____

Thank you.

012

TRIANGLE LABS

SDG#3578

CASE NARRATIVE

Analysis of Samples for the Presence of

Polychlorinated Dibenzo-*p*-Dioxins and Dibenzofurans by

High-Resolution Chromatography / High-Resolution Mass Spectrometry

Method 8290 Rev. 0 (9/94)

Date:	November 6, 1997
Client ID:	Columbia Analytical Services
P.O. Number:	
TLI Project Number:	43764C

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Triangle Laboratories, Inc.
801 Capitola Drive
Durham, NC 27713-4411
919-544-5729
P.O. Box 13485
Research Triangle Park, NC 27709-3435
Fax # 919-544-5491

Overview

The samples and any associated QC samples were extracted and analyzed according to procedures described in EPA Method 8290 Rev. 0 (9/94). Any particular difficulties encountered during the sample handling by Triangle Laboratories will be discussed in the QC Remarks section below. Results reported relate only to the items tested.

Quality Control Samples

A laboratory method blank, identified as the TLI Blank, was prepared along with the samples.

Batched QC samples laboratory control spike (LCS) and laboratory control spike duplicate (LCSD) samples were processed under TLI project number 43764A. A report summarizing the analyte recoveries and relative percent differences for these samples is included in the data package.

Quality Control Remarks

This release of this particular set of Columbia Analytical Services analytical data by Triangle Laboratories was authorized by the Quality Control Chemist who has reviewed each sample data package individually following a series of inspections/reviews. When applicable, general deviations from acceptable QC requirements are identified below and comments are made on the effect of these deviations upon the validity and reliability of the results. Specific QC issues associated with this particular project are:

Sample receipt: Nine solid samples were received from Columbia Analytical Services at 6 °C in good condition on October 25, 1997 and were stored in a refrigerator at 4 °C. Only the results for sample RF663, RF675 and sample RF677 are reported in this data package.

Sample Preparation Laboratory: None

Mass Spectrometry: None

Data Review: The $^{13}C_{12}$-OCDD internal standard recovery is above the QC limit in samples RF663, RF675 and RF677. Also, the batch QC summary report indicated that the LCSD sample has high percent recoveries for the OCDF and OCDD analytes. The relative percent difference (RPD) between the LCS/LCSD for OCDF and OCDD analytes were also above the QC limits. The results for OCDD and OCDF may be affected in these

samples and should be considered underestimated. The results of this data are released upon the approval of the quality assurance department.

Other Comments: Any analytes found in the TLI Blank are detected at a level equal to or less than the Target Detection Limit. This level of contamination is acceptable as per TLI guidelines.

Average continuing calibration (Concal) response factors are used instead of average initial calibration (Ical) response factors for all analyte and labeled standard calculations in sample(s) with a beginning and ending calibration listed on the quantitation report. Average response factors are used when the ending Concal meets Method 8290 ending Concal requirements but not beginning Concal requirements. The average response factor is an average of the factors from the beginning and ending Concals.

Sample Calculations:

Analyte Concentration

The concentration or amount of any analyte is calculated using the following expression.

$$C_x = \frac{A_x * Q_s}{A_s * RRF_{(x)} * W}$$

Where:

C_x is the concentration or amount of a given analyte,

A_x is the integrated current for the characteristic ions of the analyte,

A_s is the integrated current of the characteristic ions of the corresponding internal standard,

Q_s represents the amount of internal standard added to the sample before extraction,

$RRF_{(x)}$ is the mean analyte relative response factor from the initial calibration (ICal) and,

W is the sample weight or volume

Detection Limits

The detection limit reported for a target analyte that is not detected or presents an analyte response that is less than 2.5 times the background level is calculated by using the following expression. The area of the analyte is replaced by the noise level measured in a

Revised page 3

samples and should be considered estimated The results of this data are released upon the approval of the quality assurance department.

Other Comments: Any analytes found in the TLI Blank are detected at a level equal to or less than the Target Detection Limit. This level of contamination is acceptable as per TLI guidelines.

Average continuing calibration (Concal) response factors are used instead of average initial calibration (Ical) response factors for all analyte and labeled standard calculations in sample(s) with a beginning and ending calibration listed on the quantitation report. Average response factors are used when the ending Concal meets Method 8290 ending Concal requirements but not beginning Concal requirements. The average response factor is an average of the factors from the beginning and ending Concals.

Sample Calculations:

Analyte Concentration

The concentration or amount of any analyte is calculated using the following expression.

$$C_{(\sigma)} = \frac{A_\sigma * Q_\beta}{A_\beta * RRF_{(\sigma)} * W}$$

Where:

$C_{(\sigma)}$ is the concentration or amount of a given analyte,

A_σ is the integrated current for the characteristic ions of the analyte,

A_β is the integrated current of the characteristic ions of the corresponding internal standard,

Q_β represents the amount of internal standard added to the sample before extraction,

$RRF_{(\sigma)}$ is the mean analyte relative response factor from the initial calibration (ICal) and,

W is the sample weight or volume

Detection Limits

The detection limit reported for a target analyte that is not detected or presents an analyte response that is less than 2.5 times the background level is calculated by using the following expression. The area of the analyte is replaced by the noise level measured in a

region of the chromatogram clear of genuine GC signals multiplied by an empirically determined factor. The detection limits represent the maximum possible concentration of a target analyte that could be present without being detected.

$$DL_{(\sigma)} = \frac{2 * 2.5 * (F * H) * Q_{\beta}}{A_{\beta} * RRF_{(\sigma)} * W}$$

Where:

$DL_{(\sigma)}$ is the estimated detection limit for a target analyte,

2.5 is the minimum response required for a GC signal,

F is an empirical number that approximates the area to height ratio for a GC signal. This number is 3.7 for both the DB-5 GC column and the DB-225 GC column,

H is the height of the noise

A_{β} is the integrated current of the characteristic ions of the corresponding internal standard,

Q_{β} represents the amount of internal standard added to the sample before extraction,

$RRF_{(\sigma)}$ is the mean analyte relative response factor from the initial calibration (ICal) and,

W is the sample weight or volume

Data Flags

In order to assist with data interpretation, data qualifier flags are used on the final reports. Please note that all data qualifier flags are subjective and are applied as consistently as possible. Each flag has been reviewed by two independent Chemists and the impact of the data qualifier flag on the quality of the data discussed above. The most commonly used flags are:

A **'B'** flag is used to indicate that an analyte has been detected in the laboratory method blank as well as in an associated field sample. The 'B' flag will be used only when the concentration of analyte found in the sample is less than 20 times that found in the associated blank. This flag denotes possible contribution of background laboratory contamination to the concentration or amount of that analyte detected in the field sample. Under Triangle Laboratories guidelines, a laboratory blank is acceptable if the tetra- through hepta-CDD/CDF levels are all below the target detection limits (TDLS) or if the contamination levels are less than 5% of the levels detected in the associated field samples.

If these conditions are satisfied or if the blank is unable to be reextracted, the interpretation of the contamination levels relative to the samples should be as follows: 1) analyte quantitations should be considered valid if the level of blank contamination is less than five percent of the level detected in the field sample, 2) analyte quantitations should be considered estimated if the analyte level in the sample is five to twenty times the level of the analyte in the blank, or 3) analytes whose level in a sample is the same as or less than five times the level detected in the associated blank should be considered present likely due to laboratory contamination and not native to the sample.

An **'E'** flag is used to indicate that an PCDF peak has eluted at the same time as the associated diphenyl ether (DPE) and that the DPE peak intensity is ten percent or more of the PCDF peak intensity. Total PCDF values are flagged 'E' if the total DPE contribution to the total PCDF value is greater than ten percent. All PCDF peaks that are significantly influenced by the presence of DPE peaks are quantitated with EMPC values, regardless of the isotopic abundance ratio. These EMPC values are most likely overestimated due to the DPE contribution to the peak area.

An **'I'** flag is used to indicate labeled standards have been interfered with on the GC column by coeluting, interferent peaks. The interference may have caused the standard's area to be overestimated. All quantitations relative to this standard, therefore, may be underestimated.

A **'PR'** flag is used to indicate that a GC peak is poorly resolved. This resolution problem may be seen as two closely eluting peaks without a reasonable valley between the peak tops, overly broad peaks, or peaks whose shapes vary greatly from a normal distribution. The concentrations or amounts reported for such peaks are most likely overestimated.

A **'Q'** flag is used to indicate the presence of QC ion instabilities caused by quantitative interferences. Affected analytes may be overestimated or underestimated as a result of this interference. A peak is flagged 'Q' only if it is affected by a QC ion deviation greater than 20% full scale as determined relative to the labeled standard against which it is quantitated. Total PCDF/PCDF quantitations will be flagged 'Q' if the interferences affect ten percent or more of the total PCDD/PCDF peak areas.

An **'RO'** flag is used to indicate that a labeled standard has an ion abundance ratio that is outside of the acceptable QC limits, most likely due to a coeluting interference. This may have caused the percent recovery of the standard to be overestimated. All quantitations versus this standard, therefore, may be underestimated.

A **'U'** flag is used to indicate that a specific (2,3,7,8-substituted) isomer cannot be resolved from a large, coeluting interferent GC peak. The specific isomer is reported as not detected as a valid concentration/amount cannot be determined. The calculated detection limit, therefore, should be considered an underestimated value.

A 'V' flag is used to indicate that, although the percent recovery of a labeled standard may be below a specific QC limit, the signal-to-noise ratio of the peak is greater than ten-to-one. The standard is considered reliably quantifiable. All quantitations derived from the standard are considered valid as well.

By our interpretation, the analytical data in this project are valid based on the guidelines of EPA Method 8290 Rev. 0 (9/94). Any specific QC concerns or problems have been discussed in the QC Remarks section of this case narrative with emphasis on their effect on the data. Should Columbia Analytical Services have any questions regarding this data package, please contact our Project Scientist, Amy Boehm, at 919/544-5729 ext. 268.

For Triangle Laboratories, Inc.,

Released By,

Kenneth Varley

Kenneth Varley
Report Preparation Chemist

The total number of pages in the data package is : 340 .

Columbia Analytical Services™

6925 Canoga Avenue • Canoga Park, CA 91303 • (818) 587-5550 • Fax (818) 587-5555

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FO

DATE 10/24 PAGE 1 OF 1

PROJECT NAME Rocketdyne/OGDEN 813150002

PROJECT MANAGER LEO RAAB

COMPANY/ADDRESS COLUMBIA ANALYTICAL

PHONE

SAMPLERS SIGNATURE

ANALYSIS REQUESTED

SAMPLE ID	DATE	TIME	LAB ID	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH Gas/BTEX 8015/8020/602	TPH/8015 Modified Diesel ☐ FC ☐ Gasoline ☐	BTEX 602/8020	Total Petroleum Hydrocarbons EPA 418.1	Halogenated Volatiles 601/8010	Volatile Organics GC/MS 624/8240/8260	Base Neutral Acid Organic GC/MS 625/8270	CAM Metals 6010/7000	8250 DIOXINS/FURANS								* SDG ~~REMARK~~
RF638	10/16	1035		Solid	1									X								L97035C
RF642	10/16	1120			1									X								L97035
RF657	10/17	840			1									X								L97035
RF659	10/17	0920			1									X								L97035
RF663	10/20	1100			1									X								L97035
RF675	10/22	0845			1									X								L97035
RF677	10/22	1000			1									X								L97035
RF690	10/23	1515			1									X								L97036
RF691	10/23	1520			1									X								L97034

RELINQUISHED BY:	RECEIVED BY:
Signature [signature]	Signature [signature]
Printed Name A. BRAGASIN	Printed Name Bill Hurst
Firm CAS	Firm [signature]
Date/Time 10/24/97 1300	Date/Time 10/25/97

TURNAROUND REQUIREMENTS

21 hr 48 hr 5 day

Standard

Other (Specify)

Provide Verbal Preliminary Results

Requested Report Date 10/31

REPORT REQUIREMENTS

I Routine Report

II Report (includes DUP MS MSD, as required, may be charged as samples)

X III Data Validation Report (includes All Raw Data)

RWQCB

INVOICE INFORMATION:

P.O. #

Bill To

SAMPLE RECEIPT:

Shipping VIA

Shipping #

Condition

Lab No.

RELINQUISHED BY:	RECEIVED BY:
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

SPECIAL INSTRUCTIONS/COMMENTS

*Separate report per SDG #

Report in Dry Weight

DISTRIBUTION WHITE return to originator, YELLOW lab

400 05

12

CASE NARRATIVE

Analysis of Samples for the Presence of

Polychlorinated Dibenzo-*p*-Dioxins and Dibenzofurans by

High-Resolution Chromatography / High-Resolution Mass Spectrometry

Method 8290 Rev. 0 (9/94)

RF 663 &
RF 677
Resubmittals
only

Date:	December 18, 1997
Client ID:	Columbia Analytical Services
P.O. Number:	
TLI Project Number:	44280C

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Rev. 11/19/97

Triangle Laboratories, Inc.
801 Capitola Drive
Durham, NC 27713-4411
919-544-5729
P.O. Box 13485
Research Triangle Park, NC 27709-3485
Fax # 919-544-5491

Overview

The sample(s) and associated QC samples were extracted and analyzed according to procedures described in EPA Method 8290 Rev. 0 (9/94). Any particular difficulties encountered during the sample handling by Triangle Laboratories will be discussed in the QC Remarks section below. This report contains results from only the 8290 dioxin/furan analysis of two soil samples (RF663 and RF677).

Quality Control Samples

A laboratory method blank, identified as the TLI Blank, was prepared along with the sample(s).

Laboratory control spike (LCS) and laboratory control spike duplicate (LCSD) samples were extracted and analyzed along with each batch of samples. A report summarizing the analyte recoveries and relative percent differences for these samples is included in the data package.

Quality Control Remarks

This release of this particular set of Columbia Analytical Services analytical data by Triangle Laboratories was authorized by the Quality Control Chemist who has reviewed each sample data package following a series of inspections/reviews. When applicable, general deviations from acceptable QC requirements are identified below and comments are made on the effect of these deviations upon the validity and reliability of the results. Specific QC issues associated with this particular project are:

Sample receipt: Seven soil samples were received from Columbia Analytical Services at 4.0 °C in good condition on December 11, 1997 and stored in a refrigerator at 4 °C.

Sample Preparation Laboratory: New aliquots of samples RF663 and RF677 were submitted for re-extraction using a one gram sample aliquot because the OCDD analyte in both samples and the 1234678-HpCDF analyte in sample RF677 were above the calibration range in the initial aliquot. Only OCDD, 1234678-HpCDF, and total HpCDF are report for sample RF677 and only OCDD is reported for RF663.

The samples were extracted outside holding times.

Mass Spectrometry: None

Data Review: The re-extracted sample results of sample RF677 do not match the results of the original analysis with RPDs of 86.3% for OCDD and 193% for 1,2,3,4,6,7,8-HxCDD. This is probably due to the heterogeneous nature of soil samples. However, sample RF663 shows some consistency with an RPD of 17.8% for OCDD.

Other Comments: No 2,3,7,8-substituted target analytes were detected in the TLI Blank above the target detection limit (TDL).

Method 8290 contains separate criteria for beginning and ending continuing calibrations. When the ending calibration meets criteria established for the beginning calibration, the average response factor from the initial calibration is used. When the ending calibration only meets the less stringent criteria specified for an ending calibration, the average of the response factor from the beginning and ending calibration is used for analyte and internal standard calculations. Affected samples are identified by the listing of both the beginning and ending calibration filename on the sample report.

The analytical data presented in this report are consistent with the guidelines of EPA Method 8290 Rev. 0 (9/94). Any exceptions have been discussed in the QC Remarks section of this case narrative with emphasis on their effect on the data. Should Columbia Analytical Services have any questions or comments regarding this data package, please feel free to contact our Project Scientist, Amy Boehm, at 919/544-5729 ext. 268.

For Triangle Laboratories, Inc.,

Released by

William D. Hill
Report Preparation Chemist

The total number of pages in the data package is : 264 .

Columbia Analytical Services™

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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FO

6925 Canoga Avenue • Canoga Park, CA 91303 • (818) 587-5550 • Fax (818) 587-5555

DATE _____ PAGE 1 OF 1

PROJECT NAME ROCKETDYNE #

PROJECT MANAGER LEO RIAB

COMPANY/ADDRESS COLUMBIA ANALYTICAL

PHONE

SAMPLERS SIGNATURE

SAMPLE ID	DATE	TIME	LAB ID	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH Gas/BTEX 8015/8020/602	TPH/8015 Modified Diesel 7 EC 7 Gasoline 7	BTEX 602/8020	Total Petroleum Hydrocarbons EPA 418.1	Halogenated Volatiles SW 8010	Volatile Organics GC/MS 624/8240/826C	Base Neutral Acid Organic GC/MS 625/8270	CAM Metals 6010/7000	DIOXIN								SDG REMARK
RF631				SOIL	1									Y								L97035
RF661	10/17				1									X								L97035
RF663	10/20				1									X								L97035
RF677	10/22				1									X								L97035
RF 6715	10/28				1									X								L97036
RF683	10/23				1									X								797036
RF686	10/23				1									X								797036

RELINQUISHED BY:

Signature

Printed Name

Firm

Date/Time

RECEIVED BY:

Signature

Printed Name

Firm

Date/Time

TURNAROUND REQUIREMENTS

24 hr 48 hr 5 day

Standard

Other (Specify)

Provide Verbal Preliminary Results

Requested Report Date

REPORT REQUIREMENTS

I Routine Report

II Report (includes DUP MS MSD, as required, may be charged as samples)

III Data Validation Report (includes All Raw Data)

HWOB

INVOICE INFORMATION:

P.O.# _____

Bill To

SAMPLE RECEIPT:

Shipping VIA. _____

Shipping #. _____

Condition. _____

Lab No

RELINQUISHED BY:

Signature

Printed Name

Firm

Date/Time

RECEIVED BY:

Signature

Printed Name

Firm

Date/Time

SPECIAL INSTRUCTIONS/COMMENTS

* FOR DILUTION REPORTS

PLEASE REFERENCE EDD NUMBER ON REPO

6

TRIANGLE LABS

CASE NARRATIVE

Analysis of Samples for the Presence of

Polychlorinated Dibenzo-*p*-Dioxins and Dibenzofurans by

High-Resolution Chromatography / High-Resolution Mass Spectrometry

Method 8290 Rev. 0 (9/94)

Date:	November 6, 1997
Client ID:	Columbia Analytical Services
P.O. Number:	
TLI Project Number:	43764D

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Rev. 05/08/97

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919-544-5729
P.O. Box 13485
Research Triangle Park, NC 27709-3485
Fax # 919-544-5491

Overview

The samples and any associated QC samples were extracted and analyzed according to procedures described in EPA Method 8290 Rev. 0 (9/94). Any particular difficulties encountered during the sample handling by Triangle Laboratories will be discussed in the QC Remarks section below. Results reported relate only to the items tested.

Quality Control Samples

A laboratory method blank, identified as the TLI Blank, was prepared along with the samples.

Batched QC samples Laboratory control spike (LCS) and Laboratory control spike duplicate (LCSD) samples were processed under TLI project number 43764A. A report summarizing the analyte recoveries and relative percent differences for these samples is included in the data package.

Quality Control Remarks

This release of this particular set of Columbia Analytical Services analytical data by Triangle Laboratories was authorized by the Quality Control Chemist who has reviewed each sample data package individually following a series of inspections/reviews. When applicable, general deviations from acceptable QC requirements are identified below and comments are made on the effect of these deviations upon the validity and reliability of the results. Specific QC issues associated with this particular project are:

Sample receipt: Nine solid samples were received from Columbia Analytical Services at 6 °C in good condition on October 25, 1997 and were stored in a refrigerator at 4 °C. Only the results for sample RF690 and sample RF691 are reported in this data package.

Sample Preparation Laboratory: None

Mass Spectrometry: None

Data Review: Both samples RF690 and RF691 exhibited high OCDD internal standard recoveries, above the QC limit. Also, the batch QC summary report indicated that LCSD sample has high percent recoveries for the analytes OCDF and OCDD. The relative percent difference (RPD) between LCS/LCSD for OCDF and OCDD analytes were above the QC limits. The results for OCDD and OCDF may be affected in these samples and

should be considered underestimated. The results of this data are released upon the approval of the quality assurance department.

Other Comments: Any analytes found in the TLI Blank are detected at a level equal to or less than the Target Detection Limit. This level of contamination is acceptable as per TLI guidelines.

Average continuing calibration (Concal) response factors are used instead of average initial calibration (Ical) response factors for all analyte and labeled standard calculations in sample(s) with a beginning and ending calibration listed on the quantitation report. Average response factors are used when the ending Concal meets Method 8290 ending Concal requirements but not beginning Concal requirements. The average response factor is an average of the factors from the beginning and ending Concals.

Sample Calculations:

Analyte Concentration

The concentration or amount of any analyte is calculated using the following expression.

$$C_{(\sigma)} = \frac{A_\sigma * Q_\beta}{A_\beta * RRF_{(\sigma)} * W}$$

Where:

$C_{(\sigma)}$ is the concentration or amount of a given analyte,

A_σ is the integrated current for the characteristic ions of the analyte,

A_β is the integrated current of the characteristic ions of the corresponding internal standard,

Q_β represents the amount of internal standard added to the sample before extraction,

$RRF_{(\sigma)}$ is the mean analyte relative response factor from the initial calibration (ICal) and,

W is the sample weight or volume

Detection Limits

The detection limit reported for a target analyte that is not detected or presents an analyte response that is less than 2.5 times the background level is calculated by using the following expression. The area of the analyte is replaced by the noise level measured in a

region of the chromatogram clear of genuine GC signals multiplied by an empirically determined factor. The detection limits represent the maximum possible concentration of a target analyte that could be present without being detected.

$$DL_{(\sigma)} = \frac{2 * 2.5 * (F * H) * Q_{\beta}}{A_{\beta} * RRF_{(\sigma)} * W}$$

Where:

$DL_{(\sigma)}$ is the estimated detection limit for a target analyte,

2.5 is the minimum response required for a GC signal,

F is an empirical number that approximates the area to height ratio for a GC signal. This number is 3.7 for both the DB-5 GC column and the DB-225 GC column,

H is the height of the noise

A_3 is the integrated current of the characteristic ions of the corresponding internal standard,

Q_3 represents the amount of internal standard added to the sample before extraction,

$RRF_{(\sigma)}$ is the mean analyte relative response factor from the initial calibration (ICal) and,

W is the sample weight or volume

Data Flags

In order to assist with data interpretation, data qualifier flags are used on the final reports. Please note that all data qualifier flags are subjective and are applied as consistently as possible. Each flag has been reviewed by two independent Chemists and the impact of the data qualifier flag on the quality of the data discussed above. The most commonly used flags are:

A 'B' flag is used to indicate that an analyte has been detected in the laboratory method blank as well as in an associated field sample. The 'B' flag will be used only when the concentration of analyte found in the sample is less than 20 times that found in the associated blank. This flag denotes possible contribution of background laboratory contamination to the concentration or amount of that analyte detected in the field sample. Under Triangle Laboratories guidelines, a laboratory blank is acceptable if the tetra- through hepta-CDD/CDF levels are all below the target detection limits (TDLS) or if the contamination levels are less than 5% of the levels detected in the associated field samples.

If these conditions are satisfied or if the blank is unable to be reextracted, the interpretation of the contamination levels relative to the samples should be as follows: 1) analyte quantitations should be considered valid if the level of blank contamination is less than five percent of the level detected in the field sample, 2) analyte quantitations should be considered estimated if the analyte level in the sample is five to twenty times the level of the analyte in the blank, or 3) analytes whose level in a sample is the same as or less than five times the level detected in the associated blank should be considered present likely due to laboratory contamination and not native to the sample.

An **'E'** flag is used to indicate that an PCDF peak has eluted at the same time as the associated diphenyl ether (DPE) and that the DPE peak intensity is ten percent or more of the PCDF peak intensity. Total PCDF values are flagged 'E' if the total DPE contribution to the total PCDF value is greater than ten percent. All PCDF peaks that are significantly influenced by the presence of DPE peaks are quantitated with EMPC values, regardless of the isotopic abundance ratio. These EMPC values are most likely overestimated due to the DPE contribution to the peak area.

An **'I'** flag is used to indicate labeled standards have been interfered with on the GC column by coeluting, interferent peaks. The interference may have caused the standard's area to be overestimated. All quantitations relative to this standard, therefore, may be underestimated.

A **'PR'** flag is used to indicate that a GC peak is poorly resolved. This resolution problem may be seen as two closely eluting peaks without a reasonable valley between the peak tops, overly broad peaks, or peaks whose shapes vary greatly from a normal distribution. The concentrations or amounts reported for such peaks are most likely overestimated.

A **'Q'** flag is used to indicate the presence of QC ion instabilities caused by quantitative interferences. Affected analytes may be overestimated or underestimated as a result of this interference. A peak is flagged 'Q' only if it is affected by a QC ion deviation greater than 20% full scale as determined relative to the labeled standard against which it is quantitated. Total PCDF/PCDF quantitations will be flagged 'Q' if the interferences affect ten percent or more of the total PCDD/PCDF peak areas.

An **'RO'** flag is used to indicate that a labeled standard has an ion abundance ratio that is outside of the acceptable QC limits, most likely due to a coeluting interference. This may have caused the percent recovery of the standard to be overestimated. All quantitations versus this standard, therefore, may be underestimated.

A **'U'** flag is used to indicate that a specific (2,3,7,8-substituted) isomer cannot be resolved from a large, coeluting interferent GC peak. The specific isomer is reported as not detected as a valid concentration/amount cannot be determined. The calculated detection limit, therefore, should be considered an underestimated value.

A 'V' flag is used to indicate that, although the percent recovery of a labeled standard may be below a specific QC limit, the signal-to-noise ratio of the peak is greater than ten-to-one. The standard is considered reliably quantifiable. All quantitations derived from the standard are considered valid as well.

By our interpretation, the analytical data in this project are valid based on the guidelines of EPA Method 8290 Rev. 0 (9/94). Any specific QC concerns or problems have been discussed in the QC Remarks section of this case narrative with emphasis on their effect on the data. Should Columbia Analytical Services have any questions regarding this data package, please contact our Project Scientist, Amy Boehm, at 919/544-5729 ext. 268.

For Triangle Laboratories, Inc.,

Report Preparation

Girgis Mikhael
Report Preparation Chemist

Quality Control

William D Hill
Report Preparation Chemist

The total number of pages in the data package is : 259 .

Columbia Analytical Services inc

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

6925 Canoga Avenue • Canoga Park, CA 91303 • (818) 587-5550 • Fax (818) 587-5555

DATE 10/24 PAGE 1 OF 1

PROJECT NAME Rocketdyne/OGDEN 813150002

PROJECT MANAGER LEO RAAB

COMPANY/ADDRESS COLUMBIA ANALYTICAL

PHONE

SAMPLERS SIGNATURE

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH Gas/BTEX 8015/8020/602	TPH/8015 Modified Diesel ☐ FC ☐ Gasoline ☐	BTEX 602/8020	Total Petroleum Hydrocarbons EPA 418.1	Halogenated Volatiles 601/8010	Volatile Organics GC/MS 624/8240/8260	Base Neutral Acid Organic GC/MS 625/8270	CAM Metals 6010/7000	8250 DIOXINS/FURANS							* SDG# ~~REMARKS~~
RF638	10/16	1035		Solid	1									X							L9703503
RF642	10/16	1120			1									X							L9703503
RF657	10/17	840			1									X							L9703547
RF659	10/17	0920			1									X							L9703547
RF663	10/20	1100			1									X							L9703578
RF675	10/22	0845			1									X							L9703578
RF677	10/22	1000			1									X							L9703578
RF690	10/23	1515			1									X							L9703607
RF691	10/23	1520			1									X							L9703607

RELINQUISHED BY:	RECEIVED BY:
Signature [signature]	Signature [signature]
Printed Name A. BRAGASIN	Printed Name Bill Hurst
Firm CAS	Firm [signature]
Date/Time 10/24/97 1300	Date/Time 10/25/97

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr ___ 5 day

___ Standard

___ Other (Specify)

___ Provide Verbal Preliminary Results

Requested Report Date 10/31

REPORT REQUIREMENTS

___ I Routine Report

___ II Report (includes DUP MS MSD, as required, may be charged as samples)

X III Data Validation Report (includes All Raw Data)

___ RWQCB

INVOICE INFORMATION:

P O # ___

Bill To ___

SAMPLE RECEIPT:

Shipping VIA. ___

Shipping #: ___

Condition: ___

Lab No: ___

RELINQUISHED BY:	RECEIVED BY:
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

*Separate report per SDG#
Report in Dry Weight

DISTRIBUTION: WHITE - return to originator, YELLOW - lab

400-05

12

Columbia Analytical Services™

COPY

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

6925 Canoga Avenue • Canoga Park, CA 91303 • (818) 587-5550 • Fax (818) 587-5555

DATE 12-1-97 PAGE 1 OF 1

PROJECT NAME ROCKETDYNE #

PROJECT MANAGER LEO RAB

COMPANY/ADDRESS COLUMBIA ANALYTICAL

PHONE

SAMPLERS SIGNATURE

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH Gas/BTEX 8015/8020/602	TPH/8015 Modified Diesel & FC & Gasoline &	BTEX 602/8020	Total Petroleum Hydrocarbons EPA 418.1	Halogenated Volatiles 601/8010	Volatile Organics GC/MS 624/8240/8260	Base Neutral Acid Organic GC/MS 625/8270	CAM Metals 6010/7000	DIOXIN *								SDG # REMARKS
RF631				SOIL	1									Y								L9703503
RF661	10/17				1									X								L9703547
RF663	10/20				1									X								L9705578
RF677	10/22				1									X								L9703578
RF 6715	10/28				1									X								L9703679
RF683	10/23				1									X								7970360?
RF686	10/23				1									X								7970360?

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS
24 hr 48 hr 5 day
Standard
Other (Specify)
Provide Verbal Preliminary Results
Requested Report Date

REPORT REQUIREMENTS
I Routine Report
II Report (includes DUP MS MSD, as required, may be charged as samples)
III Data Validation Report (includes All Raw Data)
RWQCB

INVOICE INFORMATION:
P.O.#
Bill To

SAMPLE RECEIPT
Shipping via
Shipping #
Condition:
Lab No:

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
12-1-97 1130
Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

* FOR DILUTION RERUNS
PLEASE REFERENCE SDG #S ON REPORT

rec'd 1/6/98

Columbia Analytical Services, Inc.

3 199

January 5, 1998

Anne Freed
OGDEN
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne / Project #313150001

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on October 20-24, 1997. For your reference, these analyses have been assigned our service request number L9703563.

All analyses were performed in accordance with our laboratory's quality assu- rogram.
Results are intended to be considered in their entirety and appl- nalyzed.
Columbia Analytical Services is not responsible for use rt.

Columbia Analytical Services Mobile Laboratory is certi ; by the
California Department of Health Services (certificate nur 98).

3563

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Thomas X. Robinson
Project Chemist

TR/iz

00500

CAS CSR #L9703563

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Cover Letter 001
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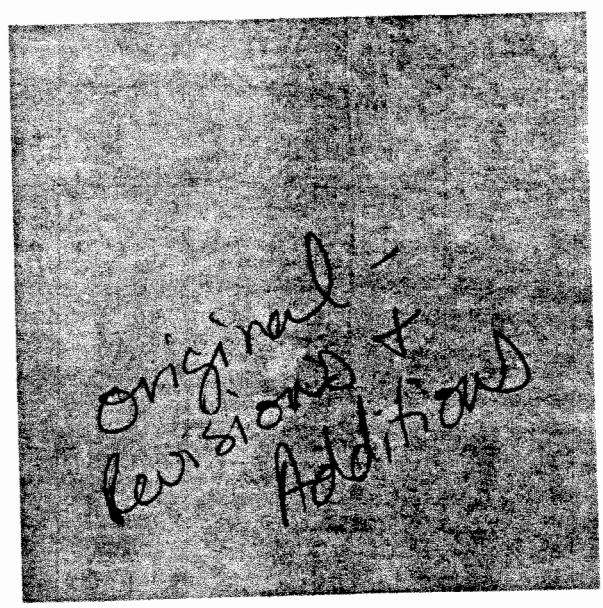
Halogenated and Aromatic Volatile Organic Compounds Analytical Data 3000-3098
Halogenated and Aromatic Volatile Organic Compounds Raw Data 4000-4804



Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	InterPhase Environmental	**Service Request No.:**	L9703563
Project:	Rocketdyne/313150001	**Date Received:**	10/20-24/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for samples designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix/Duplicate Matrix Spike (MS/DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group, except for sample RD069 for 8015OG. This sample was collected on 10/20/97 and analyzed on 11/25/97.

The following difficulties were experienced during analysis of this batch:

Several samples required dilutions to bring the concentration of a particular analyte within its calibration range. Upon reanalysis the result did not always yield the expected concentration, many times a lower result or a Non Detect was determined. The most probable cause of this phenomenon is sample homogeneity; concentrations vary throughout various subsamples of the sample container; additionally the volatility of the target analytes causes concentrations to decrease after subsampling of the initial analysis.

Sample RD683 required second column confirmation for volatile organic compounds but was inadvertently missed, the original result is reported.

Approved by: _____ Date: 2/23/98

R-003

COLUMBIA ANALYTICAL SERVICES, INC.

Nonconformity and Corrective Action Report

SAMPLES/SYSTEM/JOB/CLIENT AFFECTED

L9703563-054 Ogden Sample RD 683

NONCONFORMITY

Analysis/Event: Second column confirmation was not performed.

Instrument/System: GC 11 Date: 2/23/98

Detailed Description:

Originator: Tom Robinson Date: 2/23/98

Supervisor Verification: Thomas D. Robinson Date: 2/23/98

CORRECTIVE ACTION AND OUTCOME

Detailed Description: (Re-establishment of conformity must be demonstrated and documented. Describe the steps that were taken, or are planned to be taken, to correct the problem. Describe the outcome.)

The analyst is responsible for determining which sample needs confirmation; in the future second party review will assist in determining confirmation.

Person Responsible: Bo Kim Date: 2/23/98

Supervisor Verification: Thomas D. Robinson Date: 2/23/98

NOTIFICATION - CUSTOMER/CLIENT - INTERNAL/EXTERNAL

Project Chemist Notified? No (Yes) Date: 2/23/98

Customer Notification Necessary? (Attach telephone record) No (Yes) Date: 2/23/98

Notifier: Tom Robinson Date: 2/23/98

ACCEPTANCE OF CORRECTIVE ACTION

QA Coordinator: [signature] Date: 2/23/98

Original: Client File Photocopies: Supervisor and QA Coordinator

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	InterPhase Environmental	**Service Request No.:**	L9703563
Project:	Rocketdyne/313150001	**Date Received:**	10/20-24/97
Sample Matrix:	Soil		

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Approved by: _____ Date: 12/4/97

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
27-OCT-97 14:46

Service Req. No. L9703563
Client No. 095000
Client Name InterPhase Environmental

Project No. 313150001
Project Name Rocketdyne

Bottles: 83 - Canisters/Decore
1 - VOA Vial Set (2)

Bill To: InterPhase Environmental
Attn: Accounts Payable
6200 Peachtree Street
Los Angeles, CA 90040

Report To: Ogden Environmental
Anne Freed
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No.
Logged In By ABRAGASI
ISR Num
COC Received Y
Samples Submitted 20-OCT-97 thru 24-OCT-97

Site ID
Project Chemist Tom Robinson

Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8021 MDAY	TPH-FC-CA	~DATA DEL
L9703563-001	RD058	MISC	20-OCT-97	07-NOV-97	LAB		LAB
L9703563-001	RD058	SOIL	20-OCT-97	07-NOV-97		LAB	
L9703563-002	RD059	MISC	20-OCT-97	07-NOV-97			LAB
L9703563-002	RD059	SOIL	20-OCT-97	07-NOV-97		LAB	
L9703563-003	RD060	MISC	20-OCT-97	07-NOV-97			LAB
L9703563-003	RD060	SOIL	20-OCT-97	07-NOV-97		LAB	
L9703563-004	RD061	MISC	20-OCT-97	07-NOV-97			LAB
L9703563-004	RD061	SOIL	20-OCT-97	07-NOV-97		LAB	
L9703563-005	RD062	MISC	20-OCT-97	07-NOV-97			LAB
L9703563-005	RD062	SOIL	20-OCT-97	07-NOV-97		LAB	
L9703563-006	RD063	SOIL	20-OCT-97	07-NOV-97	LAB	LAB	
L9703563-007	RD064	SOIL	20-OCT-97	07-NOV-97	LAB	LAB	
L9703563-008	RD065	SOIL	20-OCT-97	07-NOV-97		LAB	
L9703563-009	RD066	SOIL	20-OCT-97	07-NOV-97		LAB	
L9703563-010	RD067	SOIL	20-OCT-97	07-NOV-97		LAB	
L9703563-011	RD068	SOIL	20-OCT-97	07-NOV-97		LAB	
L9703563-012	RD069	SOIL	20-OCT-97	07-NOV-97		LAB	
L9703563-013	RD070	SOIL	20-OCT-97	07-NOV-97		LAB	
L9703563-014	RD071	SOIL	20-OCT-97	07-NOV-97		LAB	
L9703563-015	RD072	SOIL	20-OCT-97	07-NOV-97		LAB	
L9703563-016	RD661	SOIL	20-OCT-97	07-NOV-97	LAB	LAB	
L9703563-017	RD662	SOIL	20-OCT-97	07-NOV-97		LAB	
L9703563-018	RD663	SOIL	20-OCT-97	07-NOV-97		LAB	
L9703563-019	RD664	SOIL	20-OCT-97	07-NOV-97		LAB	
L9703563-020	RD665	SOIL	20-OCT-97	07-NOV-97		LAB	
L9703563-021	RD666	H2O	21-OCT-97	07-NOV-97	LAB		
L9703563-022	RD667	SLUDGE	21-OCT-97	07-NOV-97	LAB	LAB	
L9703563-023	RD671	SLUDGE	21-OCT-97	07-NOV-97	LAB	LAB	
L9703563-024	RD672	SLUDGE	21-OCT-97	07-NOV-97	LAB	LAB	
L9703563-025	RD673	SLUDGE	21-OCT-97	07-NOV-97	LAB	LAB	
L9703563-026	RD674	SLUDGE	21-OCT-97	07-NOV-97	LAB	LAB	
L9703563-027	RD073	SOIL	21-OCT-97	07-NOV-97		LAB	
L9703563-028	RD074	SOIL	21-OCT-97	07-NOV-97		LAB	
L9703563-029	RD075	SOIL	21-OCT-97	07-NOV-97		LAB	
L9703563-030	RD076	SOIL	21-OCT-97	07-NOV-97		LAB	
L9703563-031	RD077	SOIL	21-OCT-97	07-NOV-97	LAB	LAB	

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By: JXR

000029

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
27-OCT-97 14:46

Service Req. No. L9703563
Client No. 095000
Client Name InterPhase Environmental

Project No. 313150001
Project Name Rocketdyne

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P.O. No.
Logged In By ABRAGASI
ISR Num
COC Received Y
Samples Submitted 20-OCT-97 thru 24-OCT-97

Site ID
Project Chemist Tom Robinson

Storage:

added on

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8021 MDAY	TPH-FC-CA	~DATA DEL
L9703563-032	RD078	SOIL	21-OCT-97	07-NOV-97	LAB	LAB	
L9703563-033	RD079	SOIL	21-OCT-97	07-NOV-97		LAB	
L9703563-034	RD080	SOIL	21-OCT-97	07-NOV-97	LAB	LAB	
L9703563-035	RD081	SOIL	21-OCT-97	07-NOV-97		LAB	
L9703563-036	RD082	SOIL	21-OCT-97	07-NOV-97		LAB	
L9703563-037	RD083	SOIL	21-OCT-97	07-NOV-97		LAB	
L9703563-038	RD084	SOIL	21-OCT-97	07-NOV-97	LAB		
L9703563-039	RD092	SOIL	22-OCT-97	07-NOV-97		LAB	
L9703563-040	RD085	SOIL	22-OCT-97	07-NOV-97		LAB	
L9703563-041	RD086	SOIL	22-OCT-97	07-NOV-97		LAB	
L9703563-042	RD087	SOIL	22-OCT-97	07-NOV-97		LAB	
L9703563-043	RD088	SOIL	22-OCT-97	07-NOV-97		LAB	
L9703563-044	RD675	SOIL	22-OCT-97	07-NOV-97	LAB	LAB	
L9703563-045	RD676	SOIL	22-OCT-97	07-NOV-97	LAB	LAB	
L9703563-046	RD677	SOIL	22-OCT-97	07-NOV-97	LAB	LAB	
L9703563-047	RD678	SOIL	22-OCT-97	07-NOV-97	LAB	LAB	
L9703563-048	RD679	SLUDGE	22-OCT-97	07-NOV-97		LAB	
L9703563-049	RD680	SLUDGE	22-OCT-97	07-NOV-97		LAB	
L9703563-050	RD681	SLUDGE	22-OCT-97	07-NOV-97	LAB		
L9703563-051	RD089	SOIL	23-OCT-97	07-NOV-97	LAB		
L9703563-052	RD090	SOIL	23-OCT-97	07-NOV-97	LAB		
L9703563-053	RD091	SOIL	23-OCT-97	07-NOV-97	LAB	LAB	
L9703563-054	RD683	SOIL	23-OCT-97	07-NOV-97	LAB	LAB	
L9703563-055	RD684	SOIL	23-OCT-97	07-NOV-97	LAB	LAB	
L9703563-056	RD686	SOIL	23-OCT-97	07-NOV-97	LAB	LAB	
L9703563-057	RD687	SOIL	23-OCT-97	07-NOV-97	LAB	LAB	
L9703563-058	RD688	SOIL	23-OCT-97	07-NOV-97	LAB	LAB	
L9703563-059	RD689	SOIL	23-OCT-97	07-NOV-97		LAB	
L9703563-060	RD690	SOIL	23-OCT-97	07-NOV-97	LAB	LAB	
L9703563-061	RD691	SOIL	23-OCT-97	07-NOV-97	LAB	LAB	
L9703563-062	RD693	SOIL	23-OCT-97	07-NOV-97		LAB	
L9703563-063	RD094	SOIL	23-OCT-97	07-NOV-97		LAB	
L9703563-064	RD095	SOIL	23-OCT-97	07-NOV-97	LAB		
L9703563-065	RD096	SOIL	23-OCT-97	07-NOV-97	LAB		
L9703563-066	RD097	SOIL	23-OCT-97	07-NOV-97	LAB		
L9703563-067	RD098	SOIL	23-OCT-97	07-NOV-97	LAB		

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By:_____

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
27-OCT-97 14:46

Service Req. No.	L9703563	Project No.	313150001	Bottles: 83 - Canisters/Decore
Client No.	095000	Project Name	Rocketdyne	1 - VOA Vial Set (2)
Client Name	InterPhase Environmental			

Bill To:	InterPhase Environmental Attn: Accounts Payable 6200 Peachtree Street Los Angeles, CA 90040	Report To:	Ogden Environmental Anne Freed 5510 Morehouse Dr. San Diego, CA 92121

P.O. No.		Site ID	
Logged In By	ABRAGASI	Project Chemist	Tom Robinson
ISR Num			
COC Received	Y		
Samples Submitted	20-OCT-97 thru 24-OCT-97		Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8021 MDAY	TPH-FC-CA	-DATA DEL
L9703563-068	RD099	SOIL	23-OCT-97	07-NOV-97	LAB	Added SW	
L9703563-069	RD100	SOIL	23-OCT-97	07-NOV-97	LAB		
L9703563-070	RD093	SOIL	23-OCT-97	07-NOV-97	LAB	LAB	
L9703563-071	RD101	SOIL	24-OCT-97	07-NOV-97	LAB	LAB	
L9703563-072	RD102	SOIL	24-OCT-97	07-NOV-97	LAB	LAB	
L9703563-073	RD103	SOIL	24-OCT-97	07-NOV-97	LAB	LAB	
L9703563-074	RD104	SOIL	24-OCT-97	07-NOV-97	LAB	LAB	
L9703563-075	RD695	SOIL	24-OCT-97	07-NOV-97	LAB	LAB	
L9703563-076	RD697	SOIL	24-OCT-97	07-NOV-97	LAB	LAB	
L9703563-077	RD698	SOIL	24-OCT-97	07-NOV-97	LAB	LAB	
L9703563-078	RD696	SOIL	24-OCT-97	07-NOV-97	LAB	LAB	
L9703563-079	RD699	SOIL	24-OCT-97	07-NOV-97	LAB	LAB	
L9703563-080	RD700	SOIL	24-OCT-97	07-NOV-97	LAB	LAB	
L9703563-081	RD105	SOIL	24-OCT-97	07-NOV-97		LAB	
L9703563-082	RD106	SOIL	24-OCT-97	07-NOV-97		LAB	
L9703563-083	RD107	SOIL	24-OCT-97	07-NOV-97		LAB	
L9703563-084	RD108	SOIL	24-OCT-97	07-NOV-97		LAB	

Comments:

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By:_____

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD058

Date 10/20/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Detfley~~ Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9703563	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD058	AABS27S01	5.5	10-20-97	855	-001	B	5.11	X					X				Relinquished By: A. Sum	10-20-97 1730
																	Received By:	10/20/97 19:20
RD059	AABS28S01	5.5	11	920	-002	B	5.11	X					X				Relinquished By: A. Sum	10-20-97 1730
																	Received By:	10/20/97
RD060	AABS28S02	10.5	11	1000	-003	B	5.11	X					X		X		Relinquished By: A. Sum	10-20-97 1730
																	Received By:	10/20/97 1730
RD061	AABS29S01	4.0	11	1030	-004	B	5.11	X					X				Relinquished By: A. Sum	10-20-97 1730
																	Received By:	10/20/97 1730
RD062	AABS30S01	6.5	11	1105	-005	B	5.11	X					X				Relinquished By: A. Sum	10-20-97 1730
																	Received By:	10/20/97 1730

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
A. Sum	10-20-97	1730

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

004

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD063

Date 10 / 20 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD063	~~AABS21~~ OCBS#35#1	1.5	10-20-97	1230	L9703563 -006	B	7.4	X				X	X				Relinquished By: A. S Received By:	10-20-97 1730 10/20/97 1730
RD064	OCBS#35S02	6.0	11	1235	-007	B	7.4	X				X	X				Relinquished By: A. S Received By:	10-20-97 1730 10/20/97 1730
~~RD065~~	~~OCBS#3S#3~~			DB -008													Relinquished By: Received By:	
RD065	OCBS#4S#1	1.0		1400	-008	B	7.4	X				DB X	X				Relinquished By: A. S Received By:	10-20-97 1730 10/20/97 1730
RD066	OCBS#4S02	4.5		1405	009 -010	B	7.4	X					X				Relinquished By: A. S Received By:	10-20-97 1730 10/20/97 1730

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	10/20/97	1430

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

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1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

005

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD067

Date 10 / 20 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ DB Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID 19107563	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD067	OCBS05S01	1.0	10-20-97	1445	-010	B	7.4	X					X				Relinquished By: A. Son	10-20-97 1730
																	Received By:	10/20/97 1730
RD068	OCBS06S01	0.5	4	1515	~~-012~~ 011	B	7.4	X					X				Relinquished By: A. Son	10-20-97 1730
																	Received By:	10/20/97 1730
RD069	OCBS07S01	1.0	11	1540	012 ~~-013~~	B	7.4	X					X	DB			Relinquished By: A. Son	10-20-97 1730
																	Received By:	10/20/97 1730
RD070	OCBS07S02	5.0	4	1550	013 ~~-014~~	B	7.4	X					X				Relinquished By: A. Son	10-20-97 1730
																	Received By:	10/20/97 1730
RD071	OCBS08S01	1.0	11	1610	014 ~~-015~~	B	7.4	X					X				Relinquished By: A. Son	10-20-97 1730
																	Received By:	10/20/97 1730

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
A. Son	10-20-97	1730

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

006

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD072

Date 10 / 20 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID 19903563	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD072	OCBS08S02	5.5	10-20-97	1620	-015	B	7.4	X					X				Relinquished By: A. Son	10-20-97 1730
																	Received By: [signature]	10/20/97 1930
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: TAT: 14 - day

Sampler's Signature	Date	Time
[signature]	10/20/97	1644

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

007

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD(d01
Date 10 / 20 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ TB PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L9703563 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD(d01	CDBSØ1SØ1	0.5'	10/20/97	1100	-016	HA	AREA II AOC	X				X	X			1	Relinquished By: K Jamieson	10/20/97 1740
																	Received By:	10/20/97 1740
RD(d02	SNBSØ2SØ2	0.5'		1230	-017	HA	6.8	X					X			1	Relinquished By: K Jamieson	10/20/97 1740
																	Received By:	10/20/97 1740
RD(d03	SNBSØ3SØ1	0.5'		1400	-018	HA	6.8	X					X			1	Relinquished By: K Jamieson	10/20/97 1740
																	Received By:	10/20/97 1740
RD(d04	SNBSØ3SØ1 2 TB	5.0'		1450	-019	HA	6.8	X					X			1	Relinquished By: K Jamieson	10/20/97 1740
																	Received By:	10/20/97 1740
RD(d05	SNBSØ4SØ1	0.5'		1645	-020	HA	6.8	X					X			1	Relinquished By: K Jamieson	10/20/97 1740
																	Received By:	10/20/97 1740

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: CP9737	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson JEO	10/20/97	1400

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

800

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD666
Date 10/21/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID 19707563	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD666	SNQW01E01	-	10/21/97	0900	-021		6.8		X			X				2	Relinquished By: K Jamieson	10/21/97 0940
																	Received By:	10/21/97 940
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

K Jamieson 10/21/97

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson ISA	10/21/97	0900

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

009

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 0607
Date 10/21/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment: TAKE SAMPLE FROM TOP OF SLEEVE FOR RD0607 & RD0671

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID 9703563	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD0607	SNBS01S01	0.5'	10/21/97	0950	-022	G	6.8				X	X	X			1	Relinquished By: J. Burton	1750 10/21/97
																	Received By: K. Jamison	10/21/97 1750
RD0671	SNBS05S01	0.5'	"	1130	-023	G	6.8				X	X	X			1	Relinquished By: J. Burton	1750 10/21/97
																	Received By: K. Jamison	10/21/97 1750
RD0672	SNBS06S01	0.5'	"	1215	-024	G	6.8				X	X	X			1	Relinquished By: J. Burton	10/21/97 1750
																	Received By: K. Jamison	10/21/97 1750
RD0673	SNBS07S01	0.5'	"	1430	-025	G	6.8				X	X	X			1	Relinquished By: J. Burton	10/21/97 1750
																	Received By: K. Jamison	10/21/97 1750
RD0674	SNBS08S01	0.5'	"	1615	-026	G	6.8		X		X	X	X			1	Relinquished By: J. Burton	10/21/97 1750
																	Received By: K. Jamison	10/21/97 1750

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: HEC	TAT: 14 - day

Sampler's Signature	Date	Time
K. Jamison J. Burton	10/21/97	0950

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

010

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD073

Date 10 / 21 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Delfey~~ Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L9703563 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD073	ABBS01S01	7.0	10-21-97	900	-027	B		X					X				Relinquished By: A. S	10-21-97 1745
																	Received By:	10/21/97 1945
RD074	ABBS02S01	5.5	4	935	-028	B		X					X				Relinquished By: A. S	10-21-97 1745
																	Received By:	1945
RD075	ABBS02S02	10.0	4	1000	-029	B		X					X				Relinquished By: A. S	10-21-97 1745
																	Received By:	10/21/97 1945
RD076	ABBS03S01	5.5	11	1045	-030	B		X					X				Relinquished By: A. S	10-21-97 1745
																	Received By:	10/21/97 1945
RD077	ABBS03S02	10.0	4	1055	-031	B		X				✓	X				Relinquished By: A. S	10-21-97 1745
																	Received By:	10/21/97 1945

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
A. S	10-21-97	1745

For Lab Use	
Does COC match samples: Y or N	✓ = Added on by phone JJM 11/3/97
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

011

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD078

Date 10 / 21 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ DB Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

	Sample Data						Field Data		Matrix										
	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L9103563 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
*	RD078	CDBS02S01 DB	1.0	10-21-97	1350	-032	B	Area II AOC	X				✓	X				Relinquished By: [signature] / Received By: [signature]	10-21-97 1745 / 10/21/97 1745
*	RD079	CDBS03S01 DB	1.0	"	1410	-033	B	"	X					X				Relinquished By: [signature] / Received By: [signature]	10-21-97 1745 / 10/21/97 1745
*	RD080	CDBS04S01 DB	1.0	"	1425	-034	B	"	X				✓	X				Relinquished By: [signature] / Received By: [signature]	10-21-97 1745 / 10/21/97 1745
*	RD081	CDBS05S01 DB	~~1.0~~ 0.5	"	1435	-035	B	"	X					X				Relinquished By: [signature] / Received By: [signature]	10-21-97 1745 / 10/21/97 1745
*	RD082	CDBS06S01	1.0	"	1450	-036	B	"	X					X				Relinquished By: [signature] / Received By: [signature]	10-21-97 1745 / 10/21/97 1745

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
[signature]	10-21-97	1745

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

✓ = Added on by phone 7xn 11/3/97

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

012

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD083
Date 10/21/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID 9710356Z	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD083	CARS165@1	0.5	10-21-97	1605	-037	B		X					X				Relinquished By: A Sm	10-21-97 1745
																	Received By:	10-21-97 1745
RD084	CARS173@1	1.0	"	1645	-038	B		X				X	AMS				Relinquished By: A Sm	10-21-97 1745
																	Received By:	10/21/97 1745
AND ~~RD085~~	~~CARS173@1~~		"														Relinquished By: A Sm	
						B		X					X				Received By:	
					10-27-97 AAO												Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
A Sm	10-21-97	1745

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

013

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD Ø92 Ø84 DB
Date 10/22/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Defiley~~ TB PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9703563	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
DB RD Ø92 ~~Ø84~~	CABS185Ø1	1.Ø'	10/22	Ø840	-039	B	5.18/ 5.19	X					X			1	Relinquished By: K Jamieson	10/22/97 1730
																	Received By:	10/22/97 1815
RD Ø85	CABS185Ø2	4.5'		Ø850	-040			X					X			1	Relinquished By: K Jamieson	10/22/97 1730
																	Received By:	10/22/97 1939
RD Ø86	CABS195Ø1	Ø.5'		Ø955	-041			X					X			1	Relinquished By: K Jamieson	10/22/97 1730
																	Received By:	10/22/97 1930
RD Ø87	LFBSØ2SØ1	1.0'		1220	-042		4.12	X					X			1	Relinquished By: K Jamieson	10/22/97 1730
																	Received By:	10/22/97 1930
~~RD Ø88~~	~~HVBS~~				K Jamieson 10/22/97												Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: CP9739	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	10/22/97	1645

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

014

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD Ø88

Date 10/22/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
					L9703563													
RDØ88	BS DASSØ1SØ1 RB	0.5'	10/22/97	1650	-043	B	5.23	X					X			1	Relinquished By: K Jamieson	10/22/97 1730
																	Received By:	10/22/97 1730
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

K Jamieson 10/22/97

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: CP97 39	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	10/22/97	1630

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

015

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 675

Date 10 / 22 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ TR PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

	Sample Data						Field Data		Matrix											
	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9703563)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
ULS17	RD675	CNBS01S01	0.5'	10/22/97	0845	-044	HA	4.14	X				X	X			1	Relinquished By:	10/22/97 1900
																		Received By:	10/22/97 19:00
ULS16	RD676	CNBS02S01	0.5'	↓	0850	-045	HA	4.14	X				X	X			1	Relinquished By:	10/22/97 1900
																		Received By:	10/22/97 19:00
ULS 7	RD677	CNBS03S01	0.5'		1000	-046	HA	4.14	X				X	X			1	Relinquished By:	10/22/97 1900
																		Received By:	10/22/97 19:00
ULS8	RD678	CNBS04S01	0.5'		1025	-047	HA	4.14	X				X	X			1	Relinquished By:	10/22/97 1900
																		Received By:	10/22/97 1900
18	RD679	LFSS03S01	0'		1145	-048	G	4.12				X		X			1	Relinquished By:	10/22/97 1900
																		Received By:	10/22/97 1900

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: MEC	TAT: 14 - day

Sampler's Signature	Date	Time
Kjimieon	10/22/97	0915

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

016

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD680
Date 10/22/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Boffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

JLS#	Sample Data: EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9710363)	Field Data: Sampling Method	SWMU	Matrix: Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
6	RD680	LFSSØ25Ø1	0'	10/22/97	1230	-049	G	4.12				X		X			1	Relinquished By:	10/22/97 1900
																		Received By:	10/22/97 19:00
JLS 3	RD681	PUSUØ15Ø1 DUP	10.5'	↓	1500	-050	G	7.10				X	X				1	Relinquished By:	10/22/97 1900
																		Received By:	10/22/97 19:00
																		Relinquished By:	
																		Received By:	
																		Relinquished By:	
																		Received By:	
																		Relinquished By:	
																		Received By:	

K Jamieson 10/22/97

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	10/22/97	1800

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

017

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD089
Date 10 / 23 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (Lab#3563)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD 089	1LBS05S01	5.5'	10/23 '97	1140	-051	B	4.3/4.4 A&C	X				X					Relinquished By:	10/23/97 1247
																	Received By:	10/23/97 1247
RD 090	1LBS05S02	~~DUP~~ 15'		~~DUP~~ 1120	-052			X				X					Relinquished By:	10/23/97 1247
																	Received By:	10/23/97 1247
RD 091	1LBS05S03	30'		1210	-053			X				X	X				Relinquished By:	10/23/97 1247
																	Received By:	10/23/97 1247
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

LS #
17
17
17

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	10/23/97	12:47

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

0180

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD683

Date 10 / 23 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Beffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

LS#	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9710356?)	Field Data: Sampling Method	Field Data: SWMU	Matrix: Soil	Matrix: Water	Matrix: Product	Matrix: Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
14.	RD683	CLBSØ1SØ1	0.5'	10/23/97	0830	-054	HA	4.7	X				1	1			1	Relinquished By: KJ	10/23/97 1800
																		Received By:	10/23/97 1800
18.	RD684	CLBSØ2SØ1	0.5'		0905	-055	HA		X				1	1			1	Relinquished By: KJ	10/23/97 1800
																		Received By:	10/23/97 1800
16	RD686	CLBSØ4SØ1	0.5'		1000	-056	HA		X				1	1			1	Relinquished By: KJ	10/23/97 1800
																		Received By:	10/23/97 1800
15.	RD687	CLBSØ5SØ1	0.5'		1030	-057	HA		X				1	1			1	Relinquished By: KJ	10/23/97 1800
																		Received By:	10/23/97 1800
15	RD688	CLBSØ5SØ2	5.0'		1105	-058	HA		X				1	1			1	Relinquished By: KJ	10/23/97 1800
																		Received By:	10/23/97 1800

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: CP9739	TAT: 14 - day

Sampler's Signature	Date	Time
K. Jamison	10/23/97	0910

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

019

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 0689
Date 10 / 23 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Beffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

L9703567

ULS#	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
19	RD689	LFBSØ3SØ1	0.5'	10/23/97	1220	-059	HA	4.12	X					1			1	Relinquished By: KJ	10/23/97 1800
																		Received By:	10/23/97 1800
7	RD690	LFBSØ1SØ1	0.5'	"	1515	-060	HA	"	X				1	1			1	Relinquished By: KJ	10/23/97 1800
																		Received By:	10/23/97 1800
7	RD691	LFBSØ1SØ2	2.5'	"	1520	-061	HA	"	X				1	1			1	Relinquished By: KJ	10/23/97 1800
																		Received By:	10/23/97 1800
17	RD693	LFSSØ5SØ1	0	"	1600	-062	G	"	X					1			1	Relinquished By: KJ	10/23/97 1800
																		Received By:	10/23/97 1800
					K Jamieson 10/23/97													Relinquished By:	
																		Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: CP9739	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	10/23/97	1230

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

020

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD#94
Date 10/23/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

JLS #	Sample Data: EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (19713563)	Field Data: Sampling Method	SWMU	Matrix: Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
38	RD#94	SLBS#5#1	1.0	10-23-97	350	-063	B		X					X				Relinquished By: A. S Received By:	10-23-97 1830 10/23/97 1830
38	RD#95	ILBS#6S#1	1.0	10-23-97	1645	-064	B		X				X					Relinquished By: A. S Received By:	4 10/23/97 1830
38	RD#96	ILBS#6S#2	6.0	4	1650	-065	B		X				X					Relinquished By: A. S Received By:	4 10/23/97 1830
38	RD#97	ILBS#6S#3	11.0	11	1655	-066	B		X				X					Relinquished By: A. S Received By:	4 10/23/97 1830
38	RD#98	ILBS#6S#4	15.0	11	1700	-067	B		X				X					Relinquished By: A. S Received By:	4 10/23/97 1830

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
A Sm		

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\RocketdynCOC2.FH5

10/23/97 1800

1 Original, 2 Lab Copy, 3 Field Copy

REV. 1

021

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD$99

Date 10 / 23 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

LS# L9703563

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
38 RD $99	ILBS$6S$5	20.0	10-23-97	1710	-068	B		X				X					Relinquished By: A. Sm	10-23-97 1830
																	Received By:	10/23/97 1830
38 RD 100	ILBS$6$6	30.0	4	1735	-069	B		X				X.					Relinquished By:	4
																	Received By:	10/23/97 1830
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

10-23-97

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
A Sm	10-23-97	1830

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

220

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD093
Date 10/24/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS#

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID 97103563	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
50 RD 093	ILBS025S07	25'	10/23/97	1428	-010	B	4.3, 4.4, + AOC	X				X	X				Relinquished By:	10/24/97 0725
																	Received By:	10/24/97 0925
																	Relinquished By:	
																	Received By:	
					DB 10/24/97												Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: MEC	TAT: 14 - day

Sampler's Signature	Date	Time
	10/23/97	

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

023

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD101

Date 10/24/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ DB purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L9803563 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD 101	BABS#1 S#1	1.0	10-24 92	1045	-011	B	4.15	X				X	X				Relinquished By: A. S	10-24-97 1320
																	Received By:	10/24/97 1320
RD 102	BABS#1 S#2	5.0	11	1055	-012	B		X				X	X				Relinquished By: A. S	11
																	Received By:	10/24/97 1320
RD 103	BABS#1 S#3	9.5	11	1105	-013	B		X				X	X				Relinquished By: A. S	11
																	Received By:	10/24/97 1320
RD 104	BABS#1 S#4	17.5	11	1120	-014	B		X				X	X				Relinquished By: A. S	11
																	Received By:	10/24/97 1320
RD 105		DB	10/24/97			B		X				X	X				Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
A. S	10-24-97	1320

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

024

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 695
Date 10/24/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Demley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9710756	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
11	RD695	BABSØ6SØ1	0.5'	10/24/97	1100	-015	HA	4.15	X				1	1			1	Relinquished By: Tom Bato	10/24/97 1730
																		Received By:	10/24/97 1730
12	RD697	BABSØ7SØ1	0.5'		1115	-016	HA		X				1	1			1	Relinquished By: Tom Bato	10/24/97 1730
																		Received By:	10/24/97 1730
13	RD698	BABSØ8SØ1	0.5'		1230	-017	HA		X				1	1			1	Relinquished By: Tom Bato	10/24/97 1730
																		Received By:	10/24/97 1730
11	RD696	BABSØ6SØ2	5.0'		1140	-018	HA		X				1	1			1	Relinquished By: Tom Bato	10/24/97 1730
																		Received By:	10/24/97 1730
13	RD699	BABSØ8SØ2	5.0'		1400	-019	HA		X				1	1			1	Relinquished By: Tom Bato	10/24/97 1730
																		Received By:	10/24/97 1730

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	10/24/97	1215

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

020

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD700

Date 10/24/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS # 30

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID 9710356-3	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD700	BASS@1S@1	0.0	10/24/97	1530	-080	G	4.15	X				X	X			1	Relinquished By:	10/24/97 1730
																	Received By:	10/24/97 1750
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

K James 10/24/97

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: MEC	TAT: 14 - day

Sampler's Signature	Date	Time
	10/24/97	1600

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

026

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD105
Date 10/24/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

EPA #

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9907356	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
19 RD 105	BABS⌀2 S⌀1	1.0	10-24-97	1345	-081 4.15	B		X					X				Relinquished By:	1733 10/24/97
																	Received By:	1953 10/24/97
18 RD 106	~~BABS⌀2 S⌀0~~ BABS⌀3S⌀1	1.5	"	1510	-082 "	B		X					X				Relinquished By:	1733 10/24/97
																	Received By:	1953 10/24/97
17 RD 107	BABS⌀4S⌀1	0.5	"	1540	-083 "	B		X					X				Relinquished By:	1733 10/24/97
																	Received By:	1953 10/24/97
17 RD 108	BABS⌀4S⌀2	5.⌀	"	1550	-084 "	B		X					X				Relinquished By:	1733 10/24/97
																	Received By:	1953 10/24/97
~~RD 109~~	DUP	10/24/97	"			B		X					X				Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	10/24/97	17:15

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

027

OGDEN *ENVIRONMENTAL AND ENERGY SERVICE*

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Mr. Leo Raab/Columbia Analytical Services
Fax No.: (818) 587-5555

From: Lisa L. Arrasmith *sign:* Lisa L. Arrasmith

Date: 11/3/97 There is 1 Page to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]
RD073	RD077	10/21/97	OG	OG & V
RD078	RD078	10/21/97	OG	OG & V
RD078	RD080	10/21/97	OG	OG & V

[a] OG– 8015OG, TPH
V – Volatiles

The reason for these changes is:

Incorrectly marked on COC form _____
Lack of sample volume _____
Ogden office personnel require this change X
Other: Containers mislabeled ___ _____

Thank you.

Columbia Analytical Services inc.

Wednesday, February 11, 1998

Anne Freed
Ogden
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9703547

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on 10/17 - 20/97.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296, expiration August 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Leo Raab
Project Chemist

Eydie Schwartz for
Stuart Sigman
Quality Assurance Chemist

xc:
Elizabeth Wessling
Ogden
550 S. Wadsworth Blvd., Suite 500
Lakewood, CO 80226

001

CAS CSR #L9703547

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Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9703547
Project:	Rocketdyne SSFL 313150002	**Date Received:**	10/17-20/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Sample Delivery Group Assignment" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses. Any tests marked under the grey-shaded parameters to the far right of this form were sub-contracted to the following laboratories:

Dioxins/Furans/EPA 8290 Triangle Lab, Durham, NC.

Subcontracted test results, case narratives and data packages are included as an appendix to this report.

The following changes were requested via phone call from Lisa Arrasmith on 10/20/97:
Take RF661 off hold for Dioxins.
The following changes were requested via fax from Lisa Arrasmith on 10/24/97:
Add Dioxins to RF657 & RF659.
The following changes were requested via fax from Lisa Arrasmith on 10/31/97:
Add 8015OG to RF019 (one day out of hold time).

Cooler temperatures were not recorded on COCs.

The following difficulties were experienced during analysis of this batch:
Surrogates for 8270SIM for RF661 were not reportable due to sample matrix requiring dilution.
Duplicate Matrix Spike Recovery for Antimony was below control limits however the LCS was within specification.
MS/MSD for 8015OG performed on non-Ogden sample.

Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

Data Qualifier Flags are: U = Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: _____ Date: 1/12/98

SAMPLE DELIVERY GROUP ASSIGNMENT

CLIENT: **OGDEN**
PROJECT MANAGER: **DIXIE HAMBRICK**
PROJECT NAME: **ROCKETDYNE SSFL**
PROJECT NUMBER: **313150002**

SDG NUMBER: **L9703547**
LABORATORY: COLUMBIA ANALYTICAL SRV.
SDG CLOSING DATE: 10/31/97 * See Note
SUMMARY / FINAL DUE: 11/14/97 / 11/28/97

#	SAMPLE NAME	SAMPLE DATE	RECEIVED DATE	MATRIX	MS/MSD or MS/DUP	MOISTURE	8260 VOC	8015OG TEPH	8270 SIM	8270 R	METALS (CAM-17)	METALS (CAM-17 + AL + B)	7196 HEXAVALENT CHROMIUM	340.2 FLUORIDE	300.0M ANIONS (CL NO3 NO2)	9040 / 9045 PH	8080 PCB	Hg CVAA 7471			ASTM D19 FORMALDEHYDE	PERCHLORATE	TRIBUTYLTIN	8290 DIOXIN/FURAN	HYDRAZINES	8330 EXPLOSIVES
1	**RF655**	10/16/97	10/17/97	SOLID		X			X																	
2	**RF007**	10/16/97	10/17/97	SOLID		X			X		X			X	X	X										
3	**RF008**	10/16/97	10/17/97	SOLID		X			X		X			X	X	X										
4	**RF009**	10/16/97	10/17/97	SOLID		X			X		X			X	X	X										
5	**RF010**	10/16/97	10/17/97	SOLID		X			X		X			X	X	X										
6	**RF011**	10/16/97	10/17/97	SOLID		X			X		X			X	X	X										
7	**RF012**	10/16/97	10/17/97	SOLID		X			X		X			X	X	X										
8	**RF013**	10/16/97	10/17/97	SOLID		X			X		X			X	X	X										
9	**RF014**	10/16/97	10/17/97	SOLID		X			X		X			X	X	X										
10	**RF015**	10/16/97	10/17/97	SOLID		X			X		X			X	X	X										
11	**RF016**	10/16/97	10/17/97	SOLID		X			X		X			X	X	X										
12	**RF017**	10/16/97	10/17/97	SOLID		X			X		X			X	X	X										
13	**RF018**	10/16/97	10/17/97	SOLID		X			X		X			X	X	X										
14	**RF019**	10/16/97	10/17/97	SOLID		X		X	X		X			X	X	X										
15	**RF657**	10/17/97	10/17/97	SOLID		X			X															X		
16	**RF659**	10/17/97	10/17/97	SOLID		X			X															X		
17	**RF661**	10/17/97	10/17/97	SOLID		X			X		X			X	X	X								X		
18	**RF030**	10/20/97	10/20/97	SOLID		X			X		X			X	X	X										
19	**RF031**	10/20/97	10/20/97	SOLID		X			X		X			X	X	X										
20	**RF032**	10/20/97	10/20/97	SOLID		X			X		X			X	X	X										

Dioxin off hold 10/20 & 10/24; RF019 added 8015OG 10/31

OGDEN

5510 MORENOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9703547

Chain of Custody

Control Number: COC RF 6038

Date 10 / 16 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in comment	

Bill To:	Mark Duffley - Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal

Shipment Method: Federal Express

Comment

Cooler No:

QC Level: Level1

TAT: 35 Day 11/21

Preservative

| Sample Data | | |

L9703547

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RF007
Date 10/16/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Federal Express
Comment:	

* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No: CP 9730
QC Level: Level4
TAT: ~~35~~ - Day 14-28

Preservatives: HCL, pH<2 4°C; HCL, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

Sample Data

	Sample ID	Description (for Ogden use only)	Date Collected	Time Collected	Lab ID	Matrix: Soil	Matrix: Water	Matrix: Product	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	8315 ALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	218.6/300 NITRATE *	325 CHLORIDE *	9045/9040 pH	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
2	RF007	ILBSØ1SØ10.0	10-16-97	835		X					X				X		X	X	X	X	B			
3	RF008	ILBSØ1SØ20.5.0		845		X					X				X		X	X	X	X				
4	RF009	ILBSØ1SØ3D9.5		855		X					X				X		X	X	X	X				
5	RF010	ILBSØ1SØ4D15		925		X					X				X		X	X	X	X				
6	RF011	ILBSØ1SØ5D20		935		X					X				X		X	X	X	X				
7	RF012	ILBSØ1SØ6D29.5		1005		X					X				X		X	X	X	X				
8	RF013	ILBSØ1SØ7D40.0		1100		X					X				X		X	X	X	X				
9	RF014	ILBSØ2SØ1D1.5		1135		X					X				X		X	X	X	X				
10	RF015	ILBSØ2SØ2D5.0		1145		X					X				X		X	X	X	X				
11	RF016	ILBSØ2SØ3D9.5		1200		X					X				X		X	X	X	X				
12	RF017	ILBSØ2SØ4D15.5		1215		X					X				X		X	X	X	X				
13	RF018	ILBSØ2SØ5D20.0		1225		X					X				X		X	X	X	X				

	Date	Time
Samplers Signature: A. San	10-16-97	1600
Relinquished By: Relinquished to Mobile Lab	10/17/97	800
Received By: [signature]	10/17/97	800
Relinquished By: Kerry Mat	10/17	1000
Received By (LAB): [signature]	[illegible]	[illegible]

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

9703547

Chain of Custody

Control Number: COC RF019

Date 10/16/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal

Shipment Method: Federal Express

Comment:

* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No: CP9730

QC Level: Level4

TAT: ~~35~~ Day 14-25

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C

| Sample Data | | | | | Matrix | | | | |

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9703547

Chain of Custody

Control Number: COC RF 1657

Date 10/17/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No: CP1737

QC Level: Level4 TAT: 35 - Day

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | H_2SO_4,pH<2 4°C | 4°C | HNO_3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

	Sample Data					Matrix				8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH											SAMPLE TYPE	Extra Volume MS/MSD	HOLD	Total # of Bottles
	Sample ID	Description (for Ogden use only)		Date Collected	Time Collected	Lab ID	Soil	Water	Product																											
15	RF1657	MW-5	DUP	10/17/97	0900		X					1																					HA			1
16	RF1658	MW-5	DUP	10/17/97	0900		X					1																					HA			1
17	RF1661	EQUIP BLANK	DUP	10/17/97	1450		X					1	1				1		1	1	1	1											HA		*	1

Samplers Signature		Date	Time
Relinquished By:		Date	Time
Received By:		Date	Time
Relinquished By:		Date	Time
Received By (LAB):		Date	Time

For Lab Use

Lab Number:

Do COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N (N/A)

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: ___/___/___

Temperature C

* HOLD DIOXIN, TEST UNTIL OGDEN AUTHORIZATION. (PROBE)

Cust/Intact

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

300

OGDEN *ENVIRONMENTAL AND ENERGY SERVICE*

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Mr. Leo Raab/Columbia Analytical Services
Fax No.: (818) 587-5555

From: Lisa L. Arrasmith *sign:* Lisa LArrasmith

Date: 10/24/97 There is 1 Page to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]
RF638	RF638	10/16/97	S, D (hold)	S, D
RF638	RF642	10/16/97	S, D (hold)	S, D
RF657	RF657	10/17/97	S	S, D
RF657	RF659	10/17/97	S	S, D
RF662	RF663	10/20/97	S, D (hold)	S, D
RF675	RF675	10/22/97	S	S, D
RF675	RF677	10/22/97	S, D (hold), pH	S, D, pH

3503
L9703607-12
-14
L9703547-15
-16
L9703578-3
-12
-14

[a] D= 8290, Dioxin/furan
S= 8270 SIM, semi-volatile organics

The reason for these changes is:

Incorrectly marked on COC form _____
Lack of sample volume _____
Ogden office personnel require this change X
Other: Containers mislabeled ___ _____

Thank you.

010

OGDEN *ENVIRONMENTAL AND ENERGY SERVICE*

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Mr. Leo Raab/Columbia Analytical Services
Fax No.: (818) 587-5555

From: Lisa L. Arrasmith *sign:* Lisa L Arrasmith

Date: 10/31/97 There is 1 Page to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[(n)]	Method (s) Now Requested[(n)]
RF019	RF019	10/16/97	S, M, A, Fl & pH	S, M, A, Fl, OG & pH

[(n)] S= 8270 SIM, semi-volatile organics
M= Metals
OG= 8015OG, TPH
Fl= 340.2, Fluoride
A= Anions

The reason for these changes is:

Incorrectly marked on COC form	____
Lack of sample volume	____
Ogden office personnel require this change	X
Other: Containers mislabeled ___	____

Thank you.

7 8015m Ext. in OGDEN FORMAT

LA703547-14

011

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RF019

Date 10/16/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313158082
Deliver results to the address above or as stated in contract	

Bill To:	Mark Delfay
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No: CP9730

QC Level: Level4 TAT: 35 - Day

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | HNO3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

| Sample Data | | | | | Matrix | | | | Analyses | | | | |

Rec'd 11/25/97

Columbia Analytical Services, Inc.

November 24, 1997

Anne Freed
OGDEN
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne / Project #313150001

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on October 13-17, 1997. For your reference, these analyses have been assigned our service request number L9703479.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services Mobile Laboratory is certified for environmental analyses by the California Department of Health Services (certificate number: 1993, expiration May 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Thomas X. Robinson

Thomas X. Robinson
Project Chemist

TR/iz

3479

0001

6925 Canoga Avenue ▪ Canoga Park, CA 91303 ▪ (818) 587-5550 ▪ Fax (818) 587-5555

OGDEN

Rocketdyne / #313150001

CAS CSR #L9703479

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Halogenated and Aromatic Volatile Organic Compounds Analytical Data 3000-3188

Halogenated and Aromatic Volatile Organic Compounds Raw Data 4000-5400

Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	InterPhase Environmental	**Service Request No.:**	L9703479
Project:	Rocketdyne/313150001	**Date Received:**	10/13-17/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for samples designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix/Duplicate Matrix Spike (MS/DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

The following difficulties were experienced during analysis of this batch:

Several samples required dilutions to bring the concentration of a particular analyte within its calibration range. Upon reanalysis the result did not always yield the expected concentration, many times a lower result or a Non Detect was determined. The most probable cause of this phenomenon is sample homogeneity; concentrations vary throughout various subsamples of the sample container, additionally the volatility of the target analytes causes concentrations to decrease after subsampling of the initial analysis.

