Ste

GIANT
REFINING CO.

Route 3, Box 7
Gallup, New Mexico
87301

505.
722.3833

MAR 1997
RECEIVED

March 20, 1997

Mr. Benito Garcia, Bureau Chief
New Mexico Environment Department
Hazardous and Radioactive Materials Bureau
2044 Galisteo
P. O. Box 26110
Santa Fe, New Mexico 87502

SUBJECT: QUARTERLY PROGRESS REPORT - 4th Quarter, 1996 and 1st Quarter, 1997

Dear Mr. Garcia:

Pursuant to Giant's **HSWA Permit Condition C.4., Page 11** and the May 31, 1990, **RFI Workplan Approval,** Giant Refining Company is submitting information for the fourth Quarter of 1996 and the first Quarter of 1997.

SWMU 6 - Tank Farm / Tank 569 :

A letter was submitted to Mr. Patricio Sanchez of the Oil Conservation Division (OCD) on November 25, 1996. The office of the HRMB was copied on this correspondence which addressed the borings completed between 8/22/96 and 9/9/96. Submitted with that letter were the following items: Boring Logs for borings 0643 through 0650, Well Installation Diagrams for OW-29 and OW-30, analytical results from soil and groundwater samples, and a site map indicating all borings done to date.

Free product and groundwater recovery from the Tank 569 area has begun. The boring originally identified as B-2 was completed as a well and designated as OW-27. This well is now called RW-1.

Giant has received verbal permission from the owner to do soil borings and sample groundwater on his property. This project is now in the planning stage. Boring Logs and analytical results will be forwarded to your office as soon as they are available.

SWMU 1 - Aeration Lagoons :

As reported in the Quarterly Progress Report submitted 9/10/96, several samples taken at the perimeter of the Aeration Lagoons showed the possible presence of some volatile organic compounds. Confirmatory samples were taken on 2/18/97. The analytical results are provided with this report. One sample showed a small amount of ethylbenzene (below NM Groundwater Standards). All other results were Not Detected (ND).

SWMU 13 - Drainage Ditch :

As part of the "No Further Action" Approval with Modifications for SWMU -13 (Drainage Ditch), the EPA, in it's 8/24/94 correspondence to Giant, directed that additional sampling be performed every 5 years. The required samples were to be drilled at an angle with soil from the 6 - 6 ½ foot depth sent for analysis. Volatile Organic Compounds, Semi-Volatile Compounds, and metals were analyzed on the three samples taken. Enclosed are the analytical results for the first 5 year sampling event, which was performed 10/23/96. A diagram indicating the sample points is also enclosed. No volatile or semi-volatile compounds were detected. Metal results are comparable (or lower) that those found in the original RFI work.

If you have questions or concerns regarding this report, please do not hesitate to call me at (505) 722-0217 or Dorinda Mancini at (505) 722-0227.

"I certify under penalty of law that this document and all attachments were prepared under my direction to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Sincerely

David C. Pavlich

David Pavlich, HSE Manager
Giant Refining Company

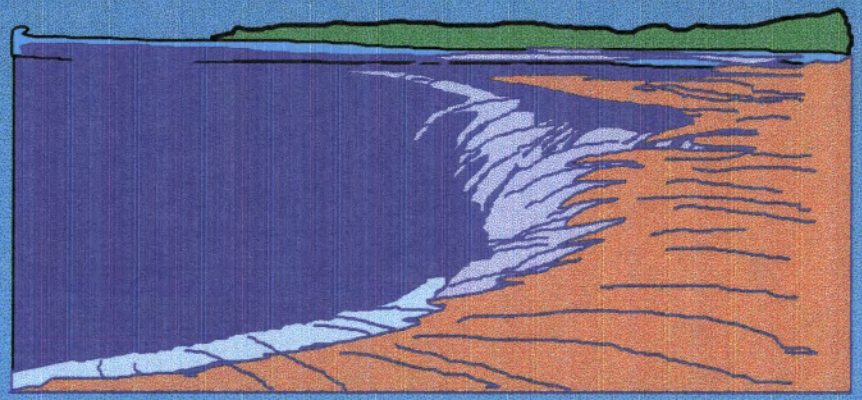
cc: Kim Bullerdick, Corporate Counsel, Giant Industries Arizona, Inc.
Dick Platt, General Manager, Ciniza Refinery
Dorinda Mancini, Environmental Manager, Ciniza Refinery
Steve Morris, Environmental Specialist, Ciniza Refinery
Patricio Sanchez, Petroleum Engineer, OCD

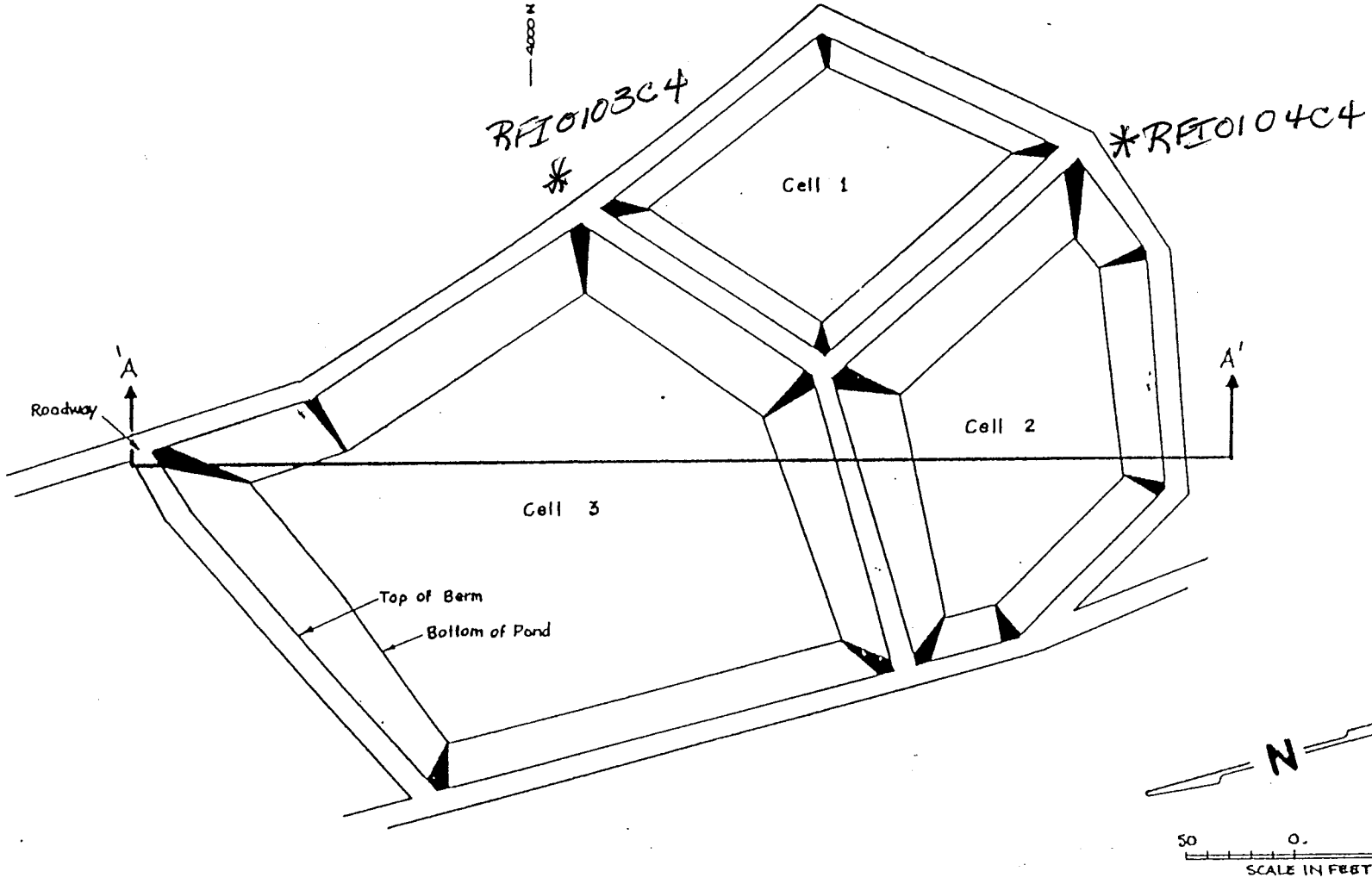
RFI1Q97

GIANT REFINING CO.

SWMU-1 AERATION LAGOONS ANALYTICAL RESULTS

RFI QUARTERLY PROGRESS REPORT
4TH QTR. 96, 1ST QTR 97





GIANT REFINERY Gallup, New Mexico	AERATION BASIN Plan View and Cross-Section Location	FIG.

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

EPA METHOD 8260
VOLATILE ORGANIC COMPOUNDS

Client:	**GIANT REFINING COMPANY**	Date Reported:	03/17/97
Sample ID:	RFI0103C4	Date Sampled:	02/18/97
Project ID:	Ciniza	Date Received:	02/20/97
Lab ID:	B970821	Date Extracted:	02/28/97
Matrix:	Soil	Date Analyzed:	03/03/97

Parameter	Result	PQL	Units
Toluene	ND	0.5	mg/kg
Xylenes (total)	ND	0.5	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	110	70 - 121
Bromofluorobenzene	99	74 - 121
Toluene-d8	111	81 - 117

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst E.D.

Reviewed CRB

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

EPA METHOD 8260
VOLATILE ORGANIC COMPOUNDS

Client:	**GIANT REFINING COMPANY**		
Sample ID:	RFI0104C4	Date Reported:	03/17/97
Project ID:	Ciniza	Date Sampled:	02/18/97
Lab ID:	B970822	Date Received:	02/20/97
Matrix:	Soil	Date Extracted:	02/28/97
		Date Analyzed:	03/03/97

Parameter	Result	PQL	Units
Ethylbenzene	0.61	0.5	mg/kg
Xylenes (total)	ND	0.5	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	110	70 - 121
Bromofluorobenzene	107	74 - 121
Toluene-d8	112	81 - 117

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst E.D. **Reviewed** CRB

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

EPA METHOD 8260
VOLATILE ORGANIC COMPOUNDS

Client:	**GIANT REFINING COMPANY**		
Sample ID:	Trip Blank	Date Reported:	03/10/97
Project ID:	Ciniza	Date Sampled:	02/18/97
Lab ID:	B970823	Date Received:	02/20/97
Matrix:	Water	Date Extracted:	NA
		Date Analyzed:	03/03/97

Parameter	Result	PQL	Units
Ethylbenzene	ND	5.0	ug/L
Toluene	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	116	81 - 126
Bromofluorobenzene	104	78 - 112
Toluene-d8	100	83 - 127

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst E.D.

