

3R - 257

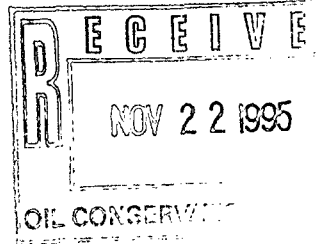
**GENERAL
CORRESPONDENCE**

YEAR(S):

1995



November 9, 1995



Crude Gathering Operations

5764 US Highway 64
Farmington, New Mexico
87401

Mr. Bill Olson
Oil Conservation Division
PO Box 2088
Santa Fe, New Mexico 87504

505
632-8024
632-8006

Dear Bill:

RE: HANDLING OF SOILS CONTAMINATED WITH CRUDE OIL

Giant Industries Arizona, Inc. (Giant) operates, among other things, crude oil pipelines, a crude oil transportation fleet, numerous crude oil storage facilities, and a refinery in New Mexico. Occasional accidental releases of crude oil occur in conjunction with these operations. In those cases where the resulting contaminated soil is not RCRA exempt, it is incumbent on Giant to determine whether the soil should be treated as a RCRA hazardous waste.

Over the years numerous soil samples have been analyzed for TCLP constituents. In every instance the work revealed that soil was not classified as a RCRA hazardous waste. Attached for your review are three recent analytical reports from soil contaminated by crude oil. Giant believes that these reports are representative of the RCRA status of crude oil related spills we encounter in our operations.

Giant requests that permission be given to treat future crude oil spills as being RCRA non-hazardous based on the representative analyses submitted with this request. Annually, if releases occur, Giant will analyze one sample to verify the ongoing reliability of this method. Results of this analysis will be forwarded for OCD review.

Giant strives to eliminate the occurrence of accidental releases in its operations. Emphasis is placed on equipment maintenance, employee training, and sound safety principles resulting in an exemplary record of clean, safe operation.

Please contact me with any questions that may arise concerning Giant's waste management practices.

Sincerely,

Tim Kinney
General Manager
Crude Gathering Operations

/tk

Attachments

cc: Carl Shook - Giant
Kim Bullerdick - Giant
Dave Pavlich - Giant
Denny Foust - OCD
Lynn Shelton - Giant



Analytical**Technologies**, Inc.

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

ATI I.D. 509406

November 7, 1995

Giant Industries
5764 Highway 64
Farmington, NM 87401

Project Name/Number: GIANT-STANDING ROCK 15230

Attention: Tim Kinney

On 09/29/95, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze 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.

ATI-Pensacola's lab ID "01" represents a composite of all five samples listed in the client description. This is the equivalent of "509406-06."

EPA method 9010 and 9030 analyses were performed by Analytical Technologies, Inc., 11 East Olive Road, Pensacola, FL.

EPA method 418.1 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.

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jt

Enclosure



Analytical Technologies, Inc.

CLIENT : GIANT INDUSTRIES
PROJECT # : 15230
PROJECT NAME: GIANT-STANDING ROCK

DATE RECEIVED : 09/29/95

REPORT DATE : 11/07/95

ATI ID: 509406

	ATI PENSACOLA ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	COMPOSITE (01-05)	SE1	NON-AQ	09/27/95
02		SW1	NON-AQ	09/27/95
03		NW1	NON-AQ	09/27/95
04		NM1	NON-AQ	09/27/95
05		NE1	NON-AQ	09/27/95
06		COMPOSITE (01-05)	NON-AQ	NA

---TOTALS---

MATRIX
NON-AQ

#SAMPLES
5 SAMPLES & 1 COMPOSITE

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.

pH

Lab Name: Analytical Technologies, Inc.

Date Collected: 09/27/95

Client Name: ATI-NM

Date Analyzed: 10/12/95

Client Project ID: Giant - Standing Rock --509406

Sample Matrix: Soil

Lab Workorder Number: 95-09-290

Sample ID	Lab Sample ID	pH
509406-Composite	95-09-290	8.9



Analytical**Technologies**, Inc.

IGNITABILITY

Method 1010

Lab Name: Analytical Technologies, Inc.

Date Collected: 09/27/95

Client Name: ATI-NM

Date Analyzed: 11/02/95

Client Project ID: Giant - Standing Rock

Sample Matrix: Soil

Lab Workorder Number: 95-09-290

Sample ID	Lab Sample ID	Ignitable At (deg C)	Non-ignitable Below (deg C)
509406 Comp.	95-09-290-01		96.5



Analytical Technologies, Inc.

[0] Page 1
Date 12-Oct-95

"FINAL REPORT FORMAT - SINGLE"

Accession: 510046
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 95-09-290
Project Name: ATI-NM
Project Location: N/S
Test: Group of Single Wetchem
Matrix: SOIL
QC Level: II

Lab ID: 001
Client Sample Id: 95-09-290-01-05 (COMPOSITE)
Sample Date/Time: 27-SEP-95 N/S
Received Date: 03-OCT-95

Parameters:	Units:	Results:	Rpt Lmts:	Q:	Batch:	Analyst:
CYANIDE, REACTIVE (9010)	MG/KG	ND	0.25		RCX048	CD
SULFIDE, REACTIVE (9030)	MG/KG	ND	5		RSX048	CD

Comments:



Analytical**Technologies**, Inc.

[0] Page 1
Date 12-Oct-95

"WetChem Quality Control Report"

Parameter:	RE-CN	RE SULFIDE
Batch Id:	RCX048	RSX048
Blank Result:	<0.25	<5
Anal. Method:	9010	9030
Prep. Method:	N/A	N/A
Analysis Date:	12-OCT-95	10-OCT-95
Prep. Date:	09-OCT-95	09-OCT-95

Sample Duplication

Sample Dup:	510046-1	510046-1
Rept Limit:	<0.25	<5
Sample Result:	<0.25	<5
Dup Result:	<0.25	<5
Sample RPD:	N/C	N/C
Max RPD:	0.25	5
Dry Weight%	N/A	N/A

Matrix Spike

Sample Spiked:	N/A	N/A
Rept Limit:	N/A	N/A
Sample Result:		
Spiked Result:		
Spike Added:		
% Recovery:		
% Rec Limits:		
Dry Weight%		

ICV

ICV Result:	2.76	18
True Result:	2.50	20
% Recovery:	110	90
% Rec Limits:	90-110	90-110

LCS

LCS Result:		
True Result:		
% Recovery:		
% Rec Limits:		