Approved by: Thomas D. Robinson Date: 11/21/97

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RF001

Date 10 / 13 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ DB purchasing.
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	Resv

Batch 1 original

L970 3479

Sample Data						Field Data		Matrix					
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L970 3479 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M
RF001 D	AABSØ2SØ1	1.0	10-13-97	1315	3479 -001	DB GB	5.9/10/11	X				X	
* RF002 D	AABSØ2SØ2	5.0	"	1330	-002	DB GB		X				X	
RF003 D DB	AABSØ2SØ3	10.0	"	1345	-003	DB GB		X				X	
* RF004 D DB	AABSØ2Ø4	15.0	"	1400	-004	DB GB		X				X	X
RF005 D DB	AABSØ2Ø5	20.0	"	1415	-005	B		X				X	

Received By: [signature]
Relinquished By: [signature]
Received By: [signature]
Relinquished By: [signature]
Received By: [signature]

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: —	TAT: 14 - day

Sampler's Signature	Date	Time
[signature]	10/13	15:31

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

0004

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RF006

Date 10/13/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

Sample Data						Field Data		Matrix												
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RF006 D	AABS035Ø1	1.0	10/13/97	1520	-006			X				X	X				Relinquished By:	10-13-97 700 pm
																	Received By:	
RF007 D	AABSØ35Ø2	5.0	"	1535	-007			X				X	X				Relinquished By:	"
																	Received By:	"
RF008 D	AABSØ55Ø1	3.0	"	1605	-008			X				X	X				Relinquished By:	"
																	Received By:	"
RF009 D	AABSØ6SØ1	50	"	1625	-009			X				X	X				Relinquished By:	"
																	Received By:	
RF010 D	AABSØ6Ø2	12	"	1635	-010			X				X	X				Relinquished By:	"
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	10/13/97	

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

0005

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RF011
Date 10/13/97 Page 1 of 1

Project Manager:	Dixie Hambrick	Bill To:	Mark Deffley	Sample Disposal Instructions:	
Project Name:	Rocketdyne	Company:	Ogden Environmental	Shipment Method:	
Project Number:	313150001	Address:	5510 Morehouse Drive, San Diego, CA 92121	Comment:	
Deliver results to the address above or as stated in contract					

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9N03~~49A~~ 3449	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RF011 D	AABS06S03	13	10/13/97	1655	-011			X				X	X				Relinquished By: A. S[illegible] / Received By: Thomas X [illegible]	10-13-97 700pm
RF012 D	AABS07S01	1.0	"	1725	-012			X				X	X				Relinquished By: A. S[illegible] / Received By: Thomas X [illegible]	"
RF013 D	AABS07S02	5.5	"	1730	-013			X				X	X				Relinquished By: A. S[illegible] / Received By: Thomas X [illegible]	"
RF014 D	AABS07S03	9.0	"	1745	-014			X				X	X				Relinquished By: A. S[illegible] / Received By: Thomas X [illegible]	"
																	Relinquished By: A. S[illegible] / Received By: Thomas X [illegible]	"

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
[signature]	10-13-97	1750

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

9000

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RF623

Date 10 / 13 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	N/A
Comment:	

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L97 6 3479 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RF 623 D	AABS01S01	0.5'	10/13/97	1325	3479-15	HA	5.9	X					X			1	Relinquished By: A. Son	10-14-97
																	Received By: Thomas Rubin	10/14/97
RF 624 D	AABS01S02	6.0'	10/13/97	1500	-16	HA	5.9	X				X	X			1	Relinquished By: A. Son	10-14-97
																	Received By: Thomas Rubin	10/14/97
RF 625 D	AABS04S01	0.5'	10/13/97	1615	-17	HA	5.9	X				X	X			1	Relinquished By: A. Son	10-14-97
																	Received By: Thomas Rubin	10/14/97
RF 626 D	AABS08S01	0.5'	10/13/97	1740	-18	HA	5.9, 10	X					X			1	Relinquished By: A. Son	10-14-97
																	Received By: Thomas Rubin	10/14/97
					KM Jamieson 10/13/97												Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: CP9720	TAT: 14 - day

Sampler's Signature	Date	Time
KM Jamieson Thomas J Brunt	10/13/97	1900

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

0007

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD015

Date 10/14/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab #	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD015	AA135Ø95Ø1	2.0	10/14/97	905	019			X				X	X				Relinquished By: A. Sm	10-14-97 1130
																	Received By: Bo Kam	10/14/97 11:30
RD016	AABSØ9SØ2	7.0	"	920	-020			X				X	X				Relinquished By: A. Sm	10-14-97 1130
																	Received By: Bo Kam	10/14/97 11:30
RD017	AABSØ9SØ3	12.0	"	935	-021			X				X	X				Relinquished By: A. Sm	10-14-97 1130
																	Received By: Bo Kam	10/14/97 11:30
RD018	AABS12SØ1	1.5	"	1005	-022			X				X	X				Relinquished By: A. Sm	10-14-97 1130
																	Received By: Bo Kam	10/14/97 11:30
RD019	AABS12SØ2	6.0	"	1010	-023			X				X	X				Relinquished By: A. Sm	10-14-97 1130
																	Received By: Bo Kam	10/14/97 11:30

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
A. Sm	10-14-97	1130

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

8000

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 627

Date 10 / 14 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick	Bill To:	Mark Deffley	Sample Disposal Instructions:	
Project Name:	Rocketdyne	Company:	Ogden Environmental	Shipment Method:	
Project Number:	313150001	Address:	5510 Morehouse Drive, San Diego, CA 92121	Comment:	
Deliver results to the address above or as stated in contract					

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L9703479 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD627	AABS10S01	0.5'	10/14/97	0915	-024	HA	5.9	X					X			1	Relinquished By: KJamieson Received By: [signature]	10/14/97 14:30 10/14/97 14:30
RD628	AABS11S01	0.5'	10/14/97	0945	-025	HA	5.9	X				X				1	Relinquished By: KJamieson Received By: [signature]	10/14/97 14:30 10/14/97 14:30
HJ RD629	AABS13S01	0.5'	10/14/97	1020	-026	HA	5.9	X				X	X			1	Relinquished By: KJamieson Received By: [signature]	10/14/97 14:30 10/14/97 14:30
RD630	AASS15S01	0	10/14/97	1120	-027	T ~~HA~~ HJ	5.9	X					X			1	Relinquished By: KJamieson Received By: [signature]	10/14/97 14:30 10/14/97 14:30
RD631	AABS13S02	3.5'	10/14/97	1150	-028	HA	5.9	X				X	X			1	Relinquished By: KJamieson Received By: [signature]	10/14/97 14:30 10/14/97 14:30

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: CP 9720 TAT: 14 - day

Sampler's Signature	Date	Time
KM Jamieson [signature]	10/14/97	~~0~~ HJ 1400

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

0009

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 632

Date 10 / 14 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD632	CABSØ2SØ1	0.5'	10/14/97	1615	-029	HA	5.18	X				X	X			1	Relinquished By:	
																	Received By:	10/14/97
RD633	CABSØ3SØ1	0.5'	10/14/97	1638	-030	T HA KJ	5.18	X				X	X			1	Relinquished By:	
																	Received By:	10/14/97
																	Relinquished By:	
																	Received By:	
					KJ 10/14/97												Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: CP9720	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson J. Bent	10/14/97	1710

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

0010

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD020

Date / / Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ DB purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9710347/4	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD020	EVBSΦ1SΦ1	1.0	10-14-97	1345	-031	B	5.2	X					X				Relinquished By: A. Sa	10-14-97
																	Received By: Thomas x Robin	10/14/97
RD021	EVBSΦ2SΦ1	1.5	10-14-97	1450	-032	B	5.2	X					X				Relinquished By: A. Sa	10-14-97
																	Received By: Thomas x Robin	10/14/97
RD022	EVBSΦ3SΦ1	1.0	10/14/97	1550	-033	B	5.2	X				X					Relinquished By: A. Sa	10-14-97
																	Received By: Thomas x Robin	10/14/97
RD023	EVBSΦ3SΦ2	3.5	10/14/97	1620	-034	B	5.2	X				X			X		Relinquished By: A. Sa	10-14-97
																	Received By: Thomas x Robin	10/14/97
					HKS 10/14/97												Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	A. Sa	Date 10/14/97	Time

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

0011

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD024
Date 10/15/97 Page 1 of 1

Project Manager:	Dixie Hambrick	Bill To:	Mark Deffley	Sample Disposal Instructions:	
Project Name:	Rocketdyne	Company:	Ogden Environmental	Shipment Method:	
Project Number:	313150001	Address:	5510 Morehouse Drive, San Diego, CA 92121	Comment:	
Deliver results to the address above or as stated in contract					

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L97/03437	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD024	~~AA~~ EVBSØ4SØ1	0.5	10/15/97	820	-035	B	5.2	X				X	X				Relinquished By: A. Sam Received By: [signature]	10-15-97 1530 10/15/97 15:30
RD025	EVBSØ4SØ2	5.0	"	830	-036	B	5.2	X				X	X				Relinquished By: A. Sam Received By: [signature]	10-15-97 1530 10/15/97 15:30
RD026	EVBSØ4SØ3	10.0	"	845	-037	B	5.2	X				X	X		X		Relinquished By: A. Sam Received By: [signature]	10-15-97 1530 10/15/97 15:30
RD027	EVBSØ4SØ4	11.5	"	855	-038	B	5.2	X				X	X				Relinquished By: A. Sam Received By: [signature]	10-15-97 1530 10/15/97 15:30
RD028	EVBSØ3SØ3	8.0	"	1000	-039	B	5.2	X				X			~~X~~		Relinquished By: A. Sam Received By: [signature]	10-15-97 1530 10/15/97 15:30

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: TAT: 14 - day

Sampler's Signature	Date	Time
A. Sam	10-15-97	1530

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

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1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

0012

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD029

Date 10 / 14 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	* please Sample from bottom (black cup)

	Sample Data						Field Data		Matrix											
	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
	RD029	EVBS05501	0.5	10-15-97	1035	-040	B	5.2	X					X				Relinquished By: A. Sam	10-15-97 1530
																		Received By:	10/15/97 15:30
*	RD031	EVBS06501	0.5	4	1225	-041	B	5.2	X					X				Relinquished By: A. Sam	10-15-97 1530
																		Received By:	15:30
*	RD030	EVBS07 AMS	0.5	10/15/97	1200	-042	B	5.2	X					X				Relinquished By: A. Sam	10-15-97 1530
																		Received By:	15:30
*	RD032	EVBS08501	1.0	10/15/97	1425	-043	B	5.2	X				X			X		Relinquished By: A. Sam	10-15-97 1530
																		Received By:	15:30
																		Relinquished By:	
																		Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
A. Sam	10/15/97	1530

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

0013

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1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD033

Date 10/15/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L9710344/9 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD032	OCBS01S01	0.5	10-15-97	1625	-044	B	7.4	X				X	X				Relinquished By: A. Sam	10/15/97 1730
																	Received By:	10/15/97 19:40
RD034	OCBS01D01	0.5	10-15-97	1625	-045	B	7.4	X				X	X				Relinquished By: A. Sam	10/15/97 1740
																	Received By:	10/15/97 19:40
RD035	OCBS01S02	4.5	"	1635	-046	B	7.4	X				X	X				Relinquished By: A. Sam	10-15-97 1740
																	Received By:	10/15/97 19:40
~~RD036~~	~~OCBS01S02~~	~~4.5~~	"	1635		B	7.4	X				X	X				Relinquished By: A. Sam	1740 10/15/97
																	Received By:	10/15/97 19:40
RD037	OCBS02S01	1.0	"	1645	-047	B	7.4	X				X	X				Relinquished By: A. Sam	10/15/97 1740
																	Received By:	10/15/97 19:40

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
A. Sam	10-15-97	1730

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

0014

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REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD038

Date 10/15/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9710 3479	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD038	OCBSD2SD2	5.0	10-15-97	1655	-048	B	7.4	B				X	X				Relinquished By: A. Sam	10/15/97 1730
																	Received By:	10/15/97 17:40
																	Relinquished By:	
																	Received By:	
					AAO 10-15-97												Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
A. Sam	10-15-97	1730

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

0015

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD634
Date 10 / 15 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	MS/MSD ON SAMPLE RD636

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L9703449 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD634	CABSØ4SØ1	0.5'	10/15/97	0840	-049	HA	5.18,5.19	X					X			1	Relinquished By: [signature] Received By: [signature]	10/15/97 18:35 10/15/97 1840
RD635	CABSØ1SØ~~8~~1 KJ	0.5'	10/15/97	1020	-050	HA	5.18,5.19	X				X	X			1	Relinquished By: [signature] Received By: [signature]	10/15/97 18:35 10/15/97 1840
RD636	CABSØ1DØ1	0.5'	10/15/97	1105	-051	HA	5.18,5.19	X				X	X			1	Relinquished By: [signature] Received By: [signature]	10/15/97 18:35 10/15/97 1840
~~RD638~~	~~CAQWØ1EØ1~~	~~-~~	~~10/15/97~~	~~1405~~		~~-~~	~~5.18,5.19~~		~~X~~				~~X~~			~~1~~	Relinquished By: Received By:	
RD639	CABSØ5SØ1	2.5'	10/15/97	1440	-052	G	5.18,5.19				X	X	X			1	Relinquished By: [signature] Received By: [signature]	10/15/97 18:35 10/15/97 1840

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson [signature]	10/15/97	1700

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

0016

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 640
Date 10/15/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD640	CABSØ6SØ1	2.Ø'	10/15/97	1526	-053	G	5.18,5.19				X	1	1			1	Relinquished By: KJ	10/15/97
																	Received By:	18:40
RD641	CABSØ7SØ1	1.Ø'	10/15/97	1600	-054	G	5.18,5.19				X	X	X			1	Relinquished By: KJ	10/15/97 18:35
																	Received By:	10/15/97 18:40
RD642	CABSØ8SØ1	2.Ø'	10/15/97	1608	-055	G	5.18,5.19				X	X	X			1	Relinquished By: KJ	10/15/97 18:35
																	Received By:	10/15/97 17:40
RD643	CABSØ9SØ1	0.5	10/15/97	1435	-056	HA	5.18,5.19	X					X			1	Relinquished By: KJ	10/15/97 18:35
																	Received By:	10/15/97 18:40
					Kjamieson 10/15/97												Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
~~CP9720~~ KJ	
Cooler No: CP9720	TAT: 14 - day

Sampler's Signature	Date	Time
Kjamieson	10/15/97	1700

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

0017

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1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD644

Date 10/15/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9703479)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD644	CABS115Ø1	0.5	10/15	1455	-057	HA	5.18, 5.19	X					X				Relinquished By:	10/15/97 1835
																	Received By:	10/15/97 17:40
RD645	CABS114SØ1	0.5	10/15	1530	-058	HA	5.18, 5.19	X					X				Relinquished By:	10/15/97 1835
																	Received By:	10/15/97 17:40
RD646	CABS125Ø1	0.5	10/15	1645	-059	HA	5.18, 5.19	X					X				Relinquished By:	10/15/97 1835
																	Received By:	10/15/97 18:40
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

K Jamison 10/15/97

QC Level: EPA Level III Equivalent, See Contract Requirements		
Cooler No: CP9720	TAT: 14 - day	

Sampler's Signature	Date	Time
J. Fant K Jamison	10/15	1745

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

0018

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD040

Date 10/16/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L9703419 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD040	ILBSΦ1SΦ1	1.0	10-16-97	835	-060	B	4.3, 4.4	X				X	X				Relinquished By: A. Sam	10/16/97 1430
																	Received By:	10/16/97 1430
RD041	ILBSΦ1SΦ2	5.0	"	845	-061	B		X				X	X				Relinquished By: A. Sam	10/16/97 1430
																	Received By:	10/16/97 1430
RD042	ILBSΦ1SΦ3	9.5	"	855	-062	B		X				X	X				Relinquished By: A. Sam	10/16/97 1430
																	Received By:	10/16/97 1430
RD043	ILBSΦ1SΦ4	15.0	"	925	-063	B		X				X	X				Relinquished By: A. Sam	10/16/97 1430
																	Received By:	10/16/97 1430
RD044	ILBSΦ1SΦ5	20.0	"	935	-064	B		X				X	X				Relinquished By: A. Sam	10/16/97 1430
																	Received By:	10/16/97 1430

QC Level: EPA Level III Equivalent, See Contract Requirements
Cooler No: / TAT: 14 - day

Sampler's Signature	Date	Time
A. Sam	10/16/97	1430

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

0019

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC R045

Date 10 / 16 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9703479	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
~~RD045~~ RD045	ILBS01S06	29.5	10-16-97	1005	-065	B	4.3,4.4	X				X	X				Relinquished By: A. Sm	10/16/97 1430
																	Received By: B. Kem	10/16/97 1430
RD046	ILBS01S07	40.0	10/16/97	1100	-066	B		X				X	X				Relinquished By: A. Sm	10/16/97 1430
																	Received By: B. Kem	10/16/97 1430
RD047	ILBS02S01	1.5	10/16/97	1135	-067	B		X				X	X				Relinquished By: A. Sm	10/16/97 1430
																	Received By: B. Kem	10/16/97 1430
RD048	ILBS02S02	5.0	10/16/97	1145	-068	B		X				X	X				Relinquished By: A. Sm	10/16/97 1430
																	Received By: B. Kem	10/16/97 1430
RD049	ILBS02S03	9.5	"	1200	-069	B		X				X	X				Relinquished By: A. Sm	10/16/97 1430
																	Received By: B. Kem	10/16/97 1430

QC Level: EPA Level III Equivalent, See Contract Requirements
Cooler No: / TAT: 14 - day

Sampler's Signature	Date	Time
A. Sm	10/16/97	1430

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

0020

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD050

Date 10/16/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9703479	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD050	ILBS φ2S φ4	15.5	10/16/97	1215	L9703479 -070	B	4.3, 4.4	X				X	X				Relinquished By: A. Sam	10/16/97 1430
																	Received By: [signature]	10/16/97 1430
RD051	ILBS φ2S φ5	20.0	"	1225	-071	B		X				X	X				Relinquished By: A. Sam	10/16/97 1430
																	Received By: [signature]	10/16/97 1430
RD052	ILBS φ2S φ6	31.5 ~~29.5~~ ~~32.0~~	"	~~1255~~ 1355	~~123~~ -072	B		X				X	X				Relinquished By: A. Sam	10/16/97 1430
																	Received By: [signature]	10/16/97 1430
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

10/16/97 AAO

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
A. Sam	10-16-97	1430

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

0021

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

RD 6047
Control Number: COC ~~RF 6037~~
Date 10 / 16 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID 10/03/97	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
~~RF 6037~~	~~AABS14S01~~	~~0.5'~~	10/16/97	1035		HA	5.11	X				KJ 10/16/97					Relinquished By:	10/16/97 1940
RD647	AABS14S01	0.5'	10/16/97	1030	-013	HA	5.11	X				X	X				Received By: / Relinquished By:	
RD648	AABS15S01	0.5'	10/16/97	1100	-014	HA	5.11	X				X	X				Received By: / Relinquished By:	
RD649	AABS14S01	5.0'	10/16/97	1120	-015	HA	5.11	X				X	X				Received By: / Relinquished By:	
RD650	AABS16S01	0.5	10/16/97	1145	-016	HA	5.11	X				X	X				Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson J. Bm	10/16/97	1200

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

0022

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 0651

Date 10/16/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

Sample Data						Field Data		Matrix												
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD0651	AABS17S01	0.5	10/16/97	1230	-077	HA	5.11	X				X	X				Relinquished By:	10-16-97 1940
RD0652	AABS17S02	5.0	10/16/97	1245	-078	HA	5.11	X				X	X				Relinquished By:	
RD0653	AABS18S01	0.5'	10/16/97	1610	-079	HA	5.11	X				X	X				Relinquished By:	
RD0654	AABS18S01	4.0 ~~0.5'~~	10/16/97	1630	-080	HA	5.11				X	X	X				Relinquished By:	
RD0655	AABS19S01	0.5'	10/16/97	1630	-081	HA	5.11				X	X	X				Relinquished By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamison T Bui	10/16/97	1700

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

0023

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD656
Date 10/16/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	KJ ~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L97034179	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD656	AABS19S01	5.0	10/16/97	1720	-082	HA	5.11				X	X	X				Relinquished By: [signature]	10-16-97 1940
																	Received By: [signature]	↓
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

K Jamieson 10/16/97

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: TAT: 14 - day

Sampler's Signature	Date	Time
[signature] K Jamieson	10/16/97	1755

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

0024

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RF636

Date 10 / 15 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Federal Express
Comment:	MOBILE LAB - EQUIPMENT RINSATE

* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:	CP9720		
QC Level:	Level4	TAT:	~~35 - Day~~ 14/30 DAY JKJ

Preservatives: HCL, pH<2 4°C; HCL, pH<2 4°C; 4°C; 4°C; H2SO4,pH<2 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

Sample Data

Sample ID	Description (for Ogden use only)	Date Collected	Time Collected	Lab ID (14N034A9)	Matrix: Soil	Matrix: Water	Matrix: Product	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH	SAMPLE METHOD	Extra Volume MS/MSD	HOLD	Total # of Bottles
RF636	CAQW01E01	10-15-97	1405	-083		X			1											-			1

10-15-97

Samplers Signature	Date	Time
[signature] FOR K. JAMISON	10/15/97	1800
Relinquished By: [signature]	10-16-97	0930
Received By: [signature]	10/16/97	0930
Relinquished By:	10/16/97	
Received By (LAB):		

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

0025

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC ~~R5~~ KJ RD657

Date 10 / 17 /97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	KJ ~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L9710349 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD657	AABS2ØSØ1	Ø.5'	10/17/97	0830	-084	HA	5.11	X				X	X			1	Relinquished By: K Jamieson	10/17/97 1614
																	Received By:	10/17/97 16:14
RD658	AABS21SØ1	Ø.5'	10/17/97	0940	-085	HA	5.11	X				X	X			1	Relinquished By: K Jamieson	10/17/97 1614
																	Received By:	10/17/97 16:14
RD659	CA AABS13SØ1 KJ	Ø.5	10/17/97	1110	-086	HA	5.18, 5.19	X				X				1	Relinquished By: K Jamieson	10/17/97 1614
																	Received By:	10/17/97 16:14
RD660	EVBS1ØSØ1	3.Ø	10/17/97	1530	-087	HA	5.2	X				X	X			1	Relinquished By: K Jamieson	10/17/97 1614
																	Received By:	10/17/97 16:14
					K Jamieson 10/17/97												Relinquished By: K Jamieson	10/17/97 1614
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: CP9737	TAT: 14 - day

Sampler's Signature K Jamieson	Date 10/17/97	Time 1030

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

0026

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD53

Date 10/17/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9710[illegible])	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD053	AABS225S01	4.0	10-17-97	925	-088	B G	5.11	X					X				Relinquished By: A. Sam	10/17/97 16:25
																	Received By:	10/17/97 16:25
RD054	AABS235S01	5.5	11	1015	-089	B	1	X					X				Relinquished By: A. Sam	10/17/97 16:25
																	Received By:	10/17/97 16:25
RD055	AABS245S01	5.5	11	1050	-090	B	1	X					X				Relinquished By: A. Sam	10/17/97 16:25
																	Received By:	10/17/97 16:25
RD056	AABS255S01	5.5	11	1125	-091	B	1	X					X				Relinquished By: A. Sam	10/17/97 16:25
																	Received By:	10/17/97 16:25
RD057	AABS265S01	5.5	11	1240	-092	B	1	X					X				Relinquished By: A. Sam	10/17/97 16:25
																	Received By:	10/17/97 16:25

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: CP9722	TAT: 14 - day

Sampler's Signature	Date	Time
A. Sam	10-17-97	

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

0027

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
22-OCT-97 18:10

Service Req. No. L9703479
Client No. 095000
Client Name InterPhase Environmental

Project No. 313150001
Project Name Rocketdyne

Bottles: 91 - Canisters/Decore

Bill To: InterPhase Environmental
Attn: Accounts Payable
6200 Peachtree Street
Los Angeles, CA 90040

Report To: Ogden Environmental
Anne Freed
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No.
Logged In By ABRAGASI
ISR Num
COC Received Y
Samples Submitted 13-OCT-97 thru 17-OCT-97

Site ID
Project Chemist Tom Robinson

Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8021 MDAY	TPH-FC-CA	~DATA DEL
L9703479-001	RD001	MISC	13-OCT-97	31-OCT-97		LAB	LAB
L9703479-001	RD001	SOIL	13-OCT-97	31-OCT-97	LAB		
L9703479-002	RD002	MISC	13-OCT-97	31-OCT-97			LAB
L9703479-002	RD002	SOIL	13-OCT-97	31-OCT-97	LAB		
L9703479-003	RD003	MISC	13-OCT-97	31-OCT-97			LAB
L9703479-003	RD003	SOIL	13-OCT-97	31-OCT-97	LAB		
L9703479-004	RD004	MISC	13-OCT-97	31-OCT-97			LAB
L9703479-004	RD004	SOIL	13-OCT-97	31-OCT-97	LAB		
L9703479-005	RD005	MISC	13-OCT-97	31-OCT-97			LAB
L9703479-005	RD005	SOIL	13-OCT-97	31-OCT-97	LAB		
L9703479-006	RD006	SOIL	13-OCT-97	31-OCT-97	LAB	LAB	
L9703479-007	RD007	SOIL	13-OCT-97	31-OCT-97	LAB	LAB	
L9703479-008	RD008	SOIL	13-OCT-97	31-OCT-97	LAB	LAB	
L9703479-009	RD009	SOIL	13-OCT-97	31-OCT-97		LAB	
L9703479-010	RD010	SOIL	13-OCT-97	31-OCT-97	LAB	LAB	
L9703479-011	RD011	SOIL	13-OCT-97	31-OCT-97	LAB	LAB	
L9703479-012	RD012	SOIL	13-OCT-97	31-OCT-97	LAB	LAB	
L9703479-013	RD013	SOIL	13-OCT-97	31-OCT-97	LAB	LAB	
L9703479-014	RD014	SOIL	13-OCT-97	31-OCT-97	LAB	LAB	
L9703479-015	RD623	SOIL	13-OCT-97	31-OCT-97		LAB	
L9703479-016	RD624	SOIL	13-OCT-97	31-OCT-97	LAB	LAB	
L9703479-017	RD625	SOIL	13-OCT-97	31-OCT-97	LAB	LAB	
L9703479-018	RD626	SOIL	13-OCT-97	31-OCT-97		LAB	
L9703479-019	RD015	SOIL	14-OCT-97	31-OCT-97	LAB	LAB	
L9703479-020	RD016	SOIL	14-OCT-97	31-OCT-97	LAB	LAB	
L9703479-021	RD017	SOIL	14-OCT-97	31-OCT-97	LAB	LAB	
L9703479-022	RD018	SOIL	14-OCT-97	31-OCT-97	LAB	LAB	
L9703479-023	RD019	SOIL	14-OCT-97	31-OCT-97	LAB	LAB	
L9703479-024	RD627	SOIL	14-OCT-97	31-OCT-97		LAB	
L9703479-025	RD628	SOIL	14-OCT-97	31-OCT-97	LAB		
L9703479-026	RD629	SOIL	14-OCT-97	31-OCT-97	LAB	LAB	
L9703479-027	RD630	SOIL	14-OCT-97	31-OCT-97		LAB	
L9703479-028	RD631	SOIL	14-OCT-97	31-OCT-97	LAB	LAB	
L9703479-029	RD632	SOIL	14-OCT-97	31-OCT-97	LAB	LAB	
L9703479-030	RD633	SOIL	14-OCT-97	31-OCT-97	LAB	LAB	
L9703479-031	RD020	SOIL	14-OCT-97	31-OCT-97		LAB	

METALS VOA
IC WET
SEMI VOA

0028

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By: TYK

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
22-OCT-97 18:10

Service Req. No. L9703479
Client No. 095000
Client Name InterPhase Environmental

Project No. 313150001
Project Name Rocketdyne

Bottles: 91 - Canisters/Decore

Bill To: InterPhase Environmental
Attn: Accounts Payable
6200 Peachtree Street
Los Angeles, CA 90040

Report To: Ogden Environmental
Anne Freed
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No.
Logged In By ABRAGASI
ISR Num
COC Received Y
Samples Submitted 13-OCT-97 thru 17-OCT-97

Site ID
Project Chemist Tom Robinson

Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8021 MDAY	TPH-FC-CA	~DATA DEL
L9703479-032	RD021	SOIL	14-OCT-97	31-OCT-97		LAB	
L9703479-033	RD022	SOIL	14-OCT-97	31-OCT-97	LAB		
L9703479-034	RD023	SOIL	14-OCT-97	31-OCT-97	LAB		
L9703479-035	RD024	SOIL	15-OCT-97	31-OCT-97	LAB	LAB	
L9703479-036	RD025	SOIL	15-OCT-97	31-OCT-97	LAB	LAB	
L9703479-037	RD026	SOIL	15-OCT-97	31-OCT-97	LAB	LAB	
L9703479-038	RD027	SOIL	15-OCT-97	31-OCT-97	LAB	LAB	
L9703479-039	RD028	SOIL	15-OCT-97	31-OCT-97	LAB		
L9703479-040	RD029	SOIL	15-OCT-97	31-OCT-97		LAB	
L9703479-041	RD031	SOIL	15-OCT-97	31-OCT-97		LAB	
L9703479-042	RD030	SOIL	15-OCT-97	31-OCT-97		LAB	
L9703479-043	RD032	SOIL	15-OCT-97	31-OCT-97	LAB		
L9703479-044	RD033	SOIL	15-OCT-97	31-OCT-97	LAB	LAB	
L9703479-045	RD034	SOIL	15-OCT-97	31-OCT-97	LAB	LAB	
L9703479-046	RD035	SOIL	15-OCT-97	31-OCT-97	LAB	LAB	
L9703479-047	RD037	SOIL	15-OCT-97	31-OCT-97	LAB	LAB	
L9703479-048	RD038	SOIL	15-OCT-97	31-OCT-97	LAB	LAB	
L9703479-049	RD634	SOIL	15-OCT-97	31-OCT-97		LAB	
L9703479-050	RD635	SOIL	15-OCT-97	31-OCT-97	LAB	LAB	
L9703479-051	RD636	SOIL	15-OCT-97	31-OCT-97	LAB	LAB	
L9703479-052	RD639	SLUDGE	15-OCT-97	31-OCT-97	LAB	LAB	
L9703479-053	RD640	SLUDGE	15-OCT-97	31-OCT-97	LAB	LAB	
L9703479-054	RD641	SLUDGE	15-OCT-97	31-OCT-97	LAB	LAB	
L9703479-055	RD642	SLUDGE	15-OCT-97	31-OCT-97	LAB	LAB	
L9703479-056	RD643	SOIL	15-OCT-97	31-OCT-97		LAB	
L9703479-057	RD644	SOIL	15-OCT-97	31-OCT-97		LAB	
L9703479-058	RD645	SOIL	15-OCT-97	31-OCT-97		LAB	
L9703479-059	RD646	SOIL	15-OCT-97	31-OCT-97		LAB	
L9703479-060	RD040	SOIL	16-OCT-97	31-OCT-97	LAB	LAB	
L9703479-061	RD041	SOIL	16-OCT-97	31-OCT-97	LAB	LAB	
L9703479-062	RD042	SOIL	16-OCT-97	31-OCT-97	LAB	LAB	
L9703479-063	RD043	SOIL	16-OCT-97	31-OCT-97	LAB	LAB	
L9703479-064	RD044	SOIL	16-OCT-97	31-OCT-97	LAB	LAB	
L9703479-065	RD045	SOIL	16-OCT-97	31-OCT-97	LAB	LAB	
L9703479-066	RD046	SOIL	16-OCT-97	31-OCT-97	LAB	LAB	
L9703479-067	RD047	SOIL	16-OCT-97	31-OCT-97	LAB	LAB	

0029

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By: TXR

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
22-OCT-97 18:10

Service Req. No. L9703479 | Project No. 313150001 | Bottles: 91 - Canisters/Decore
Client No. 095000 | Project Name Rocketdyne
Client Name InterPhase Environmental

Bill To: InterPhase Environmental
Attn: Accounts Payable
6200 Peachtree Street
Los Angeles, CA 90040

Report To: Ogden Environmental
Anne Freed
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No. | Site ID
Logged In By ABRAGASI | Project Chemist Tom Robinson
ISR Num
COC Received Y
Samples Submitted 13-OCT-97 thru 17-OCT-97 | Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8021 MDAY	TPH-FC-CA	~DATA DEL
L9703479-068	RD048	SOIL	16-OCT-97	31-OCT-97	LAB	LAB	
L9703479-069	RD049	SOIL	16-OCT-97	31-OCT-97	LAB	LAB	
L9703479-070	RD050	SOIL	16-OCT-97	31-OCT-97	LAB	LAB	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
L9703479-072	RD052	SOIL	16-OCT-97	31-OCT-97	LAB	LAB	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
L9703479-076	RD650	SOIL	16-OCT-97	31-OCT-97	LAB	LAB	
L9703479-077	RD651	SOIL	16-OCT-97	31-OCT-97	LAB	LAB	
L9703479-078	RD652	SOIL	16-OCT-97	31-OCT-97	LAB	LAB	
L9703479-079	RD653	SOIL	16-OCT-97	31-OCT-97	LAB	LAB	
L9703479-080	RD654	SLUDGE	16-OCT-97	31-OCT-97	LAB	LAB	
L9703479-081	RD655	SLUDGE	16-OCT-97	31-OCT-97	LAB	LAB	
L9703479-082	RD656	SLUDGE	16-OCT-97	31-OCT-97	LAB	LAB	
L9703479-083	RD636	H2O	15-OCT-97	31-OCT-97		LAB	
L9703479-084	RD657	SOIL	17-OCT-97	31-OCT-97	LAB	LAB	
L9703479-085	RD658	SOIL	17-OCT-97	31-OCT-97	LAB	LAB	
L9703479-086	RD659	SOIL	17-OCT-97	31-OCT-97	LAB		
L9703479-087	RD660	SOIL	17-OCT-97	31-OCT-97	LAB	LAB	
L9703479-088	RD053	SOIL	17-OCT-97	31-OCT-97		LAB	
L9703479-089	RD054	SOIL	17-OCT-97	31-OCT-97		LAB	
L9703479-090	RD055	SOIL	17-OCT-97	31-OCT-97		LAB	
L9703479-091	RD056	SOIL	17-OCT-97	31-OCT-97		LAB	
L9703479-092	RD057	SOIL	17-OCT-97	31-OCT-97		LAB	

Comments:

0030

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By: TXI2

TestAmerica
ANALYTICAL TESTING CORPORATION

17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

LABORATORY REPORT

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

Project: SSFL Group 6
Data Gap

Sampled: 04/11/06
Received: 05/04/06
Revised: 07/26/06 15:18

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain(s) of Custody, 13 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 3°C, on ice and with chain of custody documentation.

HOLDING TIMES: Not all holding times were met. Results were qualified where the sample analysis did not occur within method specified holding time requirements.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Results that fall between the MDL and RL are 'J' flagged.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

ADDITIONAL INFORMATION: Due to laboratory oversight, the Percent Solids QC for batch 6E09096 was not originally reported. The report was revised to include this data. The report was additionally revised to correct the date analyzed for Percent Solids, sample IPE0402-11. Finally the report was revised to correct the MS/MSD qualifier for Aluminum in batch 6E05103.

LABORATORY ID	CLIENT ID	MATRIX
IPE0402-01	MJ746	Soil
IPE0402-02	MJ747	Soil
IPE0402-03	MJ748	Soil
IPE0402-04	MJ750	Soil
IPE0402-05	MJ752	Soil
IPE0402-06	MJ754	Soil
IPE0402-07	MJ756	Soil
IPE0402-08	MJ759	Soil

TestAmerica - Irvine, CA
Michele Chamberlin
Project Manager

TestAmerica
ANALYTICAL TESTING CORPORATION
17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

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

LABORATORY ID	CLIENT ID	MATRIX
IPE0402-09	MJ761	Soil
IPE0402-10	MJ763	Soil
IPE0402-11	MJ744	Soil

Reviewed By:



TestAmerica - Irvine, CA
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 TestAmerica.

TestAmerica
ANALYTICAL TESTING CORPORATION
17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

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

DATA QUALIFIERS AND DEFINITIONS

A-01	Sample result might be biased high due to coelution of Aroclors 1248 and 1254.
A-01a	Sample result might be biased high due to coelution of Aroclors 1254 and 1260.
A-01b	Sample result might be biased high due to coelution of Aroclors 1260 and 1254.
BQC1	Reported for batch QC purposes only. See original analysis for final result.
H4	Sample was extracted past holding time, but analyzed within analysis holding time.
J	Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
M2	The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
M-HA	Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
R-10	The RPD between the primary and confirmatory analysis exceeded 40%. Per method 8000B, the lower value was reported due to apparent chromatographic problems.
RL-1	Reporting limit raised due to sample matrix effects.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

TestAmerica - Irvine, CA
Michele Chamberlin
Project Manager

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TestAmerica
ANALYTICAL TESTING CORPORATION
17461 Derian Avenue. Suite 100, Irvine, CA 92614 (949) 261-1022 Fax:(949) 260-3297

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

Certification Summary

TestAmerica - Irvine, CA

Method	Matrix	Nelac	California
EPA 160.3 MOD	Solid	N/A	N/A
EPA 3545/8082	Soil	X	X
EPA 6010B	Soil	X	X
EPA 6020	Soil	X	X
EPA 7471A	Soil	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for TestAmerica may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

TestAmerica - Irvine, CA
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 TestAmerica.

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92606 (949) 261-1022 FAX (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
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

ADDITIONAL ANALYSIS REQUEST FORM

Today's Date: 5/5 Del Mar Analytical Project Manager: MC

Request via: X telephone ____ chain of custody form ____ fax transmission ____ E-mail ____ other

Client: MWH-SD Contact: Lisa Tucker

Project: SFFL Groups / Data Gap

Date Sampled: 4/11/06 Date Received: 4/12/06

Status: ____ in progress X completed ____ received today ____ received yesterday ____ on hold ____ other

SAMPLE NUMBER	SAMPLE DESCRIPTION	ANALYSIS REQUESTED	SPECIAL REQUIREMENTS
IPD1108-06	MJ744	Hg + %solids	

- Add-on to IPE0402 as sample -11
- for %solids, comment = Do Not Reprep - report from 6D15055
- 48hr rush, due 5/9 due to hold time

TURNAROUND STATUS: _____Same Day _____24hr _____48hr _____3days

_____ 5days _____Standard _____No Rush Charge

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: 05/05/06

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ739	MJ746	OCBS56S02	4/11/06	HOLD Metals and PCB analysis.	Turn on Metals (Method 6010B/7000) and PCB (Method 8082) analysis. 14 day-TAT.
MJ739	MJ747	OCBS68S02	4/11/06	HOLD Metals and PCB analysis.	Turn on Metals (Method 6010B/7000) and PCB (Method 8082) analysis. 14 day-TAT.
MJ739	MJ748	OCBS67S01	4/11/06	HOLD Metals and PCB analysis.	Turn on Metals (Method 6010B/7000) and PCB (Method 8082) analysis. 14 day-TAT.
MJ739	MJ750	OCBS69S01	4/11/06	HOLD Metals and PCB analysis.	Turn on Metals (Method 6010B/7000) and PCB (Method 8082) analysis. 14 day-TAT.

Note: Hg analysis will need a rush extraction to meet 28 day hold time (up 5/12/06).

The reason for these changes:

Incorrectly marked on COC form	
Lack of sample volume	
MWH office personnel require this change	X
Other: Containers mislabeled	

Thank you

PAGE:02
TO:8598751:201
18184668730
APR-11 06 14:37 FROM:BOEING/SSFL

DRI Mar Analytical

SSFL Group 6 Data Gap Stepouts

MJ 739

MWH
OGDEN
5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: COC

Date 4/11/06 Page 1 of 3

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No:	
QC Level:	TAT: Normal

Preservatives: None

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8011 VOC	8015Q TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDNANCE	6010B METALS/RT	7199 HEX CHROME	300.0 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	HYDRAZ	Silver	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ 739	OCBS65 S01	2	04/11/06	0750			X				X						X					X			HA			2
MJ 740	NCBS26 S01	0.5		0755			X																	X				1
MJ 741	NCBS27 S01	0.5		0800			X																	X			X	1
MJ 742	NCBS28 S01	0.5		0805			X																	X			X	1
MJ 743	NCBS29 S01	0.5		0810			X																	X				1
MJ 744	OCBS66 S01	0.5		0930			X										X					X						2
MJ 745	OCBS68 S01	0.5		0930			X										X					X						2
MJ 746	OCBS66 S02	3		0935			X										X					X						2
MJ 747	OCBS68 S02	3		0940			X										X					X						2
MJ 748	OCBS67 S01	0.5		0945			X										X					X						2
MJ 749	OCBS66 S03	6		0950			X										X					X						2
MJ 750	OCBS69 S01	0.5	↓	0955			X										X					X						2

Sampler's Signature:	Date	Time
Relinquished By:	Date	Time
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

MJ 741 & MJ 742
Not on Hold

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: 05/05/06

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ751	MJ752	OCBS70S01	4/11/06	HOLD PCB analysis.	Turn on PCB analysis (Method 8082). 14 day-TAT.
MJ751	MJ754	OCBS71S01	4/11/05	HOLD PCB analysis.	Turn on PCB analysis (Method 8082). 14 day-TAT.
MJ751	MJ756	OCBS72S01	4/11/05	HOLD PCB analysis.	Turn on PCB analysis (Method 8082). 14 day-TAT.
MJ751	MJ759	OCBS73S01	4/11/05	HOLD PCB analysis.	Turn on PCB analysis (Method 8082). 14 day-TAT.
MJ751	MJ761	OCBS74S01	4/11/05	HOLD PCB analysis.	Turn on PCB analysis (Method 8082). 14 day-TAT.

The reason for these changes:

Incorrectly marked on COC form	
Lack of sample volume	
MWH office personnel require this change	*X*
Other: Containers mislabeled	

Thank you

MWH

SSFL Group 6 Data C ; Stepout

MJ751

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: COC

Date 4/11/06 Page 2 of 3

Project Manager:	Dixie Hambrick	Bill To:	Purchasing	Sample Disposal Instructions:	Laboratory Disposal
Project Name:	Rocketdyne	Company:	Ogden Environmental	Shipment Method:	Courier
Project Number:	313150002	Address:	5510 Morehouse Drive, San Diego, CA 92121	Comment:	
Deliver results to the address above or as stated in contract					

Cooler No:

QC Level:

TAT: Normal

Preservatives: None

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC (HCL, pH<2 4°C)	8015OG TPH (HCL, pH<2 4°C)	8270SIM SVOC (4°C)	8270R SVOC (4°C)	8280 DIOXIN (4°C)	ASTM D19 FORMALDEHYDE (H2SO4, pH<2 4°C)	8330 ORDNANCE (4°C)	7196 HEX CHROME (HNO3, pH<2 4°C)	340.2 FLUORIDE (4°C)	300 ANIONS (4°C)	9045/9040 pH (4°C)	8082 PCBs (4°C)	IC HYDRAZ (4°C)	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ751	OCBS68 S03	6	4/11/06	1020			X										X				X				X	2
MJ752	OCBS70 S01	0.5		1030																	X				X	1
MJ753	OCBS70 S02	3		1030																	X				X	1
MJ754	OCBS71 S01	0.5		1040																	X				X	1
MJ755	OCBS71 S02	3		1040																	X				X	1
MJ756	OCBS72 S01	0.5		1050																	X				X	1
MJ757	OCBS72 S02	3		1050																	X				X	1
MJ758	OCBS38 S01	0.5		1045																	X				X	1
MJ759	OCBS73 S01	4.5		1135																	X				X	1
MJ760	OCBS73 S02	7.5		1140																	X				X	1
MJ761	OCBS74 S01	4.5		1150																	X				X	1
MJ762	OCBS74 S02	8		1210																	X				X	1

AD 05/05/06

Samplers Signature: [signature]	Date 4/11/06	Time 1015
Relinquished By:	Date	Time
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number:

Do COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: __/__/__

Temperature °C

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: **05/05/06**

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ763	MJ763	OCBS75S01	4/11/06	HOLD PCB analysis.	Turn on PCB analysis (Method 8082). 14 day-TAT.

The reason for these changes:

Incorrectly marked on COC form _____
Lack of sample volume _____
MWH office personnel require this change X
Other: Containers mislabeled _____

Thank you

PAGE:04
TO:8587511201
18184668730
APR-11 06 14:37 FROM:BOEING/SSFL

MW11 HCl for analytical

SSFL Group 6 Data Gap Step 3

MJ763

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: COC
Date 4/11/06 Page 3 of 3

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313160002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No:	
QC Level:	TAT: Normal

Preservatives: None

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015DG TPH	8270SIM SVOC	8270A SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	6330 CHROMIUM6	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9040/9045 pH	8082 PCBs	10 HYDRAZ	Mercury	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ763	OCBS75 S01	0.5	4/11/06	1145			X														X		X			X	1
MJ764	OCBS75 S02	0.5		1205			X														X		X			X	1
MJ765	SRBS74 S01	0.5		1335			X														X		X			X	1
MJ766	SRBS75 S01			1340			X														X		X			X	1
MJ767	SRBS76 S01			1345			X														X		X			X	1
MJ768	SRBS77 S01			1355			X														X		X			X	1
MJ769	SRBS78 S01			1400			X														X		X			X	1
MJ770	SRBS81 S01			1415			X														X		X			X	1
MJ771	SRBS82 S01			1420			X														X		X			X	1
MJ772	SRBS83 S01			1425			X														X		X			X	1
MJ773	SRBS84 S01			1430			X														X		X			X	1
MJ774	SRBS83 D01	↓	↓	1430			X														X		X			X	1

AB 05/05/06

Sampler Signature	Date 4/11/06	Time 1140
Relinquished By	Date	Time
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number:

MJ767 and 769 are contained unit samples.

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92606 (949) 261-1022 FAX (949) 261-1228
1014 E. Cooley Dr., Suite A. Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
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

IPE0402

ADDITIONAL ANALYSIS REQUEST FORM

Today's Date: 5/4 Del Mar Analytical Project Manager: MC

Request via: X telephone ____ chain of custody form ____ fax transmission X E-mail ____ other

Client: MWH SD Contact: Lisa Tucker

Project: SSFL Group 6 / Data Gap

Date Sampled: 4/11/06 Date Received: 4/12/06

Status: ____ in progress ____ completed ____ received today ____ received yesterday X on hold ____ other

SAMPLE NUMBER	SAMPLE DESCRIPTION	ANALYSIS REQUESTED	SPECIAL REQUIREMENTS
IDP1108-08	MJ746	met group CAM + AP + B + 8082 + % solids	OK to analyze 8082 past HT
-09	MJ747		
-10	MJ748		
-12	MJ750		
-14	MJ752	8082 + % solids	
-16	MJ754		
-18	MJ756		
-21	MJ759		
-23	MJ761		
-25	MJ763		

MN1800

* Hg TAT = 72 hour due to HT
All other analyses = 7day TAT

TURNAROUND STATUS: ____ Same Day ____ 24hr ____ 48hr ____ 3days

- add-on, ____ 5days ____ Standard ____ No Rush Charge

new workorder

g:\dmai\misc\forms\add-req.doc

MWH

Del Mar Analytical #228

SSFL Group 6 Data Gap Stepouts

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

IPD1108

Control Number: COC MJ 739

Date 4/11/06 Page 1 of 3

Project Manager:	Dixie Hambrick	Bill To:	Purchasing
Project Name:	Rocketdyne	Company:	Ogden Environmental
Project Number:	313150002	Address:	5510 Morehouse Drive, San Diego, CA 92121
Deliver results to the address above or as stated in contract			

Sample Disposal Instructions: Laboratory Disposal

Shipment Method: Courier

Comment:

Cooler No:

QC Level:

TAT: Normal

Preservatives: None

All 802

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product		8021 VOC (HCL, pH<2 4°C)	8015OG TPH (HCL, pH<2 4°C)	8270SIM SVOC (4°C)	8270R SVOC (4°C)	8290 DIOXIN (4°C)	ASTM D19 FORMALDEHYDE (H2SO4, pH<2 4°C)	8330 ORDINANCE (4°C)	~~11M00MT~~ 6010/7000 METALSRT (HNO3 pH<2 4°C)	7196 HEX CHROME (4°C)	340.2 FLUORIDE (4°C)	300 ANIONS (4°C)	9045/9040 pH (4°C)	8082 PCBs (4°C)	IC HYDRAZ (4°C)	Silver		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ739	OCBS65 S01	2	04/11/06	0750			X					X						X					X				HA			~~2~~ 3
MJ740	NCBS26 S01	0.5		0755			X																		X					1
MJ741	NCBS27 S01	0.5		0800			X																		X				X	1
MJ742	NCBS28 S01	0.5		0805			X																		X				X	1
MJ743	NCBS29 S01	0.5		0810			X																		X					1
MJ744	OCBS66 S01	0.5		0930			X											X					X							2
MJ745	OCBS68 S01	0.5		0930			X											X					X							2
MJ746	OCBS66 S02	3		0935			X											X					X						X	2
MJ747	OCBS68 S02	3		0940			X											X					X						X	2
MJ748	OCBS67 S01	0.5		0945			X											X					X						X	2
MJ749	OCBS66 S03	6		0950			X											X					X						X	2
MJ750	OCBS69 S01	0.5		0955			X											X					X						X	2

	Date	Time
Samplers Signature: [signature]	4/11/06	0750
Relinquished By: [signature]	4/11/06	1722
Received By: [signature]	4/11/06	1722
Relinquished By: [signature]	4/11/06	1945
Received By (LAB): [signature]	4-11-06	1945

For Lab Use

Lab Number:

Do COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: __/__/__

Temperature °C 3°C

Run MJ741 + 742

NAM 4-14@0930

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

MWH

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Del Mar

SSTL Group 6 Data Group Interpretive

MJ751

Chain of Custody

Control Number: COC

Date 4/11/06 Page 1 of 3

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Courier
Comment:

Cooler No:	
QC Level:	TAT: Normal

Preservatives: None

| Sample Data | | | | | | | Matrix | | | | | | |

MWH Del Mar Analytical SSFL Group 6 Data Gap Stepouts

MJ 763

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: COC
Date 4/11/06 Page 3 of 3

Project Manager:	Dixie Hambrick	Bill To:	Purchasing	Sample Disposal Instructions:	Laboratory Disposal
Project Name:	Rocketdyne	Company:	Ogden Environmental	Shipment Method:	Courier
Project Number:	313150002	Address:	5510 Morehouse Drive, San Diego, CA 92121	Comment:	
Deliver results to the address above or as stated in contract					

Cooler No:

QC Level:

TAT: Normal

Preservatives: None

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product		8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	~~1LM09.1RT~~ 6010/7000 METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Mercury		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
											HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3 pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
MJ763	OCBS75S01	4.5	4/11/06	1145			X																X						X	1
MJ764	OCBS75S02	7.5		1205			X																X						X	1
MJ765	~~OCBS74S01~~ SR	0.5		1335			X																X							1
MJ766	SRBS75S01			1340			X																X						X	1
MJ767	SRBS76S01			1345			X																X							1
MJ768	SRBS77S01			1355			X																X							1
MJ769	SRBS78S01			1400			X																X							1
MJ770	SRBS81S01			1415			X																		X					1
MJ771	SRBS82S01			1420			X																		X					1
MJ772	SRBS83S01			1425			X																		X					1
MJ773	SRBS84S01			1430			X																		X					1
MJ774	SRBS83D01			1430			X																		X					1

	Date	Time
Samplers Signature: [signature]	4/11/06	1140
Relinquished By: [signature]	4/11/06	1722
Received By: [signature]	4/11/06	1722
Relinquished By: [signature]	4/11/06	1945
Received By (LAB): [signature]	4-11-06	1945

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 3°

MJ767 and 769 are contained unit samples.

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: 05/09/06

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ739	MJ744	OCBS66S01	4/11/06	Metals (6010B/7000) and PCB's (8082). Standard TAT.	Rerun Mercury analysis. 14 day-rush TAT.

Note: Mercury analysis will need a rush extraction to meet 28 day hold time (up to 5/12/06).
The reason for these changes:

Incorrectly marked on COC form _____
Lack of sample volume _____
MWH office personnel require this change X
Other: Containers mislabeled _____

Thank you

MWH

Del Mar Analytical

SSFL Group 6 Data Gap Stepouts

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: COC MJ 739

Date 4/11/06 Page 1 of 3

Project Manager:	Dixie Hambrick	Bill To:	Purchasing
Project Name:	Rocketdyne	Company:	Ogden Environmental
Project Number:	313150002	Address:	5510 Morehouse Drive, San Diego, CA 92121
Deliver results to the address above or as stated in contract			

Sample Disposal Instructions: Laboratory Disposal

Shipment Method: Courier

Comment:

Cooler No:

QC Level:

TAT: Normal

Preservatives: None

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC (HCL, pH<2 4°C)	8015OQ TPH (HCL, pH<2 4°C)	8270SIM SVOC (4°C)	8270R SVOC (4°C)	8290 DIOXIN (4°C)	ASTM D19 FORMALDEHYDE (H2SO4, pH<2 4°C)	8330 ORDNANCE (4°C)	7196 HEX CHROME (HNO3, pH<2 4°C)	340.2 FLUORIDE (4°C)	300 ANIONS (4°C)	9045/9040 pH (4°C)	8082 PCBs (4°C)	IC HYDRAZ (4°C)	Silver	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ 739	OCBS65 S01	2	04/11/06	0750			X				X						X				X			HA			2
MJ 740	NCBS26 S01	0.5		0755			X																X				1
MJ 741	NCBS27 S01	0.5		0800			X																X			X	1
MJ 742	NCBS28 S01	0.5		0805			X																X			X	1
MJ 743	NCBS29 S01	0.5		0810			X																X				1
* MJ 744	OCBS66 S01	0.5		0930			X										X				X						2
MJ 745	OCBS68 S01	0.5		0930			X										X				X						2
MJ 746	OCBS66 S02	3		0935			X										X				X					X	2
MJ 747	OCBS68 S02	3		0940			X										X				X					X	2
MJ 748	OCBS67 S01	0.5		0945			X										X				X					X	2
MJ 749	OCBS66 S03	6		0950			X										X				X					X	2
MJ 750	OCBS69 S01	0.5		0955			X										X				X					X	2

3 MJ 74 MJ 74

AB 05/05/06

Samplers Signature	Date	Time
Thom [signature]		
Relinquished By:	Date	Time
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number:

Do COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: __/__/__

Temperature °C

MJ741 & MJ742 Not on Hold

* MJ744 - rerun Hg analysis with a 2 week TAT.

AB 05/05/06

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

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

LABORATORY REPORT

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

Project: SSFL Group 6
Data Gap

Sampled: 04/13/06
Received: 04/13/06
Revised: 05/19/06 15:43

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 2 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT:	Samples were received intact, at 6°C, on ice and with chain of custody documentation.
HOLDING TIMES:	All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.
PRESERVATION:	Samples requiring preservation were verified prior to sample analysis.
QA/QC CRITERIA:	All analyses met method criteria, except as noted in the report with data qualifiers.
COMMENTS:	Results that fall between the MDL and RL are 'J' flagged.
SUBCONTRACTED:	Refer to the last page for specific subcontract laboratory information included in this report.
ADDITIONAL INFORMATION:	The report was revised to correct the data qualifier in the QC for Aluminum & Boron, batch 6D21084.

LABORATORY ID	CLIENT ID	MATRIX
IPD1477-03	MJ803	Soil
IPD1477-04	MJ804	Soil
IPD1477-05	MJ805	Soil
IPD1477-06	MJ806	Soil
IPD1477-07	MJ807	Soil
IPD1477-08	MJ808	Soil
IPD1477-09	MJ809	Soil
IPD1477-10	MJ810	Soil
IPD1477-11	MJ811	Soil

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

Del Mar Analytical

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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

LABORATORY ID	CLIENT ID	MATRIX
IPD1477-12	MJ812	Water
IPD1477-13	MJ813	Water

Reviewed By:

Michele Chamberlin

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: IPD1477

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

DATA QUALIFIERS AND DEFINITIONS

B	Analyte was detected in the associated Method Blank.
C	Calibration Verification recovery was above the method control limit for this analyte. Analyte not detected, data not impacted.
J	Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
M2	The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
M-HA	Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
M-NR1	There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike/Blank Spike Duplicate.
RL-1	Reporting limit raised due to sample matrix effects.
RL-3	Reporting limit raised due to high concentrations of non-target analytes.
Z3	The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

ADDITIONAL COMMENTS

For 8260 analyses:

Due to the high water solubility of alcohols and ketones, the calibration criteria for these compounds is <30% RSD. The average % RSD of all compounds in the calibration is 15%, in accordance with EPA methods.

For TICs:

All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA/NIH library.

For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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Del Mar Analytical

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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

Certification Summary

Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
Dry Weight	Soil	N/A	N/A
EPA 160.3 MOD	Solid	N/A	N/A
EPA 3510/8082	Water	X	X
EPA 3545/8082	Soil	X	X
EPA 6010B	Soil	X	X
EPA 6010B	Water	X	X
EPA 6020	Soil	X	X
EPA 6020	Water	X	X
EPA 7470A	Water	X	X
EPA 7471A	Soil	X	X
EPA 8015 MOD.	Soil	X	X
EPA 8015 MOD.	Water	X	X
EPA 8260B	Soil	X	X
EPA 8270C	Soil	X	X
EPA 8270C	Water	X	X
Level 3	Soil		

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Subcontracted Laboratories

Calscience-SUB *California Cert #1230*
7440 Lincoln Way - Garden Grove, CA 92841

Analysis Performed: 8270C (SIM)
Samples: IPD1477-06, IPD1477-07, IPD1477-08, IPD1477-09, IPD1477-12, IPD1477-13

Analysis Performed: Dry Wt
Samples: IPD1477-06, IPD1477-07, IPD1477-08, IPD1477-09

Analysis Performed: Level 3 Data Package
Samples: IPD1477-06, IPD1477-07, IPD1477-08, IPD1477-09

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.

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Pulpar IPD1477

Chain of Custody

Project: Group 6
Control Number: COC MJ801
Date 4/13/06 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	Courier

Cooler No.
QC Level: Normal
TAT:

Preservatives: None / HCl

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
MJ801	NCBS305O1		0.5'	4/13/06	0755			X		
MJ802	NCBS315O1		0.5'		0805			X		
MJ803	OCBS955O1		0.5'		0822			X		
MJ804	OCBS95DO1		0.5'		0822			X		
MJ805	OCBS965O1		0.5'		0830			X		
MJ806	OCBS975O1		0.5'		0850			X		
MJ807	OCBS97DO1		0.5'		0850			X		
MJ808	OCBS985O1		0.5'		0915			X		
MJ809	OCBS98DO1		0.5'		0915			X		
MJ810	OCBS975O1		1.5'		1000			X		
MJ811	OCBS97DO1		1.5'		1000			X		
MJ812	OCQW05EO1		-		1013				X	

Sample ID	8260B VOC	8015BM TPH	8276GCMS SVOC PAH	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE	Silver	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ801										X						X	G		X	1
MJ802																X	G		X	1
MJ803										X							G			1
MJ804										X							G			1
MJ805										X							G			1
MJ806		X	X					X		X							HA			3
MJ807		X	X					X		X							HA			3
MJ808		X	X					X		X							HA			3
MJ809		X	X					X		X				EK			HA			3
MJ810	X												i200				HA			3
MJ811	X																HA			3
MJ812	X	X	X					X		X							G			7

Samplers Signature:	Date 4/13/06	Time 1100
Relinquished By:	Date 4/13/06	Time 1650
Received By: Nicholas May	Date 4-13-06	Time 1630
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted : / /
Temperature °C 6°C

Comments:

212

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: [illegible]
Control Number: COC MJ813
Date [illegible] Page 2 of 2

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	[illegible]

Cooler No.	
QC Level:	TAT: [illegible]

Preservatives: HCl

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product		8260B VOC (HCL, pH<2 4°C)	8015BM TPH (HCL, pH<2 4°C)	8270CSIM SVOC (4°C) PAH	8270C SVOC (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ813	OCQW05FD1			4/14 4/15/06	1105				X			X	X	X					X		X							G			7

Samplers Signature: [signature]	Date 4/15/06	Time 1300
Relinquished By: [signature]	Date 4/15/06	Time 1630
Received By: Nicholas May	Date 4-13-06	Time 1630
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C 6°C

Comments:

Calscience
Environmental
Laboratories, Inc.

April 26, 2006

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

Subject: **Calscience Work Order No.: 06-04-0931**
Client Reference: IPD1477

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 4/17/2006 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of any subcontracted analysis is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Steven L. Lane
Laboratory Director

Calscience Environmental Laboratories, Inc.

Case Narrative for 06-04-0931

Sample Condition on Receipt

Two aqueous samples and four soil samples were received as part of this Work Order on April 17, 2006. All samples were transferred to the laboratory in an ice-chest following strict chain-of-custody procedures. The temperature (3.7°C) of the samples was measured upon arrival in the laboratory and was within acceptable limits. The samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers, and stored in refrigeration units pending analysis.

The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in it entirety.

Data Summary

The samples included in this report were analyzed in accordance with the attached chain-of-custody (COC) records. Data is presented on a dry weight basis.

Holding Times

All holding time requirements were met.

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

The method blank data showed non-detectable levels for all constituents.

Matrix Spikes

Matrix Spikes (MS) and Matrix Spike Duplicates (MSD) were performed at required frequencies. All recoveries were within acceptable limits, with the exception of specific analytes by EPA Method 8270C SIM. Please see Table B below for details.

Calscience Environmental Laboratories, Inc.

Case Narrative for 06-04-0931

Table B: Matrix Spike / Matrix Spike Duplicate outside acceptable limits	
EPA Method 827C SIM	
Batch #	Analytes(s)
060418S02	Acenaphthene

Laboratory Control Samples

The Laboratory Control Sample (LCS) analyses were performed at the required frequencies. All recoveries were within acceptable limits.

Surrogates

Surrogate recoveries for all samples were within acceptable control limits.

CALSCIENCE ENVIRONMENTAL LABORATORIES, INC.
Sample Summary Report

WORK ORDER #: **06-04-0931** **QAPP:** **0000**

#	*Client Sample ID*	*Matrix*	*Date Collected*	*NoC*	*Comment*
1	IPD1477-06	S	04/13/2006	1	
2	IPD1477-07	S	04/13/2006	1	
3	IPD1477-08	S	04/13/2006	1	
4	IPD1477-09	S	04/13/2006	1	
5	IPD1477-12	W	04/13/2006	1	
6	IPD1477-13	W	04/13/2006	1	

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 06 - 04 - 0931

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: Del Mar **DATE:** 4-17-06

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_____ Chilled, cooler with temperature blank provided.
_____ Chilled, cooler without temperature blank.
_____ Chilled and placed in cooler with wet ice.
_____ Ambient and placed in cooler with wet ice.
_____ Ambient temperature.
_____ °C Temperature blank.

LABORATORY (Other than Calscience Courier):

_____ °C Temperature blank.
3.7 °C IR thermometer.
_____ Ambient temperature.

Initial: ____

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: _____ No (Not Intact) : _____ Not Applicable (N/A): ✓

Initial: ____

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers for analyses requested	✓		
Proper preservation noted on sample label(s)			✓
VOA vial(s) free of headspace			✓
Tedlar bag(s) free of condensation			✓

Initial: ____

COMMENTS:

Del Mar Analytical

17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IPD1477

0931

(1/2)

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical - Irvine 17461 Derian Avenue. Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Calscience-SUB 7440 Lincoln Way Garden Grove, CA 92841 Phone :714-895-5494 Fax: 714-894-7501

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date:_____ Initials:_____

Analysis	Expiration	Comments
Sample ID: IPD1477-06 Soil	**Sampled: 04/13/06 08:50**	
8270C (SIM)-OUT	04/27/06 08:50	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	05/11/06 08:50	% solids, sub to Calscience, $10/sample
Level 3 Data Package - Out	05/11/06 08:50	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
8 oz Jar (IPD1477-06C)		
Sample ID: IPD1477-07 Soil	**Sampled: 04/13/06 08:50**	
8270C (SIM)-OUT	04/27/06 08:50	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	05/11/06 08:50	% solids, sub to Calscience, $10/sample
Level 3 Data Package - Out	05/11/06 08:50	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
8 oz Jar (IPD1477-07C)		
Sample ID: IPD1477-08 Soil	**Sampled: 04/13/06 09:15**	
8270C (SIM)-OUT	04/27/06 09:15	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	05/11/06 09:15	% solids, sub to Calscience, $10/sample
Level 3 Data Package - Out	05/11/06 09:15	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
8 oz Jar (IPD1477-08C)		
Sample ID: IPD1477-09 Soil	**Sampled: 04/13/06 09:15**	
8270C (SIM)-OUT	04/27/06 09:15	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	05/11/06 09:15	% solids, sub to Calscience, $10/sample
Level 3 Data Package - Out	05/11/06 09:15	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
8 oz Jar (IPD1477-09C)		
Sample ID: IPD1477-12 Water	**Sampled: 04/13/06 10:13**	
8270C (SIM)-OUT	04/20/06 10:13	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Containers Supplied:		
1 L Amber (IPD1477-12F)		

Released By	Date	Time	Received By	Date	Time
Nicholas May				41706	1030
	41706	1155		4/17/06	1155
Released By	Date	Time	Received By	Date	Time

Del Mar Analytical

17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

0931

(42)

SUBCONTRACT ORDER - PROJECT # IPD1477

SENDING LABORATORY:

Del Mar Analytical - Irvine
17461 Derian Avenue. Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 261-1228
Project Manager: Michele Chamberlin

RECEIVING LABORATORY:

Calscience-SUB
7440 Lincoln Way
Garden Grove, CA 92841
Phone :714-895-5494
Fax: 714-894-7501

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date:_____ **Initials:**_____

Analysis	Expiration	Comments
Sample ID: IPD1477-13 Water	**Sampled: 04/13/06 11:05**	
8270C (SIM)-OUT	04/20/06 11:05	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt

Containers Supplied:
1 L Amber (IPD1477-13F)

SAMPLE INTEGRITY:

All containers intact: ☐ Yes ☐ No | Sample labels/COC agree: ☐ Yes ☐ No | Samples Received On Ice:: ☐ Yes ☐ No
Custody Seals Present: ☐ Yes ☐ No | Samples Preserved Properly: ☐ Yes ☐ No | Samples Received at (temp): _____

Released By	Date	Time	Received By	Date	Time
Nicholas May				4-17-06	1050
	4-17-06	1155		4.17.06	1155

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 06-04-0931

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

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

Del Mar Analytical

LABORATORY REPORT

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

Project: SSFL Group 6
Data Gap

Sampled: 04/13/06
Received: 04/13/06
Issued: 06/14/06 13:37

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 6 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT:	Samples were received intact, at 6°C, on ice and with chain of custody documentation.
HOLDING TIMES:	All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.
PRESERVATION:	Samples requiring preservation were verified prior to sample analysis.
QA/QC CRITERIA:	All analyses met method criteria, except as noted in the report with data qualifiers.
COMMENTS:	Results that fall between the MDL and RL are 'J' flagged.
SUBCONTRACTED:	Refer to the last page for specific subcontract laboratory information included in this report. No subcontract data is included with this partial report.
ADDITIONAL INFORMATION:	Enclosed is a partial report and contains results for the EPA 8270C analysis of a diesel extract for sample IPD1477-08.

LABORATORY ID	CLIENT ID	MATRIX
IPD1477-08	MJ808	Soil

Reviewed By:

Michele Chamberlin

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
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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

DATA QUALIFIERS AND DEFINITIONS

A-01 Sample was extracted for Diesel analysis. No 8270 surrogates were added.

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.

RPD Relative Percent Difference

ADDITIONAL COMMENTS

For TICs:

All identifications are tentative and concentrations are estimates based upon spectral comparison to the EPA/NIH library.

For 1,2-Diphenylhydrazine:

The result for 1,2-Diphenylhydrazine is based upon the reading of its breakdown product, Azobenzene.

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.

Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
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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

Certification Summary

Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
EPA 8270C	Soil	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

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.

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Pulpar IPD1477

Chain of Custody

Project: Group 6
Control Number: COC MJ801
Date 4/13/06 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	Courier

Cooler No.
QC Level: Normal
TAT:

Preservatives: None / HCl

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product
MJ801	NCBS305O1		0.5'	4/13/06	0755			X		
MJ802	NCBS315O1		0.5'		0805			X		
MJ803	OCBS955O1		0.5'		0822			X		
MJ804	OCBS95DO1		0.5'		0822			X		
MJ805	OCBS965O1		0.5'		0830			X		
MJ806	OCBS975O1		0.5'		0850			X		
MJ807	OCBS97DO1		0.5'		0850			X		
MJ808	OCBS985O1		0.5'		0915			X		
MJ809	OCBS98DO1		0.5'		0915			X		
MJ810	OCBS975O1		1.5'		1000			X		
MJ811	OCBS97DO1		1.5'		1000			X		
MJ812	OCQW05EO1		-		1013				X	

Sample ID	8260B VOC	8015BM TPH	8276GCMS SVOC PAH	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE	Silver	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ801										X						X	G		X	1
MJ802																X	G		X	1
MJ803										X							G			1
MJ804										X							G			1
MJ805										X							G			1
MJ806		X	X					X		X							HA			3
MJ807		X	X					X		X							HA			3
MJ808		X	X					X		X							HA			3
MJ809		X	X					X		X				EK			HA			3
MJ810	X												i200				HA			3
MJ811	X																HA			3
MJ812	X	X	X					X		X							G			7

Samplers Signature:	Date 4/13/06	Time 1100
Relinquished By:	Date 4/13/06	Time 1650
Received By: Nicholas May	Date 4-13-06	Time 1630
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted : / /
Temperature °C 6°C

Comments:

212

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: [illegible]
Control Number: COC MJ813
Date [illegible] Page 2 of 2

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	[illegible]

Cooler No.	
QC Level:	TAT: [illegible]

Preservatives: HCl

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product		8260B VOC (HCL, pH<2 4°C)	8015BM TPH (HCL, pH<2 4°C)	8270CSIM SVOC (4°C)	8270C SVOC (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ813	OCQW05FD1			4/14 4/15/06	1105				X			X	X	X					X		X							G			7

Samplers Signature: [signature]	Date 4/15/06	Time 1300
Relinquished By: [signature]	Date 4/15/06	Time 1630
Received By: Nicholas May	Date 4-13-06	Time 1630
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C 6°C

Comments:

F A X

MWH

3050 Saturn Street, Ste 205
Brea, CA 92821

Tel: 714-646-2020
Fax: 714-986-9834

Date: 05/22/06

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ801	MJ808	OCBS98S01	4/13/06	TPH (by 8015/BM), Metals (by 60010B/7000), PAH(by 8270CSIM), and PCB (by 8082). Standard TAT.	TPH (8015/BM) extract by GSMS (8270) for full scan plus TICs. Standard TAT.

The reason for these changes:

Incorrectly marked on COC form _____
Lack of sample volume _____
MWH office personnel require this change X
Other: Containers mislabeled _____

Thank you

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Empty

Chain of Custody

Project: Group 6
Control Number: COC MJ801
Date 4/13/06 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowell Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No.
QC Level:
TAT: Normal

Preservatives: None / HCl

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270SIM PAH SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE	Sieve	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ801	NCBS305O1		0.5'	4/12/06	0755			X																		X	G		X	1
MJ802	NCBS315O1		0.5'		0805			X																		X	G		X	1
MJ803	OCBS965O1		0.5'		0822			X												X							G			1
MJ804	OCBS965D01		0.5'		0822			X												X							G			1
MJ805	OCBS965O1		0.5'		0830			X												X							G			1
MJ806	OCBS975O1		0.5'		0850			X			05/22/06	X	X					X		X							HA			8
MJ807	OCBS97D01		0.5'		0850			X				X	X					X		X							HA			3
* MJ808	OCBS985O1		0.5'		0915			X				(X)	X					X		X							HA			3
MJ809	OCBS98D01		0.5'		0915			X				X	X					X		X							HA			3
MJ810	OCBS975O1		1.5'		1000			X			X																HA			3
MJ811	OCBS97D01		1.5'		1000			X			X																HA			3
MJ812	QCQW05E01		-	↓	1013				X		X	X	X					X		X							G			7

Samplers Signature:	Date 4/13/06	Time 1100
Relinquished By:	Date 4/13/06	Time 1650
Received By: Nicholas May	Date 4-13-06	Time 1630
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal Intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: / /
Temperature °C 6°C

Comments:
* TPH extract by GCMS (8270) for full scan plus TICs.

F A X

MWH

3050 Saturn Street, Ste 205
Brea, CA 92821

Tel: 714-646-2020
Fax: 714-986-9834

Date: 05/22/06

To: Michele Chamberlin/ Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ801	MJ808	OCBS98S01	4/13/06	TPH (by 8015/BM), Metals (by 60010B/7000), PAH(by 8270CSIM), and PCB (by 8082). Standard TAT.	TPH (8015/BM) extract by GSMS (8270) for full scan plus TICs. Standard TAT.

The reason for these changes:

Incorrectly marked on COC form _____
Lack of sample volume _____
MWH office personnel require this change X
Other: Containers mislabeled _____

Thank you

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Empty

Chain of Custody

Project: Group 6
Control Number: COC MJ801
Date 4/13/06 Page 1 of 2

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No.
QC Level:
TAT: Normal

Preservatives: None / HCl

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC HCL, pH<2 4°C	8015BM TPH HCL, pH<2 4°C	8270SIM PAH 4°C	8270C SVOC 4°C	8290 DIOXINS 4°C	8315A FORMALDEHYDE H2SO4, pH<2 4°C	8330 ORDNANCE 4°C	6000/7000 METALS HNO3, pH<2 4°C	7196A HEX CHROMIUM 4°C	8082 PCBs 4°C	9040B/9045C pH 4°C	340.2 FLUORIDE 4°C	300M ANIONS 4°C	300M HYDRAZINE 4°C	314.0 PERCHLORATE 4°C	Sieve	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ801	NCBS30S01		0.5'	4/12/06	0755			X																		X	G		X	1
MJ802	NCBS31S01		0.5'		0805			X																		X	G		X	1
MJ803	OCBS96S01		0.5'		0822			X												X							G			1
MJ804	OCBS95D01		0.5'		0822			X												X							G			1
MJ805	OCBS96S01		0.5'		0830			X												X							G			1
MJ806	OCBS97S01		0.5'		0850			X			05/22/06	X	X					X		X							MA			3
MJ807	OCBS97D01		0.5'		0850			X				X	X					X		X							MA			3
* MJ808	OCBS98S01		0.5'		0915			X				(X)	X					X		X							MA			3
MJ809	OCBS98D01		0.5'		0915			X				X	X					X		X							MA			3
MJ810	OCBS97S01		1.5'		1000			X			X																MA			1
MJ811	OCBS97D01		1.5'		1000			X			X																MA			1
MJ812	OCQW05E01		-	↓	1053				X		X	X	X					X		X							G			7

Samplers Signature:	Date 4/13/06	Time 1100
Relinquished By:	Date 4/13/06	Time 1630
Received By: Nicholas May	Date 4-13-06	Time 1630
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal Intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: / /
Temperature °C 6°C

Comments:
* TPH extract by GCMS (8270) for full scan plus TICs.

Calscience
Environmental
Laboratories, Inc.

April 26, 2006

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

Subject: **Calscience Work Order No.: 06-04-0931**
Client Reference: IPD1477

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 4/17/2006 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of any subcontracted analysis is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Steven L. Lane
Laboratory Director

Calscience Environmental Laboratories, Inc.

Case Narrative for 06-04-0931

Sample Condition on Receipt

Two aqueous samples and four soil samples were received as part of this Work Order on April 17, 2006. All samples were transferred to the laboratory in an ice-chest following strict chain-of-custody procedures. The temperature (3.7°C) of the samples was measured upon arrival in the laboratory and was within acceptable limits. The samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers, and stored in refrigeration units pending analysis.

The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in it entirety.

Data Summary

The samples included in this report were analyzed in accordance with the attached chain-of-custody (COC) records. Data is presented on a dry weight basis.

Holding Times

All holding time requirements were met.

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

The method blank data showed non-detectable levels for all constituents.

Matrix Spikes

Matrix Spikes (MS) and Matrix Spike Duplicates (MSD) were performed at required frequencies. All recoveries were within acceptable limits, with the exception of specific analytes by EPA Method 8270C SIM. Please see Table B below for details.

Calscience Environmental Laboratories, Inc.

Case Narrative for 06-04-0931

Table B: Matrix Spike / Matrix Spike Duplicate outside acceptable limits	
EPA Method 827C SIM	
Batch #	Analytes(s)
060418S02	Acenaphthene

Laboratory Control Samples

The Laboratory Control Sample (LCS) analyses were performed at the required frequencies. All recoveries were within acceptable limits.

Surrogates

Surrogate recoveries for all samples were within acceptable control limits.

CALSCIENCE ENVIRONMENTAL LABORATORIES, INC.
Sample Summary Report

WORK ORDER #: **06-04-0931** **QAPP:** **0000**

#	*Client Sample ID*	*Matrix*	*Date Collected*	*NoC*	*Comment*
1	IPD1477-06	S	04/13/2006	1	
2	IPD1477-07	S	04/13/2006	1	
3	IPD1477-08	S	04/13/2006	1	
4	IPD1477-09	S	04/13/2006	1	
5	IPD1477-12	W	04/13/2006	1	
6	IPD1477-13	W	04/13/2006	1	

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 06 - 04 - 0931

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: Del Mar **DATE:** 4-17-06

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_____ Chilled, cooler with temperature blank provided.
_____ Chilled, cooler without temperature blank.
_____ Chilled and placed in cooler with wet ice.
_____ Ambient and placed in cooler with wet ice.
_____ Ambient temperature.
_____ °C Temperature blank.

