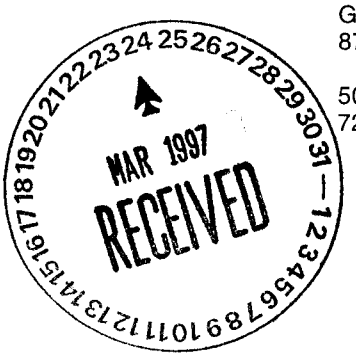
GIANT
REFINING CO.

Route 3, Box 7
Gallup, New Mexico
87301

505.
722.3833

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

RE: Bi-Monthly and Semi-Annual Land Treatment Sampling Analytical Results - October, 1996 - Permit No. NMD 0000333211-2

Dear Mr. Garcia::

In accordance with the requirements set out in Giant's Land Treatment Unit Characterization Plan and Hazardous Waste Facility Permit, attached are the analytical results for the soil sampling event scheduled for October, 1996.

The October, 1996 Bi-Monthly and Semi -Annually sampling of the Land Treatment Unit was delayed due to wet weather which prevented access to the area. Giant notified your office by letter on November 25, 1996 of this problem. Sampling of the ZOI (Zone of Incorporation) and the BTZ (Below Treatment Zone) was done on 2/18/97. No hazardous waste contaminants were detected.

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

Sincerely,

Dorinda Mancini
Environmental Manager, Ciniza Refinery

cc: w/o attachments
Dick Platt, Refinery Manager
Dave Pavlich, HSE Manager
Steve Morris, Environmental Specialist

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

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

Client: **GIANT REFINING COMPANY**
Sample ID: BTZ-1-89
Project ID: Ciniza
Lab ID: B970824
Matrix: Soil

Date Reported: 03/12/97
Date Sampled: 02/18/97
Date Received: 02/20/97
Date Extracted: 03/10/97
Date Analyzed: 03/12/97

Parameter	Result	PQL	Units
m,p-Cresol	ND	1.0	mg/kg
o-Cresol	ND	1.0	mg/kg
1-Methylnaphthalene	ND	1.0	mg/kg
Benzo(a)pyrene	ND	1.0	mg/kg
Chrysene	ND	1.0	mg/kg
Phenanthrene	ND	1.0	mg/kg
Pyrene	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
2,4,6-Tribromophenol	73	19 - 122
2-Fluorobiphenyl	61	30 - 115
2-Fluorophenol	47	25 - 121
Nitrobenzene-d5	49	23 - 120
Phenol-d6	62	24 - 113
Terphenyl-d14	60	18 - 137

ND - Not Detected at Practical Quantitation Level (PQL)
Sample was re-extracted due to QC failure. First extracted on 02/21/97.

Reference: Method 8270B, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1994.

Analyst _____ **Reviewed** _____

Inter-Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

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

Client: **GIANT REFINING COMPANY**
Sample ID: BTZ-2-168
Project ID: Ciniza
Lab ID: B970825
Matrix: Soil

Date Reported: 03/12/97
Date Sampled: 02/18/97
Date Received: 02/20/97
Date Extracted: 03/10/97
Date Analyzed: 03/12/97

Parameter	Result	PQL	Units
m,p-Cresol	ND	1.0	mg/kg
o-Cresol	ND	1.0	mg/kg
1-Methylnaphthalene	ND	1.0	mg/kg
Benzo(a)pyrene	ND	1.0	mg/kg
Chrysene	ND	1.0	mg/kg
Phenanthrene	ND	1.0	mg/kg
Pyrene	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
2,4,6-Tribromophenol	72	19 - 122
2-Fluorobiphenyl	58	30 - 115
2-Fluorophenol	45	25 - 121
Nitrobenzene-d5	47	23 - 120
Phenol-d6	58	24 - 113
Terphenyl-d14	63	18 - 137

ND - Not Detected at Practical Quantitation Level (PQL)
Sample was re-extracted due to QC failure. First extracted on 02/21/97.