----- Common Footnotes Wet Chem -----

N/A = NOT APPLICABLE.
N/S = NOT SUBMITTED.
N/C = SAMPLE AND DUPLICATE RESULTS ARE AT OR BELOW ATI REPORTING LIMIT; THEREFORE, THE RPD IS "NOT CALCULABLE" AND NO CONTROL LIMITS APPLY.
ND = NOT DETECTED ABOVE REPORTING LIMIT.
DISS. OR D = DISSOLVED
T & D = TOTAL AND DISSOLVED
R = REACTIVE
T = TOTAL
G = SAMPLE AND/OR DUPLICATE RESULT IS BELOW 5 X ATI REPORTING LIMIT AND THE ABSOLUTE DIFFERENCE BETWEEN THE SAMPLE AND DUPLICATE RESULT IS AT OR BELOW ATI REPORTING LIMIT; THEREFORE, THE RESULTS ARE "IN CONTROL".
Q = THE ANALYTICAL (POST-DIGESTION) SPIKE IS REPORTED DUE TO THE MATRIX (PRE-DIGESTION) SPIKE BEING OUTSIDE ACCEPTANCE LIMITS.
= ELEVATED REPORTING LIMIT DUE TO INSUFFICIENT SAMPLE.
+ = ELEVATED REPORTING LIMIT DUE TO DILUTION INTO CALIBRATION RANGE.
* = ELEVATED REPORTING LIMIT DUE TO MATRIX INTERFERENCE.
@ = ADJUSTED REPORTING LIMIT DUE TO SAMPLE MATRIX (DILUTION PRIOR TO PREPARATION).
P = ANALYTICAL (POST-DIGESTION) SPIKE
I = DUPLICATE INJECTION
& = AUTOMATED
F = SAMPLE SPIKED > 4 X SPIKE CONCENTRATION.
N/C+ = NOT CALCULABLE
N/C* = NOT CALCULABLE; SAMPLE SPIKED > 4 X SPIKE CONCENTRATION.
H = SAMPLE AND/OR DUPLICATE IS BELOW 5 X ATI REPORTING LIMIT AND THE ABSOLUTE DIFFERENCE BETWEEN THE RESULTS EXCEEDS THE ATI REPORTING LIMIT; THEREFORE, THE RESULTS ARE "OUT OF CONTROL".
A = SAMPLE AND DUPLICATE RESULTS ARE "OUT OF CONTROL".
Z = THE SAMPLE RESULT FOR THE SPIKE IS BELOW REPORTING LIMIT. HOWEVER, THIS RESULT IS REPORTED FOR ACCURATE QC CALCULATIONS.
NH = SAMPLE AND / OR DUPLICATE RESULT IS BELOW 5 X ATI REPORTING LIMIT AND THE RESULTS EXCEED THE ATI REPORTING LIMIT; THEREFORE, THE RESULTS ARE "OUT OF CONTROL" SAMPLE IS NON-HOMOGENOUS.
(*) = DETECTION LIMITS RAISED DUE TO CLP METHOD NOT REQUIRING A CONCENTRATION STEP FOR CN.
(CA) = SEE CORRECTIVE ACTIONS FORM.

SW-846, 3RD EDITION, SEPTEMBER 1986 AND REVISION 1, JULY 1992.
EPA 600/4-79-020, REVISED MARCH 1983.
STANDARD METHODS, 17TH ED., 1989
NIOSH MANUAL OF ANALYTICAL METHODS, 3RD EDITION.
ANNUAL BOOK OF ASTM STANDARDS, VOLUME 11.01, 1991.

1. COLIFORM. COLIFORM PRECISION IS MEASURED BY THE ABSOLUTE DIFFERENCE BETWEEN THE LOGARITHM OF COLONIES PER 100 MLS OF SAMPLE ON DUPLICATE PLATES.
2. PH. PH PRECISION IS MEASURED BY THE ABSOLUTE DIFFERENCE BETWEEN THE SAMPLE AND THE DUPLICATE ANALYSIS.
3. FLASHPOINT. FLASHPOINT PRECISION IS MEASURED BY THE ABSOLUTE DIFFERENCE BETWEEN THE SAMPLE AND DUPLICATE ANALYSIS. IF FLASHPOINT IS LESS THAN 25 DEGREES CELSIUS, THE DETECTION LIMIT BECOMES THE INITIAL STARTING TEMPERATURE.

RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION).

RPT LIMIT = REPORTING LIMITS BASED ON METHOD DETECTION LIMIT STUDIES.

DPH = DOLLY P. HWANG	SG = SCOTT GRESHAM	RB = REBECCA BROWN
TT = TONY TINEO	NSB = NANCY S. BUTLER	FB = FREDDIE BROWN
MM = MARY MOLONEY	CF = CHRISTINE FOSTER	HN = HONG NGUYEN
GJ = GARY JACOBS		

TCLP METALS



Analytical**Technologies**, Inc.

Sample ID

Composite

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Date Collected: 09/27/95

Client Project ID: Giant - Standing Rock

Prep Date: 10/06, 09/95

Lab Sample ID: 95-09-290-01

Date Analyzed: 10/09/95

Sample Matrix: TCLP Leachate

EPA HW Number	CAS Number	Analyte	Modified Method	Concentration mg/L	Detection Limit (mg/L)
D004	7440-38-2	Arsenic	6010	ND	0.1
D005	7440-39-3	Barium	6010	ND	3
D006	7440-43-9	Cadmium	6010	ND	0.05
D007	7440-47-3	Chromium	6010	ND	0.1
D008	7439-92-1	Lead	6010	ND	0.03
D009	7439-97-6	Mercury	7470	ND	0.002
D010	7782-49-2	Selenium	6010	ND	0.05
D011	7440-22-4	Silver	6010	ND	0.1

ND= Not Detected

TCLP METALS



Analytical**Technologies**, Inc.

Sample ID

TCLP Blank

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Date Collected: N/A

Client Project ID: Giant - Standing Rock

Prep Date: 10/06, 09/95

Lab Sample ID: RB 95-09-290

Date Analyzed: 10/09/95

Sample Matrix: TCLP Leachate

EPA HW Number	CAS Number	Analyte	Modified Method	Concentration mg/L	Detection Limit (mg/L)
D004	7440-38-2	Arsenic	6010	ND	0.1
D005	7440-39-3	Barium	6010	ND	3
D006	7440-43-9	Cadmium	6010	ND	0.05
D007	7440-47-3	Chromium	6010	ND	0.1
D008	7439-92-1	Lead	6010	ND	0.03
D009	7439-97-6	Mercury	7470	ND	0.002
D010	7782-49-2	Selenium	6010	ND	0.05
D011	7440-22-4	Silver	6010	ND	0.1

ND= Not Detected



Analytical**Technologies**, Inc.

