

GW - 32

REPORTS

YEAR(S):

1995 LAB DATA
FROM INSPECTION

TOBE USED w/ ATI Samples collected by
OCD as part of the OCT. 1995
Renewal Inspection/Sampling.

GIANT CINIZA DISCHARGE PLAN RENEWAL SAMPLE TABLE
10/23/95-10/25/95 (NMOCD SAMPLES)

DATE	LOCATION	METHOD	OCD ID NO.	ATI ID NO.
10/23/95	TRIP BLANK	601/602	9510231530	510409-01
10/24/95	POND 9	GEN. CHEM.	9510241345	510409-02
10/24/95	POND 9	6010 METALS	9510241350	510409-03
10/24/95	POND 9	610	9510241400	510409-04
10/24/95	POND 9	601/602	9510241405	510409-05
10/24/95	POND 11	601/602	9510241430	510409-06
10/24/95	POND 11	610	9510241435	510409-07
10/24/95	POND 11	6010 METALS	9510241440	510409-08
10/24/95	POND 11	GEN. CHEM.	9510241445	510409-09
10/24/95	POND 2	6010 METALS	9510241500	510409-10
10/24/95	POND 2	GEN. CHEM.	9510241502	510409-11
10/24/95	POND 2	610	9510241505	510409-12
10/24/95	POND 2	601/602	9510241510	510409-13

GW-032 RENEWAL
PAGE 2 OF 2

DATE	LOCATION	METHOD	OCD ID NO.	ATI ID NO.
10/25/95	OW-13	601/602	9510241100	510408-01
10/25/95	OW-13	6010 METALS	9510241105	510408-02
10/25/95	OW-13	GEN. CHEM.	9510241109	510408-03
10/25/95	OW-13	610	9510241112	510408-04
10/25/95	OW-20	6010 METALS	9510251142	510408-05
10/25/95	OW-20	GEN. CHEM.	9510251144	510408-06



Analytical **Technologies**, Inc.

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

ATI I.D. 510409

December 14, 1995

NMOCD
2040 South Pacheco
Santa Fe, NM 87505

RECEIVED

DEC 15 1995

Environmental Bureau
Oil Conservation Division

Project Name/Number: GIANT REFINERY

Attention: Pat Sanchez

On 10/25/95, 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.

This report is being reissued in part to correct for typographical errors. We apologize for any inconvenience this may have caused.

EPA method 610, 6010 and 200.7 analyses were performed by Analytical Technologies, Inc., 225 Commerce Drive, Fort Collins, CO.

Due to instrument problems, the EPA method 601/602 portion was analyzed by ENCHEM Inc., 1795 Industrial Drive, Green Bay, WI 54302 using EPA method 8260.

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

The RPD from Cation/Anion balance was greater than 5%. The 38% RPD was, in part, due to the high results of Chloride, Sulfate, Calcium, Potassium, Magnesium and Sodium. Additionally, because of the high results, the RPD also could be effected by reporting the results in two significant figures.



Analytical Technologies, Inc.

For EPA method 610, sample "9510241345" was originally extracted within its required holding times. However, the sample was re-extracted due to low surrogate recovery and the re-extraction was performed outside the holding time requirements. Results for both the original and re-extracted sample are included. The re-extracts also had surrogates outside the control limits, which demonstrated the presence of matrix effects.

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 : NMOCD
PROJECT # : (NONE)
PROJECT NAME : GIANT REFINERY

DATE RECEIVED : 10/25/95
REPORT DATE : 12/12/95

ATI ID: 510409

	ATI ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	510409-01	9510231530	AQUEOUS	10/23/95
02	510409-02	9510241345	AQUEOUS	10/24/95
03	510409-03	9510241350	AQUEOUS	10/24/95
04	510409-04	9510241400	AQUEOUS	10/24/95
05	510409-05	9510241405	AQUEOUS	10/24/95
06	510409-06	9510241430	AQUEOUS	10/24/95
07	510409-07	9510241435	AQUEOUS	10/24/95
08	510409-08	9510241440	AQUEOUS	10/24/95
09	510409-09	9510241445	AQUEOUS	10/24/95
10	510409-10	9510241500	AQUEOUS	10/24/95
11	510409-11	9510241502	AQUEOUS	10/24/95
12	510409-12	9510241505	AQUEOUS	10/24/95
13	510409-13	9510241510	AQUEOUS	10/24/95

---TOTALS---

<u>MATRIX</u>	<u>#SAMPLES</u>
AQUEOUS	13

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. : 510974

CLIENT : ANALYTICAL TECHNOLOGIES OF NM, INC.

DATE RECEIVED : 10/26/95

PROJECT # : 510409

PROJECT NAME : NMOCD

REPORT DATE : 12/12/95

PARAMETER	UNITS	02	09	11
CARBONATE (CACO3)	MG/L	<1	<1	<1
BICARBONATE (CACO3)	MG/L	26	167	539
HYDROXIDE (CACO3)	MG/L	<1	<1	<1
TOTAL ALKALINITY (AS CACO3)	MG/L	26	167	539
BROMIDE (EPA 300.0)	MG/L	66	16.6	7.8
CHLORIDE (EPA 325.2)	MG/L	170000	20000	5300
CONDUCTIVITY, (UMHOS/CM)		490000	68000	18300
FLUORIDE (EPA 340.2)	MG/L	56.7	19.7	59.7
PH (EPA 150.1)	UNITS	5.8	7.1	8.0
SULFATE (EPA 375.2)	MG/L	3800	4800	1100
T. DISSOLVED SOLIDS (160.1)	MG/L	260000	36000	9800



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

CHAIN OF CUSTODY
DATE: 10/24/95 PAGE 1 OF 2

AT LAB I.D.

510409

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

PROJECT MANAGER: Pat Sanchez

COMPANY:

NMCCD

ADDRESS:

2040 South Pacheco
Santa Fe, NM 87505

PHONE:

(505) - 827-7156

FAX:

(505) - 827-8177

BILL TO:

SAME AS ABOVE

COMPANY:

ADDRESS:

SAMPLE ID

DATE

TIME

MATRIX

LAB ID

9510231530

10/23/95 1530

AQ

-01

9510241345

11/24/95 1345

1

-02

9510241350

10/24/95 1350

1

-03

9510241400

11/24/95 1400

1

-04

9510241405

11/24/95 1405

1

-05

9510241430

11/24/95 1430

1

-06

9510241435

11/24/95 1435

1

-07

9510241440

11/24/95 1440

1

-08

9510241445

10/24/95 1445

1

-09

PROJECT INFORMATION

SAMPLE RECEIPT

PROJ. NO.:

NO. CONTAINERS

17

PROJ. NAME:

CUSTODY SEALS

① N/NA

P.O. NO.:

RECEIVED INTACT

Y

SHIPPED VIA:

RECEIVED COLD

Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK

(NORMAL) ☒ 2 WEEK

Comments:

Petroleum Hydrocarbons (418.1)

(MOD 8015) Gas/Diesel

Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)

BTXE/MTBE (8020)

GENERAL Chem. Major Cations Anions.

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

METALS - GOLD - ICP

The 13 Priority Pollutant Metals

RCRA Metals by Total Digestion

RCRA Metals by TCLP (1311)

NUMBER OF CONTAINERS

5

1

1

1

1

1

SAMPLED & RELINQUISHED BY: 1.

RELINQUISHED BY: 2.

RELINQUISHED BY: 3.

Signature: [Signature]

Signature: [Signature]

Signature: [Signature]

Printed Name: [Name]

Printed Name: [Name]

Printed Name: [Name]

Date: 10/25/95

Date: [Date]

Date: [Date]

Company: NMCCD

Company: [Company]

Company: [Company]

RECEIVED BY: 1.

RECEIVED BY: 2.

RECEIVED BY: (LAB) 3.

Signature: [Signature]

Signature: [Signature]

Signature: [Signature]

Printed Name: [Name]

Printed Name: [Name]

Printed Name: [Name]

Date: [Date]

Date: [Date]

Date: [Date]

Company: [Company]

Company: [Company]

Company: [Company]

Company: [Company]

Company: [Company]

Company: [Company]



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

CHAIN OF CUSTODY
DATE: 10/24/95 PAGE 2 OF 2

ATI LAB ID: 510409

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

PROJECT MANAGER: Pat Sanchez

COMPANY: NMCD
ADDRESS: 2040 South Richard
Santa Fe NM 87505
PHONE: (505)-827-7156
FAX:
BILL TO:
COMPANY: SAME AS ABOVE
ADDRESS:

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
9510241560	10/24/95	1500	AQ	-10
9510241502	10/24/95	1502		-11
9510241505	10/24/95	1505		-12
9510241510	10/24/95	1510		-13

PROJECT INFORMATION SAMPLE RECEIPT

PROJ. NO:	NO. CONTAINERS	7
PROJ. NAME: Grant Refinery	CUSTODY SEALS	Q/N/NA
P.O. NO:	RECEIVED INTACT	Y
SHIPPED VIA:	RECEIVED COLD	Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS
(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒ 2 WEEK

Comments:

Petroleum Hydrocarbons (418.1)	
(MOD 8015) Gas/Diesel	
Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	
BTXE/MTBE (8020)	General chem. (MAY 4 1995)
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	
METALS - 6010-ICAP	
The 13 Priority Pollutant Metals	
RCRA Metals by Total Digestion	
RCRA Metals by TCLP (1311)	
NUMBER OF CONTAINERS	1

SAMPLED & RELINQUISHED BY: 1. RELINQUISHED BY: 2. RELINQUISHED BY: 3.

Signature: [Signature]	Time: 2:30pm	Signature:	Time:	Signature:	Time:
Printed Name: Pat Sanchez	Date: 10/25/95	Printed Name:	Date:	Printed Name:	Date:
Company: NMCD	Phone: 827-7156	Company:		Company:	

RECEIVED BY: 1. RECEIVED BY: 2. RECEIVED BY: (LAB) 3.

Signature:	Time:	Signature:	Time:	Signature:	Time:
Printed Name:	Date:	Printed Name:	Date:	Printed Name:	Date:
Company:		Company:		Company:	

Signature: [Signature] Time: 1430
Printed Name: Andrew Patry Date: 10/25/95
Company: Analytical Technologies, Inc.



Analytical **Technologies**, Inc.

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

RECEIVED

DEC 13 1995

Environmental Bureau
Oil Conservation Division

ATI I.D. 510409

December 12, 1995

NMOCD
2040 South Pacheco
Santa Fe, NM 87505

Project Name/Number: GIANT REFINERY

Attention: Pat Sanchez

On 10/25/95, 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.

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Due to instrument problems, the EPA method 601/602 portion was analyzed by ENCHEM Inc., 1795 Industrial Drive, Green Bay, WI 54302 using EPA method 8260.

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

The RPD from Cation/Anion balance was greater than 5%. The 38% RPD was, in part, due to the high results of Chloride, Sulfate, Calcium, Potassium, Magnesium and Sodium. Additionally, because of the high results, the RPD also could be effected by reporting the results in two significant figures.



Analytical Technologies, Inc.

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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 : NMOCD
PROJECT # : (NONE)
PROJECT NAME : GIANT REFINERY

DATE RECEIVED : 10/25/95

REPORT DATE : 12/12/95

ATI ID: 510409

	ATI ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	510409-01	9510231530	AQUEOUS	10/23/95
02	510409-02	9510241345	AQUEOUS	10/24/95
03	510409-03	9510241350	AQUEOUS	10/24/95
04	510409-04	9510241400	AQUEOUS	10/24/95
05	510409-05	9510241405	AQUEOUS	10/24/95
06	510409-06	9510241430	AQUEOUS	10/24/95
07	510409-07	9510241435	AQUEOUS	10/24/95
08	510409-08	9510241440	AQUEOUS	10/24/95
09	510409-09	9510241445	AQUEOUS	10/24/95
10	510409-10	9510241500	AQUEOUS	10/24/95
11	510409-11	9510241502	AQUEOUS	10/24/95
12	510409-12	9510241505	AQUEOUS	10/24/95
13	510409-13	9510241510	AQUEOUS	10/24/95

---TOTALS---

MATRIX
AQUEOUS

#SAMPLES
13

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. : 510974

CLIENT : ANALYTICAL TECHNOLOGIES OF NM, INC.

DATE RECEIVED : 10/26/95

PROJECT # : 510409

PROJECT NAME : NMOCD

REPORT DATE : 12/12/95

PARAMETER	UNITS	01	02	03
CARBONATE (CACO3)	MG/L	<1	<1	<1
BICARBONATE (CACO3)	MG/L	26	167	539
HYDROXIDE (CACO3)	MG/L	<1	<1	<1
TOTAL ALKALINITY (AS CACO3)	MG/L	26	167	539
BROMIDE (EPA 300.0)	MG/L	66	16.6	7.8
CHLORIDE (EPA 325.2)	MG/L	170000	20000	5300
CONDUCTIVITY, (UMHOS/CM)		490000	68000	18300
FLUORIDE (EPA 340.2)	MG/L	56.7	19.7	59.7
PH (EPA 150.1)	UNITS	5.8	7.1	8.0
SULFATE (EPA 375.2)	MG/L	3800	4800	1100
T. DISSOLVED SOLIDS (160.1)	MG/L	260000	36000	9800



Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : ANALYTICAL TECHNOLOGIES OF NM, INC.

PROJECT # : 510409

PROJECT NAME : NMOCD

ATI I.D. : 510974

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
CARBONATE	MG/L	51096001	<1	<1	NA	NA	NA	NA
BICARBONATE	MG/L		233	231	0.9	NA	NA	NA
HYDROXIDE	MG/L		<1	<1	NA	NA	NA	NA
TOTAL ALKALINITY	MG/L		233	231	0.9	NA	NA	NA
BROMIDE	MG/L	51097501	<0.3	<0.3	NA	2.0	2.0	100
CHLORIDE	MG/L	51096201	5.7	5.8	2	16.2	10.0	105
CONDUCTIVITY (UMHOS/CM)		51095601	1380	1370	0.7	NA	NA	NA
FLUORIDE	MG/L	51096001	0.88	0.89	1	1.87	1.00	99
PH	UNITS	51097402	7.1	7.1	0	NA	NA	NA
SULFATE	MG/L	51092701	530	530	0	930	400	100
TOTAL DISSOLVED SOLIDS	MG/L	51094901	2900	2900	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.

ION BALANCE

ATI ACCESSION NUMBER: 51097401
SAMPLE IDENTIFICATION: 510409-02
CLIENT: ANALYTICAL TECHNOLOGIES, INC.

ANIONS	RESULT MG/L	FACTOR ME/L	TOTAL
ALKALINITY (AS CaCO3)	26.000	0.02000	0.52000
CHLORIDE	170000.000	0.02821	4795.70000
FLUORIDE	56.700	0.05264	2.98469
NITRATE AS N	NA	0.01613	0.00000
SULFATE	3800.000	0.02082	79.11600
TOTAL ANIONS			4878.321

CATIONS	RESULT	FACTOR	TOTAL
ALUMINUM	NA	0.11119	0.00000
CALCIUM	8800.000	0.04990	439.12
POTASSIUM	2200.000	0.02558	56.27600
MAGNESIUM	4000.000	0.08229	329.16000
SODIUM	57000.000	0.04350	2479.50000
COPPER	NA	0.03147	0.00000
IRON	NA	0.05372	0.00000
MANGANESE	NA	0.03640	0.00000
ZINC	NA	0.03059	0.00000
TOTAL CATIONS			3304.056

		%RPD (<10%)	38.48
TOTAL ANIONS/CATIONS	(CALCULATED)	245872.300	
TOTAL DISSOLVED SOLIDS	(ANALYZED)	260000	%RPD (<15%) -5.59
ELECTRICAL COND.		490000	TDS/EC RATIO (0.65+/-0.1) 0.53061



Analytical Technologies, Inc.

ION BALANCE

ATI ACCESSION NUMBER: 51097402
SAMPLE IDENTIFICATION: 510409-09
CLIENT: ANALYTICAL TECHNOLOGIES, INC.

ANIONS	RESULT MG/L	FACTOR ME/L	TOTAL
ALKALINITY (AS CaCO ₃)	167.000	0.02000	3.34000
CHLORIDE	20000.000	0.02821	564.20000
FLUORIDE	19.700	0.05264	1.03701
NITRATE AS N	NA	0.01613	0.00000
SULFATE	4800.000	0.02082	99.93600
TOTAL ANIONS			668.513

CATIONS	RESULT	FACTOR	TOTAL
ALUMINUM	NA	0.11119	0.00000
CALCIUM	1200.000	0.04990	59.88
POTASSIUM	690.000	0.02558	17.65020
MAGNESIUM	340.000	0.08229	27.97860
SODIUM	9200.000	0.04350	400.20000
COPPER	NA	0.03147	0.00000
IRON	NA	0.05372	0.00000
MANGANESE	NA	0.03640	0.00000
ZINC	NA	0.03059	0.00000
TOTAL CATIONS			505.7088

		%RPD (<10%)	27.73
TOTAL ANIONS/CATIONS	(CALCULATED)	36349.900	
TOTAL DISSOLVED SOLIDS	(ANALYZED)	36000	%RPD (<15%) 0.97
ELECTRICAL COND.		68000	TDS/EC RATIO (0.65+/-0.1) 0.52941



Analytical Technologies, Inc.

ION BALANCE

ATI ACCESSION NUMBER: 51097403
SAMPLE IDENTIFICATION: 510409-11
CLIENT: ANALYTICAL TECHNOLOGIES, INC.

ANIONS	RESULT MG/L	FACTOR ME/L	TOTAL
ALKALINITY (AS CaCO3)	539.000	0.02000	10.78000
CHLORIDE	5300.000	0.02821	149.51300
FLUORIDE	59.700	0.05264	3.14261
NITRATE AS N	NA	0.01613	0.00000
SULFATE	1100.000	0.02082	22.90200

TOTAL ANIONS 186.3376

CATIONS	RESULT	FACTOR	TOTAL
ALUMINUM	NA	0.11119	0.00000
CALCIUM	370.000	0.04990	18.463
POTASSIUM	130.000	0.02558	3.32540
MAGNESIUM	90.000	0.08229	7.40610
SODIUM	2900.000	0.04350	126.15000
COPPER	NA	0.03147	0.00000
IRON	NA	0.05372	0.00000
MANGANESE	NA	0.03640	0.00000
ZINC	NA	0.03059	0.00000

TOTAL CATIONS 155.3445

%RPD (<10%) 18.14

TOTAL ANIONS/CATIONS	(CALCULATED)	10273.100		
TOTAL DISSOLVED SOLIDS	(ANALYZED)	9800	%RPD (<15%)	4.71
ELECTRICAL COND.		18300	TDS/EC RATIO (0.65+/-0.1)	0.53552

TOTAL METALS



Analytical Technologies, Inc.

Sample ID

510974 - 01

Lab Name: Analytical Technologies, Inc.

Client Name: ATI - AZ

Client Project ID: ATI - ALB -- 510974

Date Collected: 10/24/95

Lab Sample ID: 95-10-231-01

Prep Date: 10/31/95

Sample Matrix: Aqueous

Date Analyzed: 10/31/95

Analyte	Method	Concentration mg/L	Detection Limit mg/L *
Calcium	200.7	8800	100
Magnesium	200.7	4000	100
Potassium	200.7	2200	100
Sodium	200.7	57000	100

ND = Not Detected

* Detection limits raised. Dilution required due to analyte concentration.



Analytical Technologies, Inc.

TOTAL METALS

Sample ID

Lab Name: Analytical Technologies, Inc.

510974 - 02

Client Name: ATI - AZ

Client Project ID: ATI - ALB -- 510974

Date Collected: 10/24/95

Lab Sample ID: 95-10-231-02

Prep Date: 10/31/95

Sample Matrix: Aqueous

Date Analyzed: 10/31/95

Analyte		Method	Concentration mg/L	Detection Limit mg/L
Calcium	*	200.7	1200	100
Magnesium	^	200.7	340	100
Potassium	^	200.7	690	100
Sodium	*	200.7	9200	100

ND = Not Detected

* Detection limit raised. Dilution required due to analyte concentration.

^ Detection limit raised. Sample diluted to reduce matrix interferences.

TOTAL METALS



Analytical Technologies, Inc.

Sample ID

Reagent Blank

Lab Name: Analytical Technologies, Inc.

Client Name: ATI - AZ

Date Collected: N/A

Client Project ID: ATI - ALB -- 510974

Prep Date: 10/31/95

Lab Sample ID: RB 95-10-231

Date Analyzed: 10/31/95

Analyte	Method	Concentration mg/L	Detection Limit mg/L
Calcium	200.7	ND	1
Magnesium	200.7	ND	1
Potassium	200.7	ND	1
Sodium	200.7	ND	1

ND = Not Detected



Analytical Technologies, Inc.

TOTAL METALS

Sample ID

510974 - 03

Lab Name: Analytical Technologies, Inc.

Client Name: ATI - AZ

Client Project ID: ATI - ALB -- 510974

Date Collected: 10/24/95

Lab Sample ID: 95-10-231-03

Prep Date: 10/31/95

Sample Matrix: Aqueous

Date Analyzed: 10/31/95

Analyte		Method	Concentration mg/L	Detection Limit mg/L
Calcium	^	200.7	370	10
Magnesium	^	200.7	90	10
Potassium	^	200.7	130	10
Sodium	*	200.7	2900	10

ND = Not Detected

^ Detection limit raised. Sample diluted to reduce matrix interferences.

* Detection limit raised. Dilution required due to analyte concentration.



Analytical Technologies, Inc.

TOTAL METALS MATRIX SPIKE

Sample ID

Lab Name: Analytical Technologies, Inc.

In House

Client Name: ATI - AZ

Lab Sample ID: 95-10-238-01

Prep Date: 10/31/95

Sample Matrix: Aqueous

Date Analyzed: 10/31/95

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	% Rec (limits 80-120%)	Flags
Calcium	40	47	87	100	
Magnesium	40	5	44	98	
Potassium	40	2	41	98	
Sodium	40	17	57	100	

Analyte	MSD Conc. mg/L	MSD % Rec (limits 80-120%)	Relative % Difference (limits 0-20%)	Flags
Calcium	88	103	1	
Magnesium	44	98	0	
Potassium	41	98	0	
Sodium	57	100	0	

TOTAL METALS



Analytical Technologies, Inc.

Lab Name: Analytical Technologies, Inc.

Sample ID

9510241350

Client Name: ATI-NM

Client Project ID: Giant Refinery -- 510409

Date Collected: 10/24/95

Lab Sample ID: 95-10-215-01

Prep Date: 10/27/95

Sample Matrix: Aqueous

Date Analyzed: 10/27/95

Analyte		Modified Method	Concentration mg/L	Detection Limit mg/L
Aluminum		6010	ND	0.2
Antimony	^	6010	ND	0.2
Arsenic	^	6010	0.5	0.1
Barium		6010	0.6	0.1
Beryllium		6010	ND	0.005
Boron		6010	3.5	0.1
Cadmium		6010	ND	0.005
Calcium	*	6010	6800	10
Chromium		6010	ND	0.01
Cobalt		6010	ND	0.01
Copper		6010	ND	0.01
Iron		6010	0.7	0.1
Lead	^	6010	ND	0.03
Magnesium	*	6010	3700	10
Manganese		6010	32	0.01
Molybdenum		6010	0.02	0.01
Nickel		6010	ND	0.02
Potassium	*	6010	2600	10
Selenium	^	6010	ND	0.05
Silicon		6010	20	0.05
Silver		6010	ND	0.01
Sodium	*	6010	86000	100
Thallium	^	6010	ND	0.1
Vanadium	^	6010	ND	0.1
Zinc		6010	0.03	0.02

ND = Not Detected

^ Detection limit raised. Sample diluted to reduce matrix interferences.

* Detection limit raised. Dilution required due to analyte concentration.

TOTAL METALS



Analytical Technologies, Inc.

Lab Name: Analytical Technologies, Inc.

Sample ID

9510241440

Client Name: ATI-NM

Client Project ID: Giant Refinery -- 510409

Date Collected: 10/24/95

Lab Sample ID: 95-10-215-04

Prep Date: 10/27/95

Sample Matrix: Aqueous

Date Analyzed: 10/27/95

Analyte	Modified Method	Concentration mg/L	Detection Limit mg/L
Aluminum	6010	0.3	0.2
Antimony ^	6010	ND	0.2
Arsenic ^	6010	0.1	0.1
Barium	6010	0.2	0.1
Beryllium	6010	ND	0.005
Boron	6010	1.0	0.1
Cadmium	6010	ND	0.005
Calcium *	6010	1400	100
Chromium	6010	ND	0.01
Cobalt	6010	ND	0.01
Copper	6010	ND	0.01
Iron	6010	0.6	0.1
Lead ^	6010	ND	0.03
Magnesium	6010	300	1
Manganese	6010	4.5	0.01
Molybdenum	6010	ND	0.01
Nickel	6010	0.02	0.02
Potassium	6010	820	1
Selenium ^	6010	ND	0.05
Silicon	6010	9.7	0.05
Silver	6010	ND	0.01
Sodium *	6010	11000	100
Thallium ^	6010	ND	0.1
Vanadium	6010	ND	0.01
Zinc	6010	ND	0.02

ND = Not Detected

^ Detection limit raised. Sample diluted to reduce matrix interferences.

* Detection limit raised. Dilution required due to analyte concentration.

TOTAL METALS



Analytical Technologies, Inc.

Lab Name: Analytical Technologies, Inc.

Sample ID

9510241500

Client Name: ATI-NM

Client Project ID: Giant Refinery -- 510409

Date Collected: 10/24/95

Lab Sample ID: 95-10-215-05

Prep Date: 10/27/95

Sample Matrix: Aqueous

Date Analyzed: 10/27/95

Analyte	Modified Method	Concentration mg/L	Detection Limit mg/L
Aluminum	6010	0.2	0.2
Antimony ^	6010	ND	0.2
Arsenic ^	6010	ND	0.1
Barium	6010	0.1	0.1
Beryllium	6010	ND	0.005
Boron	6010	0.3	0.1
Cadmium	6010	ND	0.005
Calcium	6010	350	1
Chromium	6010	ND	0.01
Cobalt	6010	ND	0.01
Copper	6010	ND	0.01
Iron	6010	2.0	0.1
Lead ^	6010	ND	0.03
Magnesium	6010	88	1
Manganese	6010	0.22	0.01
Molybdenum	6010	ND	0.01
Nickel	6010	ND	0.02
Potassium	6010	130	1
Selenium ^	6010	ND	0.05
Silicon	6010	14	0.05
Silver	6010	ND	0.01
Sodium *	6010	2500	100
Thallium ^	6010	ND	0.1
Vanadium	6010	ND	0.01
Zinc	6010	0.06	0.02

ND = Not Detected

^ Detection limit raised. Sample diluted to reduce matrix interferences.

* Detection limit raised. Dilution required due to analyte concentration.

TOTAL METALS



Analytical Technologies, Inc.

Sample ID

Reagent Blank

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Date Collected: N/A

Client Project ID: Giant Refinery -- 510409

Prep Date: 10/27/95

Lab Sample ID: RB 95-10-215

Date Analyzed: 10/27/95

Analyte	Modified Method	Concentration mg/L	Detection Limit mg/L
Aluminum	6010	ND	0.2
Antimony	6010	ND	0.02
Arsenic	6010	ND	0.01
Barium	6010	ND	0.1
Beryllium	6010	ND	0.005
Boron	6010	ND	0.1
Cadmium	6010	ND	0.005
Calcium	6010	ND	1
Chromium	6010	ND	0.01
Cobalt	6010	ND	0.01
Copper	6010	ND	0.01
Iron	6010	ND	0.1
Lead	6010	ND	0.003
Magnesium	6010	ND	1
Manganese	6010	ND	0.01
Molybdenum	6010	ND	0.01
Nickel	6010	ND	0.02
Potassium	6010	ND	1
Selenium	6010	ND	0.005
Silicon	6010	ND	0.05
Silver	6010	ND	0.01
Sodium	6010	ND	1
Thallium	6010	ND	0.01
Vanadium	6010	ND	0.01
Zinc	6010	ND	0.02

ND = Not Detected



Analytical Technologies, Inc.

TOTAL METALS MATRIX SPIKE

Sample ID

Lab Name: Analytical Technologies, Inc.

In House

Client Name: ATI-NM

Lab Sample ID: 95-10-216-01

Prep Date: 10/27/95

Sample Matrix: Aqueous

Date Analyzed: 10/27/95

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	% Rec (limits 80-120%)	Flags
Aluminum	2.0	< 0.2	2.0	100	
Antimony	0.50	< 0.02	0.56	112	
Arsenic	2.0	< 0.01	2.2	110	
Barium	2.0	< 0.1	2.0	100	
Beryllium	0.050	< 0.005	0.047	94	
Boron	1.0	0.3	1.3	100	
Cadmium	0.050	< 0.005	0.049	98	
Calcium	40	8	48	100	
Chromium	0.20	< 0.01	0.19	95	
Cobalt	0.50	< 0.01	0.49	98	
Copper	0.25	< 0.01	0.24	96	
Iron	1.0	< 0.1	1.0	100	
Lead	0.50	< 0.003	0.50	100	
Magnesium	40	1	41	100	
Manganese	0.50	0.02	0.51	98	
Molybdenum	1.0	< 0.01	1.0	100	
Nickel	0.50	< 0.02	0.49	98	
Potassium	40	1	41	100	
Selenium	2.0	< 0.005	2.2	110	
Silicon	0.50	3.6	4.2	120	See note
Silver	0.20	< 0.01	0.21	105	
Sodium	40	290	330	100	See note
Thallium	2.0	< 0.01	2.0	100	
Vanadium	0.50	< 0.01	0.50	100	
Zinc	0.50	< 0.02	0.49	98	

*See note on following page.