LABORATORY (Other than Calscience Courier):

_____ °C Temperature blank.
3.7 °C IR thermometer.
_____ Ambient temperature.

Initial: ____

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: _____ No (Not Intact) : _____ Not Applicable (N/A): ✓

Initial: ____

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers for analyses requested	✓		
Proper preservation noted on sample label(s)			✓
VOA vial(s) free of headspace			✓
Tedlar bag(s) free of condensation			✓

Initial: ____

COMMENTS:

Del Mar Analytical

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9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IPD1477

0931

(1/2)

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical - Irvine 17461 Derian Avenue. Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Calscience-SUB 7440 Lincoln Way Garden Grove, CA 92841 Phone :714-895-5494 Fax: 714-894-7501

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date:_____ Initials:_____

Analysis	Expiration	Comments
Sample ID: IPD1477-06 Soil	**Sampled: 04/13/06 08:50**	
8270C (SIM)-OUT	04/27/06 08:50	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	05/11/06 08:50	% solids, sub to Calscience, $10/sample
Level 3 Data Package - Out	05/11/06 08:50	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
8 oz Jar (IPD1477-06C)		
Sample ID: IPD1477-07 Soil	**Sampled: 04/13/06 08:50**	
8270C (SIM)-OUT	04/27/06 08:50	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	05/11/06 08:50	% solids, sub to Calscience, $10/sample
Level 3 Data Package - Out	05/11/06 08:50	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
8 oz Jar (IPD1477-07C)		
Sample ID: IPD1477-08 Soil	**Sampled: 04/13/06 09:15**	
8270C (SIM)-OUT	04/27/06 09:15	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	05/11/06 09:15	% solids, sub to Calscience, $10/sample
Level 3 Data Package - Out	05/11/06 09:15	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
8 oz Jar (IPD1477-08C)		
Sample ID: IPD1477-09 Soil	**Sampled: 04/13/06 09:15**	
8270C (SIM)-OUT	04/27/06 09:15	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Dry Wt-OUT	05/11/06 09:15	% solids, sub to Calscience, $10/sample
Level 3 Data Package - Out	05/11/06 09:15	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
8 oz Jar (IPD1477-09C)		
Sample ID: IPD1477-12 Water	**Sampled: 04/13/06 10:13**	
8270C (SIM)-OUT	04/20/06 10:13	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Containers Supplied:		
1 L Amber (IPD1477-12F)		

Released By	Date	Time	Received By	Date	Time
Nicholas May				41706	1030
	41706	1155		4/17/06	1155
Released By	Date	Time	Received By	Date	Time

Del Mar Analytical

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

0931

(42)

SUBCONTRACT ORDER - PROJECT # IPD1477

SENDING LABORATORY:

Del Mar Analytical - Irvine
17461 Derian Avenue. Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 261-1228
Project Manager: Michele Chamberlin

RECEIVING LABORATORY:

Calscience-SUB
7440 Lincoln Way
Garden Grove, CA 92841
Phone :714-895-5494
Fax: 714-894-7501

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date:_____ **Initials:**_____

Analysis	Expiration	Comments
Sample ID: IPD1477-13 Water	**Sampled: 04/13/06 11:05**	
8270C (SIM)-OUT	04/20/06 11:05	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt

Containers Supplied:
1 L Amber (IPD1477-13F)

SAMPLE INTEGRITY:

All containers intact: ☐ Yes ☐ No | Sample labels/COC agree: ☐ Yes ☐ No | Samples Received On Ice:: ☐ Yes ☐ No
Custody Seals Present: ☐ Yes ☐ No | Samples Preserved Properly: ☐ Yes ☐ No | Samples Received at (temp): _____

Released By	Date	Time	Received By	Date	Time
Nicholas May				4-17-06	1050
	4-17-06	1155		4.17.06	1155

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 06-04-0931

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

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

LABORATORY REPORT

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

Project: SSFL Group 6
Data Gap

Sampled: 04/13/06
Received: 04/13/06
Issued: 04/18/06 16:42

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.
This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IPD1387-01	MJ814	Soil

Reviewed By:



Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

Del Mar Analytical

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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: IPD1387

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

DATA QUALIFIERS AND DEFINITIONS

ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.

RPD Relative Percent Difference

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: IPD1387

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

Certification Summary

Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
EPA 160.3 MOD	Solid	N/A	N/A
EPA 3545/8082	Soil	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

IPD1387 #932

Chain of Custody

Project: Groups Data Gap sampling
Control Number: COC
Date 4/13/06 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	189124.0126
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Cooler
Comment:	Lab pickup

Cooler No.
QC Level:
TAT: 24 hrs

Preservatives: None

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ814	OCBS37501	7.7	0.5'	4/13/06	1304			X												X						TR			2
MJ815	NCSS09501	7.8	0-0.5'	↓	1405			X												X						TR		X	2

4/13/06

9 oz jar

ER 2030

Samplers Signature:		Date 4/13/06	Time 1430
Relinquished By:		Date 4/13/06	Time 1500
Received By:		Date 4/13/06	Time 1500
Relinquished By:		Date 4/13/06	Time 1750
Received By (LAB):		Date 4/13/06	Time 1750

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: / /
Temperature °C 5 0 C

Comments:
MJ 814, put on 24 T.A.T
MJ 815, put on HOLD.

Del Mar Analytical

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

LABORATORY REPORT

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

Project: SSFL Group 6
Data Gap

Sampled: 04/12/06
Received: 04/12/06
Revised: 04/27/06 16:56

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 5 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT:	Samples were received intact, at 3°C, on ice and with chain of custody documentation.
HOLDING TIMES:	All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.
PRESERVATION:	Samples requiring preservation were verified prior to sample analysis.
QA/QC CRITERIA:	All analyses met method criteria, except as noted in the report with data qualifiers.
COMMENTS:	Results that fall between the MDL and RL are 'J' flagged.
SUBCONTRACTED:	Refer to the last page for specific subcontract laboratory information included in this report.
ADDITIONAL INFORMATION:	The report was revised to include EPA 1613B Dioxin's to samples IPD1302-01 and IPD1302-02.

LABORATORY ID	CLIENT ID	MATRIX
IPD1302-01	MJ776	Soil
IPD1302-02	MJ777	Soil
IPD1302-06	MJ781	Soil
IPD1302-07	MJ782	Soil
IPD1302-08	MJ783	Soil
IPD1302-09	MJ784	Soil
IPD1302-11	MJ786	Soil
IPD1302-12	MJ787	Soil
IPD1302-13	MJ788	Soil
IPD1302-14	MJ789	Soil

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

Del Mar Analytical

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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

LABORATORY ID	CLIENT ID	MATRIX
IPD1302-15	MJ790	Soil
IPD1302-16	MJ791	Soil
IPD1302-19	MJ794	Soil
IPD1302-20	MJ795	Soil
IPD1302-21	MJ796	Soil
IPD1302-23	MJ798	Soil
IPD1302-24	MJ799	Soil
IPD1302-25	MJ800	Soil

Reviewed By:

Michele Chamberlin

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: IPD1302

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

DATA QUALIFIERS AND DEFINITIONS

A-01	Sample result might be biased high due to coelution of Aroclors 1248 and 1254.
A-01a	Sample result might be biased high due to coelution of Aroclors 1248 and 1260.
A-01b	Sample result might be biased high due to coelution of Aroclors 1248, 1254 and 1260.
B	Analyte was detected in the associated Method Blank.
J	Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
M2	The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
M-HA	Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
R-10	The RPD between the primary and confirmatory analysis exceeded 40%. Per method 8000B, the lower value was reported due to apparent chromatographic problems.
RL-1	Reporting limit raised due to sample matrix effects.
Z3	The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

ADDITIONAL COMMENTS

For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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Del Mar Analytical

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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

Certification Summary

Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
EPA 160.3 MOD	Solid	N/A	N/A
EPA 3545/8082	Soil	X	X
EPA 6010B	Soil	X	X
EPA 6020	Soil	X	X
EPA 7471A	Soil	X	X
EPA 8015 MOD.	Soil	X	X
EPA 8270C	Soil	X	X
Level 3	Soil		

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

Subcontracted Laboratories

Calscience-SUB *California Cert #1230*

7440 Lincoln Way - Garden Grove, CA 92841

Analysis Performed: 8270C (SIM)

Samples: IPD1302-12, IPD1302-13, IPD1302-14, IPD1302-15, IPD1302-16, IPD1302-19, IPD1302-20, IPD1302-21, IPD1302-23, IPD1302-24, IPD1302-25

Analysis Performed: Level 3 Data Package

Samples: IPD1302-12

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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IPD 1502

Del Mar #1[illegible]

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: Group 6
Control Number: COC MJ776
Date 4/12/06 Page 1 of 3 mc 4/12/

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No.
QC Level:
TAT: N>(MW)

Preservatives: None

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product		8260B VOC (HCL, pH<2 4°C)	8015BM TPH (HCL, pH<2 4°C)	8270CSIM SVOC (4°C)	8270C SVOC (4°C)	8290 DIOXINS (4°C)	8315A FORMALDEHYDE (H2SO4, pH<2 4°C)	8330 ORDNANCE (4°C)	6000/7000 METALS (HNO3, pH<2 4°C)	7196A HEX CHROMIUM (4°C)	8082 PCBs (4°C)	9040B/9045C pH (4°C)	340.2 FLUORIDE (4°C)	300M ANIONS (4°C)	300M HYDRAZINE (4°C)	314.0 PERCHLORATE (4°C)	PAH	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ776	SRBS85S01		0.5'	4/12/06	0904			X													X							G		X	2
MJ777	SRBS86S01		0.5'		0920			X													X							G		X	1
MJ778	SRBS87S01		0.5'		0929			X													X							G		X	1
MJ779	SRBS88S01		0.5'		0933			X													X							G		X	1
MJ780	SRBS89S01		0.5'		0941			X													X							G		X	1
MJ781	~~SRBS~~ OCBS76S01		0.5'		1025			X													X							HA			1
MJ782	OCBS77S01		0.5'		1030			X													X							HA			1
MJ783	OCBS78S01		0.5'		1045			X													X							HA			1
MJ784	OCBS79S01		0.5'		1049			X											X		X							HA			2
MJ785	OCSS05S01		0'		1100			X											X		X							HA		X	2
MJ786	OCBS80S01		0.5'		1105			X													X							HA			1
MJ787	OCBS81S01		0.5'		1110			X					X						X		X						X	HA			3

	Date	Time
Samplers Signature: [signature]	4/12/06	1430
Relinquished By: [signature]	4/12/06	1700
Received By: [signature]	4/12/06	1700
Relinquished By: [signature]	4/12/06	1955
Received By (LAB): [signature]	4-12-06	1955

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: / /
Temperature °C 3°C

Comments: All 8oz Jars

VB 4/13 1736

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: Group 6
Control Number: COC MJ788
Date 4/12/06 Page 2 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

Cooler No.
QC Level:
TAT: Normal

Preservatives: None

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE	PAH	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ788	OCBS82501		0.5'	4/12/06	1115			X				X						X		X						X	HA			3
MJ789	OCBS83501		0.5'	4/12/06	1120			X				X						X		X						X	HA			3
MJ790	OCBS84501		0.5'	4/12/06	1125			X				X						X		X						X	HA			3
MJ791	OCBS85501		0.5'	4/12/06	1130			X				X						X		X						X	HA			3
MJ792	OCBS86501		0.5'	4/12/06	1135			X				X						X		X						X	HA		X	3
MJ793	OCBS87501		0.5'	4/12/06	1140			X				X						X		X						X	HA		X	3
~~MJ794~~	~~OCBS88501~~		~~0.5'~~	~~4/12/06~~	~~1145~~			X												X							HA			1
MJ794	OCBS88501		0.5'	4/12/06	1215			X				X						X		X						X	G			2
MJ795	OCBS89501		0.5	↓	1315			X				X						X		X						X	HA			3
MJ796	OCBS90501		0.5		1325			X				X						X		X						X	↓			3
MJ797	OCBS91501		0.5		1335			X				X						X		X						X			X	2
MJ798	OCBS92501		0.5	↓	1315			X				X						X		X						X				3

Samplers Signature:		Date 4/12/06	Time 1430
Relinquished By:		Date 4/12/06	Time 1700
Received By:		Date 4/12/06	Time 1700
Relinquished By:		Date 4/12/06	Time 1955
Received By (LAB):		Date 4-12-06	Time 1955

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:
Comments:

Does COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: Y or N
COC Seal intact: Y or N
Any other problems: Y or (N)
If any YES, MWH contacted: Y or N
Date Contacted: / /
Temperature °C 3°C

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue. Suite 1200
Pasadena, CA 91101
(626) 568-6600

DI MW

Chain of Custody

SSFL

Project: Group 6

Control Number: COC MJ799

Date 4/12/06 Page 3 of 3

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowel Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No.
QC Level:
TAT: Normal

Preservatives: None

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	314.0 PERCHLORATE	PAH	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ799	OCBS93501	7.4		4/12/06	1333			X				X						X		X						X	HA			3
MJ800	OCBS94501				1345			X				X						X		X						X				3

Samplers Signature:		Date	4/12/06
		Time	1430
Relinquished By:		Date	4/12/06
		Time	1700
Received By:		Date	4/12/06
		Time	1700
Relinquished By:		Date	4/12/06
		Time	1955
Received By (LAB):		Date	4-12-06
		Time	1955

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: (Y) or N

Broken container: Y or (N)

Received within holding time: Y or N

COC Seal intact: Y or N

Any other problems: Y or (N)

If any YES, MWH contacted: Y or N

Date Contacted : / /

Temperature °C 3°C

Comments:

F A X

MWH

9444 Farnham St., Suite 300
San Diego, California 92123

Tel: 858-751-1200
Fax: 858-751-1201

Date: 04/14/06

To: Michele Chamberlin / Del Mar Analytical **Fax No:** 949-261-1228

From: Anca Brasoveanu

sign:

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 2 (including cover)**

Per Request:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final deliverables for these samples.

COC No.	EPA Sample ID(s)	MWH Sample ID(s)	Date Collected	Originally Requested Analyses	Change (s) and Method (s) Now Requested
MJ776	MJ776	SRBS85S01	4/12/06	Hold PCB's analysis.	Turn on PCB's analysis (method 8082) Standard TAT.
MJ776	MJ777	SRBS86S01	4/12/06	Hold PCB's analysis.	Turn on PCB's analysis (method 8082). Standard TAT.

The reason for these changes:

Incorrectly marked on COC form _____
Lack of sample volume _____
MWH office personnel require this change X
Other: Containers mislabeled _____

Thank you

MWH
MONTGOMERY WATSON HARZA

300 N. Lake Avenue, Suite 1200
Pasadena, CA 91101
(626) 568-6600

Chain of Custody

Project: Group 6

Control Number: COC MJ776

Date 4/12/06 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowell Moffit
Company:	MWH
Address:	300 N. Lake Avenue, Suite 1200 Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler #:
QC Level:
TAT: Normal

Preservatives: None

| Sample Data | | | | | | | | Matrix | | | | | | | |

ALTA

May 09, 2006

Alta Project I.D.: 27648

Ms. Michele Chamberlin
Del Mar Analytical, Irvine
17461 Derian Avenue, Suite 100
Irvine, CA 92614

Dear Ms. Chamberlin,

Enclosed are the results for the two soil samples received at Alta Analytical Laboratory on May 03, 2006 under your Project Name "IPD1302". These samples were extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. A rush turnaround time was provided for this work.

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

Alta Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-933-1640 or by email at mmaier@altalab.com. Thank you for choosing Alta as part of your analytical support team.

Sincerely,

Martha Maier

Martha M. Maier
Director of HRMS Services

Alta Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAC for those applicable test methods. This report should not be reproduced except in full without the written approval of ALTA.

Alta Analytical Laboratory Inc.
1104 Windfield Way
El Dorado Hills, CA 95762
FAX (916) 673-0106
(916) 933-1640

Section I: Sample Inventory Report

Date Received: **5/3/2006**

Alta Lab. ID	Client Sample ID
27648-001	IPD1302-01
27648-002	IPD1302-02

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
E	The reported value exceeds the calibration range of the instrument.
H	The signal-to-noise ratio is greater than 10:1.
I	Chemical interference
J	The amount detected is below the Lower Calibration Limit of the instrument.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated Detection Limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit – concentrations that corresponds to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

CERTIFICATIONS

Accrediting Authority	Certificate Number
State of Alaska, DEC	CA413-02
State of Arizona	AZ0639
State of Arkansas, DEQ	05-013-0
State of Arkansas, DOH	Reciprocity through CA
State of California – NELAP Primary AA	02102CA
State of Colorado	
State of Connecticut	PH-0182
State of Florida, DEP	E87777
Commonwealth of Kentucky	90063
State of Louisiana, Health and Hospitals	LA050001
State of Louisiana, DEQ	01977
State of Maine	CA0413
State of Michigan	81178087
State of Mississippi	Reciprocity through CA
Naval Facilities Engineering Service Center	
State of Nevada	CA413
State of New Jersey	CA003
State of New Mexico	Reciprocity through CA
State of New York, DOH	11411
State of North Carolina	06700
State of North Dakota, DOH	R-078
State of Oklahoma	D9919
State of Oregon	CA200001-002
State of Pennsylvania	68-00490
State of South Carolina	87002001
State of Tennessee	02996
State of Texas	TX247-2005A
U.S. Army Corps of Engineers	
State of Utah	9169330940
Commonwealth of Virginia	00013
State of Washington	C1285
State of Wisconsin	998036160
State of Wyoming	8TMS-Q

Del Mar Analytical

17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IPD1302

SENDING LABORATORY:
Del Mar Analytical - Irvine
17461 Derian Avenue. Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 261-1228
Project Manager: Michele Chamberlin

RECEIVING LABORATORY:
Alta Analytical - SUB
1104 Windfield Way
El Dorado Hills, CA 95762
Phone :(916) 933-1640
Fax: (916) 673-0106

27648
0.1°C

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date:_____ **Initials:**_____

Analysis	Expiration	Comments
* **Sample ID: IPD1302-01 Soil**	**Sampled: 04/12/06 09:04**	~~**Taken off hold 4/14/06 by MWH**~~
1613-Dioxin-HR-Alta	04/19/06 09:04	Sub to Alta, 17 congeners, rpt in dry wt if soil
Level 4 + EDD-OUT	05/10/06 09:04	Sub to Alta, EDD=Access 7
Containers Supplied:		
8 oz Jar (IPD1302-01B)		
* **Sample ID: IPD1302-02 Soil**	**Sampled: 04/12/06 09:20**	~~**Taken off hold 4/14/06 by MWH**~~
1613-Dioxin-HR-Alta	04/19/06 09:20	Sub to Alta, 17 congeners, rpt in dry wt if soil
Containers Supplied:		
8 oz Jar (IPD1302-02A)		

* Hold until further notice
MC 5/2/06

SAMPLE INTEGRITY:

All containers intact: ☐ Yes ☐ No Sample labels/COC agree: ☐ Yes ☐ No Samples Received On Ice:: ☐ Yes ☐ No
Custody Seals Present: ☐ Yes ☐ No Samples Preserved Properly: ☐ Yes ☐ No Samples Received at (temp): _____

Released By	Date	Time	Received By	Date	Time
I/n Bamb	5/02/06		Bettina G. Benedict	5/3/06	0920

Del Mar Analytical

17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
2620 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IPD1302

SENDING LABORATORY:
Del Mar Analytical - Irvine
17461 Derian Avenue. Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 261-1228
Project Manager: Michele Chamberlin

RECEIVING LABORATORY:
Alta Analytical - SUB
1104 Windfield Way
El Dorado Hills, CA 95762
Phone :(916) 933-1640
Fax: (916) 673-0106

27648
0.1°C

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date: 2 week, due 5/17/06 **Initials:** MC

Analysis	Expiration	Comments
* **Sample ID: IPD1302-01 Soil**	**Sampled: 04/12/06 09:04**	~~Taken off hold 4/14/06 by MWH~~
1613-Dioxin-HR-Alta	04/19/06 09:04	Sub to Alta, 17 congeners, rpt in dry wt if soil
Level 4 + EDD-OUT	05/10/06 09:04	Sub to Alta, EDD=Access 7
Containers Supplied:		
8 oz Jar (IPD1302-01B)		
Sample ID: IPD1302-02 Soil	**Sampled: 04/12/06 09:20**	~~Taken off hold 4/14/06 by MWH~~
* 1613-Dioxin-HR-Alta	04/19/06 09:20	Sub to Alta, 17 congeners, rpt in dry wt if soil
Containers Supplied:		
~~8~~ oz Jar (IPD1302-02A)		

~~* Hold until further notice~~
~~MC 5/2/06~~

Please run these two samples.
MC
5/2/06

SAMPLE INTEGRITY:

All containers intact: ☐ Yes ☐ No | Sample labels/COC agree: ☐ Yes ☐ No | Samples Received On Ice: ☐ Yes ☐ No
Custody Seals Present: ☐ Yes ☐ No | Samples Preserved Properly: ☐ Yes ☐ No | Samples Received at (temp): _____

Released By	Date	Time	Received By	Date	Time
I/n Bank	5/2/06				
Released By	Date	Time	Received By	Date	Time

SAMPLE LOG-IN CHECKLIST

Alta Project #: 27648

Samples Arrival:	Date/Time: 5/3/06 0920	Initials: BJB	Location: WR-2 Shelf/Rack:
Logged In:	Date/Time: 5/3/06 0947	Initials: BJB	Location: WR-2 Shelf/Rack: D-2

Delivered By:	(FedEx)	UPS	Cal	DHL	Hand Delivered	Other
Preservation:	(Ice)	Blue Ice		Dry Ice	None	
Temp °C 0.1		Time: 0935			Thermometer ID: DT-20	

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill Trk # 7927 3047 5413	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓

$Na_2S_2O_3$ Preservation Documented?			COC	Sample Container	(None)
Shipping Container	Alta	(Client)	Retain	(Return)	Dispose

Comments:

Samples received in clear glass jars

Martha Maier 27648

From: Michele Chamberlin [michele@dmalabs.com]
Sent: Tuesday, May 02, 2006 5:06 PM
To: Martha Maier
Cc: Rose Harrelson
Subject: More rushes.....

Hi Martha,

The client just chose two more rush samples and you will receive them tomorrow. They need a 2 week TAT, results directly to Elizabeth Wessling (same address) with a CD to me. I will send you a revised COC, since the one with the samples is not accurate. The sample ID's are IPD1302-01 & IPD1302-02.

Please let me know if you have any questions.

Michele

P.S. I will also send you a revised COC for the sample you asked about this morning.

Michele Chamberlin
Project Manager
Del Mar Analytical - Irvine, CA
949-261-1022 x215

Calscience
Environmental
Laboratories, Inc.

April 26, 2006

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

Subject: **Calscience Work Order No.: 06-04-0814**
Client Reference: IPD1302

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 4/14/2006 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of any subcontracted analysis is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Steven L. Lane
Laboratory Director

Calscience Environmental Laboratories, Inc.

Case Narrative for 06-04-0814

Sample Condition on Receipt

Eleven soil samples were received as part of this Work Order on April 14, 2006. All samples were transferred to the laboratory in an ice-chest following strict chain-of-custody procedures. The temperature (2.8°C) of the samples was measured upon arrival in the laboratory and was within acceptable limits. The samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers, and stored in refrigeration units pending analysis.

The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in it entirety.

Data Summary

The samples included in this report were analyzed in accordance with the attached chain-of-custody (COC) records. Data is presented on a dry weight basis.

Holding Times

All holding time requirements were met.

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

The method blank data showed non-detectable levels for all constituents.

Matrix Spikes

Matrix Spikes (MS) and Matrix Spike Duplicates (MSD) were performed at required frequencies. All recoveries were within acceptable limits, with the exception of specific analytes by EPA Method 8270C SIM. Please see Table B below for details.

Calscience Environmental Laboratories, Inc.

Case Narrative for 06-04-0814

Table B: Matrix Spike / Matrix Spike Duplicate outside acceptable limits	
EPA Method 827C SIM	
Batch #	Analytes(s)
060418S02	Acenaphthene

Laboratory Control Samples

The Laboratory Control Sample (LCS) analyses were performed at the required frequencies. All recoveries were within acceptable limits.

Surrogates

Surrogate recoveries for all samples were within acceptable control limits.

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 06-04-0814

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike or Matrix Spike Duplicate compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

CALSCIENCE ENVIRONMENTAL LABORATORIES, INC.
Sample Summary Report

WORK ORDER #: **06-04-0814** **QAPP:** **0000**

#	*Client Sample ID*	*Matrix*	*Date Collected*	*NoC*	*Comment*
1	IPD1302-12	S	04/12/2006	1	
2	IPD1302-13	S	04/12/2006	1	
3	IPD1302-14	S	04/12/2006	1	
4	IPD1302-15	S	04/12/2006	1	
5	IPD1302-16	S	04/12/2006	1	
6	IPD1302-19	S	04/12/2006	1	
7	IPD1302-20	S	04/12/2006	1	
8	IPD1302-21	S	04/12/2006	1	
9	IPD1302-23	S	04/12/2006	1	
10	IPD1302-24	S	04/12/2006	1	
11	IPD1302-25	S	04/12/2006	1	

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 06 - 04 - 0814

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: Del Mar DATE: 04/14/2006

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_____ Chilled, cooler with temperature blank provided.
_____ Chilled, cooler without temperature blank.
_____ Chilled and placed in cooler with wet ice.
_____ Ambient and placed in cooler with wet ice.
_____ Ambient temperature.

_____ °C Temperature blank.

LABORATORY (Other than Calscience Courier):

_____ °C Temperature blank.
2.8 °C IR thermometer.
_____ Ambient temperature.

Initial: NC

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: _____ No (Not Intact) : _____ Not Applicable (N/A): ✓

Initial: NC

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers for analyses requested	✓		
Proper preservation noted on sample label(s)			✓
VOA vial(s) free of headspace.			✓
Tedlar bag(s) free of condensation			✓

Initial: NC

COMMENTS:

Del Mar Analytical

17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
9484 Chesapeake Drive, Suite 805, San Diego, CA 92123 Ph (619) 505-9596 Fax (619) 505-9689
9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IPD1302

0814 1/3

SENDING LABORATORY:

Del Mar Analytical - Irvine
17461 Derian Avenue. Suite 100
Irvine, CA 92614
Phone: (949) 261-1022
Fax: (949) 261-1228
Project Manager: Michele Chamberlin

RECEIVING LABORATORY:

Calscience-SUB
7440 Lincoln Way
Garden Grove, CA 92841
Phone :714-895-5494
Fax: 714-894-7501

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date:_____ Initials:_____

	Analysis	Expiration	Comments
	Sample ID: IPD1302-12 Soil	**Sampled: 04/12/06 11:10**	
1	8270C (SIM)-OUT	04/26/06 11:10	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
	Level 3 Data Package - Out	05/10/06 11:10	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
	Containers Supplied:		
✓	8 oz Jar (IPD1302-12C)		
	Sample ID: IPD1302-13 Soil	**Sampled: 04/12/06 11:15**	
2	8270C (SIM)-OUT	04/26/06 11:15	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
	Level 3 Data Package - Out	05/10/06 11:15	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
	Containers Supplied:		
✓	8 oz Jar (IPD1302-13C)		
	Sample ID: IPD1302-14 Soil	**Sampled: 04/12/06 11:20**	
3	8270C (SIM)-OUT	04/26/06 11:20	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
	Level 3 Data Package - Out	05/10/06 11:20	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
	Containers Supplied:		
✓	8 oz Jar (IPD1302-14C)		
	Sample ID: IPD1302-15 Soil	**Sampled: 04/12/06 11:25**	
4	8270C (SIM)-OUT	04/26/06 11:25	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
	Level 3 Data Package - Out	05/10/06 11:25	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
	Containers Supplied:		
✓	8 oz Jar (IPD1302-15C)		
	Sample ID: IPD1302-16 Soil	**Sampled: 04/12/06 11:30**	
5	8270C (SIM)-OUT	04/26/06 11:30	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
	Level 3 Data Package - Out	05/10/06 11:30	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
	Containers Supplied:		
✓	8 oz Jar (IPD1302-16C)		

Released By	Date	Time	Received By	Date	Time
Vin Banh				41406	720
	41406	800		4-14-06	0800

Del Mar Analytical

17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
1014 E. Cooley Dr., Suite A, Colton, CA 92324 Ph (909) 370-4667 Fax (909) 370-1046
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9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IPD1302

0814 2/3

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical - Irvine 17461 Derian Avenue. Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Calscience-SUB 7440 Lincoln Way Garden Grove, CA 92841 Phone :714-895-5494 Fax: 714-894-7501

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date:_____ Initials:_____

Analysis	Expiration	Comments
Sample ID: IPD1302-19 Soil	**Sampled: 04/12/06 12:15**	
8270C (SIM)-OUT	04/26/06 12:15	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
6 Level 3 Data Package - Out	05/10/06 12:15	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
✓ 2 oz jar (IPD1302-19C)		
Sample ID: IPD1302-20 Soil	**Sampled: 04/12/06 13:15**	
8270C (SIM)-OUT	04/26/06 13:15	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
7 Level 3 Data Package - Out	05/10/06 13:15	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
✓ 8 oz Jar (IPD1302-20C)		
✓ **Sample ID: IPD1302-21 Soil**	**Sampled: 04/12/06 13:25**	
8270C (SIM)-OUT	04/26/06 13:25	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
8 Level 3 Data Package - Out	05/10/06 13:25	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
8 oz Jar (IPD1302-21C)		
Sample ID: IPD1302-23 Soil	**Sampled: 04/12/06 13:15**	
8270C (SIM)-OUT	04/26/06 13:15	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
9 Level 3 Data Package - Out	05/10/06 13:15	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
Containers Supplied:		
✓ 8 oz Jar (IPD1302-23C)		
Sample ID: IPD1302-24 Soil	**Sampled: 04/12/06 13:33**	
8270C (SIM)-OUT	04/26/06 13:33	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
10 Level 3 Data Package - Out	05/10/06 13:33	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7
✓ **Containers Supplied:**		
8 oz Jar (IPD1302-24C)		

Released By	Date	Time	Received By	Date	Time
Vin Banh				4-14-06	720
	4/14/06	800		4-14-06	0800
Released By	Date	Time	Received By	Date	Time

Del Mar Analytical

17461 Derian Ave. Suite 100, Irvine, CA 92614 Ph (949) 261-1022 Fax (949) 261-1228
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9830 South 51st Street, Suite B-120, Phoenix, AZ 85044 Ph (480) 785-0043 Fax (480) 785-0851
2520 E. Sunset Rd., Suite #3, Las Vegas, NV 89120 Ph (702) 798-3620 Fax (702) 798-3621

SUBCONTRACT ORDER - PROJECT # IPD1302

0814 3/3

SENDING LABORATORY:	RECEIVING LABORATORY:
Del Mar Analytical - Irvine 17461 Derian Avenue. Suite 100 Irvine, CA 92614 Phone: (949) 261-1022 Fax: (949) 261-1228 Project Manager: Michele Chamberlin	Calscience-SUB 7440 Lincoln Way Garden Grove, CA 92841 Phone :714-895-5494 Fax: 714-894-7501

Work Order Comments: Level 4 QC. Access 7 EDD.

Standard TAT is requested unless specific due date is requested => Due Date:_____ Initials:_____

Analysis	Expiration	Comments
Sample ID: IPD1302-25 Soil	**Sampled: 04/12/06 13:45**	
8270C (SIM)-OUT	04/26/06 13:45	PAH,sub=CalSci,dry wt(soil) & calc w/ actual sx wt
Level 3 Data Package - Out	05/10/06 13:45	Sub to Calscience,DMA Lvl IV,std logs,EDD=Access 7

Containers Supplied:
8 oz Jar (IPD1302-25C)

SAMPLE INTEGRITY:

All containers intact: ☐ Yes ☐ No Sample labels/COC agree: ☐ Yes ☐ No Samples Received On Ice:: ☐ Yes ☐ No
Custody Seals Present: ☐ Yes ☐ No Samples Preserved Properly: ☐ Yes ☐ No Samples Received at (temp): _____

Released By	Date	Time	Received By	Date	Time
				41406	720
	41406	800		4-14-06	0800

Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
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2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

LABORATORY REPORT

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

Project: SSFL Group 6
Data Gap

Sampled: 04/11/06
Received: 04/11/06
Issued: 04/27/06 16:41

NELAP #01108CA California ELAP#1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain(s) of Custody, 3 pages, are included and are an integral part of this report.
This entire report was reviewed and approved for release.

SAMPLE CROSS REFERENCE

LABORATORY ID	CLIENT ID	MATRIX
IPD1108-01	MJ739	Soil
IPD1108-02	MJ740	Soil
IPD1108-03	MJ741	Soil
IPD1108-04	MJ742	Soil
IPD1108-05	MJ743	Soil
IPD1108-06	MJ744	Soil
IPD1108-07	MJ745	Soil
IPD1108-27	MJ765	Soil
IPD1108-29	MJ767	Soil
IPD1108-30	MJ768	Soil
IPD1108-31	MJ769	Soil
IPD1108-32	MJ770	Soil
IPD1108-33	MJ771	Soil
IPD1108-34	MJ772	Soil
IPD1108-35	MJ773	Soil
IPD1108-36	MJ774	Soil

Reviewed By:



Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

Del Mar Analytical

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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

DATA QUALIFIERS AND DEFINITIONS

J	Estimated value. Analyte detected at a level less than the Reporting Limit (RL) and greater than or equal to the Method Detection Limit (MDL). The user of this data should be aware that this data is of limited reliability.
M2	The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
M-HA	Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).
R-10	The RPD between the primary and confirmatory analysis exceeded 40%. Per method 8000B, the lower value was reported due to apparent chromatographic problems.
R-3	The RPD exceeded the method control limit due to sample matrix effects.
RL-1	Reporting limit raised due to sample matrix effects.
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD	Relative Percent Difference

ADDITIONAL COMMENTS

For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.

Del Mar Analytical - Irvine
Michele Chamberlin
Project Manager

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Del Mar Analytical

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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

Certification Summary

Del Mar Analytical - Irvine

Method	Matrix	Nelac	California
EPA 160.3 MOD	Solid	N/A	N/A
EPA 3545/8082	Soil	X	X
EPA 6010B	Soil	X	X
EPA 6020	Soil	X	X
EPA 7471A	Soil	X	X
EPA 8015 MOD.	Soil	X	X

Nevada and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.testamericainc.com

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.

MWH OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Del Mar Analytical #229

SSFL Group 6 Data Gap Stefouts

Chain of Custody

IPD1108

MJ 739

Control Number: COC

Date 4/11/06 Page 1 of 3

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Courier
Comment:

Cooler No:	
QC Level:	TAT: Normal

Preservatives: None

All 602

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	~~LAMONT SOIL/Tank~~ METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Silver		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ739	OCBS65 S01	2	04/11/06	0750			X				X						X					X				HA			3
MJ740	NCBS26 S01	0.5		0755			X																	X					1
MJ741	NCBS27 S01	0.5		0800			X																	X			X		1
MJ742	NCBS28 S01	0.5		0805			X																	X			X		1
MJ743	NCBS29 S01	0.5		0810			X																	X					1
MJ744	OCBS66 S01	0.5		0930			X										X					X							2
MJ745	OCBS68 S01	0.5		0930			X										X					X							2
MJ746	OCBS66 S02	3		0935			X										X					X					X		2
MJ747	OCBS68 S02	3		0940			X										X					X					X		2
MJ748	OCBS67 S01	0.5		0945			X										X					X					X		2
MJ749	OCBS66 S03	6		0950			X										X					X					X		2
MJ750	OCBS69 S01	0.5		0955			X										X					X					X		2

Samplers Signature:	Date 4/11/06	Time 0750
Relinquished By:	Date 4/11/06	Time 1722
Received By:	Date 4/11/06	Time 1722
Relinquished By:	Date 4/11/06	Time 1945
Received By (LAB):	Date 4-11-06	Time 1945

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples (Y) or N

Broken container: Y or (N)

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or (N)

If any YES, Ogden contacted: Y or N

Date contacted: __/__/__

Temperature °C 3°

Run MJ741 + 742

NAM
4-14 0930

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

MWH

Del Mar

SSFL Group 6 Data Gap Stepa...

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

MJ751

Control Number: COC

Date 4 / 11 / 06 Page 2 of 3

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Courier
Comment:	

Cooler No:	
QC Level:	TAT: Normal

Preservatives: None

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product		8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	~~1LM02.IRT~~ 6.016/7000 METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
											HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
MJ751	OCBS68 S03	6	4/11/06	1020			X											X					X						X	2
MJ752	OCBS70 S01	0.5		1030																			X						X	1
MJ753	OCBS70 S02	3		1030																			X						X	1
MJ754	OCBS71 S01	0.5		1040																			X						X	1
MJ755	OCBS71 S02	3		1040																			X						X	1
MJ756	OCBS72 S01	0.5		1050																			X						X	1
MJ757	OCBS72 S02	3		1050																			X						X	1
MJ758	OCBS38 S01	0.5		1045																			X						X	1
MJ759	OCBS73 S01	4.5		1135																			X						X	1
MJ760	OCBS73 S02	7.5		1140																			X						X	1
MJ761	OCBS74 S01	4.5		1150																			X						X	1
MJ762	OCBS74 S02	8		1210																			X						X	1

	Date	Time
Samplers Signature: [signature]	4/11/06	1015
Relinquished By: [signature]	4/11/06	1722
Received By: [signature]	4/11/06	1722
Relinquished By: [signature]	4/11/06	1945
Received By (LAB): [signature]	4-11-06	1945

For Lab Use

Lab Number:

Do COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: __/__/__

Temperature °C 3°C

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

MWH Del Mar Analytical SSFL Group 6 Data Gap Stepouts

MJ 763

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(858) 458-9044

Chain of Custody

Control Number: COC
Date 4/11/06 Page 3 of 3

Project Manager:	Dixie Hambrick	Bill To:	Purchasing	Sample Disposal Instructions: Laboratory Disposal	
Project Name:	Rocketdyne	Company:	Ogden Environmental	Shipment Method:	Courier
Project Number:	313150002	Address:	5510 Morehouse Drive, San Diego, CA 92121	Comment:	
Deliver results to the address above or as stated in contract					

Cooler No:

QC Level:

TAT: Normal

Preservatives: None

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product		8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	~~ALM02.IRT~~ 6010/7000 METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Mercury		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
											HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
MJ763	OCBS75S01	4.5	4/11/06	1145			X																X						X	1
MJ764	OCBS75S02	7.5		1205			X																X						X	1
MJ765	SR~~OC~~BS74S01	0.5		1335			X																X							1
MJ766	SRBS75S01			1340			X																X						X	1
MJ767	SRBS76S01			1345			X																X							1
MJ768	SRBS77S01			1355			X																X							1
MJ769	SRBS78S01			1400			X																X							1
MJ770	SRBS81S01			1415			X																		X					1
MJ771	SRBS82S01			1420			X																		X					1
MJ772	SRBS83S01			1425			X																		X					1
MJ773	SRBS84S01			1430			X																		X					1
MJ774	SRBS83D01			1430			X																		X					1

	Date	Time
Samplers Signature: [signature]	4/11/06	1140
Relinquished By: [signature]	4/11/06	1722
Received By: [signature]	4/11/06	1722
Relinquished By: [signature]	4/11/06	1945
Received By (LAB): [signature]	4-11-06	1945

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 3°C

MJ767 and 769 are contained unit samples.

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Figure A.5-2 Example Chain-of-Custody Form

Rec'd 1/9/98

Columbia Analytical Services, Inc.

January 6, 1998

Anne Freed
OGDEN
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne / Project #313150001

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on October 27-31, 1997. For your reference, these analyses have been assigned our service request number L9703643.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services Mobile Laboratory is certified for environmental analyses by the California Department of Health Services (certificate number: 1993, expiration May 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Thomas X. Robinson
Project Chemist

TR/iz

6925 Canoga Avenue ▪ Canoga Park, CA 91303 ▪ (818) 587-5550 ▪ Fax (818) 587-5555

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	InterPhase Environmental	**Service Request No.:**	L9703643
Project:	Rocketdyne/313150001	**Date Received:**	10/27-31/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for samples designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix/Duplicate Matrix Spike (MS/DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

The following difficulties were experienced during analysis of this batch:

Several samples required dilutions to bring the concentration of a particular analyte within its calibration range. Upon reanalysis the result did not always yield the expected concentration, in some cases a lower result was determined. The most probable cause of this phenomenon is sample homogeneity; concentrations vary throughout various subsamples of the sample container, additionally the volatility of the target analytes causes concentrations to decrease after subsampling of the initial analysis.

Sample results that have elevated PQL's with no target compounds detected were diluted due to matrix interferences from hydrocarbons, these samples are appropriately footnoted.

Sample RD708 required second column confirmation for volatile organic compounds but was inadvertently missed, the original result is reported.

Approved by: _____ Date: 2/23/98

R-003

COLUMBIA ANALYTICAL SERVICES, INC.

Nonconformity and Corrective Action Report

SAMPLES/SYSTEM/JOB/CLIENT AFFECTED

L9703643 - 019 Ogden Sample AD708

NONCONFORMITY

Analysis/Event: Second column confirmation was not performed.

Instrument/System: GC 11 Date: 2/23/98

Detailed Description:

Originator: Tom Robinson Date: 2/23/98

Supervisor Verification: Thomas R. Robinson Date: 2/23/98

CORRECTIVE ACTION AND OUTCOME

Detailed Description: (Re-establishment of conformity must be demonstrated and documented. Describe the steps that were taken, or are planned to be taken, to correct the problem. Describe the outcome.)

The analyst is responsible for determining which sample needs confirmation; in the future second party review will assist in determining confirmation.

Person Responsible: Bo Kim Date: 2/23/98

Supervisor Verification: Thomas R Robinson Date: 2/23/98

NOTIFICATION - CUSTOMER/CLIENT - INTERNAL/EXTERNAL

Project Chemist Notified? No (Yes) Date: 2/23/98

Customer Notification Necessary? (Attach telephone record) No (Yes) Date: 2/23/98

Notifier: Tom Robinson Date: 2/23/98

ACCEPTANCE OF CORRECTIVE ACTION

QA Coordinator: Stuart Date: 2/23/98

Original: Client File Photocopies: Supervisor and QA Coordinator CORACTEP.DOC 10/29/96

003A

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	InterPhase Environmental	**Service Request No.:**	L9703643
Project:	Rocketdyne/313150001	**Date Received:**	10/27-31/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for samples designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix/Duplicate Matrix Spike (MS/DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

The following difficulties were experienced during analysis of this batch:

Several samples required dilutions to bring the concentration of a particular analyte within its calibration range. Upon reanalysis the result did not always yield the expected concentration, in some cases a lower result was determined. The most probable cause of this phenomenon is sample homogeneity; concentrations vary throughout various subsamples of the sample container, additionally the volatility of the target analytes causes concentrations to decrease after subsampling of the initial analysis.

Sample results that have elevated PQL's with no target compounds detected were diluted due to matrix interferences from hydrocarbons, these samples are appropriately footnoted.

Approved by: _____ Date: 12/29/97

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
03-NOV-97 17:01

Service Req. No. L9703643
Client No. 095000
Client Name InterPhase Environmental

Project No. 313150001 ✓
Project Name Rocketdyne

Bottles: 92 - Canisters/Decore
2 - VOA Vial Set (2)
1 - VOA Vial Set (4)

Bill To: InterPhase Environmental
Attn: Accounts Payable
6200 Peachtree Street ✓
Los Angeles, CA 90040

Report To: Ogden Environmental
Anne Freed
5510 Morehouse Dr. ✓
San Diego, CA 92121

P.O. No.
Logged In By ABRAGASI
ISR Num
COC Received Y
Samples Submitted 31-OCT-97

Site ID
Project Chemist Tom Robinson ✓

Storage:

TESTS/DAY

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8021 HOLD	TPH-FC-CA
L9703643-001	RD702	SLUDGE	27-OCT-97	14-NOV-97	III	III
L9703643-002	RD703	SLUDGE	27-OCT-97	14-NOV-97	III	III
L9703643-003	RD704	SLUDGE	27-OCT-97	14-NOV-97	III	III
L9703643-004	RD109	SOIL	27-OCT-97	14-NOV-97		III
L9703643-005	RD110	SOIL	27-OCT-97	14-NOV-97		III
L9703643-006	RD111	SOIL	27-OCT-97	14-NOV-97	III	III
L9703643-007	RD112	SOIL	27-OCT-97	14-NOV-97	III	III
L9703643-008	RD113	SOIL	27-OCT-97	14-NOV-97	III	III
L9703643-009	RD114	SOIL	27-OCT-97	14-NOV-97	III	III
L9703643-010	RD115	SOIL	27-OCT-97	14-NOV-97	III	III
L9703643-011	RD116	SOIL	27-OCT-97	14-NOV-97	III	III
L9703643-012	RD117	SOIL	27-OCT-97	14-NOV-97	III	III
L9703643-013	RD118	SOIL	27-OCT-97	14-NOV-97	III	III
L9703643-014	RD119	SOIL	27-OCT-97	14-NOV-97	III	III
L9703643-015	RD120	SOIL	27-OCT-97	14-NOV-97	III	III
L9703643-016	RD705	SLUDGE	27-OCT-97	14-NOV-97	III	III
L9703643-017	RD706	SLUDGE	27-OCT-97	14-NOV-97	III	III
L9703643-018	RD707	SOIL	27-OCT-97	14-NOV-97	III	III
L9703643-019	RD708	SLUDGE	27-OCT-97	14-NOV-97	III	III
L9703643-020	RD709	SOIL	27-OCT-97	14-NOV-97	III	III
L9703643-021	RD710	SOIL	27-OCT-97	14-NOV-97		III
L9703643-022	RD121	SOIL	28-OCT-97	14-NOV-97		III
L9703643-023	RD122	SOIL	28-OCT-97	14-NOV-97		III
L9703643-024	RD123	SOIL	28-OCT-97	14-NOV-97		III
L9703643-025	RD124	SOIL	28-OCT-97	14-NOV-97	III	III
L9703643-026	RD125	SOIL	28-OCT-97	14-NOV-97	III	III
L9703643-027	RD126	SOIL	28-OCT-97	14-NOV-97	III	III
L9703643-028	RD128	SOIL	28-OCT-97	14-NOV-97	III	III
L9703643-029	RD129	SOIL	28-OCT-97	14-NOV-97	III	III
L9703643-030	RD130	SOIL	28-OCT-97	14-NOV-97		III
L9703643-031	RD131	SOIL	28-OCT-97	14-NOV-97		III
L9703643-032	RD132	SOIL	28-OCT-97	14-NOV-97		III
L9703643-033	RD133	SOIL	28-OCT-97	14-NOV-97	III	III
L9703643-034	RD134	SOIL	28-OCT-97	14-NOV-97	III	III
L9703643-035	RD135	SOIL	28-OCT-97	14-NOV-97	III	III
L9703643-036	RD139	SOIL	28-OCT-97	14-NOV-97	III	

21+18 = 39

14+17 = 31

METALS VOA
IC WET
SEMI VOA

004

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By: DXM 11/10

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
03-NOV-97 17:01

Service Req. No. L9703643
Client No. 095000
Client Name InterPhase Environmental

Project No. 313150001
Project Name Rocketdyne

Bottles: 92 - Canisters/Decore
2 - VOA Vial Set (2)
1 - VOA Vial Set (4)

Bill To: InterPhase Environmental
Attn: Accounts Payable
6200 Peachtree Street
Los Angeles, CA 90040

Report To: Ogden Environmental
Anne Freed
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No.
Logged In By ABRAGASI
ISR Num
COC Received Y
Samples Submitted 31-OCT-97

Site ID
Project Chemist Tom Robinson

Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8021	HOLD	TPH-FC-CA
L9703643-037	RD136	SOIL	28-OCT-97	14-NOV-97	III		
L9703643-038	RD137	SOIL	28-OCT-97	14-NOV-97	III		
L9703643-039	RD138	H2O	28-OCT-97	14-NOV-97	III		III
L9703643-040	RD723	SOIL	28-OCT-97	14-NOV-97	III		III
L9703643-041	RD721	SOIL	28-OCT-97	14-NOV-97		III	
L9703643-042	RD722	SOIL	28-OCT-97	14-NOV-97		III	
L9703643-043	RD724	H2O	28-OCT-97	14-NOV-97	III		
L9703643-044	RD725	H2O	28-OCT-97	14-NOV-97			III
L9703643-045	RD140	SOIL	29-OCT-97	14-NOV-97	III		III
L9703643-046	RD141	SOIL	29-OCT-97	14-NOV-97			III
L9703643-047	RD142	SOIL	29-OCT-97	14-NOV-97			III
L9703643-048	RD143	SOIL	29-OCT-97	14-NOV-97	III		III
L9703643-049	RD144	SOIL	29-OCT-97	14-NOV-97	III		III
L9703643-050	RD145	SOIL	29-OCT-97	14-NOV-97	III		III
L9703643-051	RD146	SOIL	29-OCT-97	14-NOV-97	III		III
L9703643-052	RD147	SOIL	29-OCT-97	14-NOV-97	III		III
L9703643-053	RD148	SOIL	29-OCT-97	14-NOV-97	III		III
L9703643-054	RD726	SOIL	29-OCT-97	14-NOV-97	III		III
L9703643-055	RD727	SOIL	29-OCT-97	14-NOV-97	III		III
L9703643-056	RD728	SLUDGE	29-OCT-97	14-NOV-97			III
L9703643-057	RD730	SOIL	29-OCT-97	14-NOV-97	III		III
L9703643-058	RD731	SOIL	29-OCT-97	14-NOV-97			III
L9703643-059	RD732	SOIL	29-OCT-97	14-NOV-97			III
L9703643-060	RD733	SOIL	29-OCT-97	14-NOV-97	III		III
L9703643-061	RD734	SOIL	29-OCT-97	14-NOV-97			III
L9703643-062	RD735	SOIL	29-OCT-97	14-NOV-97	III		III
L9703643-063	RD736	SOIL	30-OCT-97	14-NOV-97	III		III
L9703643-064	RD737	SLUDGE	30-OCT-97	14-NOV-97			III
L9703643-065	RD738	SOIL	30-OCT-97	14-NOV-97	III		III
L9703643-066	RD739	SOIL	30-OCT-97	14-NOV-97	III		III
L9703643-067	RD740	SOIL	30-OCT-97	14-NOV-97	III		III
L9703643-068	RD150	SOIL	30-OCT-97	14-NOV-97	III		III
L9703643-069	RD151	SOIL	30-OCT-97	14-NOV-97	III		III
L9703643-070	RD152	SOIL	30-OCT-97	14-NOV-97	III		III
L9703643-071	RD153	SOIL	30-OCT-97	14-NOV-97	III		III
L9703643-072	RD741	SOIL	30-OCT-97	14-NOV-97	III		III

30

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By: DRM

005

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
03-NOV-97 17:01

Service Req. No. L9703643
Client No. 095000
Client Name InterPhase Environmental

Project No. 313150001
Project Name Rocketdyne

Bottles: 92 - Canisters/Decore
2 - VOA Vial Set (2)
1 - VOA Vial Set (4)

Bill To: InterPhase Environmental
Attn: Accounts Payable
6200 Peachtree Street
Los Angeles, CA 90040

Report To: Ogden Environmental
Anne Freed
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No.
Logged In By ABRAGASI
ISR Num
COC Received Y
Samples Submitted 31-OCT-97

Site ID
Project Chemist Tom Robinson

Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8021 HOLD	TPH-FC-CA
L9703643-073	RD742	SOIL	30-OCT-97	14-NOV-97	III	III
L9703643-074	RD743	SOIL	30-OCT-97	14-NOV-97		III
L9703643-075	RD744	SOIL	30-OCT-97	14-NOV-97		III
L9703643-076	RD154	SOIL	30-OCT-97	14-NOV-97	III	III
L9703643-077	RD155	SOIL	30-OCT-97	14-NOV-97	III	III
L9703643-078	RD156	SOIL	30-OCT-97	14-NOV-97	III	III
L9703643-079	RD157	SOIL	30-OCT-97	14-NOV-97	III	III
L9703643-080	RD159	SOIL	31-OCT-97	14-NOV-97	III	III
L9703643-081	RD160	SOIL	31-OCT-97	14-NOV-97	III	III
L9703643-082	RD162	SOIL	31-OCT-97	14-NOV-97	III	
L9703643-083	RD163	SOIL	31-OCT-97	14-NOV-97	III	
L9703643-084	RD164	SOIL	31-OCT-97	14-NOV-97	III	
L9703643-085	RD165	SOIL	31-OCT-97	14-NOV-97	III	
L9703643-086	RD745	SOIL	31-OCT-97	14-NOV-97		III
L9703643-087	RD747	SOIL	31-OCT-97	14-NOV-97		III
L9703643-088	RD750	SOIL	31-OCT-97	14-NOV-97	III	III
L9703643-089	RD751	SOIL	31-OCT-97	14-NOV-97	III	III
L9703643-090	RD754	SOIL	31-OCT-97	14-NOV-97	III	III
L9703643-091	RD166	SOIL	31-OCT-97	14-NOV-97	III	III
L9703643-092	RD167	SOIL	31-OCT-97	14-NOV-97	III	III
L9703643-093	RD168	SOIL	31-OCT-97	14-NOV-97	III	III
L9703643-094	RD169	SOIL	31-OCT-97	14-NOV-97		III
L9703643-095	RD170	SOIL	31-OCT-97	14-NOV-97		III
L9703643-096	RD171	SOIL	31-OCT-97	14-NOV-97	III	

31

25

Comments:

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By: DXN

006

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 702
Date 10 / 27 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9710343)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
2 RD702	SNBS055002	0.5'	10/27/97	0830	-001	G	6.8				X	1	1			1	Relinquished By: K Jamieson	10/27/97 1100
																	Received By:	10/27/97 1100
1 RD703	SNBS015002	0.5'		0850	-002	G	6.8				X	1	1			1	Relinquished By: K Jamieson	10/27/97 1100
																	Received By:	10/27/97 1100
3 RD 704	SNBS065002	0.5'		1030	-003	G	6.8				X	1	1			1	Relinquished By: K Jamieson	10/27/97 1100
																	Received By:	10/27/97 1100
																	Relinquished By:	
				K Jamieson 10/27/97													Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	10/27/97	910

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

007

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD109

Date 10/27/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #	Sample Data: EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9703643)	Field Data: Sampling Method	SWMU	Matrix: Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
6	RD 109	EBS~~#~~9 S#1	0.5'	10-27-97	810	-004	G		X					X				Relinquished By: A. Son	10-27-97 1415
																		Received By:	10/27/97 1415
10	RD 110	CABIS S#1	0.5	"	940	-005	G		X					X				Relinquished By: A. Son	"
																		Received By:	"
1	RD 111	LX BS#1 S#1	1.0	"	1050	-006	G		X				X	X				Relinquished By: A. Son	"
																		Received By:	"
1	RD 112	LX BS#1 S#2	5.0	"	1055	-007	G		X				X	X				Relinquished By: A. Son	"
																		Received By:	"
1	RD 113	LX BS#1 S#3	9.5	"	1105	-008	G		X				X	X				Relinquished By: A. Son	"
																		Received By:	"

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
A. Son	10-27-97	1415

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

008

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD114

Date 10/27/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ DB purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

DLS #

Sample Data						Field Data		Matrix										
	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	LG10743 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
3	RD114	LXBS02S01	0.5	10/27/97	1210	-009	B		X				X	X				Relinquished By:	10-27-97 1415
																		Received By:	10/27/97 1415
3	RD115	LXBS02S02	5.0		1220	-010	B		X				X	X				Relinquished By:	"
																		Received By:	"
3	RD116	LXBS02S03	9.5		1235	-011	B		X				X	X				Relinquished By:	"
																		Received By:	"
	~~RD117~~ DB			AD 10-27-97			B		X				X	X				Relinquished By:	#
																		Received By:	DB
							B		X				X	X				Relinquished By:	DB
																		Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	10.27.97	1415

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

009

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD118

Date 10/27/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

DLS #	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L97035643)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
2	RD117	LxBSφ3Sφ1	1.0	10 27 97	1425	-012	B		X				X	X				Relinquished By: A. Sam	10-27-97 1730
																		Received By:	10/27/97 1730
2	RD118	LxBSφ3Sφ2 RB	5.0	4	1435	-013	B		X				X	X				Relinquished By: A. Sam	4
																		Received By:	4
13	RD119	~~BBL~~ BVBSφ8Sφ1	6.0	4	1630	-014	B		X				X	X				Relinquished By: A. Sam	4
																		Received By:	4
22	RD120	BVBSφ9Sφ1	0.5	11	1650	-015	B		X				X	X				Relinquished By: A. Sam	4
																		Received By:	11
					MS 10-27-97													Relinquished By:	
																		Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
A. Sam	10-27-97	1730

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

0110

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD705

Date 10/27/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	KJ ~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

JLS

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9703143	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
1-2 RD 705	R1BS01S01	2.0	10/21/97	1155	-016	G	4.16				X	1	1			1	Relinquished By: K Jamieson	10/27/97 1730
																	Received By:	10/27/97 1730
3 RD 706	R1BS02S01	0.5'		1220	-017	G					X	1	1			1	Relinquished By: K Jamieson	10/27/97 1730
																	Received By:	10/27/97 1730
4 RD 707	R1BS04S01	0.5'		1435	-018	HA		X				1	1			1	Relinquished By: K Jamieson	10/27/97 1730
																	Received By:	10/27/97 1730
1 RD 708	R1BS03S01	1.0'		1430	-019	G					X	1	1			1	Relinquished By: K Jamieson	10/27/97 1730
																	Received By:	10/27/97 1730
28 RD 709	KJ ~~R1~~ LFBS04S01	0.5'		1530	-020	HA	4.12	X				1	1			1	Relinquished By: K Jamieson	10/27/97 1730
																	Received By:	10/27/97 1730

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: R11	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	KJ 10/27/97	1730

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

011

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 710
Date 10 / 27 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	KJ ~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

ULS #	Sample Data: EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9703643	Field Data: Sampling Method	SWMU	Matrix: Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
25	RD 710 ~~6010~~	LFSS07S01	0'	10/27/97	1610	-021	G	4.12	X					1			1	Relinquished By: K Jamieson	10/27/97 1730
																		Received By: [signature]	10/27/97 1730
																		Relinquished By:	
																		Received By:	
																		Relinquished By:	
																		Received By:	
																		Relinquished By:	
																		Received By:	
																		Relinquished By:	
																		Received By:	

K Jamieson 10/27/97

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: R11	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	10/27/97	1650

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

012

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD121

Date 10/28/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ DB pending
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

ULS	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9703643)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/Time
19	RD 121	BVBS10S01	0.5	10-28-97	840	-022	B	SWMU 5.13	X					X				Relinquished By: A. San Received By: [signature]	10-28-97 1430 10/28/97 1430
~~DB~~ 8	RD 122	~~BVBS10D01~~ DB BVBS11S01	1.0	"	855	-023	B	"	X					X				Relinquished By: A. San Received By: [signature]	10-28-97 " "
8	RD 123	BVBS11S02	3.5	"	"	-024	B	"	X					X				Relinquished By: A. San Received By: [signature]	10-28-97 " "
22	RD 124	BABS05S01	1.0	"	1025	-025	B	DB	X				X	X				Relinquished By: A. San Received By: [signature]	10-28-97 " "
22	RD 125	BABS05D01	1.0	"	1025	-026	B	DB	X				X	X				Relinquished By: A. San Received By: [signature]	10-28-97 " "

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: TAT: 14 - day

Sampler's Signature	Date	Time
A. San	10-28-97	1430

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

013

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD126

Date 10/28/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ pending
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9703643	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD 126	BABS#5 S#2	5.5	10-28-97	1040	-027	B	4.15	X				X	X				Relinquished By: A. Sen	10/28/97 1435
RD128	BABS#5 S#3	10.0	〃	1050	-028	B	〃	X				X	X				Received By: [signature]	10/28/97 1430
RD129	BABS#5 D#3	10.0	〃	1050	-029	B	〃	X				X	X				Relinquished By: A. Sen	〃
RD130	BABS#11 S#1	1.5	〃	1105	-030	B	〃	X					X				Received By: [signature]	〃
RD131	BABS#11 S#2	5.0	〃	1110	-031	B	〃	X					X				Relinquished By: A. Sen	〃
																	Received By: [signature]	〃

22
22
22
14
14

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
A. Sen	10-28-97	1430

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

014

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD132

Date 10/28/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix												
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L9703643 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
25 RD 132	BABS125#1	~~0.0~~ 0.5	10-28-97	1145	-032	B	4.15	X					X				Relinquished By: A Sam	10.28.97 1430
																	Received By:	10/28/97 1430
25 RD 133	BABS125#2	11.0	11	1200	-033	B	11	X				X	X				Relinquished By: A Sam	11
																	Received By:	11
25 RD 134	BABS125#3	16.0	11	1220	-034	B	X	X				X	X				Relinquished By: A Sam	11
																	Received By:	11
25 RD 135	BABS125#4	20.0	11	1230	-035	B		X				X	X				Relinquished By: A. Sam	11
																	Received By:	11
				AMS 10-28-97													Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
A Sam	10-28-97	1430

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

015

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD135
Date 10/28/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ Randy
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

	Sample Data						Field Data		Matrix										
	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID 19705643	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
13	RD ~~135~~ 139	SLBSØ2 SØ1 DB 10/29/97	0.5	10-28-97	1525	-036	B		X				X					Relinquished By: A. Son Received By: [signature]	10-28-97 1730 10/28/97 1730
13	RD 136	SLBSØ2SØ2	~~6.8~~ 8.0	4	1535	-037	B		X				X					Relinquished By: A. Son Received By: [signature]	4 10/28/97 1730
6	RD 137	CFBSØ1SØ1	7.0	4	1620	-038	B		X				X					Relinquished By: A. Son Received By: [signature]	4 10/28/97 1730
	R138	BAQWØ1EØ1	-	4	1710	-039	G			X			X	X			4	Relinquished By: A. Son Received By: [signature]	4 10/28/97 1730
																		Relinquished By: Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
A Son	10-28-97	1730

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

016

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 716
Date 10/28/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	KJ ~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

ULS #	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/Time
~~46a~~ KJ	~~RD 716~~	~~1LSU0~~ ~~2S02~~ 3S01 KJ	~~0'~~	~~10/28/97~~	~~1130~~ 1400	L9703643	G	4.3	~~X~~ KJ			X		1			1	~~Relinquished By:~~ KJ Received By:	
48a	RD 723	CLSS03S01	0'		1610	-040	G	4.7	X				1	1			1	Relinquished By: KJamieson Received By: [signature]	10/28/97 1820 10/28/97 1820
~~29~~	~~RD 721~~	~~CLSS01S01~~	~~0'~~		~~1610~~	~~-041~~	~~G~~	~~4.7~~	~~X~~					~~1~~			~~1~~	Relinquished By: KJamieson Received By: [signature]	10/28/97 1820 10/28/97 1820
~~30~~	~~RD 722~~	~~CLSS02S01~~	~~0'~~		~~1615~~	~~-042~~	~~G~~	~~4.7~~	~~X~~					~~1~~			~~1~~	Relinquished By: KJamieson Received By: [signature]	10/28/97 1820 10/28/97 1820
						KJamieson 10/28/97												Relinquished By: Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
KJamieson	10/28/97	1140

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

017

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 724

Date 10/28/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #

L9703643

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD 724	CLQWØ1EØ1	N/A	10/28/97	1720 KJ	-043		4.7		X			1				2	Relinquished By: K Jamieson	10/28/97 1820
																	Received By:	10/28/97 1820
RD 725	CLQWØ1EØ2	N/A	↓	↓	-044		↓		X				1			2	Relinquished By: K Jamieson	10/28/97 1820
																	Received By:	10/28/97 1820
~~RD 726~~		N/A	↓	↓	KJ		↓		~~X~~								Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

K Jamieson 10/28/97

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	10/28/97	1720

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

018

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD140
Date 10/29/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9710343)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD140	1LBS02 D05	31.5'	10/29/97	0920	-045	B	4.3/4.4	X				X	X			1	Relinquished By:	10/29/97 1738
																	Received By:	10/29/97 1738
RD141	DABS03S01	1.0'		1125	-046	B	5.23	X					X			1	Relinquished By:	10/29/97 1738
																	Received By:	10/29/97 1738
RD142	DABS03S02	6.0'		1130	-047	B	5.23	X					X			1	Relinquished By:	10/29/97 1738
																	Received By:	10/29/97 1738
RD143	BLBS01S01	0.5'		1410	-048	B	7.1	X				X	X			1	Relinquished By:	10/29/97 1738
																	Received By:	10/29/97 1738
RD144	BLBS01S02	5.0		1430	-049	B	7.1	X				X	X			1	Relinquished By:	10/29/97 1738
																	Received By:	10/29/97 1738

ULS

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	10/29/97	1730

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

019

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD145
Date 10/29/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

VLS

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9703643)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
1	RD145	BLBS015003	9.5	10/29/97	1440	B	7.1	X				X	X			1	Relinquished By:	10/29/97 1738
					-050												Received By:	10/29/97 1738
2	RD146	BLBS025001	9.5		1505	B	7.1	X				X	X			1	Relinquished By:	10/29/97 1738
					-051												Received By:	10/29/97 1738
2	RD147	BLBS025002	5.0		1515	B	7.1	X				X	X			1	Relinquished By:	10/29/97 1738
					-052												Received By:	10/29/97 1738
2	RD148	BLBS025003	9.5		1530	B	7.1	X				X	X			1	Relinquished By:	10/29/97 1738
					-053												Received By:	10/29/97 1738
							D&B										Relinquished By:	
							10/29/97										Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	10/29/97	1730

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

020

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 726
Date 10/29/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	KJ ~~Mark Dettley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

ULS #	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9703643)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
14	RD 726	AF KJ SSØ1SØ1	Ø'	10-29-97	0810	-054	G	4.9	X				1	1			1	Relinquished By: K Jamieson	10/29/97 1745
																		Received By:	10/29/97 1745
12	RD 727	OCBSØ9SØ1	Ø.5'		1040	-055	HA	7.4	X				1	1			1	Relinquished By: K Jamieson	10/29/97 1745
																		Received By:	10/29/97 1745
7	RD 728	OCBS1ØSØ1	Ø.5'		1135	-056	HA	7.4				X		1			1	Relinquished By: K Jamieson	10/29/97 1745
																		Received By:	10/29/97 1745
15	RD 730	OCBS12SØ1	Ø.5'		1230	-051	HA	7.4	X				Ø	1			1	Relinquished By: K Jamieson	10/29/97 1745
																		Received By:	10/29/97 1745
						K Jamieson 10/29/97												Relinquished By:	
																		Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	10-29-97	0820

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

021

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD731
Date 10/29/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	KJ ~~Mark Bellew~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

ULS

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID 19703643	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
3 RD 731	BLBS045Ø1	Ø.5'	10/29/97	1415	-058	HA	7.1	X					X			1	Relinquished By: K Jamieson Received By:	10/29/97 1745 10/29/97 1745
4 RD 732	BLBS055Ø1	Ø.5'		1430	-059	HA	7.1	X					X			1	Relinquished By: K Jamieson Received By:	10/29/97 1745 10/29/97 1745
6 RD 733	BLBS065Ø1	Ø.5'		1500	-060	HA	7.1	X				X	X			1	Relinquished By: K Jamieson Received By:	10/29/97 1745 10/29/97 1745
5 RD 734	BLBS075Ø1	Ø.5'		1600 ~~1530~~ TB	-061	HA	7.1	X				X	X			1	Relinquished By: K Jamieson Received By:	10/29/97 1745 10/29/97 1745
7 RD 735	BLBS085Ø1	Ø.5'		1600	-062	HA	7.1	X				X	X			1	Relinquished By: K Jamieson Received By:	10/29/97 1745 10/29/97 1745

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
Tom Bolton	10/29/97	1645

For Lab Use	
Does COC match samples: Y or N Broken container: Y or N Received within holding time: Y or N COC seal intact: Y or N or NA Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

022

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 7360

Date 10 / 30 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Bellley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

ULS #	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9703643)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
9	RD 736	BLBSØ9SØ1	Ø.5'	10/30/97	0815	-063	HA	7.1	X									Relinquished By: K Jamieson	10/30/97 1220
																		Received By:	10/30/97 1220
10	RD 737	OCBS13SØ1	Ø.5'		0930	-064	HA	7.4				X						Relinquished By: K Jamieson	10/30/97 1220
																		Received By:	10/30/97 1220
17	RD 738	OCBS14SØ1	Ø.5'		1000	-065	HA	7.4	X									Relinquished By: K Jamieson	10/30/97 1220
																		Received By:	10/30/97 1220
4	RD 739	LXBSØ4SØ1	Ø.5'		1130	-066	HA	4.5	X									Relinquished By: K Jamieson	10/30/97 1220
																		Received By:	10/30/97 1220
5	RD 740	LXBSØ5SØ1	5.Ø		1215	-067	HA	4.5	X									Relinquished By: K Jamieson	10/30/97 1220
																		Received By:	10/30/97 1220

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	10/30/97	1145

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

023

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD150

Date 10 / 30 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L9703643 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
2 RD 150	BLBSϕ2Sϕ4	16.0	10-30 97	930	~~T~~ T068	B	7.1	X				X	X				Relinquished By: A. San	10-30-97 1330
																	Received By:	10/30/97 1330
3 RD 151	BLBSϕ3Sϕ1	1.0	4	1040	-069	B	7.1	X				X	X				Relinquished By: A. San	10-30-97 4
																	Received By:	10/30/97 1330
3 RD152	BLBSϕ1Sϕ1	5.0	4	1220	-070	B	5.5	X				X	X				Relinquished By: A. San	4
																	Received By:	10/30/97 1330
3 RD153	BLBSϕ1Sϕ2	9.5	4	1225	-071	B	5.5	X				X	X				Relinquished By: A. San	4
																	Received By:	10/30/97 1330
~~RD~~ 3 RD154	BLBSϕ1Sϕ3		4			B		X				X	X				Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
A. San	10-30-97	1330

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

024

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 741
Date 10/30/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	KJ ~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

ULS #	Sample Data: EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L970643	Field Data: Sampling Method	SWMU	Matrix: Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/Time
4	RD 741	DABS04S01	0.5'	10/30/97	1515	-072	HA	5.23	X				1	1			1	Relinquished By: K Jamieson Received By: [signature]	10/30/97 1730 10/30/97 1730
3	RD 742	DABS05S01	0.5'	↓	1545	-073	HA	5.23	X				1	1			1	Relinquished By: K Jamieson Received By: [signature]	10/30/97 1730 10/30/97 1730
2	RD 743	DABS06S01	0.5'	↓	1615	-074	HA	5.23	X					1			1	Relinquished By: K Jamieson Received By: [signature]	10/30/97 1730 10/30/97 1730
2a	RD KJ 744	DASS02S01	0'	↓	1645	-075	G	5.23	X					1			1	Relinquished By: K Jamieson Received By: [signature]	10/30/97 1730 10/30/97 1730
					K Jamieson			10/30/97										Relinquished By: Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	10/30/97	1530

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

025

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 154.
Date 10/30/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

	Sample Data						Field Data		Matrix										
	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9703643	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
4	RD 154	BUBSØ2SØ1	0.5	10-30-97	1355	~~1355e~~ -076	B	5.5	X				X	X				Relinquished By: A. Sam Received By: [signature]	10-30-97 1730 10/30/97 1730
2	RD 155	BUBSØ~~3~~5SØ1	~~6.5~~ 5.5	"	~~1430~~ 1635	-077	B	"	1				1	1				Relinquished By: A. Sam Received By: [signature]	" "
2	RD 156	BUBSØ~~3~~SØ2	9.5	"	1500	-078	B	"	1				1	1		X		Relinquished By: A. Sam Received By: [signature]	" "
1	RD 157	BUBSØ4SØ1	1.5	"	1550	-079	B	"	1				1	1				Relinquished By: A. Sam Received By: [signature]	" "
~~2~~ ANS	~~RD 158~~	~~BUBSØ4SØ2~~		~~"~~			~~B~~	~~"~~	1				1	1				Relinquished By: Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
A. Sam	10-30-97	

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

026

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD159

Date 10 / 31 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ DB Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
ULS					10/31/97													
2 RD 159	B4BS05S02	10.0	10-31 97	820	-080	B	5.5/ AOC	X				X	X				Relinquished By: A. Sam	10/31/97 1340
																	Received By:	10/31/97 1340
1 RD 160	B4BS06S01	4.5	4	850	-081	B	5.5/ AOC	X				X	X				Relinquished By: A. Sam	10/31/97 1340
																	Received By:	10/31/97 1340
~~RD 161~~	~~B4BS07S01~~		4		DB 10/31/97	B		X				X	X				Relinquished By: A. Sam	10/31/97 1340
																	~~Received By:~~	
27 RD 162	CLBSQ6S01	1.0	10/31/ 97	1052	-082	B	4.7	X				X					Relinquished By:	10/31/97 1340
																	Received By:	10/31/97 1340
27 RD 163	CLBSQ6S02	5.0		1100	-083	B	4.7	X				X			X		Relinquished By:	10/31/97 1340
																	Received By:	10/31/97 1340

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	10/31/97	

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

027

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD164
Date 10/31/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9710364[3]	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
27	RD164 CLBSQ65Φ4	10'	10/31/97	1115	-084	B	4.7	X				X					Relinquished By:	10/31/97 1340
																	Received By:	10/31/97 1340
27	RD165 CLBSQ65Φ3 (*)	7.0'	↓	1115	-085	B	4.7	X				X					Relinquished By:	10/31/97 1340
																	Received By:	10/31/97 1340
					D&B 10/31/97												Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day
Sampler's Signature	Date: 10/31/97 Time: 1200

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

(*) ANALYZE Sample From Black Soil @ Top of Sleeve

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

020

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 745
Date 10/31/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	KJ ~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

ULS #	Sample Data: EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9710764	Field Data: Sampling Method	SWMU	Matrix: Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
20	RD 745	DABSØ7SØ1	Ø.5'	10/31/97	0815	-086	HA	5.23	X					1			1	Relinquished By: KJ	10/31/97 1625
																		Received By:	10/31/97 1625
19	RD 747	DABSØ9SØ1	Ø.5'	"	0855	-087	HA	5.23	X					1			1	Relinquished By: KJ	10/31/97 1625
																		Received By:	10/31/97 1625
14	RD 750	SPBSØ3SØ1	Ø.5'	"	1035	-088	HA	A. II	X				1	1			1	Relinquished By: KJ	10/31/97 1625
																		Received By:	10/31/97 1625
17	RD 751	SPBSØ4SØ1	Ø.5'	"	1115	-089	HA	A. II	X				1	1			1	Relinquished By: KJ	10/31/97 1625
																		Received By:	10/31/97 1625
18	RD 754	SPBSØ7SØ1	Ø.5'	"	1410	-090	HA	A. II	X				1	1			1	Relinquished By: KJ	10/31/97 1625
																		Received By:	10/31/97 1625

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: CP 9728	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	10/31/97	0830

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

029

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD166
Date 10/31/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	9703643 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
2	RD166 SPBSΦBSΦ1	1.Φ	10/31/97	1415	-091	X B	AREA II ADC	X				X	X				Relinquished By:	10/31/97 1715
																	Received By:	10/31/97 1715
1	RD167 SPBSΦ9SΦ1	Φ.5		1430	-092	B		X				X	X				Relinquished By:	10/31/97 1715
																	Received By:	10/31/97 1715
1	RD168 SPBSΦ9SΦ2	5.Φ		1440	-093	B		X				X	X				Relinquished By:	10/31/97 1715
																	Received By:	10/31/97 1715
2Φ	RD169 SPBS1ΦSΦ1	Φ.5		1515	-094	B		X					X				Relinquished By:	10/31/97 1715
																	Received By:	10/31/97 1715
					2Φ												Relinquished By:	
					10/31/97												Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	10/31/97	1625

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

030

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD170

Date 10 / 31 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ pinclosing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9703643	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD170	PEBS01S01	0.5'	10-31-97	1650	-095	G		X					X				Relinquished By: A. Sa[illegible]	10-31-97 1715
																	Received By: [signature]	10/31/97 1715
RD171	PEBS02S01	0.5'	"	"	-096	G		X				X					Relinquished By: A. Sa[illegible]	
																	Received By: [signature]	
					AAS 10-31-97												Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: TAT: 14 - day

Sampler's Signature	Date	Time
[signature]	10/31/97	1625

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

031

Columbia Analytical Services inc.

Thursday, February 19, 1998

Anne Freed
Ogden
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9703679

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on 10/28 - 29/97.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296, expiration August 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Leo Raab
Project Chemist

Stuart Sigman
Quality Assurance Chemist

xc:
Elizabeth Wessling
Ogden
550 S. Wadsworth Blvd., Suite 500
Lakewood, CO 80226

001

CAS CSR #L9703679

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Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9703679
Project:	Rocketdyne SSFL 313150002	**Date Received:**	10/28-29/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Sample Delivery Group Assignment" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses. Any tests marked under the grey-shaded parameters to the far right of this form were sub-contracted to the following laboratories:

Formaldehyde	Columbia Analytical Services, Kelso, WA.
Dioxins/Furans/EPA 8290	Triangle Lab, Durham, NC.

Subcontracted test results, case narratives and data packages are included as an appendix to this report.

The following changes were requested via fax from Lisa Arrasmith on 10/30/97:
Add on 8270 SIM, Formaldehyde, Aluminum and Boron to RF 721. Add on 8270 SIM and Formaldehyde to RF722. Fluoride, Anions and pH were cancelled on RF721 & RF722.

MS/MSD analysis for 8080-PCB was performed on sample RF678 from SDG L9703578.
Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

The following difficulties were experienced during analysis of this batch:
Surrogates for 8270SIM for RF723DL, RF728DL, RF723DLDL & RF726DLDL were not reportable due to sample matrix requiring dilution. Surrogate for 8270SIM for RF126DL was slightly above range for one of three surrogates.