**TCLP METALS
MATRIX SPIKE**

Sample ID

Composite

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Lab Sample ID: 95-09-290-01

Prep Date: 10/06, 09/95

Sample Matrix: TCLP Leachate

Date Analyzed: 10/09/95

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	% Rec (limits 80-120%)	Flags
Arsenic	20	< 0.1	22	110	
Barium	20	< 3	22	110	
Cadmium	0.50	< 0.05	0.55	110	
Chromium	2.0	< 0.1	2.0	100	
Lead	5.0	< 0.03	5.3	106	
Mercury	0.020	< 0.002	0.017	85	
Selenium	20	< 0.05	23	115	
Silver	2.0	< 0.1	2.2	110	

Analyte	MSD Conc. mg/L	MSD % Rec (limits 80-120 %)	Relative % Difference (limits 0-20%)	Flags
Arsenic	22	110	0	
Barium	22	110	0	
Cadmium	0.55	110	0	
Chromium	2.0	100	0	
Lead	5.2	104	2	
Mercury	0.017	85	0	
Selenium	23	115	0	
Silver	2.2	110	0	



Analytical**Technologies**, Inc.

TCLP ANALYSIS
Modified Method 8020

Lab Name: Analytical Technologies, Inc.

Date Collected: 09/27/95

Client Name: ATI-NM

Date Extracted: 10/05/95

Client Project ID: Giant - Standing Rock

Date Analyzed: 10/06/95

Lab Workorder Number: 95-09-290

Sample Matrix: TCLP Leachate

Sample ID	Lab Sample ID	Sample Volume (ml)	Conc. Benzene (mg/L)	Conc. Toluene (mg/L)	Conc. Ethyl Benzene (mg/L)	Conc. Xylenes (mg/L)	Surrogate Percent Recovery (TFT)
Reagent Blank	WRB1 10/06/95	5.0	< 0.01	< 0.01	< 0.01	< 0.01	101
TCLP Reagent Blank	TCLPRB1 10/05/95	0.50	< 0.10	< 0.10	< 0.10	< 0.10	98
Composite	95-09-290-01	0.50	< 0.10	0.49	0.14	1.2	101



Analytical Technologies, Inc.

TCLP MATRIX SPIKE RESULTS

Modified Method 8020

Sample ID

Lab Name: Analytical Technologies, Inc.

Composite

Client Name: ATI-NM

Date Analyzed: 10/06,07/95

Lab Sample ID: 95-09-290-01

Sample Matrix: TCLP Leachate

Analyte	Spike Added (mg/L)	Sample Concentration (mg/L)	MS Concentration (mg/L)	MS Percent Recovery
Benzene	0.500	ND	0.492	98
Toluene	0.500	0.49	0.801	63
Ethyl Benzene	0.500	0.14	0.587	89
Xylenes	1.50	1.2	2.47	85

Analyte	Spike Added (mg/L)	MSD Concentration (mg/L)	MSD Percent Recovery	RPD
Benzene	0.500	0.517	103	5
Toluene	0.500	0.805	64	0
Ethyl Benzene	0.500	0.594	91	1
Xylenes	1.50	2.45	83	1

ND = Not detected



Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

CLIENT	: GIANT INDUSTRIES	ATI I.D.	: 509406
PROJECT #	: 15230	DATE RECEIVED	: 09/29/95
PROJECT NAME	: GIANT-STANDING ROCK	DATE ANALYZED	: 10/03/95

PARAMETER	UNITS	06
PETROLEUM HYDROCARBONS, IR	MG/KG	46000



Analytical**Technologies**, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : GIANT INDUSTRIES ATI I.D. : 509406
PROJECT # : 15230 SAMPLE MATRIX : NON-AQ
PROJECT NAME : GIANT-STANDING ROCK UNITS : MG/KG

PARAMETER	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC.	% REC
PETROLEUM HYDROCARBONS	51030501	70	78	11	230	150	107

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

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

Chain of Custody Record

(505) 326-2262 Phone
(505) 326-2388 FAX

COC Serial No. C 3124

509406

[illegible]

Relinquished by:

Received By:

Signature	Date	Time	Signature	Date	Time
<i>Annex Kelly</i>	7/28/95	0735	<i>Don V</i>	9:28	13:00
			<i>Blue ice, in fact, no seals cold</i>		

Samples Iced: ☒ Yes ☐ No	Carrier: Fed Ex	Airbill No.
Preservatives (ONLY for Water Samples) ☐ Cyanide Sodium hydroxide (NaOH) ☐ Volatile Organic Analysis Hydrochloric acid (HCl) ☐ Metals Nitric acid (HNO ₃) ☐ TPH (419.1) Sulfuric acid (H ₂ SO ₄) ☐ Other (Specify) _____ ☐ Other (Specify) _____	Shipping and Lab Notes: Combine these 5 grab samples into one composite sample to be analyzed for the listed tests Bill Giant Industries in Bloomfield, Minn. attn. Tim Kinney. Also, report results to Mr. Kinney.	



Analytical Technologies, Inc.

225 COMMERCE DRIVE
FORT COLLINS, CO
80524

(970) 490-1511
(970) 490-1522 FAX
1 (800) 443-1511

Chain of Custody

DATE 10-2 PAGE 1 OF 1

ACCESSION NUMBER: 510046

ANALYSIS REQUESTED

9070/9071 — Oil & Grease	
418.1 — TRPH	
8015 Mod. — Gasoline	
8015 Mod. — Diesel	
8015/8020 — Gasoline/BTEX	
8020 — BTEX	
8240 — GC/MS VOC's	
8270 — GC/MS SVOC's	
8080 — Pesticides/PCB's	
8080 — PCB Only	
8310 — PNA's	
8150 — Herbicides	
8140 — OP Pesticides	
TOX — EOX — TX	
Total Metals:	
TCLP:	
Gross Alpha	
Gross Beta	
Radium 226	
Radium 228	
Tritium	
Strontium	
% Moisture	
Number of Containers	5

PROJECT MANAGER: Ken J
COMPANY: ATI
ADDRESS: 6600
SAMPLER: 770-440-1511
PHONE NUMBER: 770-440-1511 FAX NUMBER

SAMPLE ID	SAMPLE DATE	SAMPLE TIME	MATRIX	LAB ID
75-09-270-01	7-27		oil	1
02				
03				
04				
05				

PROJECT INFORMATION

SAMPLE RECEIPT

PROJECT NUMBER: 75-09-270
PROJECT NAME: ATI Mm
PURCHASE ORDER NUMBER:
TAT: ☐ STANDARD ☒ RUSH DUE: 10-12
SAMPLE DISPOSAL: ☐ HAZ WASTE \$5.00 ☐ RAD CHEM \$15.00 ☐ RETURN

TOTAL NUMBER OF CONTAINERS: 5
CHAIN OF CUSTODY SEALS Y/N: X
SEALS INTACT? Y/N/A: X
RECEIVED GOOD COND./COLD: X

Comments: * Composite 1-5 Sample jars
Into 1 Sample & Run.