Reviewed

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

LAB QA/QC
EPA METHOD 8260
METHOD BLANK

Date Analyzed: 03/03/97
Lab ID: MBS97059
Matrix: Soil
Date Extracted: 02/28/97

Parameter	Result	PQL	Units
Toluene	ND	0.2	mg/kg
Xylenes (total)	ND	0.2	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	114	80 - 120
Bromofluorobenzene	108	74 - 121
Toluene-d8	124 #	81 - 117

ND - Not Detected at Practical Quantitation Level (PQL)
- Surrogate Recovery not within control limits.

Analyst E.D.

Reviewed

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

LAB QA/QC
EPA METHOD 8260
MATRIX SPIKE / MATRIX SPIKE DUPLICATE SUMMARY

Date Analyzed: **03/03/97**
Lab ID: 0597H00821
Matrix: Soil
Date Extracted: 02/28/97

Original Sample Parameters

Parameter	Spike Added (mg/kg)	Sample Result (mg/kg)	Spike Result (mg/kg)	MS Recovery %		QC Limits Rec.
1,1-Dichloroethene	12.5	0	8.58	69	*	75 - 145
Benzene	12.5	0	10.4	83		71 - 120
Chlorobenzene	12.5	0	11.4	91		76 - 127
Toluene	12.5	0.33	13.3	104		71 - 127
Trichloroethene (TCE)	12.5	0	10.6	85		75 - 130

Duplicate Sample Parameters

Parameter	Spike Added (mg/kg)	MSD Result (mg/kg)	MSD Recovery %	RPD %		QC Limits RPD	QC Limits Rec.
1,1-Dichloroethene	12.5	10.8	86	23	*	22	75 - 145
Benzene	12.5	12.3	98	17		24	71 - 120
Chlorobenzene	12.5	13.1	105	14		21	76 - 127
Toluene	12.5	15.8	124	17		21	71 - 127
Trichloroethene (TCE)	12.5	12.7	102	18		21	75 - 130

Note: Spike Recoveries are calculated using zero for Sample result if Sample result was less than PQL (Practical Quantitation Level).

Spike Recovery: 1 out of 10 outside QC limits.
RPD: 1 out of 5 outside QC limits.

Analyst E.D.

Reviewed

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

LAB QA/QC
EPA METHOD 8260
LAB CONTROL SAMPLE

Date Analyzed: **03/03/97**
Lab ID: LCS97059
Matrix: Soil
Date Extracted 02/28/97

Parameter	Spike Added (mg/kg)	Sample Result (mg/kg)	LCS Result (mg/kg)	LCS Recovery %	QC Limits Rec.
1,4-Dichlorobenzene	2.0	0	2.4	120	70 -130
1,1,2-Trichloroethane	2.0	0	2.2	110	70 -130
1,2-Dibromoethane (EDB)	2.0	0	1.6	80	70 -130
1,2-Dichloroethane	2.0	0	2.4	120	70 -130
1,2-Dichloropropane	2.0	0	1.7	85	70 -130
Benzene	2.0	0	2.0	100	70 -130
Bromoform	2.0	0	1.7	85	70 -130
Carbon Tetrachloride	2.0	0	1.9	95	70 -130
cis-1,3-Dichloropropene	2.0	0	2.2	110	70 -130
Tetrachloroethene (PCE)	2.0	0	1.8	90	70 -130
Trichloroethene (TCE)	2.0	0	2.1	105	70 -130
Vinyl Chloride	2.0	0	2.9	145 *	70 -130

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
Bromofluorobenzene	109	74 -121
1,2-Dichloroethane-d4	113	70 -121
Toluene-d8	118 #	81 -117

Spike Recovery: 1 out of 12 outside QC limits.
Surrogates: Surrogate Recovery affected by Matrix Effect.

Analyst E.D.

Reviewed

imi
Inter- Mountain Laboratories, Inc.

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location
GIANT Refining Co - RFI Resample	CINIZA

Sampler: (Signature) [signature]

Chain of Custody Tape No.

ANALYSES / PARAMETERS

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	8260 Toluene Xylenes (TAL)	8260 BENZ Xylenes (Total)			Remarks
RFI 0103C4	2/18/97	0945	B9700821	Soil	1	✓				On ice
RFI 0104C4	"	0925	B9700822	"	1		✓			<4°C
TRIP BLANK			B9700823	WATER	1					
										TRIP BLANK
										1/2" head space

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	2/18/97	0900			
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time
FEDEX (Carrier)			Suzanne M Fetridge	2/20/97	1235

Inter-Mountain Laboratories, Inc.

☐ 1633 Terra Avenue, Sheridan, Wyoming 82801, Telephone (307) 672-8945

☐ 1701 Phillips Circle, Gillette, Wyoming 82718, Telephone (307) 682-8945

☒ 2506 West Main Street, Farmington, NM 87401, Telephone (505) 326-4737

☒ 1160 Research Dr., Bozeman, Montana 59715, Telephone (406) 586-8450

☐ 11183 SH 30, College Station, TX 77845, Telephone (409) 776-8945

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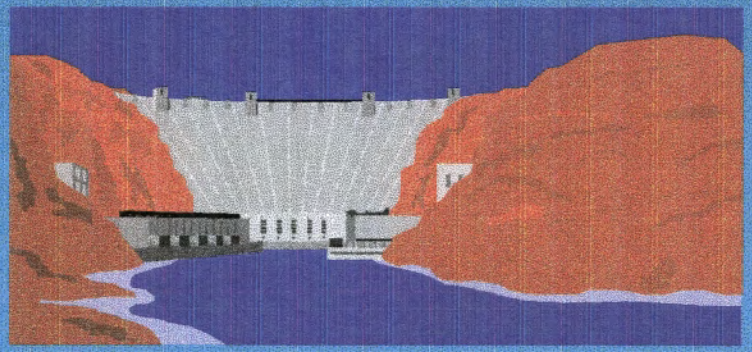
GIANT REFINING CO.

SWMU-13 DRAINAGE DITCH ANALYTICAL RESULTS

RFI QUARTERLY PROGRESS REPORT
4TH QTR. 96, 1ST QTR 97



GIANT REFINERY Gallup, New Mexico	Drainage Ditch Between API5 and Neutralization Ponds	FIG

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TRACE METAL CONCENTRATION

Client:	**Giant Refining Company**	Date Reported:	11/14/96
Project:	Ciniza Refinery	Date Sampled:	10/24/96
Sample ID:	RFI 1301 A6	Date Received:	10/25/96
Matrix:	Soil		
Condition:	Intact		
Lab ID:	0396G02343		

Parameter	Result (mg/Kg)	Detection Limit (mg/Kg)	Method
Arsenic	<0.25	0.25	SW-846-7000
Barium	119	0.50	SW-846 6010
Cadmium	<0.05	0.05	SW-846 6010
Chromium	4.45	0.50	SW-846 6010
Cobalt	2.25	0.50	SW-846 6010
Copper	2.05	0.50	SW-846 6010
Selenium	<0.250	0.250	SW-846-7000
Lead	4.60	2.50	SW-846-6010
Mercury	<0.050	0.050	SW-846 7171A
Nickel	4.05	0.50	SW-846 6010
Antimony	<0.250	0.250	SW-846 6010
Vanadium	6.90	0.50	SW-846 6010
Zinc	6.40	2.50	SW-846 6010
Beryllium	4.750	0.200	SW-846 6010

References: Method 3050: Acid Digestion for Sediments, Sludges, and Soil, SW-846, Rev. 1, July 1992.

Reported By: _____ Reviewed By: _____

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TRACE METAL CONCENTRATION

Client:	**Giant Refining Company**	Date Reported:	11/14/96
Project:	Ciniza Refinery	Date Sampled:	10/24/96
Sample ID:	RFI 1302 A6	Date Received:	10/25/96
Matrix:	Soil		
Condition:	Intact		
Lab ID:	0396G02344		

Parameter	Result (mg/Kg)	Detection Limit (mg/Kg)	Method
Arsenic	<0.25	0.25	SW-846-7000
Barium	84.5	0.50	SW-846 6010
Cadmium	<0.05	0.05	SW-846 6010
Chromium	5.15	0.50	SW-846 6010
Cobalt	2.60	0.50	SW-846 6010
Copper	2.30	0.50	SW-846 6010
Selenium	<0.250	0.250	SW-846-7000
Lead	5.55	2.50	Sw-846-6010
Mercury	<0.050	0.050	SW-846 7171A
Nickel	4.60	0.50	SW-846 6010
Antimony	<0.250	0.250	SW-846 6010
Vanadium	8.05	0.50	SW-846 6010
Zinc	7.30	2.50	SW-846 6010
Beryllium	6.00	0.200	SW-846 6010

References: Method 3050: Acid Digestion for Sediments, Sludges, and Soil, SW-846, Rev. 1, July 1992.

Reported By: SW

Reviewed By: SB

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TRACE METAL CONCENTRATION

Client:	**Giant Refining Company**	Date Reported:	11/14/96
Project:	Ciniza Refinery	Date Sampled:	10/24/96
Sample ID:	RFI 1303 A6	Date Received:	10/25/96
Matrix:	Soil		
Condition:	Intact		
Lab ID:	0396G02345		

Parameter	Result (mg/Kg)	Detection Limit (mg/Kg)	Method
Arsenic	<0.25	0.25	SW-846-7000
Barium	93.5	0.50	SW-846 6010
Cadmium	<0.05	0.05	SW-846 6010
Chromium	4.90	0.50	SW-846 6010
Cobalt	2.55	0.50	SW-846 6010
Copper	2.55	0.50	SW-846 6010
Selenium	<0.250	0.250	Sw-846-7000
Lead	5.00	2.50	SW-846-6010
Mercury	<0.050	0.050	SW-846 7171A
Nickel	4.50	0.50	SW-846 6010
Antimony	<0.250	0.250	SW-846 6010
Vanadium	7.55	0.50	SW-846 6010
Zinc	7.30	2.50	SW-846 6010
Beryllium	0.590	0.200	SW-846 6010

References: Method 3050: Acid Digestion for Sediments, Sludges, and Soil, SW-846, Rev. 1, July 1992.

