GW - 32

REPORTS

YEAR(S):

1994 - GW REPORT

GIANT REFINING CO.

Route 3, Box 7
Gallup, New Mexico
87301

505
722-3833

April 10, 1995

Roger Anderson
Environmental Bureau Chief
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Re: **1994 Annual Groundwater and Quarterly Sampling Event**

Dear Mr. Anderson:

Pursuant to the water discharge permit, GW-32, Giant Refining Company - Ciniza (Giant) submits the **1994 Annual OCD Groundwater Report.**

The data presented in the enclosed report is arranged in the following order:

I. Quarterly Aerated Lagoon and API Effluent
II. Tabulated Analytical Data - OW-1, 2, and 3
III. Original Analytical Data - OW-1, 2, and 3

If you require additional information, please contact me at (505) 722-0227.

Sincerely,

Lynn Shelton
Senior Environmental Coordinator
Giant Refining Company

cc w/o enclosure: David Pavlich, HSE Manager
Giant Refining Company

Kim Bullerdick, Corporate Counsel
Giant Industries Arizona, Inc.

Denny Foust, OCD, Aztec Office

[SRP\WP\TLS\NMOCD0410]

Analytical Technologies, Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. **403421**

April 19, 1994

Giant Refining Company
I40 Exit 39
Jamestown, NM 87347

Project Name/Number: QTR OCD 1ST QTR

Attention: Lynn Shelton

On **03/29/94**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA Method 150.1 analyses were performed by Analytical Technologies, Inc., Albuquerque, NM.

Total Organic Carbon analyses were performed by Analytical Technologies, Inc., 225 Commerce Drive, Fort Collins, CO.

Biochemical Oxygen Demand analysis was performed by Aquatic Consulting & Testing, Inc., 1555 W. University Drive, Suite 103, Tempe, AZ.

All other analyses were performed by Analytical Technologies, Inc., 9830 S. 51st Street, Suite B-113, Phoenix, AZ.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Letitia Krakowski, Ph.D.
Project Manager

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jd

Enclosure

Analytical Technologies, Inc.

CLIENT : GIANT REFINING CO. DATE RECEIVED : 03/29/94
PROJECT # : (NONE)
PROJECT NAME : QTR OCD REPORT DATE : 04/19/94

ATI I.D. : 403421

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	AERATION LAGOON	AQUEOUS	03/28/94
02	API SEPARATOR	AQUEOUS	03/28/94

----- TOTALS -----

MATRIX	# SAMPLES
AQUEOUS	2

ATI STANDARD DISPOSAL PRACTICE

All samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

CLIENT	: GIANT REFINING CO.	ATI I.D.	: 403421
PROJECT #	: QTR OCD	DATE RECEIVED	: 03/29/94
PROJECT NAME	: (NONE)	DATE ANALYZED	: 03/29/94

PARAMETER	UNITS	01	02
PH (150.1)	UNITS	7.52	8.22

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : GIANT REFINING CO. ATI I.D. : 403421

PROJECT # : QTR OCD SAMPLE MATRIX : AQUEOUS

PROJECT NAME : (NONE)

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC.	% REC
PH	UNITS	40342101	7.52	7.56	0.53	NA	NA	NA

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

ATI I.D. : 403421

CLIENT : GIANT REFINING CO.
PROJECT # : (NONE)
PROJECT NAME : QTR OCD

DATE RECEIVED : 03/29/94
REPORT DATE : 04/19/94

PARAMETER	UNITS	01	02
BIOCHEMICAL OXYGEN DEMAND	MG/L	113	143
CHEMICAL OXYGEN DEMAND	MG/L	620	990
T. DISSOLVED SOLIDS (160.1)	MG/L	5700	16000

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : GIANT REFINING CO.
PROJECT # : (NONE)
PROJECT NAME : QTR OCD ATI I.D. : 403421

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
BIOCHEMICAL OXYGEN DEM	MG/L	40342101	113	124	9	NA	NA	NA
CHEMICAL OXYGEN DEMAND	MG/L	40342101	620	610	2	890	300	90
TOTAL DISSOLVED SOLIDS	MG/L	40342101	5700	5700	0	NA	NA	NA

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

TOTAL ORGANIC CARBON

Method 415.2

Lab Name: Analytical Technologies, Inc.

Date Collected: 03/28/94

Client Name: ATI-NM

Date Analyzed: 04/11/94

Client Project ID: GRC -- 403421

Sample Matrix: Water

Lab Workorder Number: 94-03-236

Sample ID	Lab Sample ID	Volume Injected (mL)	TOC Conc. (mg/L)	TOC AVG	RPD
Reagent Blank	RB 94-03-236	1	< 1.0	< 1.0	N/A
403421-1	94-03-236-01	0.5	11		
	94-03-236-01DUP	0.5	11	11	0
403421-2	94-03-236-02	0.5	7		
	94-03-236-02DUP	0.5	7	7	0

Analytical Technologies, Inc., Albuquerque, NM
San Diego • Phoenix • Seattle • Pensacola • Ft. Collins • Portland • Albuquerque

CHAIN OF CUSTODY

DATE: 3-28-94 PAGE 1 OF 1

ATI LAB I.D. 410429

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT MANAGER:

COMPANY: GIANT REFINING CO
ADDRESS: I40 EXIT 39
JAMESTOWN, NM 87347
PHONE: (505) 722 0227
FAX: (505) 722 0210

BILL TO:
COMPANY: SAME
ADDRESS: RT 3 BOX 7
GALLUP, NM 87301

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
AERATION LAGOON	3-28	2:35	H_2O	01
API SEPARATOR	3-28	2:45	H_2O	02

ANALYSIS REQUEST

Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/MTBE (8020)	TOC	pH	Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.			Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	Polynuclear Aromatics (610/8310)			SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal			The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion	RCRA Metals by TCLP (1311)		NUMBER OF CONTAINERS
				X	X																						3
				X	X																						3

PROJECT INFORMATION		SAMPLE RECEIPT	
PROJ. NO.:		NO. CONTAINERS	6
PROJ. NAME:	QTR OCD	CUSTODY SEALS	Y / N / (NA)*
P.O. NO.:	997 9023 94	RECEIVED INTACT	Y
SHIPPED VIA:	FED EX	RECEIVED COLD	Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒ 2 WEEK

Comments:

*C.O.C. Seals intact on outside of cooler.

SAMPLED & RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Lynn Shelton Time: 3:30	Signature: Time:	Signature: Time:
Printed Name: LYNN SHELTON Date: 3-28-94	Printed Name: Date:	Printed Name: Date:
Company: GIANT Phone: 722 0227	Company:	Company:

RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY:(LAB) 3.
Signature: Time:	Signature: Time:	Signature: Time: 0900
Printed Name: Date:	Printed Name: Date:	Printed Name: Terry Date: 3/29/94
Company:	Company:	Analytical Technologies, Inc.

Analytical Technologies, Inc.
Phoenix, Arizona

Chain of Custody

DATE 3/29/94 PAGE 1 OF 1

NETWORK PROJECT MANAGER: [illegible]

COMPANY: Analytical Technologies, Inc.
ADDRESS: 9830 S. 51st Street, Suite B-113
Phoenix, Arizona 85044

CLIENT PROJECT MANAGER: AT

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	BOD	NUMBER OF CONTAINERS
403421-1	3/28/94	2:35	AQ	657	X	1
" -2	3/28/94	2:45	AQ	658	X	1

TOX, TOC, ORGANIC LEAD, SULFIDE, SURFACTANTS (MBAS), 632/632 MOD, 619/619 MOD, 8240 (TCLP 1311) ZHE, Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020), Volatile Organics GC/MS (624/8240), NACE, ASBESTOS, TOTAL COLIFORM, FECAL COLIFORM, GROSS ALPHA/BETA, RADIUM 226/228, AIR - 02, CO2, METHANE, CO, N2, AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)

PROJECT INFORMATION

PROJECT NUMBER: 403421
PROJECT NAME:
QC LEVEL: STD/ IV
TAT: STANDARD RUSH!
ATI WORKORDER #

SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS	2
CHAIN OF CUSTODY SEALS	
INTACT?	—
RECEIVED GOOD COND./~~COLD~~ COOL	✓
LAB NUMBER	

DUE DATE: 4/3/94
TIME:

SAMPLES SENT TO:
SAN DIEGO
FT. COLLINS
RENTON
PENSACOLA
PORTLAND
AQUATIC ✓

RELINQUISHED BY: 1.
Signature: [illegible] Time: 1244
Printed Name: [illegible] Date: 3/29/94
Analytical Technologies, Inc.
Phoenix

RECEIVED BY: 1.
Signature: [illegible] Time: 12 mid
Printed Name: ED MENDIVIL Date: 3/29/94
Analytical Technologies, Inc.

RELINQUISHED BY: 2.
Signature: Time: 13:18
Printed Name: Date 3/29/94
Company:

RECEIVED BY: (LAB) 2.
Signature: M. McClean Time: 13:18
Printed Name: M. McClean Date: 3/29/93
Company: ACT

ATI Labs: San Diego (619) 458-9141 • Phoenix (602) 496-4400 • Seattle (206) 228-8335 • Pensacola (904) 474-1001

DISTRIBUTION: White, Canary - ANALYTICAL TECHNOLOGIES, INC. • Pink - ORIGINATOR

Analytical Technologies, Inc. Albuquerque, NM

Chain of Custody

94-03-236 DATE 3/29/94 PAGE 1 OF 1

NETWORK PROJECT MANAGER: BETH PROFFITT

COMPANY: **Analytical Technologies, Inc.**

ADDRESS: 2709-D Pan American Freeway, NE
Albuquerque, NM 87107

CLIENT PROJECT MANAGER:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)	632/632 MOD	619/619 MOD	610/8310	8240 /TCLP 1311) ZHE	Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)	NACE	ASBESTOS	BOD	TOTAL COLIFORM	FECAL COLIFORM	GROSS ALPHA/BETA	RADIUM 226/228	AIR - O2, CO2, METHANE	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
403421-1	3/28/94	1435	AQ	01		X																			4
-2	3/28/94	1445	AQ	02		X																			4

PROJECT INFORMATION	
PROJECT NUMBER: 403421	
PROJECT NAME: GRC	
QC LEVEL: (STD.) IV	
QC REQUIRED: MS MSD BLANK	
TAT: (STANDARD) RUSH!	

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	4
CHAIN OF CUSTODY SEALS	N
INTACT?	N
RECEIVED GOOD COND./COLD	Y
LAB NUMBER	94-03-236

DUE DATE: 4/12/94 W.O. # LK624

RUSH SURCHARGE:

CLIENT DISCOUNT: 10 %

SAMPLES SENT TO:
- SAN DIEGO
- FT. COLLINS X
- RENTON
- PENSACOLA
- PHOENIX
- BARRINGER
- FIBERQUANT

RELINQUISHED BY: 1.
Signature: Terri Dettre Time: 1730
Printed Name: Terri Dettre Date: 3/29/94
Analytical Technologies, Inc. Albuquerque

RECEIVED BY: (LAB) 1.
Signature: Time:
Printed Name: Date:
Company:

RELINQUISHED BY: 2.
Signature: Time:
Printed Name: Date
Company: Cubrinn

RECEIVED BY: (LAB) 2.
Signature: John Wheeler Time: 1000
Printed Name: John Wheeler Date: 3/30/94
Company: ATI-10

Analytical Technologies, Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. **406390**

July 14, 1994

Giant Refining
Route 3, Box 7
Gallup, NM 87301

Project Name/Number: OCD QTR SPLG 2ND QUARTER

Attention: Lynn Shelton

On **06/22/94**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

Total Organic Carbon analyses were performed by Analytical Technologies, Inc., 225 Commerce Drive, Fort Collins, CO.

Total Dissolved Solids and Chemical Oxygen Demand analyses were performed by Analytical Technologies, Inc., 9830 S. 51st Street, Suite B-113, Phoenix, AZ.

Biochemical Oxygen Demand analysis was performed by Aquatic Consulting and Testing, 1555 W. University Drive, Suite 103, Tempe, AZ.

EPA Method 150.1 analyses were performed by Analytical Technologies, Inc., Albuquerque, NM.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Letitia Krakowski, Ph.D.
Project Manager

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jt

Enclosure

Analytical Technologies, Inc.

CLIENT	: GIANT REFINING	DATE RECEIVED	: 06/22/94
PROJECT #	: 2ND QUARTER		
PROJECT NAME	: OCD QTR SPLG	REPORT DATE	: 07/14/94

ATI ID: 406390

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	API EFFLUENT	AQUEOUS	06/21/94
02	AERATION #2 EFF	AQUEOUS	06/21/94

---TOTALS---

MATRIX	#SAMPLES
AQUEOUS	2

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

CLIENT	: GIANT REFINING	ATI I.D.	: 406390
PROJECT #	: 2ND QUARTER	DATE RECEIVED	: 06/22/94
PROJECT NAME	: OCD QTR SPLG	DATE ANALYZED	: 06/24/94

PARAMETER	UNITS	01	02
PH (150.1)	UNITS	7.29	7.17

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : GIANT REFINING
PROJECT # : 2ND QUARTER
PROJECT NAME : OCD QTR SPLG

ATI I.D. : 406390
SAMPLE MATRIX : AQUEOUS

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC.	% REC
PH	UNITS	40639002	7.17	7.22	0.7	NA	NA	NA

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

ATI I.D. : 406390

CLIENT : GIANT REFINING CO.
PROJECT # : 2ND QUARTER
PROJECT NAME : OCD QTR SPLG

DATE RECEIVED : 06/22/94
REPORT DATE : 07/14/94

PARAMETER	UNITS	01	02
BIOCHEMICAL OXYGEN DEMAND	MG/L	4990	205
CHEMICAL OXYGEN DEMAND	MG/L	12000	760
T. DISSOLVED SOLIDS (160.1)	MG/L	2500	7800

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : GIANT REFINING CO.
PROJECT # : 2ND QUARTER
PROJECT NAME : OCD QTR SPLG ATI I.D. : 406390

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
CHEMICAL OXYGEN DEMAND	MG/L	40639002	760	770	1	1040	300	93
TOTAL DISSOLVED SOLIDS	MG/L	40691402	2100	2200	5	NA	NA	NA

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

TOTAL ORGANIC CARBON

Method 415.2

Lab Name: Analytical Technologies, Inc.

Date Collected: 06/21/94

Client Name: ATI-NM

Date Analyzed: 07/07/94

Client Project ID: GRC -- 406390

Sample Matrix: Water

Lab Workorder Number: 94-06-240

Sample ID	Lab Sample ID	Volume Injected (mL)	TOC Conc. (mg/L)	TOC AVG	RPD
Reagent Blank	RB 94-06-240	1	< 1.0	< 1.0	N/A
API Effluent	94-06-240-01	0.1	114		
	94-06-240-01DUP	0.1	118	116	3
Aeration #2 Eff	94-06-240-02	0.01	2700		
	94-06-240-02DUP	0.01	3000	2850	11

Analytical Technologies, Inc., Albuquerque, NM
San Diego • Phoenix • Seattle • Pensacola • Ft. Collins • Portland • Albuquerque

CHAIN OF CUSTODY

DATE: 6-21-94 PAGE 1 OF 1

ATI LAB I.D. 406340 406923

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT MANAGER:

COMPANY: GIANT REFINING CO.
ADDRESS: I 40 EXIT 39
JAMESTOWN, NM 87347
PHONE: (505) 722-0212
FAX: (505) 722-0210

BILL TO: SAME
COMPANY: R+3 BOX 7
ADDRESS: GALLUP, NM 87301

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
API EFFLUENT	6-21-94	1:40pm	W	1
AERATION #2 EFF	6-21-94	1:50pm	W	2

ANALYSIS REQUEST

Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/MTBE (8020)	BOD	COD	Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.	TDS	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	Polynuclear Aromatics (610/8310)			SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal			The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion	RCRA Metals by TCLP (1311)		NUMBER OF CONTAINERS
				X	X				X																	2
				X	X				X																	2

PROJECT INFORMATION

PROJ. NO.: 2nd QUARTER
PROJ. NAME: OCD QTR SPLG
P.O. NO.: 997 9009 14
SHIPPED VIA: FED. EX.

SAMPLE RECEIPT

NO. CONTAINERS: 6
CUSTODY SEALS: Y / N / NA
RECEIVED INTACT: Y
RECEIVED COLD: Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒ 2 WEEK

Comments:

SAMPLED & RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Time: 2:00 P.M	Signature: Time:	Signature: Time:
Printed Name: WALT TOOMER Date: 6-21-94	Printed Name: Date:	Printed Name: Date:
Company: GIANT Phone: (505) 722-0212	Company:	Company:

RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY: (LAB) 3.
Signature: Time:	Signature: Time:	Signature: Time: 1130am
Printed Name: Date:	Printed Name: Date:	Printed Name: Date: 6/22/94
Company:	Company:	Analytical Technologies, Inc.

Analytical Technologies, Inc., Albuquerque, NM
San Diego • Phoenix • Seattle • Pensacola • Ft. Collins • Portland • Albuquerque

CHAIN OF CUSTODY

DATE: 6-21-94 PAGE 1 OF 1

ATI LAB I.D. 406390

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT MANAGER:

COMPANY: GIANT REFINING CO.
ADDRESS: I 40 EXIT 39
JAMESTOWN, NM 87347
PHONE: (505) 722-0212
FAX: (505) 722-0210

BILL TO: SAME
COMPANY: R+3 BOX 7
ADDRESS: GALLUP, NM 87301

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/MTBE (8020)	pH	TOC	Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.			Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	Polynuclear Aromatics (610/8310)			SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal			The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion	RCRA Metals by TCLP (1311)	NUMBER OF CONTAINERS
API EFFLUENT	6-21-94	1:45PM	W	01					X	X																						2
AERATION #2 EFF	6-21-94	1:35 p.m.	W	02					X	X																						2

PROJECT INFORMATION

PROJ. NO.: 2nd QUARTER
PROJ. NAME: OCD QTR SPLG
P.O. NO.: 997 9009 14
SHIPPED VIA: FED. EX

SAMPLE RECEIPT

NO. CONTAINERS: 4
CUSTODY SEALS: Y / N / (NA)*
RECEIVED INTACT: Y
RECEIVED COLD: Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒ 2 WEEK

Comments:

*C.O.C. Seals intact on outside cooler

SAMPLED & RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Time: 2:00 P.M.	Signature: Time:	Signature: Time:
Printed Name: WALT TOOMER Date: 6-21-94	Printed Name: Date:	Printed Name: Date:
Company: GIANT Phone: 722-0212	Company:	Company:

RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY:(LAB) 3.
Signature: Time:	Signature: Time:	Signature: Time: 0945
Printed Name: Date:	Printed Name: Date:	Printed Name: Date: 6/22/94
Company:	Company:	Analytical Technologies, Inc.