RELINQUISHED BY: 1.

Signature: [Signature] Time: 4:00
Printed Name: [Name] Date: 10-2
Company: ATI

RECEIVED BY: 1.

RELINQUISHED BY: 2.

Signature: [Signature] Time: [Time]
Printed Name: [Name] Date: [Date]
Company: [Company]

RECEIVED BY: 2.

RELINQUISHED BY: 3.

Signature: [Signature] Time: [Time]
Printed Name: [Name] Date: [Date]
Company: [Company]

RECEIVED BY: 3.

Signature: [Signature] Time: 0928
Printed Name: [Name] Date: 10/3/95
Company: ATI - FL

Signature: [Signature] Time: [Time]
Printed Name: [Name] Date: [Date]
Company: [Company]

Signature: [Signature] Time: [Time]
Printed Name: [Name] Date: [Date]
Company: [Company]

Chain of Custody

DATE 9-25-96 PAGE 1 OF 1

NETWORK PROJECT MANAGER: LETHA KRAKOWSKI Kim McNeil

COMPANY: Analytical Technologies, Inc.
ADDRESS: 2709-D Pan American Freeway, NE
Albuquerque, NM 87107

CLIENT PROJECT MANAGER: Kim McNeil

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)	632/632 MOD	619/619 MOD	610/8310	TCLP BTEX	TCLP RCRA Metals	8240 (TCLP 1311) ZHE	Ing. React. Corr.	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
509406-01	9-27-96	10:25	Soil	01									X	X	X	X	X	X										3
-02		10:05		02									X	X	X	X	X	X										3
-03		10:40		03									X	X	X	X	X	X										3
-04		10:55		04									X	X	X	X	X	X										3
-05		11:10		05									X	X	X	X	X	X										3

PROJECT INFORMATION

SAMPLE RECEIPT

SAMPLES SENT TO:

RELINQUISHED BY: 1.

RELINQUISHED BY: 2.

PROJECT NUMBER: 509406

TOTAL NUMBER OF CONTAINERS: 15

SAN DIEGO

Signature: [Signature] Time: 15:08

Signature: [Signature] Time: [Blank]

PROJECT NAME: Grant-Standing Rock

CHAIN OF CUSTODY SEALS: Y

FT. COLLINS

Printed Name: Dan Johnson Date: 9-29-96

Printed Name: [Blank] Date: [Blank]

QC LEVEL: 8TD IV

INTACT?

RENTON

Signature: [Signature] Time: [Blank]

Signature: [Signature] Time: [Blank]

QC REQUIRED: MS MSD BLANK

RECEIVED GOOD COND. COLD

PENSACOLA

Analytical Technologies, Inc.

Signature: [Signature] Time: [Blank]

TAT: STANDARD RUSH

LAB NUMBER 95-09-290

PORTLAND

Signature: [Signature] Time: [Blank]

Signature: [Signature] Time: [Blank]

DUE DATE: 10/11

RUSH SURCHARGE: [Blank]

RECEIVED BY: (LAB) 1.

Printed Name: [Blank] Date: [Blank]

Signature: [Signature] Time: [Blank]

CLIENT DISCOUNT: [Blank] %

RECEIVED BY: (LAB) 2.

Printed Name: [Blank] Date: [Blank]

Signature: [Signature] Time: [Blank]

INVO# KCM 973

RECEIVED BY: (LAB) 2.

Printed Name: [Blank] Date: [Blank]

Signature: [Signature] Time: [Blank]

RECEIVED MAY 25 1995



Analytical **Technologies**, Inc.

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

ATI I.D. 505330

May 22, 1995

Giant Refining
5764 Highway 64
Farmington, NM 87401

Project Name/Number: APACHE

Attention: Tim Kinney

On 05/09/95, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze non-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.

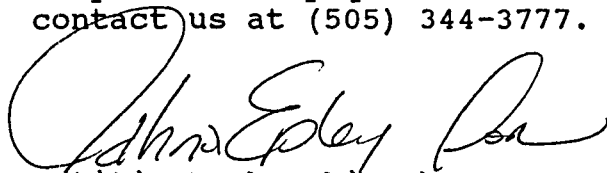
The antimony spike on sample "9505081030" was out of limits due to matrix interferences. The sample was post spiked to verify the matrix interference. The blank spike was within limits. Both the spike and blank spike are reported.

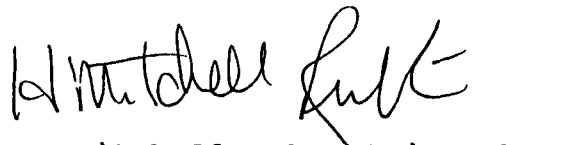
Metals and TCLP BTEX analyses were performed by Analytical Technologies, Inc., 17400 SW Upper Boones Ferry Road, Suite 270, Durham, OR.

EPA Method 418.1 analyses were performed by Analytical Technologies, Inc., Albuquerque, NM.

All other analyses were performed by Analytical Technologies, Inc., 5550 Morehouse Drive, San Diego, CA.

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 : 05/09/95
PROJECT # : (NONE)
PROJECT NAME : APACHE REPORT DATE : 05/22/95

ATI ID: 505330

	ATI SAN DIEGO ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	505330-01	9505081030	NON-AQ	05/08/95

---TOTALS---

<u>MATRIX</u>	<u>#SAMPLES</u>
NON-AQ	1

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.	: 505330
PROJECT #	: (NONE)	DATE RECEIVED	: 05/09/95
PROJECT NAME	: APACHE	DATE ANALYZED	: 05/09/95

PARAMETER	UNITS	01
PETROLEUM HYDROCARBONS, IR	MG/KG	23000



Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : GIANT REFINING ATI I.D. : 505330
PROJECT # : (NONE) SAMPLE MATRIX : NON-AQ
PROJECT NAME : APACHE UNITS : MG/KG

PARAMETER	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC.	% REC
PETROLEUM HYDROCARBONS	50533203	<20	<20	NA	160	150	107

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

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



Analytical**Technologies**, Inc.

GENERAL CHEMISTRY RESULTS

Client : ANALYTICAL TECHNOLOGIES, INC.

Project # : 505330

ATI I.D.: 505094

Project Name: GRC/APACHE

Sample Client ID #	Matrix	Date Sampled	Date Received
1 505330-01	SOIL	08-MAY-95	10-MAY-95

Parameter	Units
IGNITABILITY	NEGATIVE
pH	UNITS 8.2
REACTIVITY	NEGATIVE



Analytical**Technologies**, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

DUP/MS

Client : ANALYTICAL TECHNOLOGIES, INC.