**TOTAL METALS
MATRIX SPIKE DUPLICATE**



Analytical Technologies, Inc.

Sample ID

In House

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Lab Sample ID: 95-10-216-01

Prep Date: 10/27/95

Sample Matrix: Aqueous

Date Analyzed: 10/27/95

Analyte	MSD Conc. mg/L	MSD % Rec (limits 80-120%)	Relative % Difference (limits 0-20%)	Flags
Aluminum	2.0	100	0	
Antimony	0.56	112	0	
Arsenic	2.2	110	0	
Barium	2.0	100	0	
Beryllium	0.047	94	0	
Boron	1.3	100	0	
Cadmium	0.050	100	2	
Calcium	48	100	0	
Chromium	0.20	100	5	
Cobalt	0.50	100	2	
Copper	0.25	100	4	
Iron	1.0	100	0	
Lead	0.50	100	0	
Magnesium	42	103	2	
Manganese	0.52	100	2	
Molybdenum	1.0	100	0	
Nickel	0.49	98	0	
Potassium	41	100	0	
Selenium	2.2	110	0	
Silicon	4.2	120	0	See note
Silver	0.21	105	0	
Sodium	340	125	3	See note
Thallium	2.1	105	5	
Vanadium	0.50	100	0	
Zinc	0.50	100	2	

Note: Due to the large concentration of analyte in the sample, matrix spike recovery may not be accurate. The Laboratory Control Sample (LCS) is included on a separate page to show that the digestion and analysis were in control.



Analytical Technologies, Inc.

**TOTAL METALS
LABORATORY CONTROL SAMPLE**

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Client Project ID: Giant Refinery -- 510409

Work Order Number: 95-10-215

Date Analyzed: 10/27/95

Analyte	LCS Result mg/L	LCS True Value mg/L	LCS % Recovery	Limits
Silicon	0.50	0.50	100	80 - 120%
Sodium	11	11	100	80 - 120%

POLYNUCLEAR AROMATIC HYDROCARBONS

Method 610



Analytical Technologies, Inc.

Lab Name: Analytical Technologies Inc.
Client Name: ATI-NM
Client Project ID: Giant Refinery -- 510409
Lab Sample ID: 95-10-215-02

Sample Matrix: Water
Cleanup: N/A

Sample ID

9510241400

Date Collected: 10/24/95
Date Extracted: 10/27/95
Date Analyzed: 11/3/95

Sample Volume: 1000 mL
Final Volume: 1 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Naphthalene	ND	0.50
Acenaphthylene	ND	1.0
1-Methylnaphthalene	ND	1.0
2-Methylnaphthalene	ND	1.0
Acenaphthene	ND	1.0
Fluorene	0.17	0.10
Phenanthrene	ND	0.050
Anthracene	0.025 J	0.10
Fluoranthene	ND	0.10
Pyrene	ND	0.050
Benzo(a)anthracene	ND	0.050
Chrysene	ND	0.050
Benzo(b)fluoranthene	ND	0.10
Benzo(k)fluoranthene	ND	0.050
Benzo(a)pyrene	ND	0.050
Dibenzo(a,h)anthracene	ND	0.10
Benzo(g,h,i)perylene	ND	0.10
Indeno(1,2,3-c,d)pyrene	ND	0.10

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2-Chloroanthracene	17 *	34 - 120

ND = Not Detected at or above client requested detection limit.

* = Surrogate recovery out of limits due to matrix interferences.

J = Estimated value. Below requested detection limits.

POLYNUCLEAR AROMATIC HYDROCARBONS

Method 610



Analytical Technologies, Inc.

Lab Name: Analytical Technologies Inc.
Client Name: ATI-NM
Client Project ID: Giant Refinery -- 510409
Lab Sample ID: 95-10-215-02RX

Sample Matrix: Water
Cleanup: N/A

Sample ID

9510241400

Date Collected: 10/24/95
Date Extracted: 11/13/95
Date Analyzed: 11/19/95

Sample Volume: 1000 mL
Final Volume: 1 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Naphthalene	ND	0.50
Acenaphthylene	ND	1.0
1-Methylnaphthalene	ND	1.0
2-Methylnaphthalene	ND	1.0
Acenaphthene	ND	1.0
Fluorene	0.24	0.10
Phenanthrene	0.14	0.050
Anthracene	0.032 J	0.10
Fluoranthene	0.065 J	0.10
Pyrene	ND	0.050
Benzo(a)anthracene	ND	0.050
Chrysene	ND	0.050
Benzo(b)fluoranthene	ND	0.10
Benzo(k)fluoranthene	ND	0.050
Benzo(a)pyrene	ND	0.050
Dibenzo(a,h)anthracene	ND	0.10
Benzo(g,h,i)perylene	ND	0.10
Indeno(1,2,3-c,d)pyrene	ND	0.10

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2-Chloroanthracene	17 *	34 - 120

ND = Not Detected at or above client requested detection limit.

J = Estimated value below reporting limit.

* = Surrogate recovery out of limits due to matrix interferences.

POLYNUCLEAR AROMATIC HYDROCARBONS

Method 610



Analytical Technologies, Inc.

Lab Name: Analytical Technologies Inc.
 Client Name: ATI-NM
 Client Project ID: Giant Refinery -- 510409
 Lab Sample ID: 95-10-215-03

Sample Matrix: Water
 Cleanup: N/A

Sample ID

9510241435

Date Collected: 10/24/95
 Date Extracted: 10/27/95
 Date Analyzed: 11/4/95

Sample Volume: 1000 mL
 Final Volume: 1 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Naphthalene	ND	0.50
Acenaphthylene	ND	1.0
1-Methylnaphthalene	ND	1.0
2-Methylnaphthalene	ND	1.0
Acenaphthene	ND	1.0
Fluorene	ND	0.10
Phenanthrene	0.34	0.050
Anthracene	ND	0.10
Fluoranthene	0.38	0.10
Pyrene	ND	0.050
Benzo(a)anthracene	ND	0.050
Chrysene	ND	0.050
Benzo(b)fluoranthene	ND	0.10
Benzo(k)fluoranthene	ND	0.050
Benzo(a)pyrene	ND	0.050
Dibenzo(a,h)anthracene	ND	0.10
Benzo(g,h,i)perylene	ND	0.10
Indeno(1,2,3-c,d)pyrene	ND	0.10

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2-Chloroanthracene	30 *	34 - 120

ND = Not Detected at or above client requested detection limit.

* = Surrogate recovery out of limits.

POLYNUCLEAR AROMATIC HYDROCARBONS

Method 610



Analytical Technologies, Inc.

Lab Name: Analytical Technologies Inc.
Client Name: ATI-NM
Client Project ID: Giant Refinery -- 510409
Lab Sample ID: 95-10-215-06

Sample Matrix: Water
Cleanup: N/A

Sample ID

9510241505

Date Collected: 10/24/95
Date Extracted: 10/27/95
Date Analyzed: 11/4/95

Sample Volume: 1000 mL
Final Volume: 100 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Naphthalene	ND	50
Acenaphthylene	ND	100
1-Methylnaphthalene	ND	100
2-Methylnaphthalene	ND	100
Acenaphthene	ND	100
Fluorene	4.0 J	10
Phenanthrene	19	5.0
Anthracene	ND	10
Fluoranthene	10	10
Pyrene	ND	5.0
Benzo(a)anthracene	ND	5.0
Chrysene	7.7	5.0
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	5.0
Benzo(a)pyrene	ND	5.0
Dibenzo(a,h)anthracene	ND	10
Benzo(g,h,i)perylene	ND	10
Indeno(1,2,3-c,d)pyrene	ND	10

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2-Chloroanthracene	I	34 - 120

ND = Not Detected at or above client requested detection limit.

I = Surrogate recovery not reported due to high sample dilution.

J = Estimated value. Below requested detection limits.

POLYNUCLEAR AROMATIC HYDROCARBONS

Method 610



Analytical Technologies, Inc.

Lab Name: Analytical Technologies Inc.
Client Name: ATI-NM
Client Project ID: Giant Refinery -- 510409
Lab Sample ID: WRB1 10/27/95

Sample Matrix: Water
Cleanup: N/A

Sample ID

Reagent Blank

Date Collected: N/A
Date Extracted: 10/27/95
Date Analyzed: 11/3/95

Sample Volume: 1000 mL
Final Volume: 1 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Naphthalene	ND	0.50
Acenaphthylene	ND	1.0
1-Methylnaphthalene	ND	1.0
2-Methylnaphthalene	ND	1.0
Acenaphthene	ND	1.0
Fluorene	ND	0.10
Phenanthrene	ND	0.050
Anthracene	ND	0.10
Fluoranthene	ND	0.10
Pyrene	ND	0.050
Benzo(a)anthracene	ND	0.050
Chrysene	ND	0.050
Benzo(b)fluoranthene	ND	0.10
Benzo(k)fluoranthene	ND	0.050
Benzo(a)pyrene	ND	0.050
Dibenzo(a,h)anthracene	ND	0.10
Benzo(g,h,i)perylene	ND	0.10
Indeno(1,2,3-c,d)pyrene	ND	0.10

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2-Chloroanthracene	75	34 - 120

ND = Not Detected at or above client requested detection limit.

POLYNUCLEAR AROMATIC HYDROCARBONS

Method 610



Analytical Technologies, Inc.

Lab Name: Analytical Technologies Inc.
Client Name: ATI-NM
Client Project ID: Giant Refinery -- 510409
Lab Sample ID: WRB1 11/13/95

Sample Matrix: Water
Cleanup: N/A

Sample ID

Reagent Blank

Date Collected: N/A
Date Extracted: 11/13/95
Date Analyzed: 11/19/95

Sample Volume: 1000 mL
Final Volume: 1 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Naphthalene	ND	0.50
Acenaphthylene	ND	1.0
1-Methylnaphthalene	ND	1.0
2-Methylnaphthalene	ND	1.0
Acenaphthene	ND	1.0
Fluorene	ND	0.10
Phenanthrene	ND	0.050
Anthracene	ND	0.10
Fluoranthene	ND	0.10
Pyrene	ND	0.050
Benzo(a)anthracene	ND	0.050
Chrysene	ND	0.050
Benzo(b)fluoranthene	ND	0.10
Benzo(k)fluoranthene	ND	0.050
Benzo(a)pyrene	ND	0.050
Dibenzo(a,h)anthracene	ND	0.10
Benzo(g,h,i)perylene	ND	0.10
Indeno(1,2,3-c,d)pyrene	ND	0.10

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2-Chloroanthracene	89	34 - 120

ND = Not Detected at or above client requested detection limit.



Analytical Technologies, Inc.

POLYNUCLEAR AROMATIC HYDROCARBONS BLANK SPIKE

Method 610

Lab Name: Analytical Technologies Inc.

Lab Sample ID: WBS1,2 10/27/95

Client Name: ATI-NM

Date Extracted: 10/27/95

Client Project ID: Giant Refinery -- 510409

Date Analyzed: 11/3/95

Sample Matrix: Water

Sample Volume: 1000 mL

Final Volume: 1 mL

Analyte	Spike Added (ug/L)	BS Concentration (ug/L)	BS Percent Recovery	QC Limits % Rec
Acenaphthylene	10	5.70	57	36 - 113
Phenanthrene	1.0	0.833	83	30 - 114
Pyrene	1.0	0.875	88	43 - 108
Dibenzo(a,h)anthracene	1.0	0.758	76	42 - 111
Benzo(k)fluoranthene	0.25	0.216	86	35 - 104

Analyte	Spike Added (ug/L)	BSD Concentration (ug/L)	BSD Percent Recovery	RPD	QC Limits RPD
Acenaphthylene	10	6.53	65	14	20
Phenanthrene	1.0	0.844	84	1	20
Pyrene	1.0	0.899	90	3	20
Dibenzo(a,h)anthracene	1.0	0.803	80	6	20
Benzo(k)fluoranthene	0.25	0.216	86	0.2	20

SURROGATE RECOVERY BS/BSD

Analyte	% Recovery(BS)	% Recovery(BSD)	% Rec Limits
2-Chloroanthracene	88	84	34 - 120

ND = Not Detected



Analytical Technologies, Inc.

POLYNUCLEAR AROMATIC HYDROCARBONS BLANK SPIKE

Method 610

Lab Name: Analytical Technologies Inc.

Lab Sample ID: WBS1,2 11/13/95

Client Name: ATI-NM

Date Extracted: 11/13/95

Client Project ID: Giant Refinery -- 510409

Date Analyzed: 11/19/95

Sample Matrix: Water

Sample Volume: 1000 mL

Final Volume: 1 mL

Analyte	Spike Added (ug/L)	BS Concentration (ug/L)	BS Percent Recovery	QC Limits % Rec
Acenaphthylene	10	7.00	70	23 - 122
Phenanthrene	1.0	0.874	87	34 - 112
Pyrene	1.0	0.928	93	35 - 116
Dibenzo(a,h)anthracene	1.0	0.911	91	33 - 123
Benzo(k)fluoranthene	0.25	0.246	98	39 - 119

Analyte	Spike Added (ug/L)	BSD Concentration (ug/L)	BSD Percent Recovery	RPD	QC Limits RPD
Acenaphthylene	10	6.35	64	10	20
Phenanthrene	1.0	0.827	83	6	20
Pyrene	1.0	0.881	88	5	20
Dibenzo(a,h)anthracene	1.0	0.918	92	1	20
Benzo(k)fluoranthene	0.25	0.240	96	2	20

SURROGATE RECOVERY BS/BSD

Analyte	% Recovery(BS)	% Recovery(BSD)	% Rec Limits
2-Chloroanthracene	92	87	34 -120

ND = Not Detected



...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750
Location : OCD #510409
En Chem Proj# : 9511061
Date Reported : 11/06/1995

Report to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO

Thank you for using En Chem! Samples were analyzed according to strict EPA or Wisconsin DNR methodology. Any comments or problems associated with the receipt of or analysis are reported below:

Sample no. 161707: The estimated detection limit for cis+trans-1,3-Dichloropropene is 0.4 ug/L. Quantifying at this level and reviewing the data these compounds were not detected at this level. Sample foamed during analysis.

Sample no. 161708: The estimated detection limit for cis+trans-1,3-Dichloropropene is 4 ug/L (0.4 ug/L * dilution factor of 10). Quantifying at this level and reviewing the data these compounds were not detected at this level. Sample foamed during analysis.

Sample nos. 161709 and 161710: The estimated detection limit for cis+trans-1,3-Dichloropropene is 20 ug/L (0.4 ug/L * dilution factor of 50). Quantifying at this level and reviewing the data these compounds were not detected at this level. Sample foamed during analysis.





...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750

Location : OCD #510409

Your Sample ID: 510409-01

Sample Desc. :

Sample Matrix : WATER

En Chem Proj# : 9511061

En Chem Lab # : 161707

Date Collected: 10/23/1995

Date Received : 11/03/1995

Date Reported : 11/06/1995

Report to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO
2709-D PAN AMERICAN FREEWAY, NE
ALBUQUERQUE, NM 87107

Bill to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyzed By
8260+	Benzene	ND	ug/l	0.5	SW846 5030	11/03/1995	SW846 8260	11/03/1995	HW
	Bromodichloromethane	ND	ug/l	0.2					
	Bromoform	ND	ug/l	0.5					
	Bromomethane	ND	ug/l	1.0					
	sec-Butylbenzene	ND	ug/l	1.0					
	Carbon tetrachloride	ND	ug/l	0.2					
	Chlorobenzene	ND	ug/l	0.5					
	Chlorodibromomethane	ND	ug/l	0.2					
	Chloroethane	ND	ug/l	0.5					
	Chloroform	ND	ug/l	0.5					
	Chloromethane	ND	ug/l	1.0					
	Dibromomethane	ND	ug/l	0.2					
	1,2-Dichlorobenzene	ND	ug/l	0.5					
	1,3-Dichlorobenzene	ND	ug/l	0.5					
	1,4-Dichlorobenzene	0.8	ug/l	0.5					
	1,1-Dichloroethane	ND	ug/l	0.2					
	1,2-Dichloroethane	ND	ug/l	0.5					
	1,1-Dichloroethene	ND	ug/l	0.2					
	cis-1,2-Dichloroethene	ND	ug/l	0.2					
	trans-1,2-Dichloroethene	ND	ug/l	1.0					
	1,2-Dichloropropane	ND	ug/l	0.2					
	1,3-Dichloropropane	ND	ug/l	0.2					
	2,2-Dichloropropane	ND	ug/l	0.2					
	Ethyl Benzene	ND	ug/l	0.5					
	Methylene chloride	ND	ug/l	2.0					
	Methyl-tert-butyl-ether	ND	ug/l	2.5					
	1,1,2,2-Tetrachloroethane	ND	ug/l	0.2					
	Tetrachloroethene	ND	ug/l	0.5					
	Toluene	ND	ug/l	0.5					
	1,1,1-Trichloroethane	ND	ug/l	1.0					





...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750

Location : OCD #510409

Your Sample ID: 510409-01

Sample Desc. :

Sample Matrix : WATER

En Chem Proj# : 9511061

En Chem Lab # : 161707

Date Collected: 10/23/1995

Date Received : 11/03/1995

Date Reported : 11/06/1995

Report to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO
2709-D PAN AMERICAN FREEWAY, NE
ALBUQUERQUE, NM 87107

Bill to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analysis Analyzed By
8260+	1,1,2-Trichloroethane	ND	ug/l	0.2	SW846 5030	11/03/1995	SW846 8260	11/03/1995	HW
	Trichloroethene	ND	ug/l	0.2					
	Trichlorofluoromethane	ND	ug/l	0.2					
	Vinyl chloride	ND	ug/l	0.5					
	Xylenes, m + p	ND	ug/l	0.5					
	Xylene, o	ND	ug/l	0.5					

"ND" Indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:

M. Suhr





...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750

Location : OCD #510409

Your Sample ID: 510409-05

Sample Desc. :

Sample Matrix : WATER

En Chem Proj# : 9511061

En Chem Lab # : 161708

Date Collected: 10/24/1995

Date Received : 11/03/1995

Date Reported : 11/06/1995

Report to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO
2709-D PAN AMERICAN FREEWAY, NE
ALBUQUERQUE, NM 87107

Bill to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyzed By
8260+	Benzene	ND	ug/l	5.0	SW846 5030	11/03/1995	SW846 8260	11/03/1995	HW
	Bromodichloromethane	ND	ug/l	2.0					
	Bromoform	ND	ug/l	5.0					
	Bromomethane	ND	ug/l	10					
	sec-Butylbenzene	ND	ug/l	10					
	Carbon tetrachloride	ND	ug/l	2.0					
	Chlorobenzene	ND	ug/l	5.0					
	Chlorodibromomethane	ND	ug/l	2.0					
	Chloroethane	ND	ug/l	5.0					
	Chloroform	ND	ug/l	5.0					
	Chloromethane	ND	ug/l	10					
	Dibromomethane	ND	ug/l	2.0					
	1,2-Dichlorobenzene	ND	ug/l	5.0					
	1,3-Dichlorobenzene	ND	ug/l	5.0					
	1,4-Dichlorobenzene	ND	ug/l	5.0					
	1,1-Dichloroethane	ND	ug/l	2.0					
	1,2-Dichloroethane	ND	ug/l	5.0					
	1,1-Dichloroethene	ND	ug/l	2.0					
	cis-1,2-Dichloroethene	ND	ug/l	2.0					
	trans-1,2-Dichloroethene	ND	ug/l	10					
	1,2-Dichloropropane	ND	ug/l	2.0					
	1,3-Dichloropropane	ND	ug/l	2.0					
	2,2-Dichloropropane	ND	ug/l	2.0					
	Ethyl Benzene	ND	ug/l	5.0					
	Methylene chloride	ND	ug/l	20					
	Methyl-tert-butyl-ether	ND	ug/l	25					
	1,1,2,2-Tetrachloroethane	ND	ug/l	2.0					
	Tetrachloroethene	ND	ug/l	5.0					
	Toluene	ND	ug/l	5.0					
	1,1,1-Trichloroethane	ND	ug/l	10					





...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750

Location : OCD #510409

Your Sample ID: 510409-05

Sample Desc. :

Sample Matrix : WATER

En Chem Proj# : 9511061

En Chem Lab # : 161708

Date Collected: 10/24/1995

Date Received : 11/03/1995

Date Reported : 11/06/1995

Report to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO
2709-D PAN AMERICAN FREEWAY, NE
ALBUQUERQUE, NM 87107

Bill to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analysis Analyzed By
8260+	1,1,2-Trichloroethane	ND	ug/l	2.0	SW846 5030	11/03/1995	SW846 8260	11/03/1995	HW
	Trichloroethene	ND	ug/l	2.0					
	Trichlorofluoromethane	ND	ug/l	2.0					
	Vinyl chloride	ND	ug/l	5.0					
	Xylenes, m + p	ND	ug/l	5.0					
	Xylene, o	ND	ug/l	5.0					

"ND" Indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:

M. Suhg





...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750

Location : OCD #510409

Your Sample ID: 510409-06

Sample Desc. :

Sample Matrix : WATER

En Chem Proj# : 9511061

En Chem Lab # : 161709

Date Collected: 10/24/1995

Date Received : 11/03/1995

Date Reported : 11/06/1995

Report to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO
2709-D PAN AMERICAN FREEWAY, NE
ALBUQUERQUE, NM 87107

Bill to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analysis By
8260+	Benzene	ND	ug/l	25	SW846 5030	11/03/1995	SW846 8260	11/03/1995	HW
	Bromodichloromethane	ND	ug/l	10					
	Bromoform	ND	ug/l	25					
	Bromomethane	ND	ug/l	50					
	sec-Butylbenzene	ND	ug/l	50					
	Carbon tetrachloride	ND	ug/l	10					
	Chlorobenzene	ND	ug/l	25					
	Chlorodibromomethane	ND	ug/l	10					
	Chloroethane	ND	ug/l	25					
	Chloroform	ND	ug/l	25					
	Chloromethane	ND	ug/l	50					
	Dibromomethane	ND	ug/l	10					
	1,2-Dichlorobenzene	ND	ug/l	25					
	1,3-Dichlorobenzene	ND	ug/l	25					
	1,4-Dichlorobenzene	ND	ug/l	25					
	1,1-Dichloroethane	ND	ug/l	10					
	1,2-Dichloroethane	ND	ug/l	25					
	1,1-Dichloroethene	ND	ug/l	10					
	cis-1,2-Dichloroethene	ND	ug/l	10					
	trans-1,2-Dichloroethene	ND	ug/l	50					
	1,2-Dichloropropane	ND	ug/l	10					
	1,3-Dichloropropane	ND	ug/l	10					
	2,2-Dichloropropane	ND	ug/l	10					
	Ethyl Benzene	ND	ug/l	25					
	Methylene chloride	ND	ug/l	100					
	Methyl-tert-butyl-ether	ND	ug/l	130					
	1,1,2,2-Tetrachloroethane	ND	ug/l	10					
	Tetrachloroethene	ND	ug/l	25					
	Toluene	ND	ug/l	25					
	1,1,1-Trichloroethane	ND	ug/l	50					





...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750

Location : OCD #510409

Your Sample ID: 510409-06

Sample Desc. :

Sample Matrix : WATER

En Chem Proj# : 9511061

En Chem Lab # : 161709

Date Collected: 10/24/1995

Date Received : 11/03/1995

Date Reported : 11/06/1995

Report to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO
2709-D PAN AMERICAN FREEWAY, NE
ALBUQUERQUE, NM 87107

Bill to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analysis Date	Analyzed By
8260+	1,1,2-Trichloroethane	ND	ug/l	10	SW846 5030	11/03/1995	SW846 8260	11/03/1995		HW
	Trichloroethene	ND	ug/l	10						
	Trichlorofluoromethane	ND	ug/l	10						
	Vinyl chloride	ND	ug/l	25						
	Xylenes, m + p	ND	ug/l	25						
	Xylene, o	ND	ug/l	25						

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These results have been reviewed and their authenticity verified by:

M. Suha





...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750

Location : OCD #510409

Your Sample ID: 510409-13

Sample Desc. :

Sample Matrix : WATER

En Chem Proj# : 9511061

En Chem Lab # : 161710

Date Collected: 10/24/1995

Date Received : 11/03/1995

Date Reported : 11/06/1995

Report to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO
2709-D PAN AMERICAN FREEWAY, NE
ALBUQUERQUE, NM 87107

Bill to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO

Analysis	Parameter	Result	Units	Detection Limit	Prep. Method	Prep Date	Analysis Method	Analysis Date	Analysis Analyzed By
8260+	Benzene	ND	ug/l	25	SW846 5030	11/03/1995	SW846 8260	11/03/1995	HW
	Bromodichloromethane	ND	ug/l	10					
	Bromoform	ND	ug/l	25					
	Bromomethane	ND	ug/l	50					
	sec-Butylbenzene	ND	ug/l	50					
	Carbon tetrachloride	ND	ug/l	10					
	Chlorobenzene	ND	ug/l	25					
	Chlorodibromomethane	ND	ug/l	10					
	Chloroethane	ND	ug/l	25					
	Chloroform	ND	ug/l	25					
	Chloromethane	ND	ug/l	50					
	Dibromomethane	ND	ug/l	10					
	1,2-Dichlorobenzene	ND	ug/l	25					
	1,3-Dichlorobenzene	ND	ug/l	25					
	1,4-Dichlorobenzene	ND	ug/l	25					
	1,1-Dichloroethane	ND	ug/l	10					
	1,2-Dichloroethane	ND	ug/l	25					
	1,1-Dichloroethene	ND	ug/l	10					
	cis-1,2-Dichloroethene	ND	ug/l	10					
	trans-1,2-Dichloroethene	ND	ug/l	50					
	1,2-Dichloropropane	ND	ug/l	10					
	1,3-Dichloropropane	ND	ug/l	10					
	2,2-Dichloropropane	ND	ug/l	10					
	Ethyl Benzene	ND	ug/l	25					
	Methylene chloride	ND	ug/l	100					
	Methyl-tert-butyl-ether	ND	ug/l	130					
	1,1,2,2-Tetrachloroethane	ND	ug/l	10					
	Tetrachloroethene	ND	ug/l	25					
	Toluene	ND	ug/l	25					
	1,1,1-Trichloroethane	ND	ug/l	50					





...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750

Location : OCD #510409

Your Sample ID: 510409-13

Sample Desc. :

Sample Matrix : WATER

En Chem Proj# : 9511061

En Chem Lab # : 161710

Date Collected: 10/24/1995

Date Received : 11/03/1995

Date Reported : 11/06/1995

Report to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO
2709-D PAN AMERICAN FREEWAY, NE
ALBUQUERQUE, NM 87107

Bill to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analysis By
8260+	1,1,2-Trichloroethane	ND	ug/l	10	SW846 5030	11/03/1995	SW846 8260	11/03/1995	HW
	Trichloroethene	ND	ug/l	10					
	Trichlorofluoromethane	ND	ug/l	10					
	Vinyl chloride	ND	ug/l	25					
	Xylenes, m + p	ND	ug/l	25					
	Xylene, o	ND	ug/l	25					

"ND" Indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:

Mc. Saha



Printed on Recycled Paper



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

CHAIN OF CUSTODY
DATE: 10/24/95 PAGE 1 OF 2

ATILAB ID.

510409

ANALYSIS REQUEST

PROJECT MANAGER: Pat Sanchez

COMPANY: NMCD

ADDRESS: 2040 South Pacheco

PHONE: Santa Fe, NM 87505

FAX: (505) - 827-7156

(505) - 827-8177

BILL TO: SAME AS ABOVE

COMPANY:

ADDRESS:

SAMPLE ID DATE TIME MATRIX LAB ID

9510231530	10/23/95 1530	AQ	-01
9510241345	11/24/95 1345		-02
9510241350	11/24/95 1350		-03
9510241400	11/24/95 1400		-04
9510241405	11/24/95 1405		-05
9510241430	11/24/95 1430		-06
9510241435	11/24/95 1435		-07
9510241440	11/24/95 1440		-08
9510241445	11/24/95 1445		-09

Petroleum Hydrocarbons (418.1)	
(MOD 8015) Gas/Diesel	
Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	
BTXE/MTBE (8020)	
GENERAL Chem. Major Cations Anions.	
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	
METALS - 6010 - ICA-P	
The 13 Priority Pollutant Metals	
RCRA Metals by Total Digestion	
RCRA Metals by TCLP (1311)	

NUMBER OF CONTAINERS

PROJECT INFORMATION SAMPLE RECEIPT

PROJ. NO.:

NO. CONTAINERS

17

PROJ. NAME: Great Refinery

CUSTODY SEALS

1 N / NA

P.O. NO.:

RECEIVED INTACT

Y

SHIPPED VIA:

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: [Signature] Time: 2:30 pm

Signature:

Signature:

Printed Name: Pat Sanchez Date: 10/25/95

Printed Name:

Printed Name:

Company: NMCD

Company:

Company:

Phone: 827-7156

Signature:

Signature:

RECEIVED BY: 1.

RECEIVED BY: 2.

RECEIVED BY: (LAB) 3.

Signature:

Time:

Signature:

Time:

Printed Name:

Date:

Printed Name:

Date:

Company:

Company:

Analytical Technologies, Inc.



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

CHAIN OF CUSTODY
DATE: 10/24/95 PAGE 2 OF 2

AT/LAB I.D.