Reported By: SW

Reviewed By: LB

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Spike Analysis / Blank Analysis
TOTAL METALS

Client:	Giant Refining Company	Date Reported:	11/14/96
Project:	Ciniza Refinery	Date Analyzed:	11/13/96
Sample Matrix:	soil	Date Received:	10/25/96

Spike Analysis

Parameter	Spike Result (mg/L)	Sample Result (mg/L)	Spike Added (mg/L)	Percent Recovery
Antimony	0.506	0.500	0.500	101%
Arsenic*	*	*	*	*
Barium	0.55	0.50	0.50	98%
Cadium*	*	*	*	*
Chromium	0.53	0.50	0.50	106%
Lead	0.51	0.500	0.50	102%
Mercury	0.520	0.50	0.500	96%
Selenium	0.022	0.025	0.025	114%
Beryllium	0.52	0.50	0.50	104%
Cobalt	0.52	0.50	0.50	104%
Copper	0.52	0.50	0.50	104%
Nickel	0.50	0.50	0.50	101%
Vanadium	0.53	0.50	0.500	107%
Zinc	0.57	0.50	0.50	88%

Method Blank Analysis

Parameter	Result	Detection Limit	Units
Antimony	ND	0.25	mg/L
Arsenic	ND	0.25	mg/L
Barium	ND	0.50	mg/L
Cadmium	ND	0.25	mg/L
Chromium	ND	0.50	mg/L
Lead	ND	0.75	mg/L
Mercury	ND	0.05	mg/L
Selenium	ND	0.25	mg/L
Silver	ND	0.50	mg/L
Beryllium	ND	0.20	mg/L
Cobalt	ND	0.50	mg/L
Copper	ND	0.50	mg/L
Nickel	ND	0.5	mg/L
Vanadium	ND	0.50	mg/L

References: Method 3050: Acid Digestion for Sediments, Sludges, and Soil
SW-846, Rev. 1, July 1992.

Comments: *Spikes did not recover due to matrix interferences.

Reported by SW

Reviewed by JB

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Known Analysis
TOTAL METALS

Client:	**Giant Refining Company**	Date Reported:	11/14/96
Project:	Ciniza Refinery	Date Analyzed:	11/13/96
Sample Matrix:	soil	Date Received:	10/25/96

Known Analysis

Parameter	Found Result	Known Result	Percent Recovery	Units
Antimony	1.06	1.00	106%	mg/L
Arsenic	0.010	0.010	100%	mg/L
Barium	1.07	1.00	107%	mg/L
Cadmium	1.08	1.00	108%	mg/L
Chromium	1.06	1.00	106%	mg/L
Lead	1.03	1.00	103%	mg/L
Mercury	0.004	0.004	103%	mg/L
Selenium	0.010	0.010	100%	mg/L
Silver	0.49	0.50	98%	mg/L
Beryllium	1.00	1.00	100%	mg/L
Cobalt	1.01	1.00	101%	mg/L
Copper	1.04	1.00	104%	mg/L
Nickel	0.99	1.00	99%	mg/L
Vanadium	1.00	1.00	100%	mg/L

References: Method 3050: Acid Digestion for Sediments, Sludges, and Soil, SW-846, Rev. 1, July 1992.

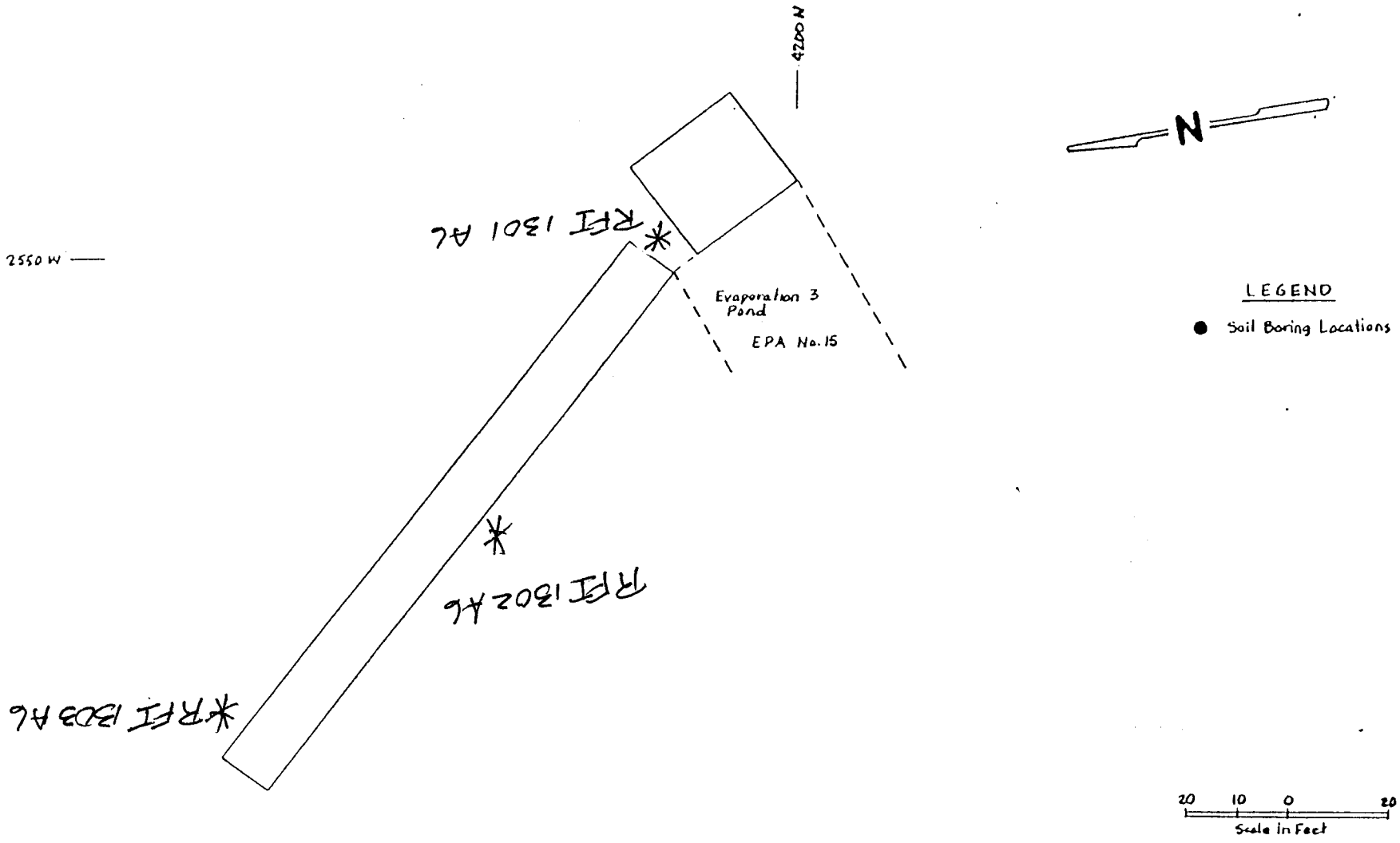
Reported by _____

Reviewed by _____

TABLE -1
BACKGROUND METALS

Total Metals

Parameter	Analytical Method	Reporting Limit mg/kg
Antimony	6010	6.0
Arsenic	7060	0.5
Barium	6010	1.0
Beryllium	6010	0.2
Cadmium	6010	0.5
Chromium	6010	1.0
Cobalt	6010	1.0
Copper	6010	2.0
Lead	6010	5.0
Mercury	7471	0.2
Nickel	6010	4.0
~~Potassium~~ not requested	6010	500
Selenium	7740	0.5
Vanadium	6010	1.0
Zinc	6010	2.0



GIANT REFINERY Gallup, New Mexico	Drainage Ditch Between API5 and Neutralization Ponds	F16

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: RFI 1301 A6
Project ID: Ciniza
Lab ID: B969762 0396G02343
Matrix: Soil

Date Reported: 11/07/96
Date Sampled: 10/23/96
Date Received: 10/29/96
Date Extracted: 11/04/96
Date Analyzed: 11/05/96

Parameter	Result	PQL	Units
1,1,1,2-Tetrachloroethane	ND	0.2	mg/kg
1,1,1-Trichloroethane	ND	0.2	mg/kg
1,1,2,2-Tetrachloroethane	ND	0.2	mg/kg
1,1,2-Trichloroethane	ND	0.2	mg/kg
1,1-Dichloroethane	ND	0.2	mg/kg
1,1-Dichloroethene	ND	0.2	mg/kg
1,1-Dichloropropene	ND	0.2	mg/kg
1,2,3-Trichlorobenzene	ND	0.2	mg/kg
1,2,3-Trichloropropane	ND	0.2	mg/kg
1,2,4-Trichlorobenzene	ND	0.2	mg/kg
1,2,4-Trimethylbenzene	ND	0.2	mg/kg
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.2	mg/kg
1,2-Dibromoethane (EDB)	ND	0.2	mg/kg
1,2-Dichlorobenzene	ND	0.2	mg/kg
1,2-Dichloroethane	ND	0.2	mg/kg
1,2-Dichloropropane	ND	0.2	mg/kg
1,3,5-Trimethylbenzene	ND	0.2	mg/kg
1,3-Dichlorobenzene	ND	0.2	mg/kg
1,3-Dichloropropane	ND	0.2	mg/kg
1,4-Dichlorobenzene	ND	0.2	mg/kg
2,2-Dichloropropane	ND	0.2	mg/kg
2-Chlorotoluene	ND	0.2	mg/kg
4-Chlorotoluene	ND	0.2	mg/kg
4-Isopropyltoluene	ND	0.2	mg/kg
Benzene	ND	0.2	mg/kg
Bromobenzene	ND	0.2	mg/kg
Bromochloromethane	ND	0.2	mg/kg
Bromodichloromethane	ND	0.2	mg/kg
Bromoform	ND	0.2	mg/kg
Bromomethane	ND	0.2	mg/kg

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8260
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY		Date Reported:	11/07/96
Sample ID:	RFI 1301 A6		Date Sampled:	10/23/96
Project ID:	Ciniza		Date Received:	10/29/96
Lab ID:	B969762	0396G02343	Date Extracted:	11/04/96
Matrix:	Soil		Date Analyzed:	11/05/96