Project # : 505330

ATI I.D. : 505094

Project Name: GRC/APACHE

Parameters	REF I.D.	Units	Sample Result	Dup Result	RPD	Spiked Sample	Spike Conc	% Rec
IGNITABILITY	505094-01		NEGATIVE	NEGATIVE	0	N/A	N/A	N/A
REACTIVITY	505094-01		NEGATIVE	NEGATIVE	0	N/A	N/A	N/A
pH	505084-03	UNITS	9.5	9.5	0	N/A	N/A	N/A

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration

RPD (Relative % Difference) = (Sample Result - Duplicate Result)*100/Average Result



METALS RESULTS

CLIENT: ATI-Albuquerque
PROJECT #: 505330
PROJECT NAME: Apache
SAMPLE MATRIX: SOIL

ATI I.D.: 505558
DATE SAMPLED: 05/08/95
DATE RECEIVED: 05/10/95
DATE DIGESTED: 05/10,11/95
DATE ANALYZED: 05/10,11/95
UNITS: mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT.

	ATI I.D.:	505558-0	505558-1
	Client I.D.:	Method Blank	9505081030
PARAMETER	METHOD		
ANTIMONY	6010	< 5	< 5
ARSENIC	7060	< 0.5	4.6
BERYLLIUM	6010	< 0.5	< 0.5
CADMIUM	6010	< 0.5	< 0.5
CHROMIUM	6010	< 1	2
COPPER	6010	< 1	6
LEAD	6010	< 5	8
MERCURY	7471	< 0.1	< 0.1
NICKEL	6010	< 2	3
SELENIUM	7740	< 0.5	< 0.5
SILVER	6010	< 1	< 1
THALLIUM	7841	< 0.5	< 0.5
ZINC	6010	< 1	12



Analytical Technologies, Inc.

METALS DUPLICATE RESULTS

METHOD: 6010 / 7000 series
CLIENT: ATI-Albuquerque
PROJECT #: 505330
PROJECT NAME: Apache
SAMPLE MATRIX: SOIL

ATI I.D.: 505558
QC SAMPLE: 505558-1
DATE DIGESTED: 05/10,11/95
DATE ANALYZED: 05/10,11/95
DILUTION FACTOR: 1
UNITS: mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	SAMPLE RESULT	DUPLICATE RESULT	RPD	RPD CONTROL LIMIT
ANTIMONY	< 5	< 5	NA	20
ARSENIC	4.6	4.6	0	20
BERYLLIUM	< 0.5	< 0.5	NA	20
CADMIUM	< 0.5	< 0.5	NA	20
CHROMIUM	2	2	0	20
COPPER	6	6	0	20
LEAD	8	8	0	20
MERCURY	< 0.1	< 0.1	NA	20
NICKEL	3	3	0	20
SELENIUM	< 0.5	< 0.5	NA	20
SILVER	< 1	< 1	NA	20
THALLIUM	< 0.5	< 0.5	NA	20
ZINC	12	13	8	20



Analytical **Technologies**, Inc.

METALS SPIKE RESULTS

METHOD: 6010 / 7000 series
CLIENT: ATI-Albuquerque
PROJECT #: 505330
PROJECT NAME: Apache
SAMPLE MATRIX: SOIL

ATI I.D.: 505558
QC SAMPLE: 505558-1
DATE DIGESTED: 05/10,11/95
DATE ANALYZED: 05/10,11/95
DILUTION FACTOR: 1
UNITS: mg/kg

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

PARAMETER	SAMPLE RESULT	SPIKE CONC	SPIKE RESULT	% RECOV	CONTROL LIMIT
ANTIMONY	< 5	109	38	35	F 75-125%
ARSENIC	4.6	4.3	8.6	93	75-125%
BERYLLIUM	< 0.5	109	93.4	86	75-125%
CADMIUM	< 0.5	109	88.5	81	75-125%
CHROMIUM	2	109	100	90	75-125%
COPPER	6	109	108	94	75-125%
LEAD	8	217	192	85	75-125%
MERCURY	< 0.1	1.0	0.9	90	75-125%
NICKEL	3	109	99	88	75-125%
SELENIUM	< 0.5	2.2	2.4	109	75-125%
SILVER	< 1	109	95	87	75-125%
THALLIUM	< 0.5	4.3	4.2	98	75-125%
ZINC	12	109	100	81	75-125%

F - Out of limits due to matrix interference.



Analytical **Technologies, Inc.**

METALS BLANK SPIKE RESULTS

METHOD:	6010 / 7000 series	ATI I.D.:	505558
CLIENT:	ATI-Albuquerque	QC SAMPLE:	Method Blank
PROJECT #:	505330	DATE DIGESTED:	05/10,11/95
PROJECT NAME:	Apache	DATE ANALYZED:	05/10,11/95
SAMPLE MATRIX:	SOIL	DILUTION FACTOR:	1
		UNITS:	mg/kg

PARAMETER	RESULT	TRUE VALUE	% RECOV	LIMITS mg/Kg
ANTIMONY	65	75.0	87	32-350
ARSENIC	87.8	72.1	122	35-110
BERYLLIUM	24.2	26.7	91	17-37
CADMIUM	57.4	61.6	93	36-86
CHROMIUM	41	44.1	93	26-61
COPPER	80	78.1	102	48-110
LEAD	51	50.9	100	27-71
MERCURY	38.6	32.0	121	17-48
NICKEL	110	110	100	65-157
SELENIUM	88.2	74.2	119	36-108
SILVER	74	71.7	103	29-105
THALLIUM	71.9	64.1	112	31-98
ZINC	69	78.2	88	45-119



Analytical Technologies, Inc.

GCMS - RESULTS

TEST:	EPA 8240 Mod. (TCLP BETX)	ATI I.D.:	505558-1
CLIENT I.D.:	9505081030	DATE SAMPLED:	05/08/95
CLIENT:	ATI-Albuquerque	DATE RECEIVED:	05/10/95
PROJECT #:	505330	DATE EXTRACTED:	05/10/95
PROJECT NAME:	Apache	DATE ANALYZED:	05/11/95
SAMPLE MATRIX:	SOIL	DILUTION FACTOR:	1
		UNITS:	mg/L in Extract

PARAMETER	RESULTS
-----------	---------

BENZENE	< 0.010
ETHYLBENZENE	0.19
TOLUENE	0.84
TOTAL XYLENES	1.9

SURROGATES:

1,2-DICHLOROETHANE-D4	109%
TOLUENE-D8	98%
BROMOFLUOROBENZENE	100%

CONTROL LIMITS

74% - 125%
78% - 123%
81% - 127%



Analytical **Technologies**, Inc.