Reference: Method 8270B, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1994.

Analyst _____ **Reviewed** _____

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

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

Client:	**GIANT REFINING COMPANY**		
Sample ID:	BTZ-3-186	Date Reported:	03/12/97
Project ID:	Ciniza	Date Sampled:	02/18/97
Lab ID:	B970826	Date Received:	02/20/97
Matrix:	Soil	Date Extracted:	03/10/97
		Date Analyzed:	03/12/97

Parameter	Result	PQL	Units
m,p-Cresol	ND	1.0	mg/kg
o-Cresol	ND	1.0	mg/kg
1-Methylnaphthalene	ND	1.0	mg/kg
Benzo(a)pyrene	ND	1.0	mg/kg
Chrysene	ND	1.0	mg/kg
Phenanthrene	ND	1.0	mg/kg
Pyrene	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
2,4,6-Tribromophenol	70	19 - 122
2-Fluorobiphenyl	58	30 - 115
2-Fluorophenol	51	25 - 121
Nitrobenzene-d5	62	23 - 120
Phenol-d6	54	24 - 113
Terphenyl-d14	59	18 - 137

ND - Not Detected at Practical Quantitation Level (PQL)
Sample was re-extracted due to QC failure. First extracted on 02/21/97.

Reference: Method 8270B, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1994.

Analyst _____ **Reviewed** _____

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

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

Client: **GIANT REFINING COMPANY**
Sample ID: BTZ-3-27
Project ID: Ciniza
Lab ID: B970827
Matrix: Soil

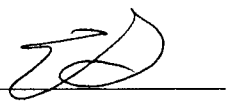
Date Reported: 03/12/97
Date Sampled: 02/18/97
Date Received: 02/20/97
Date Extracted: 03/10/97
Date Analyzed: 03/12/97

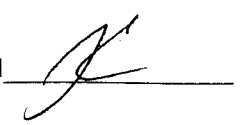
Parameter	Result	PQL	Units
m,p-Cresol	ND	1.0	mg/kg
o-Cresol	ND	1.0	mg/kg
1-Methylnaphthalene	ND	1.0	mg/kg
Benzo(a)pyrene	ND	1.0	mg/kg
Chrysene	ND	1.0	mg/kg
Phenanthrene	ND	1.0	mg/kg
Pyrene	ND	1.0	mg/kg

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
2,4,6-Tribromophenol	70	19 - 122
2-Fluorobiphenyl	62	30 - 115
2-Fluorophenol	56	25 - 121
Nitrobenzene-d5	60	23 - 120
Phenol-d6	66	24 - 113
Terphenyl-d14	59	18 - 137

ND - Not Detected at Practical Quantitation Level (PQL)
Sample was re-extracted due to QC failure. First extracted on 02/21/97.

Reference: Method 8270B, Gas Chromatography/Mass Spectrometry for Semivolatile Organics, Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1994.

Analyst 

Reviewed 

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

QUALITY ASSURANCE / QUALITY CONTROL

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

LAB QA/QC
EPA METHOD 8270
METHOD BLANK

Date Analyzed: 03/12/97
Lab ID: MBS97069
Matrix: Soil
Date Extracted: 03/10/97

Parameter	Result	PQL	Units
1,2,4-Trichlorobenzene	ND	1.0	mg/kg
1,4-Dichlorobenzene	ND	1.0	mg/kg
1-Methylnaphthalene	ND	1.0	mg/kg
2,4-Dinitrotoluene	ND	1.0	mg/kg
2-Chlorophenol	ND	1.0	mg/kg
4-Chloro-3-methylphenol	ND	2.0	mg/kg
4-Nitrophenol	ND	5.0	mg/kg
Acenaphthene	ND	1.0	mg/kg
Benzo(a)pyrene	ND	1.0	mg/kg
Chrysene	ND	1.0	mg/kg
N-Nitrosodi-n-propylamine	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	67	19 - 122
2-Fluorobiphenyl	55	30 - 115
2-Fluorophenol	47	25 - 121
Nitrobenzene-d5	46	23 - 120
Phenol-d6	59	24 - 113
Terphenyl-d14	63	18 - 137