Parameter	Result	PQL	Units
Continued			
Carbon Tetrachloride	ND	0.2	mg/kg
Chlorobenzene	ND	0.2	mg/kg
Chloroethane	ND	0.2	mg/kg
Chloroform	ND	0.2	mg/kg
Chloromethane	ND	0.2	mg/kg
cis-1,2-Dichloroethene	ND	0.2	mg/kg
cis-1,3-Dichloropropene	ND	0.2	mg/kg
Dibromochloromethane	ND	0.2	mg/kg
Dibromomethane	ND	0.2	mg/kg
Dichlorodifluoromethane	ND	0.2	mg/kg
Ethylbenzene	ND	0.2	mg/kg
Hexachlorobutadiene	ND	0.2	mg/kg
Isopropylbenzene	ND	0.2	mg/kg
m,p-Xylene	ND	0.2	mg/kg
Methylene chloride	ND	1.0	mg/kg
n-Butylbenzene	ND	0.2	mg/kg
n-Propylbenzene	ND	0.2	mg/kg
Naphthalene	ND	0.2	mg/kg
o-Xylene	ND	0.2	mg/kg
sec-Butylbenzene	ND	0.2	mg/kg
Styrene	ND	0.2	mg/kg
tert-Butylbenzene	ND	0.2	mg/kg
Tetrachloroethene (PCE)	ND	0.2	mg/kg
Toluene	ND	0.2	mg/kg
trans-1,2-Dichloroethene	ND	0.2	mg/kg
Trichloroethene (TCE)	ND	0.2	mg/kg
Trichlorofluoromethane	ND	0.2	mg/kg
Vinyl Chloride	ND	0.2	mg/kg
Xylenes (total)	ND	0.2	mg/kg

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8260
VOLATILE ORGANIC COMPOUNDS

Client:	**GIANT REFINING COMPANY**			
Sample ID:	RFI 1301 A6		Date Reported:	11/07/96
Project ID:	Ciniza		Date Sampled:	10/23/96
Lab ID:	B969762	0396G02343	Date Received:	10/29/96
Matrix:	Soil		Date Extracted:	11/04/96
			Date Analyzed:	11/05/96

Parameter	Result	PQL	Units

Continued

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	93	70 - 121
Bromofluorobenzene	100	74 - 121
Toluene-d8	104	81 - 117

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst E.D.

Reviewed [illegible]

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client: GIANT REFINING COMPANY
Sample ID: RFI 1301 A6
Project ID: Ciniza
Lab ID: B969762 0396G02343
Matrix: Soil

Date Reported: 11/08/96
Date Sampled: 10/23/96
Date Received: 10/29/96
Date Extracted: 11/04/96
Date Analyzed: 11/05/96

Parameter	Result	PQL	Units
1,2,4-Trichlorobenzene	ND	1.0	mg/kg
1,2-Dichlorobenzene	ND	1.0	mg/kg
1,3-Dichlorobenzene	ND	1.0	mg/kg
1,4-Dichlorobenzene	ND	1.0	mg/kg
2,4,5-Trichlorophenol	ND	2.0	mg/kg
2,4,6-Trichlorophenol	ND	2.0	mg/kg
2,4-Dichlorophenol	ND	1.0	mg/kg
2,4-Dimethylphenol	ND	1.0	mg/kg
2,4-Dinitrophenol	ND	2.0	mg/kg
2,4-Dinitrotoluene	ND	1.0	mg/kg
2,6-Dinitrotoluene	ND	1.0	mg/kg
2-Chloronaphthalene	ND	1.0	mg/kg
2-Chlorophenol	ND	1.0	mg/kg
2-Methylnaphthalene	ND	1.0	mg/kg
2-Methylphenol	ND	1.0	mg/kg
2-Nitroaniline	ND	5.0	mg/kg
2-Nitrophenol	ND	1.0	mg/kg
3,3'-Dichlorobenzidine	ND	2.0	mg/kg
3-Methylphenol/4-Methylphenol	ND	1.0	mg/kg
3-Nitroaniline	ND	5.0	mg/kg
4,6-Dinitro-2-methylphenol	ND	5.0	mg/kg
4-Bromophenyl-phenylether	ND	1.0	mg/kg
4-Chloro-3-methylphenol	ND	2.0	mg/kg
4-Chloroaniline	ND	2.0	mg/kg
4-Chlorophenyl-phenylether	ND	1.0	mg/kg
4-Nitroaniline	ND	2.0	mg/kg
4-Nitrophenol	ND	2.0	mg/kg
Acenaphthene	ND	1.0	mg/kg

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GIANT REFINING COMPANY		Date Reported:	11/08/96
Sample ID:	RFI 1301 A6		Date Sampled:	10/23/96
Project ID:	Ciniza		Date Received:	10/29/96
Lab ID:	B969762	0396G02343	Date Extracted:	11/04/96
Matrix:	Soil		Date Analyzed:	11/05/96

Parameter	Result	PQL	Units
Continued			
Acenaphthylene	ND	1.0	mg/kg
Anthracene	ND	1.0	mg/kg
Benzo(a)anthracene	ND	1.0	mg/kg
Benzo(a)pyrene	ND	1.0	mg/kg
Benzo(b)fluoranthene	ND	1.0	mg/kg
Benzo(g,h,i)perylene	ND	1.0	mg/kg
Benzo(k)fluoranthene	ND	1.0	mg/kg
Benzoic Acid	ND	5.0	mg/kg
Benzyl Alcohol	ND	2.0	mg/kg
bis(2-Chloroethoxy)methane	ND	1.0	mg/kg
bis(2-Chloroethyl)ether	ND	1.0	mg/kg
bis(2-Chloroisopropyl)ether	ND	1.0	mg/kg
bis(2-Ethylhexyl)phthalate	ND	5.0	mg/kg
Butylbenzylphthalate	ND	1.0	mg/kg
Chrysene	ND	1.0	mg/kg
Di-n-Butylphthalate	ND	5.0	mg/kg
Di-n-Octylphthalate	ND	5.0	mg/kg
Dibenz(a,h)anthracene	ND	1.0	mg/kg
Dibenzofuran	ND	1.0	mg/kg
Diethylphthalate	ND	1.0	mg/kg
Dimethylphthalate	ND	1.0	mg/kg
Fluoranthene	ND	1.0	mg/kg
Fluorene	ND	1.0	mg/kg
Hexachlorobenzene	ND	2.0	mg/kg
Hexachlorobutadiene	ND	2.0	mg/kg
Hexachlorocyclopentadiene	ND	1.0	mg/kg
Hexachloroethane	ND	2.0	mg/kg
Indeno(1,2,3-cd)pyrene	ND	1.0	mg/kg

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GIANT REFINING COMPANY		Date Reported:	11/08/96
Sample ID:	RFI 1301 A6		Date Sampled:	10/23/96
Project ID:	Ciniza		Date Received:	10/29/96
Lab ID:	B969762	0396G02343	Date Extracted:	11/04/96
Matrix:	Soil		Date Analyzed:	11/05/96

Parameter	Result	PQL	Units
Continued			
Isophorone	ND	1.0	mg/kg
N-Nitrosodi-n-propylamine	ND	1.0	mg/kg
N-Nitrosodiphenylamine	ND	1.0	mg/kg
Naphthalene	ND	1.0	mg/kg
Nitrobenzene	ND	1.0	mg/kg
Pentachlorophenol	ND	5.0	mg/kg
Phenanthrene	ND	1.0	mg/kg
Phenol	ND	1.0	mg/kg
Pyrene	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
2,4,6-Tribromophenol	59	19 - 122
2-Fluorobiphenyl	59	30 - 115
2-Fluorophenol	62	25 - 121
Nitrobenzene-d5	51	23 - 120
Phenol-d6	78	24 - 113
Terphenyl-d14	62	18 - 137

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, November 1990.

Analyst _____ Reviewed _____

Inter·Mountain Laboratories, Inc.
1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8260
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY		Date Reported:	11/07/96
Sample ID:	RFI 1302 A6		Date Sampled:	10/23/96
Project ID:	Ciniza		Date Received:	10/29/96
Lab ID:	B969763	0396G02344	Date Extracted:	11/04/96
Matrix:	Soil		Date Analyzed:	11/05/96

Parameter	Result	PQL	Units
1,1,1,2-Tetrachloroethane	ND	0.2	mg/kg
1,1,1-Trichloroethane	ND	0.2	mg/kg
1,1,2,2-Tetrachloroethane	ND	0.2	mg/kg
1,1,2-Trichloroethane	ND	0.2	mg/kg
1,1-Dichloroethane	ND	0.2	mg/kg
1,1-Dichloroethene	ND	0.2	mg/kg
1,1-Dichloropropene	ND	0.2	mg/kg
1,2,3-Trichlorobenzene	ND	0.2	mg/kg
1,2,3-Trichloropropane	ND	0.2	mg/kg
1,2,4-Trichlorobenzene	ND	0.2	mg/kg
1,2,4-Trimethylbenzene	ND	0.2	mg/kg
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.2	mg/kg
1,2-Dibromoethane (EDB)	ND	0.2	mg/kg
1,2-Dichlorobenzene	ND	0.2	mg/kg
1,2-Dichloroethane	ND	0.2	mg/kg
1,2-Dichloropropane	ND	0.2	mg/kg
1,3,5-Trimethylbenzene	ND	0.2	mg/kg
1,3-Dichlorobenzene	ND	0.2	mg/kg
1,3-Dichloropropane	ND	0.2	mg/kg
1,4-Dichlorobenzene	ND	0.2	mg/kg
2,2-Dichloropropane	ND	0.2	mg/kg
2-Chlorotoluene	ND	0.2	mg/kg
4-Chlorotoluene	ND	0.2	mg/kg
4-Isopropyltoluene	ND	0.2	mg/kg
Benzene	ND	0.2	mg/kg
Bromobenzene	ND	0.2	mg/kg
Bromochloromethane	ND	0.2	mg/kg
Bromodichloromethane	ND	0.2	mg/kg
Bromoform	ND	0.2	mg/kg
Bromomethane	ND	0.2	mg/kg

Continued

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EPA METHOD 8260
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY			
Sample ID:	RFI 1302 A6		Date Reported:	11/07/96
Project ID:	Ciniza		Date Sampled:	10/23/96
Lab ID:	B969763	0396G02344	Date Received:	10/29/96
Matrix:	Soil		Date Extracted:	11/04/96
			Date Analyzed:	11/05/96