GCMS - RESULTS

TEST:	EPA 8240 Mod. (TCLP BETX)	ATI I.D.:	505558-0
CLIENT I.D.:	Method Blank	DATE SAMPLED:	N/A
CLIENT:	ATI-Albuquerque	DATE RECEIVED:	N/A
PROJECT #:	505330	DATE EXTRACTED:	05/10/95
PROJECT NAME:	Apache	DATE ANALYZED:	05/11/95
SAMPLE MATRIX:	SOIL	DILUTION FACTOR:	1
		UNITS:	mg/L in Extract

PARAMETER	RESULTS
-----------	---------

BENZENE	< 0.010
ETHYLBENZENE	< 0.010
TOLUENE	< 0.010
TOTAL XYLENES	< 0.010

SURROGATES:

1,2-DICHLOROETHANE-D4	102%
TOLUENE-D8	96%
BROMOFLUOROBENZENE	95%

CONTROL LIMITS

74% - 125%
78% - 123%
81% - 127%



Analytical Technologies, Inc.

GC/MS SPIKE RESULTS

METHOD:	EPA 8240 Mod. (TCLP BETX)	ATI ID:	505558
CLIENT:	ATI-Albuquerque	QC SAMPLE:	505558-1
PROJECT #:	505330	DATE EXTRACTED:	05/10/95
PROJECT NAME:	Apache	DATE ANALYZED:	05/11/95
SAMPLE MATRIX:	SOIL	DILUTION FACTOR:	1
		UNITS:	mg/L in Extract

PARAMETER		SAMPLE RESULT	SPIKE CONC.	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
BENZENE	<	0.010	0.500	0.494	99	0.552	110	11
ETHYLBENZENE		0.19	0.500	0.705	103	0.744	111	5
TOLUENE		0.84	0.500	1.28	88	1.37	106	7
TOTAL XYLENES		1.9	1.00	2.95	105	3.07	117	4

SURROGATE:

1,2-DICHLOROETHANE-d4 (74% - 125%)	107%	108%
TOLUENE-d8 (78% - 123%)	102%	103%
BROMOFLUOROBENZENE (81% - 127%)	100%	101%

CONTROL LIMITS

	% REC	RPD
BENZENE	77% - 131%	20
TOLUENE	79% - 125%	20
ETHYLBENZENE	76% - 124%	20
TOTAL XYLENES	74% - 127%	20



Analytical Technologies, Inc.

GC/MS SPIKE RESULTS

METHOD:	EPA 8240 Mod. (TCLP BETX)	ATI ID:	505558
CLIENT:	ATI-Albuquerque	QC SAMPLE:	Method Blank
PROJECT #:	505330	DATE EXTRACTED:	05/10/95
PROJECT NAME:	Apache	DATE ANALYZED:	05/11/95
SAMPLE MATRIX:	SOIL	DILUTION FACTOR:	1
		UNITS:	mg/L in Extract

PARAMETER		SAMPLE RESULT	SPIKE CONC.	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
BENZENE	<	0.010	0.500	0.548	110	0.569	114	4
ETHYLBENZENE	<	0.010	0.500	0.545	109	0.549	110	1
TOLUENE	<	0.010	0.500	0.533	107	0.542	108	2
TOTAL XYLENES	<	0.010	1.00	1.08	108	1.09	109	1

SURROGATE:

1,2-DICHLOROETHANE-d4 (74% - 125%)	106%	110%
TOLUENE-d8 (78% - 123%)	104%	104%
BROMOFLUOROBENZENE (81% - 127%)	102%	103%

CONTROL LIMITS

	% REC	RPD
BENZENE	85% - 118%	20
TOLUENE	85% - 119%	20
ETHYLBENZENE	85% - 120%	20
TOTAL XYLENES	85% - 120%	20



CHAIN OF CUSTODY

Date: 5-8-95 Page 1 of 1

Phone (505) 632-8006

[illegible]



DATE 5/9/05 PAGE 1 OF 1

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



Chain of Custody

NETWORK PROJECT MANAGER: LETITIA KRAKOWSKI				ANALYSIS REQUEST											
COMPANY: Analytical Technologies, Inc. ADDRESS: 2709-D Pan American Freeway, NE Albuquerque, NM 87107				NUMBER OF CONTAINERS											
				1											
CLIENT PROJECT MANAGER:				AIR - O2, CO2, METHANE											
				AIR/Diesel/Gasoline/BTEX/ (MOD 8015/8020)											
SAMPLE ID: 50533D-01				RADIUM 226/228											
				GROSS ALPHA/BETA											
DATE: 5/8				TOTAL COLIFORM											
				FECAL COLIFORM											
TIME: 1030				BOD											
				ASBESTOS											
LAB ID: NANCY 01				NACE											
				Volatile Organics GC/MS (624/8240)											
MATRIX: NANCY				Diesel/Gasoline/BTEX/MTBE/ (MOD 8015/8020)											
				8240 (TCCLP 1311) ZHE											
DATE: 5/8				610/8310											
				619/619 MOD											
TIME: 1030				632/632 MOD											
				SURFACTANTS (MBAS)											
LAB ID: NANCY				SULFIDE											
				ORGANIC LEAD											
DATE: 5/8				TOC											
				TOX											
TIME: 1030				SURFACTANTS (MBAS)											
				632/632 MOD											
LAB ID: NANCY				619/619 MOD											
				610/8310											
DATE: 5/8				X Reactivity											
				X Corrosivity											
TIME: 1030				8240 (TCCLP 1311) ZHE											
				Diesel/Gasoline/BTEX/MTBE/ (MOD 8015/8020)											
LAB ID: NANCY				Volatile Organics GC/MS (624/8240)											
				NACE											
DATE: 5/8				ASBESTOS											
				BOD											
TIME: 1030				TOTAL COLIFORM											
				FECAL COLIFORM											
LAB ID: NANCY				GROSS ALPHA/BETA											
				RADIUM 226/228											
DATE: 5/8				AIR - O2, CO2, METHANE											
				AIR/Diesel/Gasoline/BTEX/ (MOD 8015/8020)											
TIME: 1030				NUMBER OF CONTAINERS											
				1											

PROJECT INFORMATION				SAMPLE RECEIPT			
PROJECT NUMBER:	50533D	TOTAL NUMBER OF CONTAINERS	1				
PROJECT NAME:	GRC	CHAIN OF CUSTODY SEALS	Y				
QC LEVEL:	STD IV	INTACT?	Y				
QC REQUIRED:	MS MSD BLANK	RECEIVED GOOD COND./COLD	Y/2.0%				
TAT STANDARD:	RUSH!	LAB NUMBER	5053094				

RELINQUISHED BY: 1.		RELINQUISHED BY: 2.	
Signature:	<i>[Signature]</i>	Signature:	<i>[Signature]</i>
Printed Name:	Blaine Lutter	Printed Name:	Blaine Lutter
Date:	5/9/95	Date:	5/9/95
Company:	Analytical Technologies, Inc.	Company:	Analytical Technologies, Inc.