Analyst _____

Reviewed _____

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

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

Date Analyzed: **03/12/97**
Lab ID: BSS97069
Matrix: Soil
Date Extracted: 03/10/97

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	5.2	52	38 - 107
1,4-Dichlorobenzene	10	0	5.1	51	28 - 104
2,4-Dinitrotoluene	10	0	8.4	84	28 - 89
2-Chlorophenol	20	0	8.7	44	25 - 102
4-Chloro-3-methylphenol	20	0	10.1	51	26 - 103
4-Nitrophenol	20	0	11	55	11 - 114
Acenaphthene	10	0	6.2	62	31 - 137
N-Nitrosodi-n-propylamine	10	0	7.2	72	41 - 126
Pentachlorophenol	20	0	10.8	54	17 - 109
Phenol	20	0	8.6	43	26 - 90
Pyrene	10	0	7.5	75	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	6.4	64	21		23	38 - 107
1,4-Dichlorobenzene	10	6.9	69	30	*	27	28 - 104
2,4-Dinitrotoluene	10	8.8	88	5		47	28 - 89
2-Chlorophenol	20	10.6	53	20		50	25 - 102
4-Chloro-3-methylphenol	20	11.2	56	10		33	26 - 103
4-Nitrophenol	20	11.8	59	7		50	11 - 114
Acenaphthene	10	6.8	68	9		19	31 - 137
N-Nitrosodi-n-propylamine	10	8.4	84	15		38	41 - 126
Pentachlorophenol	20	11.8	59	9		47	17 - 109
Phenol	20	9.6	48	11		35	26 - 90
Pyrene	10	8.0	80	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: 1 out of 11 outside QC limits.

Analyst _____ **Reviewed** _____

Inter·Mountain Laboratories, Inc.

1160 Research Drive
Bozeman, Montana 59718

LAB QA/QC
EPA METHOD 8270
MATRIX SPIKE

Date Analyzed: **03/12/97**
Lab ID: 0597H00824 SK1
Matrix: Soil
Date Extracted: 03/10/97

Parameter	Spike Added (mg/kg)	Sample Result (mg/kg)	Spike Result (mg/kg)	MS Recovery %	QC Limits Rec.
1,2,4-Trichlorobenzene	10	0	5.4	54	38 -107
1,4-Dichlorobenzene	10	0	4.7	47	28 -104
2,4-Dinitrotoluene	10	0	8.9	89	28 - 89
2-Chlorophenol	20	0	8.6	43	25 -102
4-Chloro-3-methylphenol	20	0	11.4	57	26 -103
4-Nitrophenol	20	0	12	60	11 -114
Acenaphthene	10	0	6.8	68	31 -137
N-Nitrosodi-n-propylamine	10	0	8.2	82	41 -126
Pentachlorophenol	20	0	12.2	61	17 -109
Phenol	20	0	9.1	46	26 - 90
Pyrene	10	0	8.2	82	35 -142

QUALITY CONTROL - Surrogate Recovery	%	QC Limits
2,4,6-Tribromophenol	77	19 -122
2-Fluorobiphenyl	63	30 -115
2-Fluorophenol	44	25 -121
Nitrobenzene-d5	55	23 -120
Phenol-d6	55	24 -113
Terphenyl-d14	62	18 -137

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 11 outside QC limits.

Analyst _____ **Reviewed** _____

imi
Inter- Mountain
Laboratories, Inc.

CHAIN OF CUSTODY RECORD

Client/Project Name		Project Location	ANALYSES / PARAMETERS
GIANT Refinery	RCRA LTA Soil Samples	CINIZA	
Sampler: (Signature)		Chain of Custody Tape No.	