Data Qualifier Flags are: U = Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: _____ Date: 2/19/98

SAMPLE DELIVERY GROUP ASSIGNMENT

CLIENT: **OGDEN**
PROJECT MANAGER: **DIXIE HAMBRICK**
PROJECT NAME: **ROCKETDYNE SSFL**
PROJECT NUMBER: **313150002**

SDG NUMBER: **L9703679**
LABORATORY: COLUMBIA ANALYTICAL SRV.
SDG CLOSING DATE: 10/30/97 * See Note
SUMMARY / FINAL DUE: 11/13/97 / 11/26/97

#	SAMPLE NAME	SAMPLE DATE	RECEIVED DATE	MATRIX	MS/MSD or MS/DUP	MOISTURE	8260 VOC	8015OG TEPH	8270 SIM	8270 R	METALS (CAM-17)	METALS (CAM-17 + AL + B)	7196 HEXAVALENT CHROMIUM	340.2 FLUORIDE	300.0M ANIONS (CL NO3 NO2)	9040 / 9045 PH	8080 PCB	ICP AL & B			ASTM D19 FORMALDEHYDE	PERCHLORATE	TRIBUTYLTIN	8290 DIOXIN/FURAN	HYDRAZINES	8330 EXPLOSIVES
1	**RF713**	10/28/97	10/28/97	SOLID		X					X					X										
2	**RF714**	10/28/97	10/28/97	SOLID		X					X					X										
3	**RF715**	10/28/97	10/28/97	SOLID		X					X			X	X	X								X		
4	**RF716**	10/28/97	10/28/97	SOLID		X							X				X									
5	**RF717**	10/28/97	10/28/97	SOLID		X					X		X			X										
6	**RF718**	10/28/97	10/28/97	SOLID		X					X		X			X										
7	**RF719**	10/28/97	10/28/97	SOLID		X					X		X			X										
8	**RF720**	10/28/97	10/28/97	SOLID		X					X		X			X										
9	**RF721**	10/28/97	10/28/97	SOLID		X			X					C	C	C		X			X					
10	**RF722**	10/28/97	10/28/97	SOLID		X			X					C	C	C					X					
11	**RF723**	10/28/97	10/28/97	SOLID		X			X									X			X					
12	**RF124**	10/28/97	10/28/97	SOLID		X			X																	
13	**RF126**	10/28/97	10/28/97	SOLID		X			X																	
14	**RF127**	10/28/97	10/28/97	SOLID		X			X																	
15	**RF128**	10/28/97	10/28/97	SOLID		X			X																	
16	**RF726**	10/29/97	10/29/97	SOLID		X			X												X					
17	**RF728**	10/29/97	10/29/97	SOLID		X			X		X			X	X	X										
18	**RF729**	10/29/97	10/29/97	SOLID		X											X									
19	**RF731**	10/29/97	10/29/97	SOLID		X					X					X										
20	**RF732**	10/29/97	10/29/97	SOLID		X					X					X										

cancelled & added to RF721 & RF722 10/30

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9703679

Chain of Custody

Control Number: COC RF 713

Date 10 / 28 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:			
QC Level:	Level4	TAT:	35 - Day

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	H_2SO_4,pH<2 4°C	4°C	HNO_3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C

ULS # 9451 9-1-3 2-29-30 4EA

Sample Data						Matrix				8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH	Al, B	SWMU	RCRA		SAMPLING METHOD	Extra Volume MS/MSD	HOLD	Total # of Bottles
Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Soil	Water	Product	SLUDGE																					
RF 713	NCSSØ1SØ1	Ø	10/28/97	0840	1	X										1					1		7.8			G			1
RF 714	NCSSØ2SØ1	Ø		0840	2	X										1					1		7.8			G			1
RF 715	LFSSØ1SØ3	Ø		0955	3				X				1			1		1	1	1	1		4.12			G		~~*~~	1
RF 716	ILSSØ2SØ2 KJ	Ø		~~H30~~ KJ	4	X KJ			X							~~1~~	1				~~1~~ KJ		4.3	1		G			1
	3501			1400	5							KJ																	
RF 717	APSSØ1SØ1	Ø		1500	5	X										1	1				1		5.6			G			1
RF 718	APSSØ2SØ1	Ø		1505	6	X										1	1				1		5.6			G			1
RF 719	APSSØ3SØ1	Ø		1505	7	X										1	1				1		5.6			G			1
RF 720	APSSØ4SØ1	Ø		1505	8	X										1	1				1		5.6			G			1
RF 721	CLSSØ1SØ1	Ø		~~1600~~ 1615 KJ	9	X								1 KJ				1	1	1	1		4.7			G			1
RF 722	CLSSØ2SØ1	Ø		~~1610~~ 1625 KJ	10	X								1 KJ				1	1	1	1		4.7			G			1
RF 723	CLSSØ3SØ1	Ø	↓	1610	11	X						1		1								1	4.7			G			1

Samplers Signature	K.M. Jamieson	Date	10/28/97
Relinquished By:	K.M. Jamieson	Date	10/28/97
Received By:		Date	10/28/97
Relinquished By:		Date	10/28/97
Received By (LAB):		Date	10/28/97

	Time
Samplers Signature	0850
Relinquished By:	1820
Received By:	1820
Relinquished By:	1855
Received By (LAB):	1855

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

*~~HOLD DIOXIN TEST UNTIL OGDEN AUTHORITIES ORD.~~ KJ

Do COC match samples: (Y) or N

Broken container: Y or (N)

Received within holding time: (Y) or N

COC seal intact: Y or N (NA)

Any other problems: Y or (N)

If any YES, Ogden contacted: Y or N

Date contacted: __/__/__

Temperature °C 3

3°/Intact

REV: 1

L9703679

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RF124

Date 10/28/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal

Shipment Method: Federal Express

Comment:

* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:

QC Level: Level4 TAT: 35 - Day

Preservatives: HCL, pH<2 4°C; HCL, pH<2 4°C; 4°C; 4°C; H2SO4,pH<2 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

Sample Data

Sample ID	Description (for Ogden use only)		Date Collected	Time Collected	Lab ID	Matrix: Soil	Matrix: Water	Matrix: Product	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RF124	BABS05S01	1.0	10-28-97	1025	12	X					X										B			
RF126	BABS05S02	5.5	"	1040	13	X					X										B			
RF127	BABS05D02	5.5	"	1040	14	X					X										B			
RF128	BABS05S03	10.0	"	1050	15	X					X										B			

AAS 10-28-97

	Date	Time
Samplers Signature: A. Sm	10-28-97	1445
Relinquished By: A. Sm	10-28-97	1445
Received By: [signature]	10/28/97	1445
Relinquished By: [signature]	10/28/97	1855
Received By (LAB): Christelle Bragg	10/28/97	1855

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N NA

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: __/__/__

Temperature °C 3

3° / Intact

REV: 1

006

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9703679

Chain of Custody

Control Number: COC RF 7216

Date 10 / 29 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To: KJ ~~Mark Deffley~~ PURCHASING	
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:		
QC Level: Level4	TAT: 35 - Day	

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	H_2SO_4,pH<2 4°C	4°C	HNO_3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C

Sample Data						Matrix				8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH		PCBs			SWMU SAMPLING METHOD	Extra Volume MS/MSD	HOLD	Total # of Bottles
Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Soil	Water	Product	SLUDGE																				
RF 7216	AFSS01S01	0	10/29/97	0810	16	X						1		1												4.9	G			1
RF728	OCBS10S01	0.5		1135	17				X			1				1		1	1	1	1					7.4	HA			1
RF729	OCBS11S01	0.5		1215	18	X															10 KJ		1			7.4	HA			1
RF731	BLBS04S01	0.5		1415	19	X										1					1					7.1				1
RF732	BLBS05S01	0.5		1430	20	X										1					1									1
RF733	BLBS06S01	0.5		1500		X										1					1									1
RF734	BLBS07S01	0.5		~~1600~~ 1600	KJ	X										1					1									1
RF735	BLBS08S01	0.5	↓	~~1600~~ 1600		X										1					1					↓	↓			1

K Jamison 10/29/97

Samplers Signature: K Jamison	Date: 10/29/97	Time: 0820
Relinquished By: K Jamison	Date: 10/29/97	Time: 1745
Received By:	Date: 10/29/97	Time: 1745
Relinquished By:	Date: 10/29/97	Time: 1835
Received By (LAB):	Date: 10/29/97	Time: 1835

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC seal intact: Y or N (NA)
Any other problems: Y or (N)
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 14

REV: 1

OGDEN *ENVIRONMENTAL AND ENERGY SERVICE*

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Mr. Leo Raab/Columbia Analytical Services
Fax No.: (818) 587-5555

From: Lisa L. Arrasmith *sign:* Lisa L Arrasmith

Date: 10/30/97 There is 1 Page to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]	
RF702	RF702	10/27/97	S, M & pH	S, M+ & pH	L9703698-19
RF702	RF703	10/27/97	S, M+ & pH	HOLD	–
RF702	RF704	10/27/97	S, M+ & pH	HOLD	–
RF713	RF721	10/28/97	Fl, A & pH	S, F, Al & B	L9703679-9
RF713	RF722	10/28/97	Fl, A & pH	S & F	-10

[a] S= 8270 SIM, semi-volatile organics
M= Metals
M+= Metals + Aluminum (Al) & Boron (B)
Fl= 340.2, Fluoride
F= 3500, Formaldehyde
A= Anions

The reason for these changes is:

Incorrectly marked on COC form	
Lack of sample volume	
Ogden office personnel require this change	X
Other: Containers mislabeled __	

Thank you.

TRIANGLE LABS

CASE NARRATIVE

Analysis of Samples for the Presence of

Polychlorinated Dibenzo-*p*-Dioxins and Dibenzofurans by

High-Resolution Chromatography / High-Resolution Mass Spectrometry

Method 8290 Rev. 0 (9/94)

Date:	November 13, 1997
Client ID:	Columbia Analytical Services
P.O. Number:	
TLI Project Number:	43820

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Rev. 05/08/97

Triangle Laboratories, Inc.
801 Capitola Drive
Durham, NC 27713-4411
919-544-5729
P.O. Box 13485
Research Triangle Park, NC 27709-3485
Fax # 919-544-5491

Overview

The sample and any associated QC samples were extracted and analyzed according to procedures described in EPA Method 8290 Rev. 0 (9/94). Any particular difficulties encountered during the sample handling by Triangle Laboratories will be discussed in the QC Remarks section below. Results reported relate only to the items tested.

Quality Control Samples

A laboratory method blank, identified as the TLI Blank, was prepared along with the sample.

Laboratory control spike (LCS) and laboratory control spike duplicate (LCSD) samples were extracted and analyzed along with the samples. A report summarizing the analyte recoveries and relative percent differences for these samples is included in the data package.

Quality Control Remarks

This release of this particular set of Columbia Analytical Services analytical data by Triangle Laboratories was authorized by the Quality Control Chemist who has reviewed each sample data package individually following a series of inspections/reviews. When applicable, general deviations from acceptable QC requirements are identified below and comments are made on the effect of these deviations upon the validity and reliability of the results. Specific QC issues associated with this particular project are:

Sample receipt: One sludge sample was received from Columbia Analytical Services at 4 °C in good condition on October 30, 1997 and was stored in a refrigerator at 4 °C. Additional sample was received from Columbia Analytical Services at 4 °C in good condition on November 5, 1997 and was stored in a refrigerator at 4 °C.

Sample Preparation Laboratory: None

Mass Spectrometry: None

Data Review: The additional sample was composited with the original sample. Then, another percent moisture determination was performed prior to extraction.

Other Comments: No analytes were detected in the method blank.

Average continuing calibration (Concal) response factors are used instead of average initial calibration (Ical) response factors for all analyte and labeled standard calculations in sample(s) with a beginning and ending calibration listed on the quantitation report. Average response factors are used when the ending Concal meets Method 8290 ending Concal requirements but not beginning Concal requirements. The average response factor is an average of the factors from the beginning and ending Concals.

Sample Calculations:

Analyte Concentration

The concentration or amount of any analyte is calculated using the following expression.

$$C_{(\sigma)} = \frac{A_\sigma * Q_\beta}{A_\beta * RRF_{(\sigma)} * W}$$

Where:

$C_{(\sigma)}$ is the concentration or amount of a given analyte,

A_σ is the integrated current for the characteristic ions of the analyte,

A_β is the integrated current of the characteristic ions of the corresponding internal standard,

Q_β represents the amount of internal standard added to the sample before extraction,

$RRF_{(\sigma)}$ is the mean analyte relative response factor from the initial calibration (ICal) and,

W is the sample weight or volume

Detection Limits

The detection limit reported for a target analyte that is not detected or presents an analyte response that is less than 2.5 times the background level is calculated by using the following expression. The area of the analyte is replaced by the noise level measured in a region of the chromatogram clear of genuine GC signals multiplied by an empirically determined factor. The detection limits represent the maximum possible concentration of a target analyte that could be present without being detected.

$$DL_{(\sigma)} = \frac{2 * 2.5 * (F * H) * Q_{\beta}}{A_{\beta} * RRF_{(\sigma)} * W}$$

Where:

$DL_{(\sigma)}$ is the estimated detection limit for a target analyte,

2.5 is the minimum response required for a GC signal,

F is an empirical number that approximates the area to height ratio for a GC signal. This number is 3.7 for both the DB-5 GC column and the DB-225 GC column,

H is the height of the noise

A_{β} is the integrated current of the characteristic ions of the corresponding internal standard,

Q_{β} represents the amount of internal standard added to the sample before extraction,

$RRF_{(\sigma)}$ is the mean analyte relative response factor from the initial calibration (ICal) and,

W is the sample weight or volume

Data Flags

In order to assist with data interpretation, data qualifier flags are used on the final reports. Please note that all data qualifier flags are subjective and are applied as consistently as possible. Each flag has been reviewed by two independent Chemists and the impact of the data qualifier flag on the quality of the data discussed above. The most commonly used flags are:

A **'B'** flag is used to indicate that an analyte has been detected in the laboratory method blank as well as in an associated field sample. The 'B' flag will be used only when the concentration of analyte found in the sample is less than 20 times that found in the associated blank. This flag denotes possible contribution of background laboratory contamination to the concentration or amount of that analyte detected in the field sample. Under Triangle Laboratories guidelines, a laboratory blank is acceptable if the tetra- through hepta-CDD/CDF levels are all below the target detection limits (TDLS) or if the contamination levels are less than 5% of the levels detected in the associated field samples.

If these conditions are satisfied or if the blank is unable to be reextracted, the interpretation of the contamination levels relative to the samples should be as follows: 1) analyte quantitations should be considered valid if the level of blank contamination is less than five percent of the level detected in the field sample, 2) analyte quantitations should be considered estimated if the analyte level in the sample is five to twenty times the level of the analyte in the blank, or 3) analytes whose level in a sample is the same as or less than five times the level detected in the associated blank should be considered present likely due to laboratory contamination and not native to the sample.

An **'E'** flag is used to indicate that an PCDF peak has eluted at the same time as the associated diphenyl ether (DPE) and that the DPE peak intensity is ten percent or more of the PCDF peak intensity. Total PCDF values are flagged 'E' if the total DPE contribution to the total PCDF value is greater than ten percent. All PCDF peaks that are significantly influenced by the presence of DPE peaks are quantitated with EMPC values, regardless of the isotopic abundance ratio. These EMPC values are most likely overestimated due to the DPE contribution to the peak area.

An **'I'** flag is used to indicate labeled standards have been interfered with on the GC column by coeluting, interferent peaks. The interference may have caused the standard's area to be overestimated. All quantitations relative to this standard, therefore, may be underestimated.

A **'PR'** flag is used to indicate that a GC peak is poorly resolved. This resolution problem may be seen as two closely eluting peaks without a reasonable valley between the peak tops, overly broad peaks, or peaks whose shapes vary greatly from a normal distribution. The concentrations or amounts reported for such peaks are most likely overestimated.

A **'Q'** flag is used to indicate the presence of QC ion instabilities caused by quantitative interferences. Affected analytes may be overestimated or underestimated as a result of this interference. A peak is flagged 'Q' only if it is affected by a QC ion deviation greater than 20% full scale as determined relative to the labeled standard against which it is quantitated. Total PCDF/PCDF quantitations will be flagged 'Q' if the interferences affect ten percent or more of the total PCDD/PCDF peak areas.

An **'RO'** flag is used to indicate that a labeled standard has an ion abundance ratio that is outside of the acceptable QC limits, most likely due to a coeluting interference. This may have caused the percent recovery of the standard to be overestimated. All quantitations versus this standard, therefore, may be underestimated.

A 'U' flag is used to indicate that a specific (2,3,7,8-substituted) isomer cannot be resolved from a large, coeluting interferent GC peak. The specific isomer is reported as not detected as a valid concentration/amount cannot be determined. The calculated detection limit, therefore, should be considered an underestimated value.

A 'V' flag is used to indicate that, although the percent recovery of a labeled standard may be below a specific QC limit, the signal-to-noise ratio of the peak is greater than ten-to-one. The standard is considered reliably quantifiable. All quantitations derived from the standard are considered valid as well.

By our interpretation, the analytical data in this project are valid based on the guidelines of EPA Method 8290 Rev. 0 (9/94). Any specific QC concerns or problems have been discussed in the QC Remarks section of this case narrative with emphasis on their effect on the data. Should Columbia Analytical Services have any questions or comments regarding this data package, please feel free to contact our Project Scientist, Amy Boehm, at 919/544-5729 ext. 268.

For Triangle Laboratories, Inc.,

Report Preparation

Craig Myrick

Craig Myrick
Report Preparation Chemist

Quality Control

William D. Hill

William D. Hill
Report Preparation Chemist

The total number of pages in the data package is : ~~139~~ 444
10/21/98

REVISED PAGE: 6
10/21/98

TRIANGLE LABS

CASE NARRATIVE

Analysis of Samples for the Presence of

Polychlorinated Dibenzo-*p*-Dioxins and Dibenzofurans by

High-Resolution Chromatography / High-Resolution Mass Spectrometry

Method 8290 Rev. 0 (9/94)

Date:	November 13, 1997
Client ID:	Columbia Analytical Services
P.O. Number:	
TLI Project Number:	43820

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Triangle Laboratories, Inc.
801 Capitola Drive
Durham, NC 27713-4411
919-544-5729
P.O. Box 13485
Research Triangle Park, NC 27709-3485
Fax # 919-544-5491

Overview

The sample and any associated QC samples were extracted and analyzed according to procedures described in EPA Method 8290 Rev. 0 (9/94). Any particular difficulties encountered during the sample handling by Triangle Laboratories will be discussed in the QC Remarks section below. Results reported relate only to the items tested.

Quality Control Samples

A laboratory method blank, identified as the TLI Blank, was prepared along with the sample.

Laboratory control spike (LCS) and laboratory control spike duplicate (LCSD) samples were extracted and analyzed along with the samples. A report summarizing the analyte recoveries and relative percent differences for these samples is included in the data package.

Quality Control Remarks

This release of this particular set of Columbia Analytical Services analytical data by Triangle Laboratories was authorized by the Quality Control Chemist who has reviewed each sample data package individually following a series of inspections/reviews. When applicable, general deviations from acceptable QC requirements are identified below and comments are made on the effect of these deviations upon the validity and reliability of the results. Specific QC issues associated with this particular project are:

Sample receipt: One sludge sample was received from Columbia Analytical Services at 4 °C in good condition on October 30, 1997 and was stored in a refrigerator at 4 °C. Additional sample was received from Columbia Analytical Services at 4 °C in good condition on November 5, 1997 and was stored in a refrigerator at 4 °C.

Sample Preparation Laboratory: None

Mass Spectrometry: None

Data Review: The additional sample was composited with the original sample. Then, another percent moisture determination was performed prior to extraction.

Other Comments: No analytes were detected in the method blank.

Average continuing calibration (Concal) response factors are used instead of average initial calibration (Ical) response factors for all analyte and labeled standard calculations in sample(s) with a beginning and ending calibration listed on the quantitation report. Average response factors are used when the ending Concal meets Method 8290 ending Concal requirements but not beginning Concal requirements. The average response factor is an average of the factors from the beginning and ending Concals.

Sample Calculations:

Analyte Concentration

The concentration or amount of any analyte is calculated using the following expression.

$$C_{(\sigma)} = \frac{A_\sigma * Q_\beta}{A_\beta * RRF_{(\sigma)} * W}$$

Where:

$C_{(\sigma)}$ is the concentration or amount of a given analyte,

A_σ is the integrated current for the characteristic ions of the analyte,

A_β is the integrated current of the characteristic ions of the corresponding internal standard,

Q_β represents the amount of internal standard added to the sample before extraction,

$RRF_{(\sigma)}$ is the mean analyte relative response factor from the initial calibration (ICal) and,

W is the sample weight or volume

Detection Limits

The detection limit reported for a target analyte that is not detected or presents an analyte response that is less than 2.5 times the background level is calculated by using the following expression. The area of the analyte is replaced by the noise level measured in a region of the chromatogram clear of genuine GC signals multiplied by an empirically determined factor. The detection limits represent the maximum possible concentration of a target analyte that could be present without being detected.

$$DL_{(\sigma)} = \frac{2 * 2.5 * (F * H) * Q_{\beta}}{A_{\beta} * RRF_{(\sigma)} * W}$$

Where:

$DL_{(\sigma)}$ is the estimated detection limit for a target analyte,

2.5 is the minimum response required for a GC signal,

F is an empirical number that approximates the area to height ratio for a GC signal. This number is 3.7 for both the DB-5 GC column and the DB-225 GC column,

H is the height of the noise

A_{β} is the integrated current of the characteristic ions of the corresponding internal standard,

Q_{β} represents the amount of internal standard added to the sample before extraction,

$RRF_{(\sigma)}$ is the mean analyte relative response factor from the initial calibration (ICal) and,

W is the sample weight or volume

Data Flags

In order to assist with data interpretation, data qualifier flags are used on the final reports. Please note that all data qualifier flags are subjective and are applied as consistently as possible. Each flag has been reviewed by two independent Chemists and the impact of the data qualifier flag on the quality of the data discussed above. The most commonly used flags are:

A **'B'** flag is used to indicate that an analyte has been detected in the laboratory method blank as well as in an associated field sample. The 'B' flag will be used only when the concentration of analyte found in the sample is less than 20 times that found in the associated blank. This flag denotes possible contribution of background laboratory contamination to the concentration or amount of that analyte detected in the field sample. Under Triangle Laboratories guidelines, a laboratory blank is acceptable if the tetra- through hepta-CDD/CDF levels are all below the target detection limits (TDLS) or if the contamination levels are less than 5% of the levels detected in the associated field samples.

If these conditions are satisfied or if the blank is unable to be reextracted, the interpretation of the contamination levels relative to the samples should be as follows: 1) analyte quantitations should be considered valid if the level of blank contamination is less than five percent of the level detected in the field sample, 2) analyte quantitations should be considered estimated if the analyte level in the sample is five to twenty times the level of the analyte in the blank, or 3) analytes whose level in a sample is the same as or less than five times the level detected in the associated blank should be considered present likely due to laboratory contamination and not native to the sample.

An **'E'** flag is used to indicate that an PCDF peak has eluted at the same time as the associated diphenyl ether (DPE) and that the DPE peak intensity is ten percent or more of the PCDF peak intensity. Total PCDF values are flagged 'E' if the total DPE contribution to the total PCDF value is greater than ten percent. All PCDF peaks that are significantly influenced by the presence of DPE peaks are quantitated with EMPC values, regardless of the isotopic abundance ratio. These EMPC values are most likely overestimated due to the DPE contribution to the peak area.

An **'I'** flag is used to indicate labeled standards have been interfered with on the GC column by coeluting, interferent peaks. The interference may have caused the standard's area to be overestimated. All quantitations relative to this standard, therefore, may be underestimated.

A **'PR'** flag is used to indicate that a GC peak is poorly resolved. This resolution problem may be seen as two closely eluting peaks without a reasonable valley between the peak tops, overly broad peaks, or peaks whose shapes vary greatly from a normal distribution. The concentrations or amounts reported for such peaks are most likely overestimated.

A **'Q'** flag is used to indicate the presence of QC ion instabilities caused by quantitative interferences. Affected analytes may be overestimated or underestimated as a result of this interference. A peak is flagged 'Q' only if it is affected by a QC ion deviation greater than 20% full scale as determined relative to the labeled standard against which it is quantitated. Total PCDF/PCDF quantitations will be flagged 'Q' if the interferences affect ten percent or more of the total PCDD/PCDF peak areas.

An **'RO'** flag is used to indicate that a labeled standard has an ion abundance ratio that is outside of the acceptable QC limits, most likely due to a coeluting interference. This may have caused the percent recovery of the standard to be overestimated. All quantitations versus this standard, therefore, may be underestimated.

A **'U'** flag is used to indicate that a specific (2,3,7,8-substituted) isomer cannot be resolved from a large, coeluting interferent GC peak. The specific isomer is reported as not detected as a valid concentration/amount cannot be determined. The calculated detection limit, therefore, should be considered an underestimated value.

A **'V'** flag is used to indicate that, although the percent recovery of a labeled standard may be below a specific QC limit, the signal-to-noise ratio of the peak is greater than ten-to-one. The standard is considered reliably quantifiable. All quantitations derived from the standard are considered valid as well.

By our interpretation, the analytical data in this project are valid based on the guidelines of EPA Method 8290 Rev. 0 (9/94). Any specific QC concerns or problems have been discussed in the QC Remarks section of this case narrative with emphasis on their effect on the data. Should Columbia Analytical Services have any questions or comments regarding this data package, please feel free to contact our Project Scientist, Amy Boehm, at 919/544-5729 ext. 268.

For Triangle Laboratories, Inc.,

Report Preparation

Craig Myrick

Craig Myrick
Report Preparation Chemist

Quality Control

William D. Hill
Report Preparation Chemist

The total number of pages in the data package is : 139 444
10/2/98

REVISED PAGE: 6
10/2/98

Columbia Analytical Services inc.

COPY

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

6925 Canoga Avenue • Canoga Park, CA 91303 • (818) 587-5550 • Fax (818) 587-5555

DATE _____ PAGE 1 OF 1

PROJECT NAME Rocketdyne # ~~D~~ 313150002

PROJECT MANAGER LEO RAAB

COMPANY/ADDRESS COLUMBIA ANALYTICAL

PHONE (818) 587 5550

SAMPLERS SIGNATURE _____

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH Gas/BTEX 8015/8020/602	TPH/8015 Modified Diesel ☐ FC ☐ Gasoline ☐	BTEX 602/8020	Total Petroleum Hydrocarbons EPA 418.1	Halogenated Volatiles 601/8010	Volatile Organics GC/MS 624/8240/8260	Base Neutral Acid Organic GC/MS 625/8270	CAM Metals 6010/7000	DIOXINS							SDG ~~REMARKS~~
RF 715	10/28	0955		SL406E	1									X							L9703679

RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature: [signature]
Printed Name: A. BRAGASIN	Printed Name: Bill Hurst
Firm: CAS	Firm: [signature]
Date/Time: 10/29/97 1500	Date/Time: 10/30/97

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr. ___ 5 day

___ Standard

___ Other (Specify)

___ Provide Verbal Preliminary Results 11/7

Requested Report Date ~~11/7~~ as

REPORT REQUIREMENTS

___ I. Routine Report

___ II Report (includes DUP.MS. MSD, as required, may be charged as samples)

X III Data Validation Report (includes All Raw Data)

___ RWQCB

INVOICE INFORMATION:

P.O.# _____

Bill To _____

SAMPLE RECEIPT:

Shipping VIA: _____

Shipping #: _____

Condition: _____

Lab No: _____

RELINQUISHED BY:	RECEIVED BY:
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

PLEASE REFERENCE SDG ON REPORT

Columbia Analytical Services inc.

Bd 11/05/97

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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

6925 Canoga Avenue • Canoga Park, CA 91303 • (818) 587-5550 • Fax (818) 587-5555

DATE _____ PAGE 1 OF 10

PROJECT NAME Rocketdyne # 31315 0002

PROJECT MANAGER LEO RAAB

COMPANY/ADDRESS COLUMBIA ANALYTICAL

PHONE _____

SAMPLERS SIGNATURE _____

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH Gas/BTEX 8015/8020/602	TPH/8015 Modified Diesel ⌉ FC ⌉ Gasoline ⌉	BTEX 602/8020	Total Petroleum Hydrocarbons EPA 418.1	Halogenated Volatiles 601/8010	Volatile Organics GC/MS 624/8240/8260	Base Neutral Acid Organic GC/MS 625/8270	CAM Metals 6010/7000	DIOXINS *							SDG ~~REMARKS~~
RF 715	10/28/97	0955		SLUDGE	1																L9703679-3

RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature: [signature]
Printed Name: A. BRAGASIN	Printed Name: Bill Hurst
Firm: CAS	Firm: TVI
Date/Time: 11/4/97 1500	Date/Time: 11/05/97 10:00

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr. ___ 5 day

___ Standard

___ Other (Specify)

___ Provide Verbal Preliminary Results

Requested Report Date _____

REPORT REQUIREMENTS

___ I. Routine Report

___ II. Report (includes DUP.MS. MSD, as required, may be charged as samples)

X III. Data Validation Report (includes All Raw Data)

___ RWQCB

INVOICE INFORMATION:

P.O.# _____

Bill To _____

SAMPLE RECEIPT:

Shipping VIA: _____

Shipping #. _____

Condition: _____

Lab No: _____

RELINQUISHED BY:	RECEIVED BY:
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

ADDITIONAL SAMPLES AS REQUIRED/REQUESTED

By Amy Boehm.

ORIGINAL JOB SUBMITTED 10/29 to be received 10/30

Columbia Analytical Services INC.

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

6925 Canoga Avenue • Canoga Park, CA 91303 • (818) 587-5550 • Fax (818) 587-5555

DATE _____ PAGE 1 OF 1 14

PROJECT NAME Rocketdyne # 31315000 2

PROJECT MANAGER LEO RAAB

COMPANY/ADDRESS COLUMBIA ANALYTICAL

PHONE _____

SAMPLERS SIGNATURE _____

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH Gas/BTEX 8015/8020/602	TPH/8015 Modified Diesel ⊐ FC ⊐ Gasoline ⊐	BTEX 602/8020	Total Petroleum Hydrocarbons EPA 418.1	Halogenated Volatiles 601/8010	Volatile Organics GC/MS 624/8240/8260	Base Neutral Acid Organic GC/MS 625/8270	CAM Metals 6010/7000	8290 DIOXINS							SDG ~~REMARKS~~
RF 757	11/3	0930		Soil	1									X							L9703734

RELINQUISHED BY:	RECEIVED BY:
Signature: Cristobal Bragasin	Signature: Bill Hurst
Printed Name: A. BRAGASIN	Printed Name: Bill Hurst
Firm: CAS	Firm: TG
Date/Time: 11/4/97 1500	Date/Time: 11/05/97/1000

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr. ___ 5 day

___ Standard

___ Other (Specify)

___ Provide Verbal Preliminary Results

Requested Report Date 11/11

REPORT REQUIREMENTS

___ I. Routine Report

___ II. Report (includes DUP.MS MSD, as required, may be charged as samples)

X III. Data Validation Report (includes All Raw Data)

___ RWQCB

INVOICE INFORMATION:

P.O.# _____

Bill To _____

SAMPLE RECEIPT:

Shipping VIA: _____

Shipping #: _____

Condition: _____

Lab No: _____

RELINQUISHED BY:	RECEIVED BY:
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

* Report in Dry Weight

Please reference SDG #

TRIANGLE LABS

CASE NARRATIVE

Analysis of Samples for the Presence of

Polychlorinated Dibenzo-*p*-Dioxins by

High-Resolution Chromatography / High-Resolution Mass Spectrometry

Method 8290 Rev. 0 (9/94)

Date:	December 23, 1997
Client ID:	Columbia Analytical Services
P.O. Number:	
TLI Project Number:	44280D

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Rev. 11/19/97

Triangle Laboratories, Inc.
801 Capitola Drive
Durham, NC 27713-4411
919-544-5729
P.O. Box 13485
Research Triangle Park, NC 27709-3485
Fax # 919-544-5491

Overview

The sample and associated QC samples were extracted and analyzed according to procedures described in EPA Method 8290 Rev. 0 (9/94). Any particular difficulties encountered during the sample handling by Triangle Laboratories will be discussed in the QC Remarks section below. This report contains results from only the 8290 dioxin/furan analysis of the soil sample RF715.

Quality Control Samples

A laboratory method blank, identified as the TLI Blank, was prepared along with the sample.

A laboratory control spike (LCS) and laboratory control spike duplicate (LCSD) were prepared along with the samples in this project. A report summarizing the results from these QC samples is included in the data package.

Quality Control Remarks

This release of this particular set of Columbia Analytical Services analytical data by Triangle Laboratories was authorized by the Quality Control Chemist who has reviewed each sample data package following a series of inspections/reviews. When applicable, general deviations from acceptable QC requirements are identified below and comments are made on the effect of these deviations upon the validity and reliability of the results. Specific QC issues associated with this particular project are:

Sample receipt: Seven soil samples were received from Columbia Analytical Services at 4 °C in good condition on December 11, 1997 and stored in a refrigerator at 4 °C. Only results for sample RF715 are included in this data package.

Sample Preparation Laboratory: A new aliquot of sample RF715 was submitted for re-extraction using a one gram sample aliquot because 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8,-HpCDF, OCDF, and OCDD analytes in sample were above the calibration range in the initial aliquot. Only 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8,9-HpCDF, OCDF, OCDD, total HpCDF, and total HpCDD are reported for sample RF715.

Mass Spectrometry: None

Data Review: The re-extracted sample results of sample RF715 do not match the results of the original analysis with RPDs of 154% for 1,2,3,4,6,7,8-HpCDD, 157% for 1,2,3,4,6,7,8-HpCDF, 151% for OCDF, and 169% for OCDD. This is probably due to the heterogeneous nature of soil samples.

Other Comments: No 2,3,7,8-substituted target analytes were detected in the TLI Blank above the target detection limit (TDL).

The analytical data presented in this report are consistent with the guidelines of EPA Method 8290 Rev. 0 (9/94). Any exceptions have been discussed in the QC Remarks section of this case narrative with emphasis on their effect on the data. Should Columbia Analytical Services have any questions or comments regarding this data package, please feel free to contact our Project Scientist, Amy Boehm, at 919/544-5729 ext. 268.

For Triangle Laboratories, Inc.,

Report Preparation

William D. Hill
Report Preparation Chemist

Quality Control

Amy L. Boehm
Report Preparation Chemist

The total number of pages in the data package is : 428 .

REVISED PAGE: 3

Columbia Analytical Services inc

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CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FOR

6925 Canoga Avenue • Canoga Park, CA 91303 • (818) 587-5550 • Fax (818) 587-5555

DATE

PAGE 1 OF 1

PROJECT NAME [illegible] #

PROJECT MANAGER LEO RAAB

COMPANY/ADDRESS COLUMBIA ANALYTICAL

PHONE

SAMPLERS SIGNATURE

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH Gas/BTEX 8015/8020/602	TPH/8015 Modified Diesel ⌉ FC ⌉ Gasoline ⌉	BTEX 602/8020	Total Petroleum Hydrocarbons EPA 418.1	Halogenated Volatiles 601/8010	Volatile Organics GC/MS 624/8240/8260	Base Neutral Acid Organic GC/MS 625/8270	CAM Metals 6010/7000	DIOXIN *							SDG # ~~REMARKS~~
RF 631				Soil	1									Y							L970350[illegible]
RF 661	10/17				1									X							L970354[illegible]
RF 663	10/20				1									X							L970357[illegible]
RF 677	10/22				1									Y							L9703578
RF ~~6~~ 715	10/28				1									Y							L9703679
RF 683	10/23				1									Y							7970360[illegible]
RF 686	10/23				1									Y							7970360[illegible]

RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature:
Printed Name: A. BRAGASIN	Printed Name:
Firm: CAS	Firm:
Date/Time: 12/1/97 1500	Date/Time:

TURNAROUND REQUIREMENTS

- 24 hr 48 hr 5 day
- Standard
- Other (Specify)
- Provide Verbal Preliminary Results

Requested Report Date

REPORT REQUIREMENTS

- I. Routine Report
- II. Report (includes DUP, MS, MSD, as required, may be charged as samples)
- III. Data Validation Report (includes All Raw Data)
- RWQCB

INVOICE INFORMATION:

P.O #

Bill To

SAMPLE RECEIPT:

Shipping VIA:

Shipping #:

Condition:

Lab No:

RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature: [signature]
Printed Name:	Printed Name: Bill Hurst
Firm:	Firm: [signature]
Date/Time:	Date/Time: 12-1-97 1100

SPECIAL INSTRUCTIONS/COMMENTS:

* FOR DILUTION RERUNS
PLEASE REFERENCE SDG #S ON REPORT

RJ 772

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

November 28, 2000

Mr Jose Toledo
Ogden Environmental
5510 Morehouse Drive
San Diego, CA 92121

NOV 29

Dear Mr. Toledo:

Enclosed are the results for the analyses performed in support of Ogden Environmental, Rocketdyne Project, Case No. 313150, SDG No. RJ772. The 22 soil samples were taken from the field on November 1, 2 and 3, 2000 and received at Ceimic Corporation on November 6, 2000.

These samples are reported under Ceimic Project Number 200794, which can be referenced when inquiring about this project.

Please note that this data package does not include Asbestos and Dioxin results. These analyses were performed at a subcontract laboratory, and the results will follow under a separate cover.

If you have any questions or concerns regarding this data, please call me at the telephone number listed below.

Sincerely,

Neil Pothier, Ph.D.
Laboratory Manager

NP/djj

Enclosures

10 Dean Knauss Drive, Narragansett, RI 02882 • Tel: (401) 782-8900 • Fax: (401) 782-8905

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Page #

SIMS .....

PCB .....

TPH .....

Metals .....

Inorganic Analytes .....

PROJECT NARRATIVE

SDG Narrative

The enclosed data package is in response to Ogden Environmental, Rocketdyne Project, Case No. 313150, SDG No. RJ772. Under this SDG there are 15 TPH, 18 SIM and 11 PCB analyses for 22 soil samples which were received at Ceimic Corporation on November 6, 2000.

This data package includes the analyses for the following samples from SDG No. RJ772, all of which are billable:

(1) Client ID	Ceimic ID	Analyses
RJ772	200794-01	TPH, PCB, SIM
RJ773	200794-02	TPH, PCB, SIM
RJ773 ms/msd	200794-02 ms/msd	TPH, PCB
RJ774	200794-03	TPH, PCB, SIM
RJ774 ms/msd	200794-03 ms/msd	SIM
RJ775	200794-04	TPH, PCB, SIM
RJ776	200794-05	TPH, PCB, SIM
RJ777	200794-06	PCB, SIM
RJ778	200794-07	SIM
RJ779	200794-08	SIM
RJ780	200794-09	SIM
RJ781	200794-10	TPH, PCB, SIM
RJ782	200794-11	TPH, PCB, SIM
RJ783	200794-12	SIM
RJ786	200794-15	TPH
RJ788	00794-16	TPH, SIM
RJ789	200794-17	TPH, SIM
RJ790	200794-18	TPH, SIM
RJ791	200794-19	TPH, SIM
RJ792	200794-20	TPH, PCB

Sample Receipt

The submitted data covers the analysis of the Volatiles (VOA), SIM, PCB and TPH fractions and their associated blanks and QA/QC. CEIMIC would like to highlight the following points pertaining to the analyses performed for this case:

(2) Instrumentation and Column Identification

The following instruments were used for the analyses:

GC/MS Analysis

A. SIM

MS13: HP5970B GC/MS, 30 m, 25 mm ID, ZB-5 fused silica capillary column

GC Analysis

B. PCB

AD8: HP5890II using 30 m x 0.53 mm ID, DB-608 megabore column GC-7.

AD9: HP5890II using 30 m x 0.53 mm ID, DB-1701 megabore column GC-7.

C. TPH

AD24_1: HP5890II using 30 m x 0.25 mm ID, DB-5 capillary column GC-9.

(3) Sample Information

Additional qualifier: "x"

An "x" qualifier is flagged by Formaster software whenever the data is manually edited.

The letters "M" for GC/MS and "FF" for GC are used on the raw data of the quantitation report whenever a manual integration is performed. These data manipulations are done only to correct for computer integration error

A. SIM Fraction (Method 8270)

The following samples had a matrix effect which interfered with the internal standard Chrysene-d12, so the compounds associated with this internal standard were quantitated with phenanthrene-d10.

The following samples were analyzed at a dilution:

Client ID:	Ceimic ID:	Dilution:
RJ773	200794-02	1:5
RJ775	200794-04	1:5
RJ789	200794-17	1:5
RJ790	200794-18	1:100

The following samples were reanalyzed at a dilution:

Client ID:	Ceimic ID:	Dilution:
RJ783	200794-12	1:5
RJ788	200794-16	1:00
RJ790	200794-18	1:100
RJ791	200794-19	1:100

Sample RJ775 (200794-04) was taken off hold on 11/16/00 and extracted on that date, but it was out of hold by that time.

B. PCB Fraction (Method 8082)

The AR1254 concentration found in RJ773 MS (1000 ppb) is very different from the results of RJ773 and RJ773 MSD (64 ppb). This indicates that even though the sample material was thoroughly homogenized before the three aliquots were taken, the sample is inhomogeneous. The average AR1254 concentration in the sample jar could be higher than reported.

C. TPH Fraction (Method 8015G)

Diesel Range Recovery in RJ773 MS is low (9 %) and Lubricant Oil Range recoveries are high in RJ773 MS (559 %) and RJ773 MSD (382 %), most likely due to slight inhomogeneity in the sample material. The spike concentrations are low compared to the concentration of TPH in the sample.

Surrogate p-Terphenyl is coeluted with TPH in sample RJ788 (324 %), RJ789 (307 %), RJ790 (372 %) and RJ791 (256 %).
The blank and LCS FBLK03/FLCS03 associated with sample RJ775 were contaminated. Therefore, the sample was re-extracted. The re-extract was analyzed 2 days out of hold time. The original data as well as the data of the re-extract are included in the data package.

Deviations from the SOW

None other than specified above.

End of SDG Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the laboratory manager or his designee, as verified by the following signature.

Neil Pothier, Laboratory Manager

November 29, 2000
Date

Inorganic SDG Narrative

Client Case ID: Rocketdyne
Ceimic Project No.: 200794
SDG No.: RJ772

The following samples were received at Ceimic Corporation on November 6, 2000:

RJ772	RJ773	RJ774 (MS/MSD)
RJ775	RJ776	RJ777
RJ778	RJ779	RJ780
RJ781	RJ782	RJ784
RJ785	RJ788	RJ789
RJ790	RJ791	

The above samples were digested and analyzed for total metals using SW846 methods 3050A/7471A/6010B in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

Comments on Data Package:

QA/QC Samples:

Inorganic Ventures CICV-1, CICV-2, and CICV-3 were used for the ICV and CCV for the ICP metals. CPI CAL-3, CAL-5 and CAL-8 were used for the calibration standards for the ICP metals. Inorganic Ventures CLPP-ICS-A and CLPP-ICS-B were used for the ICSA and ICSAB samples. Environmental Resource Associates standard (lot# 243) was used for the mercury LCSS sample and metals LCSS samples.

Observations:

Total metals were determined using inductively coupled plasma (ICP) emission spectroscopy. Mercury analysis was performed via automated cold vapor atomic absorption spectroscopy (CVAA).

A "U" flag in the C column on the sample result forms (Form I-IN) indicates that the concentration of that analyte in the sample is undetected at the method detection limit (MDL). For the sample concentration reported between the Contract Required Detection Limits (CRDL) and the instrument MDL, a "B" flag is shown in the C column on the Form I-IN.

Elevated levels of iron and other spectral interferants caused analytical signal suppression for the elements cadmium and selenium. The affected samples were re-analyzed and reported from diluted runs.

Deviations from Contract:

None.

End of case Narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Neil Pothier
Laboratory Manager

November 28, 2000
Date

CHAIN OF CUSTODY

Chain of Custody

Date 11/1/00 Page 1 of 1

Project Manager:	Dixie Hambrick	Bill To:	Purchasing
Project Name:	Rocketdyne	Company:	Ogden Environmental
Project Number:	313150002	Address:	5510 Morehouse Drive, San Diego, CA 92121
Deliver results to the address above or as stated in contract			

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: FED EX
Comment:

Cooler No: 3
QC Level: Level 1
TAT: 14-day hardcopy summary, 28-day full package

Preservatives: NCL, pH<2 4°C; NCL, pH<2 4°C; 4°C; 4°C; 4°C; H2SO4, pH<2 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

SWMU 7.4

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015DO TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D18 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	Asbestos		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ772	OCTS23S01	5.0	11/1/00	1115	60		X				X	X		X			X				X	X		X					3
RJ773	OCTS23D01	5.0		1120	60						X			X								X							3
RJ774	OCTS24S01	5.0		1130	61						X			X								X		X					3
RJ775	OCTS24D01	5.0		1140	61						X			X								X						X	3
RJ776	OCTS23S02	6.5		1245	60						X			X								X							1
RJ777	OCTS35S01	2.1		1255	63									X								X		X					1
RJ778	OCTS38S01	0.5		1250	65									X										X					1
RJ779	OCTS39S01	1.0		1255	64	CD								X										X					1
RJ780	OCTS37S01	1.0		1320	62									X										X					1
RJ781	OCTS24S02	6.5		1330	61		X				X	X		X			X				X	X							21

Samplers Signature: [signature]	Date 11/1/00	Time 1345
Relinquished By: [signature]	Date 11/1/00	Time 1345
Received By: [signature]	Date 11/1/00	Time 1345
Relinquished By: [signature]	Date 11/4/00	Time 0830
Received By (LAB):	Date	Time

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C

HOMOGENIZE ALL SAMPLE CONTAINERS PER SAMPLE ID.
Please add Asbestos to RJ772, RJ774, RJ777, RJ778, RJ779, RJ780 per DAH (11/10/00).
RJ775 off Hold per DAH (11/14/00)

1 Original, 2 Lab Copy, 3 Field Copy

REV 1

09

SAN DIEGO, CA 92121

Chain of Custody

Control Number: COC

Date: 11/14/00 Page 1 of 1

Project Manager	Dixie Hambrick
Project Name	Rocketdyne
Project Number	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company	Ogden Environmental
Address	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions	Laboratory Disposal
Shipment Method:	FED-EX
Comment:	

Cooler No. 3

QC Level: Level4

TAT: 14-day hardcopy summary, 28-day full package

Preservatives

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270M SVOC	8280 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02 IRT METALSRT	7198 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	PERCLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
										HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
RJ784	HVTS08S01	3'	11/2	0700	105		X							X		∞	X				X			X					1
RJ785	HVTS08D01	3'		0710	106									X		∞	X				X			X					1
RJ786	SRBS21S01	1'		1600	40						X																		1
~~RJ787~~	~~SRBS22S01~~	~~1'~~		~~1640~~	~~40~~																							X	1
RJ788	SRTS02S01	4' X	∞	1510	41						X	X	X				X				X								1
RJ789	SRTS02D01	4' X	∞	1515	41							X																	1
RJ790	SRTS02S02	4'		1535	41							X																	1
RJ791	SRTS02D02	4'		1440	41							X	X				X				X								1
RJ792	CLBS63S01	1'	11/3/00	1230	90						X	X										X							1
RJ793	AFBS16S01	0.5	"	1425	37		X							X														X	1
						LACO ENTRY																							

SUMMU
A1AOC
A1USRE
4.7 CTU
APTF

Samplers Signature: [signature]	Date: 11/3/00	Time: 1500
Relinquished By: [signature]	Date: 11/4/00	Time: 0830
Received By:	Date:	Time:
Relinquished By:	Date:	Time:
Received By (LAB):	Date:	Time:

For Lab Use

Lab Number:

Do COC match samples: Y or N

Broken containers: Y or N

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: ___/___/___

Temperature °C

HOMOGENIZE ALL SAMPLES
TWO WEEK TAT ON RJ 750 per DAH (11/15/00).

1 Original 2 Lab Copy, 3 Field Copy

REV 1

10

OGDEN (619) 458-9044

Chain of Custody

COC

Date 10/24/00 Page 1 of

Project Manager	Dixie Hambrick
Project Name	Rocketdyne
Project Number	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions	Laboratory Disposal
Shipment Method	
Comment	

Cooler No	
QC Level: Level4	TAT: 14-day hardcopy summary 28-day full package

Preservatives: HCL, pH<2, 4°C | HCL, pH<2, 4°C | 4°C | 4°C | 4°C | H_2SO_4, pH<2, 4°C | 4°C | HNO_3, pH<2, 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015DC TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	8Ghe D18 FORMALDEHYDE	8330 ORDNANCE	11M02JRT METALS ET	7196 HEX CHROME	300.0 FLUORIDE	300 ANIONS	8015/8000 PH	8082 PCBs	IC HYDRAZ	FE ELEMENTS	Sampling Method	Sample Volume Received	MOLD	Total # of Bottles
SWMU 4 ADC	RJ760				9		X																	X			X	1
	RJ761				9		X																				X	1
	RJ762				9		X																				X	1
	RJ763	HVSWZ3501			1430	10		X	X																			2
	RJ764	HVSWZ0501			1510	9		X	X																			2
							LAST ENTRY																					

Samplers Signature	Date	Time
Relinquished By:	Date	Time
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken containers: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

HOMOGENIZE ALL SAMPLES

2 WEEK TURN ON RJ763, AND RJ764

Change Ogden ID on RJ763 from HVSWZ0501 to HVSWZ3501. per DH 11/10/00.

1 Original, 2 Lab Copy, 3 Field Copy

REV 1

OGDEN

SAN DIEGO CA 92121
(619) 458-9044

Chain of Custody

Control Number COC RJ784

Date 11/14/00 Page 1 of 1

Project Manager:	Dixie Hambrick	Bill To:	Purchasing	Sample Disposal Instructions: Laboratory Disposal	
Project Name:	Rocketdyne	Company	Ogden Environmental	Shipment Method:	FED-EX
Project Number:	313150002	Address	5510 Morehouse Drive, San Diego, CA 92121	Comment:	
Deliver results to the address above or as stated in contract					

Cooler No 3

QC Level: Level4

TAT: 14-day hardcopy summary
28-day full package

Preservatives

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D18 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	9081 PCBs	IC HYDRAZ	PERCLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
										HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
RJ784	HVTS08S01	3'	11/2	0700	106		X						X	X		∅	X				X			X					1
RJ785	HVTS08D01	3'		0710	106								X	X		∅	X				X			X					1
RJ786	SRBS21S01	1'		1600	40						X																		1
~~RJ787~~	~~SRBS22S01~~	~~1'~~		~~1640~~	~~40~~																							X	1
RJ788	SRTS02S01	4 X	∅	1510	41						X	X	X				X				X								1
RJ789	SRTS02D01	4 X	∅	1515	41							X																	1
RJ790	SRTS02S02	4'		1535	41							X																	1
RJ791	SRTS02D02	4'		1440	41							X	X				X				X								1
RJ792	CLBS63S01	1'	11/3/00	1230	90						X											X							1
RJ793	AFBS16S01	0.5	"	1425	37		X							X														X	1
				LAST ENTRY																									

SWMU
A1AOC
A1VSRF
4.7 [illegible]
APTF

Samplers Signature: [signature]	Date 11/3/00	Time 1500
Relinquished By: [signature]	Date 11/4/00	Time 0830
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

HOMOGENIZE ALL SAMPLES.

1 Original, 2 Lab Copy, 3 Field Copy

REV 1

15

SAN DIEGO, CA 92121

Chain of Custody

Control Number: COC 6354

Date 11/01/00 Page 1 of 1

Project Manager	Dixie Hambrick
Project Name	Rocketdyne
Project Number	3131500002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions	Laboratory Disposal
Shipment Method	FEDEX
Comment	

Cooler No 3

QC Level: Level II

TAT: 14-day hardcopy summary
28-day full package

Sample Data							Matrix				Preservatives																									
Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product		HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C														
											8260B VOC	8015BC TPH	8270C/M SVOC	8270A SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	TLM02,IRT METALS,RT	7196 HEX CHROME	340.2 FLUORIDE	300 AMIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ				Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles				
RJ782	DLB526501	1 ft	11/2/00	1100	70		X					X		X	X			X				X										1			
RJ783	DLB527501	0 ft	"	1730	71		X							X	X																	1			
						LAB ENTRY																															

Sampler's Signature:		Date: 11/2/00	Time: 1400
Relinquished By:		Date: 11/2/00	Time: 1600
Received By:		Date	Time
Relinquished By:		Date	Time
Received By (LAB):		Date	Time

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

HOMOGENIZE ALL SAMPLES
Add Asbestos to RJ782 per DAH (11/10/00). Add SO82 to RJ782 per DAH (11/10/00)

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

NOV 13 2000 2:11PM OGDEN SAN DIEGO 858 R000000000 PG 3/3

Bill To: Purchasing

Company: Ogden Environmental

Address: 5510 Morehouse Drive, San Diego, CA 92121

Cooler No: 3

QC Level: Level4

TAT: 14-day hardcopy summary
28-day full package

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | 4°C | H_2SO_4, pH<2 4°C | 4°C | HNO_3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

| Sample Data | | | | | | | Matrix | | | | | | |

OGDEN

(619) 458-9044

Chain of Custody

Control Number: COC

Date: 10/26/00 Page 1 of

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal

Shipment Method:

Comment:

Cooler No:

QC Level: Level4

TAT: 14-day hardcopy summary
28-day full package

Preservatives: HCL, pH<2 4°C; HCL, pH<2 4°C; 4°C; 4°C; 4°C; H2SO4, pH<2 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

SWMO 4.12 ~~SWMO~~ ~~A1AOC~~

A1AOC

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015OD TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ	M+	PERCHLORATE	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ748	LFBS38S01	1'	10/26	1540	65		X				X			X							X			X					3
RJ749	LFBS39S01	1'		1630	66						X			X							X			X				X	2
RJ750	LFBS40S01	1'		1655	67									X															2
RJ751	LFBS41S01	0.5		1710	68									X															2
RJ752	LFBS41S02	5'	10/27	1115	68																							X	1
RJ753	LFBS41S03	8'		1130	68																							X	1
RJ754	LFBS42S01	0.5		1215	69															X	X			X					1
RJ755	~~LFBS~~ HVBS68S01	0.5		1334	104																				X			X	1
RJ756	HVBS68S02	3.0		1340	105																				X			X	1
RJ757	HVBS68S03	5'		1350	105																				X			X	1
RJ758	HVBS68S04	0.5		1355	105																				X			X	1
~~RJ759~~	~~HVBS67S01~~	~~1'~~		~~1430~~	~~9~~																				X			X	1

Samplers Signature	Date	Time
Relinquished By	Date	Time
Received By	Date	Time
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number:

Do COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: ___/___/___

Temperature °C

HOMOGENIZE ALL SAMPLES

COMPOSITE RJ748, 749, 750, 4751

Change Ogden ID from RJ754 from LFBS42S04 to LFBS42S01 per DAH (11/10/00).

1 Original, 2 Lab Copy, 3 Field Copy

REV. 1

12

200794 (4)

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ782

Date 11/01/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: FED-EX
Comment:

Cooler No:	3
QC Level:	Level4
TAT:	14-day hardcopy summary 28-day full package

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H_2SO_4,pH<2 4°C	4°C	HNO_3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						

Sample Data							Matrix																									
Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product		8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ782	OCBS26501	05	11/2/00	1700	70	11	X					X	X		X			X				X								1
RJ783	OCBS27501	05	11/2/00	1730	71	12	X						X		X																1
						LAST ENTRY																										

Samplers Signature	Date	Time
[signature]	11/2/00	1700
Relinquished By: [signature]	Date 11/4/00	Time 0830
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB): Robert David	Date 11/6/00	Time 10:00

For Lab Use

Lab Number:

HOMOGENIZE ALL SAMPLES

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 4

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

200.794 (4)

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RJ784
Date 11/4/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	FED-EX
Comment:	

Cooler No:	3	
QC Level:	Level4	TAT: 14-day hardcopy summary 28-day full package

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						

Sample Data							Matrix				8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product																					
RJ784	HVTSO8SO1	3'	10/2	0700	105	13	X							X	X			X				X								1
RJ785	HVTSO3DO1	3'	11/2	0710	105	14								X	X			X				X								1
RJ786	SRBS21SO1	1'		1600	40	15						X																		1
~~RJ787~~	~~SRBS22SO1~~	~~1'~~		~~1640~~	~~40~~	22						X																	X	1
RJ788	SRTSO2SO1	4'	"	1510	41	16						X		X				X				X								1
RJ789	SRTSO2DO1	4'	"	1515	41	17																								1
RJ790	SRTSO2SO2	4'		1535	41	18																								1
RJ791	SRTSO2DO2	4'	"	1440	41	19						X		X				X				X								1
RJ792	CLBS163SO1	1'	11/3/00	1230	90	20						X											X							1
RJ793	AFBS16SO1	0.5	"	1425	37	21	X								X														X	1
				LAST	ENTRY																									

Samplers Signature:	Date 11/3/00	Time 1700
Relinquished By:	Date 11/4/00	Time 0830
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB): Robert Dano	Date 11/6/00	Time 10:00

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use	
Lab Number:	HOMOGENIZE ALL SAMPLES
Do COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N	
Any other problems: Y or N	
If any YES, Ogden contacted: Y or N	
Date contacted: __/__/__	
Temperature °C 4	

REV: 1

CEIMIC CORPORATION
Sample Receiving Checklist

LIMS #: 200794 Cooler Number: 1

Client: Ogden Number of Coolers: 1

Project: rocketdyne Date Received: 11/6/00

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 11,6 00

1. Have designated person initial here to acknowledge receipt of cooler: RD (date): 11,6,00

2. Did cooler come with a shipping slip (airbill, etc.)? ..... (YES) NO

If YES, enter carrier name & airbill number here: Fx 823967509373

3. Were custody seals on outside of cooler? ..... (YES) NO

How many & where: 2, front, side seal date: 11,4,00 seal name: QEC

4. Were custody seals unbroken and intact at the date and time of arrival ..... (YES) NO

5. Did you screen samples for radioactivity using a Geiger Counter? ..... Reading: _____ (YES) NO

6. Chain of Custody #: # RJ772, RJ782, RJ784

7. Were custody papers sealed in a plastic bag & taped inside to the lid? ..... (YES) NO

8. Were custody papers filled out properly (ink, signed, etc.)? ..... (YES) NO

9. Did you sign custody papers in the appropriate place? ..... (YES) NO

10. Was project identifiable from custody papers? ..... (YES) NO

11. If required, was enough ice used? ..... Cooler Temperature: 4 °C Type of ice: cubes (YES) NO

B. LOG-IN PHASE: Date samples were logged-in: 11,6,00

by (print): RD (sign): RD

12. Describe type of packing in cooler: _____

13. Were all bottles sealed in separate plastic bags? ..... YES (NO)

14. Did all bottles arrive unbroken and were labels in good condition? ..... (YES) NO

15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? ..... (YES) NO

16. Did all bottle labels agree with custody papers? ..... YES (NO)

17. Were correct containers used for the tests indicated? ..... (YES) NO

18. Were samples received at the correct pH? ..... YES NO

19. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO

20. Were bubbles absent in VOA samples? If NO, list by sample#: _____ YES NO

21. Laboratory labelling verified by: (Initials): RD (date): 11,6,00

QAT0261

Telephone Log

Client: Ogden

Telephone:

Contact: Sharon

Project: Rocketdyne

Date & Time: 11/7/00 12:30 P.M.

Ceimic's Contact: Karen W.

Summary:

Sharon called to say that RJ784 and RJ785 are to be analyzed for Metals, pH and perchlorate only. Also, COC incorrectly has checked 8270R for some samples - should be SIM for all.

CEIMIC

Corporation

"Analytical Chemistry for Environmental Management"

Sample Receiving Notification Form

Name: Robert Davis Date: 11/6/00

Client(s): ogden

Samples Affected: RJ787 (200794-22)

(reference both Ceimic and client IDs)

The following noncompliance(s) occurred during sample shipment or receiving :

(describe what happened, when, where and how, and who discovered the problem)

RJ 787 crossed out on C.O.C. but sample arrived: Sample was assigned #22

Required Action:

(to be completed by the client or internal coordinator)

Faxed to Lisa Tucker and Elizabeth Wessling.

Name: Karen W Date: 11/7/00

Additional Comments:

(lab use only)

Name: _____ Date: _____

Note: The original of this form will be included in the final data package.

QAT0296

10 Dean Knauss Drive, Narragansett, RI 02882 · Tel: (401) 782-8900 · Fax: (401) 782-8905

OGDEN *ENVIRONMENTAL AND ENERGY SERVICE*

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax (619) 458-0943

FACSIMILE

To. Ms. Karen Williamson/Ceimic Corporation
Fax No.. (401) 782-8905

From: Jose L. Toledo *sign*

Date: 11/13/00 There are 4 Pages to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	OGDEN Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ760	RJ763	HVSW20S01	10/27/00	Perchlorate	**Change Ogden ID to HVSW23S01.**
RJ748	RJ754	LFBS42S01	10/27/00	Anions, pH , Metals.	**Change Ogden ID to LFBS42S01.**
RJ772	RJ772	OCTS23S01	11/01/00	TPH. 8270CSIM, 8290, Metals, pH, 8082.	TPH, 8270CSIM, 8290, Metals, pH,8082, **Asbestos.**
RJ772	RJ774	OCT S24S01	11/01/00	TPH, 8270CSIM, 8290, Metals, pH, 8082.	TPH, 8270CSIM, 8290, Metals, pH, 8082, **Asbestos**
RJ772	RJ777	OCTS35S01	11/01/00	8270CSIM, 8290, Metals, pH,8082.	8270CSIM, 8290, Metals, pH, 8082, **Asbestos**
RJ772	RJ778	OCTS38S01	11/01/00	8270CSIM. 8290, Metals, pH.	8270CSIM, 8290, Metals, pH, **Asbestos.**
RJ772	RJ779	OCTS39S01	11/01/00	8270CSIM, 8290, Metals, pH	8270CSIM, 8290, Metals, pH, **Asbestos.**
RJ772	RJ780	OCTS37S01	11/01/00	8270CSIM, 8290, Metals, pH.	8270CSIM, 8290, Metals, pH, **Asbestos.**
RJ782	RJ782	OCBS26S01	11/02/00	TPH, 8270CSIM, 8290, Metals, pH.	TPH, 8270CSIM, 8290, Metals, pH, **8082, Asbestos.**
RJ792	RJ792	HSBS02S01	11/06/00	8021, TPH, Metals, pH, 8082.	**Change EPA ID to RJ817.**
RJ792	RJ793	HSBS02D01	11/06/00	8021, TPH, Metals, pH. 8082.	**Change EPA ID to RJ818.**

*Please Run for Requested Analyses Only

The reason for these changes is:

Incorrectly marked on COC form _____
Lack of sample volume _____
Ogden office personnel require this change X
Other Containers mislabeled ___ _____

Thank you.

OGDEN ENVIRONMENTAL AND ENERGY SERVICE

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax (619) 458 0943

FACSIMILE

To Ms. Karen Williamson/Ceimic Corporation
Fax No . (401) 782-8905

From Jose L. Toledo *sign.* Jose L Toledo

Date 11/15/00 There are 2 Pages to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	OGDEN Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ784	RJ786	SRBS21S01	11/02/00	TPH	TPH (2 Week TAT)

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form _____
Lack of sample volume _____
Ogden office personnel require this change X
Other: Containers mislabeled _____

Thank you.

OGDEN *ENVIRONMENTAL AND ENERGY SERVICE*

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax. (619) 458-0943

FACSIMILE

To: Ms. Karen Williamson/Ceimic Corporation
Fax No.: (401) 782-8905

From: Jose L. Toledo *sign:* Jose L. Toledo

Date: 07/13/00 There are 3 Pages to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	OGDEN Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ772	RJ775	OCTS24D01	11/01/00	.On Hold	**TPH, 8270CSIM, 8290, METALSRT, pH, 8082**
RJ579	RJ583	BUTS03S01	09/01/00	METALSRT, pH, Asbestos.	**Reanalyze METALS RT extract for Ag only. Re-extract and analyze a new aliquot for Ag.**
RJ579	RJ584	BUTS03D01	09/01/00	METALSRT, pH, Asbestos.	**Reanalyze METALS RT extract for Ag only. Re-extract and analyze a new aliquot for Ag.**

200794

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form _____
Lack of sample volume _____
Ogden office personnel require this change X
Other: Containers mislabeled _____

Thank you.

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

December 8, 2000

Mr. Jose Toledo
Ogden Environmental
5510 Morehouse Drive
San Diego, CA 92121

Dear Mr. Toledo:

Enclosed are the missing pH results for the analyses performed in support of Ogden Environmental, Rocketdyne Project, Case No. 313150, SDG No. RJ772. The 22 soil samples were taken from the field on November 1, 2 and 3, 2000 and received at Ceimic Corporation on November 6, 2000.

These samples are reported under Ceimic Project Number 200794, which can be referenced when inquiring about this project.

If you have any questions or concerns regarding this data, please call me at the telephone number listed below.

Sincerely,

Neil Pothier, Ph.D.
Laboratory Manager

NP/djj

Enclosures

10 Dean Knauss Drive, Narragansett, RI 02882 • Tel: (401) 782-8900 • Fax: (401) 782-8905

Ceimic Corporation

Classical Chemistry Laboratory

Inorganic pH Logbook

Date / Time	Ceimic ID	Client ID	Matrix	Slope	Sample pH	Analyst	Review By
11/28/00 14:35	200826-18	RJ 833	S	98.1	7.08	es	12/4/00 KRB
〃	-19	RJ 834	〃	〃	6.82	〃	〃
〃	-20	RJ 835	〃	〃	6.90	〃	〃
11/28/00 ~~pH 8.00 IP000608D A 98.1~~							
11/28/00 15:00	200761-04	CAT #55	A	98.1	9.60	es	
〃	-04 dup	〃	A	〃	9.60	es	
〃	pH 8.00	IP000608 D	A	〃	8.00	es	
11/28/00 16:05	pH 4.00	IP000608 A	A	98.1	4.00	es	
〃	7.00	B	A	〃	7.00	〃	
〃	10.00	C	A	〃	10.01	〃	
〃	200832-13	D03636	oil	98.1	3.70	〃	
〃	-14	D03637	oil	98.1	~~5.00~~ 6.19	11/28/00 es	
〃 ~~pH 8.00 -15 IP000608A 11/28/00~~			A	98.1	8.00	〃	
11/29/00 15:10	pH 4.00	IP000608 A	A	98.2	4.01	es	
〃	7.00	IP000608 B	〃	〃	7.00	〃	
〃	10.00	IP000608 C	〃	〃	10.01	〃	
〃	200832-13		oil	〃	4.56	〃	
〃	-14		〃	〃	6.80	〃	
〃	-15		〃	〃	4.24	〃	
〃	-16		〃	〃	4.31	〃	
〃	-17	~~Diluted 1:1 11/29/00~~	〃	〃	12.94	〃	
〃	-18	Diluted (1:1 because too low)	〃	〃	0.41 for 1:1	〃	
〃	-19		〃	〃	9.19	〃	
〃	pH 8.00	IP000605 I	A	98%	8.05	〃	
12/4/00 10:10	pH 4.00	IP000608 A	A	98%	4.04	es	
〃	pH 7.00	B	〃	〃	7.04	〃	
〃	pH 10.00	C	〃	〃	10.04	〃	
〃	200794-04		S	〃	7.63	〃	
〃	pH 8.00	IP000608 D	A	〃	8.04	〃	

Ceimic Corporation

Classical Chemistry Laboratory

% Solids Logbook

Date/Time In	Date/Time Out	Ceimic ID	Client ID	Tare g	Wet weight Gross g	Wet weight Net g	Dry Weight Gross #1 g	Dry Weight Gross #2* g	Dry Weight Net g	% Solids	Analyst	Review By
~~11/02/00 12:00~~		200770-05										—
↓		-06		HG 11/02/00								—
11/06/00 11:00	11/07/00 8:30	200780-02	RJ654	0.98	7.93	6.95	7.68		6.70	96.4	HG/HG	KBF 11/10/00
		200782-01	RJ748	0.98	8.67	7.69	8.47		7.49	97.4		
		-07	RJ754	0.98	9.02	8.04	8.02		7.04	87.6		
		-16	RJ767	0.98	8.15	7.17	7.50		6.52	90.9		
		-18	RJ769	0.98	8.48	7.50	8.00		7.02	93.6		
11/08/00 11:00	11/09/00 8:30	200794-01	RJ772	0.98	8.41	7.43	8.16		7.18	96.6	HG	
		-02	RJ773	0.98	7.60	6.62	7.33		6.35	95.9		
		-03	RJ774 ~~=ms~~ HG 11/09/00	0.98	7.94	6.96	7.75		6.77	97.3		
		-03D	↓ -ms	0.98	8.50	7.52	8.29		7.31	97.2		
		-05	RJ776	0.98	7.41	6.43	7.00		6.02	93.6		
		-06	RJ777	0.98	7.61	6.63	~~7.29~~ 7.29 HG 11/09/00		6.31	86.6		
		-07	RJ778	0.98	8.02	7.04	7.75		6.77	87.4		
		-08	RJ779	0.98	7.88	6.90	7.57		6.59	95.5		
		-09	RJ780	0.98	7.80	~~6.82~~ 6.80	7.51		6.53	95.7		
		-10	RJ781	0.98	7.27	6.29	6.96		5.98	95.1		
		-11	RJ782	0.98	7.56	6.58	7.40		6.42	97.6		

All weights must be carried out to 2 decimal places Dry samples ≥ 12 hours at 103°C to 105°C * Use only when proving constant weight.

% solids = (net dry weight/ net wet weight)*100

Ceimic Corporation

Classical Chemistry Laboratory

% Solids Logbook

Date/Time In	Date/Time Out	Ceimic ID	Client ID	Tare g	Wet weight Gross g	Wet weight Net g	Dry Weight Gross #1 g	Dry Weight Gross #2* g	Dry Weight Net g	% Solids	Analyst	Review By
11/15/00	11/16/00 1422	200817-02	D03382	0.99	7.12	~~7.45~~ 6.13	5.94	—	4.95	80.8	[illegible]	KBF 11/20
		-03	D03383	0.98	7.45	6.47 11/15/00	6.18	—	5.20	80.4		
		-04	D03384	0.99	7.44	6.45	5.99	—	5.009	77.5		
		-05	D03385	0.99	7.60	6.61	6.75	—	5.76	87.1		
11/16/00 1600		200794-04	RJ775	0.99	7.07	6.08	6.89	—	5.90	97.0	UM	
11/21/00 1600	11/22/00 1210	200824-01	WYC-1 ~~RJ816~~ 11/21/00	0.99	7.69	6.70	4.02	—	3.03	45.2	UM	KBF 11/22
		-02	WYC-2 ~~RJ817~~ 11/21/00	0.99	7.30	6.31	3.52		2.53	40.1		
		-03	WYC3	0.99	7.31	6.32	3.67		2.68	42.4		
		11/21/00 200826-13	RJ828	1.00 ~~0.997~~	7.58	6.58	7.05		6.05	91.9		
		-14	RJ829	0.99	7.58	6.59	7.03		6.04	91.7		
		-15	RJ830	0.99	7.17	6.18	6.46		5.47	88.5		
		-16	RJ831	0.99	8.01	7.02	7.40		6.41	91.3		
		-17	RJ832	0.99	7.18	6.19	6.66		5.67	91.6		
		-18	RJ833	0.99	8.09	7.10	7.49		6.50	91.5		
		-19	RJ834	0.99	7.57	6.58	7.19		6.20	94.2		
		-20	RJ835	1.00 ~~0.997~~	7.76	6.76	7.39		6.39	88.9		
11/21/00 1045	11/22/00	200769-06	RJ745	0.973	8.52	7.55	8.24	8.2~~34~~	7.26	96.2	KBF	UM
11/27/00		200826-19	RJ834	0.98	5.91						TS	

All weights must be carried out to 2 decimal places Dry samples ≥ 12 hours at 103°C to 105°C * Use only when proving constant weight.

% solids = (net dry weight/ net wet weight)*100

QAT0042

Page #

1443

QAT: 0042-00

Ceimic Corporation

Classical Chemistry Laboratory

% Solids Logbook

Date/Time In	Date/Time Out	Ceimic ID	Client ID	Tare	Wet weight		Dry Weight			% Solids	Analyst	Review By
					Gross	Net	Gross #1	Gross #2*	Net			
				g	g	g	g	g	g			
11/08/00 11:00	11/09/00 9:30	200794-13	RJ784	0.98	7.70	6.72	6.93	—	5.95	88.5	HB	KBF 11/9
		-14	RJ785	0.98	7.59	6.61	6.77		5.79	87.6		
		-16	RJ788	0.98	7.94	6.96	7.65		6.67	95.8		
		-17	RJ789	0.98	7.72	6.74	7.41		6.43	95.4		
		-18	RJ790	0.98	7.54	6.56	6.90		5.92	90.2		
		-19	RJ791	0.98	8.29	7.31	7.53		6.55	89.6		
11/8/00 11:40	11/09/00	200793-01	Nike Rolloff	75.56	130.9	55.34	~~122.36~~ ~~118.00~~	—	46.8	84.6	es	
		-01Dup	-ms	74.26	125.4	51.14	118.00	—	43.74	85.5	es	
11/8/00 13:30	11/09/00	200782-07	RJ754	0.98	7.210	6.230	6.417	—	5.437	87.3	es	
		15	RJ766	0.98	7.829	6.849	7.655	—	6.675	97.5		
		16	RJ767	0.98	6.173	5.193	5.706	—	4.726	91.0		
		17	RJ768	0.98	9.687	8.707	9.089	—	8.109	93.1		
11/15/00 1024	11/16/00 1422	200803-01	~~RJ792~~ RJ817	0.99	8.09	7.10	7.524	—	6.53	91.9	es	KBF 11/20
		-02	~~RJ793~~ RJ818	0.99	7.31	6.32	6.255	—	5.27	83.4		
		-03	RJ795	0.99	8.03	7.04	6.788	—	5.80	82.4		
		-03Dup	RJ795 Dup	0.98	8.14	7.16	7.029	—	6.05	84.5		
		200817-01	DO3381	0.99	7.10	6.11	5.60	—	4.61	75.5		
		-01Dup	DO3381 Dup	0.99	7.08	6.09	5.51	—	4.52	74.2		

All weights must be carried out to 2 decimal places Dry samples ≥ 12 hours at 103°C to 105°C * Use only when proving constant weight.

% solids = (net dry weight/ net wet weight)*100

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

December 14, 2000
Fax: 303-935-6575

Ms. Elizabeth Wessling
Odgen Environmental, Inc.
550 South Wadsworth Boulevard
Suite 500
Lakewood, CO 80226

Dear Ms. Wessling:

Ceimic has been working very hard in support of your Rocketdyne project and we look forward to continuing our efforts and success in meeting your project needs.

As you know, Ceimic has received several phone requests from Ogden over the past few months to place an abundance of Ogden samples on hold, until further notice by your project management team. Before we received these requests, these samples were received, logged in, and approved by our project managers at a significant cost to Ceimic without any reimbursement. Only a small fraction of these "on hold" samples were later analyzed at Ogden's request.

Ceimic will continue to store these samples in our refrigerators until the last day of the year, December 31, 2000. After this day, all samples remaining on hold will be properly disposed of by Ceimic. If you would like to procure "on hold" sample storage at our facility after this point in time, we would be happy to discuss this with you and devise a plan that would be mutually beneficial.

I have enclosed copies of all Ceimic logins that contain Rocketdyne samples currently on hold. If you have any questions or would like to discuss this matter further, please feel free to call me. We appreciate your business and look forward to continuing our work with you on this important project.