ATI Labs San Diego (619) 458 9141 • Phoenix (602) 496 4400 • Seattle (206) 228 8335 • Pensacola (904) 474-1001 • Portland (503) 684 0447 • Albuquerque (505) 344-3777 DISTRIBUTION: White, Canary - ATI • Pink - ORIGINATOR

Analytical Technologies, Inc.
Phoenix, Arizona

Chain of Custody

DATE 6/22/94 PAGE 1 OF 1

NETWORK PROJECT MANAGER: Amy Klinger

COMPANY: Analytical Technologies, Inc.
ADDRESS: 9830 S. 51st Street, Suite B-113
Phoenix, Arizona 85044

MT

CLIENT PROJECT MANAGER:

L94-

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)	632/632 MOD	619/619 MOD	8240 (TCLP 1311) ZHE	Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)	NACE	ASBESTOS	BOD	TOTAL COLIFORM	FECAL COLIFORM	GROSS ALPHA/BETA	RADIUM 226/228	AIR - O_2, CO_2, METHANE, CO, N_2	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
406923 -01	6/21	1:40pm	W	2044													X							1
↓ -02	↓	1:30pm	W	2045													X							1

PROJECT INFORMATION	
PROJECT NUMBER:	406923
PROJECT NAME:	
QC LEVEL: STD. IV	
TAT: STANDARD RUSH!	
ATI WORKORDER #	

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS	
INTACT?	
RECEIVED GOOD COND./COLD	
LAB NUMBER	

DUE DATE: 7/6/94
TIME:

SAMPLES SENT TO:
- SAN DIEGO
- FT. COLLINS
- RENTON
- PENSACOLA
- PORTLAND
- AQUATIC X

RELINQUISHED BY: 1.
Signature: Amy Klinger Time:
Printed Name: Amy Klinger Date 6/22/94
Analytical Technologies, Inc. Phoenix

RECEIVED BY: 1.
Signature: R. Doote Time: 14:33
Printed Name: Doote Date: 6/22
Analytical Technologies, Inc. TSD

RELINQUISHED BY: 2.
Signature: R. Doote Time: 1517
Printed Name: Doote Date 6/22/94
Company: TSD

RECEIVED BY: (LAB) 2.
Signature: M. McClean Time: 1517
Printed Name: M. McCLEAN Date 6/22/94
Company: NC+T

ATI Labs: San Diego (619) 458-9141 • Phoenix (602) 496-4400 • Seattle (206) 228-8335 • Pensacola (904) 474-1001

DISTRIBUTION: White, Canary - ANALYTICAL TECHNOLOGIES, INC. • Pink - ORIGINATOR

Analytical Technologies, Inc. Albuquerque, NM

Chain of Custody

DATE 6/22/94 PAGE 1 OF 1

NETWORK PROJECT MANAGER: BETH PROFFITT

COMPANY: **Analytical Technologies, Inc.**

ADDRESS: 2709-D Pan American Freeway, NE
Albuquerque, NM 87107

CLIENT PROJECT MANAGER:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)	632/632 MOD	619/619 MOD	610/8310	8240 (TCLP 1311) ZHE	Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)	NACE	ASBESTOS	BOD	TOTAL COLIFORM	FECAL COLIFORM	GROSS ALPHA/BETA	RADIUM 226/228	AIR - O2, CO2, METHANE	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
406390-1	6/21/94	1345	AQ	01		X																			2
-2	6/21/94	1335	AQ	02		X																			2

2 T

PROJECT INFORMATION

PROJECT NUMBER: 406390
PROJECT NAME: GRC
QC LEVEL: (STD) IV
QC REQUIRED: MS MSD BLANK
TAT: (STANDARD) RUSH!

SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS	4
CHAIN OF CUSTODY SEALS	N
INTACT?	NA
RECEIVED GOOD COND./(COLD)	4
LAB NUMBER	

DUE DATE: 7/7/94
RUSH SURCHARGE:
CLIENT DISCOUNT: %
$55.00/sample

W.O. #L1857

SAMPLES SENT TO:

- SAN DIEGO
- FT. COLLINS X
- RENTON
- PENSACOLA
- PHOENIX
- BARRINGER
- FIBERQUANT

RELINQUISHED BY: 1.
Signature: [signature] Time: 1730
Printed Name: Terri Dette Date 6/22/94
Analytical Technologies, Inc. Albuquerque

RECEIVED BY: (LAB) 1.
Signature: Time:
Printed Name: Date:
Company: AIRBORNE

RELINQUISHED BY: 2.
Signature: Time:
Printed Name: Date
Company: AIRBORNE

RECEIVED BY: (LAB) 2.
Signature: [signature] Time: 10:00
Printed Name: C. Kelly Date: 6-23-94
Company: ATI

ATI Labs: San Diego (619) 458-9141 • Phoenix (602) 496-4400 • Seattle (206) 228-8335 • Pensacola (904) 474-1001 • Portland (503) 684-0447 • Albuquerque (505) 344-3777 DISTRIBUTION: White, Canary - ATI • Pink - ORIGINATOR

Analytical **Technologies,** Inc. 9830 S. 51st Street Suite B-113 Phoenix, AZ 85044 (602) 496-4400

ATI I.D. **408613**

August 30, 1994

Giant Refining Company
I 40 Exit 39
Jamestown, NM 87347

Project Name/Number: OCD QTR SPLG/3rd Quarter

Attention: Walt Toomer

On **08/05/94**, Analytical Technologies, Inc., received a request to analyze **aqueous** sample(s). The sample(s) were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

Biochemical Oxygen Demand analysis was performed by Aquatic Consulting & Testing, Inc., 1555 W. University Drive, Suite 103, Tempe, AZ 85281.

If you have any questions or comments, please do not hesitate to contact us at (602) 496-4400.

Mary A. Tyer

Mary Tyer
Project Manager

MT/paw

Enclosure

ADHS License No. AZ0061
Donald F. Weber, Laboratory Manager

Analytical Technologies, Inc.

CLIENT : GIANT REFINING CO. DATE RECEIVED : 08/05/94
PROJECT # : 3RD QUARTER
PROJECT NAME : OCD QTR SPLG REPORT DATE : 08/30/94
ATI I.D. : 408613

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	API EFFLUENT	AQUEOUS	08/04/94
02	AERATION #2 EFF	AQUEOUS	08/04/94

----- TOTALS -----

MATRIX	# SAMPLES
AQUEOUS	2

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

ATI I.D. : 408613

CLIENT : GIANT REFINING CO.
PROJECT # : 3RD QUARTER
PROJECT NAME : OCD QTR SPLG

DATE RECEIVED : 08/05/94
REPORT DATE : 08/30/94

PARAMETER	UNITS	01	02
BIOCHEMICAL OXYGEN DEMAND	MG/L	235	169
CHEMICAL OXYGEN DEMAND	MG/L	850	640
T. DISSOLVED SOLIDS (160.1)	MG/L	5000	8400

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : GIANT REFINING CO.
PROJECT # : 3RD QUARTER
PROJECT NAME : OCD QTR SPLG ATI I.D. : 408613

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
BIOCHEMICAL OXYGEN DEM	MG/L	40859601	17	16	6	NA	NA	NA
CHEMICAL OXYGEN DEMAND	MG/L	40861301	850	840	1	1200	300	117
TOTAL DISSOLVED SOLIDS	MG/L	40861602	5700	5800	2	NA	NA	NA

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc., Albuquerque, NM
San Diego • Phoenix • Seattle • Pensacola • Ft. Collins • Portland • Albuquerque

CHAIN OF CUSTODY

DATE: 8.4.94 PAGE 1 OF 1

ATI LAB I.D. 408613

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT MANAGER:

COMPANY: GIANT REFINING CO.
ADDRESS: I 40 EXIT 39
JAMESTOWN, NM 87347
PHONE: (505) 722-0212
FAX: (505) 722-0210

BILL TO: SAME
COMPANY: RT3 BOX 7
ADDRESS: GALLUP, NM 87301

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	BOD	COD	FDS	NUMBER CONTAINERS
API EFFLUENT	8.4.94	10:15 AM	W	1	X	X	X	3
AERATION #2 EFF	8.4.94	10:30 AM	W	2	X	X	X	3

Petroleum Hydrocarbons (418.1); (MOD 8015) Gas/Diesel; Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020); BTXE/MTBE (8020); Chlorinated Hydrocarbons (601/8010); Aromatic Hydrocarbons (602/8020); SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.; Pesticides/PCB (608/8080); Herbicides (615/8150); Base/Neutral/Acid Compounds GC/MS (625/8270); Volatile Organics GC/MS (624/8240); Polynuclear Aromatics (610/8310); SDWA Primary Standards - Arizona; SDWA Secondary Standards - Arizona; SDWA Primary Standards - Federal; SDWA Secondary Standards - Federal; The 13 Priority Pollutant Metals; RCRA Metals by Total Digestion; RCRA Metals by TCLP (1311)

PROJECT INFORMATION		SAMPLE RECEIPT	
PROJ. NO.: 3RD QUARTER		NO. CONTAINERS	2
PROJ. NAME: OCD QTRSPLG		CUSTODY SEALS	Y / N / NA
P.O. NO.: 9979009 14		RECEIVED INTACT	Y
SHIPPED VIA: FED. EX.		RECEIVED COLD	Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒ WEEK

Comments:

SAMPLED & RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Time: 1505	Signature: Time:	Signature: Time:
Printed Name: WALT TOOMER Date: 8/4/94	Printed Name: Date:	Printed Name: Date:
Company: GIANT Phone: (505) 722-0212	Company:	Company:

RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY: (LAB) 3.
Signature: Time:	Signature: Time:	Signature: Rosella Vida Time: 0958
Printed Name: Date:	Printed Name: Date:	Printed Name: Rosella Vida Date: 8/5/94
Company:	Company:	Analytical Technologies, Inc.

Analytical Technologies, Inc.
Phoenix, Arizona

Chain of Custody

DATE 8/5/94 PAGE 1 OF 1

NETWORK PROJECT MANAGER: Amy Klinger

COMPANY: **Analytical Technologies, Inc.**
ADDRESS: 9830 S. 51st Street, Suite B-113
Phoenix, Arizona 85044

CLIENT PROJECT MANAGER: MT

L94-

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)	632/632 MOD	619/619 MOD	8240 (TCLP 1311) ZHE	Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)	NACE	ASBESTOS	BOD	TOTAL COLIFORM	FECAL COLIFORM	GROSS ALPHA/BETA	RADIUM 226/228	AIR - 02, CO2, METHANE, CO, N_2	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
408613-01	8/4	10:15	Wtr	2735													X							1
↓ 02	↓	10:30	↓	2736													X							1

PROJECT INFORMATION

PROJECT NUMBER: 408613
PROJECT NAME:
QC LEVEL: (STD) IV
TAT: (STANDARD) RUSH!
ATI WORKORDER #

DUE DATE: 8/19/94
TIME:

SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS	2
CHAIN OF CUSTODY SEALS	
INTACT?	
RECEIVED GOOD COND./COLD	
LAB NUMBER	

SAMPLES SENT TO:

SAN DIEGO	
FT. COLLINS	
RENTON	
PENSACOLA	
PORTLAND	
AQUATIC	X

RELINQUISHED BY: 1.
Signature: Amy Klinger Time: 12:17
Printed Name: Amy Klinger Date 8/5/94
Analytical Technologies, Inc.
Phoenix

RECEIVED BY: 1.
Signature: Harvey Gilgert Time: 12:17
Printed Name: HARV GILGERT Date: 8-5-94
Analytical Technologies, Inc.
TSD

RELINQUISHED BY: 2.
Signature: Harvey Gilgert Time: 12:30
Printed Name: HARV GILGERT Date 8-5-94
Company: TSD

RECEIVED BY: (LAB) 2.
Signature: M. McClean Time: 1230
Printed Name: M. McCLEARN Date: 8/5/94
Company: ACT

DISTRIBUTION: White, Canary - ANALYTICAL TECHNOLOGIES, INC. • Pink - ORIGINATOR

Analytical Technologies, Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. **408324**

August 30, 1994

Giant Refining Co.
I40 Exit 39
Jamestown, NM 87347

Project Name/Number: OCD QTR SPLG 3RD QUARTER

Attention: Walt Toomer

On **08/05/94**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **aqueous and non-aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

Oil and Grease analyses were performed by Analytical Technologies, Inc., 9830 S. 51st Street, Suite B-113, Phoenix, AZ.

Total Organic Carbon analyses were performed by Analytical Technologies, Inc., 225 Commerce Drive, Fort Collins, CO.

EPA Method 150.1 analyses were performed by Analytical Technologies, Inc., Albuquerque, NM.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jt

Enclosure

Analytical Technologies, Inc.

CLIENT	: GIANT REFINING CO.	DATE RECEIVED	: 08/05/94
PROJECT #	: 3RD QUARTER		
PROJECT NAME	: OCD QTR SPLG	REPORT DATE	: 08/30/94

ATI ID: 408324

	ATI ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	408324-01	API EFFLUENT	AQUEOUS	08/04/94
02	408324-02	AERATION#2EFF	AQUEOUS	08/04/94
03	408324-03	LTA ZOI 81	NON-AQ	08/04/94
04	408324-04	LTA ZOI 82	NON-AQ	08/04/94
05	408324-05	LTA ZOI 83	NON-AQ	08/04/94
06	408324-06	LTA ZOI 84	NON-AQ	08/04/94

---TOTALS---

MATRIX	#SAMPLES
AQUEOUS	2
NON-AQ	4

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

CLIENT	: GIANT REFINING CO.	ATI I.D.	: 408324
PROJECT #	: 3RD QUARTER	DATE RECEIVED	: 08/05/94
PROJECT NAME	: OCD QTR SPLG	DATE ANALYZED	: 08/05/94

PARAMETER	UNITS	01	02
PH (150.1)	UNITS	3.58	6.76

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : GIANT REFINING CO. ATI I.D. : 408324

PROJECT # : 3RD QUARTER SAMPLE MATRIX : AQUEOUS

PROJECT NAME : OCD QTR SPLG

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC.	% REC
PH	UNITS	40832401	3.58	3.56	0.56	NA	NA	NA

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

ATI I.D. : 408324

CLIENT : GIANT REFINING CO.
PROJECT # : 3RD QUARTER
PROJECT NAME : OCD QTR SPLG

DATE RECEIVED : 08/05/94
REPORT DATE : 08/29/94

PARAMETER	UNITS	03	04	05	06
OIL AND GREASE, IR (EPA 413.	MG/KG	16000	32000	16000	60000

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : GIANT REFINING CO.
PROJECT # : 3RD QUARTER
PROJECT NAME : OCD QTR SPLG ATI I.D. : 408324

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
OIL AND GREASE, IR	MG/KG	40849812	<20	<20	NA	200	210	95

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

TOTAL ORGANIC CARBO..

Method 415.2

Analytical Technologies, Inc.

Lab Name: Analytical Technologies, Inc.

Date Collected: 08/04/94

Client Name: ATI

Date Analyzed: 08/19/94

Client Project ID: 408324

Sample Matrix: Water

Lab Workorder Number: 94-08-080

Sample ID	Lab Sample ID	Volume Injected (mL)	TOC Conc. (mg/L)	TOC AVG	RPD
Reagent Blank	RB 94-08-080	1	< 1.0	< 1.0	N/A
408324-01	94-08-080-01	0.1	108		
	94-08-080-01DUP	0.1	107	107.5	1
408324-02	94-08-080-02	0.1	59		
	94-08-080-02DUP	0.1	58	58.5	2

Analytical**Technologies,**Inc., Albuquerque, NM
San Diego • Phoenix • Seattle • Pensacola • Ft. Collins • Portland • Albuquerque

CHAIN OF CUSTODY

DATE: 8.4.94 PAGE 1 OF 1

ATI LAB I.D. 408824

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT MANAGER:

COMPANY: GIANT REFINING CO.
ADDRESS: I 40 EXIT 39
JAMESTOWN, NM 87347
PHONE: (505) 722-0212
FAX: (505) 722-0210

BILL TO: SAME
COMPANY: R+3 BOX 7
ADDRESS: GALLUP, NM 87301

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
API EFFLUENT	8.4.94	10:15 A.M	W	01
AERATION #2 EFF	8.4.94	10:30 AM	W	02
LTA ZOI 81	8-4-94	1000	S	03
LTA ZOI 82	8-4-94	1015	S	04
LTA ZOI 83	8-4-94	1022	S	05
LTA ZOI 84	8-4-94	1027	S	06

	BTXE/MTBE (8020)	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	(MOD 8015) Gas/Diesel	Petroleum Hydrocarbons (418.1)	Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	Polynuclear Aromatics (610/8310)	SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal	The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion	RCRA Metals by TCLP (1311)	NUMBER OF CONTAINERS
	RH			OIL & GREASE	TPH															
API EFFLUENT	X				X															2
AERATION #2 EFF	X				X															2
LTA ZOI 81				X																1
LTA ZOI 82				X																1
LTA ZOI 83				X																1
LTA ZOI 84				X																1

PROJECT INFORMATION

PROJ. NO.: 3RD QUARTER
PROJ. NAME: OCD QTR SPLG
P.O. NO.: 997 9009 14
SHIPPED VIA: FED. EX.