510409

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

PROJECT MANAGER: Pat Sanchez

COMPANY:
ADDRESS:

N MCD
2040 South Frederick
Santa Fe NM 87505

PHONE:

(505)-827-7156

FAX:

BILL TO:

COMPANY:

SAME AS ABOVE

ADDRESS:

SAMPLE ID DATE TIME MATRIX LAB ID

9510241500 10/24/95 1500 AQ -10

9510241502 10/24/95 1502 -11

9510241505 10/24/95 1505 -12

9510241510 10/24/95 1510 -13

PROJECT INFORMATION

SAMPLE RECEIPT

PROJ. NO.: NO. CONTAINERS 7

PROJ. NAME: Grant Refinery CUSTODY SEALS 01N/NA

P.O. NO.: RECEIVED INTACT Y

SHIPPED VIA: 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: 2:30pm

Signature: Time:

Signature: Time:

Printed Name: Pat Sanchez Date: 10/25/95

Printed Name: Date:

Printed Name: Date:

Company: Phone: 827-7156

Company:

Company:

RECEIVED BY: 1. Signature: Time:

RECEIVED BY: 2. Signature: Time:

RECEIVED BY: (LAB) 3. Signature: Time: 1430

Printed Name: Date:

Printed Name: Date:

Printed Name: Date: 10/25

Company:

Company:

Analytical Technologies, Inc.

Petroleum Hydrocarbons (418.1)
(MOD 8015) Gas/Diesel
Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)
BTXE/MTBE (8020)
General chem. (Major components)
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
METALS - 6010-ICAP
The 13 Priority Pollutant Metals
RCRA Metals by Total Digestion
RCRA Metals by TCLP (1311)

NUMBER OF CONTAINERS

PROJECT MANAGER: Kay McElrath

COMPANY: ALB-ATI
 ADDRESS:
 PHONE:
 FAX:
 BILL TO:
 COMPANY:
 ADDRESS:

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
510409-02	10/24	1345	AA	1
-09	1445			2
-11	1502			3

PROJECT INFORMATION

PROJ. NO.: 510409
 PROJ. NAME: NMCD
 P.O. NO.:
 SHIPPED VIA: RECEIVED COLD BLUE

SAMPLE RECEIPT

NO. CONTAINERS: 3
 CUSTODY SEALS: (Y/N) / NA
 RECEIVED INTACT: Y
 RECEIVED COLD: BLUE

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

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

Route only to (circle one):
 Portland San Diego Ft. Collins
 Renton Pensacola PHX ONLY

Petroleum Hydrocarbons (418.1)	
(MOD 8015) Gas/Diesel	
Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	
BTXE/MTBE (8020)	
Item 25: Cation & Anions: F, Br, Ca, K, Mg, Na, Alk, Cl, SO ₄ , TDS, Cation/Anion Balance	X X X
Chlorinated Hydrocarbons (601/8040) PH, PC	X X X
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

SAMPLED & RELINQUISHED BY:

1. Signature: Andrew L. Desjardis Time: 1700
 Printed Name: Andrew L. Desjardis Date: 10/25
 Company: Phone:

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

3. Signature: Time:
 Printed Name: Date:
 Company:

RECEIVED BY:

1. Signature: Time:
 Printed Name: Date:
 Company:

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

3. Signature: Time:
 Printed Name: Date:
 Company:

Signature: Andrew L. Desjardis Time: 1700
 Printed Name: Andrew L. Desjardis Date: 10/25
 Company: Analytical Technologies, Inc.

PROJECT MANAGER: Kim McNeil

COMPANY: ALB-ATI

ADDRESS:

PHONE:

FAX:

BILL TO:

COMPANY:

ADDRESS:

SAMPLE ID

DATE

TIME

MATRIX

LAB ID

510409-03

10/25

1350

Ag

01

-04

1

1400

1

02

-07

1

1435

1

03

-08

1

1440

1

04

-10

1

1500

1

05

-12

10/25

1505

1

06

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.

6010 - Item No 24: Al, Sb, As, Ba

Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo

Pesticides (PCB (600/8000) H, K, Se, Si, Ag, Ng,

Herbicides (615/8150) TL, V, Zn

Base/Neutral/Acid Compounds GC/MS (625/8270)

Volatile Organics GC/MS (624/8240)

Polynuclear Aromatics (610/8260) Item No. 5

See Quote

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

PROJECT INFORMATION

SAMPLE RECEIPT

PROJ. NO.: 510409

NO. CONTAINERS

8

PROJ. NAME: Giant Refinery

CUSTODY SEALS

OPEN/NA

P.O. NO.:

RECEIVED INTACT

✓

SHIPPED VIA:

RECEIVED COLD

✓

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK

(NORMAL) ☐ 2 WEEK

✓ 1 container Received Broken

Route only to (circle one)

Portland

San Diego

Renton

Pensacola

Ft. Collins

LAB USE ONLY

SAMPLED & RELINQUISHED BY: 1.

RELINQUISHED BY: 2.

RELINQUISHED BY: 3.

Signature:

Time:

1700

Signature:

Time:

Signature:

Time:

Printed Name:

Date:

10/25

Printed Name:

Date:

Printed Name:

Date:

Company:

Phone:

Company:

Company:

Company:

RECEIVED BY:

Time:

1.

RECEIVED BY:

Time:

2.

RECEIVED BY: (LAB)

Time:

Signature:

Time:

900

Signature:

Time:

Signature:

Time:

Printed Name:

Date:

10/25

Printed Name:

Date:

Printed Name:

Date:

Company:

Company:

Company:

Company:

Company:

Company:

Interlab Chain of Custody

95-10-231

DATE 10/24/95 PAGE 1 OF 4

NETWORK PROJECT MANAGER:

ANALYSIS REQUEST

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

CLIENT PROJECT MANAGER:

M. Tye

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TO	TO	OR	SU	SU	63	619	Ca	82	Die	Vo	NA	AS	BO	TC	FE	GR	RA	A	AI	N
51097401	10/24/95		AC	01																					
02				02																					
03				03																					
												</													

PROJECT INFORMATION

SAMPLE RECEIPT

SAMPLES SENT TO:

RELINQUISHED BY:

RELINQUISHED BY:

PROJECT NUMBER: 510974

TOTAL NUMBER OF CONTAINERS

3

PROJECT NAME: ATI-ALB

CHAIN OF CUSTODY SEALS

MA

QC LEVEL: STD IV

INTACT?

MA

TAT: STANDARD RUSHI

RECEIVED GOOD COND. FOLD

Y

ATI WORKORDER #

LAB NUMBER

DUE DATE:

TIME:

RECEIVED BY:

1.

Signature:

Time:

Printed Name:

Date:

Analytical Technologies, Inc.

Company:

ATI-CD

01/30/95 All 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 - ATT 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. 510408

December 14, 1995

NMOCD
2040 South Pacheco
Santa Fe, NM 87505

Project Name/Number: GIANT REFINERY

Attention: Pat Sanchez

RECEIVED

DEC 15 1995

Environment
Oil Conservation Division

On 10/25/95, 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.

This report is being reissued in part to correct for typographical errors. We apologize for any inconvenience this may have caused.

EPA method 610, 200.7 and 6010 analyses were performed by Analytical Technologies, Inc., 225 Commerce Drive, Fort Collins, CO.

Due to instrument problems, the EPA method 601/602 portion was analyzed by ENCHEM Inc., 1795 Industrial Drive, Green Bay, WI 54302 using EPA method 8260.

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

The RPD from Cation/Anion balance was greater than 5%. The 38% RPD was, in part, due to the high results of Chloride, Sulfate, Calcium, Potassium, Magnesium and Sodium. Additionally, because of the high results, the RPD also could be effected by reporting the results in two significant figures.

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 : NMOCD
PROJECT # : (NONE)
PROJECT NAME : GIANT REFINERY

DATE RECEIVED : 10/25/95

REPORT DATE : 12/12/95

ATI ID: 510408

	ATI ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	510408-01	9510251100	AQUEOUS	10/25/95
02	510408-02	9510251105	AQUEOUS	10/25/95
03	510408-03	9510251109	AQUEOUS	10/25/95
04	510408-04	9510251112	AQUEOUS	10/25/95
05	510408-05	9510251142	AQUEOUS	10/25/95
06	510408-06	9510251144	AQUEOUS	10/25/95

---TOTALS---

MATRIX
AQUEOUS

#SAMPLES
6

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. : 510975

CLIENT : ANALYTICAL TECHNOLOGIES, INC-NM
PROJECT # : 510408
PROJECT NAME : GIANT REF.

DATE RECEIVED : 10/26/95

REPORT DATE : 12/12/95

PARAMETER	UNITS	03	06
CARBONATE (CACO3)	MG/L	22	140
BICARBONATE (CACO3)	MG/L	448	<1
HYDROXIDE (CACO3)	MG/L	<1	634
TOTAL ALKALINITY (AS CACO3)	MG/L	470	774
BROMIDE (EPA 300.0)	MG/L	<0.3	0.4
CHLORIDE (EPA 325.2)	MG/L	20	77
CONDUCTIVITY, (UMHOS/CM)		1190	3550
FLUORIDE (EPA 340.2)	MG/L	0.34	0.83
PH (EPA 150.1)	UNITS	8.4	12.4
SULFATE (EPA 375.2)	MG/L	160	10
T. DISSOLVED SOLIDS (160.1)	MG/L	780	930



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

CHAIN OF CUSTODY

DATE: 10/25/95 PAGE 1 OF 1

ATL LAB ID: 510408

PROJECT MANAGER: PAT SANCHEZ

COMPANY: NM O C D

ADDRESS: 2040 S. Pacheco

PHONE: Santa Fe, NM 87505

FAX: (505) - 827-7156

BILL TO: SAME AS ABOVE.

COMPANY: SAME AS ABOVE.

ADDRESS: SAME AS ABOVE.

SAMPLE ID DATE TIME MATRIX LAB ID

9510251100	10/25/95	1100	AQ	-01
9510251105	10/25/95	1105		-02
9510251109	10/25/95	1109		-03
9510251112	10/25/95	1112		-04
9510251142	10/25/95	1142		-05
9510251144	10/25/95	1144	✓	-06

PROJECT INFORMATION SAMPLE RECEIPT

PROJ. NO.:	NO. CONTAINERS	9
PROJ. NAME: Grant Refinery	CUSTODY SEALS	(Y) N / NA
P.O. NO.:	RECEIVED INTACT	Y
SHIPPED VIA:	RECEIVED COLD	Y
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS		
(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK	(NORMAL) ☒ 2 WEEK	
Comments:		

Petroleum Hydrocarbons (418.1)	
(MOD 8015) Gas/Diesel	
Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	
BTXE/MTBE (8020)	
General Chemistry (Mag. Lab. Analysis)	
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	
Metals 6010-ICAP	✓
The 13 Priority Pollutant Metals	
RCRA Metals by Total Digestion	
RCRA Metals by TCLP (1311)	
NUMBER OF CONTAINERS	3

SAMPLED & RELINQUISHED BY: 1. Signature: [Signature] Time: 2:30 pm	RELINQUISHED BY: 2. Signature: [Signature] Time: [Time]	RELINQUISHED BY: 3. Signature: [Signature] Time: [Time]
Printed Name: Pat Sanchez Date: 10/25/95	Printed Name: [Name] Date: [Date]	Printed Name: [Name] Date: [Date]
Company: NM O C D Phone: 827-7156	Company: [Company]	Company: [Company]

SIGNED BY: 1. Signature: [Signature] Time: [Time]	SIGNED BY: 2. Signature: [Signature] Time: [Time]	SIGNED BY: 3. Signature: [Signature] Time: [Time]
Printed Name: [Name] Date: [Date]	Printed Name: [Name] Date: [Date]	Printed Name: [Name] Date: [Date]
Company: [Company]	Company: [Company]	Company: [Company]

ANALYSIS REQUEST



Analytical **Technologies**, Inc.

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

ATI I.D. 510408

December 12, 1995

NMOCD
2040 South Pacheco
Santa Fe, NM 87505

RECEIVED

DEC 13 1995

Environmental Bureau
Oil Conservation Division

Project Name/Number: GIANT REFINERY

Attention: Pat Sanchez

On 10/25/95, 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 610, 200.7 and 6010 analyses were performed by Analytical Technologies, Inc., 225 Commerce Drive, Fort Collins, CO.

Due to instrument problems, the EPA method 601/602 portion was analyzed by ENCHEM Inc., 1795 Industrial Drive, Green Bay, WI 54302 using EPA method 8260.

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

The RPD from Cation/Anion balance was greater than 5%. The 38% RPD was, in part, due to the high results of Chloride, Sulfate, Calcium, Potassium, Magnesium and Sodium. Additionally, because of the high results, the RPD also could be effected by reporting the results in two significant figures.

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 : NMCD
PROJECT # : (NONE)
PROJECT NAME : GIANT REFINERY

DATE RECEIVED : 10/25/95
REPORT DATE : 12/12/95

ATI ID: 510408

	ATI ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	510408-01	9510251100	AQUEOUS	10/25/95
02	510408-02	9510251105	AQUEOUS	10/25/95
03	510408-03	9510251109	AQUEOUS	10/25/95
04	510408-04	9510251112	AQUEOUS	10/25/95
05	510408-05	9510251142	AQUEOUS	10/25/95
06	510408-06	9510251144	AQUEOUS	10/25/95

---TOTALS---

<u>MATRIX</u>	<u>#SAMPLES</u>
AQUEOUS	6

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. : 510975

CLIENT : ANALYTICAL TECHNOLOGIES, INC-NM
PROJECT # : 510408
PROJECT NAME : GIANT REF.

DATE RECEIVED : 10/26/95

REPORT DATE : 12/12/95

PARAMETER	UNITS	01	02
CARBONATE (CACO3)	MG/L	22	140
BICARBONATE (CACO3)	MG/L	448	<1
HYDROXIDE (CACO3)	MG/L	<1	634
TOTAL ALKALINITY (AS CACO3)	MG/L	470	774
BROMIDE (EPA 300.0)	MG/L	<0.3	0.4
CHLORIDE (EPA 325.2)	MG/L	20	77
CONDUCTIVITY, (UMHOS/CM)		1190	3550
FLUORIDE (EPA 340.2)	MG/L	0.34	0.83
PH (EPA 150.1)	UNITS	8.4	12.4
SULFATE (EPA 375.2)	MG/L	160	10
T. DISSOLVED SOLIDS (160.1)	MG/L	780	930



Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

CLIENT : ANALYTICAL TECHNOLOGIES, INC-NM
PROJECT # : 510408
PROJECT NAME : GIANT REF.

ATI I.D. : 510975

PARAMETER	UNITS	ATI I.D.	SAMPLE RESULT	DUP. RESULT	RPD	SPIKED SAMPLE	SPIKE CONC	% REC
CARBONATE	MG/L	51096201	<1	<1	NA	NA	NA	NA
BICARBONATE	MG/L		125	121	3	NA	NA	NA
HYDROXIDE	MG/L		<1	<1	NA	NA	NA	NA
TOTAL ALKALINITY	MG/L		125	121	3	NA	NA	NA
BROMIDE	MG/L	51097501	<0.3	<0.3	NA	2.0	2.0	100
CHLORIDE	MG/L	51149909	13.6	13.7	0.7	23.8	10	102
CONDUCTIVITY (UMHOS/CM)		51097501	1190	1180	0.8	NA	NA	NA
FLUORIDE	MG/L	51096001	0.88	0.89	1	1.87	1.00	99
PH	UNITS	51097402	7.1	7.1	0	NA	NA	NA
SULFATE	MG/L	51092701	530	530	0	930	400	100
TOTAL DISSOLVED SOLIDS	MG/L	51090801	280	280	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.

ION BALANCE

ATI ACCESSION NUMBER: 51097501
SAMPLE IDENTIFICATION: 510408-03
CLIENT: ANALYTICAL TECHNOLOGIES, INC.

ANIONS	RESULT MG/L	FACTOR ME/L	TOTAL
ALKALINITY (AS CaCO ₃)	470.000	0.02000	9.40000
CHLORIDE	20.000	0.02821	0.56420
FLUORIDE	0.340	0.05264	0.01790
NITRATE AS N	NA	0.01613	0.00000
SULFATE	160.000	0.02082	3.33120
TOTAL ANIONS			13.3133

CATIONS	RESULT	FACTOR	TOTAL
ALUMINUM	NA	0.11119	0.00000
CALCIUM	9.000	0.04990	0.4491
POTASSIUM	1.000	0.02558	0.02558
MAGNESIUM	1.000	0.08229	0.08229
SODIUM	300.000	0.04350	13.05000
COPPER	NA	0.03147	0.00000
IRON	NA	0.05372	0.00000
MANGANESE	NA	0.03640	0.00000
ZINC	NA	0.03059	0.00000
TOTAL CATIONS			13.60697

		%RPD (<10%)	-2.18
TOTAL ANIONS/CATIONS	(CALCULATED)	773.340	
TOTAL DISSOLVED SOLIDS	(ANALYZED)	780	%RPD (<15%) -0.86
ELECTRICAL COND.		1190	TDS/EC RATIO (0.65+/-0.1) 0.65546



Analytical Technologies, Inc.

ION BALANCE

ATI ACCESSION NUMBER: 51097502
SAMPLE IDENTIFICATION: 510408-06
CLIENT: ANALYTICAL TECHNOLOGIES, INC.

ANIONS	RESULT MG/L	FACTOR ME/L	TOTAL
ALKALINITY (AS CaCO ₃)	774.000	0.02000	15.48000
CHLORIDE	77.000	0.02821	2.17217
FLUORIDE	0.830	0.05264	0.04369
NITRATE AS N	NA	0.01613	0.00000
SULFATE	10.000	0.02082	0.20820

TOTAL ANIONS 17.90406

CATIONS	RESULT	FACTOR	TOTAL
ALUMINUM	NA	0.11119	0.00000
CALCIUM	76.000	0.04990	3.7924
POTASSIUM	17.000	0.02558	0.43486
MAGNESIUM	ND	0.08229	0.00000
SODIUM	300.000	0.04350	13.05000
COPPER	NA	0.03147	0.00000
IRON	NA	0.05372	0.00000
MANGANESE	NA	0.03640	0.00000
ZINC	NA	0.03059	0.00000

TOTAL CATIONS 17.27726

%RPD (<10%) 3.56

TOTAL ANIONS/CATIONS	(CALCULATED)	945.230		
TOTAL DISSOLVED SOLIDS	(ANALYZED)	930	%RPD (<15%)	1.62
ELECTRICAL COND.		3550	TDS/EC RATIO (0.65+/-0.1)	0.26197

TOTAL METALS



Analytical Technologies, Inc.

Sample ID

510975 - 01

Lab Name: Analytical Technologies, Inc.

Client Name: ATI - AZ

Client Project ID: ATI - ALB -- 510975

Date Collected: 10/25/95

Lab Sample ID: 95-10-232-01

Prep Date: 10/31/95

Sample Matrix: Aqueous

Date Analyzed: 10/31/95

Analyte	Method	Concentration mg/L	Detection Limit mg/L
Calcium	200.7	9	1
Magnesium	200.7	1	1
Potassium	200.7	1	1
Sodium	200.7	300	1

ND = Not Detected



Analytical Technologies, Inc.

TOTAL METALS

Sample ID

510975 - 02

Lab Name: Analytical Technologies, Inc.

Client Name: ATI - AZ

Client Project ID: ATI - ALB -- 510975

Date Collected: 10/25/95

Lab Sample ID: 95-10-232-02

Prep Date: 10/31/95

Sample Matrix: Aqueous

Date Analyzed: 10/31/95

Analyte	Method	Concentration mg/L	Detection Limit mg/L
Calcium	200.7	76	1
Magnesium	200.7	ND	1
Potassium	200.7	17	1
Sodium	200.7	300	1

ND = Not Detected



Analytical Technologies, Inc.

TOTAL METALS

Sample ID

Reagent Blank

Lab Name: Analytical Technologies, Inc.

Client Name: ATI - AZ

Date Collected: N/A

Client Project ID: ATI - ALB -- 510975

Prep Date: 10/31/95

Lab Sample ID: RB 95-10-232

Date Analyzed: 10/31/95

Analyte	Method	Concentration mg/L	Detection Limit mg/L
Calcium	200.7	ND	1
Magnesium	200.7	ND	1
Potassium	200.7	ND	1
Sodium	200.7	ND	1

ND = Not Detected



Analytical Technologies, Inc.

TOTAL METALS MATRIX SPIKE

Lab Name: Analytical Technologies, Inc.

Sample ID

In House

Client Name: ATI - AZ

Lab Sample ID: 95-10-238-01

Prep Date: 10/31/95

Sample Matrix: Aqueous

Date Analyzed: 10/31/95

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	% Rec (limits 80-120%)	Flags
Calcium	40	47	87	100	
Magnesium	40	5	44	98	
Potassium	40	2	41	98	
Sodium	40	17	57	100	

Analyte	MSD Conc. mg/L	MSD % Rec (limits 80-120%)	Relative % Difference (limits 0-20%)	Flags
Calcium	88	103	1	
Magnesium	44	98	0	
Potassium	41	98	0	
Sodium	57	100	0	

TOTAL METALS



Analytical Technologies, Inc.

Lab Name: Analytical Technologies, Inc.

Sample ID

9510251105

Client Name: ATI-NM

Client Project ID: NMOCD -- 510408

Date Collected: 10/25/95

Lab Sample ID: 95-10-216-01

Prep Date: 10/27/95

Sample Matrix: Aqueous

Date Analyzed: 10/27/95

Analyte	Modified Method	Concentration mg/L	Detection Limit mg/L
Aluminum	6010	ND	0.2
Antimony	6010	ND	0.02
Arsenic	6010	ND	0.01
Barium	6010	ND	0.1
Beryllium	6010	ND	0.005
Boron	6010	0.3	0.1
Cadmium	6010	ND	0.005
Calcium	6010	8	1
Chromium	6010	ND	0.01
Cobalt	6010	ND	0.01
Copper	6010	ND	0.01
Iron	6010	ND	0.1
Lead	6010	ND	0.003
Magnesium	6010	1	1
Manganese	6010	0.02	0.01
Molybdenum	6010	ND	0.01
Nickel	6010	ND	0.02
Potassium	6010	1	1
Selenium	6010	ND	0.005
Silicon	6010	3.6	0.05
Silver	6010	ND	0.01
Sodium	6010	290	1
Thallium	6010	ND	0.01
Vanadium	6010	ND	0.01
Zinc	6010	ND	0.02

ND = Not Detected

TOTAL METALSAnalytical Technologies, Inc.
Lab Name: Analytical Technologies, Inc.

Sample ID

9510251142

Client Name: ATI-NM

Client Project ID: NMOCD -- 510408

Date Collected: 10/25/95

Lab Sample ID: 95-10-216-02

Prep Date: 10/27/95

Sample Matrix: Aqueous

Date Analyzed: 10/27/95

Analyte	Modified Method	Concentration mg/L	Detection Limit mg/L
Aluminum	6010	2.0	0.2
Antimony	6010	ND	0.02
Arsenic	6010	ND	0.01
Barium	6010	0.3	0.1
Beryllium	6010	ND	0.005
Boron	6010	ND	0.1
Cadmium	6010	ND	0.005
Calcium	6010	80	1
Chromium	6010	0.19	0.01
Cobalt	6010	ND	0.01
Copper	6010	ND	0.01
Iron	6010	ND	0.1
Lead	6010	ND	0.003
Magnesium	6010	ND	1
Manganese	6010	ND	0.01
Molybdenum	6010	ND	0.01
Nickel	6010	ND	0.02
Potassium	6010	18	1
Selenium	6010	0.019	0.005
Silicon	6010	2.9	0.05
Silver	6010	ND	0.01
Sodium	6010	320	1
Thallium	6010	ND	0.01
Vanadium	6010	ND	0.01
Zinc	6010	ND	0.02

ND = Not Detected

TOTAL METALS



Analytical Technologies, Inc.

Sample ID

Reagent Blank

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Date Collected: N/A

Client Project ID: NMOCD -- 510408

Prep Date: 10/27/95

Lab Sample ID: RB 95-10-216

Date Analyzed: 10/27/95

Analyte	Modified Method	Concentration mg/L	Detection Limit mg/L
Aluminum	6010	ND	0.2
Antimony	6010	ND	0.02
Arsenic	6010	ND	0.01
Barium	6010	ND	0.1
Beryllium	6010	ND	0.005
Boron	6010	ND	0.1
Cadmium	6010	ND	0.005
Calcium	6010	ND	1
Chromium	6010	ND	0.01
Cobalt	6010	ND	0.01
Copper	6010	ND	0.01
Iron	6010	ND	0.1
Lead	6010	ND	0.003
Magnesium	6010	ND	1
Manganese	6010	ND	0.01
Molybdenum	6010	ND	0.01
Nickel	6010	ND	0.02
Potassium	6010	ND	1
Selenium	6010	ND	0.005
Silicon	6010	ND	0.05
Silver	6010	ND	0.01
Sodium	6010	ND	1
Thallium	6010	ND	0.01
Vanadium	6010	ND	0.01
Zinc	6010	ND	0.02

ND = Not Detected



Analytical Technologies, Inc.

TOTAL METALS MATRIX SPIKE

Sample ID

Lab Name: Analytical Technologies, Inc.

9510251105

Client Name: ATI-NM

Lab Sample ID: 95-10-216-01

Prep Date: 10/27/95

Sample Matrix: Aqueous

Date Analyzed: 10/27/95

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	% Rec (limits 80-120%)	Flags
Aluminum	2.0	< 0.2	2.0	100	
Antimony	0.50	< 0.02	0.56	112	
Arsenic	2.0	< 0.01	2.2	110	
Barium	2.0	< 0.1	2.0	100	
Beryllium	0.050	< 0.005	0.047	94	
Boron	1.0	0.3	1.3	100	
Cadmium	0.050	< 0.005	0.049	98	
Calcium	40	8	48	100	
Chromium	0.20	< 0.01	0.19	95	
Cobalt	0.50	< 0.01	0.49	98	
Copper	0.25	< 0.01	0.24	96	
Iron	1.0	< 0.1	1.0	100	
Lead	0.50	< 0.003	0.50	100	
Magnesium	40	1	41	100	
Manganese	0.50	0.02	0.51	98	
Molybdenum	1.0	< 0.01	1.0	100	
Nickel	0.50	< 0.02	0.49	98	
Potassium	40	1	41	100	
Selenium	2.0	< 0.005	2.2	110	
Silicon	0.50	3.6	4.2	120	See note
Silver	0.20	< 0.01	0.21	105	
Sodium	40	290	330	100	See note
Thallium	2.0	< 0.01	2.0	100	
Vanadium	0.50	< 0.01	0.50	100	
Zinc	0.50	< 0.02	0.49	98	

*See note on following page.

**TOTAL METALS
MATRIX SPIKE DUPLICATE**



Analytical Technologies, Inc.

Sample ID

9510251105

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Lab Sample ID: 95-10-216-01

Prep Date: 10/27/95

Sample Matrix: Aqueous

Date Analyzed: 10/27/95

Analyte	MSD Conc. mg/L	MSD % Rec (limits 80-120%)	Relative % Difference (limits 0-20%)	Flags
Aluminum	2.0	100	0	
Antimony	0.56	112	0	
Arsenic	2.2	110	0	
Barium	2.0	100	0	
Beryllium	0.047	94	0	
Boron	1.3	100	0	
Cadmium	0.050	100	2	
Calcium	48	100	0	
Chromium	0.20	100	5	
Cobalt	0.50	100	2	
Copper	0.25	100	4	
Iron	1.0	100	0	
Lead	0.50	100	0	
Magnesium	42	103	2	
Manganese	0.52	100	2	
Molybdenum	1.0	100	0	
Nickel	0.49	98	0	
Potassium	41	100	0	
Selenium	2.2	110	0	
Silicon	4.2	120	0	See note
Silver	0.21	105	0	
Sodium	340	125	3	See note
Thallium	2.1	105	5	
Vanadium	0.50	100	0	
Zinc	0.50	100	2	

Note: Due to the large concentration of analyte in the sample, matrix spike recovery may not be accurate. The Laboratory Control Sample (LCS) is included on a separate page to show that the digestion and analysis were in control.



Analytical Technologies, Inc.

**TOTAL METALS
LABORATORY CONTROL SAMPLE**

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Client Project ID: NMOCD -- 510408

Work Order Number: 95-10-216

Date Analyzed: 10/27/95

Analyte	LCS Result mg/L	LCS True Value mg/L	LCS % Recovery	Limits
Silicon	0.50	0.50	100	80 - 120%
Sodium	11	11	100	80 - 120%

POLYNUCLEAR AROMATIC HYDROCARBONS

Method 610



Analytical Technologies, Inc.

Lab Name: Analytical Technologies Inc.

Client Name: ATI-NM

Client Project ID: NMOCD -- 510408

Lab Sample ID: 95-10-216-03

Sample Matrix: Water

Cleanup: N/A

Sample ID

9510251112

Date Collected: 10/25/95

Date Extracted: 10/27/95

Date Analyzed: 11/4/95

Sample Volume: 1000 mL

Final Volume: 1 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Naphthalene	ND	0.50
Acenaphthylene	ND	1.0
1-Methylnaphthalene	ND	1.0
2-Methylnaphthalene	ND	1.0
Acenaphthene	ND	1.0
Fluorene	ND	0.10
Phenanthrene	ND	0.050
Anthracene	ND	0.10
Fluoranthene	ND	0.10
Pyrene	ND	0.050
Benzo(a)anthracene	ND	0.050
Chrysene	ND	0.050
Benzo(b)fluoranthene	ND	0.10
Benzo(k)fluoranthene	ND	0.050
Benzo(a)pyrene	ND	0.050
Dibenzo(a,h)anthracene	ND	0.10
Benzo(g,h,i)perylene	ND	0.10
Indeno(1,2,3-c,d)pyrene	ND	0.10

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2-Chloroanthracene	79	34 - 120

ND = Not Detected at or above client requested detection limit.