Sincerely,

John F. McGarry, Jr.
President

10 Dean Knauss Drive, Narragansett, RI 02882 • Tel: (401) 782-8900 • Fax: (401) 782-8905

RUSH

CHANGES MADE ON ANALYSES REQUESTED; 8082 ADDED TO RJ782

CEIMIC Corporation
Sample Log In Information

Date: 11/14/00 -09:43:56

Date Samples Received: 11/06/00

Date Due: 11/20/00

Client: Ogden Environmental

Project Name: Rocketdyne

Client Task: 313150002

Client Contact: Dixie Hambrick

Project #: 200794
SDG: RJ772
Case: 313150

Project Amount: $19,155.00

Stored : 4

Ceimic Rep: HOUSE

Coordinator: NEIL

Report To : Ogden Environmental
5510 Morehouse Drive
San Diego, CA 92121

Attn : Dixie Hambrick

Invoice To: Ogden Environmental
5510 Morehouse Dr, Suite 300
San Diego, CA 92121

Attn : Accounts Payable

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-01A	RJ772	3	SOIL	11/06/00	11/01/00	11:15:00	TPH(8015OG) PCB(8082) Dioxins(8290) pH(9045) Asbestos TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-02A	RJ773	3	SOIL	11/06/00	11/01/00	11:20:00	TPH(8015OG) PCB(8082) Dioxins(8290) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-02B	RJ773ms		SOIL	11/06/00	11/01/00	11:20:00	TPH(8015OG) PCB(8082)
-02C	RJ773msd/dup		SOIL	11/06/00	11/01/00	11:20:00	TPH(8015OG) PCB(8082) pH(9045)
-03A	RJ774	3	SOIL	11/06/00	11/01/00	11:30:00	TPH(8015OG) PCB(8082) Dioxins(8290) pH(9045) Asbestos TAL Metals(6010B)

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-03A	RJ774	3	SOIL	11/06/00	11/01/00	11:30:00	SIM(8270) TAL Metals(6010B), TRACE
-03B	RJ774ms		SOIL	11/06/00	11/01/00	11:30:00	Dioxins(8290) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-03C	RJ774msd		SOIL	11/06/00	11/01/00	11:30:00	Dioxins(8290) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-04A	RJ775	3	SOIL	11/06/00	11/01/00	11:40:00	Sample on hold
-05A	RJ776	1	SOIL	11/06/00	11/01/00	12:45:00	TPH(8015OG) PCB(8082) Dioxins(8290) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-06A	RJ777	1	SOIL	11/06/00	11/01/00	12:55:00	PCB(8082) Dioxins(8290) pH(9045) Asbestos TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-07A	RJ778	1	SOIL	11/06/00	11/01/00	12:50:00	Dioxins(8290) pH(9045) Asbestos TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-08A	RJ779	1	SOIL	11/06/00	11/01/00	12:55:00	Dioxins(8290) pH(9045) Asbestos TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-09A	RJ780	1	SOIL	11/06/00	11/01/00	13:20:00	Dioxins(8290) pH(9045) Asbestos TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-10A	RJ781	1	SOIL	11/06/00	11/01/00	13:30:00	TPH(8015OG) PCB(8082) Dioxins(8290) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-11A	RJ782	1	SOIL	11/06/00	11/02/00	17:00:00	TPH(8015OG) PCB(8082) Dioxins(8290) pH(9045) Asbestos TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-12A	RJ783	1	SOIL	11/06/00	11/02/00	17:30:00	Dioxins(8290) SIM(8270)
-13A	RJ784	1	SOIL	11/06/00	11/02/00	07:00:00	Perchlorate pH(9045) TAL Metals(6010B) TAL Metals(6010B), TRACE
-14A	RJ785	1	SOIL	11/06/00	11/02/00	07:10:00	Perchlorate pH(9045) TAL Metals(6010B) TAL Metals(6010B), TRACE
-15A	RJ786	1	SOIL	11/06/00	11/02/00	16:00:00	TPH(8015OG)
-16A	RJ788	1	SOIL	11/06/00	11/02/00	15:10:00	TPH(8015OG) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-17A	RJ789	1	SOIL	11/06/00	11/02/00	15:15:00	TPH(8015OG) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-18A	RJ790	1	SOIL	11/06/00	11/02/00	15:35:00	TPH(8015OG) pH(9045) TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-19A	RJ791	1	SOIL	11/06/00	11/02/00	14:40:00	TPH(8015OG) pH(9045)

Project #: 200794

LAB ID	CLIENT ID	NO. CONT.	MATRIX	DATE RCVD	DATE SAMP	TIME SAMP	ANALYSIS & METHOD
-19A	RJ791	1	SOIL	11/06/00	11/02/00	14:40:00	TAL Metals(6010B) SIM(8270) TAL Metals(6010B), TRACE
-20A	RJ792	1	SOIL	11/06/00	11/03/00	12:30:00	TPH(8015OG) PCB(8082)
-21A	RJ793	1	SOIL	11/06/00	11/03/00	14:25:00	Sample on hold
-22A	RJ787	1	SOIL	11/06/00	11/02/00	16:40:00	Sample on hold

Comments:
Homogenize all samples

Requirements:
Level IV; 28 day TAT
TPH = Ogden 4 ranges; 8270SIM = PAH's and NDMA
Dioxin and Asbestos and Formaldehyde subcontracted
8260B to include TIC's for soils

K.T.: 02/18/01

LIMS Identifier: 0011016

LIMS Project Code: OGDEN_ROCKET

Approved by: 11/14/00

OGDEN

SAN DIEGO, CA 92121
(619) 455-5045

Chain of Custody

Date 11/1/00 Page 1 of 1

Project Manager:	Dixie Hambrick	Bill To:	Purchasing
Project Name:	Rocketdyne	Company:	Ogden Environmental
Project Number:	313150002	Address:	5510 Morehouse Drive, San Diego, CA 92121
Deliver results to the address above or as stated in contract			

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: FED EY
Comment:

Cooler No: 3
QC Level: Level 4
TAT: 14-day hardcopy summary
28-day full package

Preservatives

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8021 VOC	8015DC TPH	8270SIM SVOC	8270R SVOC	8280 DIOXIN	ASTM D18 FORMALDEHYDE	8330 ORDINANCE	1LM02.1RT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	8045/8040 pH	8082 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
											HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
RJ772	OCTS23S01	5.0	11/1/00	1115	60		X				X	X		X			X				X	X							3
RJ773	OCTS23D01	5.0		1120	60						X			X								X							3
RJ774	OCTS24S01	5.0		1130	61						X			X								X							3
RJ775	OCTS24D01	5.0		1140	61						X			X								X						X	3
RJ776	OCTS23S02	6.5		1245	60						X			X								X							1
RJ777	OCTS35S01	2.1		1255	63									X								X							1
RJ778	OCTS38S01	0.5		1250	65									X															1
RJ779	OCTS39S01	1.0		1255	64	CD								X									CD						1
RJ780	OCTS37S01	1.0		1320	62									X															1
RJ781	OCTS24S02	6.5		1330	61		X				X	X		X			X				X	X							21

SWMU 7.4

Samplers Signature: [signature]	Date 11/1/00	Time 1345
Relinquished By: [signature]	Date 11/1/00	Time 1345
Received By: [signature]	Date 11/1/00	Time 1345
Relinquished By: [signature]	Date 11/4/00	Time 1430
Received By (LAB):	Date	Time

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

HOMOGENIZE ALL SAMPLE CONTAINERS PER SAMPLE ID.

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC EJ782
Date 11/01/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	013150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	FEDEX
Comment:	

Cooler No:	3	
QC Level:	Level I	TAT: 14-day hardcopy summary 28-day full package

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | 4°C | H2SO4, pH<2 4°C | 4°C | HNO3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

| Sample Data | | | | | | | Matrix | | | | | | |

OGDEN

SAN DIEGO, CA 92121
(619) 450-6000

Chain of Custody

Control Number: COC

Date 11/14/00 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	FED-EX
Comment:	

Cooler No: 3

QC Level: Level4

TAT: 14-day hardcopy summary
28-day full package

Preservatives

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC (HCL, pH<2 4°C)	8015OQ TPH (HCL, pH<2 4°C)	8270SIM SVOC (4°C)	8270R SVOC (4°C)	8280 DIOXIN (4°C)	ASTM D19 FORMALDEHYDE (H2SO4, pH<2 4°C)	8330 ORDINANCE (4°C)	1LM02.1RT METALSRT (HNO3, pH<2 4°C)	7190 HEX CHROMG (4°C)	340.2 FLUORIDE (4°C)	300 ANIONS (4°C)	9040/9040 pH (4°C)	8081 PCBs (4°C)	IC HYDRAZ (4°C)	PERCLORATE		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RJ784	HVTS08S01	3'	11/2	0700	105		X						X	X		CD	X				X			X					1
RJ785	HVTS08D01	3'		0710	106								X	X		CD	X				X			X					1
RJ786	SRBS21S01	1'		1600	40						X																		1
~~RJ787~~	~~SRBS22S01~~	~~1'~~		~~1640~~	~~40~~																							X	1
RJ788	SRTS02S01	4 X	CD	1510	41						X	X	X				X				X								1
RJ789	SRTS02D01	4 X	CD	1515	41							X																	1
RJ790	SRTS02S02	4'		1535	41							X																	1
RJ791	SRTS02D02	4'		1440	41							X	X				X				X								1
RJ792	CLBS63S01	1'	11/3/00	1230	90						X	X										X							1
RJ793	AFBS16S01	0.5	"	1425	37		X							X														X	1
				LAST ENTRY																									

SUMU
A1AOC
A1USRE
4.7 CTUIR
APTF

Samplers Signature: [signature]	Date 11/3/00	Time 1500
Relinquished By: [signature]	Date 11/4/00	Time 0830
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C

HOMOGENIZE ALL SAMPLES.

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN ENVIRONMENTAL AND ENERGY SERVICE

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Ms. Karen Williamson/Ceimic Corporation
Fax No.: (401) 782-8905

From: Jose L. Toledo *sign:*_____

Date: 11/13/00 There are 6 Pages to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	OGDEN Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*
RJ760	RJ763	HVSW20S01	10/27/00	Perchlorate	**Change Ogden ID to HVSW23S01.**
RJ748	RJ754	LFBS42S01	10/27/00	Anions, pH , Metals.	**Change Ogden ID to LFBS42S01.**
RJ772	RJ772	OCTS23S01	11/01/00	TPH, 8270CSIM, 8290, Metals, pH, 8082.	TPH, 8270CSIM, 8290, Metals, pH,8082, **Asbestos.**
RJ772	RJ774	OCT S24S01	11/01/00	TPH, 8270CSIM, 8290, Metals, pH, 8082.	TPH, 8270CSIM, 8290, Metals, pH, 8082, **Asbestos.**
RJ772	RJ777	OCTS35S01	11/01/00	8270CSIM, 8290, Metals, pH,8082.	8270CSIM, 8290, Metals, pH, 8082, **Asbestos.**
RJ772	RJ778	OCTS38S01	11/01/00	8270CSIM, 8290, Metals, pH.	8270CSIM, 8290, Metals, pH, **Asbestos.**
RJ772	RJ779	OCTS39S01	11/01/00	8270CSIM, 8290, Metals, pH.	8270CSIM, 8290, Metals, pH, **Asbestos.**
RJ772	RJ780	OCTS37S01	11/01/00	8270CSIM, 8290, Metals, pH.	8270CSIM, 8290, Metals, pH, **Asbestos.**
RJ782	RJ782	OCBS26S01	11/02/00	TPH, 8270CSIM, 8290, Metals, pH.	TPH, 8270CSIM, 8290, Metals, pH, **8082, Asbestos.**
RJ792	RJ792	HSBS02S01	11/06/00	8021, TPH, Metals, pH, 8082.	**Change EPA ID to RJ817.**
RJ792	RJ793	HSBS02D01	11/06/00	8021, TPH, Metals, pH, 8082.	**Change EPA ID to RJ818.**

*Please Run for Requested Analyses Only.

The reason for these changes is:

Incorrectly marked on COC form _____
Lack of sample volume _____
Ogden office personnel require this change *X*
Other: Containers mislabeled __ _____

Thank you.

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

Sample Receiving Notification Form

Name: Robert Davis Date: 11/6/00

Client(s): ogden
Samples Affected: RJ787 (200794-22)
(reference both Ceimic and client IDs)

The following noncompliance(s) occurred during sample shipment or receiving :
(describe what happened, when, where and how, and who discovered the problem)

RJ 787 crossed out on C.O.C. but sample arrived: Sample was assigned #22

Required Action:
(to be completed by the client or internal coordinator)

Name: _____ Date: _____

Additional Comments:
(lab use only)

Name: _____ Date: _____

Note: The original of this form will be included in the final data package.

QAT0296

10 Dean Knauss Drive, Narragansett, RI 02882 · Tel: (401) 782-8900 · Fax: (401) 782-8905

TMA
Thermo Analytical Inc.

TMA/Norcal
2030 Wright Avenue
P.O. Box 4040
Richmond, CA 94804-0040
(415) 235-2633 Fax No. (415) 235-0438

RECEIVED SEP 30 1988

September 29, 1988

David Hawkins
Groundwater Resources
Consultants, Inc.
1020 South Euclid
Tucson, AZ 85719

Dear David:

Enclosed are partial results of the analysis of the 18 soil samples collected August 25, 1988 at the Rockwell Santa Susana Field Laboratory. Results for Gross Alpha and Gross Beta analysis are not yet available. Scheduled report date for these analyses is October 4, 1988.

A number of samples contained Toluene and 2-Butanone (see the volatile organics results). We have found these compounds present in other soil cores which had been sealed with electrical tape. Analysis of common black plastic tape has shown the presence of both Toluene and 2-Butanone. In samples where these two compounds are present, contamination by the tape cannot be ruled out. Other volatile organic compounds could also be present in different brands of tape. This information came to light during analysis of your samples and was not known to me at the time of sample collection. In the future, I would recommend against the use of tape to seal core tubes.

Please call me at (415) 235-2633 if you have any questions concerning this information presented in this report.

Sincerely,

George E. Dunstan
Director of Program Management

GED/mac

Enclosures

CHAIN OF CUSTODY RECORD

BC Log Number _____

Client name: Rocketdyne | Job number: 8640/4

Project name: SSFL / Area IV

Project manager: Dickens | Sampler(s): Hawkins / Foushee

Sample number	Date sampled	Time sampled	Type Composite or Grab	Sample description	Number of containers	8240	8270	PH	Na & IC	Gross α & Gross β	Total Petrol. Hydro (8015) Lumbers	Hazardous sample special handling required	Remarks
RMDF 1	8/25/88	10:15	core	0'-0.5	1	X	X	X	X	X			brass soil core
RMDF 2	8/25/88	10:20		0'-0.5									"
RMDF 3	8/25/88	10:30		—									"
RMDF 4	8/25/88	11:10		—									"
RMDF 5	8/25/88	11:15		—									"
RMDF 6	"	11:20		—									"
OLD CONS 1	"	13:15		—		X	X	X	X	X	X		"
OLD CONS 2	"	13:25		—									"
OLD CONS 3	"	13:30		—									"
OLD CONS 4	"	13:40		—									"
OLD CONS 5	"	13:50		—									"
OLD CONS 6	"	13:55		—									"

	Signature	Company	Date	Time
Relinquished by	David B. Hawkins	GWRC	8/25/88	14:35
Received by	George Dratar	TMA/NORCAL	8/25/88	14:35
Relinquished by	George Dratar	TMA/NORCAL	8/29/88	0830
Received by	Jane B Anderson	TMA/NORCAL	8/29/88	0830
Relinquished by				
Received by				

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.

Hazardous samples will be returned to client or disposed of at client expense.

CHAIN OF CUSTODY RECORD

BC Log Number _____

Client name: ROCKETDYNE | Job number: 8640/4

Project name: SSFL / AREA IV

Project manager: DICKENS | Sampler(s): HAWKINS/FOUSHEE

Sample number	Date sampled	Time sampled	Type Composite or Grab	Sample description	Number of containers	8240	8270	pH	Na + K	GROSS α + GROSS β	TPHAL PETROLEUM HYDROCARBONS (8015)	Hazardous sample / Special handling required	Remarks
B133-1	8/25/88	0840	CORE	—	1	X	X	X	X	X	X		BRASS SOIL CORE
B133-2	8/25/88	0850	CORE	—	1	↓	↓	↓	↓	↓	↓		↓
B133-3	8/25/88	0900	CORE	0.3'-0.8'	1								
B133-4	8/25/88	0905	CORE	2.5'-3.0'	1								
B133-5	8/25/88	0915	CORE	9.0'	1								
B133-6	8/25/88	0935	CORE	—	1								

	Signature	Company	Date	Time
Relinquished by 1	David D. Hawkins	GEL RC	8/25/88	14:35
Received by	George E. Dunton	TMA/NORCAL	8/25/88	14:35
Relinquished by	George E. Dunton	TMA/NORCAL	8/29/88	0830
Received by	James B. Anderson	TMA/NORCAL	082988	0830
Relinquished by				
Received by				

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.
Hazardous samples will be returned to client or disposed of at client expense.

Space Systems
Rocketdyne Propulsion & Power
6633 Canoga Avenue
P.O. Box 7922
Canoga Park, CA 91309-7922

August 4, 1998
In reply refer to 98RC4145

BOEING

Elizabeth Wessling
Ogden Environmental
550 South Wadsworth Blvd.
Suite 500
Lakewood, CO

Dear Ms. Wessling:

Attached are packages of laboratory reports, QA/QC data and chain-of-custody for soils analyses related to the following assessment locations:

Old Construction Yard – August 1988
New Construction Yard and ESADA – August 1988
R2 Pond, SRE Pond and Perimeter Pond – May 1990
Process Development Unit – August 1991

These include all the data available in the GRC files. Unfortunately, two laboratories utilized for this work (ATI and US Testing) are no longer in business. The TMA/Norcal current successor is ThermoNUtech. They are determining if QA/QC data are retrievable for the August 1988, Old Conservation Yard samples.

Please contact me after you have had an opportunity to review these packages.

Sincerely,

Art Lenox
Environmental Remediation

AL:bc
Enclosures

(SHEA-015886)

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

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

Rocketdyne
Analysis/Method: SW846 7610 (potassium), SW846 7770 (sodium), SW846 9045 (pH)
No. of Samples: 6

Samples: OLD CONS1, OLD CONS2, OLD CONS3, OLD CONS4, OLD CONS5, OLD CONS6

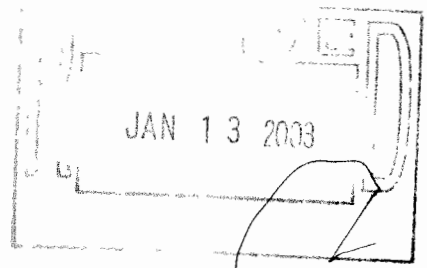
There was no laboratory quality control information or any other quality control information provided with the Form I metals and pH results for the samples in this SDG; therefore, the metals and pH results could not be validated.

CEIMIC
Corporation

"Analytical Chemistry for Environmental Management"

T762

January 10, 2003



Lisa Tucker
Montgomery Watson, Inc.
1230 Columbia St., Suite 750
San Diego, CA 92101-8536

Dear Ms. Tucker:

Enclosed are the results for the analyses performed in support of Montgomery Watson's Rocketdyne Project, SDG No. MJ094. The 1 water and 17 soil samples were received at Ceimic Corporation on December 11, 12 and 13, 2002.

This sample is reported under Ceimic Project Number 021354, which can be referenced when inquiring about this project.

If you have any questions or concerns regarding this data, please call me at the telephone number listed below.

Sincerely,

Alfred Kwolek
Director of Client Support Services

AK/klw

Enclosures

10 Dean Knauss Drive, Narragansett, RI 02882 • Tel: (401) 782-8900 • Fax: (401) 782-8905

Project Narrative

SDG Narrative

The enclosed data package is in response to Montgomery Watson's Rocketdyne Project, SDG No. MJ094. Under this SDG there are 9 VOA, 2 PAH and 17 TPH-DRO samples received at Ceimic Corporation on December 11, 12 and 13, 2002.

This data package includes the analysis for the following sample from SDG No. MJ094, which is billable:

(1)	Client ID	Ceimic ID	Analysis
	MJ112	021354-01	TPH
	MJ094	021354-02	VOA, TPH
	MJ095	021354-03	VOA, TPH
	MJ096	021354-04	TPH
	MJ097	021354-05	TPH
	MJ098	021354-06	TPH
	MJ099	021354-07	VOA, PAH, TPH
	MJ100	021354-08	TPH
	MJ101	021354-09	VOA, TPH
	MJ102	021354-10	VOA, TPH
	MJ103	021354-11	TPH
	MJ104	021354-12	TPH
	MJ105	021354-13	VOA, TPH
	MJ106	021354-14	VOA, PAH, TPH
	MJ107	021354-15	VOA, TPH
	TRIP BLANKS	021354-16	VOA
	MJ110	021354-17	TPH
	MJ111	021354-18	TPH

Sample Receipt

Cooler Temperatures upon receipt were 4°C, 6°C and 9°C.

(2) Instrumentation and Column Identification

The following instruments were used for the analyses:

GC/MS Analysis

A. VOA

MS12 HP5973 GC/MS,25 m, 0.20mm ID, 1um, DB-624 capillary column
OI trap #10 (8cm Tenax, 8cm silica gel, 8cm carbon molecular sieve)

MS16 HP5972 GC/MS, 30m, 0.32mm ID, 1.8 um, DB-624 capillary column.
OI trap #10 (8cm Tenax, 8cm silica gel, 8cm carbon molecular sieve)

B. PAH

MS1 HP5972 GC/MS,30 m,25 mm ID, ZB-5 fused silica capillary column

C. TPH-DRO

AD23_1: HP5890II (GC9) using 30 m x 0.53 mm ID, DB5 capillary column

(3) Sample Information

An "x" qualifier is flagged by Target Thru-put software whenever the data is manually edited. The letters "M" for GC/MS and "FF" for GC are used on the raw data of the quantitation report whenever a manual integration is performed. Manual integrations are performed on GC/MS and GC standards and samples when computer generated integration picks up only a portion of the chromatographic peak, due to software limitations. When manual integrations are required, these integrations are performed using sound defensible professional judgment, in order to report accurate data. Each manual integration is signed and dated, and reviewed by both the lab supervisor and the GC/MS Interpretation Specialist for GC/MS or the Organic Lab Manager for Pest/PCB.

A. VOA (Method 8260B)

1,1,2-Trichloro-1,2,2-trifluoroethane, Chlorotrifluorothane, and 1-Chloroethylvinylether were calibrated separately and reported from a separate analysis.

The following samples had high surrogate recoveries:

Client ID:	Ceimic ID:
MJ095	021354-03
MJ099	021354-07
MJ101	021354-09

The following samples had low internal standard recoveries:

Client ID:	Ceimic ID:
MJ095	021354-03
MJ099	021354-07
MJ105	021354-13
MJ106	021354-14

B. PAH Fraction (Method 8310)

The following samples were analyzed by SIM (Selective Ion Monitoring) for low detection of PAH's:

Client ID:	CEIMIC ID:
MJ099	021354-07
MJ106	021354-14

These samples had high surrogate recoveries and were reanalyzed at a dilution of 1:10.

C. TPH Fraction (Method 8015)

All samples were extracted and analyzed within their respective holding times.

The following sample extracts were diluted upon analysis, either due to high analyte concentration or to extremely dark extract color:

Sample	Lab ID	Dilution Factor	Sample	Lab ID	Dilution Factor
MJ094	021354-02	10	**MJ101**	021354-09	50
MJ095	021354-03	50	**MJ102**	021354-10	50
MJ096	021354-04	5	**MJ103**	021354-11	10
MJ097	021354-05	10	**MJ104**	021354-12	50
MJ098	021354-06	50	**MJ105**	021354-13	10
MJ099	021354-07	100	**MJ106**	021354-14	50

Several samples contain surrogate recoveries outside of QC limits due to coelution with analyte in the sample and/or to inaccuracies associated with dilution.

Lubricant oil range analyte recovery in the LCS sample is high (130%).

The following analyte responses are outside of QC limits in continuing calibration verification standards:

Standard	Injection Time	Compound	Response Shift (%D)
TPHA30B	12/27/02 16:39	p-Terphenyl-d14	-19.1%
TPHA30D	12/28/02 15:51	p-Terphenyl-d14	-21.5%
		Lubricant Oil Range	-15.1%
TPHA30E	12/30/02 18:07	p-Terphenyl-d14	-23.3%
		Lubricant Oil Range	-18.2%
TPHA30F	12/31/02 06:11	p-Terphenyl-d14	-18.5%
TPHA30G	01/02/03 16:34	p-Terphenyl-d14	+27.5%
TPHA30H	01/02/03 23:04	p-Terphenyl-d14	+36.3%
		Lubricant Oil Range	+17.6%
TPHA30J	01/03/03 08:37	p-Terphenyl-d14	+22.4%
TPHA30K	01/03/03 10:25	p-Terphenyl-d14	+20.2%

Deviations from the SOW

None other than specified above.

End of SDG Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the laboratory manager or his/her designee, as verified by the following signature.

Alfred Kwolek, Director of Client Support Services

1/10/03

Date

Chain-of-Custody

CHAIN OF CUSTODY

021354

20, VOA

MWH
MONTGOMERY WATSON HARZA

250 N. Madison Avenue
Pasadena, CA 91101
(626) 568-6310

Chain of Custody

Control Number: COC MJ 105

Date 12/10/02 Page 2 of 2

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowell Moffitt
Company:	MWH
Address:	250 N. Madison Avenue, Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Fed EX
Comment:	

Cooler No.	
QC Level:	TAT:

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4, pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C	4°C	4°C				
	8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	300M PERCHLORATES	8310 PAH	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
13 MJ 105 CDBS04 S02 AIIA0C 3' 12/10/02 1510	X	X														X	GP		X	3
14 MJ 106 BABS14 S04 4.15 21' 12/11/02 1540	X	X														X	GP			5
15 MJ 107 B-1-12-7.5' 4.1 7.5' 12/11/02 1620	X	X														X	GP		X	5
16 trip blanks																				

J.B. 12/11/02

Sample Data							
Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID

Matrix			
Soil	Water	Product	

Samplers Signature:	Date	Time
Thomas J. Bt	12/10/02	1500
Relinquished By: Thomas J. Bt	Date 12/11/02	Time 1700
Received By: Elizabeth Astuig	Date 12/12/02	Time 10:00
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC Seal Intact: Y or N

Any other problems: Y or N

If any YES, MWH contacted: Y or N

Date Contacted: __/__/__

Temperature °C

Comments:
Hold SVOCs pending results of MJ 106.
Run TPH, VOCs on all samples.

021354
VOA, 20

MWH
MONTGOMERY WATSON HARZA

250 N. Madison Avenue
Pasadena, CA 91101
(626) 568-6310

Chain of Custody

Control Number: COC MJ093

Date 12 / 9 / 02 Page 1 of 2

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowell Moffitt
Company:	MWH
Address:	250 N Madison Avenue, Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Fed Ex
Comment:	

Cooler No. 370
QC Level:
TAT:

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | 4°C | H2SO4, pH<2 4°C | 4°C | HNO3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

Sample Data

	Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID
01	MJ093	BATS03 S01	4.15	3.5	12/9/02	1135		
02	MJ094	BABS12 S02	↓	11	↓	1345		
03	MJ095	BABS12 S04	↓	20	↓	1405		
04	MJ096	BUTS01 S04	5.5 SWMU	13	↓	1550		
05	MJ097	AABS14 S02	5.9	55	12/10/02	0855		
06	MJ098	BVBS15 S02	5.13	5.5		0930		
07	MJ099	BVBS23 S02	↓	6'		1015		
08	MJ100	AABS06 S03	5.9	13'		1110		
09	MJ101	ABBS10 S02	AIIAOC	5		1210		
10	MJ102	ABBS10 D02	↓	5.5		1215		
11	MJ103	AB BS 15 S03	↓	6.5		1335		
12	MJ104	CDBS17 S01	↓	5	↓	1430		

Matrix: Soil | Water | Product

	8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	300M PERCHLORATES	8310 PAH	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
01		X														X	GP		X	1
02	X	X														X	GP		X	4
03	X	X														X	GP		X	4
04		X														X	GP		X	2
05		X														X	GP		X	1
06		X														X	GP		X	1
07	X	X														X	GP			4
08	TB ###	X														X	GP		X	1
09	X	X														X	HA		X	3
10	X	X														X	HA		X	3
11		X														X	HA		X	1
12		X														X	GP		X	1

Samplers Signature: Thomas J. Bath	Date 12/9/02	Time 1000
Relinquished By: Thomas J. Bath	Date 12/10/02	Time 1700
Received By: Elizabeth Astrug	Date 12/11/02	Time 10:00
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal Intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C

Comments:
3) Report TPH in 4 Carbon Fractions.
2) Take TPH aliquot, then homogenize, split, + sample SVOCs for PAH only (8310).
1) Hold all samples pending result of MJ099.

SAMPLES

021354
(20)

MWH
MONTGOMERY WATSON ~~HARZA~~

250 N. Madison Avenue
Pasadena, CA 91101
(626) 568-6310

Chain of Custody

Control Number: COC MJ 108

Date 12/11/02 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	
Deliver the results to the address above or as stated in contract	

Bill To:	Lowell Moffitt
Company:	MWH
Address:	250 N. Madison Avenue, Pasadena, CA, 91101

Sample Disposal Instructions	Laboratory Disposal
Shipment Method:	Fed Ex
Comment:	

Cooler No.	
QC Level:	TAT:

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | 4°C | H2SO4, pH<2 4°C | 4°C | HNO3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	300M PERCHLORATES	8310 PAH Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
~~B1BS07~~	MJ 108	4.1		12/11/02	1650			X																					
MJ 109	B1BS07 S02	4.1	12	12/11/02	1700			X			X	X	X					X								GP		X	
MJ 108	B1BS07 S01	4.1	6	↓	1650			X			X	X	X					X								GP			
~~TB MJ 110~~																													
MJ 110	~~F~~ OCBS06 S01	7.4	0.5	12/12/02	0930			X				X	~~X~~ TB												X	HA		X	
MJ 111	EVBS01 S01	5.2	1	↓	1415			X				X	~~X~~ TB												X	HA		X	

J.B. 12/12/02

Samplers Signature:	Date	Time
Thomas J. Bu	12/11/02	1645
Relinquished By:	Date	Time
Thomas J. Bu	12/12/02	1630
Received By:	Date	Time
Elizabeth Astrig	12/13/02	10:00
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal Intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C

Comments:
1) MJ 108, 109 are a separate SDG.
2) MJ 110, 111 are part of SDGs MJ 093, MJ 105.
3) Hold all analyses on MJ 109.
4) For MJ 110, 111, run TPH + hold SVOC (PAH). (1 week turn on these TPH results)

Sample Receiving Checklist

LIMS #: _____ Cooler Number: 1

Client: MWOH Number of Coolers: 1

Project: Boeing SSFL Date Received: 12/13/02

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 12/13/02

1. Have designated person initial here to acknowledge receipt of cooler: EA (date): 12/13/02

2. Did cooler come with a shipping slip (airbill, etc.)? ..YES NO

If YES, enter carrier name & airbill number here: FX836347588321

3. Were custody seals on outside of cooler? ..... YES (NO)

How many & where: _____ seal date: / / seal name:

4. Were custody seals unbroken and intact at the date and time of arrival ..... YES NO

5. Did you screen samples for radioactivity using a Geiger Counter? ..... Reading: 0 (YES) NO

6 Chain of Custody #: MJ108

7 Were custody papers sealed in a plastic bag & taped inside to the lid? ..... (YES) NO

8 Were custody papers filled out properly (ink, signed, etc.)? ..... (YES) NO

9 Did you sign custody papers in the appropriate place? ..... (YES) NO

10. Was project identifiable from custody papers? ..... (YES) NO

11. If required, was enough ice used? ..... Cooler Temperature: 6 °C Type of ice: packs (YES) NO

B LOG-IN PHASE: Date samples were logged-in: 12/13/02

by (print): E. Astring (sign): Elizabeth Astring

12. Describe type of packing in cooler: _____

13. Were all bottles sealed in separate plastic bags? ..... YES (NO)

14. Did all bottles arrive unbroken and were labels in good condition? ..... (YES) NO

15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? ..... (YES) NO

16. Did all bottle labels agree with custody papers? ..... (YES) NO

17. Were correct containers used for the tests indicated? ..... (YES) NO

18. Were samples received at the correct pH? ..... (YES) NO

19. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO

20. Were bubbles absent in VOA samples? If NO, list by sample#: _____ (YES) NO

21. Are the lot numbers of the bottleware consistent with those of the bottleware shipped to the client? ..... (YES) NO

22. Laboratory labelling verified by: (Initials): EA (date): 12/13/02

Sample Receiving Checklist

LIMS #: _____ Cooler Number: 1

Client: MWH Number of Coolers: 1

Project: Boeing SSFL Date Received: 12, 11, 02

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 12, 11, 02

1. Have designated person initial here to acknowledge receipt of cooler: EA (date): 12, 11, 02

2. Did cooler come with a shipping slip (airbill, etc.)? ..... YES NO

If YES, enter carrier name & airbill number here: FX8 3125 3882 6642

3. Were custody seals on outside of cooler? ..... YES NO

How many & where: _____ seal date: / / seal name:

4. Were custody seals unbroken and intact at the date and time of arrival ..... YES NO

5. Did you screen samples for radioactivity using a Geiger Counter? ..... Reading: C YES NO

6. Chain of Custody #: MJ093

7. Were custody papers sealed in a plastic bag & taped inside to the lid? ..... YES NO

8. Were custody papers filled out properly (ink, signed, etc.)? ..... YES NO

9. Did you sign custody papers in the appropriate place? ..... YES NO

10. Was project identifiable from custody papers? ..... YES NO

11. If required, was enough ice used? ..... Cooler Temperature: 4 °C Type of ice: pack YES NO

B. LOG-IN PHASE: Date samples were logged-in: 12, 11, 02

by (print): E Isting (sign): Elizabeth Isting

12. Describe type of packing in cooler: bubble wrap

13. Were all bottles sealed in separate plastic bags? ..... YES NO

14. Did all bottles arrive unbroken and were labels in good condition? ..... YES NO

15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? ..... YES NO

16. Did all bottle labels agree with custody papers? ..... YES NO

17. Were correct containers used for the tests indicated? ..... YES NO

18. Were samples received at the correct pH? ..... YES NO

19. Was a sufficient amount of sample sent for tests indicated? ..... YES NO

20. Were bubbles absent in VOA samples? If NO, list by sample#: _____ YES NO

21. Are the lot numbers of the bottleware consistent with those of the bottleware shipped to the client? ..... YES NO

22. Laboratory labelling verified by: (Initials): EA (date): 12, 11, 02

Sample Receiving Checklist

LIMS #: _____ Cooler Number: 1

Client: NLOH Number of Coolers: 1

Project: Boeing SSFL Date Received: 12/12/02

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 12/12/02

Have designated person initial here to acknowledge receipt of cooler: EA (date): 12/12/02

1 Did cooler come with a shipping slip (airbill, etc.)? ..... (YES) NO

If YES, enter carrier name & airbill number here: FX 831253882620

2 Were custody seals on outside of cooler? ..... YES (NO)

How many & where: _____ seal date: / / seal name:

3 Were custody seals unbroken and intact at the date and time of arrival ..... YES NO

4 Did you screen samples for radioactivity using a Geiger Counter? ..... Reading: 0 (YES) NO

5 Chain of Custody #: MS105

7 Were custody papers sealed in a plastic bag & taped inside to the lid? ..... YES (NO)

8 Were custody papers filled out properly (ink, signed, etc.)? ..... (YES) NO

9 Did you sign custody papers in the appropriate place? ..... (YES) NO

10 Was project identifiable from custody papers? ..... (YES) NO

11 If required, was enough ice used? ..... Cooler Temperature: 9 °C Type of ice: pack YES NO

B LOG-IN PHASE: Date samples were logged-in: 12/12/02

by (print): E Astinq (sign): Elizabeth Astinq

12. Describe type of packing in cooler: bubble wrap

13. Were all bottles sealed in separate plastic bags? ..... YES (NO)

14. Did all bottles arrive unbroken and were labels in good condition? ..... (YES) NO

15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? ..... (YES) NO

16. Did all bottle labels agree with custody papers? ..... (YES) NO

17. Were correct containers used for the tests indicated? ..... (YES) NO

18. Were samples received at the correct pH? ..... (YES) NO

19. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO

20. Were bubbles absent in VOA samples? If NO, list by sample#: _____ (YES) NO

21. Are the lot numbers of the bottleware consistent with those of the bottleware shipped to the client? ..... (YES) NO

22. Laboratory labelling verified by: (Initials): EA (date): 12/12/02

FAX

MWH
MONTGOMERY WATSON HARZA

1230 Columbia Street, Suite 750
San Diego, California 92101-8536

Tel: 619-699-4144
Fax: 619 239 3895

Date 12/16/02

To: Kirsten Riley / Cermic Corp. **Fax No:** (401) 782-8905

Cc: Karen Williamsen / Cermic Corp.

From: Edmund Sarao
sign: Edmund Sarao

Subject: **Chain-of-Custody Form Analytical Request Change** **No. of Pages: 3 (including cover)**

Per our conversation on 12/16/02:
Please make the changes listed below to the chain of custody form analytical request. **Disregard comment(s) section of original COC and use comments below as additional instructions.** Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	MWH Sample ID	Date Collected	Method(s) Originally Requested	Method(s) and Changes Now Requested
MJ105	MJ105	CDBS04S02	12/11/02	On "HOLD"	**8260B; 8015/BM**
MJ105	MJ106	BABS14S04	12/11/02	8260B, 8015/BM; 8310	**8260B & 8015/BM on Std. TAT; ONLY 8310 will be on a 5-day TAT**
MJ105	MJ107	B-1-12-7.5	12/11/02	On "HOLD"	**8260B; 8015/BM**

Comments:
1.) Homogenize all samples and save ample amount for pending PAH analysis.
2.) Report TPH (8015) in four Carbon Fractions.
3) All analysis on Standard TAT unless otherwise stated above.
4) Assign all samples to SDG MJ094

The reason for these changes is:

Incorrectly marked on COC form ____
Lack of sample volume ____

MWH office personnel require this change X

Other: Containers mislabeled

Thank you.

FAX

MWH
MONTGOMERY WATSON HARZA

1230 Columbia Street, Suite 750
San Diego, California 92101-8536

Tel: 619-699-4144
Fax. 619 239 3895

Date: 12/16/02

To: Kirsten Riley / Ceimic Corp. **Fax No:** (401) 782 8905

Cc: Karen Williamsen / Ceimic Corp.

From: Edmund Sarao
sign: Edmund Sarao

Subject: **Chain-of-Custody Form Analytical Request Change**

No. of Pages: 3 (including cover)

Per our conversation on 12/16/02:
Please make the changes listed below to the chain-of-custody form analytical request **Disregard comment(s) section of original COC and use comments below as additional instructions.** Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	MWH Sample ID	Date Collected	Method(s) Originally Requested	Method(s) and Changes Now Requested
MJ093	MJ093	BATS03S01	12/09/02	On "HOLD"	**8015B/M; change EPA ID from MJ093 to MJ112**
MJ093	MJ094	BABS12S02	12/09/02	On "HOLD"	**8260B; 8015/BM**
MJ093	MJ095	BABS12S04	12/09/02	On "HOLD"	**8260B; 8015/BM**
MJ093	MJ096	BUTS01S04	12/09/02	On "HOLD"	**8015/BM**
MJ093	MJ097	AABS14S02	12/09/02	On "HOLD"	**8015/BM**
MJ093	MJ098	BVBS15S02	12/10/02	On "HOLD"	**8015/BM**
MJ093	MJ099	BVBS23S02	12/10/02	8260B; 8015/BM; 8310	**8260B & 8015/BM on Std. TAT; ONLY 8310 will be on a 5-day TAT**
MJ093	MJ100	AABS06S03	12/10/02	On "HOLD"	**8015/BM**
MJ093	MJ101	AABS10S02	12/10/02	On "HOLD"	**8260B; 8015/BM**
MJ093	MJ102	AABS10D02	12/10/02	On "HOLD"	**8260B; 8015/BM**
MJ093	MJ103	ABBS15S03	12/10/02	On "HOLD"	**8015/BM**
MJ093	MJ104	CDBS17S01	12/10/02	On "HOLD"	**8015/BM**

Comments:
1.) The COC number is now changed from "MJ093" to "MJ094"
2.) Homogenize all samples and save ample amount for pending PAH analysis.
3.) Report TPH (8015) in four Carbon Fractions.
4.) All analysis on Standard TAT unless otherwise stated above.
5.) Assign all samples to SDG MJ094

The reason for these changes is:

Incorrectly marked on COC form ____
Lack of sample volume ____
MWH office personnel require this change X
Other: Containers mislabeled ____
Thank you.

Chain of Custody

Original Chain of Custody goes to Laboratory

0228

Page _____ of WR

Project #	Project Name Rocketdyne Project Mont. watson	Cooler Temp.
Samplers (please print)		Cooler #

Lab ID	Date	Time	Comp. / Grab	Sample Identification	Sample Matrix	No. of Containers	PAH 8310	pH		pH		pH		pH		pH		pH		pH	Remarks
	12/9/02	11:35		MJ112	S	1	X														
		13:45		MJ094	S	1	X														
		14:05		MJ095	S	1	X														
		15:50		MJ096	S	1	X														
	12/10/02	8:55		MJ097	S	1	X														
		9:30		MJ098	S	1	X														
		11:10		MJ100	S	1	X														
		12:10		MJ101	S	1	X														
		12:15		MJ102	S	1	X														
		13:35		MJ103	S	1	X														

Ceimic Project #	Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
	[signature]	12/20/02 1:05:00 PM	[signature]	12/21/02 1130
Storage Location	Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
	Relinquished by (signature)	Date/Time	Received by Ceimic (signature)	Date/Time

Remarks:

= Lab Use Only

Ceimic Corporation, 10 Dean Knauss Drive, Narragansett, RI 02882 - Tel: (401) 782-8900, Fax: (401) 782-8905

Project 23227

Chain of Custody

Original Chain of Custody goes to Laboratory

0227 23107

Page _____ of 10

Project #	Project Name	Cooler Temp.
	Raytheon Montgomery Watson	
Samplers (please print)		Cooler #

Lab ID	Date	Time	Comp.	Grab	Sample Identification	Sample Matrix	No. of Containers	PAH 8310	pH		pH		pH		pH		pH		pH		pH	Remarks
	12/13/02	14:30			MJ104	S	1	X														
	12/13/02	15:10			MJ105	S	1	X														
	12/11/02	15:40			MJ106	S	1	X														
	12/12/02	~~15:30~~ 16:40			12/12/02 ~~MJ107~~ MJ110 *	S	1	X														
	12/12/02	14:15			MJ111 *	S	1	X														* hold analysis
	12/10/02	10:15			MJ099	S	1	X														

Celmic Project #	Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
	Karen Williamson	12/20/02 5:00 PM	[signature]	12/21/02 1130
Storage Location	Relinquished by (signature)	Date/Time	Received by (signature)	Date/Time
	Relinquished by (signature)	Date/Time	Received by Celmic (signature)	Date/Time

Remarks:

- hold analysis of MJ111 and MJ110

= Lab Use Only

Celmic Corporation, 10 Dean Knauss Drive, Narragansett, RI 02882 - Tel: (401) 782-8900, Fax: (401) 782-8905

CEIMIC
Corporation
"Analytical Chemistry for Environmental Management"

December 12, 2001

Ms. Lisa Tucker
MWH
1230 Columbia Street
Suite 750
San Diego, CA 92101-8536
619-239-3888

Dear Ms. Tucker:

Enclosed are the results for the analyses performed in support of Montgomery Watson's Rocketdyne Project, SDG No. MJ031. The 12 soil samples were taken from the field on November 19 and 20, 2001 and received at Ceimic Corporation on November 20 and 21, 2001.

These samples are reported under Ceimic Project Number 010951, which can be referenced when inquiring about this project.

If you have any questions or concerns regarding this data, please call me at the telephone number listed below.

Sincerely,

Henry Leibovitz, Ph.D.
Organic Laboratory Manager

HL/klw

Enclosures

10 Dean Knauss Drive, Narragansett, RI 02882 • Tel: (401) 782-8900 • Fax: (401) 782-8905

Project Narrative

SDG Narrative

The enclosed data package is in response to Montgomery Watson, Rocketdyne Project, SDG MJ031. Under this SDG there are 8 SIM and 3 TPH-DRO analyses for 12 soil samples which were received at Ceimic Corporation on November 20 and 21, 2001.

This data package includes the analyses for the following samples from SDG No. MJ031:

(1)

Client ID	Ceimic ID	Analysis
MJ031	010951-01	SIM
MJ032	010951-02	SIM
MJ035	010951-05	SIM, TPH-DRO
MJ036	010951-06	SIM, TPH-DRO
MJ037	010951-07	TPH-DRO
MJ039	010951-09	SIM
MJ040	010951-10	SIM
MJ041	010951-11	SIM
MJ042	010951-12	SIM

The submitted data covers the analyses of the SIM and TPH-DRO fraction and its associated blanks and QA/QC. CEIMIC would like to highlight the following points pertaining to the analyses performed for this case:

(2) Sample Receipt

All samples were received intact and properly preserved.

The cooler temperatures upon receipt are annotated on the Chain of Custodies and on the Ceimic Sample Receiving Checklist.

(3) Instrumentation and Column Identification

The following instruments were used for analyses:

GC/MS Analysis

A. SIM

MS10: HP5970B GC/MS,30 m,25 mm ID, ZB-5 fused silica capillary column

MS11: HP5973 GC/MS,30 m,25 mm ID, ZB-5 fused silica capillary column

B. TPH-DRO

AD23_1: HP5890II GC/MS,30 m, 25 mm ID, DB-5 capillary column, GC9.

(4) Sample Information

A. SIM Fraction (Method 8270)

The following samples were analyzed by SIM (Selective Ion Monitoring) for low detection of N-Nitrosodimethylamine, PAH's, and Phthalates.

Client ID:	CEIMIC ID:
MJ031	010951-01
MJ032	010951-02
MJ035	010951-05
MJ036	010951-06
MJ039	010951-09
MJ040	010951-10
MJ041	010951-11
MJ042	010951-12

The extraction blank and most of the samples were contaminated with bis (2-Ethylhexyl) phthalate above the SIM calibration range. The blank was also contaminated with Di-n-butylphthalate.

The following samples had high surrogate recoveries:

Client ID:	CEIMIC ID:
MJ031	010951-01
MJ035	010951-05
MJ039	010951-09

Sample MJ042 (010951-12) was reanalyzed at a dilution of 1:2. The diluted sample had low internal standard recoveries.

B. TPH-DRO Fraction (Method 8015B)

All samples were extracted within holding time.

n-Eicosane recovery is low in sample MJ037 (70%).

Surrogate recoveries are high in F1127-LCS4 (139%, 126%).

Deviations from the SOW

None other than specified above.

End of SDG Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Henry Leibovitz, Organic Laboratory Manager

12-12-01
Date

Inorganic SDG Narrative

Client Case ID: Rocketdyne
Ceimic Project No.: 010951
SDG No.: MJ031

The following sample was received at Ceimic Corporation on November 20, 2001:

MJ034

The following samples werereceived at Ceimic Corporation on November 21, 2001:

MJ035 MJ036 MJ037

The above samples were digested and analyzed for total metals using SW846 methods 3050A/6010B/7471A and reported in accordance with the Inorganic Statement of Work (SOW) ILM04.1.

QA/QC Samples:

Inorganic Ventures Qcplus+ Second Source QCP-CICV-1, QCP-CICV-2, and QCP-CICV-3 were used for the ICV and CCV for the ICP metals. Inorganic Ventures CLPP CAL-1, CLPP CAL-2 and CLPP CAL-3 were used for the calibration standards for the ICP metals. Inorganic Ventures CLPP-ICS-A and CLPP-ICS-B were used for the ICSA and ICSAB samples. Environmental Resource Associates lot 248 was used for the LCSS sample.

Observations:

Total metals were determined using inductively coupled plasma (ICP) emission spectroscopy. Mercury analysis was performed via automated cold vapor atomic absorption spectroscopy (CVAA).

Elevated levels of iron and other spectral interferants caused analytical signal suppression for the elements thallium and silver. The affected sample were re-analyzed and reported from diluted runs.

A "U" flag in the C column on the sample result forms (Form I-IN) indicates that the concentration of that analyte in the sample is undetected at the method detection limit (MDL). For the sample concentration reported between the Contract Required Detection Limits (CRDL) and the instrument MDL, a "B" flag is shown in the C column on the Form I-IN.

Deviations from Contract:

None.

End of case Narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Leontyna Majnich — Date

Leontyna Majnich
Analytical Chemist

CHAIN OF CUSTODY

010951 (8)

MWH
MONTGOMERY WATSON HARZA

250 N. Madison Avenue
Pasadena, CA 91101
(626) 568-6310

Chain of Custody

Control Number: COC MJ031
Date 11/19/01 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	DOE Soils NOV. 1890533 011607
Deliver the results to the address above or as stated in contract	

Bill To:	Lowell Moffitt
Company:	MWH
Address:	250 N. Madison Avenue, Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Fed-Ex
Comment:	

Cooler No.	
QC Level:	TAT:

Preservatives: None

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270CSIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	9040B/9045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	300M PERCHLORATES		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ031	OCBS275Ø2	7.4	3'	11/19/01	1330	-		X							X			X									HA			1
MJ032	OCBS285Ø1	7.4	0.5'		1345	-		X							X			X												1
MJ033	OCBS28DØ1	7.4	0.5'		1345	-		X										X												1
MJ034	OCBS295Ø1	7.4	0.5'		1420	-		X										X												1

Samplers Signature:	Date	Time
Relinquished By:	Date	Time
Received By:	Date	Time
Relinquished By:	Date	Time
Received By (LAB):	Date 11/20/01	Time 10:30

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:	Comments:
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC Seal Intact: Y or N	
Any other problems: Y or N	
If any YES, MWH contacted: Y or N	
Date Contacted: __/__/__	
Temperature °C	

MWH
MONTGOMERY WATSON HARZA

250 N. Madison Avenue
Pasadena, CA 91101
(626) 568-6310

010951 (08)

Chain of Custody

Control Number: COC MJ035
Date 11 / 20 / 01 Page 1 of

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	DOE Soils
Deliver the results to the address above or as stated in contract	

Bill To:	Lowell Moffitt
Company:	MWH
Address:	250 N. Madison Avenue, Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Fed-Ex
Comment:	

Cooler No.
QC Level:
TAT:

Preservatives: None

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC HCL, pH<2 4°C	8015BM TPH HCL, pH<2 4°C	8270CSIM SVOC 4°C	8270C SVOC 4°C	8290 DIOXINS 4°C	8315A FORMALDEHYDE H2SO4, pH<2 4°C	8330 ORDNANCE 4°C	6000/7000 METALS HNO3, pH<2 4°C	7196A HEX CHROMIUM 4°C	8082 PCBs 4°C	9040B/9045C pH 4°C	340.2 FLUORIDE 4°C	300M ANIONS 4°C	300M HYDRAZINE 4°C	300M PERCHLORATES 4°C	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ035	PUTSØ9SØ1	7.10	9'	11/20/01	0730	—		X				X	X					X			X					TS			1
MJ036	PUTSØ9SØ2	7.10	7'		0740	—		X				X	X					X			X								1
MJ037	BHTS25SØ1	7.5	1'		0905	—		X				X						X			X								1
MJ038	BHTS25SØ2		4'		0925	—		X				X						X			X							X	1
MJ039	BHTS51SIØ		2.3'		0950	—		X					X																2
MJ040	BHTS51SI1		2.5'		1010	—		X					X																2
MJ041	BHTS51SI2		2'		1035	—		X					X																1
MJ042	BHTS51SI3		2'		1045	—		X					X																2

Samplers Signature: — Date 11/20 — Time 1300

	Date	Time
Relinquished By:		
Received By:		
Relinquished By:		
Received By (LAB):	11/26/01	10:30

White Copy:Original Yellow:Lab Copy Pink:Field Copy

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal Intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C

Comments:
Note: Composite/Blend MJ039, MJ040, and MJ042
MJ039: 0.5', 3.5'
MJ040: 1.5', 3.5'
MJ041: 2', ref. @ 2'
MJ042: 1', 3'

F A X

MWH
MONTGOMERY WATSON HARZA

1230 Columbia Street, Suite 750
San Diego, California 92101-8536

Tel: 619-699-4144
Fax: 619-239-3895

Date: 01/28/02

To: Patti Meeks/ AMEC, Denver **Fax No:** 303-935-6575

From: Lisa J. Tucker
*sign:*_____

Subject: **Chain-of-Custody Form Analytical Request Change**

No. of Pages: 2 (including cover)

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	MWH Sample ID	Date Collected	Sample ID (s) Now Requested
MJ035	MJ039	BHTS51S10	08/02/01	**Change Sample ID to BHBS01S01**
MJ035	MJ040	BHTS51S11	08/02/01	**Change EPA ID to BHBS02S01**
MJ035	MJ041	BHTS51S12	08/02/01	**Change EPA ID to BHBS03S01**
MJ035	MJ042	BHTS51S13	08/02/01	**Change EPA ID to BHBS04S01**

Ids changed in Database 11/30/01.

COC No.	EPA Sample ID	MWH Sample ID	Date Collected	Originally Depth	Corrected Depth
MJ035	MJ039	BHBS01S01	08/02/01	2.3 Feet	**2 Feet**

Ids changed in Database 11/30/01.

The reason for these changes is:
MWH office personnel require this change X

Thank you.

MWH
MONTGOMERY WATSON HARZA

250 N. Madison Avenue
Pasadena, CA 91101
(626) 568-6310

Chain of Custody

Control Number: COC MJ035

Date 11/20/01 Page 1 of

Project Manager:	Dixie Hambrick
Project Name:	Boeing SSFL
Project Number:	DOE Soils
Deliver the results to the address above or as stated in contract	

Bill To:	Lowell Moffitt
Company:	MWH
Address:	250 N. Madison Avenue, Pasadena, CA, 91101

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Fed-Ex
Comment:	

Cooler No.	
C Level:	TAT:

Preservatives: None

Sample ID	Description (for MWH use only)	SWMU	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260B VOC	8015BM TPH	8270C SIM SVOC	8270C SVOC	8290 DIOXINS	8315A FORMALDEHYDE	8330 ORDNANCE	6000/7000 METALS	7196A HEX CHROMIUM	8082 PCBs	8040B/8045C pH	340.2 FLUORIDE	300M ANIONS	300M HYDRAZINE	300M PERCHLORATES	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
MJ035	PUTS09S01	7.10	9'	11/20/01	0730	–		X				X	X					X			X					TS			1
MJ036	PUTS09S02	7.10	7'		0740	–		X				X	X					X			X								1
MJ037	BHTS25S01	7.5	1'		0905	–		X				X						X			X								1
MJ038	BHTS25S02		4'		0925	–		X				X						X			X							X	1
MJ039	~~BHTS51S10~~	2.0	~~23'~~		0950	–		X					X																2
MJ040	~~BHTS51S11~~		25'		1010	–		X					X																2
MJ041	~~BHTS51S12~~		2'		1035	–		X					X																1
MJ042	~~BHTS51S13~~		2'		1045	–		X					X																2
MJ039	BHBS01S01																												
MJ040	BHBS02S01																												
MJ041	BHBS03S01																												
MJ042	BHBS04S01																												

IDs changed 11/30/01 JJ

	Date	Time
Samplers Signature:	11/20	1300
Relinquished By:		
Received By:		
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC Seal Intact: Y or N
Any other problems: Y or N
If any YES, MWH contacted: Y or N
Date Contacted: __/__/__
Temperature °C

Comments:
Note: Composite/Blend MJ039, MJ040, and MJ042
MJ039: 0.5', 3.5'
MJ040: 1.5', 3.5'
MJ041: 2', ref. @ 2'
MJ042: 1', 3'

White Copy:Original Yellow:Lab Copy Pink:Field Copy

LIMS #_____ Cooler Number: 1

Client: HW Montgomery Watson Number of Coolers: 1

Project: DOE Soils Boeing SSFL Date Received: 11/21/01

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 11/21/01

1. Have designated person initial here to acknowledge receipt of cooler: MJC (date): 11/21/01

2. Did cooler come with a shipping slip (airbill, etc.)? ..... (YES) NO

If YES, enter carrier name & airbill number here: FX 831950250810

3. Were custody seals on outside of cooler? ..... (YES) NO

How many & where: 1 front seal date: 11/20/01 seal name:

4. Were custody seals unbroken and intact at the date and time of arrival ..... (YES) NO

5. Did you screen samples for radioactivity using a Geiger Counter? ..... Reading: — (YES) NO

6. Chain of Custody #: MJ035

7. Were custody papers sealed in a plastic bag & taped inside to the lid? ..... (YES) NO

8. Were custody papers filled out properly (ink, signed, etc.)? ..... (YES) NO

9. Did you sign custody papers in the appropriate place? ..... (YES) NO

10. Was project identifiable from custody papers? ..... (YES) NO

11. If required, was enough ice used? ..... Cooler Temperature: 6 °C Type of ice: Cube (YES) NO

B. LOG-IN PHASE: Date samples were logged-in: 11/21/01

by (print): Matthew Campbell (sign): Matthew Campbell

12. Describe type of packing in cooler: dissolved packing foam

13. Were all bottles sealed in separate plastic bags? ..... YES (NO)

14. Did all bottles arrive unbroken and were labels in good condition? ..... (YES) NO

15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? ..... (YES) NO

16. Did all bottle labels agree with custody papers? ..... (YES) NO

17. Were correct containers used for the tests indicated? ..... (YES) NO

18. Were samples received at the correct pH? ..... (YES) NO

19. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO

20. Were bubbles absent in VOA samples? If NO, list by sample#: N/A YES NO

21. Are the lot numbers of the bottleware consistent with those of the bottleware shipped to the client? N/A ..... YES NO

22. Laboratory labelling verified by: (Initials): MJC (date): 11/21/01

LIMS #_____ Cooler Number: 1

Client: MWH Number of Coolers: 1

Project: Boeing SSFL Date Received: 11/20/01

A. PRELIMINARY EXAMINATION PHASE: Date cooler was opened: 11/20/01

1. Have designated person initial here to acknowledge receipt of cooler: PC (date): 11/20/01

2. Did cooler come with a shipping slip (airbill, etc.)? FX ..... (YES) NO

If YES, enter carrier name & airbill number here: 831950250342

3. Were custody seals on outside of cooler? ..... YES (NO)

How many & where:_____ seal date:___/___/___ seal name:

4. Were custody seals unbroken and intact at the date and time of arrival ..... YES (NO)

5. Did you screen samples for radioactivity using a Geiger Counter? ..... Reading:_____ (YES) NO

6. Chain of Custody #: MJ031

7. Were custody papers sealed in a plastic bag & taped inside to the lid? ..... (YES) NO

8. Were custody papers filled out properly (ink, signed, etc.)? ..... (YES) NO

9. Did you sign custody papers in the appropriate place? ..... (YES) NO

10. Was project identifiable from custody papers? ..... (YES) NO

11. If required, was enough ice used? ..... Cooler Temperature: 4 °C Type of ice: cube (YES) NO

B. LOG-IN PHASE: Date samples were logged-in: 11/20/01

by (print): PATRICK CRONAN (sign): Patrick Cronan

12. Describe type of packing in cooler: None

13. Were all bottles sealed in separate plastic bags? ..... YES (NO)

14. Did all bottles arrive unbroken and were labels in good condition? ..... (YES) (NO) PJC 11/20/01

15. Were all bottle labels complete (ID, date, time, signature, preservative, etc.)? ..No signature ..... (YES) (NO) PJC 11/20/01

16. Did all bottle labels agree with custody papers? ..... (YES) NO

17. Were correct containers used for the tests indicated? ..... (YES) NO

18. Were samples received at the correct pH? ..... (YES) NO

19. Was a sufficient amount of sample sent for tests indicated? ..... (YES) NO

20. Were bubbles absent in VOA samples? If NO, list by sample#:_____ YES NO

21. Are the lot numbers of the bottleware consistent with those of the bottleware shipped to the client? ..... YES NO

22. Laboratory labelling verified by: (Initials): PC (date): 11/20/01

FAX

MWH
MONTGOMERY WATSON HARZA

1230 Columbia Street, Suite 500
San Diego, California 92101-4536

Tel: 619-699-4144
Fax: 619-239-3895

Date: 11/20/01

To: Ms. Karen Williamsen / Ceimic Corporation **Fax No:** (401) 782-8905

From: Lisa J. Tucker
sign:

Subject: **Chain-of-Custody Form Analytical Request Change**

No. of Pages: 2 **(including cover)**

As per our conversation:
Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	MWH Sample ID	Date Collected	Method (s) Originally Requested	Method (s) Now Requested*	
MJ031	MJ031	OCBS27S02	11/19/01	8290 & METALS	**8290 & 8270S**	M
MJ031	MJ032	OCBS28S01	11/19/01	8290 & METALS	**8290 & 8270S**	M
MJ031	MJ033	OCBS28D01	11/19/01	METALS	**HOLD**	

*Please Run for Requested Analyses Only.
The reason for these changes is:

Incorrectly marked on COC form _____
Lack of sample volume _____
MWH office personnel require this change X
Other: Containers mislabeled _____
Thank you.

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www.pacelabs.com

Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

REPORT OF: CHEMICAL ANALYSES

PROJECT: **PCDD/PCDF ANALYSES** **DATE:** December 7, 2001

ISSUED TO: Ceimic Corporation
Attn: Mr. Henry Leibovitz
10 Dean Knauss Drive
Narragansett, RI 02882

REPORT NO: 01-1051354

INTRODUCTION

This report presents the results from the analysis performed on two samples that were submitted by a representative of Ceimic Corporation. The samples were analyzed for the presence or absence of polychlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs) using a modified version of USEPA Method 8290 as described below.

SAMPLE IDENTIFICATION

Client ID	Sample Type	Date Received	Pace ID
MJ031	Solid	11/21/01	103161725
MJ032	Solid	11/21/01	103161733

METHODOLOGY

Sample Extraction

Each sample was spiked with $^{13}C_{12}$-labeled PCDD/PCDF internal standards (Table 1) and extracted with toluene in a Soxhlet extractor. The extract was quantitatively transferred to a Kuderna-Danish concentrator, concentrated, and solvent exchanged to hexane. The hexane extract was then spiked with 2,3,7,8-TCDD-$^{37}Cl_4$ enrichment efficiency standard (Table 1) and processed through the analyte enrichment procedures described below. Moisture content was determined by taking a portion of each solid sample to constant weight in an oven.

REPORT OF LABORATORY ANALYSIS

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Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

PCDD/PCDF Analyte Enrichment

The extraction procedure often removes a variety of compounds, in addition to the PCDDs and PCDFs, from the sample matrix. Some of these compounds can directly interfere with the analyses while others can overload the capillary column causing degradation in chromatographic resolution or sensitivity. The analyte enrichment steps described below are used to remove interferences from the extracts.

Each extract was diluted to 100 mL with hexane, transferred to a separatory funnel, and washed with 1N sodium hydroxide, concentrated sulfuric acid, and aqueous sodium chloride (5% w/v) as needed. The hexane extract was quantitatively transferred to a liquid chromatography column containing alternating layers of silica gel, 40% concentrated sulfuric acid on silica gel, and 33% 1 N sodium hydroxide on silica gel. The column was eluted with 90 mL of hexane and the entire eluate was collected and concentrated, under ambient conditions, to a volume of 1 mL and spiked with the $^{37}Cl_4$-TCDD cleanup standard (Table 1).

Each extract was then fractionated on a liquid chromatography column containing 4 g of activated alumina. The column was eluted with 20 mL of hexane followed by 15 mL of 60% methylene chloride/hexane. The 60% methylene chloride/hexane fraction was concentrated to 1 mL under a stream of dry nitrogen and applied to the top of a chromatography column containing 1 g of 5% AX-21 activated carbon in silica gel. The column was eluted with two 2-mL portions of hexane, 2 mL of cyclohexane/methylene chloride (50:50 v/v) and cyclohexane/methanol/toluene (75:20:5 v/v) in the forward direction, and then with toluene in the reverse direction. The toluene fraction was collected, concentrated, spiked with recovery standards (1,2,3,4-TCDD-$^{13}C_{12}$ and 1,2,3,7,8,9-HxCDD-$^{13}C_{12}$) and taken to a final volume of 20 uL.

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Minneapolis, MN 55414
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Fax: 612.607.6444

PCDD/PCDF Analyses

Each sample extract was analyzed for the presence of PCDDs and PCDFs using combined capillary column gas chromatography/high resolution mass spectrometry (HRGC/HRMS). The instrumentation consisted of a Hewlett Packard Model 6890 gas chromatograph interfaced to a Micromass Ultima high-resolution mass spectrometer. The capillary column was interfaced directly into the ion source of the mass spectrometer, thus providing the highest possible sensitivity while minimizing degradation of the chromatographic resolution.

The mass spectrometer was operated in the electron impact ionization mode at a mass resolution of 10,000-11,000 (M/ΔM, 10 percent valley definition). This resolution is sufficient to resolve most interferences, such as PCBs, thus providing the highest level of confidence that the detected levels of PCDD/PCDF were not false positives resulting from interferences. Typical operating parameters for the HRGC/HRMS analyses are summarized in Table 2.

The data were acquired by selected-ion-recording (SIR) using groups of ion masses similar to those described in USEPA Method 8290. The five groups corresponded to the tetrachlorinated through octachlorinated congener classes. Each group contained two ion masses for the PCDDs, two ion masses for the PCDFs, the corresponding ion masses from the two isotopically labeled internal standards, and the ion mass characteristic of the polychlorinated diphenylether (PCDE) which, if present, could cause false responses in the dibenzofuran channels.

Each group of ion masses also contained a lock mass which was used by the data system to automatically correct the mass focus of the instrument. The data system determined the centroid of the lock mass during each data acquisition cycle and corrected the mass focus of the analyte and internal standard ion masses to assure that the centers of the mass peaks were being monitored.

The criteria used to judge positive responses for a PCDD/PCDF isomer included:

* Simultaneous response at both ion masses of the PCDD or PCDF
* Signal-to-noise ratio equal to or greater than 2.5:1.0 for both ion masses
* Chlorine isotope ratio within 15% of the theoretical value
* Chromatographic retention time within +/- 2 seconds of the expected retention time
* Chromatographic retention times within elution windows determined from analyses of standard mixtures
* Absence of simultaneous response in the PCDF and PCDPE ion traces

A list of the exact ion masses monitored for the determination of PCDD/PCDF isomers and the PCDE interferences is presented in Table 3. Also included are the theoretical chlorine isotope ratios for the ten congener classes.

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Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

PCDD/PCDF Quantification and Calculations

The PCDD/PCDF isomers were quantified by comparison of their responses to the responses of the labeled internal standards. Relative response factors were calculated from analyses of standard mixtures containing representatives of each of the PCDD/PCDF congener classes at five concentration levels, and each of the internal standards at one concentration level, as shown in Table 4. The PCDD/PCDF response factors were calculated by comparing the sum of the responses from the two ion masses monitored for each chlorine congener class to the sum of the responses from the two ion masses of the corresponding isotopically labeled internal standard. The formula for the response factor calculation is:

$$Rf = \frac{An \times Qis}{Ais \times Qn}$$

where:

Rf = Response factor
An = Sum of integrated areas for native isomer
Qis = Quantity of labeled internal standard
Ais = Sum of integrated areas for labeled internal standard
Qn = Quantity of native isomer

The levels of PCDD/PCDF in each sample were quantified using the following equation:

$$C = \frac{An \times Qis}{Ais \times W \times Rf}$$

where:

C = Concentration of target isomer or congener class
An = Sum of integrated areas for the target isomer or congener class
Qis = Quantity of labeled internal standard added to the sample
Ais = Sum of integrated areas for the labeled internal standard
W = Sample amount
Rf = Response factor

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Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

PROJECT: PCDD/PCDF ANALYSES **DATE:** December 7, 2001

 REPORT NO: 01-1051354

PCDD/PCDF Quantification and Calculations (Cont.)

Each pair of ion mass peaks in the selected-ion-current chromatograms was evaluated manually to determine if it met the criteria for a PCDD or PCDF isomer. Areas of all peaks exhibiting correct ion ratios, having retention times within the correct windows, and having areas corresponding to concentrations in the range covered by the initial calibration were then summed for calculations of total congener concentrations.

A limit of detection (LOD) based on producing a signal that is 2.5 times the noise level, was calculated for each undetected 2,3,7,8-substituted isomer of any tetra through octa chlorinated congener class. The noise heights used to calculate the detection limits were measured at the retention time of the specific isomer. The formula used for calculating the LOD is:

$$LOD = \frac{Hn \times Qis \times 2.5}{His \times W \times Rf}$$

where:

LOD = Single isomer limit of detection
Hn = Sum of noise heights at native isomer retention time
Qis = Quantity of labeled internal standard
His = Sum of peak heights for labeled internal standard
W = Sample amount
Rf = Response factor

The recovery of the 2,3,7,8-TCDD-$^{37}Cl_4$ enrichment efficiency standard and each $^{13}C_{12}$-labeled internal standard, relative to either 1,2,3,4-TCDD-$^{13}C_{12}$ or 1,2,3,7,8,9-HxCDD-$^{13}C_{12}$, was calculated using the following equation:

$$\%R = \frac{Ais \times Qrs \times 100\%}{Rfr \times Ars \times Qis}$$

where:

%R = Percent recovery of labeled internal standard
Ais = Sum of integrated areas of labeled internal standard
Qrs = Quantity of recovery standard
Ars = Sum of integrated areas of recovery standard
Rfr = Response factor of the specific labeled internal standard relative to the recovery standard
Qis = Quantity of the labeled internal standard congener added to the sample

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Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

PROJECT: PCDD/PCDF ANALYSES **DATE:** December 7, 2001

 REPORT NO: 01-1051354

Quality Control for PCDD/PCDF Analyses

The performance of the sample processing steps and the instrumentation are monitored on a routine basis. The procedures and criteria are summarized below.

One method blank and one laboratory spike sample are typically prepared with each ten samples of any given matrix. Recoveries of the native PCDD/PCDF analytes in the laboratory spike samples generally range from 70 to 130%. Recoveries of selected analytes outside this range do not invalidate the data but provide information, which is used by the laboratory to monitor recovery trends and to assure optimization of the method.

Internal standards are spiked into each sample prior to extraction in order to monitor the level of recovery, which is achieved for each individual sample. Acceptable recoveries range from 40 to 135 percent for the internal standards unless a deviation is due to variation in instrument response as a result of analytical interferences.

The resolution of the mass spectrometer is verified prior to each analysis to be 10,000 or greater. Hardcopies of the reference peaks are printed at the beginning and end of each analysis day. The resolving power of the DB-5MS chromatographic column is checked daily by analyzing a standard solution containing 2,3,7,8-TCDD and the adjacent TCDD isomers. The DB-225 column resolution is checked daily by analyzing a standard solution containing 2,3,7,8-TCDF and the adjacent TCDF isomers. Acceptable performance is achieved when 2,3,7,8-TCDD or 2,3,7,8-TCDF is resolved from the adjacent isomers by a valley of 25% or less. The group times for the selected-ion-monitoring data acquisitions are also checked daily by analyzing the column performance mix which has been modified to contain the first and last eluting isomers of each congener class. In this way one is assured of collecting data representative of the total PCDD/PCDF content and that the 2,3,7,8-substituted isomers are suitably resolved.

Initial calibrations are generated by analyzing standard solutions (see Table 4) containing target native and labeled PCDD/PCDF compounds. Response factors are calculated and averaged for each compound. These averages are used for quantification and for comparison to the daily continuing calibration. The relative standard deviation for each native compound must be 20% or less (30% or less for the labeled compounds) as specified in Method 8290. A continuing calibration standard is analyzed at the beginning and end of each 12-hour shift on days when initial calibrations are not performed. The initial calibration is considered to be valid when the response factors from the continuing calibration analysis fall to within the ranges specified in Method 8290.

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Pace Analytical™
www.pacelabs.com
Pace Analytical Services, Inc.
1700 Elm Street, Suite 200
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Fax: 612.607.6444

REPORT OF: CHEMICAL ANALYSES

PROJECT: PCDD/PCDF ANALYSES **DATE:** December 7, 2001

 REPORT NO: 01-1051354

RESULTS

The results from the analyses are presented in the following:

Appendix A - Documentation
Appendix B - PCDD/PCDF Analysis Results
Appendix C - QC and Calibration Results
Appendix D - Sample Chromatograms and Raw Data
Appendix E - Standard Chromatograms and Raw Data
Appendix F - QC Chromatograms and Raw Data

DISCUSSION

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 38-91% and indicate a level of efficiency through the extraction and enrichment steps that is considered typical for this matrix. With the exception of one standard, all of the internal standard recoveries for the field samples were within the method specified target ranges. Also, since the quantifications of the native 2,3,7,8-substituted isomers were based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results, found at the beginning of Appendix B, show the blank to contain low levels of selected PCDD and PCDF isomers. The samples contained these isomers at levels over 2 orders of magnitude higher than seen in the blank. In general, levels less than ten times the background are not considered statistically different from the background. This indicates that the sample processing procedures did not significantly impact the results of the analyses. It should be noted that one internal standard recovery was below the target range for this method and is flagged "P" on the data sheet.

A laboratory spike sample was also prepared with the sample batch using clean sand that had been fortified with native standard materials. The results show that the spiked native compounds were recovered at 96-114%. This indicates a high degree of accuracy for these determinations.

REPORT OF LABORATORY ANALYSIS

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www.pacelabs.com

Pace Analytical Services, Inc.
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Phone: 612.607.1700
Fax: 612.607.6444

REPORT OF: CHEMICAL ANALYSES

PROJECT: PCDD/PCDF ANALYSES **DATE:** December 7, 2001

PAGE: 8 **REPORT NO:** 01-1051354

REMARKS

The sample extracts will be retained for a period of 30 days from the date of this report and then discarded unless other arrangements are made. The raw mass spectral data will be archived on magnetic tape for a period of not less than one year. Questions regarding the data contained in this report may be directed to the authors at the numbers provided below.

Pace Analytical Services, Inc.

Charles V. Sueper, Technical Director
High Resolution Mass Spectrometry
(612) 607-6387

Scott C. Unze
Project Manager, Dioxins
(612) 607-6383

REPORT OF LABORATORY ANALYSIS

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Chain of Custody

Original Chain of Custody goes to Laboratory

165354

Page _____ of _____

| Project # | Project Name | Cooler Temp. | Analyses | | |

Columbia Analytical Services INC.
An Employee Owned Company

November 17, 1999

Lisa Arrasmith
Ogden
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9903979

Dear Lisa:

Enclosed are the results of the samples submitted to our laboratory on September 21-23, 1999. The samples were sent to Alta for Dioxins. Please find their report (#7356) attached. Samples were also sent to our Kelso facility for Formaldehyde. Please find their report (K9906630) attached. For your refernece, these analyses have been assigned our servicees request number L9903979.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296A, expiration: August 31, 2000).

If you have any questions, please call me at (818) 587-5550, extension 300.

Respectfully submitted,

Columbia Analytical Services, Inc.

Eydie Schwartz for

Leo C. Raab
Lab Director

LCR/iz

00001

CAS CSR #L9903979

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Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
EQL	Estimated Qauntitation Limit
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

00002

~~00001~~

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9903979
Project:	Rocketdyne/313150002	**Date Received:**	9/21-23/99
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Internal Login Summary Report" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses.

Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

The Formaldehyde sample was analyzed by our Kelso Facility. Their job number is K9906630.

The Dioxin sample was analyzed by Alta Analytical. Their job number is 7356.

The following difficulties were experienced during analysis of this batch: On 9/23/99 the CCV for Chloromethane (Method 8021B), had a percent difference result above 15%. This same CCV for Chlorotrifluoroethane uses linear regression. There is no sample curve for this compound. The second standard for the CCV on 9/23/99 has percent difference results above 15% for 1,1-DCA and 2-Chloroethyl Vinyl Ether. This CCV also uses linear regression for Chlorotrifluoroethane. On 9/24/99 the CCV has percent difference results above 15% for 1,1,2-TCA and 2-Chloroethyl Vinyl Ether. Once again this CCV uses a linear regression method for Chlorotrifluoroethane. The second standard for the CCV on 9/24/99 has three compounds above the 15%, percent difference level. On 9/24/99 the MTBE result from the PID has a percent difference above 15%. The OGDEN CCV has two compounds above 15%. A curve for linear regression compounds in Ogden's standard is also necessary. The CCV on 9/25/99, third standard, has four compounds that are above the 15% difference level. The PID has Xylene above the 15% difference level. Once again a linear regression curve is needed. The Ogden CCV has Acetone at 21% difference from the PID.

For method 8021B, sample RS894 (undiluted) there are several compounds which are flagged as estimated. This is due to the internal standard response factor exceeding the upper limit. This sample was rerun at a dilution, those results are included in this report.

As required samples RS892 and RS893 were reanalyzed for all hits by method 8021B. The results did not confirm.

On sample RS885, the MS/DMS results were not calculated for Aluminum. This is due to the relatively high concentration of the sample analyte compared to the spike concentration. Antimony, Beryllium, Cadmium, Cobalt, Copper, Lead, Nickel, Selenium, Vanadium and Zinc are also outside of acceptance limits. In all cases the LCS was acceptable, therefore, the data was approved.