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	8270	Remarks
BTZ-1-89	2/18/97	0715	B9700824	Soil	1	X	SEMIVOLS (8270 — O-Cresol
BTZ-2-168	2/18/97	0800	B9700825	"	1	X	M+P-Cresol
BTZ-3-186	2/18/97	0830	B9700826	"	1	X	Pyrene
BTZ-3-27	2/18/97	0900	B9700827	"	1	X	Phenanthrene
							1-Methylnaphthalene
							Benzo (A) Pyrene
							Chrysene

NOTE: ~~THESE SAMPLES WERE NOT RECEIVED. CONTACTED CLIENT. HE WILL~~ SM
~~CHECK IMF AND SEE IF PERHAPS THEY WERE INCLUDED IN A COOLER SENT~~ SM
~~TO THEM. HE WILL CALL TO LET US KNOW THE STATUS.~~ SM
SAMPLES WERE FOUND UNDER A LAYER OF STYRAFOAM AT BOTTOM OF COOLER SM

ON ICE
< 4°C

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	2/19/97	0900	SM		
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by laboratory: (Signature)	Date	Time
FEDEX (Carrier)			[signature]	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

43577

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TOTAL OIL AND GREASE
EPA METHOD 413.2

Client: **Giant Refining**
Project: RCRA LTA
Matrix: soil
Condition: Intact/Cool

Date Reported: 03/06/97
Date Sampled: 02/18/97
Date Received: 02/20/97
Date Extracted: 03/05/97
Date Analyzed: 03/05/97

Sample ID	Lab ID	Result (mg/kg)	Detection Limit (mg/kg)
ZOI-1-89	0397G00246	ND	20.0
ZOI-2-168	0397G00247	ND	19.7
ZOI-3-186	0397G00248	ND	20.0
ZOI-3-27	0397G00249	ND	19.7

ND - Analyte not detected at stated detection level.

References:

Method 413.2: Oil And Grease, Total Recoverable, USEPA Chemical Analysis of Water and Waste, 1978.

Method 3550: Ultrasonic Extraction of Non-Volatile and Semi-Volatile Organic Compounds from Solids, USEPA SW-846, Sept. 1986.

Analyst: _____

Reviewed: SB

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

TOTAL OIL AND GREASE
Quality Assurance/Quality Control

Client: **Giant Refining**
Project: RCRA LTA
Matrix: soil
Condition: Intact/Cool

Date Reported: 03/06/97
Date Sampled: 02/18/97
Date Received: 02/20/97
Date Extracted: 03/05/97
Date Analyzed: 03/05/97

Duplicate Analysis

Lab ID	Sample Result	Duplicate Result	Units	% Difference
G00249	ND	ND	mg/Kg	NA

Method Blank Analysis

Lab ID	Result	Units	Detection Limit
MB	ND	mg/Kg	19.7

Spike Analysis

Lab ID	Found Conc. mg/Kg	Sample Conc. mg/Kg	Spike Amount mg/Kg	Percent Recovery	Acceptance Limits
MB	54.5	0.0	52.5	104%	70-130%

Known Analysis

Lab ID	Found Conc. mg/Kg	Known Conc. mg/Kg	Percent Recovery	Acceptance Limits
QC	24.6	25.2	98%	70-130%

References:

Method 413.2: Oil And Grease, Total Recoverable, USEPA Chemical Analysis of Water and Waste, 1978.

Method 3550: Ultrasonic Extraction of Non-Volatile and Semi-Volatile Organic Compounds from Solids, USEPA SW-846, Sept. 1986.