Parameter	Result	PQL	Units
Carbon Tetrachloride	ND	0.2	mg/kg
Chlorobenzene	ND	0.2	mg/kg
Chloroethane	ND	0.2	mg/kg
Chloroform	ND	0.2	mg/kg
Chloromethane	ND	0.2	mg/kg
cis-1,2-Dichloroethene	ND	0.2	mg/kg
cis-1,3-Dichloropropene	ND	0.2	mg/kg
Dibromochloromethane	ND	0.2	mg/kg
Dibromomethane	ND	0.2	mg/kg
Dichlorodifluoromethane	ND	0.2	mg/kg
Ethylbenzene	ND	0.2	mg/kg
Hexachlorobutadiene	ND	0.2	mg/kg
Isopropylbenzene	ND	0.2	mg/kg
m,p-Xylene	ND	0.2	mg/kg
Methylene chloride	ND	1.0	mg/kg
n-Butylbenzene	ND	0.2	mg/kg
n-Propylbenzene	ND	0.2	mg/kg
Naphthalene	ND	0.2	mg/kg
o-Xylene	ND	0.2	mg/kg
sec-Butylbenzene	ND	0.2	mg/kg
Styrene	ND	0.2	mg/kg
tert-Butylbenzene	ND	0.2	mg/kg
Tetrachloroethene (PCE)	ND	0.2	mg/kg
Toluene	ND	0.2	mg/kg
trans-1,2-Dichloroethene	ND	0.2	mg/kg
Trichloroethene (TCE)	ND	0.2	mg/kg
Trichlorofluoromethane	ND	0.2	mg/kg
Vinyl Chloride	ND	0.2	mg/kg
Xylenes (total)	ND	0.2	mg/kg

Continued

Inter·Mountain Laboratories, Inc.

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EPA METHOD 8260
VOLATILE ORGANIC COMPOUNDS

Client:	**GIANT REFINING COMPANY**			
Sample ID:	RFI 1302 A6		Date Reported:	11/07/96
Project ID:	Ciniza		Date Sampled:	10/23/96
Lab ID:	B969763	0396G02344	Date Received:	10/29/96
Matrix:	Soil		Date Extracted:	11/04/96
			Date Analyzed:	11/05/96

Parameter	Result	PQL	Units

Continued

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	91	70 - 121
Bromofluorobenzene	100	74 - 121
Toluene-d8	104	81 - 117

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst E.D.

Reviewed CZB

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GIANT REFINING COMPANY		Date Reported:	11/08/96
Sample ID:	RFI 1302 A6		Date Sampled:	10/23/96
Project ID:	Ciniza		Date Received:	10/29/96
Lab ID:	B969763	0396G02344	Date Extracted:	11/04/96
Matrix:	Soil		Date Analyzed:	11/05/96

Parameter	Result	PQL	Units
1,2,4-Trichlorobenzene	ND	1.0	mg/kg
1,2-Dichlorobenzene	ND	1.0	mg/kg
1,3-Dichlorobenzene	ND	1.0	mg/kg
1,4-Dichlorobenzene	ND	1.0	mg/kg
2,4,5-Trichlorophenol	ND	2.0	mg/kg
2,4,6-Trichlorophenol	ND	2.0	mg/kg
2,4-Dichlorophenol	ND	1.0	mg/kg
2,4-Dimethylphenol	ND	1.0	mg/kg
2,4-Dinitrophenol	ND	2.0	mg/kg
2,4-Dinitrotoluene	ND	1.0	mg/kg
2,6-Dinitrotoluene	ND	1.0	mg/kg
2-Chloronaphthalene	ND	1.0	mg/kg
2-Chlorophenol	ND	1.0	mg/kg
2-Methylnaphthalene	ND	1.0	mg/kg
2-Methylphenol	ND	1.0	mg/kg
2-Nitroaniline	ND	5.0	mg/kg
2-Nitrophenol	ND	1.0	mg/kg
3,3'-Dichlorobenzidine	ND	2.0	mg/kg
3-Methylphenol/4-Methylphenol	ND	1.0	mg/kg
3-Nitroaniline	ND	5.0	mg/kg
4,6-Dinitro-2-methylphenol	ND	5.0	mg/kg
4-Bromophenyl-phenylether	ND	1.0	mg/kg
4-Chloro-3-methylphenol	ND	2.0	mg/kg
4-Chloroaniline	ND	2.0	mg/kg
4-Chlorophenyl-phenylether	ND	1.0	mg/kg
4-Nitroaniline	ND	2.0	mg/kg
4-Nitrophenol	ND	2.0	mg/kg
Acenaphthene	ND	1.0	mg/kg

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GIANT REFINING COMPANY		Date Reported:	11/08/96
Sample ID:	RFI 1302 A6		Date Sampled:	10/23/96
Project ID:	Ciniza		Date Received:	10/29/96
Lab ID:	B969763	0396G02344	Date Extracted:	11/04/96
Matrix:	Soil		Date Analyzed:	11/05/96

Parameter	Result	PQL	Units
Acenaphthylene	ND	1.0	mg/kg
Anthracene	ND	1.0	mg/kg
Benzo(a)anthracene	ND	1.0	mg/kg
Benzo(a)pyrene	ND	1.0	mg/kg
Benzo(b)fluoranthene	ND	1.0	mg/kg
Benzo(g,h,i)perylene	ND	1.0	mg/kg
Benzo(k)fluoranthene	ND	1.0	mg/kg
Benzoic Acid	ND	5.0	mg/kg
Benzyl Alcohol	ND	2.0	mg/kg
bis(2-Chloroethoxy)methane	ND	1.0	mg/kg
bis(2-Chloroethyl)ether	ND	1.0	mg/kg
bis(2-Chloroisopropyl)ether	ND	1.0	mg/kg
bis(2-Ethylhexyl)phthalate	ND	5.0	mg/kg
Butylbenzylphthalate	ND	1.0	mg/kg
Chrysene	ND	1.0	mg/kg
Di-n-Butylphthalate	ND	5.0	mg/kg
Di-n-Octylphthalate	ND	5.0	mg/kg
Dibenz(a,h)anthracene	ND	1.0	mg/kg
Dibenzofuran	ND	1.0	mg/kg
Diethylphthalate	ND	1.0	mg/kg
Dimethylphthalate	ND	1.0	mg/kg
Fluoranthene	ND	1.0	mg/kg
Fluorene	ND	1.0	mg/kg
Hexachlorobenzene	ND	2.0	mg/kg
Hexachlorobutadiene	ND	2.0	mg/kg
Hexachlorocyclopentadiene	ND	1.0	mg/kg
Hexachloroethane	ND	2.0	mg/kg
Indeno(1,2,3-cd)pyrene	ND	1.0	mg/kg

Continued

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GIANT REFINING COMPANY		Date Reported:	11/08/96
Sample ID:	RFI 1302 A6		Date Sampled:	10/23/96
Project ID:	Ciniza		Date Received:	10/29/96
Lab ID:	B969763	0396G02344	Date Extracted:	11/04/96
Matrix:	Soil		Date Analyzed:	11/05/96

Parameter	Result	PQL	Units
Continued			
Isophorone	ND	1.0	mg/kg
N-Nitrosodi-n-propylamine	ND	1.0	mg/kg
N-Nitrosodiphenylamine	ND	1.0	mg/kg
Naphthalene	ND	1.0	mg/kg
Nitrobenzene	ND	1.0	mg/kg
Pentachlorophenol	ND	5.0	mg/kg
Phenanthrene	ND	1.0	mg/kg
Phenol	ND	1.0	mg/kg
Pyrene	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
2,4,6-Tribromophenol	59	19 - 122
2-Fluorobiphenyl	58	30 - 115
2-Fluorophenol	55	25 - 121
Nitrobenzene-d5	49	23 - 120
Phenol-d6	69	24 - 113
Terphenyl-d14	58	18 - 137

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, November 1990.

Analyst _____ Reviewed _____

Inter·Mountain Laboratories.

1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8260
VOLATILE ORGANIC COMPOUNDS

Client: GIANT REFINING COMPANY
Sample ID: RFI 1303 A6
Project ID: Ciniza
Lab ID: B969764 0396G02345
Matrix: Soil

Date Reported: 11/07/96
Date Sampled: 10/23/96
Date Received: 10/29/96
Date Extracted: 11/04/96
Date Analyzed: 11/05/96

Parameter	Result	PQL	Units
1,1,1,2-Tetrachloroethane	ND	0.2	mg/kg
1,1,1-Trichloroethane	ND	0.2	mg/kg
1,1,2,2-Tetrachloroethane	ND	0.2	mg/kg
1,1,2-Trichloroethane	ND	0.2	mg/kg
1,1-Dichloroethane	ND	0.2	mg/kg
1,1-Dichloroethene	ND	0.2	mg/kg
1,1-Dichloropropene	ND	0.2	mg/kg
1,2,3-Trichlorobenzene	ND	0.2	mg/kg
1,2,3-Trichloropropane	ND	0.2	mg/kg
1,2,4-Trichlorobenzene	ND	0.2	mg/kg
1,2,4-Trimethylbenzene	ND	0.2	mg/kg
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.2	mg/kg
1,2-Dibromoethane (EDB)	ND	0.2	mg/kg
1,2-Dichlorobenzene	ND	0.2	mg/kg
1,2-Dichloroethane	ND	0.2	mg/kg
1,2-Dichloropropane	ND	0.2	mg/kg
1,3,5-Trimethylbenzene	ND	0.2	mg/kg
1,3-Dichlorobenzene	ND	0.2	mg/kg
1,3-Dichloropropane	ND	0.2	mg/kg
1,4-Dichlorobenzene	ND	0.2	mg/kg
2,2-Dichloropropane	ND	0.2	mg/kg
2-Chlorotoluene	ND	0.2	mg/kg
4-Chlorotoluene	ND	0.2	mg/kg
4-Isopropyltoluene	ND	0.2	mg/kg
Benzene	ND	0.2	mg/kg
Bromobenzene	ND	0.2	mg/kg
Bromochloromethane	ND	0.2	mg/kg
Bromodichloromethane	ND	0.2	mg/kg
Bromoform	ND	0.2	mg/kg
Bromomethane	ND	0.2	mg/kg

Continued

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1160 Research Drive
Bozeman, Montana 59715