Data Qualifier Flags are: U – Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: Lydia Scheurich Date: 11/17/99

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
27-SEP-99 11:35

00064

Service Req. No. L9903979
Client No. 154375
Client Name Ogden Environmental

Project No. 313150002
Project Name Rocketdyne

Bottles: 1 - 1 L Plastic
1 - 4 oz Glass
20 - Canisters/Decore

Bill To: Ogden Environmental
Attn: Accounts Payable
5510 Morehouse Dr.
San Diego, CA 92121

Report To: Ogden Environmental
Lisa Arrasmith
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No.
Logged In By SMALONE
ISR Num
COC Received Y
Samples Submitted 21-SEP-99 thru 23-SEP-99

Site ID
Project Chemist Eydie Schwartz

Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8021	8081	8270	FORM	HOLD	ICP-2	PH	SIM-PP	TPH-FC-CA	DIOXINS	-DIGEST	TS GEN
L9903979-001	RS320	SOIL	21-SEP-99	28-SEP-99		III							HOLD			III
L9903979-002	RS321	SOIL	21-SEP-99	28-SEP-99		HOLD							III			III
L9903979-003	RS322	SOIL	21-SEP-99	28-SEP-99					III							
L9903979-004	RS323	SOIL	21-SEP-99	28-SEP-99		III										III
L9903979-005	RS324	SOIL	21-SEP-99	28-SEP-99		III										III
L9903979-006	RS883	SOIL	22-SEP-99	29-SEP-99				KLAB								
L9903979-007	RS884	SOIL	22-SEP-99	29-SEP-99				KLAB								
L9903979-008	RS885	SOIL	22-SEP-99	29-SEP-99						III	III				III	
L9903979-009	RS886	SOIL	22-SEP-99	29-SEP-99						III	III				III	
L9903979-010	RS887	SOIL	22-SEP-99	29-SEP-99						III	III				III	
L9903979-011	RS888	SOIL	22-SEP-99	29-SEP-99								III		ALA		
L9903979-012	RS889	SOIL	22-SEP-99	29-SEP-99						III	III				III	
L9903979-013	RS890	SOIL	22-SEP-99	29-SEP-99		III										
L9903979-014	RS892	SOIL	23-SEP-99	30-SEP-99	III								III			III
L9903979-015	RS893	SOIL	23-SEP-99	30-SEP-99	III								III			III
L9903979-016	RS894	SOIL	23-SEP-99	30-SEP-99	III								III			III
L9903979-017	RS895	SOIL	23-SEP-99	30-SEP-99	III								III			III
L9903979-018	RS896	SOIL	23-SEP-99	30-SEP-99						III	III	III	III		III	III
L9903979-019	RS897	SOIL	23-SEP-99	30-SEP-99						III					III	III
L9903979-020	RS898	SOIL	23-SEP-99	30-SEP-99			III			III	III		III		III	III

METALS
IC
SEMI VOA
VOA
WET

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By:

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
27-SEP-99 11:35

00005

Service Req. No. L9903979
Client No. 154375
Client Name Ogden Environmental

Project No. 313150002
Project Name Rocketdyne

Bottles: 1 - 1 L Plastic
1 - 4 oz Glass
20 - Canisters/Decore

Bill To: Ogden Environmental
Attn: Accounts Payable
5510 Morehouse Dr.
San Diego, CA 92121

Report To: Ogden Environmental
Lisa Arrasmith
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No.
Logged In By SMALONE
ISR Num
COC Received Y
Samples Submitted 21-SEP-99 thru 23-SEP-99

Site ID
Project Chemist Eydie Schwartz

Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	TITLE 22 METALS	TITLE 22 METALS AS/GFAA	TITLE 22 METALS SE/GFAA	TITLE 22 METALS TL/GFAA	TITLE 22 METALS ICP-13
L9903979-001	RS320	SOIL	21-SEP-99	28-SEP-99					
L9903979-002	RS321	SOIL	21-SEP-99	28-SEP-99					
L9903979-003	RS322	SOIL	21-SEP-99	28-SEP-99					
L9903979-004	RS323	SOIL	21-SEP-99	28-SEP-99					
L9903979-005	RS324	SOIL	21-SEP-99	28-SEP-99					
L9903979-006	RS883	SOIL	22-SEP-99	29-SEP-99					
L9903979-007	RS884	SOIL	22-SEP-99	29-SEP-99					
L9903979-008	RS885	SOIL	22-SEP-99	29-SEP-99	III	III	III	III	III
L9903979-009	RS886	SOIL	22-SEP-99	29-SEP-99	III	III	III	III	III
L9903979-010	RS887	SOIL	22-SEP-99	29-SEP-99	III	III	III	III	III
L9903979-011	RS888	SOIL	22-SEP-99	29-SEP-99					
L9903979-012	RS889	SOIL	22-SEP-99	29-SEP-99	III	III	III	III	III
L9903979-013	RS890	SOIL	22-SEP-99	29-SEP-99					
L9903979-014	RS892	SOIL	23-SEP-99	30-SEP-99					
L9903979-015	RS893	SOIL	23-SEP-99	30-SEP-99					
L9903979-016	RS894	SOIL	23-SEP-99	30-SEP-99					
L9903979-017	RS895	SOIL	23-SEP-99	30-SEP-99					
L9903979-018	RS896	SOIL	23-SEP-99	30-SEP-99	III	III	III	III	III
L9903979-019	RS897	SOIL	23-SEP-99	30-SEP-99	III	III	III	III	III
L9903979-020	RS898	SOIL	23-SEP-99	30-SEP-99	III	III	III	III	III

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By: CEA

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
27-SEP-99 11:35

00068

Service Req. No.	L9903979	Project No.	313150002	Bottles:	1 - 1 L Plastic
Client No.	154375	Project Name	Rocketdyne		1 - 4 oz Glass
Client Name	Ogden Environmental				20 - Canisters/Decore

Bill To:	Ogden Environmental Attn: Accounts Payable 5510 Morehouse Dr. San Diego, CA 92121	Report To:	Ogden Environmental Lisa Arrasmith 5510 Morehouse Dr. San Diego, CA 92121

P.O. No.		Site ID	
Logged In By	SMALONE	Project Chemist	Eydie Schwartz
ISR Num			
COC Received	Y		
Samples Submitted	21-SEP-99 thru 23-SEP-99		Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	TITLE 22 METALS HG/CVAA
L9903979-001	RS320	SOIL	21-SEP-99	28-SEP-99	
L9903979-002	RS321	SOIL	21-SEP-99	28-SEP-99	
L9903979-003	RS322	SOIL	21-SEP-99	28-SEP-99	
L9903979-004	RS323	SOIL	21-SEP-99	28-SEP-99	
L9903979-005	RS324	SOIL	21-SEP-99	28-SEP-99	
L9903979-006	RS883	SOIL	22-SEP-99	29-SEP-99	
L9903979-007	RS884	SOIL	22-SEP-99	29-SEP-99	
L9903979-008	RS885	SOIL	22-SEP-99	29-SEP-99	III
L9903979-009	RS886	SOIL	22-SEP-99	29-SEP-99	III
L9903979-010	RS887	SOIL	22-SEP-99	29-SEP-99	III
L9903979-011	RS888	SOIL	22-SEP-99	29-SEP-99	
L9903979-012	RS889	SOIL	22-SEP-99	29-SEP-99	III
L9903979-013	RS890	SOIL	22-SEP-99	29-SEP-99	
L9903979-014	RS892	SOIL	23-SEP-99	30-SEP-99	
L9903979-015	RS893	SOIL	23-SEP-99	30-SEP-99	
L9903979-016	RS894	SOIL	23-SEP-99	30-SEP-99	
L9903979-017	RS895	SOIL	23-SEP-99	30-SEP-99	
L9903979-018	RS896	SOIL	23-SEP-99	30-SEP-99	III
L9903979-019	RS897	SOIL	23-SEP-99	30-SEP-99	III
L9903979-020	RS898	SOIL	23-SEP-99	30-SEP-99	III

Comments:

L9903979	Dry weight.
L9903979	EDD
L9903979	PCB's ONLY!
L9903979-004	Homogenize sample.

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By: _____

DIVIDER SHEET

DATA FOR

PERCENT SOLIDS

ANALYSIS

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS883
Date 09/22/99 Page 1 of 1

00008

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Federal Express
Comment:	

* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No: ACZ2B6
QC Level: Level4 TAT: 35 - Day

Preservatives: HCL, pH<2 4°C; HCL, pH<2 4°C; 4°C; 4°C; H2SO4,pH<2 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

Sample Data

ULS #	Sample ID	Description (for Ogden use only)	DEPTH ft.	Date Collected	Time Collected	Lab ID	Soil	Water	Product	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH	8082 PCBs	Extra Volume MS/MSD	HOLD	Total # of Bottles
1	RS883	PLBS01S01	1.5'	9/22/99	0940	~~1~~ 6	X							1											1
2	RS884	PLBS02S01	0.5'		1040	~~2~~ 7	X							1											1
13	RS885	ELBS08S01	1.0'		1145	~~3~~ 8	X									1					1				1
11	RS886	ELBS09S01	1.5'		1225	~~4~~ 9	X									1					1				1
14	RS887	ELBS10S01	0.5'		1330	~~5~~ 10	X									1					1				1
5	RS888	NCSS01S02	0.0'		1400	~~6~~ 11	X					1	1												1
33	RS889	CABS27S01	2.5'		1550	~~7~~ 12	X									1					1				1
9a	RS890	CABS21S01	0.5'		1655	~~8~~ 13	X															1			1
—	RS891	PLQW01S01	—		1845	~~9~~ 1		X				1	1	1		1					1	1			5

xcb 9/22/99

Samplers Signature: Thomas J. B[illegible]	Date 9/22/99	Time 0900
Relinquished By: Thomas J. B[illegible]	Date 9/22/99	Time 1940
Received By: Jeo C Rod[illegible]	Date 9/22/99	Time 1940
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number: L9903993-H20

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 9

L9903979 (soils)

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS883
Date 09/22/99 Page 1 of 1

0000047

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:	AC72B6	
QC Level:	Level4	TAT: 35 - Day

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	H_2SO_4,pH<2 4°C	4°C	HNO_3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C

ULS #	Sample ID	Description (for Ogden use only)	Depth Ft.	Date Collected	Time Collected	Lab ID	Soil	Water	Product	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH	8082 PCBs	Extra Volume MS/MSD	HOLD	Total # of Bottles
1	RS883	PLBSΦ15Φ1	1.5'	9/22/99	Φ94Φ	X6	X							1											1
2	RS884	PLBSΦ25Φ1	Φ.5'		1Φ4Φ	X7	X							1											1
13	RS885	ELBSΦ85Φ1	1.Φ'		1145	X8	X									1					1				1
11	RS886	ELBSΦ95Φ1	1.5'		1225	X9	X									1					1				1
14	RS887	ELBS1Φ5Φ1	Φ.5'		133Φ	X10	X									1					1				1
5	RS888	NCSSΦ15Φ2	Φ.Φ'		14ΦΦ	X11	X					1	1												1
33	RS889	CABS27SΦ1	2.5'		155Φ	X12	X									1					1				1
9a	RS89Φ	CABS21SΦ1	Φ.5'		1655	X13	X															1			1
—	RS891	PLQWΦ1SΦ1	—		1845	X14		X				1	1	1		1					1	1			5

~~xcb~~ 9/22/99

Samplers Signature	Thomas J. Baker	Date 9/22/99	Time 0900
~~Relinquished By:~~	Thomas J. Baker	Date 9/22/99	Time 1940
~~Received By:~~	Lee C. Rose	Date 9/22/99	Time 1940
~~Relinquished By:~~		Date	Time
Received By (LAB):		Date	Time

For Lab Use

Lab Number: L9903993-H20

L9903979 (soils)

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 9

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

L9903979

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS320

Date 9 / 21 / 1999 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* FLUORIDE, ANIONS, AND PH WILL USE ONE AQUEOUS CONTAINER

Cooler No:	R9		
QC Level:	Level4	TAT:	28 - Day

Preservatives	HCL, pH<2 4°C	H2SO4, pH<2 4°C	4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C					

Sample Data						Field Data		Matrix																								
Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8270R SVOC	8290 DIOXIN	8081C PCBs	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	6010 METALSA(AL,B)	7196 CrVI	340.2 FLUORIDE *	300 ANIONS*	9045/9040 pH*			Extra Volume MS/MSD	HOLD	Total # of Bottles
RS320	OCTS225B01	1.0'	9/22/99	1245	-1	TS	7.4	X					A				1													1
RS321	OCTS225B02	2.5'		1420	-2	TS	7.4	X					1				8													1
RS322	OCTS225B03	4.0'		1430	-3	TS	7.4	X					1				1												X	1
RS323	OCTS225B01	0.5'		1600	-4	TS	7.4	X									*1													1
RS324	OCTS225B02	4.0'	↓	1637	-5	TS	7.4	X									1													1

9/22/99

Samplers Signature		Date 9/21/99	Time 1800
Relinquished By:		Date 9/21/99	Time 1842
Received By:		Date 9/21/99	Time 1842
Relinquished By:		Date	Time
Received By (LAB):		Date	Time

For Lab Use

Lab Number:

A: Hold TPH
B: Hold PCB
*: Please Homogenize Sample

Does COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC seal intact: (Y) or N
Any other problems: Y or (N)
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 0°C

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

L9903979

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS892

Date 9/23/99 Page 1 of 1

Project Manager:	Dixie Hambrick	Bill To:	Purchasing	Sample Disposal Instructions:	Laboratory Disposal
Project Name:	Rocketdyne	Company:	Ogden Environmental	Shipment Method:	
Project Number:	313150002	Address:	5510 Morehouse Drive, San Diego, CA 92121	Comment:	
Deliver results to the address above or as stated in contract					

Cooler No: R9

QC Level: Level4

TAT: 14-day hardcopy summary
28-day full package

Preservatives

	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C						
Sample ID	8021 VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8082 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RS892	/	/																		1
RS893	/	/																		1
RS894	/	/																		1
RS895	/	/																		1
RS896	/	/	/					/				/								2
RS897								/												1
RS898		/		/				/				/								1

Sample Data

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Matrix: Soil	Water	Product	
RS892	B1BS02S01	1.5	9/23/99	0915		14	/			
RS893	B1BS02S02	6.5		1007		15	/			
RS894	B1BS02S03	~~11.5~~ 12.0		1145		16	/			
RS895	B1BS03S01	0.5		1235		17	/			
RS896	LXBS11S01	0.5		1412		18	/			
RS897	LXBS12S02	0.5		1500		19	/			
RS898	SNBS16S01	0.5		1845		20	/			

SN 9/23/99

	Date	Time
Samplers Signature	9/23/99	1900 ~~1700~~
Relinquished By:	9/23/99	1900
Received By:	9/23/99	1900
Relinquished By:	9/23/99	1915
Received By (LAB): Barbara Sanborn	9/23/99	19:15

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

received 9/25/99 JB/S

Analytical Services INC.

6925 CANOGA AVENUE • CANOGA PARK, CA 91303

% Solids / % Moisture

SM 2540B

Sample#	MB	03979-1	03979-1DUP	03979-2
A. Dish+sample (g)	13.8007	9.8641	10.4911	16.8715
B. Dryed weight (g)	1.2873	9.2865	9.8312	15.4206
C. Dish weight (g)	1.2841	1.2848	1.2925	1.2964
D. Dry sample weight (g) (B-C)	0.0032 ~~12.5134~~ pfe 9/25/99	8.0017	8.5387	14.1242
E. Sample weight/volume (A-C) (g) (ml)	12.5166	8.5793	9.1986	15.5751
F. Result (%) or mg/L)	<1 / 799	93.27/6.73	92.87/7.17	90.68/9.32

Sample#	03979-3	03979-4	03979-5	03979-6
A. Dish+sample (g)	12.9681	14.6281	10.4794	13.8630
B. Dryed weight (g)	11.6703	14.1514	10.0147	13.3503
C Dish weight (g)	1.2806	1.2838	1.2804	1.2942
D. Dry sample weight (g) (B-C)	10.3897	12.8676	8.7343	12.0561
E. Sample weight/volume (A-C) (g) (ml)	11.6875	13.3443	9.1990	12.5688
F. Result (%) or mg/L)	88.90/11.1	96.43/3.57	94.95/5.05	95.92/4.08

Sample#	03979-7	03979-8	03979-9	03979-10
A. Dish+sample (g)	13.5323	12.6896	13.9292	~~13~~ 14.0032
B. Dryed weight (g)	13.1761	12.5272	13.8423	13.6148
C. Dish weight (g)	1.2893	1.2820	1.2770	1.2751
D. Dry sample weight (g) (B-C)	11.8868	11.2462	12.5653	12.3397
E. Sample weight/volume (A-C) (g) (ml)	12.2430	11.4076	12.6522	12.7281
F. Result (%) or mg/L)	97.09/2.91	98.58/1.42	99.31/0.69	96.95/3.05

Time in: 18:20 Time out: 06:35

Temperature: 105°C Temperature: 105°C

Comments: CORRECTED TEMP READING

AVG. 03979-1 = 93.07 RPD = <1 %

Analyst: PFE Date: 9/24/99 ~~9/25/99~~

Services INC.

6925 CANOGA AVENUE • CANOGA PARK, CA 91303

% Solids / % Moisture

SM 2540B

Sample#	03979-11	03979-11Dup	03979-12	03979-13
A. Dish+sample (g)	8.7910	9.3356	12.0987	15.0428
B. Dryed weight (g)	8.7195	9.2544	11.3554	14.9108
C. Dish weight (g)	1.2889	1.2957	1.2949	1.2800
D. Dry sample weight (g) (B-C)	7.4306	7.9587	10.0605	13.6308
E. Sample weight/volume (A-C) (g) (ml)	7.5021	8.0399	10.8038	13.7628
F. Result (%) or mg/L)	99.05/0.95	98.99/1.01	93.12/6.88	99.04/0.96

AVG.= 99.02 RPD= <1 %

Sample#	03979-14	03979-15	03979-16	03979-17
A. Dish+sample (g)	15.0174	15.7447	~~13~~ 14.7196	12.5489
B. Dryed weight (g)	14.1937	14.0603	13.3032	12.2920
C Dish weight (g)	1.2866	1.2798	1.2926	1.2797
D. Dry sample weight (g) (B-C)	12.9071	12.7805	12.0106	11.0123
E. Sample weight/volume (A-C) (g) (ml)	13.7308	14.4649	13.4270	11.2692
F. Result (%) or mg/L)	94.00/6.00	88.36/11.64	89.45/10.55	97.72/2.28

Sample#	03979-18	03979-19	03979-20	
A. Dish+sample (g)	13.6332	15.5054	14.3104	
B. Dryed weight (g)	13.3446	15.2717	10.4185	
C. Dish weight (g)	1.2834	1.2817	1.2858	
D. Dry sample weight (g) (B-C)	12.0612 ~~12.2~~	13.9900	9.1327	
E. Sample weight/volume (A-C) (g) (ml)	12.3498	14.2237	13.0246	
F. Result (%) or mg/L)	97.66/2.34	98.36/1.64	70.12/29.89	

Not used

Time in: 18:30 Time out: 06:38

Temperature: 105°C Temperature: 105°C

Comments: CORRECTED TEMP. READING

Analyst: PJC Date: 9/24/99 - 9/25/99

		% Solids						
Sample #	MB		3979-1		3979-1 dup		3979-2	
A. Dish and sample (g)	13.8007		9.8641		10.4911		16.8715	
B. Dried weight (g)	1.2873		9.2865		9.8312		15.4206	
C. Dish weight	1.2841		1.2848		1.2925		1.2964	
D. Dry sample weight (g)	0.0032		8.0017		8.5387		14.1242	
(B-C)								
E. Sample weight/volume	12.5166		8.5793		9.1986		15.5751	
(A-C) (g) (mL)								
Result (% or mg/L)	0.03		93.27	average	92.83		90.68	
% moisture	99.97		6.73	93.05	7.17		9.32	
				6.95				
Sample #	3977-3		3979-4		3979-5		3979-6	
A. Dish and sample (g)	12.9681		14.6281		10.4794		13.863	
B. Dried weight (g)	11.6703		14.1514		10.0147		13.3503	
C. Dish weight	1.2806		1.2838		1.2804		1.2942	
D. Dry sample weight (g)	10.3897		12.8676		8.7343		12.0561	
(B-C)								
E. Sample weight/volume	11.6875		13.3443		9.199		12.5688	
(A-C)								
Result (% or mg/L)	88.90		96.43		94.95		95.92	
% moisture	11.10		3.57		5.05		4.08	
Sample #	39779-7		3979-8		3979-9		3979-10	
A. Dish and sample (g)	13.5323		12.6896		13.9292		14.0032	
B. Dried weight (g)	13.1761		12.5272		13.8423		13.6148	
C Dish weight	1.2893		1.282		1.277		1.2751	
D. Dry sample weight (g)	11.8868		11.2452		12.5653		12.3397	
(B-C)								
E. Sample weight/volume	12.243		11.4076		12.6522		12.7281	
(A-C)								
Result (% or mg/L)	97.09		98.58		99.31		96.95	
% moisture	2.91		1.42		0.69		3.05	
Sample #	3979-11		3979-11 DUP		3979-12		3979-13	
A. Dish and sample (g)	8.791		9.3356		12.0987		15.0428	
B. Dried weight (g)	8.7195		9.2544		11.3554		14.9108	
C. Dish weight	1.2889		1.2957		1.2949		1.28	
D. Dry sample weight (g)	7.4306		7.9587		10.0605		13.6308	
(B-C)								
E. Sample weight/volume	7.5021		8.0399		10.8038		13.7628	
(A-C)								
Result (% or mg/L)	99.05	average	98.99		93.12		99.04	
% moisture	0.95	99.02	1.01		6.88		0.96	
		0.98						
Sample #	3979-14		3979-15		3979-16		3979-17	
A. Dish and sample (g)	15.0174		15.7447		14.7196		12.5489	
B. Dried weight (g)	14.1937		14.0603		13.3032		12.292	
C. Dish weight	1.2866		1.2798		1.2926		1.2797	
D. Dry sample weight (g)	12.9071		12.7805		12.0106		11.0123	
(B-C)								
E. Sample weight/volume	13.7308		14.4649		13.427		11.2692	
(A-C)								
Result (% or mg/L)	94.00		88.36		89.45		97.72	
% moisture	6.00		11.64		10.55		2.28	
Sample #	3979-18		3979-19		3979-20			
A. Dish and sample (g)	13.6332		15.5054		14.3104			
B. Dried weight (g)	13.3446		15.2717		10.4185			
C. Dish weight	1.2834		1.2817		1.2858			
D. Dry sample weight (g)	12.0612		13.99		9.1327		0	
(B-C)								
E. Sample weight/volume	12.3498		14.2237		13.0246		0	
(A-C)								
Result (% or mg/L)	97.66		98.36		70.12		#DIV/0!	
% moisture	2.34		1.64		29.88		#DIV/0!	

L9902750

Columbia Analytical Services, Inc.
An Employee-Owned Company

1999

Friday, August 13, 1999

Lisa Arrasmith
Ogden
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9902750

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on 6/18/99.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296A, expiration August 2000).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Leo Raab
Project Chemist

xc:
Elizabeth Wessling
Ogden
550 S. Wadsworth Blvd., Suite 500
Lakewood, CO 80226

0001

CAS CSR #L9902750

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Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9702750
Project:	Rocketdyne SSFL 313150002	**Date Received:**	6/18/99
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Internal Login Summary Report" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses.

Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

The following difficulties were experienced during analysis of this batch:

MSD for TPH8015 was slightly above range, however LCS was within limits so data was accepted.

Aluminum MS/MSD not calculated due to high target concentration. Antimony MS/MSD exhibited low recovery however LCS was acceptable, therefore data was approved. Selenium MS was slightly below range, however MSD and LCS were within range, therefore data was approved.

Data Qualifier Flags are: U = Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: _____ Date: 8/13/99

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
14-AUG-99 11:36

Service Req. No. L9902750
Client No. 154375
Client Name Ogden Environmental

Project No. 313150002
Project Name Rocketdyne

Bottles: 5 - Canisters/Decore

Bill To: Ogden Environmental
Attn: Accounts Payable
5510 Morehouse Dr.
San Diego, CA 92121

Report To: Ogden Environmental
Lisa Arrasmith
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No. RS870
Logged In By GGRIDER
ISR Num
COC Received Y
Samples Submitted 18-JUN-99

Site ID
Project Chemist Leo Raab

Note: This Service Request has been invoiced - # 508234

Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8021	ICP-2	SIM-PP	TS GEN	DIGEST	TPH-FC-CA	PH	TITLE 22 METALS
L9902750-001	RS302	SOIL	18-JUN-99	02-JUL-99	III	III	III	III	III	III	III	III
L9902750-002	RS303	SOIL	18-JUN-99	02-JUL-99				III		III		
L9902750-003	RS304	SOIL	18-JUN-99	02-JUL-99	III	III	III	III	III	III	III	III
L9902750-004	RS305	SOIL	18-JUN-99	02-JUL-99	III	III	III	III	III	III	III	III
L9902750-005	RS306	SOIL	18-JUN-99	02-JUL-99				III		III		

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By:_____

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
14-AUG-99 11:36

Service Req. No.	L9902750	Project No.	313150002	Bottles: 5 - Canisters/Decore
Client No.	154375	Project Name	Rocketdyne	
Client Name	Ogden Environmental			

Bill To:	Ogden Environmental Attn: Accounts Payable 5510 Morehouse Dr. San Diego, CA 92121	Report To:	Ogden Environmental Lisa Arrasmith 5510 Morehouse Dr. San Diego, CA 92121

P.O. No.	RS870	Site ID	
Logged In By	GGRIDER	Project Chemist	Leo Raab
ISR Num			
COC Received	Y		
Samples Submitted	18-JUN-99	Note: This Service Request has been invoiced - # 508234	Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	TITLE 22 METALS AS/GFAA	TITLE 22 METALS SE/GFAA	TITLE 22 METALS HG/CVAA	TITLE 22 METALS TL/GFAA	TITLE 22 METALS ICP-13
L9902750-001	RS302	SOIL	18-JUN-99	02-JUL-99	III	III	III	III	III
L9902750-002	RS303	SOIL	18-JUN-99	02-JUL-99					
L9902750-003	RS304	SOIL	18-JUN-99	02-JUL-99	III	III	III	III	III
L9902750-004	RS305	SOIL	18-JUN-99	02-JUL-99	III	III	III	III	III
L9902750-005	RS306	SOIL	18-JUN-99	02-JUL-99					

Comments:

L9902750	Report dry weight.
L9902750	EDD.
L9902750	More samples to come.
L9902750	ICP-2: Al & B.
L9902750	SIM-PP: 8270sim.
L9902750-004	MS/MSD on this sample.

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By:_____

L9902687

L9902687-AG
L9902750-SO

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS 302

Date 6/18/99 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* FLUORIDE, ANIONS, AND PH WILL USE ONE AQUEOUS CONTAINER

Cooler No:			
QC Level:	Level4	TAT:	28 - Day

Preservatives	HCL, pH<2 4°C	H_2SO_4, pH<2 4°C	4°C	4°C	4°C	4°C	H_2SO_4, pH<2 4°C	4°C	HNO_3, pH<2 4°C	HNO_3, pH<2 4°C	4°C	4°C	4°C	4°C					

Sample Data						Field Data		Matrix																							
Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8270R SVOC	8290 DIOXIN	8081C PCBs	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	6010 METALSA(AL,B)	7196 CrVI	340.2 FLUORIDE *	300 ANIONS*	9045/9040 pH*			Extra Volume MS/MSD	HOLD	Total # of Bottles
ULS																														
50	RS302 OCTS18S01	2'	6/18/99	0855	1	HA	7.4	X				X	X	X						X					X					
45	RS303 OCTS04S01	5.5'		1115	2								X																	
53	RS304 OCTS20S01	2'		1200	3							X	X	X						X					X					
53	RS305 OCTS20D01	2'		1200	4							X	X	X						X					X			X		2
51	RS306 OCBS24S01	1'		1240	5								X																	
—	RS307 OCQW03E01	—		1315	6 (3)	—			X				X																	
—	RS308 OCQW03T01	—		1315	7 (3)	—			X			X																		
												J B. 6/18/99																		

Samplers Signature: Thomas J. Butler	Date: 6/18/99	Time: 0930
Relinquished By: Thomas J. Butler	Date: 6/18/99	Time: 1440
Received By: Sharon Malone	Date: 6/18/99	Time: 1444 (SM)
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Does COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC seal intact: Y or N NA
Any other problems: Y or (N)
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 4

REV: 1

DIVIDER SHEET

DATA FOR

PERCENT SOLIDS

ANALYSIS

Analytical Services INC.

6925 CANOGA AVENUE • CANOGA PARK, CA 91303

% Solids / % Moisture

SM 2540B

Sample#	MB	02750-1	02750-3	02750-4
A. Dish+sample (g)	13.9195	13.1185	12.6850	13.3316
B. Dryed weight (g)	1.2243	11.0860	10.8081	11.3497
C. Dish weight (g)	1.2215	1.2170	1.2246	1.2332
D. Dry sample weight (g) (B-C)	0.0028	9.8690	9.5835	10.1165
E. Sample weight/volume (A-C) (g) (ml)	12.6980	11.9015	11.4604	12.0984
F. Result (%) or mg/L)	<1/799 %	82.92/17.08	83.62/16.38	83.62/16.38

Sample#	02750-4 Dup	02750-2	02750-2 Dup	02750-5
A. Dish+sample (g)	15.0267	15.7088	15.1462	14.8396
B. Dryed weight (g)	12.7515	14.3424	13.8318	14.3125
C Dish weight (g)	1.2070	1.2116	1.2120	1.2202
D. Dry sample weight (g) (B-C)	11.5445	13.1308	12.6198	13.0923
E. Sample weight/volume (A-C) (g) (ml)	13.8197	14.4972	13.9342	13.6194
F. Result (%) or mg/L)	83.54/16.46	90.57/9.43	90.57/9.47	96.13/3.87

<1 % RPD

Sample#				
A. Dish+sample (g)				
B. Dryed weight (g)				
C. Dish weight (g)				
D. Dry sample weight (g) (B-C)				
E. Sample weight/volume (A-C) (g) (ml)				
F. Result (%) or mg/L)				

Air + Mass

Time in: 16:15 Time out: 06:50

Temperature: 106°C Temperature: 105°C

Comments:

Analyst: PFW Date 6/18/99 0007

L9902672

Columbia Analytical Services inc.
An Employee-Owned Company

Monday, August 23, 1999

Lisa Arrasmith
Ogden
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9902672

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on 6/14-17/99.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296A, expiration August 2000).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Leo Raab
Project Chemist

xc:
Elizabeth Wessling
Ogden
550 S. Wadsworth Blvd., Suite 500
Lakewood, CO 80226

00001

CAS CSR #L9902672

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Base Neutral Semivolatile Organic Compounds Raw Data 2000-2081
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Polychlorinated Biphenyls (PCBs) Raw Data 4000-4121
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Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9702672
Project:	Rocketdyne SSFL 313150002	**Date Received:**	6/14-17/99
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Internal Login Summary Report" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses.

The following changes were requested via fax from Lisa Arrasmith on 7/7/99:
Added PCBs to RS293 & RS294.
The following changes were requested via fax from Lisa Arrasmith on 7/12/99:
Added PCBs to RS288 (outside of holding time).
The following changes were requested via fax from Lisa Arrasmith on 7/14/99:
Requested re-extract/re-analysis of RS875 for PCBs (outside of holding time).

Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

The following difficulties were experienced during analysis of this batch:

8270SIM surrogate diluted out and not reportable for RS288DL

8021VOC acetone did not confirm for RS880

Aluminum MS/MSD not calculated due to high target concentration. Selenium MS was below range, however MSD and LCS were within range, therefore data was approved

Data Qualifier Flags are: U = Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: _____ Date: 8/23/99

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
14-AUG-99 11:38

Service Req. No. L9902672
Client No. 154375
Client Name Ogden Environmental

Project No. 313150002
Project Name Rocketdyne

Bottles: 20 - Canisters/Decore

Bill To: Ogden Environmental
Attn: Accounts Payable
5510 Morehouse Dr.
San Diego, CA 92121

Report To: Ogden Environmental
Lisa Arrasmith
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No. RS870
Logged In By SMALONE
ISR Num
COC Received Y
Samples Submitted 14-JUN-99 thru 17-JUN-99

Site ID
Project Chemist Leo Raab

Note: This Service Request has been invoiced - # 508233

Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8021	ICP-2	PH	TPH-FC-CA	TS GEN	SIM-PP	PCB-8080	~DIGEST	TITLE 22 METALS
L9902672-001	RS874	SOIL	14-JUN-99	28-JUL-99	III	III	III	III	III	III	III	III	III
L9902672-002	RS875	SOIL	14-JUN-99	28-JUL-99	III	III	III	III	III	III	III	III	III
L9902672-003	RS876	SOIL	14-JUN-99	28-JUL-99	III	III	III	III	III	III	III	III	III
L9902672-004	RS287	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III	III		III	III
L9902672-005	RS288	SOIL	17-JUN-99	28-JUL-99		III	III	III	III	III	III	III	III
L9902672-006	RS289	SOIL	17-JUN-99	28-JUL-99		III	III	III	III	III		III	III
L9902672-007	RS290	SOIL	17-JUN-99	28-JUL-99		III	III	III	III	III		III	III
L9902672-008	RS291	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III	III		III	III
L9902672-009	RS292	SOIL	17-JUN-99	28-JUL-99		III	III	III	III	III		III	III
L9902672-010	RS293	SOIL	17-JUN-99	28-JUL-99				III	III		III		
L9902672-011	RS294	SOIL	17-JUN-99	28-JUL-99				III	III		III		
L9902672-012	RS295	SOIL	17-JUN-99	28-JUL-99				III	III				
L9902672-013	RS296	SOIL	17-JUN-99	28-JUL-99				III	III				
L9902672-014	RS297	SOIL	17-JUN-99	28-JUL-99				III	III				
L9902672-015	RS298	SOIL	17-JUN-99	28-JUL-99				III	III				
L9902672-016	RS299	SOIL	17-JUN-99	28-JUL-99		HOLD	HOLD		HOLD			HOLD	HOLD
L9902672-017	RS878	SOIL	17-JUN-99	28-JUL-99		III	III	III	III	III		III	III
L9902672-018	RS879	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III	III		III	III
L9902672-019	RS880	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III	III		III	III
L9902672-020	RS881	SOIL	17-JUN-99	28-JUL-99				III	III				
L9902672-021	RS875RE	SOIL	14-JUN-99	28-JUL-99							III		

COC 47

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By:_____

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
14-AUG-99 11:38

Service Req. No. L9902672 | Project No. 313150002 | Bottles: 20 - Canisters/Decore
Client No. 154375 | Project Name Rocketdyne
Client Name Ogden Environmental

Bill To: Ogden Environmental
Attn: Accounts Payable
5510 Morehouse Dr.
San Diego, CA 92121

Report To: Ogden Environmental
Lisa Arrasmith
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No. RS870 | Site ID
Logged In By SMALONE | Project Chemist Leo Raab
ISR Num
COC Received Y
Samples Submitted 14-JUN-99 thru 17-JUN-99 | Note: This Service Request has been invoiced - # 508233 | Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	TITLE 22 METALS AS/GFAA	TITLE 22 METALS HG/CVAA	TITLE 22 METALS SE/GFAA	TITLE 22 METALS TL/GFAA	TITLE 22 METALS ICP-13
L9902672-001	RS874	SOIL	14-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-002	RS875	SOIL	14-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-003	RS876	SOIL	14-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-004	RS287	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-005	RS288	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-006	RS289	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-007	RS290	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-008	RS291	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-009	RS292	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-010	RS293	SOIL	17-JUN-99	28-JUL-99					
L9902672-011	RS294	SOIL	17-JUN-99	28-JUL-99					
L9902672-012	RS295	SOIL	17-JUN-99	28-JUL-99					
L9902672-013	RS296	SOIL	17-JUN-99	28-JUL-99					
L9902672-014	RS297	SOIL	17-JUN-99	28-JUL-99					
L9902672-015	RS298	SOIL	17-JUN-99	28-JUL-99					
L9902672-016	RS299	SOIL	17-JUN-99	28-JUL-99	HOLD	HOLD	HOLD	HOLD	HOLD
L9902672-017	RS878	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-018	RS879	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-019	RS880	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-020	RS881	SOIL	17-JUN-99	28-JUL-99					
L9902672-021	RS875RE	SOIL	14-JUN-99	28-JUL-99					

Comments:

L9902672	DRY WT
L9902672	EDD
L9902672	Expect more samples Thursday 6/17.
L9902672	ICP-2: Al & B
L9902672	PCB-8080: -010 & 011: Added 7/8/99.
L9902672	SIM-PP: 8270 SIM
L9902672-005	PCB-8080: Added 7/12/99.
L9902672-021	PCB-8080: Added Previously -002 Re-extract/Re-Run

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__ | Reviewed By:_____

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

L9902672
L9902687

Control Number: COC RS 874

Date 6/14/99 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Federal Express
Comment:	RS 877 = trip blank

* FLUORIDE, ANIONS, AND PH WILL USE ONE AQUEOUS CONTAINER

Cooler No:			
QC Level:	Level4	TAT:	28 - Day

Preservatives

													HCL, pH<2 4°C	H2SO4, pH<2 4°C	4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C					
	Sample Data						Field Data		Matrix																						
LS.#	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	8260M VOC	8015~~OR~~ HYDROCARBON	8270SIM PAH	8270R ~~SVOC~~ PTB	8290 DIOXIN	8081C PCBs	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	6010 METALSA(AL,B)	7196 CrVI	340.2 FLUORIDE *	300 ANIONS*	9045/9040 pH*			Extra Volume MS/MSD	HOLD	Total # of Bottles
13	RS874	BLBS12S01	1.0	6/14/99	1145	1	HA	7.1	X				X	X	X	X		X			X					X					
14	RS875	BLBS13S01	1.0	↓	1200	2	↓	↓	X				X	X	X	X		X			X					X					
15	RS876	BLBS14S01	1.0	↓	1215	3	↓	↓	X				X	X	X	X		X			X					X					
—	RS877	BLQW03T01	—	6/14/99	—	~~4~~ SM	—	—		X			X			2															1

J.B. 6/14/99

Samplers Signature: [signature]	Date 6-14-99	Time 12:30
Relinquished By: Thomas J [signature]	Date 6/14/99	Time 1400
Received By: Sharon Malone	Date 6/14/99	Time 1400
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N N/A
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 4°

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

L9902612
L9902687
RS 287

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC
Date 6/17/99 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Federal Express
Comment:	TPH only on RS293

* FLUORIDE, ANIONS, AND PH WILL USE ONE AQUEOUS CONTAINER

Cooler No: R12
QC Level: Level4 TAT: 28 - Day

Preservatives

													HCL, pH<2 4°C	H2SO4, pH<2 4°C	4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C					
	Sample Data						Field Data		Matrix				8260M 8021 VOC	8015~~CM~~ HYDROCARBON	8270SIM PAH	8270R SVOC	8290 DIOXIN	8081C PCBs	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	6010 METALSA(AL,B)	7196 CrVI	340.2 FLUORIDE *	300 ANIONS*	9045/9040 pH*			Extra Volume MS/MSD	HOLD	Total # of Bottles
ULS#	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge																		
36	RS287	OCTS05S01	3'	6/17/99	1040	4	HA	7.4	X				X	X	X	X					X					X				
35	RS288	OCTS06S01	2'		1100	5							X	X	X						X					X				
37	RS289	OCTS07S01	2.5'		1125	6							X	X	X						X					X				
38	RS290	OCTS08S01	2'		1155	7							X	X	X						X					X				
1~~30~~ TB	RS291	OCTS09S01	1'		1435	8							X	X	X						X					X				
40	RS292	OCTS10S01	1'		1440	9							X	X	X						X					X				
41	RS293	OCTS11S01	0.75'		1455	10							X	X	X															
43	RS294	OCTS12S01	1.5'		1505	11								X																
42	RS295	OCTS13S01	2'		1605	12								X																
44	RS296	OCTS14S01	1.0'		1610	13								X																
27	RS297	OCTS15S01	4'		1640	14								X																
28	RS298	OCTS15S02	4'		1645	15								X																

Samplers Signature: [signature]	Date 6/17/99	Time 1700
Relinquished By: [signature]	Date 6/17/99	Time 19:30
Received By: [signature]	Date 6/17/99	Time 19:30
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number: L9902728

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 2°C

No VOC's on RS 288, 289, 290, 292, 293

No SVOCs on RS287

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

L9902672
L9902687

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS878
Date 6/17/99 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ DSB Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Federal Express
Comment:	

* FLUORIDE, ANIONS, AND PH WILL USE ONE AQUEOUS CONTAINER

Cooler No: R12
QC Level: Level4 TAT: 28 - Day

Preservatives

														HCL, pH<2 4°C	H2SO4, pH<2 4°C	4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C					
ULS	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	~~8260M~~ 8021 VOC	8015OG HYDROCARBON	8270SIM PAH	8270R SVOC	8290 DIOXIN	8081C PCBs	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	6010 METALSA(AL,B)	7196 CrVI	340.2 FLUORIDE *	300 ANIONS*	9045/9040 pH*			Extra Volume MS/MSD	HOLD	Total # of Bottles
20	RS878	OCSS02S01	0	6/17/99	1345	17	HA	7.4	X					X	X						X					X					
21	RS879	OCBS23S01	0.5	↓	1400	18	↓	↓	↓				X	X	X						X					X					
24	RS880	OCBS24S01	1.0	↓	1535	19	↓	↓	↓				X	X	X						X					X					
4	RS881	OCBS07S01	1.0	↓	1705	20	↓	↓	↓					X																	
—	RS882	OCQW02T02	—	↓	1815		—	↓		X			X																		

J.B. 6/17/99

Samplers Signature: Thomas [signature]	Date 6/17/99	Time 1830
Relinquished By: [signature]	Date 6/17/99	Time 19:30
Received By: [signature]	Date 6/17/99	Time 19:30
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number: L9902728
Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 2°C

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

L9902687
L9902672

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS299
Date 6/17/99 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Federal Express
Comment:	

* FLUORIDE, ANIONS, AND PH WILL USE ONE AQUEOUS CONTAINER

Cooler No: 6035
QC Level: Level4 TAT: 28 - Day

Preservatives

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	~~8260M~~ BDZ1 VOC (HCL, pH<2 4°C)	8015OG HYDROCARBON (H2SO4, pH<2 4°C)	8270SIM PAH (4°C)	8270R SVOC (4°C)	8290 DIOXIN (4°C)	8081C PCBs (4°C)	3500 FORMALDEHYDE (H2SO4, pH<2 4°C)	8330 ORDINANCE (4°C)	6010/7000 METALSRT (HNO3, pH<2 4°C)	6010 METALSA(AL,B) (HNO3, pH<2 4°C)	7196 CrVI (4°C)	340.2 FLUORIDE * (4°C)	300 ANIONS* (4°C)	9045/9040 pH* (4°C)			Extra Volume MS/MSD	HOLD	Total # of Bottles
RS299	OCTS16S01	3'	6/17/99	1720	16	HA	7.4	X												X					X				X	
RS300	OCQW02E01	—	6/17/99	1815		—	7.4		X			X		X						X					X					6
RS301	OCQW02T01	—	↓	1815		—	7.4		X			X																		2
~~RS302~~	~~OCQW02T02~~			~~1815~~			~~7.4~~		X			X																		2

J.B. 6/17/99

Samplers Signature: [signature]	Date 6/17/99	Time 1830
Relinquished By: [signature]	Date 6/17/99	Time 19:30
Received By: [signature]	Date 6/17/99	Time 19:30
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number: L9902728

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 2°C

* HOLD RS299

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Mr. Leo Raab/Columbia Analytical Services
Fax No.: (818) 587-5555

From: Lisa Arrasmith *sign:* Lisa Arrasmith

Date: 7/7/99 There are 1 Page to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

Dipila ok to run outside of hold time 7/8/99 ach

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.
These changes supersede the previous C-O-C Analysis Request Change 6/12/98.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]
RS287	RS293	6/17/99	OG	OG & PCBs
RS287	RS294	6/11/98	OG	OG & PCBs

(a) OG = 8015OG, TPH PCBs= Polychlorinated Biphenyls, 8080

The reason for these changes is:

L9902672-010
-011

Incorrectly marked on COC form _____
Lack of sample volume _____
Ogden office personnel require this change X
Other: Containers mislabeled _____

Thank you.

00010

OGDEN *ENVIRONMENTAL AND ENERGY SERVICES*

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Mr. Leo Raab/Columbia Analytical Services
Fax No.: (818) 587-5555

From: Lisa Arrasmith *sign:* Lisa Arrasmith

Date: 7/12/99 There are 1 Page to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.
These changes supersede the previous C-O-C Analysis Request Change 6/12/98.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]
RS287	RS288	6/17/99	OG, S, M & pH	OG OG, S, M, pH & PCBs

(a) OG = 8015OG, TPH PCBs= Polychlorinated Biphenyls, 8080
S = SVOCs, 8270SIM
M = MetalsRT

L9902672-5

Please run RS288 for PCBs even though holding time has expired.
The reason for these changes is:

Incorrectly marked on COC form	
Lack of sample volume	
Ogden office personnel require this change	*X*
Other: Containers mislabeled	

Thank you.

00011

OGDEN *ENVIRONMENTAL AND ENERGY SERVICES*

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Mr. Leo Raab/Columbia Analytical Services
Fax No.: (818) 587-5555

From: Lisa Arrasmith *sign:* Lisa Arrasmith

Date: 7/14/99 There are 1 Page to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.
These changes supersede the previous C-O-C Analysis Request Change 6/12/98.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]
RS874	RS875	6/17/99	OG, V, S, M, Ph & PCBs	OG, V, S, M, pH & PCBs

(a) OG = 8015OG, TPH PCBs= Polychlorinated Biphenyls, 8080
S = SVOCs, 8270SIM V = 8021, Volatiles
M = MetalsRT

L9902672-002

Please reextract and rerun RS875 for PCBs even though holding time has expired.
The reason for these changes is:

Relog As

Incorrectly marked on COC form	
Lack of sample volume	
Ogden office personnel require this change	X
Other: Containers mislabeled __	

L9902672-021

" RS875RE "

Thank you.

00012

Columbia Analytical Services inc.

Monday, August 23, 1999

Lisa Arrasmith
Ogden
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9902672

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on 6/14-17/99.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296A, expiration August 2000).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Leo Raab
Project Chemist

xc:
Elizabeth Wessling
Ogden
550 S. Wadsworth Blvd., Suite 500
Lakewood, CO 80226

00001

CAS CSR #L9902672

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Base Neutral Semivolatile Organic Compounds Raw Data 2000-2081
Polychlorinated Biphenyls (PCBs) Analytical Data 3000-3014
Polychlorinated Biphenyls (PCBs) Raw Data 4000-4121
Hydrocarbon Scan / Fuel Characterization Analytical Data 5000-5022
Hydrocarbon Scan / Fuel Characterization Raw Data 6000-6085
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Halogenated and Aromatic Volatile Organic Compounds Raw Data 8000-8342
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Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9702672
Project:	Rocketdyne SSFL 313150002	**Date Received:**	6/14-17/99
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Internal Login Summary Report" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses.

The following changes were requested via fax from Lisa Arrasmith on 7/7/99:
Added PCBs to RS293 & RS294.
The following changes were requested via fax from Lisa Arrasmith on 7/12/99:
Added PCBs to RS288 (outside of holding time).
The following changes were requested via fax from Lisa Arrasmith on 7/14/99:
Requested re-extract/re-analysis of RS875 for PCBs (outside of holding time).

Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

The following difficulties were experienced during analysis of this batch:

8270SIM surrogate diluted out and not reportable for RS288DL

8021VOC acetone did not confirm for RS880

Aluminum MS/MSD not calculated due to high target concentration. Selenium MS was below range, however MSD and LCS were within range, therefore data was approved

Data Qualifier Flags are: U = Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: _____ Date: 8/23/99

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
14-AUG-99 11:38

Service Req. No. L9902672
Client No. 154375
Client Name Ogden Environmental

Project No. 313150002
Project Name Rocketdyne

Bottles: 20 - Canisters/Decore

Bill To: Ogden Environmental
Attn: Accounts Payable
5510 Morehouse Dr.
San Diego, CA 92121

Report To: Ogden Environmental
Lisa Arrasmith
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No. RS870
Logged In By SMALONE
ISR Num
COC Received Y
Samples Submitted 14-JUN-99 thru 17-JUN-99

Site ID
Project Chemist Leo Raab

Note: This Service Request has been invoiced - # 508233

Storage:

CAS Samp No.	Client Sample No	Matrix	Collected DueDate	8021	ICP-2	PH	TPH-FC-CA	TS GEN	SIM-PP	PCB-8080	~DIGEST	TITLE 22 METALS
L9902672-001	RS874	SOIL	14-JUN-99 28-JUL-99	III	III	III	III	III	III	III	III	III
L9902672-002	RS875	SOIL	14-JUN-99 28-JUL-99	III	III	III	III	III	III	III	III	III
L9902672-003	RS876	SOIL	14-JUN-99 28-JUL-99	III	III	III	III	III	III	III	III	III
L9902672-004	RS287	SOIL	17-JUN-99 28-JUL-99	III	III	III	III	III	III		III	III
L9902672-005	RS288	SOIL	17-JUN-99 28-JUL-99		III	III	III	III	III	III	III	III
L9902672-006	RS289	SOIL	17-JUN-99 28-JUL-99		III	III	III	III	III		III	III
L9902672-007	RS290	SOIL	17-JUN-99 28-JUL-99		III	III	III	III	III		III	III
L9902672-008	RS291	SOIL	17-JUN-99 28-JUL-99	III	III	III	III	III	III		III	III
L9902672-009	RS292	SOIL	17-JUN-99 28-JUL-99		III	III	III	III	III		III	III
L9902672-010	RS293	SOIL	17-JUN-99 28-JUL-99				III	III		III		
L9902672-011	RS294	SOIL	17-JUN-99 28-JUL-99				III	III		III		
L9902672-012	RS295	SOIL	17-JUN-99 28-JUL-99				III	III				
L9902672-013	RS296	SOIL	17-JUN-99 28-JUL-99				III	III				
L9902672-014	RS297	SOIL	17-JUN-99 28-JUL-99				III	III				
L9902672-015	RS298	SOIL	17-JUN-99 28-JUL-99				III	III				
L9902672-016	RS299	SOIL	17-JUN-99 28-JUL-99		HOLD	HOLD		HOLD			HOLD	HOLD
L9902672-017	RS878	SOIL	17-JUN-99 28-JUL-99		III	III	III	III	III		III	III
L9902672-018	RS879	SOIL	17-JUN-99 28-JUL-99	III	III	III	III	III	III		III	III
L9902672-019	RS880	SOIL	17-JUN-99 28-JUL-99	III	III	III	III	III	III		III	III
L9902672-020	RS881	SOIL	17-JUN-99 28-JUL-99				III	III				
L9902672-021	RS875RE	SOIL	14-JUN-99 28-JUL-99							III		

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By:_____

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
14-AUG-99 11:38

Service Req. No. L9902672 | Project No. 313150002 | Bottles: 20 - Canisters/Decore
Client No. 154375 | Project Name Rocketdyne
Client Name Ogden Environmental

Bill To: Ogden Environmental
Attn: Accounts Payable
5510 Morehouse Dr.
San Diego, CA 92121

Report To: Ogden Environmental
Lisa Arrasmith
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No. RS870 | Site ID
Logged In By SMALONE | Project Chemist Leo Raab
ISR Num
COC Received Y
Samples Submitted 14-JUN-99 thru 17-JUN-99 | Note: This Service Request has been invoiced - # 508233 | Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	TITLE 22 METALS AS/GFAA	TITLE 22 METALS HG/CVAA	TITLE 22 METALS SE/GFAA	TITLE 22 METALS TL/GFAA	TITLE 22 METALS ICP-13
L9902672-001	RS874	SOIL	14-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-002	RS875	SOIL	14-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-003	RS876	SOIL	14-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-004	RS287	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-005	RS288	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-006	RS289	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-007	RS290	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-008	RS291	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-009	RS292	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-010	RS293	SOIL	17-JUN-99	28-JUL-99					
L9902672-011	RS294	SOIL	17-JUN-99	28-JUL-99					
L9902672-012	RS295	SOIL	17-JUN-99	28-JUL-99					
L9902672-013	RS296	SOIL	17-JUN-99	28-JUL-99					
L9902672-014	RS297	SOIL	17-JUN-99	28-JUL-99					
L9902672-015	RS298	SOIL	17-JUN-99	28-JUL-99					
L9902672-016	RS299	SOIL	17-JUN-99	28-JUL-99	HOLD	HOLD	HOLD	HOLD	HOLD
L9902672-017	RS878	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-018	RS879	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-019	RS880	SOIL	17-JUN-99	28-JUL-99	III	III	III	III	III
L9902672-020	RS881	SOIL	17-JUN-99	28-JUL-99					
L9902672-021	RS875RE	SOIL	14-JUN-99	28-JUL-99					

Comments:

L9902672	DRY WT
L9902672	EDD
L9902672	Expect more samples Thursday 6/17.
L9902672	ICP-2: Al & B
L9902672	PCB-8080: -010 & 011: Added 7/8/99.
L9902672	SIM-PP: 8270 SIM
L9902672-005	PCB-8080: Added 7/12/99.
L9902672-021	PCB-8080: Added Previously -002 Re-extract/Re-Run

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__ | Reviewed By:_____

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

L9902672
L9902687 RS 874

Control Number: COC

Date 6/14/99 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Federal Express
Comment:	RS 877 = trip blank

* FLUORIDE, ANIONS, AND PH WILL USE ONE AQUEOUS CONTAINER

Cooler No:			
QC Level:	Level4	TAT:	28 - Day

Preservatives

ULS#	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	8260M VOC	8015~~OG~~ HYDROCARBON	8270SIM PAH	8270R SVOC	8290 DIOXIN	8081C PCBs	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	6010 METALSA(AL,B)	7196 CrVI	340.2 FLUORIDE *	300 ANIONS*	9045/9040 pH*			Extra Volume MS/MSD	HOLD	Total # of Bottles
													HCL, pH<2 4°C	H2SO4, pH<2 4°C	4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C					
13	RS874	BLBS12S01	1.0	6/14/99	1145	1	HA	7.1	X				X	X	X	X		X			X					X					
14	RS875	BLBS13S01	1.0	↓	1200	2	↓	↓	X				X	X	X	X		X			X					X					
15	RS876	BLBS14S01	1.0	↓	1215	3	↓	↓	X				X	X	X	X		X			X					X					
—	RS877	BLQW03T01	—	6/14/99	—	~~4~~ SM	—	—		X			X			X															1

J.B. 6/14/99

Samplers Signature: [signature]	Date 6-14-99	Time 12:30
Relinquished By: Thomas J [signature]	Date 6/14/99	Time 1400
Received By: Sharon Malone	Date 6/14/99	Time 1400
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number:

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N N/A
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 4°

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

L9902672
L9902687
RS 287

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC

Date 6/17/99 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Federal Express
Comment:	TPH only on RS293

* FLUORIDE, ANIONS, AND PH WILL USE ONE AQUEOUS CONTAINER

Cooler No: R12

QC Level: Level4 TAT: 28 - Day

Preservatives

													HCL, pH<2 4°C	H2SO4, pH<2 4°C	4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C					
	Sample Data						Field Data		Matrix																						
VLS#	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	~~8260M~~ 8021 VOC	8015~~OCM~~ HYDROCARBON	8270SIM PAH	8270R SVOC	8290 DIOXIN	8081C PCBs	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	6010 METALSA(AL,B)	7196 CrVI	340.2 FLUORIDE *	300 ANIONS*	9045/9040 pH*			Extra Volume MS/MSD	HOLD	Total # of Bottles
36	RS287	OCTS05S01	3'	6/17/99	1040	4	HA	7.4	X				X	X	X	X					X					X					
35	RS288	OCTS06S01	2'		1100	5							X	X	X						X					X					
37	RS289	OCTS07S01	2.5'		1125	6							X	X	X						X					X					
38	RS290	OCTS08S01	2'		1155	7							X	X	X						X					X					
39 ~~40~~ TB	RS291	OCTS09S01	1'		1435	8							X	X	X						X					X					
40	RS292	OCTS10S01	1'		1440	9							X	X	X						X					X					
41	RS293	OCTS11S01	0.75'		1455	10							X	X	X																
43	RS294	OCTS12S01	1.5'		1505	11								X																	
42	RS295	OCTS13S01	2'		1605	12								X																	
44	RS296	OCTS14S01	1.0'		1610	13								X																	
27	RS297	OCTS15S01	4'		1640	14								X																	
28	RS298	OCTS15S02	4'		1645	15								X																	

Samplers Signature: [signature]	Date 6/17/99	Time 1700
Relinquished By: [signature]	Date 6/17/99	Time 19:30
Received By: [signature]	Date 6/17/99	Time 19:30
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number: L9902428

Does COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: ___/___/___

Temperature °C 2°C

No VOC's on RS 288, 289, 290, 292, 293

No SVOCs on RS287

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

L9902687
L9902672
RS299

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: **COC**

Date 6/17/99 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Federal Express
Comment:	

* FLUORIDE, ANIONS, AND PH WILL USE ONE AQUEOUS CONTAINER

Cooler No: 6Ø35

QC Level: Level4 TAT: 28 - Day

Preservatives

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	~~8260M~~ 8021 VOC (HCL, pH<2 4°C)	8015OG HYDROCARBON (H2SO4, pH<2 4°C)	8270SIM PAH (4°C)	8270R SVOC (4°C)	8290 DIOXIN (4°C)	8081C PCBs (4°C)	3500 FORMALDEHYDE (H2SO4,pH<2 4°C)	8330 ORDINANCE (4°C)	6010/7000 METALSRT (HNO3, pH<2 4°C)	6010 METALSA(AL,B) (HNO3, pH<2 4°C)	7196 CrVI (4°C)	340.2 FLUORIDE * (4°C)	300 ANIONS* (4°C)	9045/9040 pH* (4°C)			Extra Volume MS/MSD	HOLD	Total # of Bottles
RS299	OCTS16S01	3'	6/17/99	1720	16	HA	7.4	X												X					X				X	
RS300	OCQW02E01	—	6/17/99	1815		—	7.4		X			X		X						X					X					6
RS301	OCQW02T01	—	↓	1815		—	7.4		X			X																		2
~~RS302~~	~~OCQW02T02~~		↓	~~1815~~			~~7.4~~		X			X																		2

VCS #
23
—
—
B

J.B. 6/17/99

	Date	Time
Samplers Signature: Thomas J. Burt	6/17/99	1830
Relinquished By: [signature]	6/17/99	19:30
Received By: [signature]	6/17/99	19:30
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number: L9902728

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 2°C

* HOLD RS299

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

L9902672
L9902687

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS878

Date 6/17/99 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ DSB Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Federal Express
Comment:	

* FLUORIDE, ANIONS, AND PH WILL USE ONE AQUEOUS CONTAINER

Cooler No: R12

QC Level: Level4 TAT: 28 - Day

Preservatives

ULS	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	~~8260M~~ 8021 VOC	8015OG HYDROCARBON	8270SIM PAH	8270R SVOC	8290 DIOXIN	8081C PCBs	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	6010 METALSA(AL,B)	7196 CrVI	340.2 FLUORIDE *	300 ANIONS*	9045/9040 pH*			Extra Volume MS/MSD	HOLD	Total # of Bottles
													HCL, pH<2 4°C	H2SO4, pH<2 4°C	4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C					
20	RS878	OCSS02S01	0	6/17/99	1345	17	HA	7.4	X					X	X						X					X					
21	RS879	OCBS23S01	0.5	↓	1400	18	↓	↓	↓				X	X	X						X					X					
24	RS880	OCBS24S01	1.0	↓	1535	19	↓	↓	↓				X	X	X						X					X					
4	RS881	OCBS07S01	1.0	↓	1705	20	↓	↓	↓					X																	
—	RS882	OCQW02T02	—	↓	1815		—	↓		X			X																		

J.B. 6/17/99

Samplers Signature: Thomas [signature]	Date 6/17/99	Time 1830
Relinquished By: [signature]	Date 6/17/99	Time 19:30
Received By: [signature]	Date 6/17/99	Time 19:30
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number: L9902728

Does COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: ___/___/___

Temperature °C 2°C

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN *ENVIRONMENTAL AND ENERGY SERVICES*

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

Dupes OK to run outside of hold time 7/8/99 ath

To: Mr. Leo Raab/Columbia Analytical Services
Fax No.: (818) 587-5555

From: Lisa Arrasmith *sign:* Lisa Arrasmith

Date: 7/7/99 There are 1 Page to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.
These changes supersede the previous C-O-C Analysis Request Change 6/12/98.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]
RS287	RS293	6/17/99	OG	OG & PCBs
RS287	RS294	6/11/98	OG	OG & PCBs

(a) OG = 8015OG, TPH PCBs= Polychlorinated Biphenyls, 8080

The reason for these changes is:

L9902672-010
-011

Incorrectly marked on COC form _____
Lack of sample volume _____
Ogden office personnel require this change X
Other: Containers mislabeled __ _____

Thank you.

00010

OGDEN *ENVIRONMENTAL AND ENERGY SERVICES*

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Mr. Leo Raab/Columbia Analytical Services
Fax No.: (818) 587-5555

From: Lisa Arrasmith *sign:* Lisa Arrasmith

Date: 7/12/99 There are 1 Page to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.
These changes supersede the previous C-O-C Analysis Request Change 6/12/98.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]
RS287	RS288	6/17/99	OG, S, M & pH	OG OG, S, M, pH & PCBs

(a) OG = 8015OG, TPH PCBs= Polychlorinated Biphenyls, 8080
S = SVOCs, 8270SIM
M = MetalsRT

L9902672 -5

Please run RS288 for PCBs even though holding time has expired.
The reason for these changes is:

Incorrectly marked on COC form _____
Lack of sample volume _____
Ogden office personnel require this change X
Other: Containers mislabeled ___ _____

Thank you.

00011

OGDEN *ENVIRONMENTAL AND ENERGY SERVICES*

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Mr. Leo Raab/Columbia Analytical Services
Fax No.: (818) 587-5555

From: Lisa Arrasmith *sign:* Lisa Arrasmith

Date: 7/14/99 There are 1 Page to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.
These changes supersede the previous C-O-C Analysis Request Change 6/12/98.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]
RS874	RS875	6/17/99	OG, V, S, M, Ph & PCBs	OG, V, S, M, pH & PCBs

(a) OG = 8015OG, TPH PCBs= Polychlorinated Biphenyls, 8080
S = SVOCs, 8270SIM V = 8021, Volatiles
M = MetalsRT

L9902672-002

Please reextract and rerun RS875 for PCBs even though holding time has expired.
The reason for these changes is:

Relog As

Incorrectly marked on COC form ____
Lack of sample volume ____ L9902672-021
Ogden office personnel require this change X
Other: Containers mislabeled ____ "RS875RE"

Thank you.

03312

Columbia Analytical Services INC.
An Employee-Owned Company

December 21, 1998

Anne Freed
Ogden
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9803410

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on 10/8-9/98.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296, expiration August 2000).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Leo Raab
Project Chemist

Stuart Sigman
Quality Assurance Chemist

xc:
Elizabeth Wessling
Ogden
550 S. Wadsworth Blvd., Suite 500
Lakewood, CO 80226

001

CAS CSR #L9803410

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Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9803410
Project:	Rocketdyne SSFL 313150002	**Date Received:**	10/8-9/98
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Internal Login Summary Report" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses. The following tests were sub-contracted to the following laboratories:

Perchlorate	Columbia Analytical Services, Santa Clara, CA.
Dioxins/Furans/EPA 8290	Triangle Lab, Durham, NC.
Explosives/EPA 8330	Paragon Analytical, Fort Collins, CO.

Subcontracted test results, case narratives and data packages are included as an appendix to this report.

Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

Cooler temperatures were recorded on COCs for Control No. RS818 (5 deg. C), RS799 (14 deg. C), RS805 (14 deg. C).

The following difficulties were experienced during analysis of this batch:
MS for Mercury was slightly below range, however the DMS and LCS were acceptable.

Data Qualifier Flags are: U = Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: _____ Date: 12/21/98

004

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
17-DEC-98 15:26

Service Req. No. L9803410
Client No. 154375
Client Name Ogden Environmental

Project No. 313150002
Project Name Rocketdyne

Bottles: 20 - Canisters/Decore

Bill To: Ogden Environmental
Attn: Accounts Payable
5510 Morehouse Dr.
San Diego, CA 92121

Report To: Ogden Environmental
Anne Freed
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No. 97-32S-33504
Logged In By SMALONE
ISR Num
COC Received Y
Samples Submitted 08-OCT-98 thru 09-OCT-98

Site ID
Project Chemist Leo Raab

Note: This Service Request has been invoiced - # 505551

Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8330 CLO4	DIOXINS	HG/CVAA	TPH-FC-CA	TS GEN	~DIGEST
L9803410-001	RS806	SOIL	08-OCT-98	23-OCT-98				III	III	
L9803410-002	RS807	SOIL	08-OCT-98	23-OCT-98				III	III	
L9803410-003	RS808	SOIL	08-OCT-98	23-OCT-98		HOLD		III	III	
L9803410-004	RS809	SOIL	08-OCT-98	23-OCT-98		ALA		HOLD		
L9803410-005	RS810	SOIL	08-OCT-98	23-OCT-98		ALA				
L9803410-006	RS811	SOIL	08-OCT-98	23-OCT-98		ALA				
L9803410-007	RS812	SOIL	08-OCT-98	23-OCT-98		ALA				
L9803410-008	RS813	SOIL	08-OCT-98	23-OCT-98		ALA				
L9803410-009	RS814	SOIL	08-OCT-98	23-OCT-98		ALA				
L9803410-010	RS815	SOIL	08-OCT-98	23-OCT-98		ALA				
L9803410-011	RS816	SOIL	08-OCT-98	23-OCT-98		ALA				
L9803410-012	RS799	SOIL	08-OCT-98	23-OCT-98			III		III	III
L9803410-013	RS800	SOIL	08-OCT-98	23-OCT-98			III		III	III
L9803410-014	RS802	SOIL	08-OCT-98	23-OCT-98	PARA	ALA				
L9803410-015	RS803	SOIL	08-OCT-98	23-OCT-98		ALA				
L9803410-016	RS804	SOIL	08-OCT-98	23-OCT-98	PARA					
L9803410-017	RS818	SOIL	09-OCT-98	23-OCT-98				III	III	
L9803410-018	RS819	SOIL	09-OCT-98	23-OCT-98				III	III	
L9803410-019	RS820	SOIL	09-OCT-98	23-OCT-98	SLAB				III	
L9803410-020	RS821	SOIL	09-OCT-98	23-OCT-98	SLAB				III	

Comments:

L9803410 SB/GFAA: Use SPLP extract.

500

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By:_____

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9803410

Chain of Custody

Control Number: COC RS818
Date 10/9/98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:	CP-9847		
QC Level:	Level4	TAT:	35 - Day

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	H_2SO_4,pH<2 4°C	4°C	HNO_3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C									

Sample Data						Matrix				8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH	PERCHLORATES	8080/8081 PCB							
Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Soil	Water	Product																							
SWMU																															
5.9, 5.10	RS818	AABS41SØ1	3.5	10/9/98	900	17	X				X																		201		1
↓	RS819	AABS41DØ1	3.5		900	18					X																		201		
A.I AOC	RS820	BSBS32SØ1	0.5		1115	19																X							32		
	RS821	BSBS32DØ1	0.5		1115	20																X							32		
	RS822	BSBS32SØ2	5		1140																	X							32		
	RS823	BSBS32SØ3	10		1155																	X							32		
5.13, 5.14	RS824	BVBS16SØ4	1.5		1450																		X						32		
	RS825	BVBS16DØ1	1.5		1450																		X						32		
	RS826	BVBS24SØ3	1.0		1500																		X						32		
	RS827	BVBS37SØ1	0.5		1515						X												X					X	32		
	RS828	BVBS24SØ1	5		1530																		X						32		
	RS829	BVBS37SØ2	5		1600						X												X					X	32		

Samplers Signature	KM Jamieson KJ	Date 10/9/98 ~~4/10~~ KJ	Time 1920
Relinquished By:	KM Jamieson	Date 10/9/98	Time 2015
Received By:		Date	Time
Relinquished By:		Date	Time
Received By (LAB):	Flo Rael	Date 10/9/98	Time 2015

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC seal intact: Y or N (NA)
Any other problems: Y or (N)
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 5°C

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9803410

Chain of Custody

Control Number: COC RS799
Date 10 / 7 / 98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

Cooler No: R6
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Preservatives: HCL, pH<2 4°C; HCL, pH<2 4°C; 4°C; 4°C; 4°C; H2SO4,pH<2 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

SWMU 5.2 ↓ AREA 1 ↓

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	COMMENT	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RS799	EVBS31S01	0.5	10/7/98	1315	31	12	X										X							*	HA			1
RS800	EVBS31D01	1.0		1530	31	13											X							*				1
RS801	EVBS34S01	0.5		1545	33												X							*			X	1
RS802	HVSS06S01	0		1615	10a	14								X		X												1
RS803	HVSS06D01	0		1630	10a	15								X														1
RS804	HVBS53S01	0.5		1645	19a	16										X												1

KMJ 10/7/98

Samplers Signature:	KMJamieson	Date 10/7/98	Time 1600
Relinquished By:	KMJamieson	Date 10/8/98	Time 1900
Received By:		Date	Time
Relinquished By:		Date	Time
Received By (LAB):	[signature]	Date 10/8/98	Time 1900

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N NA
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 14

* Hg ONLY

REV: 1

007

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9803410

Chain of Custody

Control Number: COC RS805
Date 10/8/98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:			
QC Level:	Level4	TAT:	35 - Day

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	H_2SO_4,pH<2 4°C	4°C	HNO_3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C

Sample Data						Matrix				8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH	ULS #	Extra Volume MS/MSD	HOLD	Total # of Bottles
Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Soil	Water	Product																	
SWMU AREA I 7.4 7.4 4.14 " AREA II	CN																								
RS805	HVQW04E01	-	10/8/98	810	8		X						X		X										4
RS806	QCBS17S01	7.0		1120	-21	X					X											11			1
RS807	QCBS17D01	7.5		1120	-2	X					X											11			1
RS808	~~DCBS26S01~~	1.0		1220	3	X					X		*									16a			1
RS809	~~DCBS26S02~~	5.0		1340	4	X					*		X									16a			1
RS810	CDBS24S01	0.5		1445	5								X									23 ~~16a~~			1
RS811	CDBS24D01	0.5		1445	6								X									23			1
RS812	CDBS25S01	0.5		1515	7								X									24			1
RS813	CDBS23S01	0.5		1545	8								X									21			1
RS814	CDBS26S01	0.5		1630	9								X									25			1
RS815	CDBS27S01	0.5		1700	10								X									22			1
RS816	CDBS22S02	4.0		1715	11								X									20			1

Samplers Signature	KMJamieson	Date 10/8/98	Time 830
Relinquished By:	KMJamieson	Date 10/8/98	Time 900
Received By:		Date	Time
Relinquished By:		Date	Time
Received By (LAB):		Date 10/8/98	Time 19:00

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N NA
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 14

* Hold for TPH (or dioxin)

REV: 1

008

Columbia Analytical Services inc.

Tuesday, March 17, 1998

Anne Freed
Ogden
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9800238

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on 1/28-30/98.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296, expiration August 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Leo Raab
Project Chemist

Stuart Sigman
Quality Assurance Chemist

xc:
Elizabeth Wessling
Ogden
550 S. Wadsworth Blvd., Suite 500
Lakewood, CO 80226

001

CAS CSR #L9800238

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COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9800238
Project:	Rocketdyne SSFL 313150002	**Date Received:**	1/28-30/98
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Sample Delivery Group Assignment" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses. Any tests marked under the grey-shaded parameters to the far right of this form were sub-contracted to the following laboratories:

Formaldehyde	Columbia Analytical Services, Kelso, WA.

Subcontracted test results, case narratives and data packages are included as an appendix to this report.

Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

MS/MSD analysis for 8080PCB was performed on sample RS652 from SDG L9800196.
MS/MSD analysis for 8015TPH was performed on sample RS181 from SDG L9800225.

No difficulties were experienced during analysis of this batch.

Data Qualifier Flags are: U = Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: _____ Date: 3/17/98

Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

SAMPLE DELIVERY GROUP ASSIGNMENT

CLIENT: **OGDEN**
PROJECT MANAGER: **DIXIE HAMBRICK**
PROJECT NAME: **ROCKETDYNE SSFL**
PROJECT NUMBER: **313150002**

SDG NUMBER: **L9800238**
LABORATORY: COLUMBIA ANALYTICAL SRV.
SDG CLOSING DATE: 1/29/98
SUMMARY / FINAL DUE: 2/12/98 / 2/26/98

#	SAMPLE NAME	SAMPLE DATE	RECEIVED DATE	MATRIX	MS/MSD or MS/DUP	MOISTURE	8260 VOC	8015OG TEPH	8270 SIM	8270 R	METALS (CAM-17)	METALS (CAM-17 + AL + B)	7196 HEXAVALENT CHROMIUM	340.2 FLUORIDE	300.0M ANIONS (CL NO3 NO2)	9040 / 9045 PH	8080 PCB	Hg CVAA 7471			ASTM D19 FORMALDEHYDE	PERCHLORATE	TRIBUTYLTIN	8290 DIOXIN/FURAN	HYDRAZINES	8330 EXPLOSIVES
1	**RS182**	1/28/98	1/28/98	SOLID		X		X																		
2	**RS183**	1/28/98	1/28/98	SOLID		X		X																		
3	**RS683**	1/29/98	1/29/98	SOLID		X						X				X										
4	**RS684**	1/29/98	1/29/98	SOLID		X							X													
5	**RS685**	1/29/98	1/29/98	SOLID		X							X													
6	**RS686**	1/29/98	1/29/98	SOLID		X							X													
7	**RS687**	1/29/98	1/29/98	SOLID		X		X																		
8	**RS688**	1/29/98	1/29/98	SOLID		X							X													
9	**RS689**	1/29/98	1/29/98	SOLID		X							X													
10	**RS690**	1/29/98	1/29/98	SOLID		X							X													
11	**RS691**	1/29/98	1/29/98	SOLID		X							X													
12	**RS692**	1/29/98	1/29/98	SOLID		X							X													
13	**RS693**	1/29/98	1/29/98	SOLID		X							X													
14	**RS694**	1/29/98	1/29/98	SOLID		X							X													
15	**RS186**	1/29/98	1/29/98	SOLID		X		X									X									
* 16	**RS695**	1/29/98	1/29/98	SOLID		C																				
17	**RS696**	1/29/98	1/29/98	SOLID		X							X													
18	**RS698**	1/30/98	1/30/98	SOLID		X		X	X													X				
19	**RS699**	1/30/98	1/30/98	SOLID		X		X	X													X				
20	**RS700**	1/30/98	1/30/98	SOLID		X		X																		

* RS695 MOVED TO SDG L9800338

L9800238

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS176
Date 1/28/98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Preservatives: HCL, pH<2 4°C; HCL, pH<2 4°C; 4°C; 4°C; 4°C; H2SO4, pH<2 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

Sample Data / Matrix

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RS176	BABS45S01	5.5	1/28/98	1155	53		X				X													B			
RS177	BABS45S02	10		1205							X																
RS178	BABS39S01	5		1445	55						X																
RS179	BABS39S02	10		1455							X																
RS180	BABS39S03	15		1515							X																
RS181	BABS39S04	20		1540							X																
RS182	BABS39S05	25		1610		1					X																
RS183	BABS39S06	30		1630		2					X																
RS184	BAQW03E01	—		1700				X			X													—			2

T.B. 1/28/98

Samplers Signature: Thomas J. Brit	Date 1/28/98	Time 1000
Relinquished By: Thomas J. Brit	Date 1/28/98	Time 1842
Received By: Jerre J. Dicker	Date 1/28/98	Time 1842
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number:
Do COC match samples Y or N
Broken container: Y or N
Received within holding time Y or N
COC seal intact: Y or N N/A
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 7°

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

004

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9800238

Chain of Custody

Control Number: COC RS 6083
Date 1 / 29 / 98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:		
QC Level: Level4	TAT: 14-day hardcopy summary 28-day full package	

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | 4°C | H_2SO_4,pH<2 4°C | 4°C | HNO_3, pH<2 4°C | 4°C | 4°C | 4°C | 4 C | 4°C | 4°C

SWMU	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	SLUDGE	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
AIV Acc	RS 6083	SRBSØ6SØ1	0.5	1/29/98	1120	7	3	X											X				X				HA			1
↓	RS 6084	SRBSØ3SØ1	0.5		1145	1	4	↓												X							↓			
5.13	RS 6085	BVSSØ3SØ2	0		1230	40	5													X							G			
4.16	RS 6086	BIBSØ1SØ1	2		1345	2	6				X									X							G			
4.15	RS 6087	BABSIØSØ1	0.5		1400	33a	7	X					X														HA			
4.7	RS 6088	CLBSI9SØ1	0.5		1500	46	8	X												X										
5.23	RS 6089	DABSØ4SØ1	0.5		1525	4	9													X										
6.8	RS 6090	SNBSØ9SØ1	0.5		1540	10	10													X										
6.9	RS 6091	ELBSØ2SØØ1	0.5		1550	2	11													X										
A.III Acc	RS 6092	STBSØ1SØ1	0.5		1600	1	12													X										
7.1	RS 6093	BLBSØ5SØ1	0.5		1620	4	13	↓												X										
4.5	RS 6094	LXBSØ1SØ1	1'	↓	1640	1	14				X									X							↓			↓

Samplers Signature	KMJ	Date	1/29/98
		Time	1130
Relinquished By:	KMJ	Date	1/29/98
		Time	1845
Received By:		Date	1/29/98
		Time	1845
Relinquished By:		Date	1/29/98
		Time	1934
Received By (LAB):		Date	1/29/98
		Time	1930

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC seal intact: Y or (NA)
Any other problems: Y or (N)
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 1°

FOR ALL SAMPLES, TAKE FROM MIDDLE OF SLEEVE.

5000

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9800238

Chain of Custody

Control Number: COC RS185

Date 1/29/98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:		
QC Level: Level4	TAT: 14-day hardcopy summary 28-day full package	

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | 4°C | H_2SO_4,pH<2 4°C | 4°C | HNO_3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

SWMU 5.13 11

Sample Data							Matrix			8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product																			
RS185	BVBS185Ø1	0.5	1/29/98	0935	38		X				X											X				HA		*	
RS186	BVBS255Ø3	1	↓	1240	37	15.	X				X											X				HA			
									T. B.																				
									1/29/98																				

Samplers Signature: Thomas J. Burton	Date: 1/29/98	Time: 0930
Relinquished By: Thomas J. Burton	Date: 1/29/98	Time: 1825
Received By:	Date: 1/29/98	Time: 1825
Relinquished By:	Date: 1/29/98	Time: 1930
Received By (LAB):	Date: 1/29/98	Time: 1930

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: (Y) or N

Broken container: Y or (N)

Received within holding time: (Y) or N

COC seal intact: (Y) or N

Any other problems: Y or (N)

If any YES, Ogden contacted: Y or N

Date contacted: ___/___/___

Temperature °C 17

* Hold both analytes

Sample from middle of sleeves

REV: 1

900

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9800238

Chain of Custody

Control Number: COC RS 695

Date 1 / 29 / 98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:		
QC Level: Level4	TAT: 14-day hardcopy summary 28-day full package	

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | 4°C | H_2SO_4,pH<2 4°C | 4°C | HNO_3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

Sample Data							Matrix																								
Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	1312 SPLP	COMMENT Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
SWMU 5.2 7.4																															
RS695	EVBS17SØ1	2	1/29/98	1700	179	16 *	X																	X	* HA			1
RS696	OCBSØ7SØ1	1	↓	1730	4	17 *	X												X						↓			↓
RS697	BADWØ4EØ1	-	↓	1800	-	/		X			X														-			2
									KJ																						

L9800238

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS 698

Date 1 / 30 / 98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

Cooler No:

QC Level: Level4

TAT: 14-day hardcopy summary
28-day full package

Preservatives: HCL, pH<2 4°C; HCL, pH<2 4°C; 4°C; 4°C; 4°C; H2SO4,pH<2 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

Sample Data

	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product		8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
WMU 6.1, 6.3	RS 698	ECBS20S01	0.5'	1/30/98	1445	18	18	X					X	X			X											HA		H2	1
↓	RS 699	ECBS20S02	5'	↓	1545	↓	19	↓					X	X			X											↓		~~X~~	↓
II	RS 700	ABBS20S01	3'	↓	1615	68b	20	↓					X															↓			↓
↓	RS 701	ABBS21S01	2.5'	↓	1630	69		↓					X															↓			↓

KJ 1/30/98

Samplers Signature	KMJ	Date 1/30/98	Time 1500
Relinquished By:	KMJ	Date 1/30/98	Time 1705
Received By:	Thomas J. [signature]	Date 1/30/98	Time 1705
Relinquished By:	Thomas J. [signature]	Date 1/30/98	Time 1913
Received By (LAB):	[signature]	Date 1/30/98	Time 1913

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N N/A

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: ___/___/___

Temperature °C 6°C

REV: 1

008

Columbia Analytical Services inc.