Analyst: _____

Reviewed: _____

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

VOLATILE AROMATIC HYDROCARBONS

Giant Refining Company

Project ID:	RCRA LTA	Report Date:	03/06/97
Sample ID:	BTZ-1-89	Date Sampled:	02/19/97
Lab ID:	0397G00250	Date Received:	02/20/97
Sample Matrix:	soil	Date Extracted:	NA
Condition:	Cool/Intact	Date Analyzed:	02/25/97

Target Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	ND	10.0
Toluene	ND	10.0
Ethylbenzene	ND	10.0
m,p-Xylenes	ND	10.0
o-Xylene	ND	10.0

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Bromofluorobenzene	135%*	70%-130%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

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

Analyst

Review

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

VOLATILE AROMATIC HYDROCARBONS

Giant Refining Company

Project ID:	RCRA LTA	Report Date:	03/06/97
Sample ID:	BTZ-2-168	Date Sampled:	02/19/97
Lab ID:	0397G00251	Date Received:	02/20/97
Sample Matrix:	soil	Date Extracted:	NA
Condition:	Cool/Intact	Date Analyzed:	02/25/97

Target Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	ND	9.9
Toluene	ND	9.9
Ethylbenzene	ND	9.9
m,p-Xylenes	ND	9.9
o-Xylene	ND	9.9

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Bromofluorobenzene	138%*	70%-130%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

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

Analyst

Review

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

VOLATILE AROMATIC HYDROCARBONS

Giant Refining Company

Project ID:	RCRA LTA	Report Date:	03/06/97
Sample ID:	BTZ-3-186	Date Sampled:	02/19/97
Lab ID:	0397G00252	Date Received:	02/20/97
Sample Matrix:	soil	Date Extracted:	NA
Condition:	Cool/Intact	Date Analyzed:	02/25/97

Target Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	ND	10.0
Toluene	ND	10.0
Ethylbenzene	ND	10.0
m,p-Xylenes	ND	10.0
o-Xylene	ND	10.0

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Bromofluorobenzene	130%	70%-130%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

VOLATILE AROMATIC HYDROCARBONS

Giant Refining Company

Project ID:	RCRA LTA	Report Date:	03/06/97
Sample ID:	BTZ-3-27	Date Sampled:	02/19/97
Lab ID:	0397G00253	Date Received:	02/20/97
Sample Matrix:	soil	Date Extracted:	NA
Condition:	Cool/Intact	Date Analyzed:	02/25/97

Target Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	ND	10.0
Toluene	ND	10.0
Ethylbenzene	ND	10.0
m,p-Xylenes	ND	10.0
o-Xylene	ND	10.0

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Bromofluorobenzene	122%	70%-130%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

VOLATILE AROMATIC HYDROCARBONS
QUALITY CONTROL REPORT

Duplicate Analysis

Lab ID: 0397G00250
Sample Matrix: soil
Condition: Cool/Intact

Report Date: 03/06/97
Date Analyzed: 02/25/97

Target Analyte	Duplicate Concentration (ppb)	Original Concentration (ppb)	% Difference
Benzene	ND	ND	NA
Toluene	ND	ND	NA
Ethylbenzene	ND	ND	NA
m,p-Xylenes	ND	ND	NA
o-Xylene	ND	ND	NA

ND - Analyte not detected at the stated detection limit.
NA - Not applicable or not calculated.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Bromofluorobenzene	134%	70 -130%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

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

Analyst

Review

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

VOLATILE AROMATIC HYDROCARBONS
QUALITY CONTROL REPORT

Matrix Spike Analysis

Lab ID: MB
Sample Matrix: water
Condition: Cool/Intact

Report Date: 03/06/97
Date Analyzed: 02/25/97

Target Analyte	Spiked Sample Result in ng	Sample result in ng	Spike Added (ng)	% Recovery	Acceptance Limits (%)
Benzene	20.49	0.12	20.0	102%	70-130
Toluene	20.43	0.23	20.0	101%	70-130
Ethylbenzene	20.11	0.00	20.0	101%	70-130
m,p-Xylenes	39.98	0.13	40.0	100%	70-130
o-Xylene	20.36	0.00	20.0	102%	70-130

ND - Analyte not detected at the stated detection limit.
NA - Not applicable or not calculated.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Bromofluorobenzene	108%	70 -130%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Revi