POLYNUCLEAR AROMATIC HYDROCARBONS

Method 610



Analytical Technologies, Inc.

Lab Name: Analytical Technologies Inc.

Client Name: ATI-NM

Client Project ID: NMOCD -- 510408

Lab Sample ID: WRB1 10/27/95

Sample Matrix: Water

Cleanup: N/A

Sample ID

Reagent Blank

Date Collected: N/A

Date Extracted: 10/27/95

Date Analyzed: 11/3/95

Sample Volume: 1000 mL

Final Volume: 1 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Naphthalene	ND	0.50
Acenaphthylene	ND	1.0
1-Methylnaphthalene	ND	1.0
2-Methylnaphthalene	ND	1.0
Acenaphthene	ND	1.0
Fluorene	ND	0.10
Phenanthrene	ND	0.050
Anthracene	ND	0.10
Fluoranthene	ND	0.10
Pyrene	ND	0.050
Benzo(a)anthracene	ND	0.050
Chrysene	ND	0.050
Benzo(b)fluoranthene	ND	0.10
Benzo(k)fluoranthene	ND	0.050
Benzo(a)pyrene	ND	0.050
Dibenzo(a,h)anthracene	ND	0.10
Benzo(g,h,i)perylene	ND	0.10
Indeno(1,2,3-c,d)pyrene	ND	0.10

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2-Chloroanthracene	75	34 - 120

ND = Not Detected at or above client requested detection limit.



Analytical Technologies, Inc.

POLYNUCLEAR AROMATIC HYDROCARBONS BLANK SPIKE

Method 610

Lab Name: Analytical Technologies Inc.

Lab Sample ID: WBS1,2 10/27/95

Client Name: ATI-NM

Date Extracted: 10/27/95

Client Project ID: NMOCD -- 510408

Date Analyzed: 11/3/95

Sample Matrix: Water

Sample Volume: 1000 mL

Final Volume: 1 mL

Analyte	Spike Added (ug/L)	BS Concentration (ug/L)	BS Percent Recovery	QC Limits % Rec
Acenaphthylene	10	5.7	57	36 - 113
Phenanthrene	1.0	0.83	83	30 - 114
Pyrene	1.0	0.88	88	43 - 108
Dibenzo(a,h)anthracene	1.0	0.76	76	42 - 111
Benzo(k)fluoranthene	0.25	0.216	86	35 - 104

Analyte	Spike Added (ug/L)	BSD Concentration (ug/L)	BSD Percent Recovery	RPD	QC Limits RPD
Acenaphthylene	10	6.5	65	14	20
Phenanthrene	1.0	0.84	84	1	20
Pyrene	1.0	0.90	90	3	20
Dibenzo(a,h)anthracene	1.0	0.80	80	6	20
Benzo(k)fluoranthene	0.25	0.216	86	0.2	20

SURROGATE RECOVERY BS/BSD

Analyte	% Recovery(BS)	% Recovery(BSD)	% Rec Limits
2-Chloroanthracene	88	84	34 -120



...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750
Location : NMOCD #510408
En Chem Proj# : 9511060
Date Reported : 11/06/1995

Report to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO

Thank you for using En Chem! Samples were analyzed according to strict EPA or Wisconsin DNR methodology. Any comments or problems associated with the receipt of or analysis are reported below:

Sample no. 161706: The estimated detection limit for cis+trans-1,3-Dichloropropene is 0.4 ug/L. Quantifying at this level and reviewing the data these compounds were not detected at this level.





...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750

Location : NMOC #510408

Your Sample ID: 510408-01

Sample Desc. :

Sample Matrix : WATER

En Chem Proj# : 9511060

En Chem Lab # : 161706

Date Collected: 10/25/1995

Date Received : 11/03/1995

Date Reported : 11/06/1995

Report to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO
2709-D PAN AMERICAN FREEWAY, NE
ALBUQUERQUE, NM 87107

Bill to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analysis Analyzed By
8260+	Benzene	ND	ug/l	0.5	SW846 5030	11/03/1995	SW846 8260	11/03/1995	HW
	Bromodichloromethane	ND	ug/l	0.2					
	Bromoform	ND	ug/l	0.5					
	Bromomethane	ND	ug/l	1.0					
	Carbon tetrachloride	ND	ug/l	0.2					
	Chlorobenzene	ND	ug/l	0.5					
	Chlorodibromomethane	ND	ug/l	0.2					
	Chloroethane	ND	ug/l	0.5					
	Chloroform	ND	ug/l	0.5					
	Chloromethane	ND	ug/l	1.0					
	Dibromomethane	ND	ug/l	0.2					
	1,2-Dichlorobenzene	ND	ug/l	0.5					
	1,3-Dichlorobenzene	ND	ug/l	0.5					
	1,4-Dichlorobenzene	ND	ug/l	0.5					
	1,1-Dichloroethane	ND	ug/l	0.2					
	1,2-Dichloroethane	0.5	ug/l	0.5					
	1,1-Dichloroethene	ND	ug/l	0.2					
	cis-1,2-Dichloroethene	ND	ug/l	0.2					
	trans-1,2-Dichloroethene	ND	ug/l	1.0					
	1,2-Dichloropropane	ND	ug/l	0.2					
	1,3-Dichloropropane	ND	ug/l	0.2					
	2,2-Dichloropropane	ND	ug/l	0.2					
	Ethyl Benzene	ND	ug/l	0.5					
	Methylene chloride	ND	ug/l	2.0					
	Methyl-tert-butyl-ether	ND	ug/l	2.5					
	1,1,2,2-Tetrachloroethane	ND	ug/l	0.2					
	Tetrachloroethene	ND	ug/l	0.5					
	Toluene	0.6	ug/l	0.5					
	1,1,1-Trichloroethane	ND	ug/l	1.0					
	1,1,2-Trichloroethane	ND	ug/l	0.2					





...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750

Location : NMOC #510408

Your Sample ID: 510408-01

Sample Desc. :

Sample Matrix : WATER

En Chem Proj# : 9511060

En Chem Lab # : 161706

Date Collected: 10/25/1995

Date Received : 11/03/1995

Date Reported : 11/06/1995

Report to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO
2709-D PAN AMERICAN FREEWAY, NE
ALBUQUERQUE, NM 87107

Bill to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analysis Analyzed By
8260+	Trichloroethene	ND	ug/l	0.2	SW846 5030	11/03/1995	SW846 8260	11/03/1995	HW
	Trichlorofluoromethane	ND	ug/l	0.2					
	Vinyl chloride	ND	ug/l	0.5					
	Xylenes, m + p	ND	ug/l	0.5					
	Xylene, o	ND	ug/l	0.5					

"ND" Indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:

M. Saha





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

CHAIN OF CUSTODY
DATE: 10/25/95 PAGE 1 OF 1

ATILAB ID: 510408

PROJECT MANAGER: PAT SANCHEZ

COMPANY: NM OGD

ADDRESS: 2040 S. Pacheco

PHONE: Santa Fe, NM 87505

FAX: (505) - 827-7156

BILL TO: SAME AS ABOVE.

COMPANY:

ADDRESS:

SAMPLE ID DATE TIME MATRIX LAB ID

9510251100	10/25/95	1100	AQ	-01
9510251105	10/25/95	1105		-02
9510251109	10/25/95	1109		-03
9510251112	10/25/95	1112		-04
9510251142	10/25/95	1142		-05
9510251144	10/25/95	1144		-06

Petroleum Hydrocarbons (418.1)	
(MOD 8015) Gas/Diesel	
Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	
BTXE/MTBE (8020)	
General Chemistry (Mod. 24th)	
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	
Metals 6010-ICAP	
The 13 Priority Pollutant Metals	
RCRA Metals by Total Digestion	
RCRA Metals by TCLP (1311)	

NUMBER OF CONTAINERS

PROJECT INFORMATION SAMPLE RECEIPT

PROJ. NO.:	NO. CONTAINERS	9
PROJ. NAME: Giant Refinery	CUSTODY SEALS	(V) N/NA
P.O. NO.:	RECEIVED INTACT	Y
SHIPPED VIA:	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:	Signature:	Time:	Signature:	Time:
Pat Sanchez	2:30 pm				
Printed Name:	Date:	Printed Name:	Date:	Printed Name:	Date:
Pat Sanchez	10/25/95				
Company:	Phone:	Company:		Company:	
NM OGD	827-7156				

RECEIVED BY: 1. RECEIVED BY: 2. RECEIVED BY: (LAB) 3.

Signature:	Time:	Signature:	Time:	Signature:	Time:
Printed Name:	Date:	Printed Name:	Date:	Printed Name:	Date:
Company:		Company:		Company:	

Signature: Andrew
Time: 1430
Printed Name: Andrew
Date: 10/25
Company: Analytical Technologies, Inc.



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

CHAIN OF CUSTODY

DATE: 10/25 PAGE 1 OF 1

LAB ID: 510475

PROJECT MANAGER: Kim McNeil

COMPANY: ALB-ATI

ADDRESS:

PHONE:

FAX:

BILL TO:

COMPANY:

ADDRESS:

SAMPLE ID

DATE

TIME

MATRIX

LAB ID

510408-03
-06

10/25

1409

AG

AG

2

Petroleum Hydrocarbons (418.1)
(MOD 8015) Gas/Diesel
Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)
BTXE/MTBE (8020)
Item 15 (F, Br, Cl, K, Mg, Na, Al, Fe, Cu, SO₄, TDS, Cation/Anion Balance (52), pH, EC)
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

PROJECT INFORMATION

SAMPLE RECEIPT

PROJ. NO.: 510408

NO. CONTAINERS

2

PROJ. NAME: Giant Refinery

CUSTODY SEALS

N/A

P.O. NO.:

RECEIVED INTACT

Y

SHIPPED VIA:

RECEIVED COLD

Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK

(NORMAL) ☒ 2 WEEK

Two: 41043
Route only to (circle one):

Portland San Diego
Renton Pensacola

LAB USE ONLY

SAMPLED & RELINQUISHED BY: 1.

RELINQUISHED BY: 2.

RELINQUISHED BY: 3.

Signature: Andrew Lopez

Time: 1700

Printed Name: Andrew Lopez

Date: 10/25

Company: Phone:

Signature:

Time:

Printed Name:

Date:

Company:

Signature:

Time:

Printed Name:

Date:

Company:

RECEIVED BY: 1.

RECEIVED BY: 2.

RECEIVED BY: (LAB) 3.

Signature: Time:

Printed Name: Date:

Company:

Signature: Time:

Printed Name: Date:

Company:

Signature: Time: 10/26/05

Printed Name: Date: 10/26/05

Company: Analytical Technologies, Inc.

Interlab Chain of Custody

95-10-232

DATE 10/24 PAGE 1 OF 1

NETWORK PROJECT MANAGER:

COMPANY: Analytical Technologies, Inc.

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

CLIENT PROJECT MANAGER:

Mary Tier

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
51097501	10/25		ATC	01
02				02

TOX
TOC
ORGANIC LEAD
SULFIDE
SURFACTANTS (MBAS)

632/632 MOD
619/619 MOD

XX Ca, K, Mg, Na

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

PROJECT INFORMATION

SAMPLE RECEIPT

PROJECT NUMBER: 510975
PROJECT NAME: ATE-41b
QC LEVEL: STD. IV
TAT: STANDARD RUSHI
ATI WORKORDER #

TOTAL NUMBER OF CONTAINERS

CHAIN OF CUSTODY SEALS

INTACT?

RECEIVED GOOD COND. GOLD

LAB NUMBER

SAMPLES SENT TO:

SAN DIEGO
FT. COLLINS
RENTON
PENSACOLA
PORTLAND
AQUATIC

RELINQUISHED BY: 1.

Signature: Mary Tier
Printed Name: Mary Tier
Date: 10/24/01
Company: Analytical Technologies, Inc.
Phoenix

RELINQUISHED BY: 3.

Signature: [Signature]
Printed Name: [Name]
Date: 10/27/01
Company: ATC

DUE DATE:

TIME:

PAGE: OF

ANALYSIS REQUEST

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

CLIENT PROJECT MANAGER:

Amherst

SAMPLEID	DATE	TIME	MATRIX	LABID
----------	------	------	--------	-------

510408-01	10/25	1100	AG 161706
-----------	-------	------	-----------

Gross Alpha/Beta

NUMBER OF CONTAINERS

SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS

CHAIN OF CUSTODY SEALS

INTACT?

RECEIVED GOOD COND./COLD

LAB NUMBER

9511060

OK

Good OK

21

၁၁၁

SAMPLES SENT TO:

RELINQUISHED BY:

→

RELINQUISHED BY:

Signature: _____ Time: 1:50

Signature: _____ **Time:** _____

Printed Name: _____ Date: _____

Printed Name: _____ Date: _____

McNabb 11/2/93

Analytical Technologies of New Mexico, Inc.
Albuquerque

Company:

RECEIVED BY: 1.

RECEIVED BY: (LAB) 2.

Signature:	Time:
------------	-------

Signature: _____ Time: _____

[illegible]

Robert Alexander

Printed name. Date.

Printed Name: _____ Date: _____

Company:

Companys: 4.0

10/30/95 ATI Labs - San Diego (619) 458-9141 • Phoenix (602) 496-4400 • Seattle (206) 226-8335 • Pensacola (904) 474-1001 • Portland (503) 664-0447 • Albuquerque (505) 344-3777 DISTRIBUTION: While, Canary - ATI Pink - ORIGINATOR

CHAIN OF CUSTODY

AVAILABLE

DATE: 10/1/02 PAGE 1 OF 1

PAGE 7 OF 7

OF

1999

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

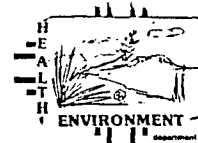
PROJECT MANAGER: P. J. ...				ANALYSIS REQUEST															
COMPANY: <u>W. H. ...</u>																			
ADDRESS: <u>...</u>																			
PHONE: <u>(502) - 257-7156</u>																			
FAX: <u>...</u>																			
BILL TO: <u>STATE OF ARIZONA</u>																			
COMPANY: <u>...</u>																			
ADDRESS: <u>...</u>																			
SAMPLE ID				DATE				TIME				MATRIX				LAB ID			
<u>450025100</u>				<u>10/16/00</u>				<u>11:00</u>				<u>1</u>				<u>-01</u>			
<u>450025105</u>				<u>10/16/00</u>				<u>11:05</u>				<u>1</u>				<u>-02</u>			
<u>450025109</u>				<u>10/16/00</u>				<u>11:09</u>				<u>1</u>				<u>-03</u>			
<u>450025112</u>				<u>10/16/00</u>				<u>11:12</u>				<u>1</u>				<u>-04</u>			
<u>450025114</u>				<u>10/16/00</u>				<u>11:14</u>				<u>1</u>				<u>-05</u>			
<u>450025117</u>				<u>10/16/00</u>				<u>11:17</u>				<u>1</u>				<u>-06</u>			
<u>450025119</u>				<u>10/16/00</u>				<u>11:19</u>				<u>1</u>				<u>-07</u>			
<u>450025121</u>				<u>10/16/00</u>				<u>11:21</u>				<u>1</u>				<u>-08</u>			
<u>450025123</u>				<u>10/16/00</u>				<u>11:23</u>				<u>1</u>				<u>-09</u>			
<u>450025125</u>				<u>10/16/00</u>				<u>11:25</u>				<u>1</u>				<u>-10</u>			
<u>450025127</u>				<u>10/16/00</u>				<u>11:27</u>				<u>1</u>				<u>-11</u>			
<u>450025129</u>				<u>10/16/00</u>				<u>11:29</u>				<u>1</u>				<u>-12</u>			
<u>450025131</u>				<u>10/16/00</u>				<u>11:31</u>				<u>1</u>				<u>-13</u>			
<u>450025133</u>				<u>10/16/00</u>				<u>11:33</u>				<u>1</u>				<u>-14</u>			
<u>450025135</u>				<u>10/16/00</u>				<u>11:35</u>				<u>1</u>				<u>-15</u>			
<u>450025137</u>				<u>10/16/00</u>				<u>11:37</u>				<u>1</u>				<u>-16</u>			
<u>450025139</u>				<u>10/16/00</u>				<u>11:39</u>				<u>1</u>				<u>-17</u>			
<u>450025141</u>				<u>10/16/00</u>				<u>11:41</u>				<u>1</u>				<u>-18</u>			
<u>450025143</u>				<u>10/16/00</u>				<u>11:43</u>				<u>1</u>				<u>-19</u>			
<u>450025145</u>				<u>10/16/00</u>				<u>11:45</u>				<u>1</u>				<u>-20</u>			
<u>450025147</u>				<u>10/16/00</u>				<u>11:47</u>				<u>1</u>				<u>-21</u>			
<u>450025149</u>				<u>10/16/00</u>				<u>11:49</u>				<u>1</u>				<u>-22</u>			
<u>450025151</u>				<u>10/16/00</u>				<u>11:51</u>				<u>1</u>				<u>-23</u>			
<u>450025153</u>				<u>10/16/00</u>				<u>11:53</u>				<u>1</u>				<u>-24</u>			
<u>450025155</u>				<u>10/16/00</u>				<u>11:55</u>				<u>1</u>				<u>-25</u>			
<u>450025157</u>				<u>10/16/00</u>				<u>11:57</u>				<u>1</u>				<u>-26</u>			
<u>450025159</u>				<u>10/16/00</u>				<u>11:59</u>				<u>1</u>				<u>-27</u>			
<u>450025161</u>				<u>10/16/00</u>				<u>12:01</u>				<u>1</u>				<u>-28</u>			
<u>450025163</u>				<u>10/16/00</u>				<u>12:03</u>				<u>1</u>				<u>-29</u>			
<u>450025165</u>				<u>10/16/00</u>				<u>12:05</u>				<u>1</u>				<u>-30</u>			
<u>450025167</u>				<u>10/16/00</u>				<u>12:07</u>				<u>1</u>				<u>-31</u>			
<u>450025169</u>				<u>10/16/00</u>				<u>12:09</u>				<u>1</u>				<u>-32</u>			
<u>450025171</u>				<u>10/16/00</u>				<u>12:11</u>				<u>1</u>				<u>-33</u>			
<u>450025173</u>				<u>10/16/00</u>				<u>12:13</u>				<u>1</u>				<u>-34</u>			
<u>450025175</u>				<u>10/16/00</u>				<u>12:15</u>				<u>1</u>				<u>-35</u>			
<u>450025177</u>				<u>10/16/00</u>				<u>12:17</u>				<u>1</u>				<u>-36</u>			
<u>450025179</u>				<u>10/16/00</u>				<u>12:19</u>				<u>1</u>				<u>-37</u>			
<u>450025181</u>				<u>10/16/00</u>				<u>12:21</u>				<u>1</u>				<u>-38</u>			
<u>450025183</u>				<u>10/16/00</u>				<u>12:23</u>				<u>1</u>				<u>-39</u>			
<u>450025185</u>				<u>10/16/00</u>				<u>12:25</u>				<u>1</u>				<u>-40</u>			
<u>450025187</u>				<u>10/16/00</u>				<u>12:27</u>				<u>1</u>				<u>-41</u>			
<u>450025189</u>				<u>10/16/00</u>				<u>12:29</u>				<u>1</u>				<u>-42</u>			

86-1160-C

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE

Albuquerque, NM 87106 841-2570



STATE OF NEW MEXICO

REPORT TO: David Boyer

N.M. Oil Conservation Division

P. O. Box 2088

Santa Fe, N.M. 87504-2088

S.L.D. No. OR- 86-1160 A-B

DATE REC. 10-8-86

PRIORITY

PHONE(S): 827-5812

USER CODE: 8 2 2 3 5

SUBMITTER: David Boyer

CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8609191305RCA

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER: CODE:

COUNTY: RIO ARriba; CITY: LYBROOK CODE:

LOCATION CODE: (Township-Range-Section-Tracts) 23N+07W+23+234 (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
☒ (754) Aromatic & Halogenated Purgeables
☐ (765) Mass Spectrometer Purgeables
☐ (766) Trihalomethanes
 Other Specific Compounds or Classes

☐ _____
☐ _____
☐ _____
☐ _____
☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
☐ (760) Organochlorine Pesticides
☐ (755) Base/Neutral Extractables
☐ (758) Herbicides, Chlorophenoxy acid
☐ (759) Herbicides, Triazines
☐ (760) Organochlorine Pesticides
☐ (761) Organophosphate Pesticides
☐ (767) Polychlorinated Biphenyls (PCB's)
☐ (764) Polynuclear Aromatic Hydrocarbons
☐ (762) SDWA Pesticides & Herbicides

Remarks:

FIELD DATA:

pH= ; Conductivity= umho/cm at °C; Chlorine Residual= mg/l

Dissolved Oxygen= mg/l; Alkalinity= mg/l; Flow Rate /

Depth to water ft.; Depth of well ft.; Perforation Interval - ft.; Casing:

Sampling Location, Methods and Remarks (i.e. odors, etc.)

STOCK POND AT LOCATION OF GIANT PIPELINE
 BREAK

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities. (signature collector): P. C. Anderson Method of Shipment to the Lab: LAND

This form accompanies 2 Septum Vials, Glass Jugs, and/or

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (Not Frozen).
☐ P-Na₂S₂O₃ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from to

at (location) on / / - : and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

For OCD Use: Date Owner Notified Phone or Letter? Initials

ANALYSES PERFORMED

LAB. No.: OR- 1160

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
☒ (754) Aromatic & Halogenated Purgeables
☐ (765) Mass Spectrometer Purgeables
☐ (766) Trihalomethanes
 Other Specific Compounds or Classes

☐
☐
☐
☐
☐

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
☐ (760) Organochlorine Pesticides
☐ (755) Base/Neutral Extractables
☐ (758) Herbicides, Chlorophenoxy acid
☐ (759) Herbicides, Triazines
☐ (760) Organochlorine Pesticides
☐ (761) Organophosphate Pesticides
☐ (767) Polychlorinated Biphenyls (PCB's)
☐ (764) Polynuclear Aromatic Hydrocarbons
☐ (762) SDWA Pesticides & Herbicides

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
halogenated purgeables	ND		
aromatic purgeables	ND		
* DETECTION LIMIT *	10 ppb	+ DETECTION LIMIT +	+

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☐ Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

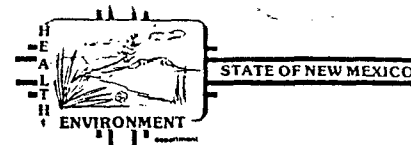
Date(s) of analysis: 10-10-86 Analyst's signature: *John Fairney*

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.

Reviewers signature: *R. Meyer*

86-1212-0

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

REPORT TO: David Boyer

S.L.D. No. OR- 86-1212 AB

N.M. Oil Conservation Division

DATE REC. 10-9-86

P. O. Box 2088

Santa Fe, N.M. 87504-2088

PRIORITY

PHONE(S): 827-5812

USER CODE: 8 2 2 3 5

SUBMITTER: David Boyer

CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8 6 1 0 0 9 0 9 4 0

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER: CODE:

COUNTY: MCKINLEY; CITY: GALLUP CODE:

LOCATION CODE: (Township-Range-Section-Tracts) 1 5 N + 1 5 W + 2 8 + (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
☒ (754) Aromatic & Halogenated Purgeables
☐ (765) Mass Spectrometer Purgeables
☐ (766) Trihalomethanes
 Other Specific Compounds or Classes

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
☐ (760) Organochlorine Pesticides
☐ (755) Base/Neutral Extractables
☐ (758) Herbicides, Chlorophenoxy acid
☐ (759) Herbicides, Triazines
☐ (760) Organochlorine Pesticides
☐ (761) Organophosphate Pesticides
☐ (767) Polychlorinated Biphenyls (PCB's)
☐ (764) Polynuclear Aromatic Hydrocarbons
☐ (762) SDWA Pesticides & Herbicides

Remarks: GIANT CINIZA REFINERY
POND SEEP

FIELD DATA:

pH=; Conductivity= umho/cm at °C; Chlorine Residual= mg/l

Dissolved Oxygen= mg/l; Alkalinity= mg/l; Flow Rate /

Depth to water ft.; Depth of well ft.; Perforation Interval - ft.; Casing:

Sampling Location, Methods and Remarks (i.e. odors, etc.)

DUG OUT HOLE IN CATTAILS TO COLLECT
SEEP WATER

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities.(signature collector): J. Barber

Method of Shipment to the Lab: Hand

This form accompanies 2 Septum Vials, Glass Jugs, and/or

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (Not Frozen).
☐ P-Na₂S₂O₃ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from to

at (location) on / / - : and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

For OCD Use: Date Owner Notified Phone or Letter? Initials

ANALYSES PERFORMED

LAB. No.: OR- 1212

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
☒ (754) Aromatic & Halogenated Purgeables
☐ (765) Mass Spectrometer Purgeables
☐ (766) Trihalomethanes
 Other Specific Compounds or Classes

☐
☐
☐
☐
☐

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
☐ (760) Organochlorine Pesticides
☐ (755) Base/Neutral Extractables
☐ (758) Herbicides, Chlorophenoxy acid
☐ (759) Herbicides, Triazines
☐ (760) Organochlorine Pesticides
☐ (761) Organophosphate Pesticides
☐ (767) Polychlorinated Biphenyls (PCB's)
☐ (764) Polynuclear Aromatic Hydrocarbons
☐ (762) SDWA Pesticides & Herbicides

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
aromatic purgeables	N.D		
halogenated purgeables	N.D		
* DETECTION LIMIT *	*	+ DETECTION LIMIT +	+

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☒ Seal(s) broken by: not sealed date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 10/14/06 Analyst's signature: Mary C. Eden

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.

Reviewers signature: R Meyer



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED <u>10/31/86</u>	LAB NO. <u>WC-5202</u>	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: <u>82235</u>	DEC 9 1986
Collection DATE <u>10/09/86</u>	SITE INFORMATION	Sample location <u>GIANT CINIZA POND SEEP</u>	
Collection TIME <u>0940</u>		Collection site description	
Collected by — Person/Agency <u>ANDERSON/OLSON/10CD</u>			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5312

SAMPLING CONDITIONS

☐ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type
pH (00400)	Conductivity (Uncorrected) <u> </u> μ mho	Water Temp. (00010) <u> </u> °C	Conductivity at 25 °C (00094) <u> </u> μ mho	
Field comments <u>Dug out hole in cattail area, + allowed to fill.</u>				

SAMPLE FIELD TREATMENT — Check proper boxes

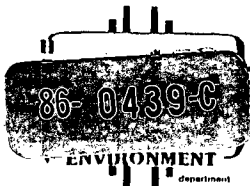
No. of samples submitted <u>1</u>	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added	☐ Other-specify: <u> </u>	☐ A: 5ml conc. HNO ₃ added	☐ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	μ mho		☒ Calcium (00915)	<u>57.6</u> mg/l	<u>11-25</u>
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	<u>6.74</u> mg/l	<u>11-25</u>
☐ Other:			☒ Sodium (00930)	<u>418</u> mg/l	<u>11-19</u>
☐ Other:			☒ Potassium (00935)	<u>17.5</u> mg/l	<u>11-19</u>
☐ Other:			☒ Bicarbonate (00440)	<u>Interference</u> mg/l	<u>11/10</u>
			☒ Chloride (00940)	<u>2.3</u> mg/l	<u>11/13</u>
			☒ Sulfate (00945)	<u>12.8</u> mg/l	<u>11/21</u>
			☒ Total filterable residue (dissolved) (70300)	<u>1192</u> mg/l	<u>11/21</u>
NF, A-H ₂ SO ₄			☒ Other: <u>0.05 Br</u>	<u>Interference</u>	<u>11/10</u>
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☒ F, A-H ₂ SO ₄		<u>11/25</u>
☐ Ammonia-N total (00610)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Total organic carbon ()	mg/l		☐ Other:		
☐ Other:			Analyst	Date Reported	Reviewed by
☐ Other:				<u>12/1/86</u>	<u>CD</u>
Laboratory remarks <u>pH = 11.31 Interference (NaOH?)</u>					

SLD 726 (12/84)

FOR OCD USE -- Date Owner Notified Phone or letter? Initials



STATE OF NEW MEXICO

DECEMBER

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

SLD Priority #3

REPORT TO:

DAVID G. BOYER

OBSERVATION ENGINEER

P.O. Box 2088

Santa Fe 87504-2088

S.L.D. No.: OR-

439A,B

DATE REC.:

4/17/86

PHONE

827-5815

USER CODE: 18122315

CONTAINERS WHICH ACCOMPANY THIS FORM ARE COLLECTIVELY REFERRED TO AS SAMPLE.

SUBMITTER:

BOYER

CODE:

[][][][]

SAMPLE TYPE: WATER ☒ SOIL ☐ OTHER ☐

CODE:

[][]

COLLECTED: 86/04/10 - 13:32 BY RM

DATE AND TIME

CODE:

[][][][][][][][][][][][][][][][]
Y Y M M D D H H M M I I I

SOURCE: TRAVEL BLANK

CODE:

[][][][][][][][][][][][][][][][]
AQUIFER DEPTH

NEAREST CITY:

CODE:

[][][][][]

LOCATION: SLD 3 April 86 #2

CODE:

[][][][][][][][][][][][][][][][]
TOWNSHIP RANGE SECTION TRACTS

pH= ; Conductivity= umho/cm at °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Travel Blank

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. *D.G. Boyer*Method of shipment to the Laboratory *Picked up & Handcarried*This form accompanies 2 Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from _____
to _____ at (location) _____ on

_____/_____/_____-_____:_____ and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____

(we) certify that this sample was transferred from _____
to _____ at (location) _____ on

_____/_____/_____-_____:_____ and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREEN REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

[illegible]

ANALYTICAL RESULTS

	* DETECTION LIMIT		
[PPB]	COMPOUND	[PPB]	COMPOUND arom, pung, green ⊕ none detected
			hard, pung, green none detected
Rubm /			

REMARKS: ① Two compounds were detected by the aromatic given that were not identified, but then later they were identified by GC/MS as; carbon disulfide, acetone, dichlorodifluorane, butanone, and cyclohexanone.