Tuesday, March 17, 1998

Anne Freed
Ogden
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9800238

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on 1/28-30/98.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296, expiration August 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Leo Raab
Project Chemist

Stuart Sigman
Quality Assurance Chemist

xc:
Elizabeth Wessling
Ogden
550 S. Wadsworth Blvd., Suite 500
Lakewood, CO 80226

001

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9800238
Project:	Rocketdyne SSFL 313150002	**Date Received:**	1/28-30/98
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Sample Delivery Group Assignment" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses. Any tests marked under the grey-shaded parameters to the far right of this form were sub-contracted to the following laboratories:

Formaldehyde	Columbia Analytical Services, Kelso, WA.

Subcontracted test results, case narratives and data packages are included as an appendix to this report.

Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

MS/MSD analysis for 8080PCB was performed on sample RS652 from SDG L9800196.
MS/MSD analysis for 8015TPH was performed on sample RS181 from SDG L9800225.

No difficulties were experienced during analysis of this batch.

Data Qualifier Flags are: U = Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: _____ Date: 3/17/98

Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

SAMPLE DELIVERY GROUP ASSIGNMENT

CLIENT: **OGDEN**
PROJECT MANAGER: **DIXIE HAMBRICK**
PROJECT NAME: **ROCKETDYNE SSFL**
PROJECT NUMBER: **313150002**

SDG NUMBER: **L9800238**
LABORATORY: COLUMBIA ANALYTICAL SRV.
SDG CLOSING DATE: 1/29/98
SUMMARY / FINAL DUE: 2/12/98 / 2/26/98

#	SAMPLE NAME	SAMPLE DATE	RECEIVED DATE	MATRIX	MS/MSD or MS/DUP	MOISTURE	8260 VOC	8015OG TEPH	8270 SIM	8270 R	METALS (CAM-17)	METALS (CAM-17 + AL + B)	7196 HEXAVALENT CHROMIUM	340.2 FLUORIDE	300.0M ANIONS (CL NO3 NO2)	9040 / 9045 PH	8080 PCB	Hg CVAA 7471			ASTM D19 FORMALDEHYDE	PERCHLORATE	TRIBUTYLTIN	8290 DIOXIN/FURAN	HYDRAZINES	8330 EXPLOSIVES
1	**RS182**	1/28/98	1/28/98	SOLID		X		X																		
2	**RS183**	1/28/98	1/28/98	SOLID		X		X																		
3	**RS683**	1/29/98	1/29/98	SOLID		X						X				X										
4	**RS684**	1/29/98	1/29/98	SOLID		X							X													
5	**RS685**	1/29/98	1/29/98	SOLID		X							X													
6	**RS686**	1/29/98	1/29/98	SOLID		X							X													
7	**RS687**	1/29/98	1/29/98	SOLID		X		X																		
8	**RS688**	1/29/98	1/29/98	SOLID		X							X													
9	**RS689**	1/29/98	1/29/98	SOLID		X							X													
10	**RS690**	1/29/98	1/29/98	SOLID		X							X													
11	**RS691**	1/29/98	1/29/98	SOLID		X							X													
12	**RS692**	1/29/98	1/29/98	SOLID		X							X													
13	**RS693**	1/29/98	1/29/98	SOLID		X							X													
14	**RS694**	1/29/98	1/29/98	SOLID		X							X													
15	**RS186**	1/29/98	1/29/98	SOLID		X		X									X									
* 16	**RS695**	1/29/98	1/29/98	SOLID		C																				
17	**RS696**	1/29/98	1/29/98	SOLID		X							X													
18	**RS698**	1/30/98	1/30/98	SOLID		X		X	X												X					
19	**RS699**	1/30/98	1/30/98	SOLID		X		X	X												X					
20	**RS700**	1/30/98	1/30/98	SOLID		X		X																		

* RS695 MOVED TO SDG L9800338

L9800238

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS176
Date 1/28/98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Preservatives: HCL, pH<2 4 C; HCL, pH<2 4 C; 4 C; 4 C; 4 C; H2SO4, pH<2 4 C; 4 C; HNO3, pH<2 4 C; 4 C; 4 C; 4 C; 4 C; 4 C; 4 C

Sample Data / Matrix

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RS176	BABS45S01	5.5	1/28/98	1155	53		X				X													B			
RS177	BABS45S02	10		1205							X																
RS178	BABS39S01	5		1445	55						X																
RS179	BABS39S02	10		1455							X																
RS180	BABS39S03	15		1515							X																
RS181	BABS39S04	20		1540							X																
RS182	BABS39S05	25		1610		1					X																
RS183	BABS39S06	30		1630		2					X																
RS184	BAQW03E01	—		1700			2 TB	X			X													—			2

WMV 1.15

T.B. 1/28/98

	Date	Time
Samplers Signature: Thomas J. Brit	1/28/98	1000
Relinquished By: Thomas J. Brit	1/28/98	1842
Received By: Jerry J. Dicker	1/28/98	1842
Relinquished By:		
Received By (LAB):		

For Lab Use

Lab Number:
Do COC match samples Y or N
Broken container: Y or N
Received within holding time Y or N
COC seal intact: Y or N N/A
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature C 7°

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

004

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9800238

Chain of Custody

Control Number: COC RS 6083
Date 1/29/98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:	
QC Level: Level4	TAT: 14-day hardcopy summary 28-day full package

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | 4°C | H_2SO_4,pH<2 4°C | 4°C | HNO_3, pH<2 4°C | 4°C | 4°C | 4°C | 4 C | 4°C | 4 C

SWMU	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	SLUDGE
AIV AOC	RS 6083	SRBSØ6SØ1	0.5	1/29/98	1120	7	3	X			
↓	RS 6084	SRBSØ3SØ1	0.5		1145	1	4	↓			
5.13	RS 6085	BVSSØ3SØ2	0		1230	40	5				
4.16	RS 6086	B1BSØ1SØ1	2		1345	2	6				X
4.15	RS 6087	BABS1ØSØ1	0.5		1400	33a	7	X			
4.7	RS 6088	CLBS19SØ1	0.5		1500	46	8	X			
5.23	RS 6089	DABSØ4SØ1	0.5		1525	4	9				
6.8	RS 6090	SNBSØ9SØ1	0.5		1540	10	10				
6.9	RS 6091	ELBSØ2SØØ1	0.5		1550	2	11				
A.III AOC	RS 6092	STBSØ1SØ1	0.5		1600	1	12				
7.1	RS 6093	BLBSØ5SØ1	0.5		1620	4	13	↓			
4.5	RS 6094	LXBSØ1SØ1	1'		1640	1	14				X

	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
AIV AOC								X	X			X					HA			1
↓									X								↓			
5.13									X								G			
4.16									X								G			
4.15		X															HA			
4.7									X											
5.23									X											
6.8									X											
6.9									X											
A.III AOC									X											
7.1									X											
4.5									X								↓			↓

	Date	Time
Samplers Signature: KMJ	1/29/98	1130
Relinquished By: KMJ	1/29/98	1845
Received By:	1/29/98	1845
Relinquished By:	1/29/98	1934
Received By (LAB):	1/29/98	1950

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC seal intact: Y or (NA)
Any other problems: Y or (N)
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 17

FOR ALL SAMPLES, TAKE FROM MIDDLE OF SLEEVE.

500

REV: 1

L9800238

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS185

Date 1/29/98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

Cooler No:		
QC Level:	Level4	TAT: 14-day hardcopy summary 28-day full package

Preservatives: HCL, pH<2 4°C; HCL, pH<2 4°C; 4°C; 4°C; 4°C; H2SO4,pH<2 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

SWMU	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
5.13	RS185	BVBS18SØ1	0.5	1/29/98	0935	38		X				X											X		HA		*	
"	RS186	BVBS25SØ3	1	↓	1240	37	15.	X				X											X		HA			

T.B 1/29/98

	Date	Time
Samplers Signature: Thomas J. Bunton	1/29/98	0930
Relinquished By: Thomas J. Bunton	1/29/98	1825
Received By: [signature]	1/29/98	1825
Relinquished By: [signature]	1/29/98	1930
Received By (LAB): [signature]	1/29/98	1930

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 17

* Hold both analytes

Sample from middle of sleeves

REV: 1

006

L9800238

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS 695
Date 1 / 29 / 98 Page 1 of 1

Project Manager:	Dixie Hambrick	Bill To:	Purchasing	Sample Disposal Instructions:	Laboratory Disposal
Project Name:	Rocketdyne	Company:	Ogden Environmental	Shipment Method:	
Project Number:	313150002	Address:	5510 Morehouse Drive, San Diego, CA 92121	Comment:	
Deliver results to the address above or as stated in contract					

Cooler No:

QC Level: Level4 TAT: 14-day hardcopy summary 28-day full package

Preservatives: HCL, pH<2 4°C; HCL, pH<2 4°C; 4°C; 4°C; 4°C; H2SO4,pH<2 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

Sample Data / Matrix

SWMU	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ	1312 SPLP	COMMENT	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
5.2	RS695	EVBS17SØ1	2	1/29/98	1700	17a	16 •	X																	X	*	HA			1
7.4	RS696	OCBSØ7SØ1	1	↓	1730	4	17 •	X											X								↓			↓
	RS697	BAQWØ4EØ1	-	↓	1800	-	/		X			X															-			2

KJ 1/29/98

Samplers Signature	Date	Time
KMJ	1/29/98	1645
Relinquished By: KMJ	1/29/98	1845
Received By: [signature]	1/29/98	1845
Relinquished By: [signature]	1/29/98	1930
Received By (LAB): [signature]	1/29/98	1930

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N/A
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 17

* Sb ONLY.
FOR ALL SAMPLES, TAKE FROM MIDDLE OF SLEEVE.

REV: 1

007

L9800238

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS 1698
Date 1 / 30 / 98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:	
QC Level: Level4	TAT: 14-day hardcopy summary 28-day full package

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H_2SO_4, pH<2 4°C	4°C	HNO_3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C	4°C						

Sample Data							Matrix																								
Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
WMU 9,1,16,3 ↓ II	RS 1698	ECBS2ØSØ1	Ø.5'	1/30/98	1445	1B	18	X			X	X			X										HA			1
	RS 1699	ECBS2ØSØ2	5'	↓	1545	↓	19	X			X	X			X										↓			↓
	RS 7ØØ	ABBS2ØSØ1	3'		1615	68	20	X			X																	
	RS 7Ø1	ABBS21SØ1	2.5'	↓	1630	69		X			X																	
									KJ																				

Columbia Analytical Services inc.

Thursday, March 19, 1998

Anne Freed
Ogden
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9800209

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on 1/26-27/98.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296, expiration August 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Leo Raab
Project Chemist

Stuart Sigman
Quality Assurance Chemist

xc:
Elizabeth Wessling
Ogden
550 S. Wadsworth Blvd., Suite 500
Lakewood, CO 80226

CAS CSR #L9800209

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Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9800209
Project:	Rocketdyne SSFL 313150002	**Date Received:**	1/26-27/98
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Sample Delivery Group Assignment" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses. Any tests marked under the grey-shaded parameters to the far right of this form were sub-contracted to the following laboratories:

Perchlorate	Columbia Analytical Services, San Jose, CA.
Dioxins/Furans/EPA 8290	Triangle Lab, Durham, NC.
Dioxins/Furans/EPA 8290	Alta Analytical, El Dorado Hills, CA.

Subcontracted test results, case narratives and data packages are included as an appendix to this report.

Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

The following changes were requested via fax from Lisa Arrasmith on 2/20/98:
Analyze "on-hold" split sample RS658 at Alta Analytical for Dioxin/Furan.

MS/MSD analysis for 8270SIM was performed on sample RS699 from SDG L9800238.
MS/MSD analysis for 8270R was performed on a non-Ogden sample HSPC-11 from SDG L9800187.
MS/MSD analysis for 8015TPH was performed on sample RS164 from SDG L9800225.
MS/MSD analysis for 8021VOC was performed on sample RS170 from SDG L9800225.

The following difficulties were experienced during analysis of this batch:
Surrogate for 8270R were below range for one of six surrogates (2,4,6-Tribromophenol) for non-Ogden sample HSPC-11 and slightly above range for one of six surrogates (Terphenyl-d14) for method blank.

Data Qualifier Flags are: U = Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: _____ Date: 3/19/98

SAMPLE DELIVERY GROUP ASSIGNMENT

CLIENT: **OGDEN**
PROJECT MANAGER: **DIXIE HAMBRICK**
PROJECT NAME: **ROCKETDYNE SSFL**
PROJECT NUMBER: **313150002**

SDG NUMBER: **L9800209**
LABORATORY: COLUMBIA ANALYTICAL SRV.
SDG CLOSING DATE: 1/27/98
SUMMARY / FINAL DUE: 2/10/98 / 2/24/98

#	SAMPLE NAME	SAMPLE DATE	RECEIVED DATE	MATRIX	MS/MSD or MS/DUP	MOISTURE	8021 VOC	8015OG TEPH	8270 SIM	8270 R	METALS (CAM-17)	METALS (CAM-17 + AL + B)	7196 HEXAVALENT CHROMIUM	340.2 FLUORIDE	300.0M ANIONS (CL NO3 NO2)	ARSENIC	LEAD	BARIUM	SILVER	ZINC	ASTM D19 FORMALDEHYDE	PERCHLORATE	TRIBUTYLTIN	8290 DIOXIN/FURAN	HYDRAZINES	8330 EXPLOSIVES
1	RS657	1/26/98	1/26/98	SOLID		X																X				
2	RS658	1/26/98	1/26/98	SOLID		X																			X		
3	RS659	1/26/98	1/26/98	SOLID		X																			X		
4	RS661	1/26/98	1/26/98	SOLID		X	X																				
5	RS662	1/26/98	1/26/98	SOLID		X			X																		
6	RS663	1/26/98	1/26/98	SOLID		X				X																	
7	RS667	1/26/98	1/26/98	SOLID		X											X			X							
8	RS668	1/27/98	1/27/98	SOLID		X		X																			
9	RS669	1/27/98	1/27/98	SOLID		X		X									X		X								
10	RS670	1/27/98	1/27/98	SOLID		X		X																			
11	RS671	1/27/98	1/27/98	SOLID		X		X																			
12	RS672	1/27/98	1/27/98	SOLID		X						X															
13	RS673	1/27/98	1/27/98	SOLID		X						X															
14	RS674	1/27/98	1/27/98	SOLID		X						X													X		
15	RS675	1/27/98	1/27/98	SOLID		X										X	X										
16	RS676	1/27/98	1/27/98	SOLID		X						X													X		
17	RS677	1/27/98	1/27/98	SOLID		X							X														
18	RS678	1/27/98	1/27/98	SOLID		X		X																			
19	RS679	1/27/98	1/27/98	SOLID		X											X	X	X	X							
20	RS680	1/27/98	1/27/98	SOLID		X											X	X	X	X							

L9800209

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS 654
Date 1 / 26/98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ KJ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Federal Express
Comment:	

* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:

QC Level: Level4 TAT: 35 - Day

Preservatives: HCL, pH<2 4°C; HCL, pH<2 4°C; 4°C; 4°C; H2SO4,pH<2 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

Sample Data

Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Matrix: Soil	Water	Product	~~8260M~~ 8021 VOCs	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	~~6010/7000~~ 6010/7000 ILM02.1/RT METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH	PERCHLOR.	8270R SVOA				ULS	Extra Volume MS/MSD	HOLD	Total # of Bottles
RS 654	SRBSØ4SØ1	1'	1/26/98	840	18	X			X																	8			1
~~RS 655~~	~~SRBSØ5Sc~~	KJ																											
RS 655	SRBSØ4SØ2	3'		850	19	X			X						X KJ					X KJ						8			
RS 656	SRBSØ5SØ1	3'		930	20	X			X						X					X						3a			
RS 657	CFBS11SØ2	1'		1030	1	X															X					18			
RS 658	CABS26SØ1	0.5'		1130	2	X						X														25			
RS 659	CDBS19SØ1	0.5'		1200	3	X						X														18			
RS 660	CDBS19SØ2	5'		1215		X						X														18		X	
RS 661	CLBS46SØ1	0.5'		1600	4				X																	41b			
RS 662	CLBS52SØ1	0.5'		1610	5						X											X KJ				41c			
RS 663	CLBS46SØ2	5'		1625	6																	X				41b			
RS 664	CLBS46SØ3	8'		1650																		X				41b		X	

Samplers Signature: KMJ	Date 1/26/98	Time 900
Relinquished By: KMJ	Date 1/26/98	Time 1930
Received By: [signature]	Date 1/26/98	Time 1930
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

For Lab Use

Lab Number: ~~L9800187~~

Do COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC seal intact: Y or N NA
Any other problems: Y or (N)
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 6

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

L9800209

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS6665
Date 1/26/98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ K PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:			
QC Level:	Level4	TAT:	35 - Day

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	H_2SO_4,pH<2 4°C	4°C	HNO_3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C								

Sample Data						Matrix				8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	~~6010/7000~~ 13 ILM04.0 RT METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH					ULS	COMMENT	Extra Volume MS/MSD	HOLD	Total # of Bottles
Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Soil	Water	Product																							
RS6665	SRQWØIEØ1	-	1/26/98	1730	96		X									X									-				1
RS6666	CLQWØ7EØ1	-	↓	↓			X					X													-				2
RS6667	CLBS51SØ1	0.5'	↓	1450	104	X										X									5lb	*			1

T.B. 1/26/98

Samplers Signature	KMJ	Date 1/26/98	Time 1750
Relinquished By:	KMJ	Date 1/26/98	Time 1930
Received By:		Date	Time
Relinquished By:		Date	Time
Received By (LAB):		Date 1/26/98	Time 1935

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC seal intact: Y or N NA
Any other problems: Y or (N)
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 6°

* TEST FOR Pb & Zn ONLY.

REV: 1

L9800209

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS668
Date 1/27/98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Dolley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:
QC Level: Level4 TAT: 35 - Day

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | H_2SO_4,pH<2 4°C | 4°C | HNO3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

Sample ID	Description (for Ogden use only)		Date Collected	Time Collected	Lab ID	Soil	Water	Product	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	~~6010/7000~~ ILM02.1 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH	ULS	Extra Volume MS/MSD	HOLD	Total # of Bottles
RS668	OCBS07SØ3	0.5'	1/27/98	0800	8	X				X					*						4			1
RS669	OCBS10SØ2	4'		0820	9	X				X					*						7			
RS670	OCBS18SØ1	0.5'		915	10	X				X											11a			
RS671	OCSSØ1SØ1	Ø'		945	11	X				X											11b			
RS672	LFBS29SØ1	Ø.5'		1040	12	X									X						21a			
RS673	LFBS3ØSØ1	Ø.5'		1050	13	X									X						43			
RS674	LFBS31SØ1	0.5'		1115	14	X						X			X						42			
RS675	LFBSØ4SØ1	0.5'		1145	15	X									+						28			
RS676	LFBS32SØ1	0.5'		1230	16	X						X			X						38			
RS677	LFBS32SØ1	0.5'		1415	17	X						X			X	X					38			
RS678	CLBS21SØ2	0.5'		1505	18	X				X											26			
RS679	NCBS1ØSØ1	0.5'		1615	19	X									*						12			

Samplers Signature	Thomas J. Burt	Date 1/27/98 Time 0900
Relinquished By:	Thomas J. Burt	Date 1/27/98 Time 2013
Received By:		Date 1/27/98 Time 2013
Relinquished By:		Date Time
Received By (LAB):		Date Time

For Lab Use

Lab Number:

Do COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC seal intact: Y or N N/A
Any other problems: Y or (N)
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 7

*Pb and Ag only
+ Pb and As only
* Pb, Zn, Ag, & Ba ONLY

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

L9800209

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS 680
Date 1 / 27 / 98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: -
Comment:

Cooler No:		
QC Level:	Level4	TAT: 14-day hardcopy summary 28-day full package

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H_2SO_4,pH<2 4°C	4°C	HNO_3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C	4°C						

Sample Data							Matrix				8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ		#'s KJ	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product																					
RS 680	NCBS11SØ1	0.5'	1/27/98	1630	11	20	X											*									HA			1
RS 681	NCBSØ2.5Ø1	0.5'	↓	1700	1		X												X								HA			

KJ 1/27/98

Samplers Signature	KMJ	Date	1/27/98
Relinquished By:	KMJ	Date	1/27/98
Received By:		Date	1/27/98
Relinquished By:		Date	
Received By (LAB):		Date	

	Time
	1630
	2015
	2015

For Lab Use

Lab Number:

Do COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC seal intact: Y or N N/A
Any other problems: Y or (N)
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 7

* Pb, Zn, Ag, & Ba ONLY

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN *ENVIRONMENTAL AND ENERGY SERVICE*

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Mr. Leo Raab/Columbia Analytical Services
Fax No.: (818) 587-5555

From: Lisa L. Arrasmith *sign:* Lisa L Arrasmith

Date: 2/20/98 There is 1 Page to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain of custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]
RS654	RS658	1/26/98	D	D Split w/Alta Lab

[a] D = 8290, Dioxin/furan

L9800209-2

The reason for these changes is.

Incorrectly marked on COC form _____
Lack of sample volume _____
Ogden office personnel require this change X
Other: Containers mislabeled __ _____

Thank you.

Columbia Analytical Services, Inc.

MAR

Thursday, March 19, 1998

Anne Freed
Ogden
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9800209

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on 1/26-27/98.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296, expiration August 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Leo Raab
Project Chemist

Stuart Sigman
Quality Assurance Chemist

xc:
Elizabeth Wessling
Ogden
550 S. Wadsworth Blvd., Suite 500
Lakewood, CO 80226

CAS CSR #L9800209

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Metals Analytical Data 9000-9021
Metals Raw Data 10000-10056
Inorganic Parameters Analytical Data 11000-11004
Inorganic Parameters Raw Data 12000-12003
Columbia Analytical Services, Inc.-San Jose, CA Perchlorates ..... Appendix A
Triangle Laboratories Dioxins/Furans ..... Appendix B
ALTA Analytical Laboratory Dioxins/Furans ..... Appendix C

Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9800209
Project:	Rocketdyne SSFL 313150002	**Date Received:**	1/26-27/98
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Sample Delivery Group Assignment" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses. Any tests marked under the grey-shaded parameters to the far right of this form were sub-contracted to the following laboratories:

Perchlorate	Columbia Analytical Services, San Jose, CA.
Dioxins/Furans/EPA 8290	Triangle Lab, Durham, NC.
Dioxins/Furans/EPA 8290	Alta Analytical, El Dorado Hills, CA.

Subcontracted test results, case narratives and data packages are included as an appendix to this report.

Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

The following changes were requested via fax from Lisa Arrasmith on 2/20/98:
Analyze "on-hold" split sample RS658 at Alta Analytical for Dioxin/Furan.

MS/MSD analysis for 8270SIM was performed on sample RS699 from SDG L9800238.
MS/MSD analysis for 8270R was performed on a non-Ogden sample HSPC-11 from SDG L9800187.
MS/MSD analysis for 8015TPH was performed on sample RS164 from SDG L9800225.
MS/MSD analysis for 8021VOC was performed on sample RS170 from SDG L9800225.

The following difficulties were experienced during analysis of this batch:
Surrogate for 8270R were below range for one of six surrogates (2,4,6-Tribromophenol) for non-Ogden sample HSPC-11 and slightly above range for one of six surrogates (Terphenyl-d14) for method blank.

Data Qualifier Flags are: U = Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: _____ Date: 3/19/98

SAMPLE DELIVERY GROUP ASSIGNMENT

CLIENT: **OGDEN**
PROJECT MANAGER: **DIXIE HAMBRICK**
PROJECT NAME: **ROCKETDYNE SSFL**
PROJECT NUMBER: **313150002**

SDG NUMBER: **L9800209**
LABORATORY: COLUMBIA ANALYTICAL SRV.
SDG CLOSING DATE: 1/27/98
SUMMARY / FINAL DUE: 2/10/98 / 2/24/98

#	SAMPLE NAME	SAMPLE DATE	RECEIVED DATE	MATRIX	MS/MSD or MS/DUP	MOISTURE	8021 VOC	8015OG TEPH	8270 SIM	8270 R	METALS (CAM-17)	METALS (CAM-17 + AL + B)	7196 HEXAVALENT CHROMIUM	340.2 FLUORIDE	300.0M ANIONS (CL NO3 NO2)	ARSENIC	LEAD	BARIUM	SILVER	ZINC	ASTM D19 FORMALDEHYDE	PERCHLORATE	TRIBUTYLTIN	8290 DIOXIN/FURAN	HYDRAZINES	8330 EXPLOSIVES
1	RS657	1/26/98	1/26/98	SOLID		X																X				
2	RS658	1/26/98	1/26/98	SOLID		X																			X		
3	RS659	1/26/98	1/26/98	SOLID		X																			X		
4	RS661	1/26/98	1/26/98	SOLID		X	X																				
5	RS662	1/26/98	1/26/98	SOLID		X			X																		
6	RS663	1/26/98	1/26/98	SOLID		X				X																	
7	RS667	1/26/98	1/26/98	SOLID		X											X			X							
8	RS668	1/27/98	1/27/98	SOLID		X		X																			
9	RS669	1/27/98	1/27/98	SOLID		X		X									X		X								
10	RS670	1/27/98	1/27/98	SOLID		X		X																			
11	RS671	1/27/98	1/27/98	SOLID		X		X																			
12	RS672	1/27/98	1/27/98	SOLID		X						X															
13	RS673	1/27/98	1/27/98	SOLID		X						X															
14	RS674	1/27/98	1/27/98	SOLID		X						X													X		
15	RS675	1/27/98	1/27/98	SOLID		X										X	X										
16	RS676	1/27/98	1/27/98	SOLID		X						X													X		
17	RS677	1/27/98	1/27/98	SOLID		X							X														
18	RS678	1/27/98	1/27/98	SOLID		X		X																			
19	RS679	1/27/98	1/27/98	SOLID		X											X	X	X	X							
20	RS680	1/27/98	1/27/98	SOLID		X											X	X	X	X							

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L98000209

Chain of Custody

Control Number: COC RS 654
Date 1 / 26 / 98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ KJ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:
QC Level: Level4 TAT: 35 - Day

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | H_2SO_4,pH<2 4°C | 4°C | HNO_3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Matrix: Soil	Water	Product	~~8260M~~ 8021 VOCs	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	~~7060~~ ~~7060A~~ ~~7740~~ ~~7041~~ ~~7421~~ ~~7470~~ ~~7471~~ ~~7060A~~ ~~7740~~ ~~7041~~ ~~7421~~ ~~7470~~ ~~7471~~ LMO2.1 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH	PERCHLOR.	8270R SVOA				ULS	Extra Volume MS/MSD	HOLD	Total # of Bottles
RS 654	SRBSØ4SØ1	1'	1/26/98	840	~~18~~	X			X																	8			1
~~RS 655~~	~~SRBSØ5S~~	~~KJ~~																											
RS 655	SRBSØ4SØ2	3'		850	~~19~~	X			X							X										8			
RS 656	SRBSØ5SØ1	3'		930	~~20~~	X			~~X~~							X										8			
RS 657	CFBS11SØ2	1'		1030	1	X																X				18			
RS 658	CABS26SØ1	0.5'		1130	2	X						X														25			
RS 659	CDBS19SØ1	0.5'		1200	3	X						X														18			
RS 660	CDBS19SØ2	5'		1215	~~7~~	X						X														18		X	
RS 661	CLBS46SØ1	0.5'		1600	4				X																	416			
RS 662	CLBS52SØ1	0.5'		1610	5						X													X		4c			
RS 663	CLBS46SØ2	5'		1625	6																			X		41b			
RS 664	CLBS46SØ3	8'	↓	1650	↓	↓																		X		41b		X	↓

Samplers Signature	KMJ	Date	Time
		1/26/98	900
Relinquished By:	KMJ	Date	Time
		1/26/98	1930
Received By:		Date	Time
		1/26/98	1930
Relinquished By:		Date	Time
Received By (LAB):		Date	Time

For Lab Use

Lab Number: ~~L98001~~ L98000187
Do COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC seal intact: Y or N NA
Any other problems: Y or (N)
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 6

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

L9800209

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS665
Date 1/26/98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ KJ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:			
QC Level:	Level4	TAT:	35 - Day

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	H_2SO_4, pH<2 4°C	4°C	HNO_3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C									

Sample Data						Matrix				8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	~~6010/7000~~ ILM04.1 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH								
Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Soil	Water	Product																	ULS	COMMENT	Extra Volume MS/MSD	HOLD	Total # of Bottles
RS665	SRQWØIEØ1	-	1/26/98	1730	96		X									X								-				1
RS666	CLQWØ7EØ1	-	↓	↓			↓					X												-				2
RS667	CLBS51SØ1	0.5'	↓	1450	104	X		(-7)								X								516	*			1

I.B. 1/26/98

Samplers Signature	KMJ	Date 1/26/98	Time 1750
Relinquished By:	KMJ	Date 1/26/98	Time 1930
Received By:		Date	Time
Relinquished By:		Date	Time
Received By (LAB):		Date 1/26/98	Time 1933

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC seal intact: Y or N NA
Any other problems: Y or (N)
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 6°

* TEST FOR Pb & Zn ONLY.

REV: 1

L9800209

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS6668
Date 1/27/98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Dolley~~ JB PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:
QC Level: Level4 TAT: 35 - Day

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | H_2SO_4, pH<2 4°C | 4°C | HNO_3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

Sample ID	Description (for Ogden use only)	Δ	Date Collected	Time Collected	Lab ID	Soil	Water	Product	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	~~6010/7000~~ ILM04.1 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH	ULS	Extra Volume MS/MSD	HOLD	Total # of Bottles
RS668	OCBS075	2.5'	1/27/98	0800	8	X				X					*						4			1
RS669	OCBS105	4'		0820	9	X				X					*						7			
RS670	OCBS185	0.5'		915	10	X				X											Ha			
RS671	OCSS015	0'		945	11	X				X											14b			
RS672	LFBS295	0.5'		1040	12	X									X						21a			
RS673	LFBS305	0.5'		1050	13	X									X						43			
RS674	LFBS315	0.5'		1115	14	X						X			X						42			
RS675	LFBS045	2.5'		1145	15	X									+						28			
RS676	LFBS325	2.5'		1230	16	X						X			X						38			
RS677	LFBS325	0.5'		1415	17	X						X			X	X					38		X	
RS678	CLBS215	0.5'		1505	18	X				X					*						216			
RS679	NCBS105	0.5'		1615	19	X															12			

Samplers Signature	Thomas J. Burt	Date 1/27/98	Time 0900
Relinquished By:	Thomas J. Burt	Date 1/27/98	Time 2013
Received By:		Date 1/27/98	Time 2013
Relinquished By:		Date	Time
Received By (LAB):		Date	Time

For Lab Use

Lab Number:

Do COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC seal intact: Y or N N/A
Any other problems: Y or (N)
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 7

*Pb and Ag only
+ Pb and As only
* Pb, Zn, Ag, & Ba ONLY

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

L9800209

OGDEN
5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS 680
Date 1 / 27 / 98 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: -
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Preservatives: HCL pH<2 4°C | HCL pH<2 4°C | 4°C | 4°C | 4°C | H_2SO_4 pH<2 4°C | 4°C | HNO_3 pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Matrix: Soil	Water	Product	8260M VOC	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ		Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
RS 680	NCBS11SØ1	0.5'	1/27/98	1630	11	20	X										*								HA			1
RS 681	NCBSØ[redacted]2SØ1	0.5'	↓	1700	1		X											X							HA			

KMJ 1/27/98

Samplers Signature: KMJ — Date 1/27/98 — Time 1630
Relinquished By: KMJ — Date 1/27/98 — Time 2015
Received By: [signature] — Date 1/27/98 — Time 2015
Relinquished By: — Date — Time
Received By (LAB): — Date — Time

For Lab Use

Lab Number:

* Pb, Zn, Ag, & Ba ONLY

Do COC match samples: (Y) or N
Broken container: Y or (N)
Received within holding time (Y) or N
COC seal intact: Y or N N/A
Any other problems: Y or (N)
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 7

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN ENVIRONMENTAL AND ENERGY SERVICE

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Mr. Leo Raab/Columbia Analytical Services
Fax No.: (818) 587-5555

From: Lisa L. Arrasmith *sign:* Lisa L Arrasmith

Date: 2/20/98 There is 1 Page to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain of custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]
RS654	RS658	1/26/98	D	D Split w/Alta Lab

[a] D = 8290, Dioxin/furan

L9800209-2

The reason for these changes is:

Incorrectly marked on COC form ____
Lack of sample volume ____
Ogden office personnel require this change X
Other: Containers mislabeled ____

Thank you.

Columbia Analytical Services, Inc.

Tuesday, March 10, 1998

Anne Freed
Ogden
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9704318

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on 12/16-17/97.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296, expiration August 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Leo Raab
Project Chemist

Stuart Sigman
Quality Assurance Chemist

xc:
Elizabeth Wessling
Ogden
550 S. Wadsworth Blvd., Suite 500
Lakewood, CO 80226

001

CAS CSR #L9704318

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Inorganic Parameters Analytical Data 13000-13013
Inorganic Parameters Raw Data 14000-14044
Columbia Analytical Services, Inc.-Kelso, WA Formaldehyde/Tributyltins ..... Appendix A
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Columbia Analytical Services, Inc.

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NAN	Not Analyzed
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ppm	Parts Per Million
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TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9704318
Project:	Rocketdyne SSFL 313150002	**Date Received:**	12/16-17/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Sample Delivery Group Assignment" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses. . Any tests marked under the grey-shaded parameters to the far right of this form were sub-contracted to the following laboratories:

Formaldehyde	Columbia Analytical Services, Kelso, WA.
Dioxins/Furans/EPA 8290	Triangle Lab, Durham, NC.

Subcontracted test results, case narratives and data packages are included as an appendix to this report.

Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

The following changes were requested via fax from Lisa Arrasmith on 12/17/97:
Add 8015TPH to sample RS563.

MS/MSD analysis for 8270SIM was performed on non-Ogden sample CHMW5A-1 from SDG L9704210.
MS/MSD analysis for 8080PCB was performed on sample RS031 from SDG L9704312.
MS/MSD analysis for 8015TPH was performed on sample RF494 from SDG L9704312.
MS/MSD analysis for 8015TPH was performed on cancelled sample RF494 (reported only for QC purposes).
MS/MSD analysis for 8021VOC was performed on sample RS057 from SDG L9704338.

The following difficulties were experienced during analysis of this batch:
MS/MSD recoveries for Phenol were slightly above range for 8270R while all other spike compounds were acceptable and LCS was within limits. One surrogate, 2-Fluorobiphenyl, out of six, was slightly above range for sample RS592DL. MS/MSD recovery for 8080PCB was above range, LCS was within limits.

Data Qualifier Flags are: U = Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: _____ Date: 3/10/98

SAMPLE DELIVERY GROUP ASSIGNMENT

CLIENT: **OGDEN**
PROJECT MANAGER: **DIXIE HAMBRICK**
PROJECT NAME: **ROCKETDYNE SSFL**
PROJECT NUMBER: **313150002**

SDG NUMBER: **L9704318**
LABORATORY: COLUMBIA ANALYTICAL SRV.
SDG CLOSING DATE: 12/17/97
SUMMARY / FINAL DUE: 12/31/97 / 1/14/98

#	SAMPLE NAME	SAMPLE DATE	RECEIVED DATE	MATRIX	MS/MSD or MS/DUP	MOISTURE	8260 VOC	8015OG TEPH	8270 SIM	8270 R	METALS (CAM-17)	METALS (CAM-17 + AL + B)	7196 HEXAVALENT CHROMIUM	340.2 FLUORIDE	300.0M ANIONS (CL NO3 NO2)	9040 / 9045 PH	8080 PCB	Hg CVAA 7471	8021VOC	Silver	ASTM D19 FORMALDEHYDE	PERCHLORATE	TRIBUTYLTIN	8290 DIOXIN/FURAN	HYDRAZINES	8330 EXPLOSIVES
1	RS573	12/16/97	12/16/97	SOLID		X		X																		
2	RS576	12/16/97	12/16/97	SOLID		X											X									
3	RS577	12/16/97	12/16/97	SOLID		X		X																		
4	RS578	12/16/97	12/16/97	SOLID		X		X																		
5	RS579	12/16/97	12/16/97	SOLID		X					X					X										
6	RS580	12/16/97	12/16/97	SOLID		X					X					X										
7	RS581	12/16/97	12/16/97	SOLID		X		X												X						
8	RS563	12/15/97	12/16/97	SOLID		C		C	C																	
9	RS584	12/17/97	12/17/97	SOLID		X					X					X										
10	RS585	12/17/97	12/17/97	SOLID		X					X					X										
11	RS586	12/17/97	12/17/97	SOLID		X			X																	
12	RS587	12/17/97	12/17/97	SOLID		X			X																	
13	RS588	12/17/97	12/17/97	SOLID		X			X		X															
14	RS589	12/17/97	12/17/97	SOLID		X					X					X										
15	RS590	12/17/97	12/17/97	SOLID		X																		X		
16	RS591	12/17/97	12/17/97	SOLID		X																		X		
17	RS592	12/17/97	12/17/97	SOLID		X				X																
18	RS593	12/17/97	12/17/97	SOLID		X																		X		
19	RS594	12/17/97	12/17/97	SOLID		X		X	X					X	X	X			X		X					
20	RS595	12/17/97	12/17/97	SOLID		X			X																	

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9704318

Chain of Custody

Control Number: COC RS 572

Date 12/16/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:
QC Level: Level4
TAT: 14-day hardcopy summary
28-day full package

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | 4°C | H_2SO_4,pH<2 4°C | 4°C | HNO_3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

| Sample Data | | | | | | | Matrix | | | | Analyses | | | | | | |

~~L9704310~~
L9704318

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RS 559
Date 12/15/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	
Comment:	

Cooler No:

QC Level: Level4

TAT: 14-day hardcopy summary
28-day full package

Preservatives

												HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	H2SO4,pH<2 4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C	4°C					
SWMU	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product		8260M VOC 8021	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ		COMMENT	Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
4.3, 4.4	RS559	1LBS21S02	3	12/15/97	830	59a	1	X				X	X															HA			1
4.7	RS560	CLBS35S01	0.5		900	20	1 2	X					X						X				X								1
"	RS561	CLBS36S01	0.5		0915	21	2 3	X					X																		1
6.5	RS562	SLSS07S01	0		955	44	3 4							X													*	G			
↓	RS563	SLSS06S01	0		1000	43								X														G		X	
6.4	RS564	CFBS06S02	4.5		1050	14	4 5												X									HA			
7.1	RS565	BLBS10S01	0.5		1230	11	5 6						X															HA			
4.12	RS566	LFSS10S01	0		1345	41	6												X									G			
↓	RS567	LFBS24S01	0.5		1420	40	7						X						X									HA			
5.18, 5.19	RS568	CASS02S01	0		1505	10a	8						X															G			
4.15	RS569	BABS39S01	0.5		1545	11b	9							X					X								☆	HA			
↓	RS570	BABS06S03	10		1630	11	10												X								☆	↓			

Samplers Signature: KMJ	Date 12/15/97	Time 845
Relinquished By: KMJ	Date 12/15/97	Time 1815
Received By: [signature]	Date 12/16/97	Time 1155
Relinquished By: [signature]	Date 12/16/97	Time 1245
Received By (LAB): [signature]	Date 12/16/97	Time 1245

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N NA
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 9°

* FAX DIXIE RESULTS ASAP
☆ Pb ONLY

CANCELLED

NOTE RS566 ON HOLD PER
FAX FROM L. ARRASMITH 12/16

[signature] 12/15/97 1815 [signature]

RECEIVED BY: [signature]
RELINQUISHED BY: [signature] 12/16/97 1155

REV: 1

006

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L97 04318

Chain of Custody

Control Number: COC RS 584

Date 12/17/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method:
Comment:

Cooler No:	
QC Level: Level4	TAT: 14-day hardcopy summary 28-day full package

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | 4°C | H_2SO_4,pH<2 4°C | 4°C | HNO_3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

	Sample Data							Matrix																								
	Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	ULS Number	Lab ID	Soil	Water	Product	SLUDGE	~~8260M VOC~~ 8021	8015OG TPH	8270SIM SVOC	8270R SVOC	8290 DIOXIN	ASTM D19 FORMALDEHYDE	8330 ORDINANCE	1LM02.IRT METALSRT	7196 HEX CHROME	340.2 FLUORIDE	300 ANIONS	9045/9040 pH	8081 PCBs	IC HYDRAZ			Sampling Method	Extra Volume MS/MSD	HOLD	Total # of Bottles
SWMU AREA IV ↓ AREA II ↓ 5.23 5.19 4.7 ↓	RS 584	SRBSØ35Ø1	0.5	12/17/97	920	1	9	X											X				X					HA			1
	RS 585	SRBSØ35Ø2	3.5		940	1	10	X											X				X					↓			↓
	RS 586	SPBS14SØ1	0.5		1020	25	11	X						X																	
	RS 587	SPBS15SØ1	↓		1030	24	12	X						X																	
	RS 588	DASSØ3SØ1	Ø		1115	20	13	X						X					X									G			
	RS 589	CABSØ5SØ2	0.5		1145	17	14				X								X				X					G			
	RS 590	CLBS45SØ1	0.5		1225	65	15	X								X												HA			
	RS 591	CLBS45DØ1	—		1225	65	16	↓								X												↓	X		
	RS 592	CLBS46SØ1	4.5		1230	41b	17	↓							X	X														*	
	RS 593	CLBS32SØ3	4.5		14.20	41	18	X								X															
	RS 594	CLBS34SØ1	3		1450	41a	19					X	X	X			X				✓	X	X								
	RS 595	CLBS42SØ1	0.5	↓	1545	16b	20	↓						X														↓			↓

Samplers Signature	KMJ	Date	12/17/97
		Time	1000
Relinquished By:		Date	12/17/97
		Time	2037
Received By:		Date	12/17/97
		Time	2037
Relinquished By:		Date	
		Time	
Received By (LAB):		Date	
		Time	

1000

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

*HOLD DIOXIN TEST

Do COC match samples: (Y) or N

Broken container: Y or (N)

Received within holding time: (Y) or N

COC seal intact: Y or N (N/A)

Any other problems: Y or (N)

If any YES, Ogden contacted: Y or N

Date contacted: ___/___/___

Temperature °C 4°

REV: 1

OGDEN *ENVIRONMENTAL AND ENERGY SERVICE*

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Mr. Leo Raab/Columbia Analytical Services
Fax No.: (818) 587-5555

From: Lisa L. Arrasmith *sign:* LLA

Date: 12/17/97 There is 1 Page to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]	
RF261	RF262	11/12/97	S, F, Fl, A & pH	S, F, Fl, A, pH & OG*	3846-10
RS559	RS563	12/15/97	S +	S & OG*	4318-8
RD360	RD362	11/25/97	OG & V	OG, V, S & F	⊛

[a] S = SVOCs, 8270SIM
Fl = 340.2, Fluoride
A= Anions, 300
F = Formaldehyde, ASTM D19
OG= 8015OG, TPH
V = 8021, Volatiles

⊛ SAMPLE PREVIOUSLY RETURNED TO CLIENT - NOT AVAILABLE TO TEST.

+ ORIGINALLY ON HOLD PER COC

***Please send chromatograms and results to Elizabeth Wessling at Ogden, Denver.**

The reason for these changes is:

Incorrectly marked on COC form ____
Lack of sample volume ____
Ogden office personnel require this change X
Other: Containers mislabeled ____

Thank you.

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden Environmental	**Service Request No.:**	K9709343
Project:	Rocketdyne/313150002	**Date Received:**	12/17/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Laboratory Control Sample (LCS), Initial and Continuing Calibration Verification Standards (ICV/CCV), and Initial and Continuing Calibration Blanks (ICB/CCB).

All EPA recommended holding times have been met for analyses in this sample delivery group.

No difficulties were experienced during analysis of this batch.

Approved by _____ **Date** 1/8/98

Columbia Analytical Services inc.

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

6925 Canoga Avenue • Canoga Park, CA 91303 • (818) 587-5550 • Fax (818) 587-5555

DATE _____ PAGE 1 OF 1

00011

PROJECT NAME Rocketdyne # 31315 0002

PROJECT MANAGER ANNE FREED

COMPANY/ADDRESS OGDEN - SD.

PHONE _____

SAMPLERS SIGNATURE _____

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH Gas/BTEX 8015/8020/602	TPH/8015 Modified Diesel ¬ FC ¬ Gasoline ¬	BTEX 602/8020	Total Petroleum Hydrocarbons EPA 418.1	Halogenated Volatiles 601/8010	Volatile Organics GC/MS 624/8240/8260	Base Neutral Acid Organic GC/MS 625/8270	CAM Metals 6010/7000	FORMALDEHYDE							SDG ~~REMARKS~~
RS 594	12/17	1450		SOIL	1									X							L9704318

RELINQUISHED BY:	RECEIVED BY:
Signature: Christelle Bragas	Signature: [signature]
Printed Name: A. BRAGASIN	Printed Name: [signature]
Firm: CAS	Firm: CAS
Date/Time: 12/18/97 1500	Date/Time: 12/19/97 1000

TURNAROUND REQUIREMENTS

- ___ 24 hr ___ 48 hr. X 5 day
- ___ Standard
- ___ Other (Specify)
- ___ Provide Verbal Preliminary Results

Requested Report Date _____

REPORT REQUIREMENTS

- ___ I. Routine Report
- ___ II. Report (includes DUP.MS. MSD, as required, may be charged as samples)
- X III. Data Validation Report (includes All Raw Data)
- ___ RWQCB

INVOICE INFORMATION:

P.O.# _____

Bill To _____

SAMPLE RECEIPT:

Shipping VIA. _____

Shipping #. _____

Condition. _____

Lab No: L9704318

RELINQUISHED BY:	RECEIVED BY:
Signature	Signature
Printed Name	Printed Name
Firm	Firm
Date/Time	Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

Report in Dry Weight

K970 9443

DISTRIBUTION WHITE - return to originator YELLOW - lab

TRIANGLE LABS

CASE NARRATIVE

Analysis of Samples for the Presence of

Polychlorinated Dibenzo-*p*-Dioxins and Dibenzofurans by

High-Resolution Chromatography / High-Resolution Mass Spectrometry

Method 8290 Rev. 0 (9/94)

Date:	December 26, 1997
Client ID:	Columbia Analytical Services
P.O. Number:	
TLI Project Number:	44402A

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Rev. 11/19/97

Triangle Laboratories, Inc.
801 Capitola Drive
Durham, NC 27713-4411
919-544-5729
P.O. Box 13485
Research Triangle Park, NC 27709-3485
Fax # 919-544-5491

Overview

The samples and associated QC samples were extracted and analyzed according to procedures described in EPA Method 8290 Rev. 0 (9/94). Any particular difficulties encountered during the sample handling by Triangle Laboratories will be discussed in the QC Remarks section below. This report contains results from only the 8290 dioxin/furan analysis of samples RS590, RS591, and RS593.

Quality Control Samples

A laboratory method blank, identified as the TLI Blank, was prepared along with the sample(s).

Laboratory control spike (LCS) and laboratory control spike duplicate (LCSD) samples were extracted and analyzed along with the samples. A report summarizing the analyte recoveries and relative percent differences for these samples is included in the data package.

Quality Control Remarks

This release of this particular set of Columbia Analytical Services analytical data by Triangle Laboratories was authorized by the Quality Control Chemist who has reviewed each sample data package following a series of inspections/reviews. When applicable, general deviations from acceptable QC requirements are identified below and comments are made on the effect of these deviations upon the validity and reliability of the results. Specific QC issues associated with this particular project are:

Sample receipt: One water sample and three soil samples were received from Columbia Analytical Services at 14.0 °C in good condition on December 19, 1997 and stored in a refrigerator at 4 °C. The client's chain-of-custody did not indicate whether or not chemical preservatives were utilized prior to shipment.

Sample Preparation Laboratory: None

Mass Spectrometry: None

Data Review: The percent recovery of OCDF in the LCS sample is slightly below the QC criteria (70-130%); however, the relative percent difference is well within the QC criteria (< 20%). TLI guidelines allow up to two analytes to have percent recoveries outside the QC criteria, so long as the relative percent differences are within the QC criteria. All other analyte percent recoveries and relative percent differences (RPDs) are within the QC limits (of 70-130% and less than 20% RPD, respectively) in the LCS/LCSD samples.

Other Comments: No 2,3,7,8-substituted target analytes were detected in the TLI Blank above the target detection limit (TDL).

Method 8290 contains separate criteria for beginning and ending continuing calibrations. When the ending calibration meets criteria established for the beginning calibration, the average response factor from the initial calibration is used. When the ending calibration only meets the less stringent criteria specified for an ending calibration, the average of the response factor from the beginning and ending calibration is used for analyte and internal standard calculations. Affected samples are identified by the listing of both the beginning and ending calibration filename on the sample report.

The analytical data presented in this report are consistent with the guidelines of EPA Method 8290 Rev. 0 (9/94). Any exceptions have been discussed in the QC Remarks section of this case narrative with emphasis on their effect on the data. Should Columbia Analytical Services have any questions or comments regarding this data package, please feel free to contact our Project Scientist, Amy J. Boehm, at 919/544-5729 ext. 268.

For Triangle Laboratories, Inc.,

Report Preparation

S A Parikh 12/26/97

Saroj A. Parikh
Report Preparation Chemist

Quality Control

VIJAY S CHHABRIA
Report Preparation Chemist

The total number of pages in the data package is : 124 .

TLI Project: 44402A
Client Sample: TLI LCS

Method 8290 PCDD/PCDF Analysis (b)
Analysis File: T978682

Surrogate Standards (Type B)	Conc. (ppt)	% Recovery	QC Limits	Ratio	RT	Flags
$^{37}Cl_4$-2,3,7,8-TCDD	8.8	44.2	40%-130%		26:42	Q___
$^{13}C_{12}$-2,3,4,7,8-PeCDF	124	62.4	40%-130%	1.50	30:27	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDF	143	71.8	40%-130%	0.48	33:10	___
$^{13}C_{12}$-1,2,3,4,7,8-HxCDD	171	85.6	40%-130%	1.24	33:54	___
$^{13}C_{12}$-1,2,3,4,7,8,9-HpCDF	164	82.1	25%-130%	0.42	37:58	___

Alternate Standards (Type B)	Conc. (ppt)	% Recovery	QC Limits	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,7,8,9-HxCDF	141	70.5	40%-130%	0.48	34:36	___
$^{13}C_{12}$-2,3,4,6,7,8-HxCDF	137	68.9	40%-130%	0.49	33:47	___

Recovery Standards	Ratio	RT	Flags
$^{13}C_{12}$-1,2,3,4-TCDD	0.82	26:30	___
$^{13}C_{12}$-1,2,3,7,8,9-HxCDD	1.25	34:19	___

Data Reviewer: S. A Parnell 12/26/97

X237_PSR v2.01, LARS 6.10.08e

Triangle Laboratories, Inc.®
801 Capitola Drive • Durham, North Carolina 27713
Phone: (919) 544-5729 • Fax: (919) 544-5491

Printed: 19:12 12/26/97

Columbia Analytical Services, Inc.

COPY 12/19/97

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

6925 Canoga Avenue • Canoga Park, CA 91303 • (818) 587-5550 • Fax (818) 587-5555

DATE _____ PAGE _____ OF 1

PROJECT NAME Rocketdyne # 313150.02

PROJECT MANAGER LEO RAAB

COMPANY/ADDRESS COLUMBIA ANALYTICAL

PHONE _____

SAMPLERS SIGNATURE _____

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH Gas/BTEX 8015/8020/602	TPH/8015 Modified Diesel / FC / Gasoline /	BTEX 602/8020	Total Petroleum Hydrocarbons EPA 418.1	Halogenated Volatiles 601/8010	Volatile Organics GC/MS 624/8240/8260	Base Neutral Acid Organic GC/MS 625/8270	CAM Metals 6010/7000	Pb only								REMARKS
RS590	12/17	1225		Soil	1									X								L9704318
RS591	12/17	1225		↓	1									X								L9704318
RS593	12/17	1420		↓	1									X								↓

ANALYSIS REQUESTED

RELINQUISHED BY:
Signature
A. BRAGASIN
Printed Name
CAL
Firm
12/18/97 1400
Date/Time

RECEIVED BY;
Signature
Charles Livengood
Printed Name
TLI
Firm
12/19/97 1100
Date/Time

TURNAROUND REQUIREMENTS
___ 24 hr ___ 48 hr. X 5 day
___ Standard
___ Other (Specify)
___ Provide Verbal Preliminary Results
Requested Report Date _____

REPORT REQUIREMENTS
___ I. Routine Report
___ II Report (includes DUP.MS. MSD, as required, may be charged as samples)
X III. Data Validation Report (includes All Raw Data)
___ RWQCB

INVOICE INFORMATION:
P.O.# _____
Bill To _____

SAMPLE RECEIPT:
Shipping VIA: _____
Shipping #: _____
Condition: _____
Lab No: _____

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

Report in Dry Weight

Columbia Analytical Services™ COPY

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

6925 Canoga Avenue • Canoga Park, CA 91303 • (818) 587-5550 • Fax (818) 587-5555

DATE _____ PAGE 1 OF 1

PROJECT NAME Rocketdyne #31315.0002

PROJECT MANAGER LEO RAAB

COMPANY/ADDRESS COLUMBIA ANALYTICAL

PHONE _____

SAMPLERS SIGNATURE _____

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH Gas/BTEX 8015/8020/602	TPH/8015 Modified Diesel ☐ FC ☐ Gasoline ☐	BTEX 602/8020	Total Petroleum Hydrocarbons EPA 418.1	Halogenated Volatiles 601/8010	Volatile Organics GC/MS 624/8240/8260	Base Neutral Acid Organic GC/MS 625/8270	CAM Metals 6010/7000	DLOX/WS								SD6 REMARKS
RS600	12/17/97	1740		H2O	2																	L9704311

RELINQUISHED BY:

Signature _____

Printed Name A. BRAGASIN

Firm CAS

Date/Time 12/18/97 1400

RECEIVED BY:

Signature _____

Printed Name Charles Lovegood

Firm _____

Date/Time 12/19/97 1100

TURNAROUND REQUIREMENTS

___ 24 hr ___ 48 hr. X 5 day

___ Standard

___ Other (Specify)

___ Provide Verbal Preliminary Results

Requested Report Date _____

REPORT REQUIREMENTS

___ I. Routine Report

___ II. Report (includes DUP.MS. MSD, as required, may be charged as samples)

X III. Data Validation Report (includes All Raw Data)

___ RWQCB

INVOICE INFORMATION:

P.O.# _____

Bill To _____

SAMPLE RECEIPT:

Shipping VIA: _____

Shipping #: _____

Condition: _____

Lab No: _____

RELINQUISHED BY:

Signature _____

Printed Name _____

Firm _____

Date/Time _____

RECEIVED BY:

Signature _____

Printed Name _____

Firm _____

Date/Time _____

SPECIAL INSTRUCTIONS/COMMENTS:

Columbia Analytical Services, Inc.

February 23, 1998

Anne Freed
OGDEN
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne / Project #313150001

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on November 10-14, 1997. For your reference, these analyses have been assigned our service request number L9703803.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services Mobile Laboratory is certified for environmental analyses by the California Department of Health Services (certificate number: 1993, expiration May 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Thomas X. Robinson
Project Chemist

TR/iz

D0001

CAS CSR #L9703803

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Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	InterPhase Environmental	**Service Request No.:**	L9703803
Project:	Rocketdyne/313150001	**Date Received:**	11/10-14/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for samples designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix/Duplicate Matrix Spike (MS/DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

The following difficulties were experienced during analysis of this batch:

Sample results that have elevated PQL's with no target compounds detected were diluted due to matrix interferences from hydrocarbons, these samples are appropriately footnoted.

Approved by: Thomas P. Robinson Date: 1/21/98

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
01-DEC-97 15:04

Service Req. No. L9703803
Client No. 095000
Client Name InterPhase Environmental

Project No. 313150001
Project Name Rocketdyne

Bottles: 67 - Canisters/Decore
3 - VOA Vial Set (2)

Bill To: InterPhase Environmental
Attn: Accounts Payable
6200 Peachtree Street
Los Angeles, CA 90040

Report To: Ogden Environmental
Dixie Hambrick
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No.
Logged In By JWICKER
ISR Num
COC Received Y
Samples Submitted 10-NOV-97 thru 14-NOV-97

Site ID
Project Chemist Tom Robinson

Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8021 MDAY	TPH-FC-CA	-DATA DEL
L9703803-001	RD230	MISC	10-NOV-97	02-DEC-97	II		II
L9703803-001	RD230	SOIL	10-NOV-97	02-DEC-97		II	
L9703803-002	RD231	MISC	10-NOV-97	02-DEC-97	II		II
L9703803-002	RD231	SOIL	10-NOV-97	02-DEC-97		II	
L9703803-003	RD232	MISC	10-NOV-97	02-DEC-97	II		II
L9703803-003	RD232	SOIL	10-NOV-97	02-DEC-97		II	
L9703803-004	RD233	MISC	10-NOV-97	02-DEC-97	II		II
L9703803-004	RD233	SOIL	10-NOV-97	02-DEC-97	II	II	
L9703803-005	RD234	MISC	10-NOV-97	02-DEC-97	II		II
L9703803-005	RD234	SOIL	10-NOV-97	02-DEC-97		II	
L9703803-006	RD235	SOIL	10-NOV-97	02-DEC-97	II	II	
L9703803-007	RD827	SOIL	10-NOV-97	02-DEC-97	II		
L9703803-008	RD828	SOIL	10-NOV-97	02-DEC-97	II	II	
L9703803-009	RD829	SOIL	10-NOV-97	02-DEC-97	II	II	
L9703803-010	RD830	SOIL	10-NOV-97	02-DEC-97	II	II	
L9703803-011	RD831	SOIL	10-NOV-97	02-DEC-97	II	II	
L9703803-012	RD832	SLUDGE	11-NOV-97	02-DEC-97	II	II	
L9703803-013	RD833	SOIL	11-NOV-97	02-DEC-97		II	
L9703803-014	RD834	SOIL	11-NOV-97	02-DEC-97		II	
L9703803-015	RD836	SOIL	11-NOV-97	02-DEC-97		II	
L9703803-016	RD839	SOIL	11-NOV-97	02-DEC-97	II	II	
L9703803-017	RD840	SOIL	11-NOV-97	02-DEC-97		II	
L9703803-018	RD236	SOIL	11-NOV-97	02-DEC-97	II	II	
L9703803-019	RD237	SOIL	11-NOV-97	02-DEC-97	II	II	
L9703803-020	RD238	SOIL	11-NOV-97	02-DEC-97	II	II	
L9703803-021	RD239	SOIL	11-NOV-97	02-DEC-97	II	II	
L9703803-022	RD240	SOIL	11-NOV-97	02-DEC-97	II	II	
L9703803-023	RD241	SOIL	11-NOV-97	02-DEC-97	II	II	
L9703803-024	RD247	SOIL	11-NOV-97	02-DEC-97	II	II	
L9703803-025	RD248	SOIL	11-NOV-97	02-DEC-97	II	II	
L9703803-026	RD249	H2O	11-NOV-97	02-DEC-97	II	II	
L9703803-027	RD842	SOIL	12-NOV-97	02-DEC-97		II	
L9703803-028	RD843	SOIL	12-NOV-97	02-DEC-97		II	
L9703803-029	RD844	SOIL	12-NOV-97	02-DEC-97	II	II	
L9703803-030	RD845	SOIL	12-NOV-97	02-DEC-97		II	
L9703803-031	RD846	SOIL	12-NOV-97	02-DEC-97		II	

0004

METALS VOA
IC WET
SEMI VOA

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By: JXM

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
01-DEC-97 15:04

Service Req. No. L9703803
Client No. 095000
Client Name InterPhase Environmental

Project No. 313150001
Project Name Rocketdyne

Bottles: 67 - Canisters/Decore
3 - VOA Vial Set (2)

Bill To: InterPhase Environmental
Attn: Accounts Payable
6200 Peachtree Street
Los Angeles, CA 90040

Report To: Ogden Environmental
Dixie Hambrick
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No.
Logged In By JWICKER
ISR Num
COC Received Y
Samples Submitted 10-NOV-97 thru 14-NOV-97

Site ID
Project Chemist Tom Robinson

Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8021 MDAY	TPH-FC-CA	~DATA DEL
L9703803-032	RD252	SOIL	12-NOV-97	02-DEC-97	II		
L9703803-033	RD254	SOIL	12-NOV-97	02-DEC-97	II		
L9703803-034	RD255	SOIL	12-NOV-97	02-DEC-97	II		
L9703803-035	RD259	SOIL	12-NOV-97	02-DEC-97	II		
L9703803-036	RD260	SOIL	12-NOV-97	02-DEC-97	II		
L9703803-037	RD261	SOIL	12-NOV-97	02-DEC-97	II	II	
L9703803-038	RD262	SOIL	12-NOV-97	02-DEC-97	II		
L9703803-039	RD854	H2O	13-NOV-97	02-DEC-97	II		
L9703803-040	RD855	H2O	13-NOV-97	02-DEC-97		II	
L9703803-041	RD856	H2O	13-NOV-97	02-DEC-97	II		
L9703803-042	RD264	SOIL	13-NOV-97	02-DEC-97	II	II	
L9703803-043	RD265	SOIL	13-NOV-97	02-DEC-97	II	II	
L9703803-044	RD266	SOIL	13-NOV-97	02-DEC-97		II	
L9703803-045	RD267	SOIL	13-NOV-97	02-DEC-97		II	
L9703803-046	RD268	SOIL	13-NOV-97	02-DEC-97		II	
L9703803-047	RD269	SOIL	13-NOV-97	02-DEC-97	II	II	
L9703803-048	RD270	SOIL	13-NOV-97	02-DEC-97		II	
L9703803-049	RD271	SOIL	13-NOV-97	02-DEC-97		II	
L9703803-050	RD272	SOIL	13-NOV-97	02-DEC-97		II	
L9703803-051	RD273	SOIL	13-NOV-97	02-DEC-97		II	
L9703803-052	RD274	SOIL	13-NOV-97	02-DEC-97		II	
L9703803-053	RD860	SOIL	14-NOV-97	02-DEC-97	II		
L9703803-054	RD861	SOIL	14-NOV-97	02-DEC-97	II	II	
L9703803-055	RD862	SOIL	14-NOV-97	02-DEC-97	II	II	
L9703803-056	RD863	SOIL	14-NOV-97	02-DEC-97		II	
L9703803-057	RD864	SOIL	14-NOV-97	02-DEC-97		II	
L9703803-058	RD865	SOIL	14-NOV-97	02-DEC-97		II	
L9703803-059	RD866	SOIL	14-NOV-97	02-DEC-97	II	II	
L9703803-060	RD867	SOIL	14-NOV-97	02-DEC-97	II		
L9703803-061	RD868	SOIL	14-NOV-97	02-DEC-97	II	II	
L9703803-062	RD869	SOIL	14-NOV-97	02-DEC-97	II		
L9703803-063	RD275	SOIL	14-NOV-97	02-DEC-97		II	
L9703803-064	RD276	SOIL	14-NOV-97	02-DEC-97		II	
L9703803-065	RD277	SOIL	14-NOV-97	02-DEC-97		II	
L9703803-066	RD278	SOIL	14-NOV-97	02-DEC-97		II	
L9703803-067	RD282	SOIL	14-NOV-97	02-DEC-97		II	

6005

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By: JXM

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
01-DEC-97 15:04

Service Req. No. L9703803
Client No. 095000
Client Name InterPhase Environmental

Project No. 313150001
Project Name Rocketdyne

Bottles: 67 - Canisters/Decore
3 - VOA Vial Set (2)

Bill To: InterPhase Environmental
Attn: Accounts Payable
6200 Peachtree Street
Los Angeles, CA 90040

Report To: Ogden Environmental
Dixie Hambrick
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No.
Logged In By JWICKER
ISR Num
COC Received Y
Samples Submitted 10-NOV-97 thru 14-NOV-97

Site ID
Project Chemist Tom Robinson

Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8021 MDAY	TPH-FC-CA	-DATA DEL
L9703803-068	RD283	SOIL	14-NOV-97	02-DEC-97	II	II	
L9703803-069	RD284	SOIL	14-NOV-97	02-DEC-97	II		
L9703803-070	RD285	SOIL	14-NOV-97	02-DEC-97	II		

Comments:

9000

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By:

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD230
Date 11 / 10 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

ULS	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9703803)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
65	RD230	ABBS12S01	5.5	11/10/97	1200	-001	B	AREA II AOC	X					X			1	Relinquished By: [signature] Received By: [signature]	1530 11/10/97 1530 11/10/97
49	RD231	ABBS13S01	5.0		1235	-002	B		X					X			1	Relinquished By: [signature] Received By: [signature]	11/10/97 1530 1530 11/10/97
49	RD232	ABBS13S02	10.0		1245	-003	B		X					X			1	Relinquished By: [signature] Received By: [signature]	11/10/97 1530 11/10/97 1530
54	RD233	ABBS14S01	0.5		1410	-004	B		X				X	X			1	Relinquished By: [signature] Received By: [signature]	11/10/97 1530 11/10/97 1530
1	RD234	CDBS02S02	2.5		1515	-005	B		X					X			1	Relinquished By: [signature] Received By: [signature]	11/10/97 1530 11/10/97 1530

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: 0004

TAT: 14 - day

Sampler's Signature	Date	Time
[signature]	11/10/97	1715

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD235
Date 11/10/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

UL5

7

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L9703803 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD235	CDB5045D2	3.0	11/10/97	1535	-006	B	Area II AOC	X				X	X			1	Relinquished By:	11/10/97 1530
																	Received By:	11/10/97 1530
	11/10/97																Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	11/10/97	1715

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 826
Date 11 / 10 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

(Alfa) ULS	Sample Data: EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L9703803 Lab ID	Field Data: Sampling Method	SWMU	Matrix: Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
30	~~RD 826~~	~~AABS11S02~~	~~3.5~~	~~11/10~~	~~1000~~	~~KJ~~	~~HA~~	~~5.9~~	~~X~~				~~X~~				~~1~~	Relinquished By: / Received By:	
30	RD 827	AABS11S02	5.5	11/10	1040	-007	HA	5.9	X				X				1	Relinquished By: [signature] / Received By: [signature]	11/10/97 1735 / 11/10/97 1735
8a	RD 828	AABS31S01	0.5	11/10	1105	-008	HA	5.9	X				X	X			1	Relinquished By: [signature] / Received By: [signature]	11/10/97 1735 / 11/10/97 1735
8a	RD 829	AABS31S02	3.0	11/10	1200	-009	HA	5.9	X				X	X			1	Relinquished By: [signature] / Received By: [signature]	11/10/97 1735 / 11/10/97 1735
35e	RD 830	AABS32S01	0.5	11/10	1450	-010	HA	5.9	X				X	X		X	1	Relinquished By: [signature] / Received By: [signature]	11/10/97 1735 / 11/10/97 1735

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: CP9728 TAT: 14 - day

Sampler's Signature	Date	Time
[signature] KJ	11/10/97	1735

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD831
Date 11/10/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

Alfa) ULS

35e

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9703803	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD 831	AABS32S02	5.0'	11/10	1545	-011	HA	5.9	X				X	X		X	1	Relinquished By: [signature]	11/10/97 1735
																	Received By: [signature]	11/10/97 1735
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

[signature]

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: TAT: 14 - day

Sampler's Signature	Date	Time
[signature]	11/10	1545

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD832
Date 11/11/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9703703	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD 832	AABS165Ø2	4.5	11/11	0845	-012	HA	5.9				X	X	X			1	Relinquished By: KJ	11/11/97 1730
																	Received By:	11/11/97 1930
RD 833	CLBS145Ø1	Ø.5	11/11	1140	-013	HA	4.7	X					X			1	Relinquished By: KJ	11/11/97 1730
																	Received By:	11/11/97 1930
RD 834	CLBS155Ø1	Ø.5	11/11	1215	-014	HA	4.7	X					X			1	Relinquished By: KJ	11/11/97 1730
																	Received By:	11/11/97 1930
RD 836	CLBS175Ø1	Ø.5	↓	1445	-015	↓	4.7	X					X			1	Relinquished By: KJ	11/11/97 1730
																	Received By:	11/11/97 1930
RD 837	CLBS [redacted] Ø1	Ø.5	↓	KJ 11/11/97		↓	4.7						X			1	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: CP 9737	TAT: 14 - day

Sampler's Signature	Date	Time
	11/11/97	1515

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

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1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 839
Date 11 / 11 /97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	IN FT, Depth	Date Collected	Time Collected	L9703803 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
41 RD 839	CLBS20S01	0.5	11/11/97	1630	-016	HA	4.7	X				1	1			1	Relinquished By: KJ	11/11/97 1730
																	Received By:	11/11/97 1730
26 RD 840	CLBS21S01	0.5	↓	1650	-017	↓	↓	X					1			1	Relinquished By: KJ	11/11/97 1730
																	Received By:	11/11/97 1730
																	Relinquished By:	
					KJ 11/11/97												Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: CP 9737	TAT: 14 - day

Sampler's Signature	Date	Time
K. Jamieson	11/11/97	1640

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

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1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD236
Date 11/11/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

Sample Data						Field Data		Matrix				EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge							
VLS						L9705802													
24	RD236	AABS335◇1	1.5	11/11/97	1000	-018	B	5.9	X				X	X				Relinquished By:	11/11/97 1840
																		Received By:	11/11/97 1840
33B a DB	RD237	AABS345◇1	2.◇		1022	-019	B		X				X	X				Relinquished By:	11/11/97 1840
																		Received By:	11/11/97 1840
33B a DB	RD238	AABS345◇2	6.◇		1030	-020	B		X				X	X				Relinquished By:	11/11/97 1840
																		Received By:	11/11/97 1840
33B a DB	RD239	AABS345◇3	10.◇		1040	-021	B		X				X	X				Relinquished By:	11/11/97 1840
																		Received By:	11/11/97 1840
33B a DB	RD240	AABS345◇4	12.◇		1055	-022	B		X				X	X				Relinquished By:	11/11/97 1840
																		Received By:	11/11/97 1840

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	11/11/97	1100

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

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1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD241
Date 11 / 11 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

ULS	Sample Data: EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L9703803 Lab ID	Field Data: Sampling Method	SWMU	Matrix: Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/Time
35d	RD241	AAB535S01	0.5	11/11/97	1140	-023	B	5.9	X				X	X				Relinquished By: [signature] Received By: [signature]	11/11/97 1840 11/11/97 1840
2	RD247	ELBS02S01	0.5	11/11/97	1646	-024	B		X				X	X				Relinquished By: [signature] Received By: [signature]	11/11/97 1840 11/11/97 1840
2	RD248	ELBS02S02	6.0	11/11/97	1650	-025	B		X				X	X				Relinquished By: [signature] Received By: [signature]	11/11/97 1840 11/11/97 1840
—	RD249	ELQW01E01	—	11/11/97	1757	-026	G			X			X	X			4	Relinquished By: [signature] Received By: [signature]	11/11/97 1840 11/11/97 1840
																		Relinquished By: [signature] Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: 0014

TAT: 14 - day

Sampler's Signature	Date	Time
[signature]	11/11/97	1800

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

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1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 842

Date 11/12/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #	Sample Data: EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (19703803)	Field Data: Sampling Method	SWMU	Matrix: Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
62	RD 842	ABBS155Ø1	Ø.5'	11/12	0820	-029	HA	Area II AOC	X					X			1	Relinquished By: KJ	11/12/97 1030
																		Received By:	11/12/97 1030
63	RD 843	ABBS165Ø1	Ø.5'	11/12	0835	-028	HA	"	X					X			1	Relinquished By: KJ	11/12/97 1030
																		Received By:	11/12/97 1038
60	RD 844	ABBS1ØSØ1	5.Ø'	11/12	955	-029	HA	"	X				X	X			1	Relinquished By: KJ	11/12/97 1030
																		Received By:	11/12/97 1030
																		Relinquished By:	
																		Received By:	
																		Relinquished By:	
																		Received By:	

KJ 11/12/97

QC Level:	EPA Level III Equivalent, See Contract Requirements
Cooler No:	CP 9737
TAT:	14 - day

Sampler's Signature: KJ	Date: 11/12/97	Time: 1000

For Lab Use

Does COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N or NA

Temperature °C _____

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REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 845
Date 11 / 12 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #	Sample Data: EPA Sample ID	Description (for Ogden use only)	IN FT. Depth	Date Collected	Time Collected	Lab ID (L9710388Z)	Field Data: Sampling Method	SWMU	Matrix: Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
64	RD 845	ABBS175Ø1	Ø.5	11/12/97	1225	-030	HA	AREA II AOC	X					1			1	Relinquished By: KJ	11/12/97 1345
																		Received By:	11/12/97 1345
64	RD 846	ABBS17DØ1	Ø.5	↓	1225	-031	↓	↓	X					1			1	Relinquished By: KJ	11/12/97 1345
																		Received By:	11/12/97 1345
																		Relinquished By:	
																		Received By:	
						KJ 11/12/97												Relinquished By:	
																		Received By:	
																		Relinquished By:	
																		Received By:	

QC Level:	EPA Level III Equivalent, See Contract Requirements
Cooler No:	CP 9737
TAT:	14 - day

Sampler's Signature	Date	Time
KJ	11/12/97	1230

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

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REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD252
Date 11/12/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9710380	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
ULS																		
RD 252	CFBS1B5Φ1	4.Φ	11/12/97	0950	-032	B	6.4	X				X					Relinquished By:	11/12/97 1750
																	Received By:	11/12/97 1057
RD 254	CFBS2Φ5Φ1	1.5		1100	-033	B		X				X					Relinquished By:	11/12/97 1750
																	Received By:	11/12/97 1057
RD 255	CFBS215Φ1	Φ.5		1134	-034	B		X				X					Relinquished By:	11/12/97 1750
																	Received By:	11/12/97 1057
RD 259	SLBSΦ35Φ1	1.5		1455	-035	B	6.5	X				X					Relinquished By:	11/12/97 1750
																	Received By:	11/12/97 1057
RD 260	SLBSΦ35Φ2	5.Φ		1500	-036	B	6.5	X				X					Relinquished By:	11/12/97 1750
																	Received By:	11/12/97 1057

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	11/12/97	1745

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

G:\Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

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REV. 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD261
Date 11/12/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD 261	SLBS045S01	1.0	11/12/97	1540	-037	B	6.5	X				X	X				Relinquished By:	11/12/97 1750
																	Received By:	11/12/97 1750
RD 262	SLBS055S01	1.0	↓	1620	-038	B	↓	X				X					Relinquished By:	11/12/97 1750
																	Received By:	11/12/97 1750
				DB 11/12/97													Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

25
1

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	11/12/97	1745

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 854
Date 11 / 13 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID 197038	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD 854	CLQW03E01	-	11/13/97	830	-039	-	4.7		X			X				2	Relinquished By: KJ	11/13/97 1210
																	Received By:	11/13/97 1210
RD 855	CLQW03E02	-	"	830	-040	-	"		X				X			2	Relinquished By: KJ	11/13/97 1210
																	Received By:	11/13/97 1210
RD 856	CFQW03F06	-	"	830	-041	-	"		X			X				2	Relinquished By: KJ	11/13/97 1210
																	Received By:	11/13/97 1210
																	Relinquished By:	
																	Received By:	
					KJ 11/13/97												Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
KJ	11/13/97	900

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

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REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD264
Date 11/13/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

	Sample Data						Field Data		Matrix											
	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L9103803 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
VLS																				
9	RD 264	SLBS0650 1	1.5	11/13/97	0930	-042	B		X				X	X		X		Relinquished By:	11/13/97 1700
																		Received By:	11/13/97 1700
11	RD 265	SLBS0750 1	0.5		1020	-043	B		X				X	X		X		Relinquished By:	11/13/97 1700
																		Received By:	11/13/97 1700
14	RD 266	DCBS0650 2	5.5		1115	-044	B		X					X				Relinquished By:	11/13/97 1700
																		Received By:	11/13/97 1700
2	RD* 267	BABS1750 1	1.5		1215	-045	B		X					X				Relinquished By:	11/13/97 1700
																		Received By:	11/13/97 1700
2	RD 268	BABS1750 2	3.0		1224	-046	B		X					X				Relinquished By:	11/13/97 1700
																		Received By:	11/13/97 1700

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	11/13/97	1700

For Lab Use	
Does COC match samples: Y or N	* Sample from Top of sleeve
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD269

Date 11/13/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

	Sample Data						Field Data		Matrix											
ULs	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L9703803 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
1	RD 269	BABS185Φ1	1.5	11/13/97	1240	-047	B		X				X	X				Relinquished By:	11/13/97 1700
																		Received By:	11/13/97 1700
1	RD 270	BABS185Φ2	5.5		1250	-048	B		X					X				Relinquished By:	11/13/97 1700
																		Received By:	11/13/97 1700
1	RD 271	BABS185Φ3	10.Φ		1255	-049	B		X					X				Relinquished By:	11/13/97 1700
																		Received By:	11/13/97 1700
1	RD 272	BABS185Φ4	13.Φ		1300	-050	B		X					X				Relinquished By:	11/13/97 1700
																		Received By:	11/13/97 1700
8	RD 273	BABS195Φ1	1.Φ		1440	-051	B		X					X				Relinquished By:	11/13/97 1700
																		Received By:	11/13/97 1700

QC Level:	EPA Level III Equivalent, See Contract Requirements
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	11/13/97	1700

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne.COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 274
Date 11 / 13 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS
8

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9703802)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD 274	BAB5195Q2	3.0	11/13/97	1450	-052	B		X					X		X		Relinquished By:	11/13/97 1700
																	Received By:	11/13/97 1700
																	Relinquished By:	
																	Received By:	
					11/13/97												Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: 10	TAT: 14 - day

Sampler's Signature	Date	Time
	11/13/97	1700

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD860

Date 11 / 14 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #	EPA Sample ID	Description (for Ogden use only)	IN FT. Depth	Date Collected	Time Collected	Lab ID L9703807	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
22	RD KJ 860	EVBS11S01	0.5	11/14/97	840	-053	HA	5.2	X				X				1	Relinquished By: KJ	11/14/97 1220
																		Received By:	11/14/97 1220
64	RD 861	CLBS22S01 (64 KJ)	0.5		930	-054		4.7	X				X	X			1	Relinquished By: KJ	11/14/97 1220
																		Received By:	11/14/97 1220
64	RD 862	CLBS28S025.0 (KJ 6)			1020	-055			X				X	X		X	1	Relinquished By: KJ	11/14/97 1220
																		Received By:	11/14/97 1220
1	RD 863	CLBS23S01	0.5		1155	-056			X					X			1	Relinquished By: KJ	11/14/97 1220
																		Received By:	11/14/97 1220
2	RD 864	CLBS24S01	0.5		1210	-057			X					X			1	Relinquished By: KJ	11/14/97 1220
																		Received By:	11/14/97 1220

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: 2 of 2	TAT: 14 - day

Sampler's Signature	Date	Time
KJ	11/14/97	845

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD865
Date 11 / 14 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #	EPA Sample ID	Description (for Ogden use only)	IN FT. Depth	Date Collected	Time Collected	L9703803 Lab ID	Field Data: Sampling Method	Field Data: SWMU	Matrix: Soil	Matrix: Water	Matrix: Product	Matrix: Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
22	RD 865	CLBS25S01	0.5	11/14/97	1230	-058	HA	4.7	X					X			1	Relinquished By: KJ	11/14/97 1700
																		Received By:	11/14/97 1900
63	RD 866	CLBS28S01	↓	↓	1425	-059	↓	↓	X				X	X			1	Relinquished By: KJ	11/14/97 1700
																		Received By:	11/14/97 1900
38	RD 867	CLBS29S01	↓	↓	1500	-060	↓	↓	X				X				1	Relinquished By: KJ	11/14/97 1700
																		Received By:	11/14/97 1900
64	RD 868	CLBS26S03	7.5	↓	1130	-061	↓	↓	X				X	X		X	1	Relinquished By: KJ	11/14/97 1700
																		Received By:	11/14/97 1900
8	RD 869	CLBS30S01	1.5	↓	1615	-062	↓	↓	X				X				1	Relinquished By: KJ	11/14/97 1700
																		Received By:	11/14/97 1900

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: 2	TAT: 14 - day

Sampler's Signature	Date	Time
KJ	11/14/97	1240

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD275
Date 11/14/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

	Sample Data						Field Data		Matrix											
VLS	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	L9703803 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
28	RD 275	BABS20S01	1.0	11/14/97	0830	-063	B	4.15	X					X				Relinquished By:	11/14/97 1800
																		Received By:	11/14/97 1800
28	RD 276	BABS20S02	5.0		0840	-064			X					X				Relinquished By:	11/14/97 1800
																		Received By:	11/14/97 1800
28	RD 277	BABS20S03	9.5		0850	-065			X					X				Relinquished By:	11/14/97 1800
																		Received By:	11/14/97 1800
10	RD 278	BABS21S01	1.0		0915	-066			X					X				Relinquished By:	11/14/97 1800
																		Received By:	11/14/97 1800
54	RD 282	LLBS22S01	1.5		1345	-067		4.7	X					X				Relinquished By:	11/14/97 1800
																		Received By:	11/14/97 1800

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	11/14/97	1754

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD283
Date 11/14/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9705803)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
DLS																		
5 RD 283	CLB5275D1	3.0	11/14/97	1430	-068	B	4.7	X				X	X		X		Relinquished By:	11/14/97 1800
																	Received By:	11/14/97 1800
5 RD 284	CLB5275D2	9.0		1455	-069			X				X					Relinquished By:	11/14/97 1800
																	Received By:	11/14/97 1800
31 RD 285	CLB5285D1 (31) DB	8.0		1530	-070			X				X					Relinquished By:	11/14/97 1800
				DB 11/14/97													Received By:	11/14/97 1800
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No. 3	TAT: 14 - day
Sampler's Signature	Date 11/14/97 Time 1750

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Columbia Analytical Services INC.