EPA METHOD 8260
VOLATILE ORGANIC COMPOUNDS

Client:	GIANT REFINING COMPANY			
Sample ID:	RFI 1303 A6		Date Reported:	11/07/96
Project ID:	Ciniza		Date Sampled:	10/23/96
Lab ID:	B969764	0396G02345	Date Received:	10/29/96
Matrix:	Soil		Date Extracted:	11/04/96
			Date Analyzed:	11/05/96

Parameter	Result	PQL	Units
Carbon Tetrachloride	ND	0.2	mg/kg
Chlorobenzene	ND	0.2	mg/kg
Chloroethane	ND	0.2	mg/kg
Chloroform	ND	0.2	mg/kg
Chloromethane	ND	0.2	mg/kg
cis-1,2-Dichloroethene	ND	0.2	mg/kg
cis-1,3-Dichloropropene	ND	0.2	mg/kg
Dibromochloromethane	ND	0.2	mg/kg
Dibromomethane	ND	0.2	mg/kg
Dichlorodifluoromethane	ND	0.2	mg/kg
Ethylbenzene	ND	0.2	mg/kg
Hexachlorobutadiene	ND	0.2	mg/kg
Isopropylbenzene	ND	0.2	mg/kg
m,p-Xylene	ND	0.2	mg/kg
Methylene chloride	ND	1.0	mg/kg
n-Butylbenzene	ND	0.2	mg/kg
n-Propylbenzene	ND	0.2	mg/kg
Naphthalene	ND	0.2	mg/kg
o-Xylene	ND	0.2	mg/kg
sec-Butylbenzene	ND	0.2	mg/kg
Styrene	ND	0.2	mg/kg
tert-Butylbenzene	ND	0.2	mg/kg
Tetrachloroethene (PCE)	ND	0.2	mg/kg
Toluene	ND	0.2	mg/kg
trans-1,2-Dichloroethene	ND	0.2	mg/kg
Trichloroethene (TCE)	ND	0.2	mg/kg
Trichlorofluoromethane	ND	0.2	mg/kg
Vinyl Chloride	ND	0.2	mg/kg
Xylenes (total)	ND	0.2	mg/kg

Continued

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EPA METHOD 8260
VOLATILE ORGANIC COMPOUNDS

Client:	**GIANT REFINING COMPANY**			
Sample ID:	RFI 1303 A6		Date Reported:	11/07/96
Project ID:	Ciniza		Date Sampled:	10/23/96
Lab ID:	B969764	0396G02345	Date Received:	10/29/96
Matrix:	Soil		Date Extracted:	11/04/96
			Date Analyzed:	11/05/96

Parameter	Result	PQL	Units

Continued

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	95	70 - 121
Bromofluorobenzene	104	74 - 121
Toluene-d8	116	81 - 117

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8260, Gas Chromatography/Mass Spectrometry for Volatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, Rev. 1, November 1992.

Analyst E.O.

Reviewed

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GIANT REFINING COMPANY		Date Reported:	11/08/96
Sample ID:	RFI 1303 A6		Date Sampled:	10/23/96
Project ID:	Ciniza		Date Received:	10/29/96
Lab ID:	B969764	0396G02345	Date Extracted:	11/04/96
Matrix:	Soil		Date Analyzed:	11/05/96

Parameter	Result	PQL	Units
1,2,4-Trichlorobenzene	ND	1.0	mg/kg
1,2-Dichlorobenzene	ND	1.0	mg/kg
1,3-Dichlorobenzene	ND	1.0	mg/kg
1,4-Dichlorobenzene	ND	1.0	mg/kg
2,4,5-Trichlorophenol	ND	2.0	mg/kg
2,4,6-Trichlorophenol	ND	2.0	mg/kg
2,4-Dichlorophenol	ND	1.0	mg/kg
2,4-Dimethylphenol	ND	1.0	mg/kg
2,4-Dinitrophenol	ND	2.0	mg/kg
2,4-Dinitrotoluene	ND	1.0	mg/kg
2,6-Dinitrotoluene	ND	1.0	mg/kg
2-Chloronaphthalene	ND	1.0	mg/kg
2-Chlorophenol	ND	1.0	mg/kg
2-Methylnaphthalene	ND	1.0	mg/kg
2-Methylphenol	ND	1.0	mg/kg
2-Nitroaniline	ND	5.0	mg/kg
2-Nitrophenol	ND	1.0	mg/kg
3,3'-Dichlorobenzidine	ND	2.0	mg/kg
3-Methylphenol/4-Methylphenol	ND	1.0	mg/kg
3-Nitroaniline	ND	5.0	mg/kg
4,6-Dinitro-2-methylphenol	ND	5.0	mg/kg
4-Bromophenyl-phenylether	ND	1.0	mg/kg
4-Chloro-3-methylphenol	ND	2.0	mg/kg
4-Chloroaniline	ND	2.0	mg/kg
4-Chlorophenyl-phenylether	ND	1.0	mg/kg
4-Nitroaniline	ND	2.0	mg/kg
4-Nitrophenol	ND	2.0	mg/kg
Acenaphthene	ND	1.0	mg/kg

Continued

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GIANT REFINING COMPANY		Date Reported:	11/08/96
Sample ID:	RFI 1303 A6		Date Sampled:	10/23/96
Project ID:	Ciniza		Date Received:	10/29/96
Lab ID:	B969764	0396G02345	Date Extracted:	11/04/96
Matrix:	Soil		Date Analyzed:	11/05/96

Parameter	Result	PQL	Units
Continued			
Acenaphthylene	ND	1.0	mg/kg
Anthracene	ND	1.0	mg/kg
Benzo(a)anthracene	ND	1.0	mg/kg
Benzo(a)pyrene	ND	1.0	mg/kg
Benzo(b)fluoranthene	ND	1.0	mg/kg
Benzo(g,h,i)perylene	ND	1.0	mg/kg
Benzo(k)fluoranthene	ND	1.0	mg/kg
Benzoic Acid	ND	5.0	mg/kg
Benzyl Alcohol	ND	2.0	mg/kg
bis(2-Chloroethoxy)methane	ND	1.0	mg/kg
bis(2-Chloroethyl)ether	ND	1.0	mg/kg
bis(2-Chloroisopropyl)ether	ND	1.0	mg/kg
bis(2-Ethylhexyl)phthalate	ND	5.0	mg/kg
Butylbenzylphthalate	ND	1.0	mg/kg
Chrysene	ND	1.0	mg/kg
Di-n-Butylphthalate	ND	5.0	mg/kg
Di-n-Octylphthalate	ND	5.0	mg/kg
Dibenz(a,h)anthracene	ND	1.0	mg/kg
Dibenzofuran	ND	1.0	mg/kg
Diethylphthalate	ND	1.0	mg/kg
Dimethylphthalate	ND	1.0	mg/kg
Fluoranthene	ND	1.0	mg/kg
Fluorene	ND	1.0	mg/kg
Hexachlorobenzene	ND	2.0	mg/kg
Hexachlorobutadiene	ND	2.0	mg/kg
Hexachlorocyclopentadiene	ND	1.0	mg/kg
Hexachloroethane	ND	2.0	mg/kg
Indeno(1,2,3-cd)pyrene	ND	1.0	mg/kg

Continued

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EPA METHOD 8270
HSL SEMI-VOLATILE COMPOUNDS
BASE/NEUTRAL/ACID EXTRACTABLES

Client:	GIANT REFINING COMPANY		Date Reported:	11/08/96
Sample ID:	RFI 1303 A6		Date Sampled:	10/23/96
Project ID:	Ciniza		Date Received:	10/29/96
Lab ID:	B969764	0396G02345	Date Extracted:	11/04/96
Matrix:	Soil		Date Analyzed:	11/05/96

Parameter	Result	PQL	Units
Continued			
Isophorone	ND	1.0	mg/kg
N-Nitrosodi-n-propylamine	ND	1.0	mg/kg
N-Nitrosodiphenylamine	ND	1.0	mg/kg
Naphthalene	ND	1.0	mg/kg
Nitrobenzene	ND	1.0	mg/kg
Pentachlorophenol	ND	5.0	mg/kg
Phenanthrene	ND	1.0	mg/kg
Phenol	ND	1.0	mg/kg
Pyrene	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
2,4,6-Tribromophenol	62	19 - 122
2-Fluorobiphenyl	59	30 - 115
2-Fluorophenol	58	25 - 121
Nitrobenzene-d5	53	23 - 120
Phenol-d6	72	24 - 113
Terphenyl-d14	64	18 - 137

ND - Not Detected at Practical Quantitation Level (PQL)

Reference: Method 8270, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, November 1990.

Analyst _____ Reviewed _____

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LAB QA/QC
EPA METHOD 8260
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Date Analyzed: **11/04/96**
Lab ID: IBS96309A
Matrix: Water

Parameter	Result	PQL	Units
1,1,1,2-Tetrachloroethane	ND	0.2	mg/kg
1,1,1-Trichloroethane	ND	0.2	mg/kg
1,1,2,2-Tetrachloroethane	ND	0.2	mg/kg
1,1,2-Trichloroethane	ND	0.2	mg/kg
1,1-Dichloroethane	ND	0.2	mg/kg
1,1-Dichloroethene	ND	0.2	mg/kg
1,1-Dichloropropene	ND	0.2	mg/kg
1,2,3-Trichlorobenzene	ND	0.2	mg/kg
1,2,3-Trichloropropane	ND	0.2	mg/kg
1,2,4-Trichlorobenzene	ND	0.2	mg/kg
1,2,4-Trimethylbenzene	ND	0.2	mg/kg
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.2	mg/kg
1,2-Dibromoethane (EDB)	ND	0.2	mg/kg
1,2-Dichlorobenzene	ND	0.2	mg/kg
1,2-Dichloroethane	ND	0.2	mg/kg
1,2-Dichloropropane	ND	0.2	mg/kg
1,3,5-Trimethylbenzene	ND	0.2	mg/kg
1,3-Dichlorobenzene	ND	0.2	mg/kg
1,3-Dichloropropane	ND	0.2	mg/kg
1,4-Dichlorobenzene	ND	0.2	mg/kg
2,2-Dichloropropane	ND	0.2	mg/kg
2-Chlorotoluene	ND	0.2	mg/kg
4-Chlorotoluene	ND	0.2	mg/kg
4-Isopropyltoluene	ND	0.2	mg/kg
Benzene	ND	0.2	mg/kg
Bromobenzene	ND	0.2	mg/kg
Bromochloromethane	ND	0.2	mg/kg
Bromodichloromethane	ND	0.2	mg/kg
Bromoform	ND	0.2	mg/kg
Bromomethane	ND	0.2	mg/kg
Carbon Tetrachloride	ND	0.2	mg/kg
Chlorobenzene	ND	0.2	mg/kg
Chloroethane	ND	0.2	mg/kg