~~CERTIFICATE OF ANALYTICAL PERSONNEL~~

Seal(s) Intact: Yes NO. Seal(s) broken by:

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data

on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 4-29-86, 5-22-86 Analyst's signature:

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: _____

86-0304-C
ENVIRONMENT

STATE OF NEW MEXICO
APR 28 1986

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

REPORT TO:
PLEASE PRINT

DAVID G. BOYER
SANTA FE

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.: OR- 304 A, B

DATE REC.: 3/7/86

SLD PRIORITY #: 3

PHONE(S): 827-5812

USER CODE: 8 2 2 3 5

SUBMITTER: DAVID BOYER Jami Bailey

SUBMITTER CODE: | | | | |

SAMPLE TYPE: WATER ☒, SOIL ☐, OTHER ☐

SAMPLE TYPE CODE: | | |

COLLECTED: 3/6/86 - 16:20 BY JMB
DATE TIME INITIALS

CODE: 8 6 0 3 0 6 1 6 2 0 4 5
Y Y M M D D H H M M I I I

SOURCE: GIANT CINIZA

CODE: | | | | |
AQUIFER DEPTH

NEAREST CITY: GALLUP

CODE: | | | | |

LOCATION: WEIR NORTH OF POND 2

CODE: | | | | |
TOWNSHIP RANGE SECTION TRACTS

pH= 8.7; Conductivity= 345 umho/cm at 15 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity=; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Jami Bailey

Method of shipment to the Laboratory Hand Carried

This form accompanies 2 Septum Vials, Glass Jugs,

Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from to at (location) on

/ / - : and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

(we) certify that this sample was transferred from to at (location) on

/ / - : and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

ANALYSES REQUESTED

LAB. No.: ORG- 304

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	+	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	+	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS
REMARKS:					

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
<i>aromatic hydrocarbons *</i>		<i>halogenated hydrocarbons **none detected</i>	
<i>Benzene</i>	<i>237</i>		
<i>Toluene</i>	<i>360</i>		
<i>Ethylbenzene</i>	<i>41</i>		
<i>p-xylene</i>	<i>41</i>		
<i>m-xylene</i>	<i>151</i>		
<i>o-xylene</i>	<i>84</i>	<i>** Detection Limit</i>	<i>1</i>
		<i>* DETECTION LIMIT</i>	<i>2</i>

REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ___ NO ___. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 3/25/86. Analyst's signature: Henry C. Eden

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: R. Meyerhen



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED	3/7/86	LAB NO.	21089	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	3/6/86	SITE INFORMATION	Sample location		
Collection TIME	1620		GIANT CINIZA		
Collected by — Person/Agency		Collection site description			
BAILEY/OCO		WEIR NORTH OF POND 2			
/OCD					

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

MAY 1 1986
OIL CONSERVATION DIVISION
SANTA FE

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type
				GRAB
pH (00400)	8.7	Conductivity (Uncorrected)	Water Temp. (00010)	Conductivity at 25°C (00094)
		3450 μ mho	15 °C	μ mho
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify:				

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho		☒ Calcium (00915)	42.0 mg/l	3-18
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	59.8 mg/l	"
☐ Other:			☒ Sodium (00930)	161.0 mg/l	"
☐ Other:			☒ Potassium (00935)	2.73 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	86.7 mg/l	3/13
			☒ Chloride (00940)	400 mg/l	3-19
			☒ Sulfate (00945)	1457 mg/l	3/27
			☒ Total filterable residue (dissolved) (70300)	2840 mg/l	4/17
			☒ Other: CO ₃	0.0	3/13
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				4/25/86	CG



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

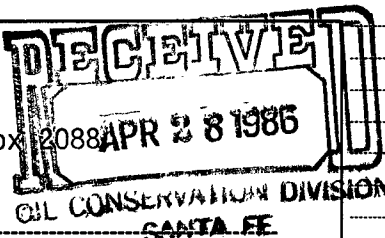
pf

HEAVY METAL
ANALYSIS

DATE RECEIVED <u>3/27/86</u>	LAB NO. <u>711-530</u>	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE <u>3/6/86</u>	SITE INFORMATION	Sample location <u>GIANT CINDER</u>
Collection TIME <u>1620</u>		Collection site description <u>WEIR NORTH OF POND 2</u>
Collected by — Person/Agency <u>BAILEY / OCD</u> /OCD		

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088



Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water level <u>—</u>	Discharge <u>—</u>	Sample type <u>GRAB</u>
pH (00400) <u>8.7</u>	Conductivity (Uncorrected) <u>3450</u> μ mho	Water Temp. (00010) <u>15</u> °C	Conductivity at 25°C (00094) <u>—</u> μ mho	
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted <u>1</u>	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☒ A: <u>2 ml H₂SO₄ added 4 ml HNO₃</u>
☐ NA: No acid added ☐ Other-specify:			

ANALYTICAL RESULTS from SAMPLES

Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095) <u>—</u> μ mho		☐ Calcium (00915) <u>—</u> mg/l		
☐ Total non-filterable residue (suspended) (00530) <u>—</u> mg/l		☐ Magnesium (00925) <u>—</u> mg/l		
☒ Other: <u>ICAP</u> <u>3/21/86</u>		☐ Sodium (00930) <u>—</u> mg/l		
☒ Other: <u>AS</u> <u>0.017</u> <u>4/10</u>		☐ Potassium (00935) <u>—</u> mg/l		
☒ Other: <u>SR</u> <u>0.010</u> <u>4/16</u>		☐ Bicarbonate (00440) <u>—</u> mg/l		
		☐ Chloride (00940) <u>—</u> mg/l		
		☐ Sulfate (00945) <u>—</u> mg/l		
		☐ Total filterable residue (dissolved) (70300) <u>—</u> mg/l		
		☐ Other: <u>—</u>		
NF, A-H₂SO₄		F, A-H₂SO₄		
☐ Nitrate-N +, Nitrate-N total (00630) <u>—</u> mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631) <u>—</u> mg/l		
☐ Ammonia-N total (00610) <u>—</u> mg/l		☐ Ammonia-N dissolved (00608) <u>—</u> mg/l		
☐ Total Kjeldahl-N () <u>—</u> mg/l		☐ Total Kjeldahl-N () <u>—</u> mg/l		
☐ Chemical oxygen demand (00340) <u>—</u> mg/l		☐ Other: <u>—</u>		
☐ Total organic carbon () <u>—</u> mg/l				
☐ Other: <u>—</u>				
☐ Other: <u>—</u>				
Laboratory remarks		Analyst	Date Reported <u>4/18/86</u>	Reviewed by <u>Jim Ashley</u>
		<u>Sample Digested</u>		

Lab Number: HM 530

Date Submitted: 3/7/86

By: Bailey

Sample Code: Plant Ciniza

Date Analyzed: 3/21/86

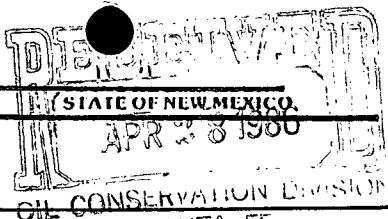
Reviewed By: Jim Ashby

Date Reported: 4/18/86

<u>Element</u>	<u>ICAP VALUE (MG/L)</u>	<u>AA VALUE (MG/L)</u>
Aluminum	<u><0.1</u>	<u> </u>
Barium	<u><0.1</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>0.3</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>64.</u>	<u> </u>
Chromium	<u>1.0</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u>0.2</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>17.</u>	<u> </u>
Manganese	<u><0.05</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>12.</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>1.1</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u>0.1</u>	<u> </u>
Arsenic		<u>0.017</u>
Selenium		<u>0.010</u>
Mercury		<u> </u>

86- 0294-C

ENVIRONMENT



SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

REPORT TO:

PLEASE PRINT

DAVID G. BOYER SANTA FE

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.:

OR- 294 A, B

DATE REC.:

3/7/86

SLD PRIORITY #:

3

PHONE(S):

827-5812

USER CODE: 8 2 2 3 5

SUBMITTER:

DAVID BOYER

SUBMITTER CODE:

SAMPLE TYPE: WATER ☒, SOIL ☐, OTHER

SAMPLE TYPE CODE:

COLLECTED: 3/6/86 - 16:30 BY

DATE

TIME

INITIALS

CODE: 8 6 0 3 0 6 1 6 3 0

Y Y M M D D H H M M I I I

SOURCE:

GIANT CINIZA

CODE:

AQUIFER DEPTH

NEAREST CITY:

GALLUP

CODE:

LOCATION:

POND 3

CODE:

TOWNSHIP RANGE SECTION TRACTS

pH= 6.5; Conductivity= 23100 umho/cm at 13.5 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity=; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

ACROSS FROM OWS

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. James Bailey

Method of shipment to the Laboratory Hand CarriedThis form accompanies 2 Septum Vials, Glass Jugs,

Containers are marked as follows to indicate preservation:

☐ NP: No preservation; sample stored at room temperature.☒ P-Ice Sample stored in an ice bath (not frozen).☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from

to at (location) on

- : and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

(we) certify that this sample was transferred from

to at (location) on

- : and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

ANALYSES REQUESTED

LAB. NO.: ORG- 294

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
arom. purge screen	none detected		
halo. purge screen	none detected		
		* DETECTION LIMIT	1 ug/ml

REMARKS: This sample was foamy.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes NO X. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 13 March 86. Analyst's signature: [Signature]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: [Signature]



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

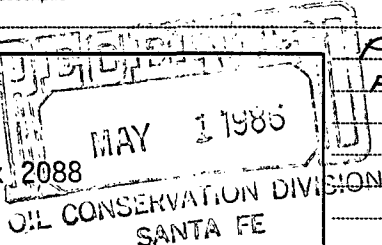
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GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED	3/7/86	LAB NO.	21087	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	3/6/86	SITE INFORMATION	Sample location		
Collection TIME	1630		GIANT CINIZA - Pond 3		
Collected by — Person/Agency		Collection site description			
BAILEY / DCD		POND 3 ACROSS FROM OWS			

SEND FINAL REPORT TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088



Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type
pH (00400)	6.5	Conductivity (Uncorrected) μ mho	23100	13.5 °C
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify:				

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho		☒ Calcium (00915)	2800	8-18
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	244.0	"
☐ Other:			☒ Sodium (00930)	5267	"
☐ Other:			☒ Potassium (00935)	48.6	"
☐ Other:			☒ Bicarbonate (00440)	95.2	3/13
			☒ Chloride (00940)	15327	3-19
			☒ Sulfate (00945)	198	3/27
			☒ Total filterable residue (dissolved) (70300)	29,293	4/17
			☒ Other: CO ₃	0.0	3/13
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				4/25/86	CS



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

RF

HEAVY METAL
GENERAL WATER CHEMISTRY
AND NITROGEN ANALYSIS

DATE RECEIVED 3/17/86	LAB NO. 7M524	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE 3/16/86	SITE INFORMATION	Sample location POND 3 ACROSS FROM OWS
Collection TIME 1630		Collection site description GIANT CINIZA
Collected by — Person/Agency BAKEY/OC		
Station/well code		
Owner		

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type
pH (00400) 6.5	Conductivity (Uncorrected) 23100 μ mho	Water Temp. (00010) 13.5 °C	Conductivity at 25°C (00094) μ mho	
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted 1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☒ A: 2 ml H₂SO₄ / L added 4 ml HNO₃
☐ NA: No acid added ☐ Other-specify:			

ANALYTICAL RESULTS from SAMPLES

Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095) μ mho		☐ Calcium (00915) mg/l		
☐ Total non-filterable residue (suspended) (00530) mg/l		☐ Magnesium (00925) mg/l		
☒ Other: ICAP		☐ Sodium (00930) mg/l		
☒ Other: AS		☐ Potassium (00935) mg/l		
☒ Other: Se		☐ Bicarbonate (00440) mg/l		
		☐ Chloride (00940) mg/l		
		☐ Sulfate (00945) mg/l		
		☐ Total filterable residue (dissolved) (70300) mg/l		
		☐ Other:		
NF, A-H₂SO₄		F, A-H₂SO₄		
☐ Nitrate-N +, Nitrate-N total (00630) mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631) mg/l		
☐ Ammonia-N total (00610) mg/l		☐ Ammonia-N dissolved (00608) mg/l		
☐ Total Kjeldahl-N () mg/l		☐ Total Kjeldahl-N () mg/l		
☐ Chemical oxygen demand (00340) mg/l		☐ Other:		
☐ Total organic carbon () mg/l				
☐ Other:		Analyst	Date Reported 5/12/86	Reviewed by JFA
☐ Other:		Laboratory remarks		

Lab Number: # 529
Date Submitted: 3/7/86
By: Bailey

Sample Code: Linea Pond 3
Date Analyzed: 3/21/86
Reviewed By: Jim Bailey
Date Reported: 5/12/86

<u>Element</u>	<u>ICAP VALUE (MG/L)</u>	<u>AA VALUE (MG/L)</u>
Aluminum	<u><0.1</u>	<u> </u>
Barium	<u>0.1</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>0.1</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>3360.</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u><0.1</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>430.</u>	<u> </u>
Manganese	<u>0.48</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u><0.1</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>19.</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u><0.1</u>	<u> </u>
Arsenic		<u>0.050</u>
Selenium		<u>0.028</u>
Mercury		<u> </u>



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	3 7 86	LAB/ NOC	1095	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	86/03/06	SITE INFORMATION	Sample location		
Collection TIME	1510		Cimiza Refinery Pond 6		
Collected by — Person/Agency		Collection site description			
BAILEY/ANDERSON 10CD		South side of Pond 6			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type
				GRAB
pH (00400)	Conductivity (Uncorrected)	Water Temp. (00010)	Conductivity at 25°C (00094)	
7 (PAPER)	38000 µmho	17 °C	µmho	
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

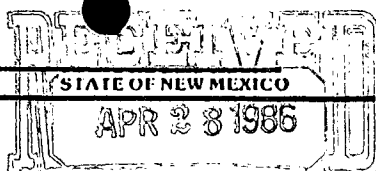
No. of samples submitted	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 µm membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify:			

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho		☒ Calcium (00915)	1800 mg/l	3-18
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	395.3 mg/l	"
☐ Other:			☒ Sodium (00930)	9900 mg/l	"
☐ Other:			☒ Potassium (00935)	89.7 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	414 mg/l	3/13
			☒ Chloride (00940)	25346 mg/l	3-19
			☒ Sulfate (00945)	2456 mg/l	3/27
			☒ Total filterable residue (dissolved) (70300)	40,353 mg/l	4/17
			☒ Other: CO ₃	0.0	3/13
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				4/25/86	CS

86-0302-C

ENVIRONMENT



SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570REPORT TO:
PLEASE PRINT

DAVID G. BOYER SANTA FE

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.: OR- 302A, BDATE REC.: 3/7/86SLD PRIORITY #: 3

PHONE(S): 827-5812

USER CODE: 82235

SUBMITTER:

DAVID BOYER/Roger AndersonSUBMITTER CODE: SAMPLE TYPE: WATER ☒, SOIL ☐, OTHER ☐SAMPLE TYPE CODE: COLLECTED: 86/03/06-15:10 BY RCA

DATE

TIME

INITIALS

CODE:
Y Y M M D D H H M M I I ISOURCE: Cinija Refinery Pond 6CODE:
AQUIFER DEPTHNEAREST CITY: GALLUPCODE: LOCATION: CODE:
TOWNSHIP RANGE SECTION TRACTSpH= 7; Conductivity= 38000 umho/cm at 17 °C; Chlorine Residual= Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Roger Anderson

Method of shipment to the Laboratory Hand Carried

This form accompanies 2 Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☒ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from
to at (location) on

 / / - : and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

(we) certify that this sample was transferred from
to at (location) on

 / / - : and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

ANALYSES REQUESTED

LAB. NO.: ORG- 302

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
arom. purge screen	none detected		
halo. purge screen	none detected		
		* DETECTION LIMIT	10 ug/ml

REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ___ NO X. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 13 March 86. Analyst's signature: [Signature]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: [Signature]



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Handwritten initials

Heavy metal
**GENERAL WATER CHEMISTRY
AND NITROGEN ANALYSIS**

DATE RECEIVED	2/07/86	LAB NO.	HM-521	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	86103106	SITE INFORMATION	Sample location <i>PECANIZA REFINERY Pond 6</i>		
Collection TIME	1510		Collection site description		
Collected by Person/Agency			<i>BAILEY/ANDERSON/0CD</i>		

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: *David Boyer*

Phone: 827-5812

MAY 8 1986

SOUTH SIDE POND 6

Station/
well code
Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type <i>GRAB</i>
pH (00400) <i>7 (PAPER)</i>	Conductivity (Uncorrected) <i>38,000</i> μ mho	Water Temp. (00010) <i>17</i> °C	Conductivity at 25°C (00094) _____ μ mho	
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	<i>1</i>	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☒ A: <i>2 mL H₂SO₄/L added 4 mL Conc HNO₃</i>
☐ NA: No acid added ☐ Other-specify:				

ANALYTICAL RESULTS from SAMPLES

NE-NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	_____ μ mho	_____	☐ Calcium (00915)	_____ mg/l	_____
☐ Total non-filterable residue (suspended) (00530)	_____ mg/l	_____	☐ Magnesium (00925)	_____ mg/l	_____
☒ Other: <i>ICAP SCAN</i>	_____	_____	☐ Sodium (00930)	_____ mg/l	_____
☒ Other: <i>AS</i>	_____	_____	☐ Potassium (00935)	_____ mg/l	_____
☒ Other: <i>se</i>	_____	_____	☐ Bicarbonate (00440)	_____ mg/l	_____
NF, A-H₂SO₄			☐ Chloride (00940)	_____ mg/l	_____
☐ Nitrate-N ⁺ , Nitrate-N total (00630)	_____ mg/l	_____	☐ Sulfate (00945)	_____ mg/l	_____
☐ Ammonia-N total (00610)	_____ mg/l	_____	☐ Total filterable residue (dissolved) (70300)	_____ mg/l	_____
☐ Total Kjeldahl-N ()	_____ mg/l	_____	☐ Other:	_____	_____
☐ Chemical oxygen demand (00340)	_____ mg/l	_____	F, A-H₂SO₄		
☐ Total organic carbon ()	_____ mg/l	_____	☐ Nitrate-N ⁺ , Nitrate-N dissolved (00631)	_____ mg/l	_____
☐ Other:	_____	_____	☐ Ammonia-N dissolved (00608)	_____ mg/l	_____
☐ Other:	_____	_____	☐ Total Kjeldahl-N ()	_____ mg/l	_____
Laboratory remarks			Analyst	Date Reported	Reviewed by
				<i>5/2/86</i>	<i>Jim Ashby</i>
			<i>Sample Digested</i>		

Lab Number: AM 521

Date Submitted: 3/7/86

By: Bailey

Sample Code: Caniza Refinery

Date Analyzed: 3/20/86

Reviewed By: Jim Ashley

Date Reported: 5/2/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u>40.1</u>	<u> </u>
Barium	<u>0.1</u>	<u> </u>
Beryllium	<u>40.1</u>	<u> </u>
Boron	<u>0.7</u>	<u> </u>
Cadmium	<u>40.1</u>	<u> </u>
Calcium	<u>1930.</u>	<u> </u>
Chromium	<u>40.1</u>	<u> </u>
Cobalt	<u>40.1</u>	<u> </u>
Copper	<u>40.1</u>	<u> </u>
Iron	<u>0.2</u>	<u> </u>
Lead	<u>40.1</u>	<u> </u>
Magnesium	<u>480.</u>	<u> </u>
Manganese	<u>4.3</u>	<u> </u>
Molybdenum	<u>40.1</u>	<u> </u>
Nickel	<u>40.1</u>	<u> </u>
Silicon	<u>10.</u>	<u> </u>
Silver	<u>40.1</u>	<u> </u>
Strontium	<u>21.</u>	<u> </u>
Tin	<u>0.1</u>	<u> </u>
Vanadium	<u>40.1</u>	<u> </u>
Zinc	<u>40.1</u>	<u> </u>
Arsenic		<u>0.10</u>
Selenium		<u>0.065</u>
Mercury		<u> </u>

86- 0293-C



STATE OF NEW MEXICO

APR 28 1986

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

REPORT TO:

PLEASE PRINT

DAVID G. BOYER

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.:

OR-

293A,B.

DATE REC.:

SLD PRIORITY #:

3

PHONE(S):

827-5812

USER CODE: 8 2 2 3 5

SUBMITTER:

DAVID BOYER, Jami Baker

SUBMITTER CODE:

SAMPLE TYPE: WATER ☒, SOIL ☐, OTHER ☐

SAMPLE TYPE CODE:

COLLECTED: 103/106 - 15:45 BY

DATE

TIME

INITIALS

CODE: 8 6 0 3 0 6 1 5 4 5

Y Y M M D D H H M M I I I

SOURCE:

Pond #8 SW corner

CODE: + + + + +

AQUIFER DEPTH

NEAREST CITY:

Gallup

CODE: + + + + +

LOCATION:

Gianto Refinery

CODE: + + + + +

TOWNSHIP RANGE SECTION TRACTS

pH= 6.3; Conductivity= 5800 umho/cm at 18.5°C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity=; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Conductivity with Geoscience meter - undiluted.

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Jami Baker

Method of shipment to the Laboratory

Hand-carried

This form accompanies 2 Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from

to at (location) on

/ / - : and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

(we) certify that this sample was transferred from

to at (location) on

/ / - : and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

ANALYSES REQUESTED

LAB. NO.: ORG-293

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
☒	☒	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
☒	☒	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
arom. purg. screen	none detected		
halo. purg. screen	none detected		
		* DETECTION LIMIT	5 ug/ml

REMARKS: This sample was foamy.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes NO X. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 13 March 86. Analyst's signature: M. Turner

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: R. M. ...



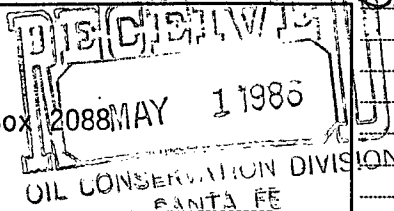
New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED 3/7/86	LAB NO. 1091	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE 86 103 06	SITE INFORMATION	Sample location <i>Ciniza Refinery Pond 8</i>
Collection TIME 1545		Collection site description <i>S.W. Corner Pond 8</i>
Collected by — Person/Agency <i>Bailey/ANDERSON /OCD</i>		

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088



Attn: *David Boyer*

Phone: 827-5812

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type <i>Grub</i>
pH (00400) <i>6.7 P</i>	Conductivity (Uncorrected) <i>58000</i> μ mho	Water Temp. (00010) <i>18.5</i> °C	Conductivity at 25°C (00094) μ mho	
Field comments <i>conductivity with Geoscience mates - NYK</i>				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted <i>1</i>	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify:			

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho		☒ Calcium (00915)	<i>4400</i> mg/l	<i>3-18</i>
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	<i>1300</i> mg/l	<i>"</i>
☐ Other:			☒ Sodium (00930)	<i>75400</i> mg/l	<i>"</i>
☐ Other:			☒ Potassium (00935)	<i>343.2</i> mg/l	<i>"</i>
☐ Other:			☒ Bicarbonate (00440)	<i>162</i> mg/l	<i>3/13</i>
			☒ Chloride (00940)	<i>106413</i> mg/l	<i>3-19</i>
			☒ Sulfate (00945)	<i>3517</i> mg/l	<i>3/27</i>
			☒ Total filterable residue (dissolved) (70300)	<i>174045 gms/l</i> mg/l	<i>4/17</i>
			☒ Other: <i>CO₃</i>	<i>0.0</i>	<i>3/13</i>
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

PF

Heavy metal
GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	3 7 86	LAB NO.	4M 534	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	86 10 3 06	SITE INFORMATION	Sample location	Ciniza Refinery Pond 8	
Collection TIME	1545			Collection site description	
Collected by — Person/Agency		BAILEY/ANDERSON/OC			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

AUG - 1 1986

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type
pH (00400)	Conductivity (Uncorrected)	Water Temp. (00010)	Conductivity at 25°C (00094)	
6.7 (Paper)	58000 μ mho	18.5 °C		Graze
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☒ A: 2 mL H ₂ SO ₄ /L added 4 mL CONC HNO ₃
☐ NA: No acid added ☐ Other-specify:			

ANALYTICAL RESULTS from SAMPLES

Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho	☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l	☐ Magnesium (00925)	mg/l	
☒ Other: ICAP SCAN		☐ Sodium (00930)	mg/l	
☒ Other: AS		☐ Potassium (00935)	mg/l	
☒ Other: Se		☐ Bicarbonate (00440)	mg/l	
NF, A-H ₂ SO ₄		☐ Chloride (00940)	mg/l	
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l	☐ Sulfate (00945)	mg/l	
☐ Ammonia-N total (00610)	mg/l	☐ Total filterable residue (dissolved) (70300)	mg/l	
☐ Total Kjeldahl-N ()	mg/l	☐ Other:		
☐ Chemical oxygen demand (00340)	mg/l	F, A-H ₂ SO ₄		
☐ Total organic carbon ()	mg/l	☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Other:		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Other:		☐ Total Kjeldahl-N ()	mg/l	
		☐ Other:		
Laboratory remarks		Analyst	Date Reported	Reviewed by
			7/23/86	Jim Ashby
		Sample Digested		

Lab Number: HM 534

Date Submitted: 3/7/86

By: Bailey

Sample Code: Ceniza Pond 8

Date Analyzed: 3/21/86

Reviewed By: Jim Bailey

Date Reported: 7/23/86

<u>Element</u>	<u>ICAP VALUE (MG/L)</u>	<u>AA VALUE (MG/L)</u>
Aluminum	<u>40.1</u>	<u> </u>
Barium	<u>0.1</u>	<u> </u>
Beryllium	<u>40.1</u>	<u> </u>
Boron	<u>1.3</u>	<u> </u>
Cadmium	<u>40.1</u>	<u> </u>
Calcium	<u>4290.</u>	<u> </u>
Chromium	<u>40.1</u>	<u> </u>
Cobalt	<u>40.1</u>	<u> </u>
Copper	<u>40.1</u>	<u> </u>
Iron	<u>40.1</u>	<u> </u>
Lead	<u>40.1</u>	<u> </u>
Magnesium	<u>150.</u>	<u> </u>
Manganese	<u>14.</u>	<u> </u>
Molybdenum	<u>40.1</u>	<u> </u>
Nickel	<u>40.1</u>	<u> </u>
Silicon	<u>2.4</u>	<u> </u>
Silver	<u>40.1</u>	<u> </u>
Strontium	<u>64.</u>	<u> </u>
Tin	<u>40.1</u>	<u> </u>
Vanadium	<u>40.1</u>	<u> </u>
Zinc	<u>40.1</u>	<u> </u>
Arsenic		<u>0.14</u>
Selenium		<u><0.01</u>
Mercury		<u> </u>

86- 0310-C



STATE OF NEW MEXICO

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570REPORT TO:
PLEASE PRINT

DAVID G. BOYER

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088 CONSERVATION DIV.

