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**iml**  
Inter-Mountain  
Laboratories, Inc.

2506 West Main Street  
Farmington, New Mexico 87401  
Tel. (505) 326-4737

Lynn Shelton  
Giant Refining Company  
P.O. Box 159  
Bloomfield, NM 87413

9 June 1997

Mr. Shelton:

Enclosed please find the reports for the samples received by our laboratory for analysis on May 30, 1997.

If you have any questions about the results of the analyses, please don't hesitate to call at your convenience.

Sincerely,

Sharon Williams  
Organic Analyst

Enclosures

xc: File

## Giant Refining Company

### Case Narrative

On May 30, 1997, three water samples were submitted to Inter-Mountain Laboratories - Farmington for analysis. The samples were received intact. Analyses for Benzene-Toluene-Ethylbenzene-Xylenes (BTEX) were performed on the samples as per the accompanying Chain of Custody document.

BTEX analysis on the samples were performed by EPA Method 5030, Purge and Trap, and EPA Method 8020, Aromatic Volatile Hydrocarbons, using an OI Analytical 4560 Purge and Trap and a Hewlett-Packard 5890 Gas Chromatograph, equipped with a photoionization detector.

It is the policy of this laboratory to employ, whenever possible, preparatory and analytical methods which have been approved by regulatory agencies. The method used in the analyses of the samples reported herein are found in Test Methods for Evaluation of Solid Waste, SW-846, USEPA, 1986 and Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, USEPA, 1983.

Quality control reports appear at the end of the analytical packages and may be identified by title. If there are any questions regarding the information presented in this package, please feel free to call at your convenience.

Sincerely,



Sharon Williams  
Organic Analyst

**EPA METHOD 8020  
AROMATIC VOLATILE COMPOUNDS  
BETX**

Client: **GIANT REFINING COMPANY**

Sample ID: River-B

Project ID: Bloomfield, NM

Lab ID: B972878

Matrix: Water

0397G00951

Date Reported: 06/05/97

Date Sampled: 05/20/97

Date Received: 06/03/97

Date Extracted: NA


Date Analyzed: 06/03/97

Parameter	Result	PQL	Units
Benzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
m,p-Xylene	ND	1.0	ug/L
o-Xylene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
<b>QUALITY CONTROL - Surrogate Recovery</b>	<b>%</b>	<b>QC Limits</b>	
Fluorobenzene	95	40 - 140	

ND - Not Detected at Practical Quantitation Level (PQL)

**Reference:** Method 8020, Volatile Organic Compounds, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, United States Environmental Protection Agency, SW-846, Volume IB, September 1994. Analysis Method: Gas Chromatograph / Purge and Trap / PID.

Analyst SD

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**EPA METHOD 8020  
AROMATIC VOLATILE COMPOUNDS  
BETX**

1160 Research Drive  
Bozeman, Montana 59718

Client: **GIANT REFINING COMPANY**

Sample ID: River-B

Project ID: Bloomfield, NM

Lab ID: B972879

Matrix: Water

0397G00952

Date Reported: 06/05/97

Date Sampled: 05/29/97

Date Received: 06/03/97

Date Extracted: NA


Date Analyzed: 06/03/97

Parameter	Result	PQL	Units
Benzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
m,p-Xylene	ND	1.0	ug/L
o-Xylene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
<b>QUALITY CONTROL - Surrogate Recovery</b>	<b>%</b>	<b>QC Limits</b>	
Fluorobenzene	103	40 - 140	

ND - Not Detected at Practical Quantitation Level (PQL)

**Reference:** Method 8020, Volatile Organic Compounds, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, United States Environmental Protection Agency, SW-846, Volume IB, September 1994. Analysis Method: Gas Chromatograph / Purge and Trap / PID.