SAMPLE RECEIPT

NO. CONTAINERS	8
CUSTODY SEALS	(Y) N / NA
RECEIVED INTACT	Y
RECEIVED COLD	Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒ 2 WEEK

Comments:

Fed Xed.

SAMPLED & RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Time: 1505	Signature: Time:	Signature: Time:
Printed Name: Date: WHITTOMER 8/4/94	Printed Name: Date:	Printed Name: Date:
Company: Phone: GIANT (505) 722-0212	Company:	Company:

RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY: (LAB) 3.
Signature: Time:	Signature: Time:	Signature: Time: 10:30
Printed Name: Date:	Printed Name: Date:	Printed Name: Date: Dianne Luther 8/5/94
Company:	Company:	Analytical Technologies, Inc.

Analytical**Technologies,**Inc. Albuquerque, NM

Chain of Custody

DATE 8/5/94 PAGE 1 OF 1

NETWORK PROJECT MANAGER: LETITIA KRAKOWSKI

COMPANY: **Analytical Technologies, Inc.**

ADDRESS: 2709-D Pan American Freeway, NE
Albuquerque, NM 87107

CLIENT PROJECT MANAGER: Pat Mitchell Pruitt

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
408324-01	8-4-94	1015	AQ	1
-02		1030	AQ	2
-03		1000	NAPHTHA	3
-04		1015		4
-05		1022		5
-06		1027		6

ANALYSIS REQUEST

	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)	Oil & Grease	632/632 MOD	619/619 MOD	610/8310		8240 (TCLP 1311) ZHE		Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)		NACE	ASBESTOS		BOD	TOTAL COLIFORM	FECAL COLIFORM		GROSS ALPHA/BETA	RADIUM 226/228		AIR - O2, CO2, METHANE	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
408324-01		X																										1
-02		X																										1
-03						X																						1
-04						X																						1
-05						X																						1
-06						X																						1

PROJECT INFORMATION

PROJECT NUMBER: 408324
PROJECT NAME: GRC
QC LEVEL: (STD.) IV
QC REQUIRED: MS MSD BLANK
TAT: (STANDARD) RUSH!

SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS	6
CHAIN OF CUSTODY SEALS	* Y
INTACT?	Y
RECEIVED GOOD COND./COLD	Y
LAB NUMBER	408324

SAMPLES SENT TO:
SAN DIEGO
FT. COLLINS
RENTON
PENSACOLA
PORTLAND
PHOENIX X
FIBERQUANT

RELINQUISHED BY: 1.
Signature: Time: 1730
Printed Name: Dianne Lutter Date: 8/5/94
Analytical Technologies, Inc. Albuquerque

RECEIVED BY: (LAB) 1.
Signature: Time:
Printed Name: Date:
Company:

RELINQUISHED BY: 2.
Signature: Time:
Printed Name: Date
Company:

RECEIVED BY: (LAB) 2.
Signature: Rosella Vidal Time: 0827
Printed Name: Rosella Vidal Date: 8/6/94
Company: ATI

DUE DATE: 8/19/94
RUSH SURCHARGE: 0
CLIENT DISCOUNT: 10 %

* Soil jars only

WO# LK928

DISTRIBUTION: White, Canary - ATI • Pink - ORIGINATOR

Analytical Technologies, Inc.
Phoenix, Arizona

Kerlab
Chain of Custody

DATE 8/8/94 PAGE 1 OF 1

NETWORK PROJECT MANAGER: Amy Klinger

COMPANY: Analytical Technologies, Inc.
ADDRESS: 9830 S. 51st Street, Suite B-113
Phoenix, Arizona 85044

CLIENT PROJECT MANAGER: MT

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)	632/632 MOD	619/619 MOD	8240 (TCLP 1311) ZHE	Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)	NACE	ASBESTOS	BOD	TOTAL COLIFORM	FECAL COLIFORM	GROSS ALPHA/BETA	RADIUM 226/228	AIR - O2, CO2, METHANE, CO, N2	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
408324-01	8/4	1015	AQ	01		X																		1
↓ 02	↓	1030	↓	02		X																		1

PROJECT INFORMATION	
PROJECT NUMBER:	408324
PROJECT NAME:	
QC LEVEL:	(STD.) IV
TAT:	(STANDARD) RUSH!
ATI WORKORDER #	139

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS	
INTACT?	
RECEIVED GOOD COND./COLD	
LAB NUMBER	94-08-080

DUE DATE: 8/19/94
TIME: _____

Send Results directly to Abby.

SAMPLES SENT TO:
- SAN DIEGO
- FT. COLLINS X
- RENTON
- PENSACOLA
- PORTLAND
- AQUATIC

RELINQUISHED BY: 1.
Signature: [signature] Time: 6p
Printed Name: Amy Klinger Date: 8/8/94
Analytical Technologies, Inc.: Phoenix

RECEIVED BY: 1.
Signature: Time:
Printed Name: Date:
Analytical Technologies, Inc.: AIRBORNE

RELINQUISHED BY: 2.
Signature: Time:
Printed Name: Date
Company: AIRBORNE

RECEIVED BY: (LAB) 2.
Signature: Debi Burdick Time: 1000
Printed Name: DEBI BURDICK Date: 8/9/94
Company: ATI

ATI Labs: San Diego (619) 458-9141 • Phoenix (602) 496-4400 • Seattle (206) 228-8335 • Pensacola (904) 474-1001

DISTRIBUTION: White, Canary - ANALYTICAL TECHNOLOGIES, INC. • Pink - ORIGINATOR

Analytical **Technologies,** Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. **412355**

January 6, 1995

Giant Refining Company
Route 3, Box 7
Gallup, NM 87301

Project Name/Number: OCD-WW 4QTR94

Attention: Walt Toomer

On **12/14/94**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

Total Organic Carbon analyses were performed by Analytical Technologies, Inc., 225 Commerce Drive, Fort Collins, CO.

EPA Method 150.1 (pH) analyses were performed by Analytical Technologies, Inc., Albuquerque, NM.

Chemical Oxygen Demand and Total Dissolved Solids analyses were performed by Analytical Technologies, Inc., 9830 S. 51st Street, Suite B-113, Phoenix, AZ.

Biochemical Oxygen Demand analysis was performed by Aquatic Consulting & Testing, Inc., 1555 W. University Drive, Suite 103, Tempe, AZ (See Attachment 1).

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Letitia Krakowski, Ph.D.
Project Manager

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jt

Enclosure

Analytical Technologies, Inc.

CLIENT	: GIANT REFINING CO.	DATE RECEIVED	: 12/14/94
PROJECT #	: 4QTR94		
PROJECT NAME	: OCD-WW	REPORT DATE	: 01/06/95

ATI ID: 412355

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	OCD4QTR94-AP1	AQUEOUS	12/13/94
02	OCD4QTR94-AL2	AQUEOUS	12/13/94

---TOTALS---

MATRIX	#SAMPLES
AQUEOUS	2

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

CLIENT	: GIANT REFINING CO.	ATI I.D.	: 412355
PROJECT #	: 4QTR94	DATE RECEIVED	: 12/14/94
PROJECT NAME	: OCD-WW	DATE ANALYZED	: 12/14/94

PARAMETER	UNITS	01	02
PH (150.1)	UNITS	9.22	9.11
		API	AL2

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : GIANT REFINING CO. ATI I.D. : 412355

PROJECT # : 4QTR94 SAMPLE MATRIX : AQUEOUS

PROJECT NAME : OCD-WW

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC.	% REC
PH	UNITS	41235501	9.22	9.20	0.2	NA	NA	NA

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

ATI I.D. : 412355

CLIENT : GIANT REFINING CO.
PROJECT # : 4QTR94
PROJECT NAME : OCD-WW

DATE RECEIVED : 12/14/94
REPORT DATE : 01/06/95

PARAMETER	UNITS	01	02
CHEMICAL OXYGEN DEMAND	MG/L	690	1500
T. DISSOLVED SOLIDS (160.1)	MG/L	2200	3000
		API	ALZ

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : GIANT REFINING CO.
PROJECT # : 4QTR94
PROJECT NAME : OCD-WW ATI I.D. : 412355

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
CHEMICAL OXYGEN DEMAND	MG/L	41235501	690	710	3	1030	300	113
TOTAL DISSOLVED SOLIDS	MG/L	41266601	2800	2800	0	NA	NA	NA

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

TOTAL ORGANIC CARBON

Method 415.2

Analytical Technologies, Inc.

Lab Name: Analytical Technologies, Inc.

Date Collected: 12/13/94

Client Name: ATI-NM

Date Analyzed: 12/21/94

Client Project ID: GRC -- 412355

Sample Matrix: Water

Lab Workorder Number: 94-12-167

Sample ID	Lab Sample ID	Volume Injected (mL)	TOC Conc. (mg/L)	TOC AVG	RPD
Reagent Blank	RB 94-12-167	1	< 1.0	< 1.0	N/A
OCD4QTR94-AP1	94-12-167-01	1	13		
	94-12-167-01DUP	1	13	13	0
OCD4QTR94-AL2	94-12-167-02	1	27		
	94-12-167-02DUP	1	27	27	0

Analytical Technologies, Inc., Albuquerque, NM
San Diego • Phoenix • Seattle • Pensacola • Ft. Collins • Portland • Albuquerque

CHAIN OF CUSTODY

DATE: 12/13/94 PAGE 1 OF 1

ATI LAB I.D. 41235

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT MANAGER:

COMPANY: GIANT REFINING CO.
ADDRESS: ROUTE 3, BOX 7
GALLUP, NM 87301
PHONE: (505) 722-0212
FAX: (505) 722-0210

BILL TO: WALT TOOMER
COMPANY: SAME
ADDRESS: SAME

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	NUMBER OF CONTAINERS
OCD4QTR94-AP1	12/13/94	0920	H_2O	01	6
OCD4QTR94-AL2	12/13/94	0935 (2)	H_2O	02	6

SAMPLE ID	Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/MTBE (8020)	BOD	COD	Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.	TOC	TDS	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	Polynuclear Aromatics (610/8310)	pH	SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal			The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion	RCRA Metals by TCLP (1311)	
OCD4QTR94-AP1					X	X				X	X						X									
OCD4QTR94-AL2					X	X				X	X						X									

PROJECT INFORMATION

PROJ. NO.: 4QTR94
PROJ. NAME: OCD-WW
P.O. NO.: ——
SHIPPED VIA: FED EX

SAMPLE RECEIPT

NO. CONTAINERS	12
CUSTODY SEALS	Y / (N) / NA
RECEIVED INTACT	Y
RECEIVED COLD	Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒ 2 WEEK

Comments:

SAMPLED & RELINQUISHED BY: 1.

Signature: [signature] Time: 1000
Printed Name: WALT TOOMER Date: 12/13/94
Company: GIANT Phone: (505) 722-0212

RELINQUISHED BY: 2.

Signature: Time:
Printed Name: Date:
Company:

RELINQUISHED BY: 3.

Signature: Time:
Printed Name: Date:
Company:

RECEIVED BY: 1.

Signature: Time:
Printed Name: Date:
Company:

RECEIVED BY: 2.

Signature: Time:
Printed Name: Date:
Company:

RECEIVED BY:(LAB) 3.

Signature: P. Cutler Time: 0925
Printed Name: Diane Cutler Date: 12/14/94
Analytical Technologies, Inc.

Analytical Technologies, Inc. Albuquerque, NM

Chain of Custody

DATE 12/14/04 PAGE 1 OF 1

NETWORK PROJECT MANAGER: LETITIA KRAKOWSKI

COMPANY: **Analytical Technologies, Inc.**

ADDRESS: 2709-D Pan American Freeway, NE
Albuquerque, NM 87107

CLIENT PROJECT MANAGER:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)	TDS	632/632 MOD	619/619 MOD	610/8310	BOD	COD	8240 (TCLP 1311) ZHE	Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)	NACE	ASBESTOS	BOD	TOTAL COLIFORM	FECAL COLIFORM	GROSS ALPHA/BETA	RADIUM 226/228	AIR - O2, CO2, METHANE	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
412355-01	12/13	0920	AQ	1						X				X	X													3
-02	↓	0935	↓	2						X				X	X													

PROJECT INFORMATION	
PROJECT NUMBER:	412355
PROJECT NAME:	GRC
QC LEVEL:	(STD) IV
QC REQUIRED:	~~MS~~ MSD BLANK
TAT:	(STANDARD) RUSH!

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	6
CHAIN OF CUSTODY SEALS	NA
INTACT?	Y
RECEIVED GOOD COND./COLD	Y
LAB NUMBER	412355

DUE DATE: 12/29
RUSH SURCHARGE: 0
CLIENT DISCOUNT: 10 %

WOFF LK1168

SAMPLES SENT TO:	
SAN DIEGO	
FT. COLLINS	
RENTON	
PENSACOLA	
PORTLAND	
PHOENIX	X
FIBERQUANT	

RELINQUISHED BY: 1.
Signature: Time: 1630
Printed Name: Dianne Cutler Date: 12/14/04
Analytical Technologies, Inc. Albuquerque

RECEIVED BY: (LAB) 1.
Signature: Time:
Printed Name: Date:
Company:

RELINQUISHED BY: 2.
Signature: Time:
Printed Name: Date
Company:

RECEIVED BY: (LAB) 2.
Signature: Time: 1630
Printed Name: Linda Eskelman Date: 12/14/04
Company: ATI

Ar[illegible]Technologies, Inc.
Phoenix, Arizona

Ir[illegible]lab

Chain of Custody

DATE 12/15/94 PAGE 1 OF 1

NETWORK PROJECT MANAGER: Amy Klinger

COMPANY: Analytical Technologies, Inc.
ADDRESS: 9830 S. 51st Street, Suite B-113
Phoenix, Arizona 85044

CLIENT PROJECT MANAGER: MT

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)	632/632 MOD	619/619 MOD	8240 (TCLP 1311) ZHE	Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)	NACE	ASBESTOS	BOD	TOTAL COLIFORM	FECAL COLIFORM	GROSS ALPHA/BETA	RADIUM 226/228	AIR - O2, CO2, METHANE, CO, N2	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
412355-01	12/13	0920	AQ	194-4		8	19										X							1
↓ 02	↓	0930	↓			8	20										X							1

PROJECT INFORMATION

PROJECT NUMBER: 412-355
PROJECT NAME:
QC LEVEL: STD IV
TAT: STANDARD RUSH!
ATI WORKORDER #

DUE DATE: 12/30/94
TIME:

Possible Biohazard
Use gloves

SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS	2
CHAIN OF CUSTODY SEALS	N
INTACT?	N/A
RECEIVED GOOD COND./COLD	
LAB NUMBER	

SAMPLES SENT TO:
SAN DIEGO
FT. COLLINS
RENTON
PENSACOLA
PORTLAND
AQUATIC X

RELINQUISHED BY: 1.
Signature: [signature] Time: 7:37
Printed Name: Amy Klinger Date: 12/15/94
Analytical Technologies, Inc.
Phoenix

RECEIVED BY: 1.
Signature: [signature] Time: 7:37
Printed Name: HARV GILGERT Date: 12-15-94
Analytical Technologies, Inc.
TSO

RELINQUISHED BY: 2.
Signature: [signature] Time: 0800
Printed Name: HARV GILGERT Date: 12-15-94
Company: TSO

RECEIVED BY: (LAB) 2.
Signature: Keith Atkinson Time: 0800
Printed Name: 0800 Date: 12-15-94
Company: ACTI

ATI Labs: San Diego (619) 458-9141 • Phoenix (602) 496-4400 • Seattle (206) 228-8335 • Pensacola (904) 474-1001

DISTRIBUTION: White, Canary - ANALYTICAL TECHNOLOGIES, INC. • Pink - ORIGINATOR

Analytical Technologies, Inc. Albuquerque, NM

94-12-167

Chain of Custody

DATE 12/14/95 PAGE 1 OF 1

NETWORK PROJECT MANAGER: LETITIA KRAKOWSKI

COMPANY: **Analytical Technologies, Inc.**

ADDRESS: 2709-D Pan American Freeway, NE
Albuquerque, NM 87107

CLIENT PROJECT MANAGER:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)	632/632 MOD	619/619 MOD	610/8310	8240 (TCLP 1311) ZHE	Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)	NACE	ASBESTOS	BOD	TOTAL COLIFORM	FECAL COLIFORM	GROSS ALPHA/BETA	RADIUM 226/228	AIR - O2, CO2, METHANE	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
412355-01	12/13	0920	N/A	01		X																			2
-02	↓	0935	↓	02		X																			1

PROJECT INFORMATION	
PROJECT NUMBER:	412355
PROJECT NAME:	GRC
QC LEVEL: ~~STD.~~ IV	
QC ~~REQUIRED:~~ MS MSD BLANK	
TAT: STANDARD RUSH!	

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS	
INTACT?	
RECEIVED GOOD COND./COLD	
LAB NUMBER	

DUE DATE: 12/29
RUSH SURCHARGE: 0
CLIENT DISCOUNT: 10 %

WO# LK1169

SAMPLES SENT TO:	
SAN DIEGO	
FT. COLLINS	X
RENTON	
PENSACOLA	
PORTLAND	
PHOENIX	
FIBERQUANT	

RELINQUISHED BY: 1.
Signature: [signature] Time: 1730
Printed Name: Daniel Hester Date: 12/14/94
Analytical Technologies, Inc. Albuquerque
Company: FED-X

RECEIVED BY: (LAB) 1.
Signature: Time:
Printed Name: Date:
Company:

RELINQUISHED BY: 2.
Signature: Time:
Printed Name: Date:
Company: FED-X

RECEIVED BY: (LAB) 2.
Signature: [signature] Time: 9:30
Printed Name: K. KPLH Date: 12-15-94
Company: ATI

ATI Labs: San Diego (619) 458-9141 • Phoenix (602) 496-4400 • Seattle (206) 228-8335 • Pensacola (904) 474-1001 • Portland (503) 684-0447 • Albuquerque (505) 344-3777 DISTRIBUTION: White, Canary - ATI • Pink - ORIGINATOR

ATTACHMENT 1

AQUATIC CONSULTING & TESTING, INC.