SANTA FE, NM 87504-2088

S.L.D. No.: OR- 310A, BDATE REC.: 3/7/86SLD PRIORITY #: 3PHONE(S): 827-5812USER CODE: 8 2 2 3 5SUBMITTER: Roger AndersonSUBMITTER CODE: SAMPLE TYPE: WATER ☒, SOIL ☐, OTHER ☐SAMPLE TYPE CODE: COLLECTED: 86/03/06 - 15:25 BY RCACODE:
Y Y M M D D H H M M I I ISOURCE: Cimarra Refinery Pond 9ACODE:
AQUIFER DEPTHNEAREST CITY: GALLUPCODE: LOCATION: CODE:
TOWNSHIP RANGE SECTION TRACTSpH= 6.3; Conductivity= 66000 umho/cm at 21 °C; Chlorine Residual= Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Sample taken on west side of pond 9A
Conductivity with bore science meter - undiluted NRB

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Roger Anderson

Method of shipment to the Laboratory Hand carriedThis form accompanies 2 Septum Vials, Glass Jugs,

Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from to at (location) on

 / / : and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

(we) certify that this sample was transferred from to at (location) on

 / / : and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

ANALYSES REQUESTED

LAB. NO.: ORG- 310

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
<i>aromatic hydrocarbons</i>	<i>** none detected</i>		
<i>halogenated hydrocarbons</i>	<i>* none detected</i>		
		<i>** Detection Limit</i>	<i>1</i>
		<i>* DETECTION LIMIT</i>	<i>1</i>

REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ___ NO ___. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: *3/26/86*. Analyst's signature: *Glenn C. Eden*

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: *R. Meyerhous*



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

FN

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED	3 7 86	LAB NO.	21092	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	86103106	SITE INFORMATION	Sample location	Cigniza Refinery pond 9A	
Collection TIME	1525			Collection site description	
Collected by	Person/Agency BAILEY/ANDERSON 10CD				

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

MAY 1 1986
OIL CONSERVATION DIVISION
SANTA FE

Station/
well code
Owner

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type	Gravel
pH (00400)	6.3 (Paper)	Conductivity (Uncorrected)	66000 μ mho	Water Temp. (00010)	21 $^{\circ}$ C
Field comments		Conductivity with geosciences meter - DAB			

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify:				

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 $^{\circ}$ C (00095)	μ mho		☒ Calcium (00915)	4200 mg/l	3-8
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	1073 mg/l	"
☐ Other:			☒ Sodium (00930)	188600 mg/l	"
☐ Other:			☒ Potassium (00935)	546 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	98 mg/l	3/13
			☒ Chloride (00940)	205087 mg/l	3-19
			☒ Sulfate (00945)	31035 mg/l	3/27
			☒ Total filterable residue (dissolved) (70300)	330.1 gms/l	4/17
			☒ Other: CO ₃	0.0	3/13
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				4/25/86	CJO



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

PF

Heavy Metals
GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	3	7	86	LAB NO.	HA-532	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	86103106		SITE INFORMATION		Sample location		
Collection TIME	1525		MAY		Cmiza Refinery Pond 9A		
Collected by — Person/Agency	BAILEY/ANDERSON/10CD		DIVISION		Collection site description		
				West Side of Pond 9A			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type
pH (00400)		Conductivity (Uncorrected)	Water Temp. (00010)	Conductivity at 25°C (00094)
6.3 (Paper)		66000 µmho	21 °C	µmho
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 µmembrane filter	☒ A: 2ml H ₂ SO ₄ /L added 4ml Conc HNO ₃
☐ NA: No acid added ☐ Other-specify:				

ANALYTICAL RESULTS from SAMPLES

Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho	☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l	☐ Magnesium (00925)	mg/l	
☒ Other: ICAP SEAL		☐ Sodium (00930)	mg/l	
☒ Other: AS		☐ Potassium (00935)	mg/l	
☒ Other: SE		☐ Bicarbonate (00440)	mg/l	
NF, A-H ₂ SO ₄		☐ Chloride (00940)	mg/l	
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l	☐ Sulfate (00945)	mg/l	
☐ Ammonia-N total (00610)	mg/l	☐ Total filterable residue (dissolved) (70300)	mg/l	
☐ Total Kjeldahl-N ()	mg/l	☐ Other:		
☐ Chemical oxygen demand (00340)	mg/l	F, A-H ₂ SO ₄		
☐ Total organic carbon ()	mg/l	☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Other:		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Other:		☐ Total Kjeldahl-N ()	mg/l	
		☐ Other:		
Laboratory remarks		Analyst	Date Reported	Reviewed by
			5/12/86	J.F. Ashby
		Sample Duplicated		

Lab Number: ● M532

Date Submitted: 3/7/86

By: Bailey

Sample Code: Conigu Pond 9A

Date Analyzed: 3/21/86

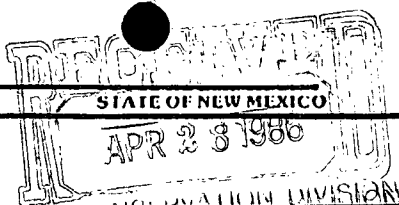
Reviewed By: Jim Ashby

Date Reported: 5/12/86

<u>Element</u>	<u>ICAP VALUE (MG/L)</u>	<u>AA VALUE (MG/L)</u>
Aluminum	<u><0.1</u>	<u> </u>
Barium	<u>0.2</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>1.0</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>4230.</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u><0.1</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>1220.</u>	<u> </u>
Manganese	<u>42.</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>0.8</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>84.</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u>0.5</u> <0.1 <u>9A</u>	<u> </u>
Arsenic		<u>0.73</u>
Selenium		<u>0.52</u>
Mercury		<u> </u>

86- 0295-C

ENVIRONMENT



SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570REPORT TO:
PLEASE PRINT

DAVID G. BOYER SANTA FE

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.: OR- 295 A, B.DATE REC. : 3/7/86SLD PRIORITY #: 3PHONE(S): 827-5812USER CODE: 8 2 2 3 5SUBMITTER: DAVID BOYERSUBMITTER CODE: SAMPLE TYPE: WATER ☒, SOIL ☐, OTHER ☐SAMPLE TYPE CODE: COLLECTED: 3/6/86 - 16:05 BY DB
DATE TIME INITIALSCODE: 8603061605
Y Y M M D D H H M M I I ISOURCE: GIANT CINIZACODE:
AQUIFER DEPTHNEAREST CITY: GALLUPCODE: LOCATION: POND 11CODE:
TOWNSHIP RANGE SECTION TRACTSpH= 7.8; Conductivity= 14900 umho/cm at 15 °C; Chlorine Residual= Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

NW CORNERI certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. James B. BuleMethod of shipment to the Laboratory Hand CarriedThis form accompanies 2 Septum Vials, Glass Jugs,

Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from
to at (location) on / / - : and that the statements in this block are correct.
DATE AND TIMEEvidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐Signatures (we) certify that this sample was transferred from
to at (location) on / / - : and that the statements in this block are correct.
DATE AND TIMEEvidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐Signatures

ANALYSES REQUESTED

LAB. No.: ORG- 295

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
halo. purg. screen	none detected		
		* DETECTION LIMIT	5 ug/g

REMARKS: This sample was foamy. Four compounds were detected by the aromatic screen; these were not identified at approx. 1 ppb each.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ___ NO X. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 13 March 86. Analyst's signature: [Signature]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: [Signature]



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

FN

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED	3	7	86	LAB NO.	1094	USER CODE	☐ 59300	☐ 59600	☒ OTHER: 82235
Collection DATE	3	7	86	SITE INFORMATION	Sample location	GIANT CUNIZA			
Collection TIME	1605					Collection site description			
Collected by — Person/Agency					BAILEY /OCD				

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

MAY 1 1986
OIL CONSERVATION DIVISION
SANTA FE

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☐ Bailed	☐ Pump	Water level	Discharge	Sample type			
☒ Dipped	☐ Tap			GRAB			
pH (00400)	7.8	Conductivity (Uncorrected)	14900 μ mho	Water Temp. (00010)	15 °C	Conductivity at 25 °C (00094)	μ mho
Field comments							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify:				

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	μ mho		☒ Calcium (00915)	160.0 mg/l	3-18
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	97.6 mg/l	"
☐ Other:			☒ Sodium (00930)	6100 mg/l	"
☐ Other:			☒ Potassium (00935)	69.4 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	838 mg/l	3/13
			☒ Chloride (00940)	4460 mg/l	3-19
			☒ Sulfate (00945)	9855 mg/l	3/27
			☒ Total filterable residue (dissolved) (70300)	17828 mg/l	4/17
			☒ Other: CO ₃	0.0	3/13
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				4/25/86	CG



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

PF

HEAVY METAL
GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED 3 7 86	LAB NO. 11531	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE 3 6 86	SITE INFORMATION RECEIVED JUN - 2 1986	Sample location CINIZA
Collection TIME 1605		Collection site description POND 11 - NORTH WEST CORNER
Collected by — Person/Agency BAILEY/OCD	1OCD	

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type GRAB
pH (00400) 7.8	Conductivity (Uncorrected) 14900 μ mho	Water Temp. (00010) 15 °C	Conductivity at 25°C (00094) μ mho	
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted 1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☒ A: 2 mL H_2SO_4 /L added 4 mL HNO_3
☐ NA: No acid added ☐ Other-specify:			

ANALYTICAL RESULTS from SAMPLES

Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095) μ mho		☐ Calcium (00915) mg/l		
☐ Total non-filterable residue (suspended) (00530) mg/l		☐ Magnesium (00925) mg/l		
☒ Other: 1 CAP		☐ Sodium (00930) mg/l		
☒ Other: AS		☐ Potassium (00935) mg/l		
☒ Other: SR		☐ Bicarbonate (00440) mg/l		
		☐ Chloride (00940) mg/l		
		☐ Sulfate (00945) mg/l		
		☐ Total filterable residue (dissolved) (70300) mg/l		
		☐ Other:		
NF, A-H₂SO₄		F, A-H₂SO₄		
☐ Nitrate-N +, Nitrate-N total (00630) mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631) mg/l		
☐ Ammonia-N total (00610) mg/l		☐ Ammonia-N dissolved (00608) mg/l		
☐ Total Kjeldahl-N () mg/l		☐ Total Kjeldahl-N () mg/l		
☐ Chemical oxygen demand (00340) mg/l		☐ Other:		
☐ Total organic carbon () mg/l		Analyst	Date Reported 5/27/86	Reviewed by Jim Ashby
☐ Other:		Sample Duplicated		
☐ Other:				
Laboratory remarks				

Lab Number: HM 531

Date Submitted: 3/7/86

By: Bailey

Sample Name: Shant Ganga Pond

Date Analyzed: 3/21/86

Reviewed By: Jim Ashby

Date Reported: 5/27/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u><0.1</u>	<u> </u>
Barium	<u><0.1</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
.15 Boron	<u>1.6</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>160.</u>	<u> </u>
.05 Chromium	<u>0.6</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u>0.4</u> <u>0.5 g/g</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>99.</u>	<u> </u>
.2 Manganese	<u>2.3</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>18.</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>5.7</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u>0.1</u>	<u> </u>
.1 Arsenic		<u>0.12</u>
Selenium		<u>0.057</u>
Mercury		<u> </u>

86-0444-C

STATE OF NEW MEXICO

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

SLD Priority 3

REPORT TO:

DAVID BOYER
NM Oil Conservation Div
P.O. Box 2088
Santa Fe NM 87504-2088

S.L.D. No.: OR- 444A,B

DATE REC.: 4/17/86

PHONE 827-5812

USER CODE: 181213151

CONTAINERS WHICH ACCOMPANY THIS FORM ARE COLLECTIVELY REFERED TO AS SAMPLE.

SUBMITTER:

Boyer

CODE: [] [] [] []

SAMPLE TYPE: WATER ☒, SOIL ☐, OTHER ☐

CODE: [] []

COLLECTED: 86/04/15-13:00 BY DGB

DATE AND TIME

CODE: []

SOURCE: Pond 12

CODE: []

AQUIFER DEPTH

NEAREST CITY: Gallup

CODE: [] [] [] [] [] []

LOCATION: Giant Cinema Refinery

CODE: []

TOWNSHIP RANGE SECTION TRACTS

pH= —; Conductivity= 3890 umho/cm at 16 °C; Chlorine Residual= —

Dissolved Oxygen= — mg/l; Alkalinity= —; Flow Rate= —

Sampling Location, Methods and Remarks (i.e. odors, etc.)

100 feet west of well SMW 6 on berm
Sample from North side of Pond

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities.

Method of shipment to the Laboratory

Hand Carried & Car

This form accompanies 2 Septum Vials, — Glass Jugs,
Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
- ☒ P-Ice Sample stored in an ice bath (not frozen).
- ☐ P- $\text{Na}_2\text{S}_2\text{O}_3$; Sample preserved with $\text{Na}_2\text{S}_2\text{O}_3$ to remove chlorine residual.

I (we) certify that this sample was transferred from _____
to _____ at (location) _____ on

_____/_____/_____-_____: _____ and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____

(we) certify that this sample was transferred from _____
to _____ at (location) _____ on

_____/_____/_____-_____: _____ and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____

ANALYSES REQUESTED

LAB. No.: ORG- 444

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
halo. purg. screen	none detected		
arom. purg. screen ⊗	none detected		
		* DETECTION LIMIT	10 ug/ml

REMARKS: ⊗ There are trace amounts of three other compounds that were detected by the aromatic screen, but they were not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ___ NO X. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 4-29-86. Analyst's signature: [Signature]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: [Signature]



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	WC 1684	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	8/6/04	SITE INFORMATION	Sample location	North Cooling Tower	
Collection TIME	12:10		Collection site description	West Side of N. Cooling Tower Giant Coniza Refinery	
Collected by — Person/Agency					

Boyer/OCD

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type
pH (00400)	Conductivity (Uncorrected)	Water Temp. (00010)	Conductivity at 25°C (00094)	
	6800 µmho	20.5°C	µmho	Grab
Field comments				

~~acidified with 2.5 ml HNO₃ at SLT on day~~

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☒ NF: Whole sample (Non-filtered)	☐ F: Filtered in field with 0.45 µm membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify: ☐ A: 5ml conc. HNO ₃ added ☐ A: 4ml fuming HNO ₃ added				

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	NF, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho		☒ Calcium (00915)	252.0 mg/l	4/28
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	29.3 mg/l	4/28
☒ Other: Lab pH	6.88	4/18	☒ Sodium (00930)	1672 mg/l	4/28
☐ Other:			☒ Potassium (00935)	13.6 mg/l	4/18
☐ Other:			☒ Bicarbonate (00440)	41.5 mg/l	4/18
			☒ Chloride (00940)	351 mg/l	4/28
			☒ Sulfate (00945)	3869 mg/l	4/25
			☒ Total filterable residue (dissolved) (70300)	656.3 mg/l	5/2
			☒ Other: CO ₃	0	4/18
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				5/7/86	CD



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy metal
GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	HM 792	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235		
Collection DATE	5/10/86	SITE INFORMATION	Sample location				
Collection TIME	1210		North Cooling Tower				
Collected by — Person/Agency		Boyer/OCD		Collection site description			
				West Side of N. Cooling Tower Giant Cement Refinery			
ENVIRONMENTAL BUREAU NM OIL CONSERVATION DIVISION State Land Office Bldg, PO Box 2088 Santa Fe, NM 87504-2088 Attn: David Boyer Phone: 827-5812 RECEIVED JUN - 2 1986 OIL CONSERVATION DIVISION SANTA FE						Station/ well code	
						Owner	
SAMPLING CONDITIONS							
☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type			
pH (00400)		Conductivity (Uncorrected)	6800 μ mho	Water Temp. (00010)	20.5 °C		
				Conductivity at 25 °C (00094)	μ mho		
Field comments							
Acidified with 2.5 ml HNO ₃ at SLD same day							
SAMPLE FIELD TREATMENT — Check proper boxes							
No. of samples submitted	1	☒ NF: Whole sample (Non-filtered)	☐ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added			
☐ NA: No acid added		☒ Other-specify: ☐ A: 5ml conc. HNO ₃ added 4ml fuming HNO₃ added					
ANALYTICAL RESULTS from SAMPLES							
NF, NA		Units	Date analyzed	F, NA			
☐ Conductivity (Corrected) 25 °C (00095)		μ mho		☐ Calcium (00915)		mg/l	
☐ Total non-filterable residue (suspended) (00530)		mg/l		☐ Magnesium (00925)		mg/l	
☒ Other: ICAP				☐ Sodium (00930)		mg/l	
☐ Other:				☐ Potassium (00935)		mg/l	
☐ Other:				☐ Bicarbonate (00440)		mg/l	
				☐ Chloride (00940)		mg/l	
				☐ Sulfate (00945)		mg/l	
				☐ Total filterable residue (dissolved) (70300)		mg/l	
				☐ Other:			
NF, A-H ₂ SO ₄				F, A-H ₂ SO ₄			
☐ Nitrate-N +, Nitrate-N total (00630)		mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)		mg/l	
☐ Ammonia-N total (00610)		mg/l		☐ Ammonia-N dissolved (00608)		mg/l	
☐ Total Kjeldahl-N ()		mg/l		☐ Total Kjeldahl-N ()		mg/l	
☐ Chemical oxygen demand (00340)		mg/l		☐ Other:			
☐ Total organic carbon ()		mg/l					
☐ Other:							
☐ Other:							
Laboratory remarks		Sample digested: 5/13/86		Analyst		Date Reported	Reviewed by
						5/27/86	Jim Ashby

Lab Number: HM 792

Date Submitted: 4/17/86

By: Bayer

Sample Code: Plant Liniza N. Cooling Tower

Date Analyzed: 5/16/86

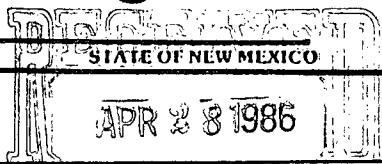
Reviewed By: J. Ashby

Date Reported: 5/27/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u><0.1</u>	<u> </u>
Barium	<u><0.1</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>0.4</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>210.</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u>0.1</u>	<u> </u>
Iron	<u>3.3</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>46.</u>	<u> </u>
Manganese	<u>0.12</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>7.2</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>2.2</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u>4.1</u>	<u> </u>
Arsenic		<u> </u>
Selenium		<u> </u>
Mercury		<u> </u>

86- 0303-C

ENVIRONMENT



SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

REPORT TO:
PLEASE PRINT

DAVID G. BOYER
SANTA FE
NEW MEXICO OIL CONSERVATION DIV.
P.O. BOX 2088
SANTA FE, NM 87504-2088

S.L.D. No.: OR- 303 A, B
DATE REC.: 3/7/86
SLD PRIORITY #: NP

PHONE(S): 827-5812

USER CODE: 8 2 2 3 5

SUBMITTER: ROGER C ANDERSON

SUBMITTER CODE:

SAMPLE TYPE: WATER ☒, SOIL ☐, OTHER ☐

SAMPLE TYPE CODE:

COLLECTED: 86/03/06-14:45 BY RCA
DATE TIME INITIALS

CODE:
Y Y M M D D H H M M I I I

SOURCE: DITCH TO ASPHALT PIT

CODE:
AQUIFER DEPTH

NEAREST CITY: GALLUP

CODE:

LOCATION:

CODE:
TOWNSHIP RANGE SECTION TRACTS

pH= ; Conductivity= umho/cm at °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

H₂O SOURCE from CATHODIC PROTECTION WELL NORTH OF ASPHALT PIT

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Roger C. Anderson

Method of shipment to the Laboratory Hand carried

This form accompanies 2 Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from
to at (location) on

 / / - : and that the statements in this block are correct.
DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

(we) certify that this sample was transferred from
to at (location) on

 / / - : and that the statements in this block are correct.
DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

ANALYSES REQUESTED

LAB. No.: ORG-303

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS
REMARKS:					

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
Aromatic hydrocarbons	** none detected		
halogenated hydrocarbon	* none detected		
		** Detection Limit	1
		* DETECTION LIMIT	1
REMARKS:			

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ___ NO ___. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 3/26/86. Analyst's signature: *A. H. C. Eden*

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: *L. Meyer*

86-0311-C

STATE OF NEW MEXICO

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

ENVIRONMENT

REPORT TO:
PLEASE PRINT

DAVID G. BOYER

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088 SANTA FE

SANTA FE, NM 87504-2088

S.L.D. No.: OR- 311 A, B

DATE REC.: 3/7/86

SLD PRIORITY #: 3

PHONE(S): 827-5812

USER CODE: 8 2 2 3 5

SUBMITTER: DAVID BOYER

SUBMITTER CODE: | | | | |

SAMPLE TYPE: WATER ☒, SOIL ☐, OTHER ☐

SAMPLE TYPE CODE: | | |

COLLECTED: 86/03/05-17:05 BY DGB

CODE: | | | | | | | | | | | | | | | |

SOURCE: North RR Lagoon

CODE: | | | | | | | | | | | | | | | |

NEAREST CITY: Gallup

CODE: | | | | |

LOCATION: Cininga Refinery

CODE: | | | | | | | | | | | | | | | |

pH= 6.5; Conductivity= 750 umho/cm at 16 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity=; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Strong, sweet odor. Has runoff from gasoline
and chemical loading area at RR siding
1/2" oilicum on Southend. Sample from northend.

I certify that the statements in this block accurately reflect the results
of my field analyses, observations and activities. David G. Boyer

Method of shipment to the Laboratory Hand carried

This form accompanies 2 Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from _____
to _____ at (location) _____ on _____

_____/_____/_____-_____:_____ and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____

(we) certify that this sample was transferred from _____
to _____ at (location) _____ on _____

_____/_____/_____-_____:_____ and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____

ANALYSES REQUESTED

LAB. No.: ORG-311

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
		AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
X	X	GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS
		<i>Please identify major peaks</i> <i>JH AFB</i>			
REMARKS:					

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
<i>aromatic hydrocarbons **</i>	<i>none</i>	<i>halogenated hydrocarbons</i>	<i>* none detected</i>
<i>Benzene</i>	<i>1</i>		
<i>Toluene</i>	<i>2</i>		
<i>Ethylbenzene</i>	<i>2</i>		
<i>m-xylene</i>	<i>2</i>		
<i>o-xylene</i>	<i>2</i>		
		<i>** Detection Limit</i>	<i>1</i>
		<i>* DETECTION LIMIT</i>	<i>1</i>

REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes___ NO___ . Seal(s) broken by:_____ date:_____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: *3/26/86* . Analyst's signature: *Harry C. Edin*

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: *L Meyer*



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

FN

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

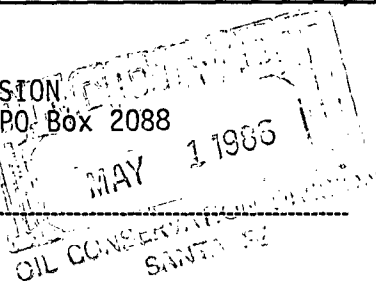
DATE RECEIVED 3/7/86	LAB NO. 21088	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE 8610305	SITE INFORMATION	Sample location North R.R. Lagoon
Collection TIME 1705		Collection site description Cimarron Refinery
Collected by — Person/Agency Boyer/Railey/Anderson/OCD		

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812



Station/
well code
Owner

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level —	Discharge —	Sample type GRAB
pH (00400) 6.5	Conductivity (Uncorrected) 750 µmho	Water Temp. (00010) 16 °C	Conductivity at 25 °C (00094) — µmho	
Field comments Runoff from gasoline and chemical loading area at RR siding				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted 1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered with 0.45 µm membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify:			

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	µmho		☒ Calcium (00915)	44.0 mg/l	3-18
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	0.98 mg/l	"
☐ Other:			☒ Sodium (00930)	5400 mg/l	"
☐ Other:			☒ Potassium (00935)	37 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	199 mg/l	3/13
			☒ Chloride (00940)	45.8 mg/l	3-19
			☒ Sulfate (00945)	224 mg/l	3/27
			☒ Total filterable residue (dissolved) (70300)	885 mg/l	
			☒ Other: CO ₃	0.0	3/13
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N + , Nitrate-N total (00630)	mg/l		☐ Nitrate-N + , Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported 4/25/86	Reviewed by



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

PF

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED	3	7	86	LAB NO.	1101	USER CODE	☐ 59300	☐ 59600	☒ OTHER: 82235
Collection DATE	86103105			SITE INFORMATION	Sample location				
Collection TIME	1705				Giant Refinery - North RR Lagoon				
Collected by	Person/Agency			Collection site description					
Boyer/Bailey				North End RR Lagoon					

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☐ Bailed	☐ Pump	Water level	Discharge	Sample type
☒ Dipped	☐ Tap			GRAB
pH (00400)	Conductivity (Uncorrected)	µmho	Water Temp. (00010)	°C
				Conductivity at 25 °C (00094)
				µmho
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 µm membrane filter	☒ A: 2 ml H ₂ SO ₄ /L added
☐ NA: No acid added ☐ Other-specify:				

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	µmho		☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l		☐ Magnesium (00925)	mg/l	
☐ Other:			☐ Sodium (00930)	mg/l	
☐ Other:			☐ Potassium (00935)	mg/l	
☐ Other:			☐ Bicarbonate (00440)	mg/l	
			☐ Chloride (00940)	mg/l	
			☐ Sulfate (00945)	mg/l	
			☐ Total filterable residue (dissolved) (70300)	mg/l	
			☐ Other:		
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☒ Nitrate-N +, Nitrate-N dissolved (00631)	0.06 mg/l	3/26
☐ Ammonia-N total (00610)	mg/l		☒ Ammonia-N dissolved (00608)	0.10 mg/l	4/2
☐ Total Kjeldahl-N ()	mg/l		☒ Total Kjeldahl-N ()	8.2 mg/l	3/17
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				4/7/86	Q. Delm



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

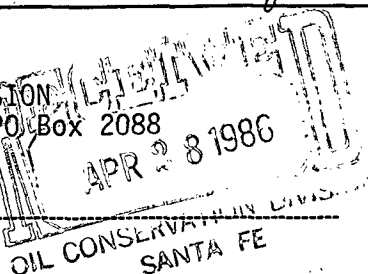
PF

Heavy Metal
GENERAL WATER CHEMISTRY
AND NITROGEN ANALYSIS

DATE RECEIVED	3/7/86	LAB NO.	HM 522	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	3/10/86	SITE INFORMATION	Sample location		
Collection TIME	1705		North RR Lagoon		
Collected by — Person/Agency		Collection site description			
Boyer/Barley/Anderson/OCD		Ciniza Refinery			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088



Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type
pH (00400)	6.5	Conductivity (Uncorrected)	750 µmho	16 °C
Field comments		Runoff from gasoline and chemical loading area at RR siding		

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 µmembrane filter	☒ A: 2 ml H ₂ SO ₄ added • Conc HNO ₃
☐ NA: No acid added ☐ Other-specify:				

ANALYTICAL RESULTS from SAMPLES

NE-NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho		☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l		☐ Magnesium (00925)	mg/l	
☒ Other: ICAP		3/20/86	☐ Sodium (00930)	mg/l	
☒ Other: AS	< 0.005	4/10/86	☐ Potassium (00935)	mg/l	
☒ Other: Se	< 0.005	4/16/86	☐ Bicarbonate (00440)	mg/l	
NF, A-H ₂ SO ₄			☐ Chloride (00940)	mg/l	
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Sulfate (00945)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Total filterable residue (dissolved) (70300)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Other:		
☐ Chemical oxygen demand (00340)	mg/l		F, A-H ₂ SO ₄		
☐ Total organic carbon ()	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Other:			☐ Ammonia-N dissolved (00608)	mg/l	
☐ Other:			☐ Total Kjeldahl-N ()	mg/l	
Laboratory remarks			Analyst	Date Reported	Reviewed by
				4/18/86	Jim Ashby
			Sample Duplicated		

Lab Number: 522

Date Submitted: 3/7/86

By: Bayer

Sample Id: North R R Lagoon

Date Analyzed: 3/20/86

Reviewed By: Jim Bakley

Date Reported: 4/18/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u><0.1</u>	<u></u>
Barium	<u>0.2</u>	<u></u>
Beryllium	<u><0.1</u>	<u></u>
Boron	<u>0.4</u>	<u></u>
Cadmium	<u><0.1</u>	<u></u>
Calcium	<u>32.</u>	<u></u>
Chromium	<u><0.1</u>	<u></u>
Cobalt	<u><0.1</u>	<u></u>
Copper	<u><0.1</u>	<u></u>
Iron	<u>0.3</u>	<u></u>
Lead	<u><0.1</u>	<u></u>
Magnesium	<u>3.7</u>	<u></u>
Manganese	<u>0.34</u>	<u></u>
Molybdenum	<u><0.1</u>	<u></u>
Nickel	<u><0.1</u>	<u></u>
Silicon	<u>0.6</u>	<u></u>
Silver	<u><0.1</u>	<u></u>
Strontium	<u>0.3</u>	<u></u>
Tin	<u><0.1</u>	<u></u>
Vanadium	<u><0.1</u>	<u></u>
Zinc	<u><0.1</u>	<u></u>
Arsenic		<u><0.005</u>
Selenium		<u><0.005</u>
Mercury		<u></u>

86-0305-C

STATE OF NEW MEXICO

APR 28 1986

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

REPORT TO:

PLEASE PRINT

DAVID G. BOYER
OIL CONSERVATION DIVISION
SANTA FE

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.: OR- 305 A, B

DATE REC.: 3/7/86

SLD PRIORITY #: 3

PHONE(S): 827-5812

USER CODE: 8 2 2 3 5

SUBMITTER: DAVID BOYER

SUBMITTER CODE: | | | |

SAMPLE TYPE: WATER ☒, SOIL ☐, OTHER ☐

SAMPLE TYPE CODE: | | |

COLLECTED: 86/03/05-08:50 BY DJR
DATE TIME INITIALSCODE: | | | | | | | | | |
Y Y M M D D H H M M I I I

SOURCE: Well OW-1 Cimiza Refinery

CODE: | | | | | | | | | |
AQUIFER DEPTH

NEAREST CITY: Gallup

CODE: | | | | |

LOCATION:

CODE: | | | | | | | | | |
TOWNSHIP RANGE SECTION TRACTS

pH= 8; Conductivity= 800 umho/cm at 10.5 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity=; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

DTW 5' 1" from top inner casing. Well purged 3/3
Very Turbid

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. David G. Boyer

Method of shipment to the Laboratory Hand Carried

This form accompanies 2 Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from _____
to _____ at (location) _____ on _____

_____/_____/_____-_____: and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____

(we) certify that this sample was transferred from _____
to _____ at (location) _____ on _____

_____/_____/_____-_____: and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____

ANALYSES REQUESTED

LAB. No.: ORG- 305

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS
REMARKS:					

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
aromatic hydrocarbons toluene	** see remarks	halogenated hydrocarbons	* none detected
		** Detection Limit	1
		* DETECTION LIMIT	1

REMARKS:

possible trace of toluene at less than 1 ppb

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ___ NO ___. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 3/26/86. Analyst's signature: *Henry C. Eden*I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: *L. Meyerhan*



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

NN

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	3/7/86	LAB NO.	47976	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	86103105	WC 1096	SITE INFORMATION	Sample location	Cinigo Refinery DN-1
Collection TIME	0850			Collection site description	
Collected by — Person/Agency	Boyer/Barley	/OCD			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	5' 1"	Discharge	—	Sample type	GRAB
pH (00400)	8 (Paper)	Conductivity (Uncorrected)	880 μ mho	Water Temp. (00010)	10.5 °C	Conductivity at 25 °C (00094)	μ mho
Field comments could not filter sample							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☒ NF: Whole sample (Non-filtered)	☐ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify:				