Analyst SD

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**QUALITY ASSURANCE / QUALITY CONTROL**


**LAB QA/QC  
EPA METHOD 8020  
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Date Analyzed: 06/03/97  
Lab ID: IBW97154A  
Matrix: Water

Parameter	Result	PQL	Units
Benzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
m,p-Xylene	ND	1.0	ug/L
Methyl tert-butyl Ether (MTBE)	ND	1.0	ug/L
o-Xylene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L

ND - Not Detected at Practical Quantitation Level (PQL)

Analyst SD

Reviewed 

**LAB QA/QC  
EPA METHOD 8020  
MATRIX SPIKE / MATRIX SPIKE DUPLICATE SUMMARY**

Date Analyzed: 06/03/97  
Lab ID: 0597H02878  
Matrix: Water

**Original Sample Parameters**

Parameter	Spike Added (ug/L)	Sample Result (ug/L)	Spike Result (ug/L)	MS Recovery %	QC Limits Rec.
Methyl tert-butyl Ether (MTBE)	10	0	12.5	125	43 -191
Benzene	10	0	11.3	113	74 -140
Ethylbenzene	10	0	10.9	109	82 -141
m,p-Xylene	20	0	22.5	113	52 -171
o-Xylene	10	0	11.3	113	81 -144
Toluene	10	0	11.3	113	81 -137

**Duplicate Sample Parameters**

Parameter	Spike Added (ug/L)	MSD Result (ug/L)	MSD Recovery %	RPD %	QC Limits RPD Rec.
Methyl tert-butyl Ether (MTBE)	10	11.6	116	7	25 43 -191
Benzene	10	10.5	105	7	25 74 -140
Ethylbenzene	10	9.4	94	15	25 82 -141
m,p-Xylene	20	19.2	96	16	25 52 -171
o-Xylene	10	9.8	98	14	25 81 -144
Toluene	10	10.1	101	11	25 81 -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 12 outside QC limits.

**RPD:** 0 out of 6 outside QC limits.

Analyst CP

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**LAB QA/QC  
EPA METHOD 8020  
LAB CONTROL SAMPLE**

Date Analyzed: 06/03/97  
Lab ID: LCW97154A  
Matrix: Water

Parameter	Spike Added (ug/L)	Sample Result (ug/L)	LCS Result (ug/L)	LCS Recovery %	QC Limits Rec.
Methyl tert-butyl Ether (MTBE)	10	0	11.3	113	76 -132
Benzene	10	0	10.1	101	82 -132
Ethylbenzene	10	0	9.8	98	86 -126
m,p-Xylene	20	0	20.2	101	72 -148
o-Xylene	10	0	10.1	101	86 -126
Toluene	10	0	9.9	99	87 -126

Spike Recovery: 0 out of 6 outside QC limits.

Analyst sb

Reviewed 





# CHAIN OF CUSTODY RECORD

Client/Project Name <i>GIANT MINING CO - PLOO, HFIELD REFINERY</i>			Project Location			<b>ANALYSES / PARAMETERS</b>				
Sampler: (Signature) <i>Lynn Shetter</i>			Chain of Custody Tape No.							
Sample No./ Identification	Date	OR Time	Lab Number	Matrix	No. of Containers	BTEX				
<i>RIVER-B</i>	<i>5/20/97</i>	<i>2:25</i>		<i>H<sub>2</sub>O</i>	<i>* 2</i>	<i>x</i>				<i>* BOTTLE BROKE DURING HANDLING - CAN NOT DUPLICATE</i>
<i>RIVER-B</i>	<i>5/29/97</i>	<i>8:05</i>		<i>H<sub>2</sub>O</i>	<i>2</i>	<i>x</i>				<i>CAN NOT DUPLICATE</i>
<i>NOWP-E</i>	<i>5-30-97</i>	<i>11:20</i>		<i>H<sub>2</sub>O</i>	<i>2</i>	<i>x</i>				<i>Broken bottle is River-B taken 5-29-97</i>
Relinquished by: (Signature) <i>Lynn Shetter</i>			Date	Time	Received by: (Signature) <i>[Signature]</i>			Date	Time	
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.

- |   |  |   |  |   |   |
|---|--|---|--|---|---|
| <input type="checkbox"/> 1633 Terra Avenue<br>Sheridan, Wyoming 82801<br>Telephone (307) 672-8945 | <input type="checkbox"/> 1701 Phillips Circle<br>Gillette, Wyoming 82718<br>Telephone (307) 682-8945 | <input checked="" type="checkbox"/> 2506 West Main Street<br>Farmington, NM 87401<br>Telephone (505) 326-4737 | <input type="checkbox"/> 1160 Research Dr.<br>Bozeman, Montana 59715<br>Telephone (406) 586-8450 | <input type="checkbox"/> 11183 SH 30<br>College Station, TX 77845<br>Telephone (409) 776-8945 | <input type="checkbox"/> 3304 Longmire Drive<br>College Station, TX 77845<br>Telephone (409) 774-4999 |
|---|--|---|--|---|---|

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