1555 W. University Drive, Suite 103
P.O. Box 1510
Tempe, Arizona 85281
Phone: (602) 921-8044 • Fax: (602) 921-0049

Lic. No. AZ0003

LABORATORY REPORT

CLIENT: **Analytical Technologies, Inc.**
9830 S. 51st Street, Suite B-113
Phoenix, AZ 85044

DATE SUBMITTED: 12/15/94
DATE REPORTED: 12/27/94

ATTN: **Amy Klinger**

PO#: ---

SUBMITTED BY: Top Speed Delivery
SAMPLE TYPE: Aqueous
SAMPLE DATE: See C.O.C
METHOD NO.: EPA 405.1

RESULTS

Client Sample I.D.	Analysis Date	AC & T Lab Number	BOD5, mg/L	
412355-01	12/15-20/94	L94-4819	210	API
412355-02	12/15-20/94	L94-4820	526	ALZ

Reviewed by: Frederick A Amalfi

Frederick A. Amalfi, Ph.D.
Laboratory Director

AQUATIC CONSULTING & TESTING, INC.

1555 W. University Drive, Suite 103
P.O. Box 1510
Tempe, Arizona 85281
Phone: (602) 921-8044 • Fax: (602) 921-0049

Lic. No. AZ0003

QUALITY CONTROL REPORT

PARAMETER: BOD5 UNITS: mg/L
METHOD NO.: 405.1 PREPARED BY: CJC
ANALYSIS DATE: 12/15-20/94

INTERNAL QUALITY CONTROL SAMPLE

Theoretical Value	Analytical Value	% Recovery
198	193	97

DUPLICATE SAMPLE DATA

Lab I.D.	Result 1	Result 2	RPD
L94-4820	522	529	1.3

SPIKED SAMPLE DATA

Lab I.D.	Sample Result	Spike Result	Amount Spiked	% Recovery
L94-4820	---	---	---	100

Giant Refining-Ciniza

OW-1 Volatile Organics Method 8240

Parameter	28 APR 93 Result	4 JUN 93 Result	14 JUL 93 Result	29 OCT 93 Result	27 APR 94 Result	6 JUL 94 Result	11 AUG 94 Result	Units
Benzene	ND	0.9	ND	ND	ND	ND	ND	ug/L
Toluene	2.3	1.9	1.4	ND	0.9	ND	ND	ug/L
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND	ug/L
Xylenes (total)	ND	1.6	0.6	ND	2.7	ND	ND	ug/L

OW-1 Dissolved Metals

Parameter	23 APR 92 Result	28 APR 93 Result	27 APR 94 Result	Units
Calcium	2.6	3.6	1.1	mg/L
Magnesium	1.5	4.5	0.2	mg/L
Potassium	1.2	2.1	ND	mg/L
Sodium	83	326	306	mg/L

OW-1 General Inorganics

Parameter	23 APR 92 Result	28 APR 93 Result	27 APR 94 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	410	387	388	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	60	22	37	mg/L
Chloride	58	41	55	mg/L
pH	8.8	8.7	8.82	units
pH	---	---	---	units
pH	---	---	---	units
pH	---	---	---	units
Sulfate	210	210	210	mg/L
Specific Conductance at 25 deg.C	1300	1260	1270	umhos/cm
Specific Conductance at 25 deg.C	---	---	---	umhos/cm
Specific Conductance at 25 deg.C	---	---	---	umhos/cm
Specific Conductance at 25 deg.C	---	---	---	umhos/cm
Total Organic Carbon	---	---	---	mg/L
Total Organic Carbon	---	---	---	mg/L
Total Organic Carbon	---	---	---	mg/L
Total Organic Carbon	---	---	---	mg/L
Total Organic Halogen as Cl	---	---	---	ug/L
Total Organic Halogen as Cl	---	---	---	ug/L
Total Organic Halogen as Cl	---	---	---	ug/L
Total Organic Halogen as Cl	---	---	---	ug/L
Total Dissolved Solids	2800	870	840	mg/L

Giant Refining-Ciniza

OW-2 Volatile Organics

Parameter	23 APR 92 Result	28 APR 93 Result	27 APR 94 Result	7 JUL 94 Result	11 AUG 94 Result	Units
Benzene	ND	ND	ND	ND	ND	ug/L
Toluene	ND	ND	ND	ND	ND	ug/L
Ethylbenzene	ND	ND	ND	ND	ND	ug/L
Xylenes (total)	ND	ND	1.1	2.2	ND	ug/L

OW-2 Dissolved Metals

Parameter	23 APR 92 Result	28 APR 93 Result	27 APR 94 Result	Units
Calcium	6.8	8.7	7.6	mg/L
Magnesium	2.5	3.7	3.1	mg/L
Potassium	ND	ND	ND	mg/L
Sodium	88	336	318	mg/L

OW-2 General Inorganics

Parameter	23 APR 92 Result	28 APR 93 Result	27 APR 94 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	670	662	668	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	ND	ND	ND	mg/L
Chloride	72	42	46	mg/L
pH	8.0	8.1	8.04	units
pH	---	---	---	units
pH	---	---	---	units
pH	---	---	---	units
Sulfate	15	19	20	mg/L
Specific Conductance at 25 deg.C	1300	1220	1260	umhos/cm
Specific Conductance at 25 deg.C	---	---	---	umhos/cm
Specific Conductance at 25 deg.C	---	---	---	umhos/cm
Specific Conductance at 25 deg.C	---	---	---	umhos/cm
Total Organic Carbon	---	---	---	mg/L
Total Organic Carbon	---	---	---	mg/L
Total Organic Carbon	---	---	---	mg/L
Total Organic Carbon	---	---	---	mg/L
Total Organic Halogen as Cl	---	---	---	ug/L
Total Organic Halogen as Cl	---	---	---	ug/L
Total Organic Halogen as Cl	---	---	---	ug/L
Total Organic Halogen as Cl	---	---	---	ug/L
Total Dissolved Solids	1800	1100	890	mg/L

Giant Refining-Ciniza

OW-3 Volatile Organics

Parameter	23 APR 92 Result	28 APR 93 Result	27 APR 94 Result	Units
Benzene	ND	ND	ND	ug/L
Toluene	ND	ND	ND	ug/L
Ethylbenzene	ND	ND	ND	ug/L
Xylenes (total)	ND	ND	ND	ug/L

OW-3 Dissolved Metals

Parameter	23 APR 92 Result	28 APR 93 Result	27 APR 95 Result	Units
Calcium	9.5	9.5	8.1	mg/L
Magnesium	3.0	3.6	3.1	mg/L
Potassium	ND	ND	ND	mg/L
Sodium	82	340	313	mg/L

OW-3 General Chemistry

Parameter	23 APR 92 Result	28 APR 93 Result	27 APR 95 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	580	660	662	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	ND	ND	ND	mg/L
Chloride	39	41	42	mg/L
pH	7.9	8.2	7.88	units
pH	---	---	---	units
pH	---	---	---	units
pH	---	---	---	units
Sulfate	34	16	18	mg/L
Specific Conductance at 25 deg.C	1200	1260	1240	umhos/cm
Specific Conductance at 25 deg.C	---	---	---	umhos/cm
Specific Conductance at 25 deg.C	---	---	---	umhos/cm
Specific Conductance at 25 deg.C	---	---	---	umhos/cm
Total Organic Carbon	---	---	---	mg/L
Total Organic Carbon	---	---	---	mg/L
Total Organic Carbon	---	---	---	mg/L
Total Organic Carbon	---	---	---	mg/L
Total Organic Halogen as Cl	---	---	---	ug/L
Total Organic Halogen as Cl	---	---	---	ug/L
Total Organic Halogen as Cl	---	---	---	ug/L
Total Organic Halogen as Cl	---	---	---	ug/L
Total Dissolved Solids	1100	840	800	mg/L

Analytical **Technologies,** Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. **404436**

May 20, 1994

Giant Refining Company
Route 3, Box 7
Gallup, NM 87301

Project Name/Number: ANNUAL GDWTR

Attention: Lynn Shelton

On **04/29/94**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

For sample OW-2, the metals bottle was marked dissolved metals, filtered and preserved with nitric acid. The sample had a turbidity reading of >1 NTU and there was sediment present; therefore, the sample did not pass criteria for dissolved. The sample was digested and analyzed for total metals.

EPA Method 150.1 and 8020 analyses were performed by Analytical Technologies, Inc., Albuquerque, NM.

Total Organic Carbon and Total Organic Carbon analyses were performed by Analytical Technologies, Inc., 225 Commerce Drive, Fort Collins, CO.

All other analyses were performed by Analytical Technologies, Inc., 9830 S. 51st Street, Suite B-113, Phoenix, AZ.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jd

Enclosure

Analytical Technologies, Inc.

CLIENT	: GIANT REFINING CO.	DATE RECEIVED	: 04/29/94
PROJECT #	: (NONE)		
PROJECT NAME	: ANNUAL GDWTR	REPORT DATE	: 05/20/94

ATI ID: 404436

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	OW-2	AQUEOUS	04/27/94
02	OW-1	AQUEOUS	04/27/94
03	MW-2	AQUEOUS	04/27/94
04	MW-5	AQUEOUS	04/27/94
05	TRIP BLANK	AQUEOUS	04/19/94

---TOTALS---

MATRIX	#SAMPLES
AQUEOUS	5

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

CLIENT	: GIANT REFINING CO.	ATI I.D.	: 404436
PROJECT #	: (NONE)	DATE RECEIVED	: 04/29/94
PROJECT NAME	: ANNUAL GDWTR	DATE ANALYZED	: 04/29/94

PARAMETER	UNITS	01	02	03	04
PH (150.1)	UNITS	8.04	8.82	9.10	9.10

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : GIANT REFINING CO. ATI I.D. : 404436

PROJECT # : (NONE) SAMPLE MATRIX : AQUEOUS

PROJECT NAME : ANNUAL GDWTR

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC.	% REC
PH	UNITS	40443601	8.04	8.01	0.4	NA	NA	NA

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

ATI I.D. : 404436

CLIENT : GIANT REFINING CO.
PROJECT # : (NONE)
PROJECT NAME : ANNUAL GDWTR

DATE RECEIVED : 04/29/94
REPORT DATE : 05/20/94

PARAMETER	UNITS	01	02	03	04
CARBONATE (CACO3)	MG/L	<1	37	42	42
BICARBONATE (CACO3)	MG/L	668	388	294	289
HYDROXIDE (CACO3)	MG/L	<1	<1	<1	<1
TOTAL ALKALINITY (AS CACO3)	MG/L	668	425	336	331
CHLORIDE (EPA 325.2)	MG/L	46	55	61	66
CONDUCTIVITY, (UMHOS/CM)		1260	1270	1120	1130
PHENOLICS, TOTAL (EPA 420.1)	MG/L	-	-	<0.005	<0.005
SULFATE (EPA 375.2)	MG/L	20	210	160	170
T. DISSOLVED SOLIDS (160.1)	MG/L	890	840	700	730

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : GIANT REFINING CO.
PROJECT # : (NONE)
PROJECT NAME : ANNUAL GDWTR ATI I.D. : 404436

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
CARBONATE	MG/L	40443602	37	35	6	NA	NA	NA
BICARBONATE	MG/L		388	383	1	NA	NA	NA
HYDROXIDE	MG/L		<1	<1	NA	NA	NA	NA
TOTAL ALKALINITY	MG/L		425	418	2	NA	NA	NA
CARBONATE	MG/L	40443603	42	42	0	NA	NA	NA
BICARBONATE	MG/L		294	298	1	NA	NA	NA
HYDROXIDE	MG/L		<1	<1	NA	NA	NA	NA
TOTAL ALKALINITY	MG/L		336	340	1	NA	NA	NA
CHLORIDE	MG/L	40443601	46	45	2	93	50	94
CONDUCTIVITY(UMHOS/CM)		40443604	1130	1130	0	NA	NA	NA
PHENOLICS, TOTAL	MG/L	40549908	<0.005	<0.005	NA	0.025	0.025	100
SULFATE	MG/L	40443601	20	20	0	40	20	100
TOTAL DISSOLVED SOLIDS	MG/L	40443603	700	700	0	NA	NA	NA

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

METALS RESULTS

ATI I.D. : 404436

CLIENT : GIANT REFINING CO.
PROJECT # : (NONE)
PROJECT NAME : ANNUAL GDWTR

DATE RECEIVED : 04/29/94
REPORT DATE : 05/20/94

PARAMETER	UNITS	01	02	03	04
SILVER (EPA 200.7/6010)	MG/L	<0.010	<0.010	<0.010	0.010
ARSENIC (200.7/6010)	MG/L	<0.1	<0.1	<0.1	<0.1
BARIUM (EPA 200.7/6010)	MG/L	0.205	0.037	0.021	0.018
CALCIUM (EPA 200.7/6010)	MG/L	7.6	1.1	0.6	1.4
CADMIUM (200.7/6010)	MG/L	<0.005	0.015	<0.005	<0.005
CHROMIUM (EPA 200.7/6010)	MG/L	-	-	0.011	<0.010
MERCURY (EPA 245.1/7470)	MG/L	-	-	<0.0002	<0.0002
POTASSIUM (EPA 200.7/6010)	MG/L	<1.0	<1.0	<1.0	<1.0
MAGNESIUM (EPA 200.7/6010)	MG/L	3.1	0.2	<0.1	0.1
MANGANESE (EPA 200.7/6010)	MG/L	0.288	<0.010	<0.010	<0.010
SODIUM (EPA 200.7/6010)	MG/L	318	306	257	263
LEAD (200.7/6010)	MG/L	-	-	<0.10	<0.10
SELENIUM (200.7/6010)	MG/L	<0.1	<0.1	<0.1	<0.1

Analytical Technologies, Inc.

METALS - QUALITY CONTROL

CLIENT : GIANT REFINING CO.
PROJECT # : (NONE)
PROJECT NAME : ANNUAL GDWTR ATI I.D. : 404436

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
SILVER	MG/L	40551301	<0.010	<0.010	NA	0.933	1.00	93
SILVER	MG/L	40530101	<0.010	<0.010	NA	0.995	1.00	100
ARSENIC (ICAP)	MG/L	40443601	<0.1	<0.1	NA	1.0	1.0	100
ARSENIC (ICAP)	MG/L	40530101	<0.1	<0.1	NA	1.0	1.0	100
BARIUM	MG/L	40443601	0.205	0.205	0	1.19	1.00	98
BARIUM	MG/L	40530101	0.016	0.016	0	0.992	1.00	98
CALCIUM	MG/L	40531102	47.6	47.9	0.6	101	50.0	107
CADMIUM	MG/L	40443601	<0.005	<0.005	NA	1.01	1.00	101
CADMIUM	MG/L	40443602	0.015	0.015	0	0.070	0.050	110
CADMIUM	MG/L	40530102	<0.005	<0.005	NA	1.00	1.00	100
CHROMIUM	MG/L	40551301	<0.010	<0.010	NA	0.952	1.00	95
MERCURY	MG/L	40411502	<0.0002	<0.0002	NA	0.0046	0.0050	92
POTASSIUM	MG/L	40531102	4.0	3.9	3	53.9	50.0	100
MAGNESIUM	MG/L	40531102	17.0	17.2	1	42.0	25.0	100
MANGANESE	MG/L	40443601	0.288	0.286	0.7	1.28	1.00	99
MANGANESE	MG/L	40530101	0.016	0.016	0	1.01	1.00	99
SODIUM	MG/L	40531102	52.3	53.0	1	99.3	50.0	94
LEAD	MG/L	40530101	<0.10	<0.10	NA	0.97	1.00	97
SELENIUM (ICAP)	MG/L	40443601	<0.1	<0.1	NA	1.05	1.00	105
SELENIUM (ICAP)	MG/L	40530101	<0.1	<0.1	NA	1.0	1.0	100

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

TOTAL ORGANIC CARBON

Method 415.2

Lab Name: Analytical Technologies, Inc.

Date Collected: 04/27/94

Client Name: ATI-NM

Date Analyzed: 05/09/94

Client Project ID: GRC -- 404436

Sample Matrix: Water

Lab Workorder Number: 94-04-307

Sample ID	Lab Sample ID	Volume Injected (mL)	TOC Conc. (mg/L)	TOC AVG	RPD
Reagent Blank	RB 94-04-307	1	< 1.0	< 1.0	N/A
404436-3	94-04-307-01	1	< 1.0		
	94-04-307-01DUP	1	< 1.0	< 1.0	N/A
404436-4	94-04-307-02	1	< 1.0		
	94-04-307-02DUP	1	< 1.0	< 1.0	N/A

Analytical Technologies, Inc.

TOTAL ORGANIC HALIDE

Modified Method 9020 TOX

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Client Project ID: GRC -- 404436

Lab Workorder Number: 94-04-307

Date Collected: 04/27/94

Date Extracted: 05/11/94

Date Analyzed: 05/11/94

Sample Matrix: Water

Sample ID	Lab Sample ID	Sample Volume (mL)	TOX Conc. (ug/L)	TOX AVG	RPD
Reagent Blank	WRB94-04-307	100	< 20	< 20	N/A
404436-3	94-04-307-01	100	20		
	94-04-307-01DUP	100	20	20	0
404436-4	94-04-307-02	100	< 20		
	94-04-307-02DUP	100	< 20	< 20	N/A

Analytical Technologies, Inc.