RECEIVED BY: (LAB) 1.		RECEIVED BY: (LAB) 2.	
Signature:	<i>[Signature]</i>	Signature:	<i>[Signature]</i>
Printed Name:	Blaine Lutter	Printed Name:	Blaine Lutter
Date:	5/9/95	Date:	5/9/95
Company:	Analytical Technologies, Inc.	Company:	Analytical Technologies, Inc.

SAMPLES SENT TO:	
SAN DIEGO	
FT. COLLINS	
RENTON	
PENSACOLA	
PORTLAND	
PHOENIX	
FBI/DOJ	
FBI/DOJ	

DUE DATE: 5/12	
RUSH SURCHARGE:	100%
CLIENT DISCOUNT:	10%

WORTH LK128

RECEIVED FEB - 1 1995



Analytical **Technologies**, Inc.

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

ATI I.D. 501320

January 27, 1995

Giant Refining
5764 Highway 64
P.O. Box 256
Farmington, NM 87499

Project Name/Number: APACHE STATION PETIGRU LINE

Attention: Tim Kinney

On 01/10/95, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **non-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.

418.1 analyses were performed by Analytical Technologies, Inc., Albuquerque, NM.

All other analyses were performed by Analytical Technologies, Inc., 5550 Morehouse Drive, San Diego, CA.

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 : 01/10/95
PROJECT # : (NONE)
PROJECT NAME : APACHE STATION PETIGRU LINE REPORT DATE : 01/27/95

ATI ID: 501320

	ATI SAN DIEGO ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	501320-01	9501091215	NON-AQ	01/09/95

---TOTALS---

MATRIX
NON-AQ

#SAMPLES
1

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.	: 501320
PROJECT #	: (NONE)	DATE RECEIVED	: 01/10/95
PROJECT NAME	: APACHE STATION PETIGRU LINE	DATE ANALYZED	: 01/10/95

PARAMETER	UNITS	01
PETROLEUM HYDROCARBONS, IR	MG/KG	6800



Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : GIANT REFINING ATI I.D. : 501320
PROJECT # : (NONE) SAMPLE MATRIX : NON-AQ
PROJECT NAME : APACHE STATION PETIGRU UNITS : MG/KG

PARAMETER	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC.	% REC
PETROLEUM HYDROCARBONS	50131904	<20	<20	NA	170	150	113

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

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



Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

Client : ANALYTICAL TECHNOLOGIES, INC.

Project # : 501320

ATI I.D.: 501087

Project Name: GIANT REFINERY/APACHE STATION

Sample Client ID #	Matrix	Date Sampled	Date Received
1 501320-01	SOIL	09-JAN-95	11-JAN-95

Parameter	Units
IGNITABILITY	NEGATIVE
pH	UNITS 9.0
REACTIVITY	NEGATIVE



Analytical Technologies, Inc. GENERAL CHEMISTRY - QUALITY CONTROL

DUP/MS

Client : ANALYTICAL TECHNOLOGIES, INC.
Project # : 501320
Project Name: GIANT REFINERY/APACHE STATION

ATI I.D. : 501087

Parameters	REF I.D.	Units	Sample Result	Dup Result	RPD	Spiked Sample	Spike Conc	% Rec
IGNITABILITY	501087-01		NEGATIVE	NEGATIVE	0	N/A	N/A	N/A
REACTIVITY	501087-01		NEGATIVE	NEGATIVE	0	N/A	N/A	N/A
pH	501087-01	UNITS	9.0	9.1	1	N/A	N/A	N/A

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration

RPD (Relative % Difference) = (Sample Result - Duplicate Result)*100/Average Result



Analytical Technologies, Inc.

METALS RESULTS

Client : ANALYTICAL TECHNOLOGIES, INC.
Project # : 501320
Project Name: GIANT REFINERY/APACHE STATION

ATI I.D.: 501087

Sample #	Client ID	Matrix	Date Sampled	Date Received
1	501320-01	SOIL	09-JAN-95	11-JAN-95

Parameter	Units	1
SILVER	MG/KG	<1.0
ARSENIC	MG/KG	2.4
BERYLLIUM	MG/KG	<0.5
CADMIUM	MG/KG	<0.5
CHROMIUM	MG/KG	2.7
COPPER	MG/KG	5.9
MERCURY	MG/KG	<0.25
NICKEL	MG/KG	3.5
LEAD	MG/KG	4.5
ANTIMONY	MG/KG	<3.0
SELENIUM	MG/KG	<1.0
THALLIUM	MG/KG	<1.0
ZINC	MG/KG	15.9



Analytical Technologies, Inc.

METALS - QUALITY CONTROL

DUP/MS

Client : ANALYTICAL TECHNOLOGIES, INC.

Project # : 501320

ATI I.D. : 501087

Project Name: GIANT REFINERY/APACHE STATION

Parameters	REF I.D.	Units	Sample Result	Dup Result	RPD	Spiked Sample	Spike Conc	% Rec
ANTIMONY	501034-10	MG/KG	4.2	3.9	7	48.9	49.7	90@v
ARSENIC	501034-10	MG/KG	15.5	13.3	15	58.0	48.9	87
BERYLLIUM	501034-10	MG/KG	<0.5	<0.5	0	47.1	49.9	94
CADMIUM	501034-10	MG/KG	2.1	2.2	5	49.9	48.9	98
CHROMIUM	501034-10	MG/KG	24.7	20.8	17	66.7	49.9	84
COPPER	501034-10	MG/KG	122	115	6	170	49.7	97@v
LEAD	501034-10	MG/KG	161	155	4	214	49.7	107@v
MERCURY	501087-01	MG/KG	<0.25	<0.25	0	0.76	0.99	77
NICKEL	501034-10	MG/KG	58.0	50.2	14	104	49.7	93@v
SELENIUM	501034-10	MG/KG	<1.0	<1.0	0	31.1	29.4	106
SILVER	501034-10	MG/KG	<1.0	<1.0	0	42.8	49.9	86
THALLIUM	501034-10	MG/KG	<1.0	<1.0	0	45.1	48.9	92
ZINC	501034-10	MG/KG	1280	1180	8	1263	49.9	N/A*V

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration

RPD (Relative % Difference) = (Sample Result - Duplicate Result)*100/Average Result



Analytical Technologies, Inc.

METALS - QUALITY CONTROL

BLANK SPIKE

Client : ANALYTICAL TECHNOLOGIES, INC.