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	μ mho		☒ Calcium (00915)	136.0 mg/l	3-18
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	14.6 mg/l	"
☐ Other:			☒ Sodium (00930)	460.0 mg/l	"
☐ Other:			☒ Potassium (00935)	58.5 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	542 mg/l	3/13
			☒ Chloride (00940)	92.1 mg/l	3-19
			☒ Sulfate (00945)	177 mg/l	3/27
			☒ Total filterable residue (dissolved) (70300) *		
			☒ Other: CO ₃	55.2	3/13
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Analyst			Date Reported	Reviewed by	
			5/5/86	CJ	

Laboratory remarks

* Could not get a meaningful result for TDS, even used centrifugation, still wouldn't filter CJ 5/86

SLD 726 (12/84)

DISTRIBUTION: WHITE — EID, GW&HW Bureau

CANARY — WS System

PINK — EID Local Office

GOLDENROD — SLD

TDS 1480.2 (summation)



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

PH

Heavy metal
HEAVY METAL CHEMISTRY
AND NITROGEN ANALYSIS

DATE RECEIVED	3/7/86	LAB NO.	HM 538	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	8/6/83	SITE INFORMATION	Sample location	Ciniza Refinery OW-1	
Collection TIME	0850			Collection site description	
Collected by — Person/Agency			OW Series Monitor Wells		
Boyer/Barlow			/OCD		

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	5' 1"	Discharge	-	Sample type	Grab
pH (00400)	8 (papers)	Conductivity (Uncorrected)	680 μ mho	Water Temp. (00010)	10.5 °C	Conductivity at 25 °C (00094)	μ mho
Field comments							
could not filter sample							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☒ NF: Whole sample (Non-filtered)	☐ F: Filtered in field with 0.45 μ m membrane filter	☒ A: 2 ml H ₂ SO ₄ added 4 ml conc HNO ₃
☐ NA: No acid added ☐ Other-specify:				

ANALYTICAL RESULTS from SAMPLES

Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	μ mho	☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l	☐ Magnesium (00925)	mg/l	
☒ Other: ICAP SCAN		☐ Sodium (00930)	mg/l	
☒ Other: AS		☐ Potassium (00935)	mg/l	
☒ Other: Se		☐ Bicarbonate (00440)	mg/l	
NF, A-H ₂ SO ₄		☐ Chloride (00940)	mg/l	
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l	☐ Sulfate (00945)	mg/l	
☐ Ammonia-N total (00610)	mg/l	☐ Total filterable residue (dissolved) (70300)	mg/l	
☐ Total Kjeldahl-N ()	mg/l	☐ Other:		
☐ Chemical oxygen demand (00340)	mg/l	F, A-H ₂ SO ₄		
☐ Total organic carbon ()	mg/l	☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Other:		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Other:		☐ Total Kjeldahl-N ()	mg/l	
Laboratory remarks		☐ Other:		
		Analyst	Date Reported	Reviewed by
			5/2/86	J.F. Ashby
		Sample Digested		

Lab Number: HM 538

Sample Code: Cinija OW-1

Date Submitted: 3/7/86

Date Analyzed: 3/21/86

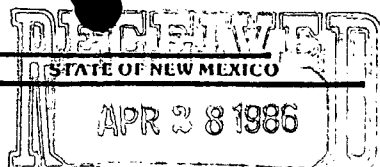
By: Boyer

Reviewed By: Jim Ashley

Date Reported: 5/2/86

Element	ICAP VALUE(MG/L)	AA VALUE(MG/L)
Aluminum	<u>210.</u>	<u> </u>
Barium	<u>1.8</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>0.4</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>100.</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u>65.</u>	<u> </u>
Lead	<u>0.3</u> DATA	<u> </u>
Magnesium	<u>66.</u>	<u> </u>
Manganese	<u>1.7</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>10.</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>7.2</u>	<u> </u>
Tin	<u>0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u>0.4</u>	<u> </u>
Arsenic		<u>0.034</u>
Selenium		<u><0.005</u>
Mercury		<u> </u>

86-0306-C



SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

APR 28 1986

REPORT TO:

PLEASE PRINT

DAVID G. BOYER OIL CONSERVATION DIVISION
SANTA FE

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.: OR-306A,B

DATE REC.: 3/7/86

SLD PRIORITY #: 3

PHONE(S): 827-5812

USER CODE: 8 2 2 3 5

SUBMITTER: DAVID BOYER

SUBMITTER CODE: | | | |

SAMPLE TYPE: WATER ☒ SOIL ☐ OTHER ☐

SAMPLE TYPE CODE: | |

COLLECTED: 86/03/05-11:30 BY DGB

CODE: | | | | | 1 1 2 0 | | | |

Y Y M M D D H H M M I I I

SOURCE: Cienega Well OW-2

CODE: | | | | | + | | | | |

AQUIFER DEPTH

NEAREST CITY: Gallup

CODE: | | | | |

LOCATION: Cienega Refinery

CODE: | | | | |

TOWNSHIP RANGE SECTION TRACTS

pH= 7.5; Conductivity= 950 umho/cm at 14.5°C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity=; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Bailed after purging on 3/3

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. David G. Boyer

Method of shipment to the Laboratory Hand carried

This form accompanies 2 Septum Vials, Glass Jugs, Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
- ☒ P-Ice Sample stored in an ice bath (not frozen).
- ☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from to at (location) on

/ / - : and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

(we) certify that this sample was transferred from to at (location) on

/ / - : and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

ANALYSES REQUESTED

LAB. NO.: ORG- 306

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
aromatic hydrocarbons	** none detected		
halogenated hydrocarbons	* none detected		
		** Detection Limit	1
		* DETECTION LIMIT	1

REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ___ NO ___. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 3/25/86. Analyst's signature: Gary C. Elder

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: R. Meyerhen



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

General
Water
Chemistry

~~General~~
~~Water~~
GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED 3/7/86	LAB NO. C1099	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE 06/03/05	SITE INFORMATION	Sample location <i>Ciniza Well OW-5</i>
Collection TIME 1120		Collection site description <i>Ciniza Refinery</i>
Collected by — Person/Agency <i>Boyer/Bailey/Anderson / OCD</i>		

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: *David Boyer*

Phone: 827-5812

MAY 1 1986
OIL CONSERVATION DIVISION
SANTA FE

Station/
well code
Owner

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level <i>29' 6.5"</i>	Discharge <i>—</i>	Sample type <i>Grab</i>
pH (00400) <i>7.5</i>	Conductivity (Uncorrected) <i>950</i> μ mho	Water Temp. (00010) <i>14.5</i> °C	Conductivity at 25°C (00094) μ mho	
Field comments <i>Bailed after purging on 3/3 Prefiltered only</i>				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted <i>1</i>	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with <i>0.45 μm</i> membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify:			

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho		☒ Calcium (00915)	mg/l	<i>3-18</i>
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	mg/l	<i>4.88</i>
☐ Other:			☒ Sodium (00930)	mg/l	<i>294.4</i>
☐ Other:			☒ Potassium (00935)	mg/l	<i>3.12</i>
☐ Other:			☒ Bicarbonate (00440)	mg/l	<i>802</i>
			☒ Chloride (00940)	mg/l	<i>41.5</i>
			☒ Sulfate (00945)	mg/l	<i>30.5</i>
			☒ Total filterable residue (dissolved) (70300)	mg/l	<i>868</i>
			☒ Other: <i>CO₃</i>	mg/l	<i>0.0</i>
					<i>3/13</i>
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Analyst			Date Reported	Reviewed by	
			<i>4/24/86</i>	<i>CS</i>	

Laboratory remarks



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

PF

Heavy Metal
GENERAL WATER CHEMISTRY
NITROGEN ANALYSIS

DATE RECEIVED	3/7/86	LAB NO.	HA 536	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	86103105	SITE INFORMATION	Sample location		
Collection TIME	120		Ciniza Well OW-2		
Collected by — Person/Agency		Collection site description			
Boyer/Bailey/Anderson/OCD		Ciniza Refinery			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

RECEIVED
APR 28 1986
OIL CONSERVATION DIVISION
SANTA FE

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	29' 6.5"	Discharge	-	Sample type	Grab
pH (00400)	7.5	Conductivity (Uncorrected)	950 μ mho	Water Temp. (00010)	14.5 $^{\circ}$ C	Conductivity at 25 $^{\circ}$ C (00094)	μ mho
Field comments							
Bailed after pumping on 3/3							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☒ A: 2 ml H ₂ SO ₄ added	conc HNO ₃ to pH 4.2
☐ NA: No acid added ☐ Other-specify:					

ANALYTICAL RESULTS from SAMPLES

Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 $^{\circ}$ C (00095)	μ mho	☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l	☐ Magnesium (00925)	mg/l	
☒ Other: ICAPSCAN	3/21/86	☐ Sodium (00930)	mg/l	
☒ Other: AS	0.006	☐ Potassium (00935)	mg/l	
☒ Other: Se	<0.005	☐ Bicarbonate (00440)	mg/l	
		☐ Chloride (00940)	mg/l	
		☐ Sulfate (00945)	mg/l	
		☐ Total filterable residue (dissolved) (70300)	mg/l	
		☐ Other:		
NF, A-H ₂ SO ₄		F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l	☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l	☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l	☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l	☐ Other:		
☐ Total organic carbon ()	mg/l			
☐ Other:		Analyst	Date Reported	Reviewed by
☐ Other:			4/18/86	Jim Ashby
Laboratory remarks				
Sample Digested				

Lab Number: M 536

Sample ~~de~~: Cinija DW-2

Date Submitted: 3/7/86

Date Analyzed: 3/21/86

By: Bayer

Reviewed By: Jim Ashley

Date Reported: 4/18/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u>0.6</u>	<u></u>
Barium	<u>0.1</u>	<u></u>
Beryllium	<u>40.1</u>	<u></u>
Boron	<u>0.8</u>	<u></u>
Cadmium	<u>40.1</u>	<u></u>
Calcium	<u>9.9</u>	<u></u>
Chromium	<u>40.1</u>	<u></u>
Cobalt	<u>40.1</u>	<u></u>
Copper	<u>40.1</u>	<u></u>
Iron	<u>0.3</u>	<u></u>
Lead	<u>40.1</u>	<u></u>
Magnesium	<u>3.2</u>	<u></u>
Manganese	<u>0.12</u>	<u></u>
Molybdenum	<u>40.1</u>	<u></u>
Nickel	<u>40.1</u>	<u></u>
Silicon	<u>5.2</u>	<u></u>
Silver	<u>40.1</u>	<u></u>
Strontium	<u>0.4</u>	<u></u>
Tin	<u>40.1</u>	<u></u>
Vanadium	<u>40.1</u>	<u></u>
Zinc	<u>40.1</u>	<u></u>
Arsenic	<u></u>	<u>0.006</u>
Selenium	<u></u>	<u>40.005</u>
Mercury	<u></u>	<u></u>

86-0298-C

STATE OF NEW MEXICO

APR 28 1986

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570REPORT TO:
PLEASE PRINT

DAVID G. BOYER

CONSERVATION DIVISION
SANTA FE

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.:

OR-

298 A, B

DATE REC.:

3/7/86

SLD PRIORITY #:

3

PHONE(S):

827-5812

USER CODE: 8 2 2 3 5

SUBMITTER:

DAVID BOYER

SUBMITTER CODE: | | | | |

SAMPLE TYPE: WATER ☒ SOIL ☐ OTHER ☐

SAMPLE TYPE CODE: | | |

COLLECTED: 86/03/05 - 11:45 BY *DB*

DATE

TIME

INITIALS

CODE: | | | | | | | | | | | | | | | |

Y Y M M D D H H M M I I I

SOURCE: Cieniza Well OW-3

CODE: | | | | | | | | | | | | | | | |

AQUIFER DEPTH

NEAREST CITY: Gallup

CODE: | | | | | | |

LOCATION: Cieniza Refinery

CODE: | | | | | | | | | | | | | | | |

TOWNSHIP RANGE SECTION TRACTS

pH=7.7; Conductivity=910 umho/cm at 13.5°C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity=; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Bailed sample after purging on 3/3

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. *David G. Boyer*

Method of shipment to the Laboratory

Hand carried

This form accompanies 2 Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:☐ NP:

No preservation; sample stored at room temperature.

☒ P-Ice

Sample stored in an ice bath (not frozen).

☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from

to at (location) on

/ / - : and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

(we) certify that this sample was transferred from

to at (location) on

/ / - : and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

ANALYSES REQUESTED

LAB. No.: ORG- 298

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
arom. purge screen	none detected		
halo. purge screen	none detected		
		* DETECTION LIMIT	1 µgm/l

REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ___ NO X. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 13 March 86. Analyst's signature: A. D. Finney

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: R. Meyers



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

FN

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 13 7 186	LAB NO. E1084	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE 86103105	SITE INFORMATION	Sample location <i>Ciniza Well OW-3</i>
Collection TIME 1145		Collection site description <i>Ciniza Refinery</i>
Collected by — Person/Agency <i>Boyer/Railay/Anderson/OC</i>		

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: *David Boyer*

Phone: 827-5812

SAMPLING CONDITIONS

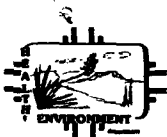
☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level <i>32' 9"</i>	Discharge <i>-</i>	Sample type <i>Grab</i>
pH (00400) <i>7.7</i>	Conductivity (Uncorrected) <i>910</i> μ mho	Water Temp. (00010) <i>13.5</i> °C	Conductivity at 25 °C (00094) μ mho	
Field comments <i>Bailed sample after pumping on 3/3</i>				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted <i>1</i>	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify:			

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	μ mho		☒ Calcium (00915)	mg/l	<i>3-18</i>
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	mg/l	<i>"</i>
☐ Other:			☒ Sodium (00930)	mg/l	<i>"</i>
☐ Other:			☒ Potassium (00935)	mg/l	<i>"</i>
☐ Other:			☒ Bicarbonate (00440)	mg/l	<i>5/19</i>
			☒ Chloride (00940)	mg/l	<i>3-19</i>
			☒ Sulfate (00945)	mg/l	<i>3/27</i>
			☒ Total filterable residue (dissolved) (70300)	mg/l	<i>4/17</i>
			☒ Other: <i>CO₃</i>		<i>3/13</i>
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks <i>* Interference</i>			Analyst	Date Reported <i>6 4 86</i>	Reviewed by <i>CO</i>



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy
PF Metal

~~GENERAL WATER CHEMISTRY
AND NITROGEN ANALYSIS~~

DATE RECEIVED	3/7/86	LAB NO.	HM 535	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	86123105	SITE INFORMATION	Sample location		
Collection TIME	1145		Ciniza Well OW-3		
Collected by — Person/Agency		Collection site description			
Boyer/Railey/Anderson 10CD		Ciniza Refinery			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	32' 9"	Discharge	-	Sample type	GRAB
pH (00400)	7.7	Conductivity (Uncorrected)	910 μ mho	Water Temp. (00010)	13.5 °C	Conductivity at 25 °C (00094)	μ mho
Field comments							
Bailed Sample after pumping on 3/3							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☒ A: 2 mL H ₂ SO ₄ added	conc HNO ₃ , 4 mL
☐ NA: No acid added ☐ Other-specify:					

ANALYTICAL RESULTS from SAMPLES

Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	μ mho	☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l	☐ Magnesium (00925)	mg/l	
☒ Other: ICAP SCAR	3/21/86	☐ Sodium (00930)	mg/l	
☒ Other: AS	0.006	☐ Potassium (00935)	mg/l	
☒ Other: SE	20.005	☐ Bicarbonate (00440)	mg/l	
		☐ Chloride (00940)	mg/l	
		☐ Sulfate (00945)	mg/l	
		☐ Total filterable residue (dissolved) (70300)	mg/l	
		☐ Other:		
NF, A-H₂SO₄		F, A-H₂SO₄		
☐ Nitrate-N + , Nitrate-N total (00630)	mg/l	☐ Nitrate-N + , Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l	☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l	☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l	☐ Other:		
☐ Total organic carbon ()	mg/l			
☐ Other:		Analyst	Date Reported	Reviewed by
☐ Other:			4/18/86	Jim Ashley
Laboratory remarks				

Lab Number: 535

Date Submitted: 3/7/86

By: Boyer

Sample de: Cemiya OW-3

Date Analyzed: 3/21/86

Reviewed By: JFA

Date Reported: 4/18/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u>40.1</u>	
Barium	<u>40.1</u>	
Beryllium	<u>40.1</u>	
Boron	<u>0.7</u>	
Cadmium	<u>40.1</u>	
Calcium	<u>36.</u>	
Chromium	<u>40.1</u>	
Cobalt	<u>40.1</u>	
Copper	<u>40.1</u>	
Iron	<u>40.1</u>	
Lead	<u>40.1</u>	
Magnesium	<u>8.2</u>	
Manganese	<u>0.13</u>	
Molybdenum	<u>40.1</u>	
Nickel	<u>40.1</u>	
Silicon	<u>3.1</u>	
Silver	<u>40.1</u>	
Strontium	<u>0.7</u>	
Tin	<u>40.1</u>	
Vanadium	<u>40.1</u>	
Zinc	<u>40.1</u>	
Arsenic		<u>0.006</u>
Selenium		<u><0.005</u>
Mercury		

86- 0308-C



STATE OF NEW MEXICO

APR 28 1986

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

REPORT TO:

PLEASE PRINT

DAVID G. BOYER

SANTA FE

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.:

OR- 308 A, B.

DATE REC.:

3/7/86

SLD PRIORITY #:

3

PHONE(S):

827-5812

USER CODE:

8 2 2 3 5

SUBMITTER:

DAVID BOYER

SUBMITTER CODE:

| | | |

SAMPLE TYPE: WATER ☒ , SOIL ☐ , OTHER ☐

SAMPLE TYPE CODE:

| |

COLLECTED:

86/03/05-14:30

BY

AGB

CODE:

| | | | | | | | | | | | | | | |

SOURCE:

Ciniza OW-5

CODE:

| | | | | | | | | | | | | | | |

AQUIFER DEPTH

NEAREST CITY:

Gallup

CODE:

| | | | |

LOCATION:

Ciniza Refinery

CODE:

| | | | | | | | | | | | | | | |

TOWNSHIP RANGE SECTION TRACTS

pH= 8 ; Conductivity= 23,500 umho/cm at 13.5°C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Bailed after ~~winery~~ bailing afternoon of 3/3

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities.

Method of shipment to the Laboratory

Hand carried

This form accompanies 2 Septum Vials, Glass Jugs, Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from

to at (location) on

/ / - : and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

(we) certify that this sample was transferred from

to at (location) on

/ / - : and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

ANALYSES REQUESTED

LAB. No.: ORG- 308

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
aromatic hydrocarbons	** none detected		
halogenated hydrocarbons	* none detected		
		** Detection Limit	1
		* DETECTION LIMIT	1

REMARKS: Teflon septum was upsidown on sample vial 308-B.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes___ NO___. Seal(s) broken by:_____ date:_____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 3/26/86. Analyst's signature: Gary C. Elen

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: R. Meyersheim



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

FN

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED 3/7/86	LAB NO. 21085	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE 3/13/85	SITE INFORMATION	Sample location Ciniza DW-5
Collection TIME 1450		Collection site description Ciniza Refinery
Collected by — Person/Agency Boyer/Bailey/Anderson		

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level 15' 1" SANTA FE	Discharge —	Sample type Grab
pH (00400) 8 (paper)	Conductivity (Uncorrected) 23,500 µmho	Water Temp. (00010) 13.5 °C	Conductivity at 25 °C (00094) µmho	
Field comments Bailed after bailing first on 3/3				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted 1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 µmembrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify:			

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	µmho		☒ Calcium (00915)	4000 mg/l	3-18
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	122.0 mg/l	"
☐ Other:			☒ Sodium (00930)	4393 mg/l	"
☐ Other:			☒ Potassium (00935)	25.3 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	195 mg/l	3/13
			☒ Chloride (00940)	15802 mg/l	3-19
			☒ Sulfate (00945)	196 mg/l	3/27
			☒ Total filterable residue (dissolved) (70300)	32,205 mg/l	4/17
			☒ Other: CO ₃	0.0	3/13
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N ⁺ , Nitrate-N total (00630)	mg/l		☐ Nitrate-N ⁺ , Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported 4/25/86	Reviewed by



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

PF

Heavy metal
GENERAL WATER CHEMISTRY
AND NITROGEN ANALYSIS

DATE RECEIVED	3/7/86	LAB NO.	HM 523	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	8/10/85	Sample location			
Collection TIME	1420	Ciniza OLW-5			
Collected by — Person/Agency	Boyer, Bailey, Anderson / OCD				
SITE INFORMATION		Collection site description			
		Ciniza Refinery			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	15' 1"	Discharge	-	Sample type	Grab
pH (00400)	8	Conductivity (Uncorrected)	23,500 μ mho	Water Temp. (00010)	13.5 °C	Conductivity at 25°C (00094)	μ mho
Field comments							
Bailed to purge on 3/3							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☒ A: 2 ml H ₂ SO ₄ added 4 ml HNO ₃
☐ NA: No acid added ☐ Other-specify:				

ANALYTICAL RESULTS from SAMPLES

Units	Date analyzed	F, NA	Units	Date analyzed
NF, A-H₂SO₄				
☐ Conductivity (Corrected) 25°C (00095)	μ mho	☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l	☐ Magnesium (00925)	mg/l	
☒ Other: ICAP SCAN		☐ Sodium (00930)	mg/l	
☒ Other: AS		☐ Potassium (00935)	mg/l	
☒ Other: Se		☐ Bicarbonate (00440)	mg/l	
		☐ Chloride (00940)	mg/l	
		☐ Sulfate (00945)	mg/l	
		☐ Total filterable residue (dissolved) (70300)	mg/l	
		☐ Other:		
NF, A-H₂SO₄				
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l	☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l	☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l	☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l	☐ Other:		
☐ Total organic carbon ()	mg/l			
☐ Other:				
☐ Other:				
Laboratory remarks		Analyst	Date Reported	Reviewed by
			5/12/86	Jim Ashby

Lab Number: HM 523
Date Submitted: 3/7/86
By: Boyer

Sample Code: Amiga OW-5
Date Analyzed: 3/20/86
Reviewed By: Jim Ashby
Date Reported: 5/12/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u><0.1</u>	<u> </u>
Barium	<u><0.1</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>1.3</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>3920.</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u><0.1</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>680.</u>	<u> </u>
Manganese	<u>0.06</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>4.4</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>120.</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u>.5</u>	<u> </u>
Arsenic		<u>0.045</u>
Selenium		<u>0.025</u>
Mercury		<u> </u>

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

STATE OF NEW MEXICO

APR 28 1986

REPORT TO:
PLEASE PRINT

DAVID G. BOYER SANTA FE

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.: OR-297A,B

DATE REC.: 3/7/86

SLD PRIORITY #: 3

PHONE(S): 827-5812

USER CODE: 8 2 2 3 5

SUBMITTER: DAVID BOYER

SUBMITTER CODE: | | | |

SAMPLE TYPE: WATER ☒ SOIL ☐ OTHER ☐

SAMPLE TYPE CODE: | | |

COLLECTED: 86/03/05-15:05 BY DJR

CODE: | | | | | | | | | | | | | | | |

SOURCE: Cimarron OW-7

CODE: | | | | | | | | | | | | | | | |

NEAREST CITY: Gallup

CODE: | | | | | |

LOCATION: Cimarron Refinery

CODE: | | | | | | | | | | | | | | | |

pH= 7.7; Conductivity= 820 umho/cm at 11 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity=; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Bailed after purging on 3/3

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. David G. Boyer

Method of shipment to the Laboratory Hand carried

This form accompanies 2 Septum Vials, Glass Jugs, Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☐ P- $\text{Na}_2\text{S}_2\text{O}_3$; Sample preserved with $\text{Na}_2\text{S}_2\text{O}_3$ to remove chlorine residual.

I (we) certify that this sample was transferred from to at (location) on

DATE AND TIME and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

(we) certify that this sample was transferred from to at (location) on

DATE AND TIME and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

ANALYSES REQUESTED

LAB. No.: ORG- 297

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
arom. purge screen	none detected		
halo. purge screen	none detected		
		* DETECTION LIMIT	3 ug/ml

REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ___ NO X. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 13 March 86. Analyst's signature: [Signature]I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: [Signature]



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	3/7/86	LAB NO.	21097	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	3/6/86	SITE INFORMATION	Sample location		
Collection TIME	1505		Ciniza OW-7		
Collected by — Person/Agency		Collection site description			
Boyer/Basley/Anderson		Ciniza Refinery			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501

Attn: David Boyer

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	4' 3.5"	Discharge	—	Sample type	Grab
pH (00400)	7.7 (paper)	Conductivity (Uncorrected)	820 µmho	Water Temp. (00010)	11 °C	Conductivity at 25°C (00094)	µmho
Field comments							
Bailed after purging on 3/3							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 µm membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify:				

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho		☒ Calcium (00915)	mg/l	3-18
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	mg/l	"
☐ Other:			☒ Sodium (00930)	mg/l	"
☐ Other:			☒ Potassium (00935)	mg/l	"
☐ Other:			☒ Bicarbonate (00440)	mg/l	3/13
			☒ Chloride (00940)	mg/l	3-19
			☒ Sulfate (00945)	mg/l	3/27
			☒ Total filterable residue (dissolved) (70300)	mg/l	4/27
			☒ Other: CO ₂	mg/l	3/13
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
Solids present, bicarbonate includes solids, other tests decent, CD 5/86				5/5/86	CD



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

R.F.