TOTAL ORGANIC HALIDE MATRIX SPIKE RESULTS

Modified Method 9020 TOX

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Lab Sample ID: 94-04-307-02

Sample Matrix: Water

Sample ID

404436-4

Date Extracted: 05/11/94

Date Analyzed: 05/11/94

Analyte	Spike Added (ug/L)	Sample Concentration (ug/L)	MS Concentration (ug/L)	MS Percent Recovery
2,4,6-Trichlorophenol	200	< 20	200	100

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : BTEX, MTBE (EPA 8020)

CLIENT : GIANT REFINING CO. ATI I.D.: 404436

PROJECT # : (NONE)

PROJECT NAME : ANNUAL GDWTR

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	OW-2	AQUEOUS	04/27/94	NA	05/03/94	1
02	OW-1	AQUEOUS	04/27/94	NA	05/03/94	1

PARAMETER	UNITS	01	02
BENZENE	UG/L	<0.5	<0.5
TOLUENE	UG/L	<0.5	0.9
ETHYLBENZENE	UG/L	<0.5	<0.5
TOTAL XYLENES	UG/L	1.1	2.7
METHYL-t-BUTYL ETHER	UG/L	<2.5	<2.5
SURROGATE:			
BROMOFLUOROBENZENE (%)		99	101

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

REAGENT BLANK

TEST	: BTEX, MTBE (EPA 8020)	ATI I.D.	: 404436
BLANK I.D.	: 050394	MATRIX	: AQUEOUS
CLIENT	: GIANT REFINING CO.	DATE EXTRACTED	: NA
PROJECT #	: (NONE)	DATE ANALYZED	: 05/03/94
PROJECT NAME	: ANNUAL GDWTR	DILUTION FACTOR	: 1

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5
METHYL-t-BUTYL ETHER	UG/L	<2.5
SURROGATE:		
BROMOFLUOROBENZENE (%)		98

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

TEST	: BTEX, MTBE (EPA 8020)		
MSMSD #	: 40443315	ATI I.D.	: 404436
CLIENT	: GIANT REFINING CO.	DATE EXTRACTED	: NA
PROJECT #	: (NONE)	DATE ANALYZED	: 05/04/94
PROJECT NAME	: ANNUAL GDWTR	SAMPLE MATRIX	: AQUEOUS
REF. I.D.	: 40443315	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD
BENZENE	<0.5	10	9.0	90	9.5	95	5
TOLUENE	<0.5	10	9.2	92	9.6	96	4
ETHYLBENZENE	<0.5	10	9.2	92	9.8	98	6
TOTAL XYLENES	<0.5	30	28	93	29	97	4
METHYL-t-BUTYL ETHER	<2.5	20	18	90	19	95	5

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

GCMS - RESULTS

ATI I.D. : 40443603

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

CLIENT	: GIANT REFINING CO.	DATE SAMPLED	: 04/27/94
PROJECT #	: (NONE)	DATE RECEIVED	: 04/29/94
PROJECT NAME	: ANNUAL GDWTR	DATE EXTRACTED	: N/A
CLIENT I.D.	: MW-2	DATE ANALYZED	: 05/05/94
SAMPLE MATRIX	: AQUEOUS	UNITS	: UG/L
		DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
CHLOROMETHANE	<5
VINYL CHLORIDE	<2
CHLOROETHANE	<5
METHYLENE CHLORIDE	<5
ACETONE	<10
CARBON DISULFIDE	<5
1,1-DICHLOROETHENE	<5
1,1-DICHLOROETHANE	<5
TRANS-1,2-DICHLOROETHYLENE	<5
CHLOROFORM	<5
1,2-DICHLOROETHANE	<5
2-BUTANONE (MEK)	<5
1,1,1-TRICHLOROETHANE	<5
CARBON TETRACHLORIDE	<5
VINYL ACETATE	<5
BROMODICHLOROMETHANE	<5
1,1,2,2-TETRACHLOROETHANE	<5
1,2-DICHLOROPROPANE	<5
TRANS-1,3-DICHLOROPROPENE	<5
TRICHLOROETHENE	<5
DIBROMOCHLOROMETHANE	<5
1,1,2-TRICHLOROETHANE	<5
BENZENE	<5
CIS-1,3-DICHLOROPROPENE	<5
BROMOFORM	<3
2-HEXANONE (MBK)	<5
4-METHYL-2-PENTANONE (MIBK)	<5
TETRACHLOROETHENE	<5
TOLUENE	<5
CHLOROBENZENE	<5
ETHYLBENZENE	<5
STYRENE	<5
TOTAL XYLENES	<5
ACROLEIN	<20
ACRYLONITRILE	<10
DIBROMOMETHANE	<5
DICHLORODIFLUOROMETHANE	<5
METHYL IODIDE	<5
TRANS-1,4-DICHLORO-2-BUTENE	<5
TRICHLOROMONOFLUOROMETHANE	<5
1,2,3-TRICHLOROPROPANE	<5

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Analytical Technologies, Inc.

GCMS - RESULTS

ATI I.D. : 40443603

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

COMPOUNDS	RESULTS
ETHYL METHACRYLATE	<5
ETHANOL	<100
BROMOMETHANE	<10
2-CHLOROETHYLVINYLETHER	<5
1,4-DICHLORO-2-BUTANE	<5
SURROGATE PERCENT RECOVERIES	
1,2-DICHLOROETHANE-D4 (%)	99
BFB (%)	102
TOLUENE-D8 (%)	104

Analytical Technologies, Inc.

ADDITIONAL COMPOUNDS (SEMI-QUANTITATED)

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

ATI I.D. : 40443603

COMPOUNDS	RESULTS
NO ADDITIONAL COMPOUNDS	

Analytical Technologies, Inc.

GCMS - RESULTS

ATI I.D. : 40443604

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

CLIENT	: GIANT REFINING CO.	DATE SAMPLED	: 04/27/94
PROJECT #	: (NONE)	DATE RECEIVED	: 04/29/94
PROJECT NAME	: ANNUAL GDWTR	DATE EXTRACTED	: N/A
CLIENT I.D.	: MW-5	DATE ANALYZED	: 05/05/94
SAMPLE MATRIX	: AQUEOUS	UNITS	: UG/L
		DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
CHLOROMETHANE	<5
VINYL CHLORIDE	<2
CHLOROETHANE	<5
METHYLENE CHLORIDE	<5
ACETONE	<10
CARBON DISULFIDE	<5
1,1-DICHLOROETHENE	<5
1,1-DICHLOROETHANE	<5
TRANS-1,2-DICHLOROETHYLENE	<5
CHLOROFORM	<5
1,2-DICHLOROETHANE	<5
2-BUTANONE (MEK)	<5
1,1,1-TRICHLOROETHANE	<5
CARBON TETRACHLORIDE	<5
VINYL ACETATE	<5
BROMODICHLOROMETHANE	<5
1,1,2,2-TETRACHLOROETHANE	<5
1,2-DICHLOROPROPANE	<5
TRANS-1,3-DICHLOROPROPENE	<5
TRICHLOROETHENE	<5
DIBROMOCHLOROMETHANE	<5
1,1,2-TRICHLOROETHANE	<5
BENZENE	<5
CIS-1,3-DICHLOROPROPENE	<5
BROMOFORM	<3
2-HEXANONE (MBK)	<5
4-METHYL-2-PENTANONE (MIBK)	<5
TETRACHLOROETHENE	<5
TOLUENE	<5
CHLOROBENZENE	<5
ETHYLBENZENE	<5
STYRENE	<5
TOTAL XYLENES	<5
ACROLEIN	<20
ACRYLONITRILE	<10
DIBROMOMETHANE	<5
DICHLORODIFLUOROMETHANE	<5
METHYL IODIDE	<5
TRANS-1,4-DICHLORO-2-BUTENE	<5
TRICHLOROMONOFLUOROMETHANE	<5
1,2,3-TRICHLOROPROPANE	<5

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Analytical Technologies, Inc.

GCMS - RESULTS

ATI I.D. : 40443604

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

COMPOUNDS	RESULTS
ETHYL METHACRYLATE	<5
ETHANOL	<100
BROMOMETHANE	<10
2-CHLOROETHYLVINYLETHER	<5
1,4-DICHLORO-2-BUTANE	<5
SURROGATE PERCENT RECOVERIES	
1,2-DICHLOROETHANE-D4 (%)	100
BFB (%)	105
TOLUENE-D8 (%)	102

Analytical Technologies, Inc.

ADDITIONAL COMPOUNDS (SEMI-QUANTITATED)

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

ATI I.D. : 40443604

COMPOUNDS	RESULTS
NO ADDITIONAL COMPOUNDS	

Analytical Technologies, Inc.

GCMS - RESULTS

ATI I.D. : 40443605

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

CLIENT	: GIANT REFINING CO.	DATE SAMPLED	: 04/19/94
PROJECT #	: (NONE)	DATE RECEIVED	: 04/29/94
PROJECT NAME	: ANNUAL GDWTR	DATE EXTRACTED	: N/A
CLIENT I.D.	: TRIP BLANK	DATE ANALYZED	: 05/05/94
SAMPLE MATRIX	: AQUEOUS	UNITS	: UG/L
		DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
CHLOROMETHANE	<5
VINYL CHLORIDE	<2
CHLOROETHANE	<5
METHYLENE CHLORIDE	<5
ACETONE	<10
CARBON DISULFIDE	<5
1,1-DICHLOROETHENE	<5
1,1-DICHLOROETHANE	<5
TRANS-1,2-DICHLOROETHYLENE	<5
CHLOROFORM	<5
1,2-DICHLOROETHANE	<5
2-BUTANONE (MEK)	<5
1,1,1-TRICHLOROETHANE	<5
CARBON TETRACHLORIDE	<5
VINYL ACETATE	<5
BROMODICHLOROMETHANE	<5
1,1,2,2-TETRACHLOROETHANE	<5
1,2-DICHLOROPROPANE	<5
TRANS-1,3-DICHLOROPROPENE	<5
TRICHLOROETHENE	<5
DIBROMOCHLOROMETHANE	<5
1,1,2-TRICHLOROETHANE	<5
BENZENE	<5
CIS-1,3-DICHLOROPROPENE	<5
BROMOFORM	<3
2-HEXANONE (MBK)	<5
4-METHYL-2-PENTANONE (MIBK)	<5
TETRACHLOROETHENE	<5
TOLUENE	<5
CHLOROBENZENE	<5
ETHYLBENZENE	<5
STYRENE	<5
TOTAL XYLENES	<5
ACROLEIN	<20
ACRYLONITRILE	<10
DIBROMOMETHANE	<5
DICHLORODIFLUOROMETHANE	<5
METHYL IODIDE	<5
TRANS-1,4-DICHLORO-2-BUTENE	<5
TRICHLOROMONOFLUOROMETHANE	<5
1,2,3-TRICHLOROPROPANE	<5

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Analytical Technologies, Inc.

GCMS - RESULTS

ATI I.D. : 40443605

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

COMPOUNDS	RESULTS
ETHYL METHACRYLATE	<5
ETHANOL	<100
BROMOMETHANE	<10
2-CHLOROETHYLVINYLETHER	<5
1,4-DICHLORO-2-BUTANE	<5
SURROGATE PERCENT RECOVERIES	
1,2-DICHLOROETHANE-D4 (%)	100
BFB (%)	101
TOLUENE-D8 (%)	104

Analytical Technologies, Inc.

ADDITIONAL COMPOUNDS (SEMI-QUANTITATED)

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

ATI I.D. : 40443605

COMPOUNDS	RESULTS
NO ADDITIONAL COMPOUNDS	

Analytical Technologies, Inc.

GCMS - RESULTS

REAGENT BLANK

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

		ATI I.D.	: 404436
CLIENT	: GIANT REFINING CO.	DATE EXTRACTED	: 05/05/94
PROJECT #	: (NONE)	DATE ANALYZED	: 05/05/94
PROJECT NAME	: ANNUAL GDWTR	UNITS	: UG/L
CLIENT I.D.	: REAGENT BLANK	DILUTION FACTOR	: N/A

COMPOUNDS	RESULTS
CHLOROMETHANE	<5
VINYL CHLORIDE	<0.5
CHLOROETHANE	<0.5
METHYLENE CHLORIDE	<5
ACETONE	<10
CARBON DISULFIDE	<5
1,1-DICHLOROETHENE	<5
1,1-DICHLOROETHANE	<5
TRANS-1,2-DICHLOROETHYLENE	<5
CHLOROFORM	<5
1,2-DICHLOROETHANE	<5
2-BUTANONE (MEK)	<5
1,1,1-TRICHLOROETHANE	<5
CARBON TETRACHLORIDE	<5
VINYL ACETATE	<5
BROMODICHLOROMETHANE	<5
1,1,2,2-TETRACHLOROETHANE	<5
1,2-DICHLOROPROPANE	<5
TRANS-1,3-DICHLOROPROPENE	<5
TRICHLOROETHENE	<5
DIBROMOCHLOROMETHANE	<5
1,1,2-TRICHLOROETHANE	<5
BENZENE	<5
CIS-1,3-DICHLOROPROPENE	<5
BROMOFORM	<3
2-HEXANONE (MBK)	<5
4-METHYL-2-PENTANONE (MIBK)	<5
TETRACHLOROETHENE	<5
TOLUENE	<5
CHLOROBENZENE	<5
ETHYLBENZENE	<5
STYRENE	<5
TOTAL XYLENES	<5
ACROLEIN	<20
ACRYLONITRILE	<10
DIBROMOMETHANE	<5
DICHLORODIFLUOROMETHANE	<5
METHYL IODIDE	<5
TRANS-1,4-DICHLORO-2-BUTENE	<5
TRICHLOROMONOFLUOROMETHANE	<5
1,2,3-TRICHLOROPROPANE	<5
ETHYL METHACRYLATE	<5
ETHANOL	<100

(CONTINUED NEXT PAGE)

Analytical Technologies, Inc.

GCMS - RESULTS

REAGENT BLANK

ATI I.D. : 404436

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

COMPOUNDS	RESULTS
BROMOMETHANE	<10
2-CHLOROETHYLVINYLETHER	<5
1,4-DICHLORO-2-BUTANE	<5
SURROGATE PERCENT RECOVERIES	
1,2-DICHLOROETHANE-D4 (%)	106
BFB (%)	100
TOLUENE-D8 (%)	103

Analytical Technologies, Inc.

GCMS - RESULTS

REAGENT BLANK

ADDITIONAL COMPOUNDS (SEMI-QUANTITATED)

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

CLIENT : GIANT REFINING CO. ATI I.D : 404436

COMPOUNDS	RESULTS
NO ADDITIONAL COMPOUNDS	

Analytical Technologies, Inc.

QUALITY CONTROL DATA

ATI I.D. : 404436

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

CLIENT : GIANT REFINING CO.
PROJECT # : (NONE)
PROJECT NAME : ANNUAL GDWTR
REF I.D. : 40443604

DATE ANALYZED : 05/05/94
SAMPLE MATRIX : AQUEOUS
UNITS : UG/L

COMPOUNDS	SAMPLE RESULT	CONC. SPIKED	SPIKED SAMPLE	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
1,1-DICHLOROETHENE	<5	50	52	104	52	104	0
TRICHLOROETHENE	<5	50	52	104	52	104	0
CHLOROBENZENE	<5	50	51	102	51	102	0
TOLUENE	<5	50	52	104	53	106	2
BENZENE	<5	50	52	104	54	108	4

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{(\text{Spiked Sample Result} - \text{Duplicate Spike Sample Result})}{\text{Average of Spiked Sample}} \times 100$$

Analytical Technologies, Inc., Albuquerque, NM
San Diego • Phoenix • Seattle • Pensacola • Ft. Collins • Portland • Albuquerque

CHAIN OF CUSTODY

DATE: 4-28-94 PAGE 1 OF 1

ATI LAB I.D. 404430

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT MANAGER:

COMPANY: GIANT
ADDRESS: I40 EXIT 39
JAMESTOWN, NM 87347
PHONE: (505) 722 3833
FAX: (505) 722 0210

BILL TO:
COMPANY: GIANT
ADDRESS: Rt 3 Box 7
GALLUP, NM 87301

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	NUMBER OF CONTAINERS
OW-2	4-27	10:00	H2O	01	5
OW-1	4-27	11:45	H2O	02	5
MW-2	4-27	2:50	H2O	03	13
MW-5	4-27	5:00	H2O	04	13
Trip Blank	4/19/94		AQ	05	1

ANALYSIS REQUEST

SAMPLE ID	Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/MTBE (8020)	pH, EC, ALKALINITY, TDS	CHLORIDE, SULFATE	Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.	8240 VOLATILES *	DISSOLVED METALS	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	Polynuclear Aromatics (610/8310)	TOC	TOX	SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal	PHENOLS	TOTAL METALS	The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion	RCRA Metals by TCLP (1311)
OW-2				X	X	X					X																
OW-1				X	X	X					X																
MW-2				X	X	X				X	X						X	X					X	X			
MW-5				X	X	X				X	X						X	X					X	X			
Trip Blank				X						X																	

PROJECT INFORMATION		SAMPLE RECEIPT	
PROJ. NO.:		NO. CONTAINERS	37
PROJ. NAME:	ANNUAL GDWTR	CUSTODY SEALS	Y / N / (NA)
P.O. NO.:	997 9023 94	RECEIVED INTACT	Y
SHIPPED VIA:	FEDEX	RECEIVED COLD	Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒ 2 WEEK

Comments:
* SEE ATTACHED LIST FOR PARAMETERS.
*C.O.C. Seals intact on outside of cooler.

SAMPLED & RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Lynn Shelton	Signature:	Signature:
Time: 7:58AM	Time:	Time:
Printed Name: LYNN SHELTON	Printed Name:	Printed Name:
Date: 4-28-94	Date:	Date:
Company: GIANT	Company:	Company:
Phone: 722027		

RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY:(LAB) 3.
Signature:	Signature:	Signature: Denise Davis
Time:	Time:	Time: 0900
Printed Name:	Printed Name:	Printed Name: Terri Pettee
Date:	Date:	Date: 4/29/94
Company:	Company:	Analytical Technologies, Inc.