Continued

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LAB QA/QC
EPA METHOD 8260
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Date Analyzed: 11/04/96
Lab ID: IBS96309A
Matrix: Water

Parameter	Result	PQL	Units
Continued			
Chloroform	ND	0.2	mg/kg
Chloromethane	ND	0.2	mg/kg
cis-1,2-Dichloroethene	ND	0.2	mg/kg
cis-1,3-Dichloropropene	ND	0.2	mg/kg
Dibromochloromethane	ND	0.2	mg/kg
Dibromomethane	ND	0.2	mg/kg
Dichlorodifluoromethane	ND	0.2	mg/kg
Ethylbenzene	ND	0.2	mg/kg
Hexachlorobutadiene	ND	0.2	mg/kg
Isopropylbenzene	ND	0.2	mg/kg
m,p-Xylene	ND	0.2	mg/kg
Methylene chloride	ND	1.0	mg/kg
n-Butylbenzene	ND	0.2	mg/kg
n-Propylbenzene	ND	0.2	mg/kg
Naphthalene	ND	0.2	mg/kg
o-Xylene	ND	0.2	mg/kg
sec-Butylbenzene	ND	0.2	mg/kg
Styrene	ND	0.2	mg/kg
tert-Butylbenzene	ND	0.2	mg/kg
Tetrachloroethene (PCE)	ND	0.2	mg/kg
Toluene	ND	0.2	mg/kg
trans-1,2-Dichloroethene	ND	0.2	mg/kg
Trichloroethene (TCE)	ND	0.2	mg/kg
Trichlorofluoromethane	ND	0.2	mg/kg
Vinyl Chloride	ND	0.2	mg/kg
Xylenes (total)	ND	0.2	mg/kg

Continued

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LAB QA/QC
EPA METHOD 8260
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Date Analyzed: **11/04/96**
Lab ID: IBS96309A
Matrix: Water

Parameter	Result	PQL	Units

Continued

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	89	80 - 120
Bromofluorobenzene	103	74 - 121
Toluene-d8	115	81 - 117

ND - Not Detected at Practical Quantitation Level (PQL)

Analyst E.D.

Reviewed

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LAB QA/QC
EPA METHOD 8260
METHOD BLANK

Date Analyzed: **11/05/96**
Lab ID: MBS96309
Matrix: Soil
Date Extracted: 11/04/96

Parameter	Result	PQL	Units
1,1,1,2-Tetrachloroethane	ND	0.2	mg/kg
1,1,1-Trichloroethane	ND	0.2	mg/kg
1,1,2,2-Tetrachloroethane	ND	0.2	mg/kg
1,1,2-Trichloroethane	ND	0.2	mg/kg
1,1-Dichloroethane	ND	0.2	mg/kg
1,1-Dichloroethene	ND	0.2	mg/kg
1,1-Dichloropropene	ND	0.2	mg/kg
1,2,3-Trichlorobenzene	ND	0.2	mg/kg
1,2,3-Trichloropropane	ND	0.2	mg/kg
1,2,4-Trichlorobenzene	ND	0.2	mg/kg
1,2,4-Trimethylbenzene	ND	0.2	mg/kg
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.2	mg/kg
1,2-Dibromoethane (EDB)	ND	0.2	mg/kg
1,2-Dichlorobenzene	ND	0.2	mg/kg
1,2-Dichloroethane	ND	0.2	mg/kg
1,2-Dichloropropane	ND	0.2	mg/kg
1,3,5-Trimethylbenzene	ND	0.2	mg/kg
1,3-Dichlorobenzene	ND	0.2	mg/kg
1,3-Dichloropropane	ND	0.2	mg/kg
1,4-Dichlorobenzene	ND	0.2	mg/kg
2,2-Dichloropropane	ND	0.2	mg/kg
2-Butanone (MEK)	ND	2.0	mg/kg
2-Chlorotoluene	ND	0.2	mg/kg
4-Chlorotoluene	ND	0.2	mg/kg
4-Isopropyltoluene	ND	0.2	mg/kg
Benzene	ND	0.2	mg/kg
Bromobenzene	ND	0.2	mg/kg
Bromochloromethane	ND	0.2	mg/kg
Bromodichloromethane	ND	0.2	mg/kg
Bromoform	ND	0.2	mg/kg
Bromomethane	ND	0.2	mg/kg
Carbon Tetrachloride	ND	0.2	mg/kg
Chlorobenzene	ND	0.2	mg/kg

Continued

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LAB QA/QC
EPA METHOD 8260
METHOD BLANK

Date Analyzed: **11/05/96**
Lab ID: MBS96309
Matrix: Soil
Date Extracted: 11/04/96

Parameter	Result	PQL	Units
Continued			
Chloroethane	ND	0.2	mg/kg
Chloroform	ND	0.2	mg/kg
Chloromethane	ND	0.2	mg/kg
cis-1,2-Dichloroethene	ND	0.2	mg/kg
cis-1,3-Dichloropropene	ND	0.2	mg/kg
Dibromochloromethane	ND	0.2	mg/kg
Dibromomethane	ND	0.2	mg/kg
Dichlorodifluoromethane	ND	0.2	mg/kg
Ethylbenzene	ND	0.2	mg/kg
Hexachlorobutadiene	ND	0.2	mg/kg
Isopropylbenzene	ND	0.2	mg/kg
m,p-Xylene	ND	0.2	mg/kg
Methylene chloride	ND	1.0	mg/kg
n-Butylbenzene	ND	0.2	mg/kg
n-Propylbenzene	ND	0.2	mg/kg
Naphthalene	ND	0.2	mg/kg
o-Xylene	ND	0.2	mg/kg
sec-Butylbenzene	ND	0.2	mg/kg
Styrene	ND	0.2	mg/kg
tert-Butylbenzene	ND	0.2	mg/kg
Tetrachloroethene (PCE)	ND	0.2	mg/kg
Toluene	ND	0.2	mg/kg
trans-1,2-Dichloroethene	ND	0.2	mg/kg
Trichloroethene (TCE)	ND	0.2	mg/kg
Trichlorofluoromethane	ND	0.2	mg/kg
Vinyl Chloride	ND	0.2	mg/kg
Xylenes (total)	ND	0.2	mg/kg

Continued

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LAB QA/QC
EPA METHOD 8260
METHOD BLANK

Date Analyzed: **11/05/96**
Lab ID: MBS96309
Matrix: Soil
Date Extracted: 11/04/96

Parameter	Result	PQL	Units

Continued

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	99	80 - 120
Bromofluorobenzene	107	74 - 121
Toluene-d8	111	81 - 117

ND - Not Detected at Practical Quantitation Level (PQL)

Analyst E.A.

Reviewed CEB

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LAB QA/QC
EPA METHOD 8270
METHOD BLANK

Date Analyzed: 11/05/96
Lab ID: MBS96308
Matrix: Soil
Date Extracted: 11/05/96

Parameter	Result	PQL	Units
1,2,4-Trichlorobenzene	ND	1.0	mg/kg
1,2-Dichlorobenzene	ND	1.0	mg/kg
1,3-Dichlorobenzene	ND	1.0	mg/kg
1,4-Dichlorobenzene	ND	1.0	mg/kg
2,4,5-Trichlorophenol	ND	2.0	mg/kg
2,4,6-Trichlorophenol	ND	2.0	mg/kg
2,4-Dichlorophenol	ND	1.0	mg/kg
2,4-Dimethylphenol	ND	1.0	mg/kg
2,4-Dinitrophenol	ND	2.0	mg/kg
2,4-Dinitrotoluene	ND	1.0	mg/kg
2,6-Dinitrotoluene	ND	1.0	mg/kg
2-Chloronaphthalene	ND	1.0	mg/kg
2-Chlorophenol	ND	1.0	mg/kg
2-Methylnaphthalene	ND	1.0	mg/kg
2-Methylphenol	ND	1.0	mg/kg
2-Nitroaniline	ND	5.0	mg/kg
2-Nitrophenol	ND	1.0	mg/kg
3,3'-Dichlorobenzidine	ND	2.0	mg/kg
3-Methylphenol/4-Methylphenol	ND	1.0	mg/kg
3-Nitroaniline	ND	5.0	mg/kg
4,6-Dinitro-2-methylphenol	ND	5.0	mg/kg
4-Bromophenyl-phenylether	ND	1.0	mg/kg
4-Chloro-3-methylphenol	ND	2.0	mg/kg
4-Chloroaniline	ND	2.0	mg/kg
4-Chlorophenyl-phenylether	ND	1.0	mg/kg
4-Nitroaniline	ND	2.0	mg/kg
4-Nitrophenol	ND	2.0	mg/kg
Acenaphthene	ND	1.0	mg/kg
Acenaphthylene	ND	1.0	mg/kg
Anthracene	ND	1.0	mg/kg
Benzo(a)anthracene	ND	1.0	mg/kg
Benzo(a)pyrene	ND	1.0	mg/kg
Benzo(b)fluoranthene	ND	1.0	mg/kg

Continued

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LAB QA/QC
EPA METHOD 8270
METHOD BLANK

Date Analyzed: 11/05/96
Lab ID: MBS96308
Matrix: Soil
Date Extracted: 11/05/96

Parameter	Result	PQL	Units
Continued			
Benzo(g,h,i)perylene	ND	1.0	mg/kg
Benzo(k)fluoranthene	ND	1.0	mg/kg
Benzoic Acid	ND	5.0	mg/kg
Benzyl Alcohol	ND	2.0	mg/kg
bis(2-Chloroethoxy)methane	ND	1.0	mg/kg
bis(2-Chloroethyl)ether	ND	1.0	mg/kg
bis(2-Chloroisopropyl)ether	ND	1.0	mg/kg
bis(2-Ethylhexyl)phthalate	ND	5.0	mg/kg
Butylbenzylphthalate	ND	1.0	mg/kg
Chrysene	ND	1.0	mg/kg
Di-n-Butylphthalate	ND	5.0	mg/kg
Di-n-Octylphthalate	ND	5.0	mg/kg
Dibenz(a,h)anthracene	ND	1.0	mg/kg
Dibenzofuran	ND	1.0	mg/kg
Diethylphthalate	ND	1.0	mg/kg
Dimethylphthalate	ND	1.0	mg/kg
Fluoranthene	ND	1.0	mg/kg
Fluorene	ND	1.0	mg/kg
Hexachlorobenzene	ND	2.0	mg/kg
Hexachlorobutadiene	ND	2.0	mg/kg
Hexachlorocyclopentadiene	ND	1.0	mg/kg
Hexachloroethane	ND	2.0	mg/kg
Indeno(1,2,3-cd)pyrene	ND	1.0	mg/kg
Isophorone	ND	1.0	mg/kg
N-Nitrosodi-n-propylamine	ND	1.0	mg/kg
N-Nitrosodiphenylamine	ND	1.0	mg/kg
Naphthalene	ND	1.0	mg/kg
Nitrobenzene	ND	1.0	mg/kg
Pentachlorophenol	ND	5.0	mg/kg
Phenanthrene	ND	1.0	mg/kg
Phenol	ND	1.0	mg/kg
Pyrene	ND	1.0	mg/kg