Project # : 501320

ATI I.D. : 501087

Project Name: GIANT REFINERY/APACHE STATION

Parameters	Blank Spike ID#	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
ANTIMONY	53520	MG/KG	<3.0	45.8	50.0	92
ARSENIC	53717	MG/KG	<1.0	44.0	50.0	88
BERYLLIUM	53520	MG/KG	<0.5	45.6	50.0	91
CADMIUM	53689	MG/KG	<0.5	46.9	50.0	94
CHROMIUM	53520	MG/KG	<0.5	46.9	50.0	94
COPPER	53520	MG/KG	<1.0	46.7	50.0	93
LEAD	53520	MG/KG	<1.5	45.9	50.0	92
MERCURY	53558	MG/KG	<0.25	1.05	1.00	105
NICKEL	53520	MG/KG	<1.0	46.7	50.0	93
SELENIUM	53714	MG/KG	<1.0	28.4	30.0	95
SILVER	53520	MG/KG	<1.0	45.9	50.0	92
THALLIUM	53719	MG/KG	<1.0	46.8	50.0	94
ZINC	53520	MG/KG	<2.0	45.3	50.0	91

 $\% \text{ Recovery} = (\text{Spike Sample Result} - \text{Sample Result}) * 100 / \text{Spike Concentration}$ $\text{RPD (Relative \% Difference)} = (\text{Sample Result} - \text{Duplicate Result}) * 100 / \text{Average Result}$



Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

: EPA 8020 (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES)

Client : ANALYTICAL TECHNOLOGIES, INC.

ATI I.D. : 501087

Project # : 501320

Project Name: GIANT REFINERY/APACHE STATION

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
2	501320-01/ZHE 01	TCLP EXTRACT	09-JAN-95	12-JAN-95	13-JAN-95	1.00
3	ZHE BLANK	TCLP EXTRACT	09-JAN-95	12-JAN-95	13-JAN-95	1.00
Parameter	Units	2	3			
BENZENE	UG/L	<25	<25			
TOLUENE	UG/L	26	<25			
ETHYLBENZENE	UG/L	<25	<25			
XYLENES (TOTAL)	UG/L	550	<50			
SURROGATES						
TRIFLUOROTOLUENE	%	95	96			



Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

REAGENT BLANK

Test : EPA 8020 (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES) ATI I.D. : 501087
Blank I.D. : 33924 Date Extracted: N/A
Client : ANALYTICAL TECHNOLOGIES, INC. Date Analyzed : 13-JAN-95
Project # : 501320 Dil. Factor : 1.00
Project Name: GIANT REFINERY/APACHE STATION

Parameters	Units	Results
BENZENE	UG/L	<25
TOLUENE	UG/L	<25
ETHYLBENZENE	UG/L	<25
XYLENES (TOTAL)	UG/L	<50
<u>SURROGATES</u>		
TRIFLUOROTOLUENE	%	101



Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

Test : EPA 8020 (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES) ATI I.D. : 501087
MSMSD # : 71846 Date Extracted: 12-JAN-95
Client : ANALYTICAL TECHNOLOGIES, INC. Date Analyzed : 13-JAN-95
Sample Matrix : WATER
Project # : 501320 REF I.D. : 501087-02
Project Name: GIANT REFINERY/APACHE STATION

Parameters	Units	Sample Result	Conc Spike	Spiked Sample	% Rec	Dup Spike	Dup % Rec	RPD
BENZENE	UG/L	<25	500	510	102	530	106	4
TOLUENE	UG/L	26	500	520	99	550	105	6

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration

RPD (Relative % Difference) = (Spiked Sample Result - Duplicate Spike Result)*100/Average Result



Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

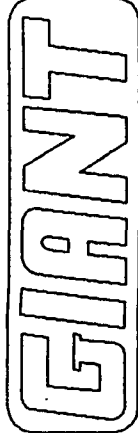
BLANK SPIKE

Test : EPA 8020 (BENZENE, TOLUENE, ETHYLBENZENE, XYLENES) ATI I.D. : 501087
Blank Spike #: 53460 Date Extracted: N/A
Client : ANALYTICAL TECHNOLOGIES, INC. Date Analyzed : 13-JAN-95
Project # : 501320 Sample Matrix : WATER
Project Name : GIANT REFINERY/APACHE STATION

Parameters	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
BENZENE	UG/L	<25	550	500	110
TOLUENE	UG/L	<25	550	500	110

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration

RPD (Relative % Difference) = (Spiked Sample - Blank Result)*100/Average Result



Bloomfield Refinery Remediation
5764 Highway 64
Post Office Box 256
Farmington, New Mexico 87499

CHAIN OF CUSTODY

Date: 1-9-95 Page 1 of 1

LABORATORY ATI
ADDRESS _____

Telephone () - - -
SAMPLER'S SIGNATURE Jeany Overman

SAMPLE NUMBER MATRIX LOCATION

9501091215 Soil

REQUESTED ANALYSIS

AROMATIC POLYNUCLEAR AROMATICS 510/8310	HALOGENATED VOLATILES 601/8010	AROMATIC VOLATILES 602/8020	GENERAL WATER CHEMISTRY	BTEX TCDF	CONDUCTIVITY	PRIORITY POLLUTANT METALS	TPH (4181)	Characteristics	Corrosivity	Leachability	RECYCLING	NUMBER OF CONTAINERS
				✓		✓	✓	✓	✓	✓	✓	2

PROJECT INFORMATION PROJECT: <u>Apache Station</u> <u>Petigah Line</u> PROJECT MANAGER: <u>Tim Kinney</u> SHIPPING I.D. NO. <u>3635741594</u> SHIPPED VIA <u>Fed Express</u>	SAMPLE RECEIPT	
	TOTAL NO. OF CONTAINERS	<u>2</u>
	CHAIN OF CUSTODY SEALS	<u>Y</u>
	REC'D GOOD CONDITION/COLD	<u>Y</u>
	CONFORMS TO RECORD	<u>Y</u>
LABORATORY NUMBER: <u>50320</u>		

SPECIAL INSTRUCTIONS OR COMMENTS
Return original Chain of Custody to Giant

RELINQUISHED BY: (Signature) <u>Jeany Overman</u> (Printed Name) (Company) Giant Refining	RELINQUISHED BY: (Signature) (Printed Name) (Company)	RELINQUISHED BY: (Signature) (Printed Name) (Company)
DATE AND TIME: <u>1-9-95 1500</u>	DATE AND TIME:	DATE AND TIME:
RECEIVED BY: (Signature) (Printed Name) (Company)	RECEIVED BY: (Signature) (Printed Name) (Company)	RECEIVED BY: (Signature) (Printed Name) (Company)
DATE AND TIME: <u>1-9-95 0900</u>	DATE AND TIME:	DATE AND TIME:

1004