ATI Labs: San Diego (619) 458-9141 • Phoenix (602) 496-4400 • Seattle (206) 228-8335 • Pensacola (904) 474-1001 • Portland (503) 684-0447 • Albuquerque (505) 344-3777 DISTRIBUTION: White, Canary - ATI • Pink - ORIGINATOR

Analytical Technologies, Inc. Albuquerque, NM

Chain of Custody 94-04-307

DATE 4/29/94 PAGE 1 OF 1

NETWORK PROJECT MANAGER: BETH PROFFITT

COMPANY: **Analytical Technologies, Inc.**

ADDRESS: 2709-D Pan American Freeway, NE
Albuquerque, NM 87107

CLIENT PROJECT MANAGER:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX - Run Duplicate	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)	632/632 MOD	619/619 MOD	610/8310	8240 (TCLP 1311) ZHE	Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)	NACE	ASBESTOS	BOD	TOTAL COLIFORM	FECAL COLIFORM	GROSS ALPHA/BETA	RADIUM 226/228	AIR - O2, CO2, METHANE	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
404436-3	4/27/94	1450	AQ	01	X	X																			6
-4	4/27/94	1700	AQ	02	X	X																			6

PROJECT INFORMATION		SAMPLE RECEIPT	
PROJECT NUMBER: 404436		TOTAL NUMBER OF CONTAINERS	10
PROJECT NAME: GRC		CHAIN OF CUSTODY SEALS	N
QC LEVEL: ~~STD.~~ IV		INTACT?	N
QC REQUIRED: MS MSD BLANK		RECEIVED GOOD COND./COLD	Y
TAT: STANDARD RUSH!		LAB NUMBER	94-04-307

DUE DATE: 5/13/94

RUSH SURCHARGE: —

CLIENT DISCOUNT: per quote %

W.O. # LK704

SAMPLES SENT TO:
- SAN DIEGO
- FT. COLLINS
- RENTON
- PENSACOLA
- PHOENIX
- BARRINGER
- FIBERQUANT

RELINQUISHED BY: 1.
Signature: Terri Dottie Time: 1730
Printed Name: Terri Dottie Date: 4/29/94
Analytical Technologies, Inc. Albuquerque

RECEIVED BY: (LAB) 1.
Signature: Time:
Printed Name: Date:
Company: Anlyte

RELINQUISHED BY: 2.
Signature: Time:
Printed Name: Date
Company: Anlyte

RECEIVED BY: (LAB) 2.
Signature: John Whaler Time: 1000
Printed Name: John Whaler Date: 4/30/94
Company: ATI-ABQ

Anal[illegible]l Technologies, Inc. Albuquerque, NM

Chain [illegible] Custody

DATE 4/29/94 PAGE 1 OF 1

NETWORK PROJECT MANAGER: BETH PROFFITT

COMPANY: **Analytical Technologies, Inc.**

ADDRESS: 2709-D Pan American Freeway, NE
Albuquerque, NM 87107

CLIENT PROJECT MANAGER:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)	EC, Alk, TDS, Cl, SO4	632/632 MOD	619/619 MOD	610/8310	8240 - see attached list pa (Appendix IX)	Dissolved Pb, Ba, Cd, Ca, Mg, Mn	8240 (TCLP 1311) ZHE	K, Se, Ag, Na	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)	Total Pb, Ba, Cd, Ca, Mg, Mn	~~[illegible]~~ K, Se, Ag, Na	ASBESTOS	Total Phenolics (420.1)	BOD	TOTAL COLIFORM	FECAL COLIFORM	Total Org Hg	GROSS ALPHA/BETA	RADIUM 226/228		AIR - O2, CO2, METHANE	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
404436-1	4/27/94	1030	AQ	1						X					X		X																[illegible] 2
-2		1145		2						X					X		X			X	X												[illegible] 2
-3		1450		3						X				X	X		X			X	X		X				X	X					6
-4		1700		4						X				X	X		X			X	X		X				X	X					7
-5 (T.B.)	4/19/94			5										X																			1

PROJECT INFORMATION

PROJECT NUMBER: 404436
PROJECT NAME: GRC
QC LEVEL: STD IV
QC REQUIRED: MS MSD BLANK
TAT: STANDARD RUSH!

DUE DATE: 5/13/94
RUSH SURCHARGE: ______
CLIENT DISCOUNT: per quote %

SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS	18
CHAIN OF CUSTODY SEALS	N
INTACT?	Y
RECEIVED GOOD COND./COLD	Y
LAB NUMBER	404434

WO # LL 706

SAMPLES SENT TO:
SAN DIEGO
FT. COLLINS
RENTON
PENSACOLA
PHOENIX ✓
BARRINGER
FIBERQUANT

RELINQUISHED BY: 1.
Signature: [signature] Time: 1230
Printed Name: Teri Pettre Date: 4/29/94
Analytical Technologies, Inc.
Albuquerque

RECEIVED BY: (LAB) 1.
Signature: Time:
Printed Name: Date:
Company:

RELINQUISHED BY: 2.
Signature: Time:
Printed Name: Date
Company:

RECEIVED BY: (LAB) 2.
Signature: [signature] Time: 11:05
Printed Name: [illegible] Date: 4-30-94
Company: ATI

Analytical Technologies, Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. **405312**

May 24, 1994

Giant Refining
Route 3, Box 7
Gallup, NM 87301

Project Name/Number: ANNUAL GDWTR

Attention: Lynn Shelton

On **05/03/94**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

Please note on the Total Organic Halide analysis relatively high RPD's for duplicate results were observed for some samples. This is likely due to the following factors. One, when concentrations are near the detection limit of 20 mg/L the reproducability of the TOX measurements is in the range of approximately +/- 20 mg/L. Two, the samples contained a very fine particulate material. The particulates may have caused the samples to be heterogeneous since the particulates would not be evenly distributed throughout the sample.

All Total Organic Halide and Total Organic Carbon samples received at ATI, Albuquerque had headspace.

Total Organic Carbon, Total Organic Halides analyses were performed by Analytical Technologies, Inc., 225 Commerce Drive, Fort Collins, CO.

EPA Method 150.1 analyses were performed by Analytical Technologies, Inc., Albuquerque, NM.

All other analyses were performed by Analytical Technologies, Inc., 9830 S. 51st Street, Suite B-113, Phoenix, AZ.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Letitia Krakowski, Ph.D.
Project Manager

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jd

Enclosure

Analytical Technologies, Inc.

CLIENT	: GIANT REFINING	DATE RECEIVED	: 05/03/94
PROJECT #	: (NONE)		
PROJECT NAME	: ANNUAL GDWTR	REPORT DATE	: 05/24/94

ATI ID: 405312

	ATI ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	405312-01	SMW-3	AQUEOUS	04/29/94
02	405312-02	SMW-4	AQUEOUS	04/29/94
03	405312-03	SMW-5	AQUEOUS	04/29/94
04	405312-04	SMW-6	AQUEOUS	04/29/94

---TOTALS---

MATRIX	#SAMPLES
AQUEOUS	4

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

CLIENT	: GIANT REFINING	ATI I.D.	: 405312
PROJECT #	: (NONE)	DATE RECEIVED	: 05/03/94
PROJECT NAME	: ANNUAL GDWTR	DATE ANALYZED	: 05/03/94

PARAMETER	UNITS	01	02	03	04
PH (150.1)	UNITS	7.81	8.49	8.85	7.24

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : GIANT REFINING
PROJECT # : (NONE)
PROJECT NAME : ANNUAL GDWTR

ATI I.D. : 405312
SAMPLE MATRIX : AQUEOUS

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC.	% REC
PH	UNITS	40530101	9.06	9.07	0.1	NA	NA	NA

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

ATI I.D. : 405312

CLIENT : GIANT REFINING CO.
PROJECT # : (NONE)
PROJECT NAME : ANNUAL GDWTR

DATE RECEIVED : 05/03/94
REPORT DATE : 05/24/94

PARAMETER	UNITS	01	02	03	04
CARBONATE (CACO3)	MG/L	<1	18	24	<1
BICARBONATE (CACO3)	MG/L	660	393	349	374
HYDROXIDE (CACO3)	MG/L	<1	<1	<1	<1
TOTAL ALKALINITY (AS CACO3)	MG/L	660	411	373	374
CHLORIDE (EPA 325.2)	MG/L	83	56	67	5400
CONDUCTIVITY, (UMHOS/CM)		3160	1190	1130	16900
SULFATE (EPA 375.2)	MG/L	1000	160	150	2100
T. DISSOLVED SOLIDS (160.1)	MG/L	2300	760	720	13000

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : GIANT REFINING CO.
PROJECT # : (NONE)
PROJECT NAME : ANNUAL GDWTR ATI I.D. : 405312

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
CARBONATE	MG/L	40531202	18	18	0	NA	NA	NA
BICARBONATE	MG/L		393	389	1	NA	NA	NA
HYDROXIDE	MG/L		<1	<1	NA	NA	NA	NA
TOTAL ALKALINITY	MG/L		411	407	1	NA	NA	NA
CHLORIDE	MG/L	40531201	83	82	1	161	80	98
CONDUCTIVITY(UMHOS/CM)		40561704	724	716	1	NA	NA	NA
SULFATE	MG/L	40530302	40	40	0	80	40	100
TOTAL DISSOLVED SOLIDS	MG/L	40530103	1400	1500	7	NA	NA	NA

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 10($$

Analytical Technologies, Inc.

METALS RESULTS

ATI I.D. : 405312

CLIENT : GIANT REFINING CO.
PROJECT # : (NONE)
PROJECT NAME : ANNUAL GDWTR

DATE RECEIVED : 05/03/9
REPORT DATE : 05/24/9

PARAMETER	UNITS	01	02	03	04
CALCIUM (EPA 200.7/6010)	MG/L	45.0	2.6	1.6	1140
CHROMIUM (EPA 200.7/6010)	MG/L	0.062	<0.010	0.094	0.442
POTASSIUM (EPA 200.7/6010)	MG/L	<1.0	<1.0	<1.0	4.6
MAGNESIUM (EPA 200.7/6010)	MG/L	13.9	0.7	0.7	221
SODIUM (EPA 200.7/6010)	MG/L	744	286	267	3120
LEAD (200.7/6010)	MG/L	<0.10	<0.10	<0.10	<0.10

Analytical Technologies, Inc. METALS - QUALITY CONTROL

CLIENT : GIANT REFINING CO.
PROJECT # : (NONE)
PROJECT NAME : ANNUAL GDWTR ATI I.D. : 405312

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
CALCIUM	MG/L	40531202	2.6	2.5	4	56.7	50.0	108
CHROMIUM	MG/L	40531201	0.062	0.061	2	0.973	1.00	91
POTASSIUM	MG/L	40531202	<1.0	<1.0	NA	49.3	50.0	99
MAGNESIUM	MG/L	40531202	0.7	0.7	0	26.0	25.0	101
SODIUM	MG/L	40531202	286	284	0.7	372	100	86
LEAD	MG/L	40531201	<0.10	<0.10	NA	0.90	1.00	90

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

GCMS - RESULTS

ATI I.D. : 40531201

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

CLIENT	: GIANT REFINING CO.	DATE SAMPLED	: 04/29/94
PROJECT #	: (NONE)	DATE RECEIVED	: 05/03/94
PROJECT NAME	: ANNUAL GDWTR	DATE EXTRACTED	: N/A
CLIENT I.D.	: SMW-3	DATE ANALYZED	: 05/11/94
SAMPLE MATRIX	: AQUEOUS	UNITS	: UG/L
		DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
CHLOROMETHANE	<5
VINYL CHLORIDE	<5
CHLOROETHANE	<5
METHYLENE CHLORIDE	<5
ACETONE	<10
CARBON DISULFIDE	<5
1,1-DICHLOROETHENE	<5
1,1-DICHLOROETHANE	<5
TRANS-1,2-DICHLOROETHYLENE	<5
CHLOROFORM	<5
1,2-DICHLOROETHANE	<5
2-BUTANONE (MEK)	<5
1,1,1-TRICHLOROETHANE	<5
CARBON TETRACHLORIDE	<5
VINYL ACETATE	<5
BROMODICHLOROMETHANE	<5
1,1,2,2-TETRACHLOROETHANE	<5
1,2-DICHLOROPROPANE	<5
TRANS-1,3-DICHLOROPROPENE	<5
TRICHLOROETHENE	<5
DIBROMOCHLOROMETHANE	<5
1,1,2-TRICHLOROETHANE	<5
BENZENE	<5
CIS-1,3-DICHLOROPROPENE	<5
BROMOFORM	<3
2-HEXANONE (MBK)	<5
4-METHYL-2-PENTANONE (MIBK)	<5
TETRACHLOROETHENE	<5
TOLUENE	<5
CHLOROBENZENE	<5
ETHYLBENZENE	<5
STYRENE	<5
TOTAL XYLENES	<5
ACROLEIN	<20
ACRYLONITRILE	<10
DIBROMOMETHANE	<5
DICHLORODIFLUOROMETHANE	<5
METHYL IODIDE	<5
TRANS-1,4-DICHLORO-2-BUTENE	<5
TRICHLOROMONOFLUOROMETHANE	<5
1,2,3-TRICHLOROPROPANE	<5

Analytical Technologies, Inc.

GCMS - RESULTS

ATI I.D. : 40531201

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

COMPOUNDS	RESULTS
ETHYL METHACRYLATE	<5
ETHANOL	<100
BROMOMETHANE	<10
2-CHLOROETHYLVINYLETHER	<5
1,4-DICHLORO-2-BUTANE	<5
SURROGATE PERCENT RECOVERIES	
1,2-DICHLOROETHANE-D4 (%)	99
BFB (%)	99
TOLUENE-D8 (%)	100

Analytical Technologies, Inc.

ADDITIONAL COMPOUNDS (SEMI-QUANTITATED)

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

ATI I.D. : 40531201

COMPOUNDS	RESULTS
NO ADDITIONAL COMPOUNDS	

Analytical Technologies, Inc.

GCMS - RESULTS

ATI I.D. : 40531202

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

CLIENT	: GIANT REFINING CO.	DATE SAMPLED	: 04/29/94
PROJECT #	: (NONE)	DATE RECEIVED	: 05/03/94
PROJECT NAME	: ANNUAL GDWTR	DATE EXTRACTED	: N/A
CLIENT I.D.	: SMW-4	DATE ANALYZED	: 05/11/94
SAMPLE MATRIX	: AQUEOUS	UNITS	: UG/L
		DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
CHLOROMETHANE	<5
VINYL CHLORIDE	<5
CHLOROETHANE	<5
METHYLENE CHLORIDE	<5
ACETONE	<10
CARBON DISULFIDE	<5
1,1-DICHLOROETHENE	<5
1,1-DICHLOROETHANE	<5
TRANS-1,2-DICHLOROETHYLENE	<5
CHLOROFORM	<5
1,2-DICHLOROETHANE	<5
2-BUTANONE (MEK)	<5
1,1,1-TRICHLOROETHANE	<5
CARBON TETRACHLORIDE	<5
VINYL ACETATE	<5
BROMODICHLOROMETHANE	<5
1,1,2,2-TETRACHLOROETHANE	<5
1,2-DICHLOROPROPANE	<5
TRANS-1,3-DICHLOROPROPENE	<5
TRICHLOROETHENE	<5
DIBROMOCHLOROMETHANE	<5
1,1,2-TRICHLOROETHANE	<5
BENZENE	<5
CIS-1,3-DICHLOROPROPENE	<5
BROMOFORM	<3
2-HEXANONE (MBK)	<5
4-METHYL-2-PENTANONE (MIBK)	<5
TETRACHLOROETHENE	<5
TOLUENE	<5
CHLOROBENZENE	<5
ETHYLBENZENE	<5
STYRENE	<5
TOTAL XYLENES	<5
ACROLEIN	<20
ACRYLONITRILE	<10
DIBROMOMETHANE	<5
DICHLORODIFLUOROMETHANE	<5
METHYL IODIDE	<5
TRANS-1,4-DICHLORO-2-BUTENE	<5
TRICHLOROMONOFLUOROMETHANE	<5
1,2,3-TRICHLOROPROPANE	<5

Analytical Technologies, Inc.

GCMS - RESULTS

ATI I.D. : 40531202

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

COMPOUNDS	RESULTS
ETHYL METHACRYLATE	<5
ETHANOL	<100
BROMOMETHANE	<10
2-CHLOROETHYLVINYLETHER	<5
1,4-DICHLORO-2-BUTANE	<5
SURROGATE PERCENT RECOVERIES	
1,2-DICHLOROETHANE-D4 (%)	100
BFB (%)	99
TOLUENE-D8 (%)	98

Analytical Technologies, Inc ADDITIONAL COMPOUNDS (SEMI-QUANTITATED)

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

ATI I.D. : 40531202

COMPOUNDS	RESULTS
NO ADDITIONAL COMPOUNDS	

Analytical Technologies, Inc.