Continued

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LAB QA/QC
EPA METHOD 8270
METHOD BLANK

Date Analyzed: **11/05/96**
Lab ID: MBS96308
Matrix: Soil
Date Extracted: 11/05/96

Parameter	Result	PQL	Units

Continued

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
2,4,6-Tribromophenol	73	19 - 122
2-Fluorobiphenyl	88	30 - 115
2-Fluorophenol	70	25 - 121
Nitrobenzene-d5	75	23 - 120
Phenol-d6	74	24 - 113
Terphenyl-d14	132	18 - 137

ND - Not Detected at Practical Quantitation Level (PQL)

Analyst _____ Reviewed _____

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LAB QA/QC
EPA METHOD 8260
MATRIX SPIKE / MATRIX SPIKE DUPLICATE SUMMARY

Date Analyzed: 11/05/96
Lab ID: 0596H09764
Matrix: Soil
Date Extracted: 11/04/96

Original Sample Parameters

Parameter	Spike Added (mg/kg)	Sample Result (mg/kg)	Spike Result (mg/kg)	MS Recovery %	QC Limits Rec.
1,1-Dichloroethene	12.5	0	8.0	64 *	75 - 145
Benzene	12.5	0	11	88	71 - 120
Chlorobenzene	12.5	0	11	88	76 - 127
Toluene	12.5	0	14	112	71 - 127
Trichloroethene (TCE)	12.5	0	9.7	78	75 - 130

Duplicate Sample Parameters

Parameter	Spike Added (mg/kg)	MSD Result (mg/kg)	MSD Recovery %	RPD %	QC Limits RPD	QC Limits Rec.
1,1-Dichloroethene	12.5	6.7	54 *	18	22	75 - 145
Benzene	12.5	8.8	70 *	22	24	71 - 120
Chlorobenzene	12.5	8.7	70 *	23 *	21	76 - 127
Toluene	12.5	10	80	33 *	21	71 - 127
Trichloroethene (TCE)	12.5	8.1	65 *	18	21	75 - 130

Note: Spike Recoveries are calculated using zero for Sample result if Sample result was less than PQL (Practical Quantitation Level).

Spike Recovery: 5 out of 10 outside QC limits.
RPD: 2 out of 5 outside QC limits.

Analyst F.D.

Reviewed CEB

Inter·Mountain Laboratories, Inc.

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LAB QA/QC
EPA METHOD 8270
MATRIX SPIKE / MATRIX SPIKE DUPLICATE SUMMARY

Date Analyzed: 11/05/96
Lab ID: 0596H09868
Matrix:
Date Extracted: 11/04/96

Original Sample Parameters

Parameter	Spike Added (mg/kg)	Sample Result (mg/kg)	Spike Result (mg/kg)	MS Recovery %	QC Limits Rec.
1,2,4-Trichlorobenzene	10	0	5.2	52	38 - 107
1,4-Dichlorobenzene	10	0	4.6	46	28 - 104
2,4-Dinitrotoluene	10	0	4.1	41	28 - 89
2-Chlorophenol	20	0	9.8	49	25 - 102
4-Chloro-3-methylphenol	20	0	10	50	26 - 103
4-Nitrophenol	20	0	5.1	26	11 - 114
Acenaphthene	10	0	6.0	60	31 - 137
N-Nitrosodi-n-propylamine	10	0	5.5	55	41 - 126
Pentachlorophenol	20	0	5.6	28	17 - 109
Phenol	20	0	10.5	53	26 - 90
Pyrene	10	0	5.0	50	35 - 142

Duplicate Sample Parameters

Parameter	Spike Added (mg/kg)	MSD Result (mg/kg)	MSD Recovery %	RPD %	QC Limits RPD	QC Limits Rec.
1,2,4-Trichlorobenzene	10	5.4	54	4	23	38 - 107
1,4-Dichlorobenzene	10	4.5	45	2	27	28 - 104
2,4-Dinitrotoluene	10	4.5	45	9	47	28 - 89
2-Chlorophenol	20	9.9	50	1	50	25 - 102
4-Chloro-3-methylphenol	20	9.6	48	4	33	26 - 103
4-Nitrophenol	20	5.2	26	2	50	11 - 114
Acenaphthene	10	6.0	60	0	19	31 - 137
N-Nitrosodi-n-propylamine	10	5.0	50	10	38	41 - 126
Pentachlorophenol	20	6.2	31	10	47	17 - 109
Phenol	20	10.4	52	1	35	26 - 90
Pyrene	10	4.7	47	6	36	35 - 142

Note: Spike Recoveries are calculated using zero for Sample result if Sample result was less than PQL (Practical Quantitation Level).

Spike Recovery: 0 out of 22 outside QC limits.
RPD: 0 out of 11 outside QC limits.

Analyst _____ Reviewed _____

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

LAB QA/QC
EPA METHOD 8260
LAB CONTROL SAMPLE

Date Analyzed: **11/05/96**
Lab ID: LCS96309A
Matrix: Soil
Date Extracted 11/04/96

Parameter	Spike Added (mg/kg)	Sample Result (mg/kg)	LCS Result (mg/kg)	LCS Recovery %	QC Limits Rec.
1,1,2-Trichloroethane	2.0	0	2.5	125	70 -130
1,2-Dibromoethane (EDB)	2.0	0	1.9	95	70 -130
1,2-Dichloroethane	2.0	0	2.2	110	70 -130
1,2-Dichloropropane	2.0	0	2.2	110	70 -130
1,4-Dichlorobenzene	2.0	0	2.5	125	70 -130
Benzene	2.0	0	2.3	115	70 -130
Bromoform	2.0	0	2.0	100	70 -130
Carbon Tetrachloride	2.0	0	1.9	95	70 -130
cis-1,3-Dichloropropene	2.0	0	2.1	105	70 -130
Tetrachloroethene (PCE)	2.0	0	2.0	100	70 -130
Trichloroethene (TCE)	2.0	0	1.9	95	70 -130
Vinyl Chloride	2.0	0	1.5	75	70 -130

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
1,2-Dichloroethane-d4	91	70 -130
Bromofluorobenzene	101	74 -121
Toluene-d8	104	81 -117

Spike Recovery: 0 out of 12 outside QC limits.
Surrogates: Surrogate Recoveries within QC Limits.

Analyst E.D.

Reviewed CRB

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59715

LAB QA/QC
EPA METHOD 8270
BLANK SPIKE / BLANK SPIKE DUPLICATE SUMMARY

Date Analyzed: 11/05/96
Lab ID: BSS96308
Matrix: Soil
Date Extracted: 11/04/96

Original Sample Parameters

Parameter	Spike Added (mg/kg)	Sample Result (mg/kg)	Spike Result (mg/kg)	BS Recovery %	QC Limits Rec.
1,2,4-Trichlorobenzene	10	0	6.6	66	38 - 107
1,4-Dichlorobenzene	10	0	6.5	65	28 - 104
2,4-Dinitrotoluene	10	0	8.5	85	28 - 89
2-Chlorophenol	20	0	14.4	72	25 - 102
4-Chloro-3-methylphenol	20	0	15.7	79	26 - 103
4-Nitrophenol	20	0	15.8	79	11 - 114
Acenaphthene	10	0	7.4	74	31 - 137
N-Nitrosodi-n-propylamine	10	0	7.3	73	41 - 126
Pentachlorophenol	20	0	13.6	68	17 - 109
Phenol	20	0	12.9	65	26 - 90
Pyrene	10	0	13.6	136	35 - 142

Duplicate Sample Parameters

Parameter	Spike Added (mg/kg)	BSD Result (mg/kg)	BSD Recovery %	RPD %	QC Limits RPD	QC Limits Rec.
1,2,4-Trichlorobenzene	10	7.0	70	6	23	38 - 107
1,4-Dichlorobenzene	10	6.8	68	5	27	28 - 104
2,4-Dinitrotoluene	10	8.5	85	0	47	28 - 89
2-Chlorophenol	20	15.4	77	7	50	25 - 102
4-Chloro-3-methylphenol	20	17.4	87	10	33	26 - 103
4-Nitrophenol	20	17.4	87	10	50	11 - 114
Acenaphthene	10	8.0	80	8	19	31 - 137
N-Nitrosodi-n-propylamine	10	7.6	76	4	38	41 - 126
Pentachlorophenol	20	15.3	77	12	47	17 - 109
Phenol	20	13.1	66	2	35	26 - 90
Pyrene	10	13.4	134	1	36	35 - 142

Note: Spike Recoveries are calculated using zero for Sample result if Sample result was less than PQL (Practical Quantitation Level).

Spike Recovery: 0 out of 22 outside QC limits.
RPD: 0 out of 11 outside QC limits.

Analyst _____

Reviewed _____

Inter- Mountain Laboratories, Inc.

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location
GIANT REFINING CO.	CINIZA

Sampler: (Signature)	Chain of Custody Tape No.
[signature]	

ANALYSES / PARAMETERS

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	8260 8270 TOTAL METALS	XYLENES	ETHYL BENZENE	TOLUENE	Remarks
RFI1301A6	10/23/96	1345		Soil	3	X				
RFI1302A6	10/23/96	1445		Soil	3	X				
RFI1303A6	10/23/96	1415		Soil	3	X				
RFI0103B4	10/23/96	1320		Soil	1		X		X	
RFI0104E4	10/23/96	1245		Soil	1		X	X		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	10/24/96	0900			
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time

Inter-Mountain Laboratories, Inc.

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