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

VOLATILE AROMATIC HYDROCARBONS
QUALITY CONTROL REPORT

Method Blank Analysis

Sample Matrix: Water
Lab ID: MB

Report Date: 03/06/97
Date Analyzed: 02/25/97

Target Analyte	Concentration (ppb)	Detection Limit (ppb)
Benzene	ND	0.2
Toluene	ND	0.2
Ethylbenzene	ND	0.2
m,p-Xylenes	ND	0.2
o-Xylene	ND	0.2

ND - Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	Percent Recovery	Acceptance Limits
Bromofluorobenzene	90%	70-130%

Reference: Method 5030, Purge and Trap; Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst

Review

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Quality Control / Quality Assurance

Known Analysis
BTEX

Client: Giant Refining Company
Project: RCRA LTA

Date Reported: 03/06/97
Date Analyzed: 02/25/97

Known Analysis

Parameter	Found Concentration (ppb)	Known Concentration (ppb)	Percent Recovery	Acceptance Limits
Benzene	4.6	4.0	114%	70-130%
Toluene	4.3	4.0	107%	70-130%
Ethylbenzene	4.2	4.0	105%	70-130%
m + p-Xylene	8.7	8.0	108%	70-130%
o-Xylene	4.3	4.0	108%	70-130%

Quality Control:	Surrogate	Percent Recovery	Acceptance Limits
	Bromofluorobenzene	107%	75-125%

Reference: Method 5030, Purge and Trap: Method 8020, Aromatic Volatile Organics; Test Methods for Evaluating Solid Wastes, SW-846, United States Environmental Protection Agency, September 1986.

Comments:

Analyst _____

Reviewed by _____

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Company**
Project:	RCRA LTA
Sample ID:	ZOI-1-89
Laboratory ID:	0397G00246
Sample Matrix:	Soil
Condition:	Cool/Intact

Date Reported: 3/18/97
Date Sampled: 2/18/97
Time Sampled: 7:15
Date Received: 2/20/97

Parameter	Analytical Result	Units
Paste pH.....	7.5	s.u.
Total Organic Carbon(TOC).....	11.8	mg/L
Total Phosphorus.....	0.13	mg/L
Total Kjeldahl Nitrogen (TKN).....	0.04	%

Comments:

Reported by _____

Reviewed by _____

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Company**		
Project:	RCRA LTA	Date Reported:	3/18/97
Sample ID:	ZOI-2-168	Date Sampled:	2/18/97
Laboratory ID:	0397G00247	Time Sampled:	7:15
Sample Matrix:	Soil	Date Received:	2/20/97
Condition:	Cool/Intact		

Parameter	Analytical Result	Units
Paste pH.....	7.7	s.u.
Total Organic Carbon(TOC).....	11.8	mg/L
Total Phosphorus.....	0.16	mg/L
Total Kjeldahl Nitrogen(TKN).....	0.03	%

Comments:

Reported by _____

Reviewed by _____

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Company**		
Project:	RCRA LTA	Date Reported:	3/18/97
Sample ID:	ZOI-3-186	Date Sampled:	2/18/97
Laboratory ID:	0397G00248	Time Sampled:	8:00
Sample Matrix:	Soil	Date Received:	2/20/97
Condition:	Cool/Intact		

Parameter	Analytical Result	Units
Paste pH.....	7.7	s.u.
Total Organic Carbon(TOC).....	11.8	mg/L
Total Phosphorus.....	0.30	mg/L
Total Kjeldahl Nitrogen(TKN).....	0.04	%

Comments:

Reported by _____

Reviewed by _____

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Company**		
Project:	RCRA LTA	Date Reported:	3/18/97
Sample ID:	ZOI-3-27	Date Sampled:	2/18/97
Laboratory ID:	0397G00249	Time Sampled:	8:00
Sample Matrix:	Soil	Date Received:	2/20/97
Condition:	Cool/Intact		