GCMS - RESULTS

ATI I.D. : 40531203

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

CLIENT	: GIANT REFINING CO.	DATE SAMPLED	: 04/29/94
PROJECT #	: (NONE)	DATE RECEIVED	: 05/03/94
PROJECT NAME	: ANNUAL GDWTR	DATE EXTRACTED	: N/A
CLIENT I.D.	: SMW-5	DATE ANALYZED	: 05/11/94
SAMPLE MATRIX	: AQUEOUS	UNITS	: UG/L
		DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
CHLOROMETHANE	<5
VINYL CHLORIDE	<5
CHLOROETHANE	<5
METHYLENE CHLORIDE	<5
ACETONE	<10
CARBON DISULFIDE	<5
1,1-DICHLOROETHENE	<5
1,1-DICHLOROETHANE	<5
TRANS-1,2-DICHLOROETHYLENE	<5
CHLOROFORM	<5
1,2-DICHLOROETHANE	<5
2-BUTANONE (MEK)	<5
1,1,1-TRICHLOROETHANE	<5
CARBON TETRACHLORIDE	<5
VINYL ACETATE	<5
BROMODICHLOROMETHANE	<5
1,1,2,2-TETRACHLOROETHANE	<5
1,2-DICHLOROPROPANE	<5
TRANS-1,3-DICHLOROPROPENE	<5
TRICHLOROETHENE	<5
DIBROMOCHLOROMETHANE	<5
1,1,2-TRICHLOROETHANE	<5
BENZENE	<5
CIS-1,3-DICHLOROPROPENE	<5
BROMOFORM	<3
2-HEXANONE (MBK)	<5
4-METHYL-2-PENTANONE (MIBK)	<5
TETRACHLOROETHENE	<5
TOLUENE	<5
CHLOROBENZENE	<5
ETHYLBENZENE	<5
STYRENE	<5
TOTAL XYLENES	<5
ACROLEIN	<20
ACRYLONITRILE	<10
DIBROMOMETHANE	<5
DICHLORODIFLUOROMETHANE	<5
METHYL IODIDE	<5
TRANS-1,4-DICHLORO-2-BUTENE	<5
TRICHLOROMONOFLUOROMETHANE	<5
1,2,3-TRICHLOROPROPANE	<5

Analytical Technologies, Inc.

GCMS - RESULTS

ATI I.D. : 40531203

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

COMPOUNDS	RESULTS
ETHYL METHACRYLATE	<5
ETHANOL	<100
BROMOMETHANE	<10
2-CHLOROETHYLVINYLETHER	<5
1,4-DICHLORO-2-BUTANE	<5
SURROGATE PERCENT RECOVERIES	
1,2-DICHLOROETHANE-D4 (%)	100
BFB (%)	100
TOLUENE-D8 (%)	101

Analytical Technologies, Inc

ADDITIONAL COMPOUNDS (SEMI-QUANTITATED)

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

ATI I.D. : 40531203

COMPOUNDS	RESULTS
NO ADDITIONAL COMPOUNDS	

Analytical Technologies, Inc.

GCMS - RESULTS

ATI I.D. : 40531204

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

CLIENT	: GIANT REFINING CO.	DATE SAMPLED	: 04/29/9
PROJECT #	: (NONE)	DATE RECEIVED	: 05/03/9
PROJECT NAME	: ANNUAL GDWTR	DATE EXTRACTED	: N/A
CLIENT I.D.	: SMW-6	DATE ANALYZED	: 05/11/9
SAMPLE MATRIX	: AQUEOUS	UNITS	: UG/L
		DILUTION FACTOR	: 1

COMPOUNDS	RESULTS
CHLOROMETHANE	<5
VINYL CHLORIDE	<5
CHLOROETHANE	<5
METHYLENE CHLORIDE	<5
ACETONE	17
CARBON DISULFIDE	<5
1,1-DICHLOROETHENE	<5
1,1-DICHLOROETHANE	<5
TRANS-1,2-DICHLOROETHYLENE	<5
CHLOROFORM	<5
1,2-DICHLOROETHANE	<5
2-BUTANONE (MEK)	<5
1,1,1-TRICHLOROETHANE	<5
CARBON TETRACHLORIDE	<5
VINYL ACETATE	<5
BROMODICHLOROMETHANE	<5
1,1,2,2-TETRACHLOROETHANE	<5
1,2-DICHLOROPROPANE	<5
TRANS-1,3-DICHLOROPROPENE	<5
TRICHLOROETHENE	<5
DIBROMOCHLOROMETHANE	<5
1,1,2-TRICHLOROETHANE	<5
BENZENE	<5
CIS-1,3-DICHLOROPROPENE	<5
BROMOFORM	<3
2-HEXANONE (MBK)	<5
4-METHYL-2-PENTANONE (MIBK)	<5
TETRACHLOROETHENE	<5
TOLUENE	<5
CHLOROBENZENE	<5
ETHYLBENZENE	<5
STYRENE	<5
TOTAL XYLENES	<5
ACROLEIN	<20
ACRYLONITRILE	<10
DIBROMOMETHANE	<5
DICHLORODIFLUOROMETHANE	<5
METHYL IODIDE	<5
TRANS-1,4-DICHLORO-2-BUTENE	<5
TRICHLOROMONOFLUOROMETHANE	<5
1,2,3-TRICHLOROPROPANE	<5

Analytical Technologies, Inc.

GCMS - RESULTS

ATI I.D. : 40531204

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

COMPOUNDS	RESULTS
ETHYL METHACRYLATE	<5
ETHANOL	<100
BROMOMETHANE	<10
2-CHLOROETHYLVINYLETHER	<5
1,4-DICHLORO-2-BUTANE	<5
SURROGATE PERCENT RECOVERIES	
1,2-DICHLOROETHANE-D4 (%)	101
BFB (%)	98
TOLUENE-D8 (%)	99

Analytical Technologies, Inc.

ADDITIONAL COMPOUNDS (SEMI-QUANTITATED)

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

ATI I.D. : 40531202

COMPOUNDS	RESULTS
NO ADDITIONAL COMPOUNDS	

Analytical Technologies, Inc.

GCMS - RESULTS

REAGENT BLANK

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

CLIENT	: GIANT REFINING CO.	ATI I.D.	: 405312
PROJECT #	: (NONE)	DATE EXTRACTED	: 05/11/9
PROJECT NAME	: ANNUAL GDWTR	DATE ANALYZED	: 05/11/9
CLIENT I.D.	: REAGENT BLANK	UNITS	: UG/L
		DILUTION FACTOR	: N/A

COMPOUNDS	RESULTS
CHLOROMETHANE	<5
VINYL CHLORIDE	<5
CHLOROETHANE	<5
METHYLENE CHLORIDE	<5
ACETONE	<10
CARBON DISULFIDE	<5
1,1-DICHLOROETHENE	<5
1,1-DICHLOROETHANE	<5
TRANS-1,2-DICHLOROETHYLENE	<5
CHLOROFORM	<5
1,2-DICHLOROETHANE	<5
2-BUTANONE (MEK)	<5
1,1,1-TRICHLOROETHANE	<5
CARBON TETRACHLORIDE	<5
VINYL ACETATE	<5
BROMODICHLOROMETHANE	<5
1,1,2,2-TETRACHLOROETHANE	<5
1,2-DICHLOROPROPANE	<5
TRANS-1,3-DICHLOROPROPENE	<5
TRICHLOROETHENE	<5
DIBROMOCHLOROMETHANE	<5
1,1,2-TRICHLOROETHANE	<5
BENZENE	<5
CIS-1,3-DICHLOROPROPENE	<5
BROMOFORM	<3
2-HEXANONE (MBK)	<5
4-METHYL-2-PENTANONE (MIBK)	<5
TETRACHLOROETHENE	<5
TOLUENE	<5
CHLOROBENZENE	<5
ETHYLBENZENE	<5
STYRENE	<5
TOTAL XYLENES	<5
ACROLEIN	<20
ACRYLONITRILE	<10
DIBROMOMETHANE	<5
DICHLORODIFLUOROMETHANE	<5
METHYL IODIDE	<5
TRANS-1,4-DICHLORO-2-BUTENE	<5
TRICHLOROMONOFLUOROMETHANE	<5
1,2,3-TRICHLOROPROPANE	<5
ETHYL METHACRYLATE	<5
ETHANOL	<100

(CONTINUED NEXT PAGE)

Analytical Technologies, Inc.

GCMS - RESULTS

REAGENT BLANK

ATI I.D. : 405312

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

COMPOUNDS	RESULTS
BROMOMETHANE	<10
2-CHLOROETHYLVINYLETHER	<5
1,4-DICHLORO-2-BUTANE	<5
SURROGATE PERCENT RECOVERIES	
1,2-DICHLOROETHANE-D4 (%)	101
BFB (%)	100
TOLUENE-D8 (%)	99

Analytical Technologies, Inc.

GCMS - RESULTS

REAGENT BLANK

ADDITIONAL COMPOUNDS (SEMI-QUANTITATED)

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

CLIENT : GIANT REFINING CO. ATI I.D : 405312

COMPOUNDS	RESULTS
NO ADDITIONAL COMPOUNDS	

Analytical Technologies, Inc.

QUALITY CONTROL DATA

ATI I.D. : 405312

TEST : VOLATILE ORGANICS (EPA 8240) APPENDIX IX

CLIENT : GIANT REFINING CO.
PROJECT # : (NONE)
PROJECT NAME : ANNUAL GDWTR
REF I.D. : 40530103

DATE ANALYZED : 05/11/94
SAMPLE MATRIX : AQUEOUS
UNITS : UG/L

COMPOUNDS	SAMPLE RESULT	CONC. SPIKED	SPIKED SAMPLE	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
1,1-DICHLOROETHENE	<5	50	51	102	48	96	6
TRICHLOROETHENE	<5	50	51	102	50	100	2
CHLOROBENZENE	<5	50	51	102	50	100	2
TOLUENE	<5	50	51	102	50	100	2
BENZENE	<5	50	50	100	49	98	2

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{(\text{Spiked Sample Result} - \text{Duplicate Spike Sample Result})}{\text{Average of Spiked Sample}} \times 100$$

Analytical Technologies, Inc.

TOTAL ORGANIC CARBON

Method 415.2

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Client Project ID: GRC -- 405312

Lab Workorder Number: 94-05-045

Date Collected: 04/29/94

Date Analyzed: 05/09/94

Sample Matrix: Water

Sample ID	Lab Sample ID	Volume Injected (mL)	TOC Conc. (mg/L)	TOC AVG	RPD
Reagent Blank	RB 94-05-045	1	< 1.0	< 1.0	N/A
405312-1	94-05-045-01	1	2		
	94-05-045-01DUP	1	2	2	0
405312-2	94-05-045-02	1	3		
	94-05-045-02DUP	1	3	3	0
405312-3	94-05-045-03	1	2		
	94-05-045-03DUP	1	2	2	0
405312-4	94-05-045-04	1	32		
	94-05-045-04DUP	1	31	31.5	3

Analytical Technologies, Inc.

TOTAL ORGANIC HALIDE

Modified Method 9020 TOX

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Client Project ID: GRC -- 405312

Lab Workorder Number: 94-05-045

Date Collected: 04/29/94

Date Extracted: 05/11/94

Date Analyzed: 05/11/94

Sample Matrix: Water

Sample ID	Lab Sample ID	Sample Volume (mL)	TOX Conc. (ug/L)	TOX AVG	RPD
Reagent Blank	WRB94-05-045	100	< 20	< 20	N/A
405312-1	94-05-045-01	100	30		
	94-05-045-01DUP	100	30	30	0
405312-2	94-05-045-02	100	80		
	94-05-045-02DUP	100	50	65	46
405312-3	94-05-045-03	100	30		
	94-05-045-03DUP	100	< 20	15	N/A
405312-4	94-05-045-04	50	290		
	94-05-045-04DUP	50	210	250	32

Analytical Technologies, Inc.

TOTAL ORGANIC HALIDE MATRIX SPIKE RESULTS

Modified Method 9020 TOX

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Lab Sample ID: 94-04-307-02

Sample Matrix: Water

Sample ID

In House

Date Extracted: 05/11/94

Date Analyzed: 05/11/94

Analyte	Spike Added (ug/L)	Sample Concentration (ug/L)	MS Concentration (ug/L)	MS Percent Recovery
2,4,6-Trichlorophenol	200	< 20	200	100

Technologies, Inc., Albuquerque, NM

San Diego • Phoenix • Seattle • Pensacola • Ft. Collins • Portland • Albuquerque

CHAIN OF CUSTODY

DATE: 5-2-94 PAGE 1 OF 1

ATI LAB I.D. 405312

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT MANAGER:

COMPANY: Giant Refining
ADDRESS: I-40, Exit 39
Jamestown, NM 87347
PHONE: 505/722-3833
FAX: 505/722-0210

BILL TO:
COMPANY: Same
ADDRESS: Route 3, Box 7
Gallup, NM 87301

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
SMW-3	4-29	2:50	H_2O	01
SMW-4	4-29	3:25	H_2O	02
SMW-5	4-29	4:00	H_2O	03
SMW-6	4-29	4:40	H_2O	04

ANALYSIS REQUEST

Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/MTBE (8020)	[illegible]*		Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.	TDC	TDX	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240) *	Polynuclear Aromatics (610/8310)	TOTAL METALS (Cr, Pb)	DISSOLVED METALS**	SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal	pH, EC, TDS, ALKALINITY	Cl, SO4	The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion	RCRA Metals by TCLP (1311)		NUMBER OF CONTAINERS
									X	X				X		X	X					X	X					11
									X	X				X		X	X					X	X					11
									X	X				X		X	X					X	X					11
									X	X				X		X	X					X	X					11

PROJECT INFORMATION

PROJ. NO.:
PROJ. NAME: ANNUAL GDWTR
P.O. NO.: 997902394
SHIPPED VIA: FED EX

SAMPLE RECEIPT

NO. CONTAINERS: 44
CUSTODY SEALS: Y / N / (NA)
RECEIVED INTACT: Y
RECEIVED COLD: Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒ 2 WEEK

Comments: * C.O.C. Seals intact on outside cooler.

* SEE ATTACHED LIST OF PARAMETERS

** Ca, Mg, K, Na

SAMPLED & RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Lynn Shelton Time: 11:10AM	Signature: Time:	Signature: Time:
Printed Name: LYNN SHELTON Date: 5-2-94	Printed Name: Date:	Printed Name: Date:
Company: GIANT Phone: 722-0227	Company:	Company:

RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY: (LAB) 3.
Signature: Time:	Signature: Time:	Signature: David Dasse Time: 0930
Printed Name: Date:	Printed Name: Date:	Printed Name: Terri Dette Date: 5/3/94
Company:	Company:	Analytical Technologies, Inc.

Analytical Technologies, Inc. Albuquerque, NM

Chain of Custody 94-05-045

DATE 5/4/94 PAGE 1 OF 1

NETWORK PROJECT MANAGER: BETH PROFFITT

COMPANY: **Analytical Technologies, Inc.**

ADDRESS: 2709-D Pan American Freeway, NE
Albuquerque, NM 87107

CLIENT PROJECT MANAGER:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX – run duplicates	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)	632/632 MOD	619/619 MOD	610/8310		8240 (TCLP 1311) ZHE	Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)		NACE	ASBESTOS		BOD	TOTAL COLIFORM	FECAL COLIFORM	GROSS ALPHA/BETA	RADIUM 226/228	AIR - O2, CO2, METHANE	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
405312-1	4/29/94	1450	W	01	X	X																						4
-2		1525		02	X	X																						4
-3		1600		03	X	X																						4
-4		1640		04	X	X																						4

PROJECT INFORMATION	
PROJECT NUMBER:	405312
PROJECT NAME:	GRC
QC LEVEL:	STD IV
QC REQUIRED:	MS MSD BLANK
TAT:	STANDARD RUSH!

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	20
CHAIN OF CUSTODY SEALS	N
INTACT?	N
RECEIVED GOOD COND./COLD	Y
LAB NUMBER	94-05-045

DUE DATE: 5/7/94

RUSH SURCHARGE:

CLIENT DISCOUNT: no quote %

WO #4720

SAMPLES SENT TO:
- SAN DIEGO
- FT. COLLINS
- RENTON
- PENSACOLA
- PHOENIX
- BARRINGER
- FIBERQUANT

RELINQUISHED BY: 1.
Signature: Terri Dottre Time: 1730
Printed Name: Terri Dottre Date: 5/4/94
Analytical Technologies, Inc. Albuquerque
Company:

RECEIVED BY: (LAB) 1.
Signature: Time:
Printed Name: Date:
Company:

RELINQUISHED BY: 2.
Signature: Time:
Printed Name: Date:
Company: Airborne

RECEIVED BY: (LAB) 2.
Signature: John Whalen Time: 1000
Printed Name: John Whalen Date: 5/5/94
Company: ATI-CO

Analytical Technologies, Inc. Albuquerque, NM

Chain of Custody

DATE 5/4/94 PAGE 1 OF 1

NETWORK PROJECT MANAGER: BETH PROFFITT

COMPANY: Analytical Technologies, Inc.

ADDRESS: 2709-D Pan American Freeway, NE
Albuquerque, NM 87107

CLIENT PROJECT MANAGER:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)	EC, pH, TDS, Cl, SO4	632/632 MOD	619/619 MOD	610/8310	Dissolved Ca, Mg, K, Na	8240 (TCLP 1311) ZHE	Total Cr, Pb	Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240) see attached list	NACE	ASBESTOS	BOD	TOTAL COLIFORM	FECAL COLIFORM	GROSS ALPHA/BETA	RADIUM 226/228	AIR - O2, CO2, METHANE	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
405312-1	4/29/94	1450	AQ	1						X				X		X		X										5
-2	"	1525	"	2						X				X		X		X										
-3	"	1600	"	3						X				X		X		X										
-4	"	1610	"	4						X				X		X		X										

PROJECT INFORMATION	
PROJECT NUMBER:	405312
PROJECT NAME:	GRC
QC LEVEL:	STD. IV
QC REQUIRED:	MS MSD BLANK
TAT:	STANDARD RUSHI

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	20
CHAIN OF CUSTODY SEALS	N
INTACT?	N/A
RECEIVED GOOD COND./COLD	Y
LAB NUMBER	405312

DUE DATE: 5/17/94

RUSH SURCHARGE:

CLIENT DISCOUNT: see quote

W.O. # 4K719

SAMPLES SENT TO:	
SAN DIEGO	
FT. COLLINS	
RENTON	
PENSACOLA	
PHOENIX	X
BARRINGER	
FIBERQUANT	

RELINQUISHED BY: 1.	
Signature:	Time: 1730
Printed Name: Leri Dottre	Date: 5/4/94
Analytical Technologies, Inc. Albuquerque	
RECEIVED BY: (LAB) 1.	
Signature:	Time:
Printed Name:	Date:
Company:	

RELINQUISHED BY: 2.	
Signature:	Time:
Printed Name:	Date
Company:	
RECEIVED BY: (LAB) 2.	
Signature:	Time: 10:15
Printed Name: M Forrester	Date: 5-5-94
Company: ATI	

Analytical **Technologies,** Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. **407325**

July 27, 1994

Giant Refining Co.
Route 3, Box 7
Gallup, NM 87301

Project Name/Number: GROUNDWATER (NONE)

Attention: Lynn Shelton

On **07/08/94**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **non-aqueous & aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA 8020 analyses were performed by Analytical Technologies, Inc., Albuquerque, NM.