January 13, 1998

Anne Freed
OGDEN
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne / Project #313150001

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on November 3-7, 1997. For your reference, these analyses have been assigned our service request number L9703719.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services Mobile Laboratory is certified for environmental analyses by the California Department of Health Services (certificate number: 1993, expiration May 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Thomas X. Robinson
Project Chemist

TR/iz

01

CAS CSR #L9703719

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Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	InterPhase Environmental	**Service Request No.:**	L9703719
Project:	Rocketdyne/313150001	**Date Received:**	11/3-7/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for samples designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix/Duplicate Matrix Spike (MS/DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

The following difficulties were experienced during analysis of this batch:

Sample results that have elevated PQL's with no target compounds detected were diluted due to matrix interferences from hydrocarbons, these samples are appropriately footnoted.

Approved by: Thomas L. Robinson Date: 1/7/98

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
12-JAN-98 10:51

Service Req. No. L9703719
Client No. 095000
Client Name InterPhase Environmental

Project No. 313150001
Project Name Rocketdyne

Bottles: 93 - Canisters/Decore

Bill To: InterPhase Environmental
Attn: Accounts Payable
6200 Peachtree Street
Los Angeles, CA 90040

Report To: Ogden Environmental
Anne Freed
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No.
Logged In By ABRAGASI
ISR Num
COC Received Y
Samples Submitted 03-NOV-97 thru 07-NOV-97

Site ID
Project Chemist Tom Robinson

Note: This Service Request has been invoiced - # 502914

Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8021	MDAY	TPH-FC-CA	-DATA DEL
L9703719-001	RD176	MISC	03-NOV-97	10-NOV-97		LAB		
L9703719-001	RD176	SOIL	03-NOV-97	10-NOV-97			III	
L9703719-002	RD177	MISC	03-NOV-97	10-NOV-97		LAB		
L9703719-002	RD177	SOIL	03-NOV-97	10-NOV-97			III	III
L9703719-003	RD178	SOIL	03-NOV-97	10-NOV-97	III		III	
L9703719-004	RD179	SOIL	03-NOV-97	10-NOV-97	III		III	
L9703719-005	RD180	SOIL	03-NOV-97	10-NOV-97			III	
L9703719-006	RD181	SOIL	03-NOV-97	10-NOV-97			III	
L9703719-007	RD757	SOIL	03-NOV-97	10-NOV-97			III	
L9703719-008	RD758	SOIL	03-NOV-97	10-NOV-97			III	
L9703719-009	RD759	SOIL	03-NOV-97	10-NOV-97			III	
L9703719-010	RD760	SOIL	03-NOV-97	10-NOV-97			III	
L9703719-011	RD761	SOIL	03-NOV-97	10-NOV-97			III	
L9703719-012	RD762	SOIL	03-NOV-97	10-NOV-97			III	
L9703719-013	RD763	SOIL	03-NOV-97	10-NOV-97			III	
L9703719-014	RD764	SOIL	03-NOV-97	10-NOV-97	III		III	
L9703719-015	RD765	SOIL	03-NOV-97	10-NOV-97			III	
L9703719-016	RD768	SOIL	03-NOV-97	10-NOV-97	III			
L9703719-017	RD769	SOIL	03-NOV-97	10-NOV-97	III		III	
L9703719-018	RD770	SOIL	03-NOV-97	10-NOV-97			III	
L9703719-019	RD182	SOIL	03-NOV-97	10-NOV-97	III		III	
L9703719-020	RD183	SOIL	03-NOV-97	10-NOV-97	III			
L9703719-021	RD184	SOIL	03-NOV-97	10-NOV-97	III			
L9703719-022	RD774	SOIL	04-NOV-97	11-NOV-97	III		III	
L9703719-023	RD777	SOIL	04-NOV-97	11-NOV-97	III		III	
L9703719-024	RD778	SOIL	04-NOV-97	11-NOV-97	III		III	
L9703719-025	RD779	SOIL	04-NOV-97	11-NOV-97	III		III	
L9703719-026	RD780	SOIL	04-NOV-97	11-NOV-97	III		III	
L9703719-027	RD781	SOIL	04-NOV-97	11-NOV-97	III		III	
L9703719-028	RD785	SLUDGE	05-NOV-97	12-NOV-97	III		III	
L9703719-029	RD786	SOIL	05-NOV-97	12-NOV-97	III		III	
L9703719-030	RD787	SOIL	05-NOV-97	12-NOV-97			III	
L9703719-031	RD788	SOIL	05-NOV-97	12-NOV-97			III	
L9703719-032	RD789	SOIL	05-NOV-97	12-NOV-97			III	
L9703719-033	RD790	SOIL	05-NOV-97	12-NOV-97			III	
L9703719-034	RD185	SOIL	05-NOV-97	12-NOV-97			III	

04

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By:_____

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
12-JAN-98 10:51

Service Req. No. L9703719
Client No. 095000
Client Name InterPhase Environmental

Project No. 313150001
Project Name Rocketdyne

Bottles: 93 - Canisters/Decore

Bill To: InterPhase Environmental
Attn: Accounts Payable
6200 Peachtree Street
Los Angeles, CA 90040

Report To: Ogden Environmental
Anne Freed
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No.
Logged In By ABRAGASI
ISR Num
COC Received Y
Samples Submitted 03-NOV-97 thru 07-NOV-97

Site ID
Project Chemist Tom Robinson

Note: This Service Request has been invoiced - # 502914

Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8021 MDAY	TPH-FC-CA	-DATA DEL
L9703719-035	RD186	SOIL	05-NOV-97	12-NOV-97	III	III	
L9703719-036	RD187	SOIL	05-NOV-97	12-NOV-97	III	III	
L9703719-037	RD188	SOIL	05-NOV-97	12-NOV-97	III	III	
L9703719-038	RD189	SOIL	05-NOV-97	12-NOV-97	III	III	
L9703719-039	RD190	SOIL	05-NOV-97	12-NOV-97	III	III	
L9703719-040	RD191	SOIL	05-NOV-97	12-NOV-97		III	
L9703719-041	RD192	SOIL	05-NOV-97	12-NOV-97	III	III	
L9703719-042	RD193	SOIL	05-NOV-97	12-NOV-97	III	III	
L9703719-043	RD194	SOIL	05-NOV-97	12-NOV-97		III	
L9703719-044	RD195	SOIL	05-NOV-97	12-NOV-97		III	
L9703719-045	RD196	SOIL	05-NOV-97	12-NOV-97	III	III	
L9703719-046	RD197	SOIL	05-NOV-97	12-NOV-97	III	III	
L9703719-047	RD198	SOIL	05-NOV-97	12-NOV-97		III	
L9703719-048	RD798	SOIL	06-NOV-97	13-NOV-97	III	III	
L9703719-049	RD799	SOIL	06-NOV-97	13-NOV-97	III	III	
L9703719-050	RD199	SOIL	06-NOV-97	13-NOV-97		III	
L9703719-051	RD200	SOIL	06-NOV-97	13-NOV-97		III	
L9703719-052	RD201	SOIL	06-NOV-97	13-NOV-97	III	III	
L9703719-053	RD202	SOIL	06-NOV-97	13-NOV-97	III	III	
L9703719-054	RD203	SOIL	06-NOV-97	13-NOV-97	III	III	
L9703719-055	RD204	SOIL	06-NOV-97	13-NOV-97		III	
L9703719-056	RD205	SOIL	06-NOV-97	13-NOV-97		III	
L9703719-057	RD800	SOIL	06-NOV-97	13-NOV-97		III	
L9703719-058	RD801	H2O	06-NOV-97	13-NOV-97	III		
L9703719-059	RD802	H2O	06-NOV-97	13-NOV-97		III	
L9703719-060	RD206	SOIL	06-NOV-97	13-NOV-97	III	III	
L9703719-061	RD207	SOIL	06-NOV-97	13-NOV-97	III	III	
L9703719-062	RD208	SOIL	06-NOV-97	13-NOV-97	III	III	
L9703719-063	RD209	SOIL	06-NOV-97	13-NOV-97	III	III	
L9703719-064	RD210	SOIL	06-NOV-97	13-NOV-97		III	
L9703719-065	RD212	SOIL	06-NOV-97	13-NOV-97	III	III	
L9703719-066	RD812	SOIL	07-NOV-97	14-NOV-97		III	
L9703719-067	RD813	SOIL	07-NOV-97	14-NOV-97		III	
L9703719-068	RD814	SOIL	07-NOV-97	14-NOV-97		III	
L9703719-069	RD815	SOIL	07-NOV-97	14-NOV-97		III	
L9703719-070	RD816	SOIL	07-NOV-97	14-NOV-97		III	

05

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By:_____

Columbia Analytical Services -- Canoga Park
INTERNAL LOGIN SUMMARY REPORT (il01)
12-JAN-98 10:51

Service Req. No. L9703719
Client No. 095000
Client Name InterPhase Environmental

Project No. 313150001
Project Name Rocketdyne

Bottles: 93 - Canisters/Decore

Bill To: InterPhase Environmental
Attn: Accounts Payable
6200 Peachtree Street
Los Angeles, CA 90040

Report To: Ogden Environmental
Anne Freed
5510 Morehouse Dr.
San Diego, CA 92121

P.O. No.
Logged In By ABRAGASI
ISR Num
COC Received Y
Samples Submitted 03-NOV-97 thru 07-NOV-97

Site ID
Project Chemist Tom Robinson

Note: This Service Request has been invoiced - # 502914

Storage:

CAS Samp No.	Client Sample No.	Matrix	Collected	DueDate	8021 MDAY	TPH-FC-CA	~DATA DEL
L9703719-071	RD817	SOIL	07-NOV-97	14-NOV-97		III	
L9703719-072	RD818	SOIL	07-NOV-97	14-NOV-97		III	
L9703719-073	RD807	H2O	07-NOV-97	14-NOV-97		III	
L9703719-074	RD808	H2O	07-NOV-97	14-NOV-97	III		
L9703719-075	RD820	SOIL	07-NOV-97	14-NOV-97		III	
L9703719-076	RD823	SOIL	07-NOV-97	14-NOV-97		III	
L9703719-077	RD824	SOIL	07-NOV-97	14-NOV-97		III	
L9703719-078	RD213	SOIL	07-NOV-97	14-NOV-97		III	
L9703719-079	RD214	SOIL	07-NOV-97	14-NOV-97		III	
L9703719-080	RD215	SOIL	07-NOV-97	14-NOV-97	III	III	
L9703719-081	RD216	SOIL	07-NOV-97	14-NOV-97	III	III	
L9703719-082	RD217	SOIL	07-NOV-97	14-NOV-97	III		
L9703719-083	RD218	SOIL	07-NOV-97	14-NOV-97	III	III	
L9703719-084	RD219	SOIL	07-NOV-97	14-NOV-97	III	III	
L9703719-085	RD220	SOIL	07-NOV-97	14-NOV-97	III	III	
L9703719-086	RD221	SOIL	07-NOV-97	14-NOV-97	III	III	
L9703719-087	RD222	SOIL	07-NOV-97	14-NOV-97	III	III	
L9703719-088	RD223	SOIL	07-NOV-97	14-NOV-97	III	III	
L9703719-089	RD224	SOIL	07-NOV-97	14-NOV-97	III	III	
L9703719-090	RD225	SOIL	07-NOV-97	14-NOV-97	III	III	
L9703719-091	RD226	SOIL	07-NOV-97	14-NOV-97	III	III	
L9703719-092	RD227	SOIL	07-NOV-97	14-NOV-97	III	III	
L9703719-093	RD228	SOIL	07-NOV-97	14-NOV-97		III	

Comments:

06

Samples Found To Be Hazardous: NONE__ ALL__ *SOME__

Reviewed By:_____

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD176
Date 11 / 3 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

ULS	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9/103/19)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
16	RD176	OCBS15 S01	1.0	11/3/97	1035	-001	B	7.4	X					X				Relinquished By: [signature] Received By: Thomas x Robinson	11/3/97 1355 11/3/97 1355
16	RD177	OCBS15 D01	1.0	11/3/97	1035	-002	B	7.4	X					X				Relinquished By: [signature] Received By: Thomas x Robinson	11/3/97 1355 11/3/97 1355
8	RD178	DABS02S01	1.5	11/3/97	1149	-003	B	5.23	X				X	X				Relinquished By: [signature] Received By: Thomas x Robinson	11/3/97 1355 11/3/97 1355
8	RD179	DABS02S02	6.0	11/3/97	1210	-004	B	5.23	X				X	X				Relinquished By: [signature] Received By: Thomas x Robinson	11/3/97 1355 11/3/97 1355
7	RD180	DABS10S01	2.0	11/3/97	1215	-005	B	5.23	X				X	X				Relinquished By: [signature] Received By: Thomas x Robinson	11/3/97 1355 11/3/97 1355

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: TAT: 14 - day

Sampler's Signature	Date	Time
[signature]	11/3/97	1355

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

07

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD181
Date 11/3/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

JLS

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Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9710319	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD181	DABS 10 SO2	5.0	11/3/97	1240	-006	B	5.23	X					X				Relinquished By:	11/3/97
																	Received By: Thomas Nelson	11/3/97 1355
																	Relinquished By:	
																	Received By:	
					DB 11/3/97												Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day
Sampler's Signature	Date 11/3/97 Time 1355

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

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8

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 757

Date 11 / 3 /97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	KJ ~~Mark Delfley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

ULS #	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9705719)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers
35	RD 757	CLBSØ7SØ1	Ø.5'	11/3/97	930	-007	HA	4.7	X								
51	RD 758	CLBSØ9SØ1	Ø.5'	"	1030	-008	HA	4.7	X								
56	RD 759	ABBSØ6SØ1	Ø.5'	"	1100	-009	HA	AREA II AOC KJ	X								
57	RD 760	ABBSØ7SØ1	Ø.5	"	1140	-010	HA	"	X								
58	RD 761	ABBSØ8SØ1	Ø.5	"	1200	-011	HA	"	X								

Sample Transfer	Date/ Time
Relinquished By: KJ	11/3/97 1740
Received By:	11/3/97 ~~1935~~ 1940
Relinquished By: KJ	11/3/97 1740
Received By:	11/3/97 ~~1935~~ 1940
Relinquished By: KJ	11/3/97 1740
Received By:	11/3/97 ~~1935~~ 1940
Relinquished By: KJ	11/3/97 1740
Received By:	11/3/97 ~~1935~~ 1940
Relinquished By: KJ	11/3/97 1740
Received By:	11/3/97 ~~1935~~ 1940

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: CP 9728	TAT: 14 - day

Sampler's Signature	Date	Time
K. Jamieson	11/3/97	945

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 7162
Date 11 / 3 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9710319)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers
58	RD 7162	ABBS08~~SD~~01	0.5'	11-3-97	1200	-012	HA	AREA II AOC	X					1			1
59	RD 7163	ABBS09S01	0.5'	"	1220	-013	HA	"	X					1			1
60	RD 7164	ABBS10S01	0.5'	"	1330	-014	HA	"	X				X	1	Add on		1
55	RD 7165	ABBS05S01	0.5	"	1405	-015	HA	"	X					1			1
21	RD 7168	BVBS12S01	0.5'	"	1530	-016	HA	5.13, 5.14	X				1	1	Add on		1

Sample Transfer	Date/ Time
Relinquished By: KJ	11/3/97 1735 KJ
Received By:	11/3/97 1735
Relinquished By: KJ	11/3/97 1735 KJ
Received By:	11/3/97 1735
Relinquished By: KJ	11/3/97 1735 KJ
Received By:	11/3/97 1435
Relinquished By: KJ	11/3/97 1735 KJ
Received By:	11/3/97 1435
Relinquished By: KJ	11/3/97 1735 KJ
Received By:	11/3/97 1435

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: CP9728	TAT: 14 - day

Sampler's Signature	Date	Time
K. Jamieson	11/3/97	1200

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

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Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 769
Date 11 / 3 /97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	KJ ~~Purchasing~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9710319	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
16 RD 769	BVBS13S01	0.5'	11/3/97	1600	-017	HA	KJ 5.13,14	X				1	1			1	Relinquished By: KJ	11/3/97 1740
																	Received By:	11/3/97 1940
10 RD 770	BVBS14S01	0.5'	↓	1605	-018	HA	5.13,14	X					1			1	Relinquished By: KJ	11/3/97 1740
																	Received By:	11/3/97 1940
																	Relinquished By:	
																	Received By:	
					K Jamieson 11/3/97												Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: CP 9778	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	11/3/97	1725

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD182
Date 11/03/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS

Sample Data						Field Data		Matrix										
	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9703119	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer / Date/Time
2	RD182	ECBS01S01	1.0	11/3/97	1540	-019	B	6.1/6.3	X				X	X				Relinquished By: 11/3/97 1745
																		Received By: 11/3/97 1745
2	RD183	ECBS01S02	5.0		1600	-020	B		X				X					Relinquished By: 11/3/97 1745
																		Received By: 11/3/97 1745
24	RD184	ECBS02S01	6.0		1640	-021	B		X				X					Relinquished By: 11/3/97 1745
																		Received By: 11/3/97 1745
																		Relinquished By:
						11/3/97												Received By:
																		Relinquished By:
																		Received By:

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	11/3/97	1735

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

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OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 774
Date 11 / 4 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9710319)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
11	RD 774	ECBSØ4SØ1	Ø.5'	11/4/97	845	-022	HA	6.1, 6.3	X				1	1			1	Relinquished By: KJ	11/4/97 1215
																		Received By:	11/4/97 1215
28	RD 777	ECBSØ7SØ1	Ø.5'	↓	1040	-023	HA	↓	X				1	1			1	Relinquished By: KJ	11/4/97 1215
																		Received By:	11/4/97 1215
22	RD 778	ECBSØ8SØ1	Ø.5'	↓	1100	-024	HA	↓	X				1	1			1	Relinquished By: KJ	11/4/97 1215
																		Received By:	11/4/97 1215
																		Relinquished By:	
																		Received By:	
																		Relinquished By:	
																		Received By:	

K Jamieson 11/4/97

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	11/4/97	900

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

13 Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 779
Date 11 / 4 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L97037A)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
1	RD 779	STBSØ1SØ1	Ø.5'	11/4/97	1440	-025	HA	AREA III AOC	X									Relinquished By: KJ	11/4/97 1700
																		Received By:	11/4/97 1900
3	RD 780 KJ	STBSØ2SØ1	Ø.5'	↓	1520	-026	HA	↓	X									Relinquished By: KJ	11/4/97 1700
																		Received By:	11/4/97 1900
3	RD 781	STBSØ2SØ2	5.Ø	↓	1540	-027	HA	↓	X									Relinquished By: KJ	11/4/97 1700
																		Received By:	11/4/97 1900
																		Relinquished By:	
																		Received By:	
																		Relinquished By:	
																		Received By:	

K Jamieson 11/4/97

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	11/4/97	1440

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

14

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 785
Date 11 / 5 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #	EPA Sample ID	Description (for Ogden use only)	Depth (Ft)	Date Collected	Time Collected	Lab ID L971037/19	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
25	RD 785	CFBSØ4SØ1	Ø.5	11/5/97	1015	-028	HA	6.4				X	1	1			1	Relinquished By:	11/5/97 1350
																		Received By:	11/5/97 1350
26	RD 786	CFBSØ5SØ1	Ø.5		1100	-029	HA	6.4	X				1	1			1	Relinquished By:	11/5/97 1350
																		Received By:	11
15	RD 787	CFBSØ6SØ1	Ø.5		1210	-030	G		X					1			1	Relinquished By:	11/5/97 1350
																		Received By:	11
11	RD 788	CFBSØ7SØ1	Ø.5		1215	-031	HA		X					1			1	Relinquished By:	11/5/97 1350
																		Received By:	11
14	RD 789	CFBSØ8SØ1	Ø.5		1220	-032	HA		X					1			1	Relinquished By:	11/5/97 1350
																		Received By:	11

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: CP 9615	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	11/5/97	1035

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

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Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 790
Date 11 / 5 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS # 23

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	IN FEET Depth	Date Collected	Time Collected	L9710371/9 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD 790	CFBS095Ø1	Ø.5	11/5/97	1430	-033	HA	6.4	X				Ø	1			1	Relinquished By: KJ	11/5/97 1720
																	Received By:	11/5/97 1720
																	Relinquished By:	
																	Received By:	
					K Jamieson 11/5/97												Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: CP 9015	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	11/5/97	1430

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

16

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD185
Date 11 / 5 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

	Sample Data					Field Data		Matrix											
	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
VLS						L9703119													
7	RD185	ECBS10 S01	1.0	11/4/97 5	0950	-034	B	6.1 + 6.3	X				X (TPH)	X		VOCs ONLY		Relinquished By:	11/5/97 1800
																		Received By:	11/5/97 1750
6	RD186	ECBS09 S01	1.0		1040	-035	B		X				X	X				Relinquished By:	11/5/97 1800
																		Received By:	11/5/97 1800
5	RD187	ECBS 11 S02 S01	1.5		1050	-036	B		X				X	X				Relinquished By:	11/5/97 1800
																		Received By:	11/5/97 1800
5	RD188	ECBS11 S02	5.0		1105	-037	B		X				X	X		X		Relinquished By:	11/5/97 1800
																		Received By:	11/5/97 1800
12	RD189	ECBS12S01	2.0		1154	-038	B		X				X	X				Relinquished By:	11/5/97 1800
																		Received By:	11/5/97 1800

DB 1800

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	11/5/97	1800

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD194
Date 11/05/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9703119)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD190	ECBS12 5Φ2	4.5	11/5/97	1205	-039	B	6.1a 6.3	X				X OK	X		X		Relinquished By:	11/5/97 1800
RDA1	BABS13 5Φ1 DB	5.5		1425	-040	B	4.15	X					X				Received By:	11/5/97 1806
RD192	BABS13 5Φ2 DB	10.0		1440	-041	B	4.15	X				X	X				Relinquished By:	11/5/97 1800
RD193	BABS13 5Φ3 DB	14'		1500	-042	B	4.15	X				X	X				Received By:	11/5/97 1800
RD194	BABS14 5Φ1	5.0'		1548	-043	B	4.15	X					X				Relinquished By:	11/5/97 1800
																	Received By:	11/5/97 1800

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	11/5/97	1800

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

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OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD195
Date 11/05/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD195	BAB5145Φ2	10.Φ	11/5/97	1555	-044	B	4.15	X					X				Relinquished By:	11/5/97 1800
																	Received By:	11/5/97 1800
RD196	BAB5145Φ3	15.Φ		1600	-045	B	4.15	X				X	X				Relinquished By:	11/5/97 1800
																	Received By:	11/5/97 1800
RD197	BAB5145Φ4	21.5		1625	-046	B	4.15	X				X	X				Relinquished By:	11/5/97 1800
																	Received By:	11/5/97 1800
RD198	BAB5125Φ5	5.Φ		165Φ	-047	B	4.15	X					X				Relinquished By:	11/5/97 1800
																	Received By:	11/5/97 1800
					DLB 11/5/97												Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	11/5/97	1800

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 798
Date 11/6/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	19970311/9 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
28 RD 798	CFBS15S01	5.0	11/6/97	1150	-048	HA	6.4	X				1	1			1	Relinquished By: KJ	11/6/97 1240
																	Received By:	11/6/97 1240
27 RD 799	CFBS16S01	5.0		1215	-049	↓	6.4	X				1	1			1	Relinquished By: KJ	11/6/97 1240
																	Received By:	11/6/97 1240
																	Relinquished By:	
																	Received By:	
					K Jamieson 11/6/97												Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: CP 9619B	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	11/6/97	1155

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: DB COC RD199
Date 11/7/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

	Sample Data						Field Data		Matrix											
	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (1910 3719)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
ULS																				
39	RD199	BAB5155Q1	5.0	11/6/97	0920	-050	B	4.15	X					X			1	Relinquished By:	11/6/97 1340
																		Received By:	11/6/97 1340
39	RD200	BAB5155Q2	10.0		0935	-051	B		X					X			1	Relinquished By:	11/6/97 1340
																		Received By:	11/6/97 1340
39	RD201	BAB5155Q3	14.5		0945	-052	B		X				X				1	Relinquished By:	11/6/97 1340
																		Received By:	11/6/97 1340
39	RD202	BAB5155Q4 DB	20.5		1000	-053	B		X				X				1	Relinquished By:	11/6/97 1340
																		Received By:	11/6/97 1340
42	RD203	BAB5165Q1	5.0		1130	-054	B		X				X			X	1	Relinquished By:	11/6/97 1340
													OK Ogden					Received By:	11/6/97 1340

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	11/6/97	1340

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD204
Date 11/06/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID 19703719	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
42 RD204	BAB5165Φ2	10.Φ	11/06/97	1140	-055	B	4.15	X				X	X		X		Relinquished By:	11/6/97 1340
																	Received By:	11/6/97 1340
42 RD205	BAB5165Φ3	15.Φ	↓	1150	-056	B	↓	X				X	X		X		Relinquished By:	11/6/97 1340
																	Received By:	11/6/97 1340
					DB 11/6/97							OK add on					Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	11/6/97	1340

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

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OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 800

Date 11/6/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #

15a

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD 800	ILBS075Ø1	5.Ø	11/6/97	1500 KJ	L9710 3719 -057	HA	4,4,3	X					1			1	Relinquished By: KJ	11/6/97 1720
																	Received By:	11/6/97 1720
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

KJ 11/06/97

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: CP 9619B	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	11/6/97	1515

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

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OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD801
Date 11 / 6 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD 801	CFQW01E01	-	11/6/97	1610	-058	-	6.4		X			1				2	Relinquished By: KJ	11/6/97 1720
																	Received By:	11/6/97 1720
RD 802	CFQW01E02	-	↓	1610	-059	-	6.4		X				1			2	Relinquished By: KJ	11/6/97 1720
																	Received By:	11/6/97 1720
																	Relinquished By:	
																	Received By:	
				K Jamieson 11/6/97													Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: CP 9619B	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	11/6/97	1610

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD206
Date 11/06/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

ULS	Sample Data: EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9703719	Field Data: Sampling Method	SWMU	Matrix: Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/Time
31a	RD206	BVBS15S01	5.0	11/6/97	1505	-060	B	5.15	X				X	X				Relinquished By: [signature] / Received By: [signature]	11/6/97 1800 / 11/6/97 1800
31a	RD207	BVBS15D01	5.0		1505	-061	B		X				X	X				Relinquished By: [signature] / Received By: [signature]	11/6/97 1800 / 11/6/97 1800
31a	RD208	BVBS15S02	11.0		1520	-062	B		X				X	X		X		Relinquished By: [signature] / Received By: [signature]	11/6/97 1800 / 11/6/97 1800
1	RD209	BVBS01S03	11.0		1550	-063	B		X				X	X				Relinquished By: [signature] / Received By: [signature]	11/6/97 1800 / 11/6/97 1800
32a	RD210	BVBS16S01	1.5		1610	-064	B		X					X		X		Relinquished By: [signature] / Received By: [signature]	11/6/97 1800 / 11/6/97 1800

OK Add on

OK Add on

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: TAT: 14 - day

Sampler's Signature	Date	Time
[signature]	11/6/97	1800

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

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OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD212
Date 11/06/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS

2

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9706319)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD212	BVBSQ2SQ4	9.0	11/6/97	1640	-065	B	5.15	X				X	X				Relinquished By:	11/6/97 1800
																	Received By:	11/6/97 1800
		DUP 11/6/97															Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	11/6/97	1800

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 812
Date 11 / 7 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick	Bill To:	Purchasing	Sample Disposal Instructions:	
Project Name:	Rocketdyne	Company:	Ogden Environmental	Shipment Method:	
Project Number:	313150001	Address:	5510 Morehouse Drive, San Diego, CA 92121	Comment:	
Deliver results to the address above or as stated in contract					

ULS #	EPA Sample ID	Description (for Ogden use only)	IN FT. Depth	Date Collected	Time Collected	L9703719 Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
29	RD 812 KJ	SLSSØ2SØ1	Ø	11/7/97	830	-066	G	6.5	X					1			1	Relinquished By: [signature] / Received By: [signature]	11/7/97 1230 / 11/7/97 1230
29	RD 813	SLSSØ2DØ1	Ø	↓	↓	-067	G	6.5	X					1			1	Relinquished By: [signature] / Received By: [signature]	11/7/97 1230 / 11/7/97 1230
5	RD 814	CTSSØ1SØ1	Ø	↓	1000	-068	G	A. I AOC	X					1			1	Relinquished By: [signature] / Received By: [signature]	11/7/97 1230 / 11/7/97 1230
6	RD 815	CTBSØ1SØ1	Ø.5	↓	1020	-069	HA	↓	X					1			1	Relinquished By: [signature] / Received By: [signature]	11/7/97 1230 / 11/7/97 1230
7	RD 816	CTBSØ2SØ1	Ø.5	↓	1050	-070	HA	↓	X					1			1	Relinquished By: [signature] / Received By: [signature]	11/7/97 1230 / 11/7/97 1230

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: CP 9701 TAT: 14 - day

Sampler's Signature	Date	Time
KJ	11/7/97	900

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

27

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 817
Date 11 / 7 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #	EPA Sample ID	Description (for Ogden use only)	IN FT. Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
4	RD 817	CTBSØ3SØ1	Ø.5	11/7/97	1115	-011	HA	AREA I AOC	X					1			1	Relinquished By:	11/7/97 1230
																		Received By:	11/7/97 1230
8	RD 818	CTBSØ4SØ1	Ø.5	↓	1150	-012	HA	↓	X					1			1	Relinquished By:	11/7/97 1230
																		Received By:	11/7/97 1230
																		Relinquished By:	
																		Received By:	
						KJ 11/7/97												Relinquished By:	
																		Received By:	
																		Relinquished By:	
																		Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
KJ	11/7/97	1130

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD 807
Date 11/7/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #

Sample Data						Field Data		Matrix										
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID L9710311/9	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD 807	CFQW02E01	-	11/7/97	730	-013	-	6.4		X				1			2	Relinquished By:	11/7/97 1230
																	Received By:	11/7/97 1230
RD 808	CFQW02E02	-	↓	730	-014	-	6.4		X			1				2	Relinquished By:	11/7/97 1230
																	Received By:	11/7/97 1230
																	Relinquished By:	
																	Received By:	
					KJ 11/7/97												Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	11/7/97	745

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

29

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD820
Date 11 / 7 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

ULS #	Sample Data: EPA Sample ID	Description (for Ogden use only)	IN FT. Depth	Date Collected	Time Collected	Lab ID (L9703719)	Field Data: Sampling Method	SWMU	Matrix: Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
45	RD 820	HVSS02S01	0	11/7/97	1350	-075	G	AREA I AOC	X					1			1	Relinquished By: KJ	11/7/97 1745
																		Received By:	11/9/97 1045
02	RD 823	CLBS11S01	0.5	↓	1530	-076	HA	4.7	X					1			1	Relinquished By: KJ	11/7/97 1745
																		Received By:	11/9/97 1045
28	RD 824	CLBS12S01	0.5	↓	1545	-077	HA	↓	X					1			1	Relinquished By: KJ	11/7/97 1745
																		Received By:	11/9/97 1045
						KJ 11/7/97												Relinquished By:	
																		Received By:	
																		Relinquished By:	
																		Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
KJ	11/7/97	1400

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

30

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

213
425

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD124 DB
Date 11/07/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
ULS DB 11/7/97 RD124	ECRW01E01	=	11/7/97			B	6.1		X			X	X				Relinquished By:	
																	Received By:	
DB 213 33 RD125	BVBS175Φ1	5.Φ	↓	0835	-078		5.15	X					X				Relinquished By:	11/7/97 1840
																	Received By:	11/8/97 1840
DB 214 33 RD126	BVBS175Φ2	8.Φ	11/7/97	0850	-079		5.15	X					X				Relinquished By:	11/7/97 1840
																	Received By:	11/8/97 1840
DB 215 14 RD127	ECBS135Φ1	1.5		1134	-080		6.1	X				X	X				Relinquished By:	11/7/97 1840
																	Received By:	11/8/97 1840
DB 216 14 RD128	ECBS135Φ2	3.Φ		1132	-081		6.1	X				X	X				Relinquished By:	11/7/97 1840
																	Received By:	11/8/97 1840

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	11/7/97	1411

For Lab Use	
Does COC match samples: Y or N	
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

31

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD ~~129~~ 217 DB
Date 11/07/97 Page 1 of 1

Project Manager:	Dixie Hambrick	Bill To:	Purchasing	Sample Disposal Instructions:	
Project Name:	Rocketdyne	Company:	Ogden Environmental	Shipment Method:	
Project Number:	313150001	Address:	5510 Morehouse Drive, San Diego, CA 92121	Comment:	
Deliver results to the address above or as stated in contract					

ULS	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID (L9703719)	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/Time
16	DB RD ~~129~~ 217	ECBS14S01	3.0	11/7/97	1150	-082	B	6.1	X				X					Relinquished By: [signature] / Received By: [signature]	11/7/97 1840 / 11/7/97 1840
17	DB RD ~~130~~ 218	ECBS15S01	1.5		1220	-083			X				X	X				Relinquished By: [signature] / Received By: [signature]	11/7/97 1840 / 11/7/97 1840
17	DB RD ~~131~~ 219	ECBS15S02	6.0		1240	-084			X				X	X				Relinquished By: [signature] / Received By: [signature]	11/7/97 1840 / 11/7/97 1840
17	DB RD ~~132~~ 220	ECBS15S03	10.5		1300	-085			X				X	X				Relinquished By: [signature] / Received By: [signature]	11/7/97 1840 / 11/7/97 1840
26	DB RD ~~133~~ 221	ECBS16S01	2.0		1520	-086			X				X	X				Relinquished By: [signature] / Received By: [signature]	11/7/97 1840 / 11/7/97 1840

QC Level: EPA Level III Equivalent, See Contract Requirements

Cooler No: TAT: 14 - day

Sampler's Signature	Date	Time
[signature]	11/7/97	1411

For Lab Use

Does COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N or NA
Temperature °C _____

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

32

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD222 DB

Date 11/07/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

	Sample Data						Field Data		Matrix											
	EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
						L9703719													
26	RD222	ECBS165Φ2 DB	6.5	11/07/97	1530	-087	B	6.1	X				X	X				Relinquished By:	11/7/97 1840
																		Received By:	11/7/97 1840
26	RD223	ECBS165Φ3 DB	10.0		1540	-088	B		X				X	X				Relinquished By:	11/7/97 1840
																		Received By:	11/7/97 1840
27	RD224	ECBS175Φ1 DB	Φ.5		1605	-089	B		X				X	X				Relinquished By:	11/7/97 1840
																		Received By:	11/7/97 1840
27	RD225	ECBS175Φ2* DB	6.5		1615	-090	B		X				X	X				Relinquished By:	11/7/97 1840
																		Received By:	11/7/97 1840
27	RD226	ECBS175Φ3* DB	10.0		1635	-091	B		X				X	X				Relinquished By:	11/7/97 1840
																		Received By:	11/7/97 1840

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	11/7/97	1810

For Lab Use	
Does COC match samples: Y or N	* Sample from middle of sleeve
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

G:\Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RD227 DB
Date 11/7/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:
Shipment Method:
Comment:

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (or Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
RD227	ECB517S04*	14.5	11/7/97	1650	-02	B	6.1	X				X	X				Relinquished By:	11/7/97 1840
																	Received By:	11/7/97 1840
RD228	BVBS10S02	7.0		0935	-03		5.13	X					X				Relinquished By:	11/7/97 1840
																	Received By:	11/7/97 1840
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

DB 11/7/97

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No:	TAT: 14 - day

Sampler's Signature	Date	Time
	11/7/97	1810

For Lab Use	
Does COC match samples: Y or N	*Sample from Middle of sleeve
Broken container: Y or N	
Received within holding time: Y or N	
COC seal intact: Y or N or NA	
Temperature °C _____	

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Columbia Analytical Services, Inc.

MAR 1 1998

Thursday, February 19, 1998

Anne Freed
Ogden
5510 Morehouse Drive
San Diego, CA 92121

Re: **Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9703713**

Dear Anne.

Enclosed are the results of the samples submitted to our laboratory on 10/31 - 11/3/97

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296, expiration August 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Leo Raab
Project Chemist

Stuart Sigman
Quality Assurance Chemist

xc.
Elizabeth Wessling
Ogden
550 S. Wadsworth Blvd., Suite 500
Lakewood, CO 80226

000.

CAS CSR #L9703713

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Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9703713
Project:	Rocketdyne SSFL 313150002	**Date Received:**	10/31-11/3/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Sample Delivery Group Assignment" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses. Any tests marked under the grey-shaded parameters to the far right of this form were sub-contracted to the following laboratories:

Formaldehyde	Columbia Analytical Services, Kelso, WA.

Subcontracted test results, case narratives and data packages are included as an appendix to this report.

Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

Cooler temperatures were recorded on COCs except for Control No. RF174.
MS/MSD analysis for 8270SIM was performed on sample RF157 from SDG L9703698.
pH duplicates analyzed on RF160 from SDG L9703698 and on RF757 from SDG L9703734.

No difficulties were experienced during analysis of this batch.

Data Qualifier Flags are: U = Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: JC Root Date: 2/19/98

SAMPLE DELIVERY GROUP ASSIGNMENT

CLIENT: **OGDEN**
PROJECT MANAGER: **DIXIE HAMBRICK**
PROJECT NAME: **ROCKETDYNE SSFL**
PROJECT NUMBER: **313150002**

SDG NUMBER: **L9703713**
LABORATORY: COLUMBIA ANALYTICAL SRV.
SDG CLOSING DATE: 11/3/97
SUMMARY / FINAL DUE: 11/17/97 / 12/1/97

#	SAMPLE NAME	SAMPLE DATE	RECEIVED DATE	MATRIX	MS/MSD or MS/DUP	MOISTURE	8260 VOC	8015OG TEPH	8270 SIM	8270 R	METALS (CAM-17)	METALS (CAM-17 + AL + B)	7196 HEXAVALENT CHROMIUM	340.2 FLUORIDE	300.0M ANIONS (CL NO3 NO2)	9040 / 9045 PH	8080 PCB	ICP AL & B			ASTM D19 FORMALDEHYDE	PERCHLORATE	TRIBUTYLTIN	8290 DIOXIN/FURAN	HYDRAZINES	8330 EXPLOSIVES
1	RF161	10/31/97	10/31/97	SOLID		X					X					X										
2	RF166	10/31/97	10/31/97	SOLID		X			X												X					
3	RF167	10/31/97	10/31/97	SOLID		X			X												X					
4	RF168	10/31/97	10/31/97	SOLID		X			X												X					
5	RF169	10/31/97	10/31/97	SOLID		X			X												X					
6	RF172	10/31/97	10/31/97	SOLID		X			X																	
7	RF173	10/31/97	10/31/97	SOLID		X					X															
8	RF746	10/31/97	10/31/97	SOLID		X					X					X	X									
9	RF748	10/31/97	10/31/97	SOLID		X			X												X					
10	RF749	10/31/97	10/31/97	SOLID		X			X							X					X					
11	RF750	10/31/97	10/31/97	SOLID		X			X					X	X						X					
12	RF751	10/31/97	10/31/97	SOLID		X			X					X	X						X					
13	RF752	10/31/97	10/31/97	SOLID		X								X	X	X										
14	RF753	10/31/97	10/31/97	SOLID		X								X	X	X										
15	RF754	10/31/97	10/31/97	SOLID		X			X					X	X						X					
16	RF756	10/31/97	10/31/97	SOLID		X			X					X	X	X		X			X					
17	RF174	11/3/97	11/3/97	SOLID		X								X	X						X					
18	RF175	11/3/97	11/3/97	SOLID		X								X	X						X					
19	RF176	11/3/97	11/3/97	SOLID		X			X		X			X	X	X										
20	RF182	11/3/97	11/3/97	SOLID		X			X					X	X	X					X					

0044

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9703713

Chain of Custody

Control Number: COC RF160

Date 10/31/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ DEB purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Federal Express
Comment:	

* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:			
QC Level:	Level4	TAT:	35 - Day

Preservatives: HCL, pH<2 4°C; HCL, pH<2 4°C; 4°C; 4°C; H2SO4,pH<2 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

Sample Data

ULS	Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Matrix: Soil	Water	Product	Method	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH	SWMU	Extra Volume MS/MSD	HOLD	Total # of Bottles
1	RF160	BUBS06S01	4.5	10-31-97	850	1	X			B			X				X					X	5.5			
9	RF161	BUBS07S01	0.5	"	925	1	X			B							X					X	5.5			
2	RF166	SPBS08S01	1.0	10/31/97	1415	2	X			B			X		X								AOC			
1	RF167	SPBS09S01	0.5	↓	1430	3	X			B			X		X								AOC			
1	RF168	SPBS09S02	5.0	↓	1440	4	X			B			X		X								AOC			
20	RF169	SPBS10S01	0.5	↓	1515	5	X			B			X		X								AOC			
—	RF172	PEBS03S01	0.5	"	1650	6	X			G			X													
—	RF173	PEBS04S01	0.5	"	1650	7	X			G							X									

Samplers Signature: [signature]	Date 10/31/97	Time 1710
Relinquished By: [signature]	Date 10/31/97	Time 1710
Received By: [signature]	Date 10/31/97	Time 1710
Relinquished By: [signature]	Date 10/31/97	Time 1850
Received By (LAB): [signature]	Date 10/31/97	Time 1750

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N NA
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: __/__/__
Temperature °C 8°

Rec'd sample RF164 10/31/97

1 Original, 2 Lab Copy, 3 Field Copy

REV 1

0005

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L 9203713

Chain of Custody

Control Number: COC RF 746
Date 10 / 31 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Federal Express
Comment:	

* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No: CP 9728
QC Level: Level4 TAT: 35 - Day

Preservatives: HCL, pH<2 4°C; HCL, pH<2 4°C; 4°C; 4°C; H2SO4,pH<2 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

Sample Data

ULS #	Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Soil	Water	Product	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH	PCBs	Al, B			SWMU	SAMPLING METHOD	Extra Volume MS/MSD	HOLD	Total # of Bottles
18	RF 746	DABS08S01	0.5	10/31/97	0820	8	X									1					1	1				5.23	HA			1
19	RF 748	SPBS01S01	0.5		1005	9	X					1		1												A II	HA			1
21	RF 749	SPBS02S01	0.5		1020	10	X					1		1							1					A II	HA			1
14	RF 750	SPBS03S01	0.5		1035	11	X					1		1				1	1	1							HA			1
17	RF 751	SPBS04S01	0.5		1130	12	X					1		1				1	1	1							HA			1
22	RF 752	SPBS05S01	0.5		1215	13	X											1	1	1	1						HA			1
23	RF 753	SPBS06S01	0.5		1215	14	X											1	1	1	1						HA			1
18	RF 754	SPBS07S01	0.5		1415	15	X					1		1		1		1	1	1							HA			1
42	RF 756	CLBS08S01	0.5		1515	16	X					1		1				1	1	1	1		1			4.7	HA			1

K Jamieson 10/31/97

Samplers Signature: K Jamieson	Date: 10/31/97	Time: 0830
Relinquished By: [signature]	Date: 10/31/97	Time: 1720
Received By: [signature]	Date: 10/31/97	Time: 1720
Relinquished By: [signature]	Date: 10/31/97	Time: 1750
Received By (LAB): [signature]	Date: 10/31/97	Time: 1750

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N NA
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 8°

1 Original, 2 Lab Copy, 3 Field Copy

REV. 1

0006

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L97037 13

Chain of Custody

Control Number: COC RF174
Date 11/3/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:		
QC Level:	Level4	TAT: 35 - Day

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	4°C	4°C	HNO3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C

| Sample Data | | | | | | Matrix | | | | | |

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden Environmental	**Service Request No.:**	K9708136
Project:	Rocketdyne/313150002	**Date Received:**	10/31-11/5/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Laboratory Control Sample (LCS), Initial and Continuing Calibration Verification Standards (ICV/CCV), and Initial and Continuing Calibration Blanks (ICB/CCB).

All EPA recommended holding times have been met for analyses in this sample delivery group.

No difficulties were experienced during analysis of this batch:

Approved by Ann Gilfillan **Date** 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden Environmental	**Service Request No.:**	K9708136
Project:	Rocketdyne/313150002	**Date Received:**	10/31-11/5/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Laboratory Control Sample (LCS), Initial and Continuing Calibration Verification Standards (ICV/CCV), and Initial and Continuing Calibration Blanks (ICB/CCB).

All EPA recommended holding times have been met for analyses in this sample delivery group.

No difficulties were experienced during analysis of this batch:

Approved by Ann Gilfillan **Date** 12/2/97

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

Columbia Analytical Services inc

6925 Canoga Avenue • Canoga Park, CA 91303 • (818) 587-5550 • Fax (818) 587-5555

DATE PAGE 1 OF 1

PROJECT NAME Rocketdyne # 313150602

PROJECT MANAGER ANNE FREED

COMPANY/ADDRESS OGDEN – SAN DIEGO

PHONE

SAMPLERS SIGNATURE

00013

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH Gas/BTEX 8015.6020/602	TPH/8015 Modified Diesel 7 FC 7 Gasoline 7	BTEX 602/8020	Total Petroleum Hydrocarbons EPA 418.1	Halogenated Volatiles 601/8010	Volatile Organics GC/MS 624/8240 8260	Base Neutral Acid Organic GC/MS 625/8270	CAM Metals 6010/7000	FORMALDEHYDE								SDG # / REMARKS
RF 174	11/3/97	0900	11	Soil	1									X								L9703713
RF 175	11/3/97	0900	12	Soil	1									X								L9703713
RF 182	11/3/97	1540	13	Soil	1									X								L9703713

RELINQUISHED BY:
Signature
Printed Name ARISTOTLE BRAGASIN
Firm CAS
Date/Time 11/4/97 1600

RECEIVED BY:
Signature
Printed Name Lori K. Hawn
Firm CAS-K
Date/Time 110597 1030

TURNAROUND REQUIREMENTS
___ 24 hr ___ 48 hr. ___ 5 day
___ Standard
___ Other (Specify)
___ Provide Verbal Preliminary Results
Requested Report Date 11/10

REPORT REQUIREMENTS
___ I. Routine Report
___ II Report (includes DUP.MS MSD, as required, may be charged as samples)
X III Data Validation Report (includes All Raw Data)
RWQCB

INVOICE INFORMATION:
P.O #
Bill To

SAMPLE RECEIPT:
Shipping VIA
Shipping #
Condition
K8136
Lab No L9703713

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

SDG L9703713 CLOSED.
REPORT IN DRY WEIGHT
MS/MSD ON RF 175

Columbia Analytical Services, Inc.
6925 Canoga Avenue • Canoga Park, CA 91303 • (818) 587-5550 • Fax (818) 587-5555

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE 11/3/97 PAGE 1 OF 1

PROJECT NAME Rocketdyne # 31315.0002
PROJECT MANAGER ANNE FREED
COMPANY/ADDRESS OGDEN - SAN DIEGO
PHONE
SAMPLERS SIGNATURE

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	TPH Gas/BTEX 8015/8020/602	TPH/8015 Modified Diesel ☐ FC ☐ Gasoline ☐	BTEX 602/8020	Total Petroleum Hydrocarbons EPA 418.1	Halogenated Volatiles 601/8010	Volatile Organics GC/MS 624/8240/8260	Base Neutral Acid Organic GC/MS 625/8270	CAM Metals 6010/7000	Formaldehyde	REMARKS
RF 166	10/31	1415		Soil	1								X		L9703713
RF 167	10/31	1430		Soil	1								X		
RF 168	10/31	1440		Soil	1								X		
RF 169	10/31	1515		Soil	1								X		
RF 748	10/31	1005		Soil	1								X		
RF 749	10/31	1020		Soil	1								X		
RF 750	10/31	1035		Soil	1								X		
RF 751	10/31	1130		Soil	1								X		
RF 754	10/31	1415		Soil	1								X		
RF 756	10/31	1515		Soil	1								X		

ANALYSIS REQUESTED

RELINQUISHED BY:
Signature
A. BRAGASIN
Printed Name
CAS
Firm
11/3/97 1800
Date/Time

RECEIVED BY:
Signature
Printed Name
CAS
Firm
11/4/97 930
Date/Time

TURNAROUND REQUIREMENTS
___ 24 hr ___ 48 hr ___ 5 day
___ Standard
___ Other (Specify)
___ Provide Verbal Preliminary Results
Requested Report Date 11/10

REPORT REQUIREMENTS
I Routine Report
II Report (includes DUP MS MSD, as required, may be charged as samples)
X III. Data Validation Report (includes All Raw Data)
___ RWQCB

INVOICE INFORMATION:
P.O.#
Bill To

SAMPLE RECEIPT:
Shipping VIA:
Shipping #
Condition
Lab No L9703713

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:
REPORT IN DRY WEIGHT

L9708136

Columbia Analytical Services inc.

Thursday, February 19, 1998

Anne Freed
Ogden
5510 Morehouse Drive
San Diego, CA 92121

Re: Rocketdyne SSFL / Project No. 313150002 / CAS SDG No. L9703698

Dear Anne:

Enclosed are the results of the samples submitted to our laboratory on 10/27 -31/97.

All analyses were performed in accordance with our laboratory's quality assurance program. Results are intended to be considered in their entirety and apply only to the samples analyzed. Columbia Analytical Services is not responsible for use of less than the complete report.

Columbia Analytical Services is certified for environmental analyses by the California Department of Health Services (certificate number: 1296, expiration August 1998).

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Leo Raab
Project Chemist

Stuart Sigman
Quality Assurance Chemist

xc:
Elizabeth Wessling
Ogden
550 S Wadsworth Blvd., Suite 500
Lakewood, CO 80226

0001

CAS CSR #L9703698

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Columbia Analytical Services, Inc.

Acronyms

8015M	California DHS LUFT Method
A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene/Toluene/Ethylbenzene/Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service Registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
CRDL	Contract Required Detection Limit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH or DHS	Department of Health Services
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U.S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl-*tert*-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	None Detected at or above the Method Reporting/Detection Limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	*Standard Methods for the Examination of Water and Wastewater*, 18th Ed., 1992.
STLC	Solubility Threshold Limit Concentration
SW	*Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

2000
0002

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Ogden	**Service Request No.:**	L9703698
Project:	Rocketdyne SSFL 313150002	**Date Received:**	10/27-31/97
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed in accordance with our laboratory's quality assurance program. This report contains analytical results for sample(s) designated for Tier III data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Matrix Spike (MS), Duplicate Matrix Spike (DMS) and Laboratory Control Sample (LCS).

All EPA recommended holding times have been met for analyses in this sample delivery group.

Refer to the "Sample Delivery Group Assignment" form for a listing of Ogden (EPA) Sample ID's versus Columbia Analytical Services' SDG/Service Request numbers, sample dates, received dates, matrix and requested analyses. Any tests marked under the grey-shaded parameters to the far right of this form were sub-contracted to the following laboratories:

Formaldehyde	Columbia Analytical Services, Kelso, WA.

Subcontracted test results, case narratives and data packages are included as an appendix to this report.

The following changes were requested via fax from Lisa Arrasmith on 10/30/97:
Add Aluminum and Boron to RF702.

Laboratory Control Samples are liquids. For solid SDGs, data is calculated and reported in solid units.

Cooler temperatures were recorded on COCs except for Control Nos. RF150, RF736 & RF160.

MS/MSD for Fluoride was performed on RF750 from SDG L9703713.

MS/MSD for Anions was performed on RF176 from SDG L9703713.

MS/MSD analysis for 8270R was performed on sample RF795DL from SDG L9703763.

No difficulties were experienced during analysis of this batch.

Data Qualifier Flags are: U = Not Detected, E = Estimated Value above calibration range, J = Estimated Value between MDL and PQL.

Approved by: _____ Date: 2/19/98

SAMPLE DELIVERY GROUP ASSIGNMENT

CLIENT: **OGDEN**
PROJECT MANAGER: **DIXIE HAMBRICK**
PROJECT NAME: **ROCKETDYNE SSFL**
PROJECT NUMBER: **313150002**

SDG NUMBER: **L9703698**
LABORATORY: COLUMBIA ANALYTICAL SRV.
SDG CLOSING DATE: 10/31/97
SUMMARY / FINAL DUE: 11/14/97 / 11/28/97

#	SAMPLE NAME	SAMPLE DATE	RECEIVED DATE	MATRIX	MS/MSD or MS/DUP	MOISTURE	8260 VOC	8015OG TEPH	8270 SIM	8270 R	METALS (CAM-17)	METALS (CAM-17 + AL + B)	7196 HEXAVALENT CHROMIUM	340.2 FLUORIDE	300.0M ANIONS (CL NO3 NO2)	9040 / 9045 PH	8080 PCB	Hg CVAA 7471	ICP AL & B		ASTM D19 FORMALDEHYDE	PERCHLORATE	TRIBUTYLTIN	8290 DIOXIN/FURAN	HYDRAZINES	8330 EXPLOSIVES
1	RF733	10/29/97	10/29/97	SOLID		X					X					X										
2	RF734	10/29/97	10/29/97	SOLID		X					X					X										
3	RF735	10/29/97	10/29/97	SOLID		X					X					X										
4	RF143	10/29/97	10/29/97	SOLID		X					X					X										
5	RF144	10/29/97	10/29/97	SOLID		X					X					X										
6	RF145	10/29/97	10/29/97	SOLID		X					X					X										
7	RF146	10/29/97	10/29/97	SOLID		X					X					X										
8	RF147	10/29/97	10/29/97	SOLID		X					X					X										
9	RF148	10/29/97	10/29/97	SOLID		X					X					X										
10	RF150	10/30/97	10/30/97	SOLID		X					X					X										
11	RF151	10/30/97	10/30/97	SOLID		X					X					X										
12	RF157	10/30/97	10/30/97	SOLID		X			X		X					X										
13	RF736	10/30/97	10/30/97	SOLID		X					X					X										
14	RF738	10/30/97	10/30/97	SOLID		X			X		X			X	X	X										
15	RF739	10/30/97	10/30/97	SOLID		X				X	X					X										
16	RF740	10/30/97	10/30/97	SOLID		X				X	X					X										
17	RF741	10/30/97	10/30/97	SOLID		X					X					X										
18	RF744	10/30/97	10/30/97	SOLID		X			X												X					
19	RF702	10/27/97	10/27/97	SOLID		X			X			X				X										
20	RF160	10/31/97	10/31/97	SOLID		X			X		X					X										

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9703698

Chain of Custody

Control Number: COC RF 726

Date 10 / 29 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	KJ ~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	Laboratory Disposal
Shipment Method:	Federal Express
Comment:	

* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:

QC Level: Level4 TAT: 35 - Day

Preservatives: HCL, pH<2 4°C; HCL, pH<2 4°C; 4°C; 4°C; H2SO4, pH<2 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

Sample Data

ULS #	Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Soil	Water	Product	SLUDGE	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH		PCBs			SWMU	SAMPLING METHOD	Extra Volume MS/MSD	HOLD	Total # of Bottles
KJ 14	RF 726	AFSS01S01	0	10/29/97	0810		X						1		1												4.9	G			1
7	RF728	OCBS10S01	0.5		1135					X			1				1		1	1	1	1					7.4	HA			1
18	RF729	OCBS11S01	0.5		1215		X															~~1~~ KJ		1			7.4	HA			1
3	RF 731	BLBS04S01	0.5		1415		X										1					1					7.1				1
4	RF 732	BLBS05S01	0.5		1430		X										1					1									1
6	RF 733	BLBS06S01	0.5		1500	1	X										1					1									1
5 KJ	RF 734	BLBS07S01	0.5		1600 ~~1600~~	2	X										1					1									1
7	RF 735	BLBS08S01	0.5		~~1530~~ 1600	3	X										1					1									1

K Jamieson 10/29/97

Samplers Signature	Date	Time
K Jamieson	10/29/97	0820
Relinquished By: K Jamieson	10/29/97	1745
Received By: [signature]	10/29/97	1745
Relinquished By: [signature]	10/29/97	1835
Received By (LAB): [signature]	10/29/97	1835

For Lab Use

Lab Number:

Do COC match samples: Y or N

Broken container: Y or N

Received within holding time: Y or N

COC seal intact: Y or N NA

Any other problems: Y or N

If any YES, Ogden contacted: Y or N

Date contacted: / /

Temperature °C 14

1 Original, 2 Lab Copy, 3 Field Copy

REV 1

0005

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9703698

Chain of Custody

Control Number: COC RF14Φ

Date 10/29/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal

Shipment Method: Federal Express

Comment:

* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No: R11

QC Level: Level4

TAT: 35 - Day

Preservatives: HCL, pH<2 4°C | HCL, pH<2 4°C | 4°C | 4°C | H_2SO_4, pH<2 4°C | 4°C | HNO_3, pH<2 4°C | 4°C | 4°C | 4°C | 4°C | 4°C

Sample Data						Matrix				8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE	300 CHLORIDE *	9045/9040 pH	SW846							Extra Volume MS/MSD	HOLD	Total # of Bottles
Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Soil	Water	Product	METHOD																						
RF143	BLBSΦ15Φ1	0.5	10/29/97	1410	4	X			B							1					1	7.1									1
RF144	BLBSΦ15Φ2	5.0		1430	5	X			B							1					1										1
~~RF145~~	~~BLBSΦ25Φ1~~	~~0.5~~		1500																										
RF145	BLBSΦ15Φ3	9.5	10/29/97	1440	6	X			B							1					1										1
RF146	BLBSΦ25Φ1	0.5		1505	7	X			B							1					1										1
RF147	BLBSΦ25Φ2	5.0		1515	8	X			B							1					1										1
RF148	BLBSΦ25Φ3	9.5		1530	9	X			B							1					1										1
RF149	BLQW01E01	—		1710			X		G							1					1										1
													DSB			10/29/97														

ULS

	Date	Time
Samplers Signature	10/29/97	1715
Relinquished By:	10/29/97	1739
Received By:	10/29/97	1752
Relinquished By:	10/29/97	1835
Received By (LAB):	10/29/97	1835

For Lab Use

Lab Number:

Do COC match samples: (Y) or N

Broken container: Y or (N)

Received within holding time: (Y) or N

COC seal intact: Y or N (N/A)

Any other problems: Y or (N)

If any YES, Ogden contacted: Y or N

Date contacted: ___/___/___

Temperature °C 14

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9703678

Chain of Custody

Control Number: COC RF150

Date 10/30/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ pending
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:		
QC Level: Level4	TAT: 35 - Day	

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	H_2SO_4,pH<2 4°C	4°C	HNO_3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C

Sample Data					Matrix				8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH	Extra Volume MS/MSD	HOLD	Total # of Bottles
Sample ID	Description (for Ogden use only)		Date Collected	Time Collected	Lab ID	Soil	Water	Product	Method															
RF150	BLBS@2S@4	16.0	10-30-97	930	10	X			B			X				X					X			
RF151	BLBS@3S@1	1.0	4	1040	11	X			B			X				X					X			
RF157	BLBS@4S@1	1.5	4	1550	12	X			B			X				X					X			
~~RF158~~	~~BLBS@4S@2~~		4			X			B			X				X					X			
RF158	BLGW@1E@1	—	4	1725			X														X			

ANS 10-30-97

Samplers Signature	Date	Time
A. Sen	10-30-97	930
Relinquished By:	Date 10/30/97	Time 1904
Received By: Mariette Duggan	Date 10/30/97	Time 1904
Relinquished By:	Date	Time
Received By (LAB):	Date	Time

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use	
Lab Number:	
Do COC match samples: (Y) or N	
Broken container: Y or (N)	
Received within holding time: (Y) or N	
COC seal intact: Y or N (NA)	
Any other problems: Y or (N)	
If any YES, Ogden contacted: Y or N	
Date contacted: ___/___/___	
Temperature °C Cool	

REV: 1

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

L9703679

Chain of Custody

Control Number: COC RF 736
Date 10 / 30 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:			
QC Level:	Level4	TAT:	35 - Day

Preservatives	HCL, pH<2 4°C	HCL, pH<2 4°C	4°C	4°C	H_2SO_4,pH<2 4°C	4°C	HNO_3, pH<2 4°C	4°C	4°C	4°C	4°C	4°C								

Sample Data						Matrix																								
Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Soil	Water	Product	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE	300 CHLORIDE *	9045/9040 pH	Full SVOC Suite				SW846	SAMPLING METHOD	Extra Volume MS/MSD	HOLD	Total # of Bottles
RF 736	BLBSØ9SØ1	8.5	10/30/97	0815	13	X									1					1					7.1	HA			1
RF 738	OCBS145Ø1	Ø.5		1000	14	X					1				1		1	1	1	1					7.4	HA			1
RF 739	LXBSØ45Ø1	Ø.5		1130	15	X									1					1	1				4.5	HA			1
RF 740	LXBSØ55Ø1	5.Ø		1215	16	X									1					1	1				4.5	HA			1
RF 741	DASSØ1SØ1	Ø		1515	17	X									1					1					5.23	G			1
RF 744	DASSØ25Ø1	Ø	✓	1645	18	X					1		1												5.23	G			1

K Hamilton 10/30/97

Samplers Signature	K Hamilton	Date	10/30/97
		Time	0820
Relinquished By:		Date	10/30/97
		Time	1901
Received By:		Date	10/30/97
		Time	1904
Relinquished By:		Date	
		Time	
Received By (LAB):		Date	
		Time	

For Lab Use	
Lab Number:	
Do COC match samples: (Y) or N	
Broken container: Y or (N)	
Received within holding time: (Y) or N	
COC seal intact: Y or N (NA)	
Any other problems: Y or (N)	
If any YES, Ogden contacted: Y or N	
Date contacted: ___/___/___	
Temperature °C COOL	

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

L9703698-19
~~L9703644~~

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RF 702
Date 10/27/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ PURCHASING
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No: R11
QC Level: Level4 TAT: 35 - Day

Preservatives 98-99

Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Soil	Water	Product	Sludge	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE	300 CHLORIDE *	9045/9040 pH	SAMPLING METHOD	Extra Volume MS/MSD	HOLD	Total # of Bottles
S2	RF 702	SNBSØ5SØ2	0.5	10/27/97	0830				X			1				1					1	G		*	1
1	RF 703	SNBSØ1SØ2	0.5		0850				X			1				1					1	G		*	1
3	RF 704	SNBSØ6SØ2	0.5		1030				X			1				1					1	G		*	1
-2	RF 705	R1BSØ1SØ1	0.5 2.0		1155				X			1			1	1					1	G			1
3	RF 706	R1BSØ2SØ1	0.5		1220				X			1			1	1					1	G			1
4	RF 707	R1BSØ4SØ1	0.5		1435	X						1			1	1					1	HA G			1
1	RF 708	R1BSØ3SØ1	1.0		1430				X			1				1					1	G			1
25	RF 710	LFSSØ7SØ1	0		1610	X						1				1		1	1	1	1	G			1

#5

K Jamieson 10/27/97

	Date	Time
Samplers Signature: K Jamieson	10/27/97	1730
Relinquished By: K Jamieson	10/27/97	1730
Received By:	10/27/97	1730
Relinquished By:	10/27/97	1830
Received By (LAB):	10/27/97	1830

1 Original, 2 Lab Copy, 3 Field Copy

For Lab Use

Lab Number:

Do COC match samples (Y) or N
Broken container: Y or (N)
Received within holding time: (Y) or N
COC seal intact: Y or N (NA)
Any other problems: Y or (N)
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C 3

* HOLD ALL TESTS UNTIL OGDEN AUTHORIZES THEM.

3°/Intact

REV: 1

L9703698

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC RF160
Date 10/31/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150002
Deliver results to the address above or as stated in contract	

Bill To:	~~Mark Deffley~~ purchasing
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions: Laboratory Disposal
Shipment Method: Federal Express
Comment:
* CHLORIDE & NITRATE WILL USE ONE CONTAINER

Cooler No:
QC Level: Level4 TAT: 35 - Day

Preservatives: HCL, pH<2 4°C; HCL, pH<2 4°C; 4°C; 4°C; H2SO4, pH<2 4°C; 4°C; HNO3, pH<2 4°C; 4°C; 4°C; 4°C; 4°C; 4°C

Sample Data

ULS	Sample ID	Description (for Ogden use only)	DEPTH	Date Collected	Time Collected	Lab ID	Soil	Water	Product	Method	8260M VOC	8015OG HYDROCARBON	8270SIM PAH	8290 DIOXIN	3500 FORMALDEHYDE	8330 ORDINANCE	6010/7000 METALSRT	7196 CrVI	340.2 FLUORIDE	300 NITRATE/NITRITE*	300 CHLORIDE *	9045/9040 pH	SWMU	Extra Volume MS/MSD	HOLD	Total # of Bottles
1	RF160	BUBS06S01	4.5	10-31-97	850	-20	X			B			X				X					X	5.5			
9	RF161	BUBS07S01	0.5	"	925		X			B							X					X	5.5			
2	RF166	SPBS08S01	1.0	10/31/97	1415		X			B			X		X								AOC			
1	RF167	SPBS09S01	0.5	↓	1430		X			B			X		X								AOC			
1	RF168	SPBS09S02	5.0	↓	1440		X			B			X		X								AOC			
20	RF169	SPBS10S01	0.5	↓	1515		X			B			X		X								AOC			
—	RF172	PEBS03S01	0.5	"	1650		X			G			X													
—	RF173	PEBS09S01	0.5	"	1650		X			G							X									

A-R3
10-31-97

	Date	Time
Samplers Signature	10/31/97	1710
Relinquished By:	10/31/97	1710
Received By:	10/31/97	1710
Relinquished By:	10/31/97	1850
Received By (LAB):	10/31/97	1750

For Lab Use

Lab Number:

Do COC match samples: Y or N
Broken container: Y or N
Received within holding time: Y or N
COC seal intact: Y or N UA
Any other problems: Y or N
If any YES, Ogden contacted: Y or N
Date contacted: ___/___/___
Temperature °C

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

0010

OGDEN *ENVIRONMENTAL AND ENERGY SERVICE*

5510 Morehouse Drive
San Diego, CA 92121-1709
(619) 458-9044
fax: (619) 458-0943

FACSIMILE

To: Mr. Leo Raab/Columbia Analytical Services
Fax No.: (818) 587-5555

From: Lisa L. Arrasmith *sign:* Lisa L Arrasmith

Date: 10/30/97 There is 1 Page to transmit including this cover page

Subject: **Chain-of-Custody Form Analytical Request Change**

Please make the changes listed below to the chain-of-custody analytical request form. Include this form with the final data deliverables for these samples.

COC No.	EPA Sample ID	Date Collected	Method (s) Originally Requested[a]	Method (s) Now Requested[a]	
RF702	RF702	10/27/97	S, M & pH	S, M+ & pH	L9703698-19
RF702	RF703	10/27/97	S, M+ & pH	HOLD	–
RF702	RF704	10/27/97	S, M+ & pH	HOLD	–
RF713	RF721	10/28/97	Fl, A & pH	S, F, Al & B	L9703679-9
RF713	RF722	10/28/97	Fl, A & pH	S & F	-10

[a] S= 8270 SIM, semi-volatile organics
M= Metals
M+= Metals + Aluminum (Al) & Boron (B)
Fl= 340.2, Fluoride
F= 3500, Formaldehyde
A= Anions

The reason for these changes is:

Incorrectly marked on COC form	____
Lack of sample volume	____
Ogden office personnel require this change	X
Other: Containers mislabeled ___	____

Thank you.

0011

SDG 1

Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY • CHEMICAL AND BIOLOGICAL ANALYSES

Client: Ogden
5510 Morehouse Drive
San Diego, CA 92121

Date Sampled: 10/15/97
Date Received: 10/17/97
Job Number: 12273

Project: Rocketdyne

CASE NARRATIVE

The following information applies to samples which were received on 10/17/97 :

The samples were received at the laboratory chilled and sample containers were intact.

Unless otherwise noted below, the Quality Control acceptance criteria were met for all samples for every analysis requested.

This report is being re-issued in order to make clerical changes or minor changes in form. There have been no changes in the results as previously reported. The date of re-issue is 11/25/97.

Report approved by:

Robert R. Clark, Ph.D.
Laboratory Director

ELAP # 1184

DL : Detection Limit -- The lowest level at which the compound can reliably be detected under normal laboratory conditions.
ND : Not Detected -- The compound was analyzed for but was not found to be present at or above the detection limit.
NA : Not Analyzed -- Per client request, this analyte was not on the list of compounds to be analyzed for.

CENTRUM LABS

12273
RC001

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC ~~RD036~~ Change per Lisa 10/17 11:03

Date 10 / 15 / 97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

Sample Data						Field Data		Matrix											
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge	EPA 8010/8020 VOCs	EPA 8015M		HOLD	Total # Containers	Sample Transfer	Date/ Time
~~RD036~~ RC001	OCBS01S02 Change per Lisa 10/17 11:03	4.5	10-15-97	1635		B	7.4	X				X	X				Relinquished By:	10-16-97 0900
																	Received By:	10/17/97 1100
~~RD037~~ RC002	OCBS01T01 Change per Lisa 10/17 11:07	—	10-15-97	1200	AAO 10-15-97	—	7.4		X			X					Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: 685	TAT: 14 - day

Sampler's Signature	Date	Time
A. Scm	10-15-97	1730

For Lab Use	
Does COC match samples: (Y) or N	
Broken container: Y or (N)	
Received within holding time: (Y) or N	
COC seal intact: Y or N or (NA)	
Temperature °C _____	ES

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1

Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY • CHEMICAL AND BIOLOGICAL ANALYSES

Client: Ogden
5510 Morehouse Drive
San Diego, CA 92121

Date Sampled: 10/15/97
Date Received: 10/17/97
Job Number: 12272

Project: Rocketdyne

CASE NARRATIVE

The following information applies to samples which were received on 10/17/97 :

The samples were received at the laboratory chilled and sample containers were intact.

Unless otherwise noted below, the Quality Control acceptance criteria were met for all samples for every analysis requested.

This report is being re-issued in order to make clerical changes or minor changes in form. There have been no changes in the results as previously reported. The date of re-issue is 11/25/97.

Report approved by:

Robert R. Clark, Ph.D.
Laboratory Director

ELAP # 1184

DL : Detection Limit -- The lowest level at which the compound can reliably be detected under normal laboratory conditions.
ND : Not Detected -- The compound was analyzed for but was not found to be present at or above the detection limit.
NA : Not Analyzed -- Per client request, this analyte was not on the list of compounds to be analyzed for.

CENTRUM LABS

12272
RC003
Change per Lisa

OGDEN

5510 MOREHOUSE DRIVE
SAN DIEGO, CA 92121
(619) 458-9044

Chain of Custody

Control Number: COC ~~RF 627~~

Date 10/15/97 Page 1 of 1

Project Manager:	Dixie Hambrick
Project Name:	Rocketdyne
Project Number:	313150001
Deliver results to the address above or as stated in contract	

Bill To:	Mark Deffley
Company:	Ogden Environmental
Address:	5510 Morehouse Drive, San Diego, CA 92121

Sample Disposal Instructions:	
Shipment Method:	
Comment:	

Sample Data						Field Data		Matrix				EPA 8010/8020 VOCs 8260	EPA 8015M Diesel		HOLD	Total # Containers	Sample Transfer	Date/ Time
EPA Sample ID	Description (for Ogden use only)	Depth	Date Collected	Time Collected	Lab ID	Sampling Method	SWMU	Soil	Water	Product	Sludge							
~~RD 637~~	Change per Lisa 10/17 11:03																Relinquished By:	10-15-97 0900
~~RF 627~~ RC003	CABS01S01	0.5'	10/15/97	1130		HA	5.18.5.19	X				X	X			1	Received By:	10-17-97 1030
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	
																	Relinquished By:	
																	Received By:	

K Jamieson 10/15/97

QC Level: EPA Level III Equivalent, See Contract Requirements	
Cooler No: ~~69720~~ 6885	TAT: 14 - day

Sampler's Signature	Date	Time
K Jamieson	10/15/97	1700

For Lab Use	
Does COC match samples: (Y) or N	
Broken container: Y or (N)	
Received within holding time: (Y) or N	
COC seal intact: Y or N or (NA)	
Temperature °C _____	

ES

Graphics\HazMat\Rocketdyne\Rocketdyne COC2.FH5

1 Original, 2 Lab Copy, 3 Field Copy

REV: 1