Parameter	Analytical Result	Units
Paste pH.....	7.8	s.u.
Total Organic Carbon(TOC).....	11.8	mg/L
Total Phosphorus.....	0.18	mg/L
Total Kjeldahl Nitrogen(TKN).....	0.04	%

Comments:

Reported by _____

Reviewed by _____

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client: **Giant Refining Company**
Project: RCRA LTA
Sample ID: BTZ-1-89
Laboratory ID: 0397G00250
Sample Matrix: Soil
Condition: Cool/Intact

Date Reported: 3/18/97
Date Sampled: 2/18/97
Time Sampled: 8:30
Date Received: 2/20/97

Parameter	Analytical Result	Units
Paste pH.....	7.6	s.u.
Total Organic Carbon(TOC).....	12.0	mg/L
% Moisture.....	13.0	%

Comments:

Reported by

Reviewed by

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client: **Giant Refining Company**
Project: RCRA LTA
Sample ID: BTZ-2-168
Laboratory ID: 0397G00251
Sample Matrix: Soil
Condition: Cool/Intact

Date Reported: 3/6/97
Date Sampled: 2/18/97
Time Sampled: 8:30
Date Received: 2/20/97

Parameter	Analytical Result	Units
Paste pH.....	7.6	s.u.
Total Organic Carbon(TOC).....	12.0	mg/L
% Moisture.....	13.8	%

Comments:

Reported by _____

Reviewed by _____

Inter-Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client:	**Giant Refining Company**		
Project:	RCRA LTA	Date Reported:	3/18/97
Sample ID:	BTZ-3-186	Date Sampled:	2/18/97
Laboratory ID:	0397G00252	Time Sampled:	9:00
Sample Matrix:	Soil	Date Received:	2/20/97
Condition:	Cool/Intact		

Parameter	Analytical Result	Units
Paste pH.....	7.9	s.u.
Total Organic Carbon(TOC).....	12.0	mg/L
% Moisture.....	11.5	%

Comments:

Reported by _____

Reviewed by _____

Inter·Mountain Laboratories, Inc.

2506 W. Main Street
Farmington, New Mexico 87401

Client: **Giant Refining Company**
Project: RCRA LTA
Sample ID: BTZ-3-27
Laboratory ID: 0397G00253
Sample Matrix: Soil
Condition: Cool/Intact

Date Reported: 3/18/97
Date Sampled: 2/18/97
Time Sampled: 9:00
Date Received: 2/20/97

Parameter	Analytical Result	Units
Paste pH.....	7.8	s.u.
Total Organic Carbon(TOC).....	12.0	mg/L
% Moisture.....	18.9	%

Comments:

Reported by _____

Reviewed by _____

CHAIN OF CUSTODY RECORD

Inter- Mountain Laboratories, Inc.

Client/Project Name		Project Location
GIANT Refinery	RCRA LTA Soil Samples	CINIZA

Sampler: (Signature) Steve Monds

Chain of Custody Tape No.

Sample No./ Identification	Date	Time	Lab Number	Matrix	No. of Containers	PH C:N:P RATIO	Soil Grease	BTEX-8020 % Moisture TOC	PH	Remarks
ZOI-1-89	2/18/97	0715		Soil	2	✓	✓			If any questions please call Dorinda or myself. Thanks Steve
BTZ-1-89	"	0715		"	2			✓	✓	
ZOI-2-168	"	0800		"	2	✓	✓			
BTZ-2-168	"	0800		"	2			✓	✓	
ZOI-3-186	"	0830		"	2	✓	✓			
BTZ-3-186	"	0830		"	2			✓	✓	
ZOI-3-27	"	0900		"	2	✓	✓			
BTZ-3-27	"	0900		"	2			✓	✓	

Cond + int. ?

	Date	Time		Date	Time
Relinquished by: (Signature) Steve Monds	2/19/97	0945	Received by: (Signature) Chris Roymer	2-20-97	1125
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.

☐ 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 59718, Telephone (406) 586-8450

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

43576