All other analyses were performed by Analytical Technologies, Inc., 225 Commerce Drive, Fort Collins, CO.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Letitia Krakowski, Ph.D.
Project Manager

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jt

Enclosure

Analytical Technologies, Inc.

CLIENT : GIANT REFINING
PROJECT # : (NONE)
PROJECT NAME : GROUNDWATER

DATE RECEIVED : 07/08/94
REPORT DATE : 07/27/94

ATI ID: 407325

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	567-SOIL	NON-AQ	07/06/94
02	SMW-6	AQUEOUS	07/06/94
03	OW-1	AQUEOUS	07/06/94
04	OW-2	AQUEOUS	07/07/94

---TOTALS---

MATRIX	#SAMPLES
NON-AQ	1
AQUEOUS	3

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : BTEX, MTBE (EPA 8020)

CLIENT : GIANT REFINING ATI I.D.: 407325

PROJECT # : (NONE)

PROJECT NAME : GROUNDWATER

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
03	OW-1	AQUEOUS	07/06/94	NA	07/11/94	1
04	OW-2	AQUEOUS	07/07/94	NA	07/11/94	1

PARAMETER	UNITS	03	04
BENZENE	UG/L	<0.5	<0.5
TOLUENE	UG/L	<0.5	<0.5
ETHYLBENZENE	UG/L	<0.5	<0.5
TOTAL XYLENES	UG/L	<0.5	2.2
METHYL-t-BUTYL ETHER	UG/L	<2.5	<2.5
SURROGATE:			
BROMOFLUOROBENZENE (%)		102	103

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

REAGENT BLANK

TEST	: BTEX, MTBE (EPA 8020)	ATI I.D.	: 407325
BLANK I.D.	: 071194	MATRIX	: AQUEOUS
CLIENT	: GIANT REFINING	DATE EXTRACTED	: NA
PROJECT #	: (NONE)	DATE ANALYZED	: 07/11/94
PROJECT NAME	: GROUNDWATER	DILUTION FACTOR	: 1

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5
METHYL-t-BUTYL ETHER	UG/L	<2.5

SURROGATE:

BROMOFLUOROBENZENE (%)	99

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

TEST	: BTEX, MTBE (EPA 8020)		
MSMSD #	: 40731101	ATI I.D.	: 407325
CLIENT	: GIANT REFINING	DATE EXTRACTED	: NA
PROJECT #	: (NONE)	DATE ANALYZED	: 07/11/94
PROJECT NAME	: GROUNDWATER	SAMPLE MATRIX	: AQUEOUS
REF. I.D.	: 40731101	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD
BENZENE	<0.5	10	9.8	98	9.8	98	0
TOLUENE	<0.5	10	9.7	97	9.8	98	1
ETHYLBENZENE	<0.5	10	10	100	10	100	0
TOTAL XYLENES	0.5	30	30	98	30	98	0
METHYL-t-BUTYL ETHER	<2.5	20	20	100	20	100	0

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

VOLATILE ORGANICS

Method 624

Lab Name: Analytical Technologies, Inc.
Client Name: ATI-NM
Client Project ID: Giant -- 407325
Lab Sample ID: 94-07-074-02
Sample Matrix: Water

Sample ID: SMW-6

Date Collected: 07/06/94
Date Analyzed: 07/14/94
Dilution Factor: 10

Analyte	Results (ug/L)	Detection Limit (ug/L)
Chloromethane	ND	100
Bromomethane	ND	100
Vinyl chloride	ND	10
Chloroethane	ND	10
Methylene chloride	ND	50
Acetone	ND	100
Carbon disulfide	ND	10
1,1-Dichloroethene	ND	10
1,1-Dichloroethane	ND	10
1,2-Dichloroethene (Total)	ND	10
Chloroform	ND	10
1,2-Dichloroethane	ND	10
2-Butanone (MEK)	ND	100
1,1,1-Trichloroethane	ND	10
Carbon tetrachloride	ND	10
Vinyl acetate	ND	100
Bromodichloromethane	ND	10
1,1,2,2-Tetrachloroethane	ND	10
1,2-Dichloropropane	ND	10
trans-1,3-Dichloropropene	ND	10
Trichloroethene	ND	10
Dibromochloromethane	ND	10
1,1,2-Trichloroethane	ND	10
Benzene	ND	10
cis-1,3-Dichloropropene	ND	10
2-Chloroethylvinylether	ND	100
Bromoform	ND	50
2-Hexanone (MBK)	ND	100
4-Methyl-2-pentanone (MIBK)	ND	100
Tetrachloroethene	ND	10
Toluene	ND	10
Chlorobenzene	ND	10
Ethylbenzene	ND	10
Styrene	ND	10
Total Xylenes	ND	10

SURROGATE RECOVERIES

Analyte	% Recovery
1,2-Dichloroethane-d4	98
Toluene-d8	98
Bromofluorobenzene	99

ND = Not Detected

Analytical **Technologies,** Inc.

VOLATILE MATRIX SPIKE RECOVERY

Method 624

Lab Name: Analytical Technologies, Inc.
Client Name: ATI-NM
Client Project ID: Giant -- 407325
Lab Sample ID: 40749908/AZ

Sample ID: In House

Date Collected: N/A
Date Analyzed: 07/12/94
Sample Matrix: Water

Analyte	Spike Added (ug/L)	Sample Concentration (ug/L)	MS Concentration (ug/L)	MS % Rec
1,1-Dichloroethene	50	ND	51	102
Trichloroethene	50	ND	51	102
Chlorobenzene	50	ND	51	102
Toluene	50	ND	50	100
Benzene	50	ND	50	100

Analyte	Spike Added (ug/L)	MSD Concentration (ug/L)	MSD % Recovery	% RPD
1,1-Dichloroethene	50	50	100	2
Trichloroethene	50	49	98	4
Chlorobenzene	50	50	100	2
Toluene	50	49	98	2
Benzene	50	49	98	2

ND = Not Detected

Analytical Technologies, Inc.

VOLATILE ORGANICS
Method 624

Lab Name: Analytical Technologies, Inc.
Client Name: ATI-NM
Client Project ID: Giant -- 407325
Lab Sample ID: 94-07-074-RB
Sample Matrix: Water

Sample ID: Reagent Blank

Date Collected: N/A
Date Analyzed: 07/14/94

Analyte	Results (ug/L)	Detection Limit (ug/L)
Chloromethane	ND	10
Bromomethane	ND	10
Vinyl chloride	ND	1
Chloroethane	ND	1
Methylene chloride	ND	5
Acetone	ND	10
Carbon disulfide	ND	1
1,1-Dichloroethene	ND	1
1,1-Dichloroethane	ND	1
1,2-Dichloroethene (Total)	ND	1
Chloroform	ND	1
1,2-Dichloroethane	ND	1
2-Butanone (MEK)	ND	10
1,1,1-Trichloroethane	ND	1
Carbon tetrachloride	ND	1
Vinyl acetate	ND	10
Bromodichloromethane	ND	1
1,1,2,2-Tetrachloroethane	ND	1
1,2-Dichloropropane	ND	1
trans-1,3-Dichloropropene	ND	1
Trichloroethene	ND	1
Dibromochloromethane	ND	1
1,1,2-Trichloroethane	ND	1
Benzene	ND	1
cis-1,3-Dichloropropene	ND	1
2-Chloroethylvinylether	ND	10
Bromoform	ND	5
2-Hexanone (MBK)	ND	10
4-Methyl-2-pentanone (MIBK)	ND	10
Tetrachloroethene	ND	1
Toluene	ND	1
Chlorobenzene	ND	1
Ethylbenzene	ND	1
Styrene	ND	1
Total Xylenes	ND	1

SURROGATE RECOVERIES

Analyte	% Recovery
1,2-Dichloroethane-d4	99
Toluene-d8	98
Bromofluorobenzene	99

ND = Not Detected

AnalyticalTechnologies, Inc., Albuquerque, NM

San Diego • Phoenix • Seattle • Pensacola • Ft. Collins • Portland • Albuquerque

CHAIN OF CUSTODY

DATE: 7/7/94 PAGE 1 OF 1

ATI LAB I.D. 407325

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

PROJECT MANAGER:

COMPANY: GIANT REFINING COMPANY
ADDRESS: I40, EXIT 39
JAMESTOWN, NM 87347
PHONE: (505) 722-3833
FAX: (505) 722-0210

BILL TO: LYNN SHELTON
COMPANY: SAMB
ADDRESS: ROUTE 3, BOX 7
GALLUP, NM 87301

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/MTBE (8020)	pH	TOTAL LEAD (ICP 6010)	Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.			Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	Polynuclear Aromatics (610/8310)			SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal			The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion	RCRA Metals by TCLP (1311)	NUMBER OF CONTAINERS
567-SOIL	7/6/94	1335	SOIL	01					X	X																					1
SMW-6	7/6/94	1620	water	02															X												2
OW-1	7/6/94	1505	WATER	03				X																							3
OW-2	7/7/94	0932	WATER	04				X																							2

PROJECT INFORMATION

PROJ. NO.:
PROJ. NAME: GROUNDWATER
P.O. NO.: 997-9023-94
SHIPPED VIA: FED EX

SAMPLE RECEIPT

NO. CONTAINERS	07	
CUSTODY SEALS	(Y)	N / NA
RECEIVED INTACT	Y	
RECEIVED COLD	Y	

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒ 2 WEEK

Comments:

Received Via Federal Express

SAMPLED & RELINQUISHED BY: 1.

Signature: Walter Toomer Time: 1115
Printed Name: WALT TOOMER Date: 7-7-94
Company: GIANT Phone: (505) 722-0212

RELINQUISHED BY: 2.

Signature: Time:
Printed Name: Date:
Company:

RELINQUISHED BY: 3.

Signature: Time:
Printed Name: Date:
Company:

RECEIVED BY: 1.

Signature: D. Lee Time:
Printed Name: Date:
Company:

RECEIVED BY: 2.

Signature: Time:
Printed Name: Date:
Company:

RECEIVED BY: (LAB) 3.

Signature: D. Lee Time: 10:10
Printed Name: Dianne Lutter Date: 7/8/94
Analytical Technologies, Inc.

DISTRIBUTION: White, Canary - ... Pink - ORIGINATOR

94-07-074

Analytical**Technologies,**Inc. Albuquerque, NM

Chain of Custody

DATE 7/8/94 PAGE 1 OF 1

NETWORK PROJECT MANAGER: BETH PROFFITT

COMPANY: **Analytical Technologies, Inc.**

ADDRESS: 2709-D Pan American Freeway, NE
Albuquerque, NM 87107

CLIENT PROJECT MANAGER:

J.

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)	Total lead (1010)	632/632 MOD	619/619 MOD	610/8310	PH	8240 (TCLP 1311) ZHE	Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)	NACE	ASBESTOS	BOD	TOTAL COLIFORM	FECAL COLIFORM	GROSS ALPHA/BETA	RADIUM 226/228	AIR - O2, CO2, METHANE	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
407325-01	7/6/94	1335	NONAQ	01						X				X													1
407325-02	7/6/94	4:20	AQ	02													X										2

PROJECT INFORMATION	
PROJECT NUMBER:	407325
PROJECT NAME:	Giant
QC LEVEL:	(STD) IV
QC REQUIRED:	MS MSD BLANK
TAT:	(STANDARD) RUSH!

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	3
CHAIN OF CUSTODY SEALS	N
INTACT?	NA
RECEIVED GOOD COND/(COLD)	Y
LAB NUMBER	

DUE DATE: 7/22/94
RUSH SURCHARGE: 0
CLIENT DISCOUNT: 10 %

WO# LK906

SAMPLES SENT TO:	
SAN DIEGO	
FT. COLLINS	X
RENTON	
PENSACOLA	
PHOENIX	
BARRINGER	
FIBERQUANT	

RELINQUISHED BY: 1.
Signature: Time: 17:30
Printed Name: Dianne Luther Date 7/8/94
Analytical Technologies, Inc. Albuquerque

RECEIVED BY: (LAB) 1.
Signature: Time:
Printed Name: Date:
Company:

RELINQUISHED BY: 2.
Signature: Time:
Printed Name: Date
Company: AIRBORNE

RECEIVED BY: (LAB) 2.
Signature: Time: 10:30
Printed Name: C. KPIN Date:
Company: ATI

Analytical Technologies, Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. **408354**

August 18, 1994

Giant Refining
Route 3, Box 7
Gallup, NM 87301

Project Name/Number: GROUNDWATER

Attention: Walt Toomer

On **08/15/94**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

Letitia Krakowski, Ph.D.
Project Manager

MR:jt

Enclosure

Analytical Technologies, Inc.

CLIENT	: GIANT REFINING	DATE RECEIVED	: 08/15/94
PROJECT #	: (NONE)		
PROJECT NAME	: GROUNDWATER	REPORT DATE	: 08/18/94

ATI ID: 408354

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	OW-1	AQUEOUS	08/11/94
02	OW-2	AQUEOUS	08/11/94

---TOTALS---

MATRIX	#SAMPLES
AQUEOUS	2

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : BTEX (EPA 8020)

CLIENT : GIANT REFINING ATI I.D.: 408354

PROJECT # : (NONE)

PROJECT NAME : GROUNDWATER

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	OW-1	AQUEOUS	08/11/94	NA	08/16/94	1
02	OW-2	AQUEOUS	08/11/94	NA	08/16/94	1

PARAMETER	UNITS	01	02
BENZENE	UG/L	<0.5	<0.5
TOLUENE	UG/L	<0.5	<0.5
ETHELBENZENE	UG/L	<0.5	<0.5
TOTAL XYLENES	UG/L	<0.5	<0.5
SURROGATE:			
BROMOFLUOROBENZENE (%)		83	94

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

REAGENT BLANK

TEST	: BTEX (EPA 8020)	ATI I.D.	: 408354
BLANK I.D.	: 081694	MATRIX	: AQUEOUS
CLIENT	: GIANT REFINING	DATE EXTRACTED	: NA
PROJECT #	: (NONE)	DATE ANALYZED	: 08/16/94
PROJECT NAME	: GROUNDWATER	DILUTION FACTOR	: 1

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5
SURROGATE:		
BROMOFLUOROBENZENE (%)		89

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

TEST	: BTEX (EPA 8020)		
MSMSD #	: 40835204	ATI I.D.	: 408354
CLIENT	: GIANT REFINING	DATE EXTRACTED	: NA
PROJECT #	: (NONE)	DATE ANALYZED	: 08/16/94
PROJECT NAME	: GROUNDWATER	SAMPLE MATRIX	: AQUEOUS
REF. I.D.	: 40835204	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD
BENZENE	<0.5	10	9.7	97	10	100	3
TOLUENE	<0.5	10	10	100	10	100	0
ETHYLBENZENE	<0.5	10	10	100	9.7	97	3
TOTAL XYLENES	<0.5	30	29	97	29	97	0

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative Percent Difference)} = \frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.
Phoenix, Arizona

Chain of Custody

DATE 8/11/94 PAGE 1 OF 1

PROJECT MANAGER:

COMPANY: GIANT REFINING
ADDRESS: ROUTE 3, BOX 7
GALLUP, NM 87301

BILL TO: WALT TOOMER
COMPANY: SAME AS ABOVE
ADDRESS: SAME AS ABOVE

SAMPLERS: (Signature)

(505)722-0212
PHONE NUMBER

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE (MOD 8015/8020)	BTXE (8020)	Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	MTBE	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	SDWA Primary Standards	SDWA Secondary Standards	SDWA Volatiles (502.1/503.1)	The 13 Priority Pollutant Metals	The 8 EP Tox Metals by EP Tox Prep. (1310)	The 8 EP Tox Metals by Total Digestion	The 8 EP Tox Metals by TCLP (1311)	NUMBER OF CONTAINERS
OW-1	8/11/94	1528	H_2O					X															2
OW-2	8/11/94	1620	H_2O					X															2

PROJECT INFORMATION		SAMPLE RECEIPT	
PROJECT NO:		TOTAL NO. OF CONTAINERS	4
PROJECT NAME:	GROUNDWATER	CHAIN OF CUSTODY SEALS	Y
P.O. NO.	997-90-2394	INTACT?	Y
SHIPPED VIA:	FED EX	RECEIVED GOOD COND./COLD	RT
SAMPLE DISPOSAL INSTRUCTIONS		LAB NUMBER	408354
☒ ATI ☐ RETURN			

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

TAT: (NORMAL) (RUSH) ☐ 24 ☐ 48 ☐ 72 ☐ 1 WEEK

Comments:

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Time: 1500	Signature: Time:	Signature: Time:
Printed Name: WALT TOOMER Date 8/11/94	Printed Name: Date	Printed Name: Date
Company:	Company:	Company:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY: (LAB) 3.**
Signature: Time:	Signature: Time:	Signature: Time: 10:00
Printed Name: Date:	Printed Name: Date:	Printed Name: Date: 8/15/94
Company:	Company:	Analytical Technologies, Inc.

ATI Labs: San Diego (619)458-9141 • Phoenix (602)438-1530 • Seattle (206)228-8335 • Pensacola (904)474-1001

DISTRIBUTION: White, Canary - ANALYTICAL TECHNOLOGIES, INC. • Pink - ORIGINATOR