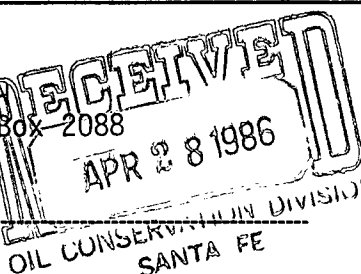
Heavy Metal
GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	3/7/86	LAB NO.	HM 525	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	8/6/03/05	SITE INFORMATION	Sample location	Ciniza OW-7	
Collection TIME	1305		Collection site description	Ciniza Refinery	
Collected by — Person/Agency	Boyer/Barber/Anderson/OCD				

SEND FINAL REPORT TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501

Attn: David Boyer



Station/
well code

Owner

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	4' 8.5"	Discharge		Sample type	GRAB
pH (00400)	7.2 (Paper)	Conductivity (Uncorrected)	820 μ mho	Water Temp. (00010)	11 $^{\circ}$ C	Conductivity at 25 $^{\circ}$ C (00094)	μ mho
Field comments Bailed after purging on 3/3							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☒ A: 2 mL H ₂ SO ₄ added 4 mL HNO ₃
☐ NA: No acid added ☐ Other-specify:				

ANALYTICAL RESULTS from SAMPLES

NE, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 $^{\circ}$ C (00095)	μ mho		☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l		☐ Magnesium (00925)	mg/l	
☒ Other: ICAP		3/21/86	☐ Sodium (00930)	mg/l	
☒ Other: Se	20.005	4/16/86	☐ Potassium (00935)	mg/l	
☒ Other: AS	20.005	4/10/86	☐ Bicarbonate (00440)	mg/l	
			☐ Chloride (00940)	mg/l	
			☐ Sulfate (00945)	mg/l	
			☐ Total filterable residue (dissolved) (70300)	mg/l	
			☐ Other:		
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N ⁺ , Nitrate-N total (00630)	mg/l		☐ Nitrate-N ⁺ , Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:			Analyst	Date Reported	Reviewed by
☐ Other:				4/18/86	Jim Ashby
Laboratory remarks Sample Duplicated					

Lab Number: 7M 525

Date Submitted: 3/7/86

By: Bayer

Sample de: Cineja OW-7

Date Analyzed: 3/21/86

Reviewed By: Jim Ashby

Date Reported: 4/18/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u>0.3</u>	<u> </u>
Barium	<u><0.1</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>0.4</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>2.3</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u>0.1</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>0.3</u>	<u> </u>
Manganese	<u><0.05</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>3.2</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>0.2</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u><0.1</u>	<u> </u>
Arsenic		<u><0.005</u>
Selenium		<u><0.005</u>
Mercury		<u> </u>

86-0309-C



STATE OF NEW MEXICO

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

APR 28 1986

REPORT TO:
PLEASE PRINT

DAVID G. BOYER

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.:

OR-309A, B

DATE REC.:

3/7/86

SLD PRIORITY #:

3

PHONE(S):

827-5812

USER CODE: 8 2 2 3 5

SUBMITTER:

DAVID BOYER

SUBMITTER CODE: | | | |

SAMPLE TYPE: WATER ☐ , SOIL ☐ , OTHER _____

SAMPLE TYPE CODE: | |

COLLECTED: 86/03/05-16:00 BY DGB

DATE

TIME

INITIALS

CODE: | | | | | | | | | | | | | | | |

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SOURCE: Ciniza Well OW-9

CODE: | | | | | | | | | | | |

AQUIFER

DEPTH

NEAREST CITY: Gallup

CODE: | | | | | |

LOCATION: Ciniza Refinery

CODE: | | | | | | | | | | | |

TOWNSHIP

RANGE

SECTION

TRACTS

pH= 6.7; Conductivity= 1010 umho/cm at 10 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity=; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Bailed after purging on 3/3

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. David G. Boyer

Method of shipment to the Laboratory Hand Carried

This form accompanies 2 Septum Vials, Glass Jugs, Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from _____

to _____ at (location) _____ on _____

_____/_____/_____-_____: and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____

(we) certify that this sample was transferred from _____

to _____ at (location) _____ on _____

_____/_____/_____-_____: and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____

ANALYSES REQUESTED

LAB. NO.: ORG- 309

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
☒	☒	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
☒	☒	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
aromatic hydrocarbons	** none detected		
halogenated hydrocarbons	* none detected		
		** Detection Limit	/
		* DETECTION LIMIT	/

REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ___ NO ___. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 3/26/86. Analyst's signature: *Harry C. Eden*

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: *R. Meyerhen*



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

FN

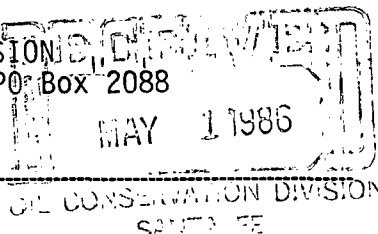
GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	3/7/86	LAB NO. 21086	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	3/10/86	SITE INFORMATION	Sample location
Collection TIME	1600		Ciniza Well OU-9
Collected by — Person/Agency		Collection site description	
Boyer/Barley/Anderson et al		Ciniza Refinery	

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501

Attn: David Boyer



Station/
well code
Owner

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	11'	Discharge	-	Sample type	Gras
pH (00400)	6.7 (Paper)	Conductivity (Uncorrected)	1010 μ mho	Water Temp. (00010)	10 °C	Conductivity at 25 °C (00094)	μ mho
Field comments							
Bailed after purging on 3/3							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify:				

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	μ mho		☒ Calcium (00915)	20.0 mg/l	3-18
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	8.30 mg/l	"
☐ Other:			☒ Sodium (00930)	322.0 mg/l	"
☐ Other:			☒ Potassium (00935)	1 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	42.7 mg/l	3/13
			☒ Chloride (00940)	97.2 mg/l	3-19
			☒ Sulfate (00945)	28.2 mg/l	3/17
			☒ Total filterable residue (dissolved) (70300)	104.5 mg/l	4/17
			☒ Other: CO ₃	0.0	3/13
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				4/25/86	CD



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

PF

Heavy metal
GENERAL WATER CHEMISTRY
AND NITROGEN ANALYSIS

DATE RECEIVED	3/7/86	LAB NO.	HM 533	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	8/10/85	SITE INFORMATION	Sample location		
Collection TIME	1600		Cinigo Well OW-9		
Collected by — Person/Agency		Collection site description			
Boyer/Bailey/Anderson/for		Cinigo Refinery			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088, Santa Fe, NM 87501

Attn: David Boyer

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	11'	Discharge	-	Sample type	GRAB
pH (00400)	6.7	Conductivity (Uncorrected)	1010 μ mho	Water Temp. (00010)	10 °C	Conductivity at 25°C (00094)	μ mho
Field comments							
Bailed after purging on 3/3							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☒ NA: 2 ml H ₂ SO ₄ added	conc HNO ₃
☐ NA: No acid added ☐ Other-specify:					

ANALYTICAL RESULTS from SAMPLES

Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho	☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l	☐ Magnesium (00925)	mg/l	
☒ Other: ICAN SCAN	3/21/86	☐ Sodium (00930)	mg/l	
☒ Other: Se	0.009	☐ Potassium (00935)	mg/l	
☒ Other: AS	<0.005	☐ Bicarbonate (00440)	mg/l	
		☐ Chloride (00940)	mg/l	
		☐ Sulfate (00945)	mg/l	
		☐ Total filterable residue (dissolved) (70300)	mg/l	
		☐ Other:		
NF, A-H ₂ SO ₄		F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l	☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l	☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l	☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l	☐ Other:		
☐ Total organic carbon ()	mg/l			
☐ Other:				
☐ Other:				
Laboratory remarks		Analyst	Date Reported	Reviewed by
			4/18/86	J. Ashby

Lab Number: ● M 533

Date Submitted: 3/7/86

By: Boyer

Sample Code: Leija DW-9

Date Analyzed: 3/21/86

Reviewed By: J. F. Ashby

Date Reported: 4/18/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u><0.1</u>	<u> </u>
Barium	<u><0.1</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>0.4</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>13.</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u><0.1</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>1.5</u>	<u> </u>
Manganese	<u><0.05</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>1.6</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>0.9</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u><0.1</u>	<u> </u>
Arsenic		<u><0.005</u>
Selenium		<u>0.009</u>
Mercury		<u> </u>



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED	LAB NO.	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 53300
Collection DATE 02/13/85	SITE INFORMATION	Sample location GIANT CIVILIZA
Collection TIME 1:15 AM		Collection site description OW-11
Collected by — Person/Agency SLD HW		

SEND
FINAL
REPORT
TO

GROUND WATER & HAZARDOUS WASTE BUREAU
NM ENVIRONMENT IMPROVEMENT DIVISION/HED
Crown Building, PO Box 968
Santa Fe, NM 87504-0968

Attn: ANN CLAASSEN

S. of main plant,
near road, next to
arroyo

Station/
well code OW-11

Owner GIANT

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level 20.7' BMP	Discharge	Sample type GRAB
pH (00400) 8.25	Conductivity (Uncorrected) 1200 μ mho	Water Temp. (00010) 9 $^{\circ}$ C	Conductivity at 25 $^{\circ}$ C (00094) μ mho	
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted 3	☒ NF: Whole sample (Non-filtered)	☐ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☐ NA: No acid added ☒ Other-specify: 2 40-ml vials, 5 drops H ₂ SO ₄ each 1 1-gal container, NA			

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☒ Conductivity (Corrected) 25 $^{\circ}$ C (00095) 1600 μ mho	μ mho	4/8	☒ Calcium (00915) 6.4 mg/l	mg/l	2/13
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925) 40.1 mg/l	mg/l	4/1
☒ Other: pH 7.93		4/14	☒ Sodium (00930) 382 mg/l	mg/l	2/20
☐ Other:			☒ Potassium (00935) 3.12 mg/l	mg/l	2/20
☐ Other:			☒ Bicarbonate (00440) 345.3 mg/l	mg/l	1/13
			☒ Chloride (00940) 110.7 mg/l	mg/l	3/1
			☒ Sulfate (00945) 173.5 mg/l	mg/l	3/14
			☒ Total filterable residue (dissolved) (70300) 1038 mg/l	mg/l	4/8
			☒ Other: Fluoride 0.32		2/25
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☒ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☒ Total organic carbon (4.5)	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported 4/11/85	Reviewed by SLD

86-0442-C

ENVIRONMENT

STATE OF NEW MEXICO

MAY 21 1986

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570REPORT TO:
PLEASE PRINT

DAVID G. BOYER

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

PHONE(S):

827-5812

SUBMITTER:

Boyer

SAMPLE TYPE: WATER ☒, SOIL ☐, OTHER ☐

COLLECTED: 86/04/15 - 16:30 BY DGB

DATE

TIME

INITIALS

SOURCE:

Well OW-12

NEAREST CITY:

Gallup

LOCATION:

Giant Cinnia Refinery

pH= 12.1; Conductivity= 4850 umho/cm at 15.5°C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity=; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Well purged 4/11, bailed for sampling 4/15
Sample slightly foamy

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. David G. Boyer

Method of shipment to the Laboratory Hand-carried Car

This form accompanies 2 Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☐ P- $\text{Na}_2\text{S}_2\text{O}_3$; Sample preserved with $\text{Na}_2\text{S}_2\text{O}_3$ to remove chlorine residual.

I (we) certify that this sample was transferred from

to at (location) on

DATE AND TIME and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

(we) certify that this sample was transferred from

to at (location) on

DATE AND TIME and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

ANALYSIS REQUESTED

LAB. NO.: ORG- 442

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
<i>Benzene</i>	<i>51</i>		
<i>Toluene</i>	<i>160</i>		
<i>Ethylbenzene</i>	<i>10</i>		
<i>p-Xylene</i>	<i>15</i>		
<i>m-Xylene</i>	<i>45</i>		
<i>o-Xylene</i>	<i>31</i>		
<i>1,2-dichloroethane</i>	<i>1</i>		
<i>1,2-dibromoethane</i>	<i>Trace < 1ppb</i>	* DETECTION LIMIT	<i>1 ug/ml</i>

REMARKS: *Ten other compounds were detected by the aromatic screen that were not identified.*

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes NO X. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: *4-29-86*. Analyst's signature: *[Signature]*I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: *[Signature]*



SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	WC 1691	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	8/10/85	SITE INFORMATION	Sample location	Well OW-12	
Collection TIME	1630		Collection site description	North of Process Area Giant Cinja Refinery	
Collected by — Person/Agency			Boyer, OCD		

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	27.5'	Discharge	—	Sample type	Grab
pH (00400)	12.1	Conductivity (Uncorrected)	4850 μ mho	Water Temp. (00010)	15.5°C	Conductivity at 25°C (00094)	μ mho
Field comments (Geosci) 5200@15.5°C							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added		☐ Other-specify:	☐ A: 5ml conc. HNO ₃ added	☐ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

MF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho		☒ Calcium (00915)	86.4 mg/l	4/29
☐ Total non-filterable residue (suspended) (00530)			☒ Magnesium (00925)	1.46 mg/l	"
☒ Other: lab pH	11.24	4/18	☒ Sodium (00930)	402.5 mg/l	"
☐ Other:			☒ Potassium (00935)	17.9 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	80 mg/l	4/18
			☒ Chloride (00940)	86.6 mg/l	4/28
			☒ Sulfate (00945)	151 mg/l	4/25
			☒ Total filterable residue (dissolved) (70300)	1255 mg/l	5/2
			☒ Other: CO ₃	00	4/18
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N ⁺ , Nitrate-N total (00630)	mg/l		☐ Nitrate-N ⁺ , Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
CO ₃ 10.68				5/7/86	



SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED 4/17/86	LAB NO. WC 1691	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE 8/10/85	SITE INFORMATION	Sample location Well OW-12
Collection TIME 1630		Collection site description North of Process Area Giant Cinja Refinery
Collected by — Person/Agency Boyer/OCD		Station/well code
SEND FINAL REPORT TO		Owner

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: **David Boyer**

Phone: **827-5312**

SAMPLING CONDITIONS

☒ Bailed ☐ Pump	Water level OW 27.5'	Discharge —	Sample type Grab
☐ Dipped ☐ Tap	pH (00400) 12.1	Conductivity (Uncorrected) 4850 μ mho	Water Temp. (00010) 15.5 °C
Field comments (Gasci) conscience and 5200 @ 15.5 °C		Conductivity at 25 °C (00094) μ mho	

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted 1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added		☐ Other-specify:	☐ A: 5ml conc. HNO ₃ added ☐ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	μ mho		☒ Calcium (00915)	mg/l	4.79
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	mg/l	1.41
☒ Other: lab pH	11.24	4/18	☒ Sodium (00930)	mg/l	402.5
☐ Other:			☒ Potassium (00935)	mg/l	17.9
☐ Other:			☒ Bicarbonate (00440)	mg/l	10.0
			☒ Chloride (00940)	mg/l	88.6
			☒ Sulfate (00945)	mg/l	151
			Total filterable residue (dissolved) (70300)	mg/l	125.5
			Other: CO₃	1392	4/18
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l		Analyst	Date Reported	Reviewed by
☐ Other:				5/7/86	
☐ Other:					

Laboratory remarks **Recalc CO₃⁼ and OH⁻ Ion according to standard methods**
CO₃⁼ = 1392 OH⁻ = 372 mg/l **6/9/86**



SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy Metal
GENERAL WATER CHEMISTRY
AND NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	HM786	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	8/6/86	SITE INFORMATION	Sample location	Well OW-12	
Collection TIME	1630		Collection site description	North of Process Area Giant Cinija Refinery	
Collected by — Person/Agency		Boyer/OCD			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	27.5'	Discharge	—	Sample type	Grab
pH (00400)	12.1	Conductivity (Uncorrected)	4850 μ mho	Water Temp. (00010)	15.5°C	Conductivity at 25°C (00094)	μ mho
Field comments Geosci and 5200 @ 15.5°C							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☐ NA: No acid added		☐ Other-specify:		☐ A: 5ml conc. HNO ₃ added ☒ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho		☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l		☐ Magnesium (00925)	mg/l	
☒ Other: ICAP SCAN			☐ Sodium (00930)	mg/l	
☒ Other: As			☐ Potassium (00935)	mg/l	
☒ Other: Se			☐ Bicarbonate (00440)	mg/l	
NF, A-H ₂ SO ₄			☐ Chloride (00940)	mg/l	
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Sulfate (00945)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Total filterable residue (dissolved) (70300)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Other:		
☐ Chemical oxygen demand (00340)	mg/l		F, A-H ₂ SO ₄		
☐ Total organic carbon ()	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Other:			☐ Ammonia-N dissolved (00608)	mg/l	
☐ Other:			☐ Total Kjeldahl-N ()	mg/l	
			☐ Other:		
Laboratory remarks			Analyst	Date Reported	Reviewed by
				6/11/86	Jim Ashby

Lab Number: MM 786

Date Submitted: 4/17/86

By: Boyer

Sample ID: Siattlinja OW-12

Date Analyzed: 4/28/86

Reviewed By: Jim Ashby

Date Reported: 6/11/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u><0.1</u>	<u> </u>
Barium	<u>0.2</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>0.1</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>94.</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u><0.1</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>0.2</u>	<u> </u>
Manganese	<u><0.05</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u><0.1</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>3.3</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u><0.1</u>	<u> </u>
Arsenic		<u><0.005</u>
Selenium		<u>0.007</u>
Mercury		<u> </u>

86-1213-C

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

STATE OF NEW MEXICO

REPORT TO: David Boyer
N.M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87504-2088

S.L.D. No. OR- 86-1213 A-B

DATE REC. 10-9-86

PHONE(S): 827-5812 USER CODE: 8 2 2 3 5

SUBMITTER: David Boyer CODE: 2 6 0

SAMPLE COLLECTION CODE: (YYMMDDHHMMIII) 8610090900

SAMPLE TYPE: WATER ☒, SOIL ☐, FOOD ☐, OTHER: CODE:

COUNTY: MCKINLEY; CITY: GALLUP CODE:

LOCATION CODE: (Township-Range-Section-Tracts) 15N + 15W + 28 + (10N06E24342)

ANALYSES REQUESTED: Please check the appropriate box(es) below to indicate the type of analytical screens required. Whenever possible list specific compounds suspected or required.

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
☒ (754) Aromatic & Halogenated Purgeables
☐ (765) Mass Spectrometer Purgeables
☐ (766) Trihalomethanes
 Other Specific Compounds or Classes

☐ _____
☐ _____
☐ _____
☐ _____
☐ _____

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
☐ (760) Organochlorine Pesticides
☐ (755) Base/Neutral Extractables
☐ (758) Herbicides, Chlorophenoxy acid
☐ (759) Herbicides, Triazines
☐ (760) Organochlorine Pesticides
☐ (761) Organophosphate Pesticides
☐ (767) Polychlorinated Biphenyls (PCB's)
☐ (764) Polynuclear Aromatic Hydrocarbons
☐ (762) SDWA Pesticides & Herbicides

Remarks: GIANT CINIZA REFINERY
OW 12

FIELD DATA:

pH= ; Conductivity= 2900 umho/cm at 13 °C; Chlorine Residual= mg/l

Dissolved Oxygen= mg/l; Alkalinity= mg/l; Flow Rate /

Depth to water ft.; Depth of well ft.; Perforation Interval - ft.; Casing:

Sampling Location, Methods and Remarks (i.e. odors, etc.)

BAKED 3 TIMES

I certify that the results in this block accurately reflect the results of my field analyses, observations and activities. (signature collector): D. Bailey Method of Shipment to the Lab: Hand

This form accompanies 2 Septum Vials, Glass Jugs, and/or

Samples were preserved as follows:

- ☐ NP: No Preservation; Sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (Not Frozen).
☐ P-Na₂S₂O₃ Sample Preserved with Sodium Thiosulfate to remove chlorine residual.

CHAIN OF CUSTODY

I certify that this sample was transferred from to

at (location) on / / - : and that

the statements in this block are correct. Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

For OCD Use: Date Owner Notified Phone or Letter? Initials

ANALYSES PERFORMED

LAB. No.: OR- 1213

THIS PAGE FOR LABORATORY RESULTS ONLY

This sample was tested using the analytical screening method(s) checked below:

PURGEABLE SCREENS

- ☐ (753) Aliphatic Purgeables (1-3 Carbons)
☒ (754) Aromatic & Halogenated Purgeables
☐ (765) Mass Spectrometer Purgeables
☐ (766) Trihalomethanes
 Other Specific Compounds or Classes

☐
☐
☐
☐
☐

EXTRACTABLE SCREENS

- ☐ (751) Aliphatic Hydrocarbons
☐ (760) Organochlorine Pesticides
☐ (755) Base/Neutral Extractables
☐ (758) Herbicides, Chlorophenoxy acid
☐ (759) Herbicides, Triazines
☐ (760) Organochlorine Pesticides
☐ (761) Organophosphate Pesticides
☐ (767) Polychlorinated Biphenyls (PCB's)
☐ (764) Polynuclear Aromatic Hydrocarbons
☐ (762) SDWA Pesticides & Herbicides

ANALYTICAL RESULTS

COMPOUND(S) DETECTED	CONC. [PPB]	COMPOUND(S) DETECTED	CONC. [PPB]
* aromatic purgeables			
benzene	27		
toluene	10		
* halogenated purgeables	see remarks		
Tetrahydrofuran +	4300		
* DETECTION LIMIT *	1	+ DETECTION LIMIT +	200

ABBREVIATIONS USED:

N D = NONE DETECTED AT OR ABOVE THE STATED DETECTION LIMIT

T R = DETECTED AT A LEVEL BELOW THE STATED DETECTION LIMIT (NOT CONFIRMED)

[RESULTS IN BRACKETS] ARE UNCONFIRMED AND/OR WITH APPROXIMATE QUANTITATION

LABORATORY REMARKS:

possible trace of 1,2 dichloroethane at less than 1 ppb. Three other peaks detected by the Hall detector but not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ No ☒ Seal(s) broken by: not sealed date:

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 10/14/86 Analyst's signature: Gary C. Eden

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block.

Reviewers signature: R Meyerhan



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

850

**GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS**

DATE RECEIVED 10/31/86	LAB NO. WC-5203	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE 10/09/86	SITE INFORMATION	Sample location GIANT CINIZA OW12
Collection TIME 0900		Collection site description
Collected by — Person/Agency ANDERSON / BAILEY / OCD		

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type
pH (00400)	Conductivity (Uncorrected) 2900 μmho	Water Temp. (00010) 12.5 $^{\circ}\text{C}$	Conductivity at 25 $^{\circ}\text{C}$ (00094) 2900 μmho	
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted 1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μm membrane filter	☐ A: 2 ml H_2SO_4 /L added
☒ NA: No acid added ☐ Other-specify: ☐ A: 5ml conc. HNO_3 added ☐ A: 4ml fuming HNO_3 added			

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 $^{\circ}\text{C}$ (00095)	μmho		☒ Calcium (00915)	mg/l	11/35
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	mg/l	11/35
☐ Other:			☒ Sodium (00930)	mg/l	11/19
☐ Other:			☒ Potassium (00935)	mg/l	11/19
☐ Other:			☒ Bicarbonate (00440)	mg/l	11/10
			☒ Chloride (00940)	mg/l	11/13
			☒ Sulfate (00945)	mg/l	11/21
			☒ Total filterable residue (dissolved) (70300)	mg/l	11/21
NF, A- H_2SO_4			☒ Other: BA CO₂		11/25
☐ Nitrate-N ⁺ , Nitrate-N total (00630)	mg/l		F, A- H_2SO_4		11/10
☐ Ammonia-N total (00610)	mg/l		☐ Nitrate-N ⁺ , Nitrate-N dissolved (00631)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Total organic carbon ()	mg/l		☐ Other:		
☐ Other:			Analyst	Date Reported	Reviewed by
☐ Other:				12/1/86	[Signature]
Laboratory remarks					

SLD 726 (12/84)

FOR OCD USE -- Date Owner Notified _____ Phone or letter? _____ Initials _____



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

HEAVY METALS
GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

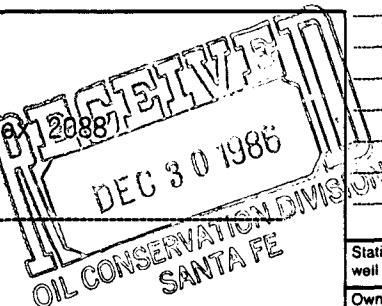
DATE RECEIVED 10/31/86	LAB NO. HM-2255	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE 10/29/86	SITE INFORMATION	Sample location GIANT CUNZA OW12
Collection TIME 0900		Collection site description
Collected by — Person/Agency BAILEY/ANDERSON 10CD		

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 20887
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812



Station/
well code
Owner

SAMPLING CONDITIONS

☐ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type
pH (00400)	Conductivity (Uncorrected) 2950 µmho	Water Temp. (00010) 12.5 °C	Conductivity at 25°C (00094) µmho	
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted 1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 µm membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☐ NA: No acid added	☐ Other-specify:	☐ A: 5ml conc. HNO ₃ added	☒ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

Units	Date analyzed	F, NA	Units	Date analyzed
☒ Conductivity (Corrected) 25°C (00095) Cr = 0.066 Pb = <0.01 µmho	furnace AA	☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l	☐ Magnesium (00925)	mg/l	
☒ Other: Cr 2 by AA		☐ Sodium (00930)	mg/l	
☒ Other: Pb 3 by AA		☐ Potassium (00935)	mg/l	
NF, A-H₂SO₄		☐ Bicarbonate (00440)	mg/l	
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l	☐ Chloride (00940)	mg/l	
☐ Ammonia-N total (00610)	mg/l	☐ Sulfate (00945)	mg/l	
☐ Total Kjeldahl-N ()	mg/l	☐ Total filterable residue (dissolved) (70300)	mg/l	
☐ Chemical oxygen demand (00340)	mg/l	☐ Other:		
☐ Total organic carbon ()	mg/l	F, A-H₂SO₄		
☐ Other:		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Other:		☐ Ammonia-N dissolved (00608)	mg/l	
		☐ Total Kjeldahl-N ()	mg/l	
		☐ Other:		
Laboratory remarks		Analyst	Date Reported 12/10/86	Reviewed by Jim Oakley

SLD 726 (12/84)

FOR OCD USE -- Date Owner Notified _____ Phone or letter? _____ Initials _____

86-0437-C

STATE OF NEW MEXICO

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

ENVIRONMENT

MAY 21 1986

REPORT TO:
PLEASE PRINT

DAVID G. BOYER

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.:

OR-

437A,B

DATE REC.:

4/17/86

SLD PRIORITY #:

3

PHONE(S):

827-5812

USER CODE: 8 2 2 3 5

SUBMITTER:

Boyer

SUBMITTER CODE: | | | |

SAMPLE TYPE: WATER ☒, SOIL ☐, OTHER ☐

SAMPLE TYPE CODE: | |

COLLECTED:

8/04/15-16:55

BY DGB

CODE: | | | | | | | | | | | | | | | |

Y Y M M D D H H M M I I I

SOURCE:

Well OW-13

CODE: | | | | | | | | | | | |

AQUIFER DEPTH

NEAREST CITY:

Gallup

CODE: | | | | |

LOCATION:

Giant Cinnia Refinery

CODE: | | | | | | | | | | | |

TOWNSHIP RANGE SECTION TRACTS

pH= 8.5; Conductivity= 900 umho/cm at 13.5 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity=; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Well purged 4/11, bailed for sampling 4/15

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. David G. Boyer

Method of shipment to the Laboratory

Car & Handcarried

This form accompanies 2 Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
- ☒ P-Ice Sample stored in an ice bath (not frozen).
- ☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from

to at (location) on

/ / - : and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

(we) certify that this sample was transferred from

to at (location) on

/ / - : and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

ANALYSES REQUESTED

LAB. NO.: ORG- 437

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
☒	☒	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
☒	☒	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
arom. purge screen	none detected		
1,2-dichloroethane	trace < 1ppb		
		* DETECTION LIMIT	1 ug/ml

REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes NO. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 4-29-86. Analyst's signature: [Signature]I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: [Signature]



NEW MEXICO DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	WC 1692	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	4/13/86	SITE INFORMATION	Sample location		
Collection TIME	1655		Well OW-13		
Collected by — Person/Agency		Collection site description			
BOYER/OCD		North of Procers Area			

Giant Cynops Reference

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	23.5'	Discharge	—	Sample type	Grab
pH (00400)	8.5	Conductivity (Uncorrected)	900 μ mho	Water Temp. (00010)	13.5 °C	Conductivity at 25°C (00094)	μ mho
Field comments							
Geoscient 975 @ 13 °C							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify: ☐ A: 5ml conc. HNO ₃ added ☐ A: 4ml fuming HNO ₃ added				

ANALYTICAL RESULTS from SAMPLES

F, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho		☒ Calcium (00915)	14.4 mg/l	4-29
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	1.22 mg/l	"
☒ Other: Lab pH	8.34	4/18	☒ Sodium (00930)	280.6 mg/l	"
☐ Other:			☒ Potassium (00935)	0.39 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	546.2 mg/l	4/18
			☒ Chloride (00940)	15.0 mg/l	4/28
			☒ Sulfate (00945)	156 mg/l	4/25
			☒ Total filterable residue (dissolved) (70300)	788 mg/l	5/2
			☒ Other: CO ₃	5.8	4/18
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:			Analyst	Date Reported	Reviewed by
☐ Other:				5/7/86	CW
Laboratory remarks					



SCIENTIFIC LABORATORY
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy metal
GENERAL WATER CHEMISTRY
AND NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	HM 787	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	4/13/86	SITE INFORMATION	Sample location	Well OW-13	
Collection TIME	1655			North of Process Area	
Collected by — Person/Agency			Giant Cynipid Reference		
BOYER/OCD					

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	23.5'	Discharge	—	Sample type	Grab
pH (00400)		Conductivity (Uncorrected)	900 μ mho	Water Temp. (00010)	13.5°C	Conductivity at 25°C (00094) μ mho	
(Geosmin) 8.5		Geosmin cond 975 @ 13°C					
Field comments							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☐ NA: No acid added		☐ Other-specify:		☐ A: 5ml conc. HNO ₃ added ☒ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho		☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l		☐ Magnesium (00925)	mg/l	
☒ Other: ICP SCAN			☐ Sodium (00930)	mg/l	
☐ Other:			☐ Potassium (00935)	mg/l	
☐ Other:			☐ Bicarbonate (00440)	mg/l	
			☐ Chloride (00940)	mg/l	
			☐ Sulfate (00945)	mg/l	
			☐ Total filterable residue (dissolved) (70300)	mg/l	
			☐ Other:		
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N ⁺ , Nitrate-N total (00630)	mg/l		☐ Nitrate-N ⁺ , Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				5/2/86	Jim Ashely

Lab Number: MM 787

Sample Code: Ciniza Ref. 06-13

Date Submitted: 4/17/86

Date Analyzed: 4/28/86

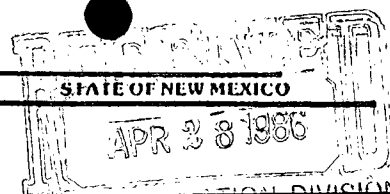
By: Bayer

Reviewed By: Jim Ashley

Date Reported: 5/2/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u><0.1</u>	<u> </u>
Barium	<u><0.1</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>0.3</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>12.</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u><0.1</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>1.8</u>	<u> </u>
Manganese	<u><0.05</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>1.1</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>0.9</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u><0.1</u>	<u> </u>
Arsenic		<u> </u>
Selenium		<u> </u>
Mercury		<u> </u>

86-0296-C



SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570REPORT TO:
PLEASE PRINT

DAVID G. BOYER SANTA FE

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.: OR- 296 A, BDATE REC.: 3/7/86SLD PRIORITY #: 2

PHONE(S): 827-5812

USER CODE: 8 2 2 3 5SUBMITTER: DAVID BoyerSUBMITTER CODE: SAMPLE TYPE: WATER ☒, SOIL ☐, OTHER ☐SAMPLE TYPE CODE: COLLECTED: 06/03/05-16:30 BY AYB
DATE TIME INITIALSCODE:
Y Y M M D D H H M M I I ISOURCE: Ciniza Well OW-14CODE:
AQUIFER DEPTHNEAREST CITY: GallupCODE: LOCATION: Ciniza RefineryCODE:
TOWNSHIP RANGE SECTION TRACTSpH= 7.5; Conductivity= 1160 umho/cm at 14 °C; Chlorine Residual= Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Bailed after purging on 3/3. Had sweet hydrocarbon odor, brothed in bottleI certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. David G BoyerMethod of shipment to the Laboratory Hand CarriedThis form accompanies 2 Septum Vials, Glass Jugs,

Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☐ P- $\text{Na}_2\text{S}_2\text{O}_3$; Sample preserved with $\text{Na}_2\text{S}_2\text{O}_3$ to remove chlorine residual.

I (we) certify that this sample was transferred from to at (location) on / / : and that the statements in this block are correct.Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐Signatures (we) certify that this sample was transferred from to at (location) on / / : and that the statements in this block are correct.Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐Signatures

ANALYSES REQUESTED

LAB. NO.: ORG-296

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS
		Please identify major peaks The B&B			
REMARKS:					

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
arom. purge screen	none detected		
1,2-dichloroethane	18		
		* DETECTION LIMIT	5 ug/ml

REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes NO X. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 13 March 86. Analyst's signature: M. Finner

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: R. Meyer



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

FN

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	3 7 86	LAB NO.	1082	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	6/23/85	SITE INFORMATION	Sample location		
Collection TIME	1630		Ciniza Well OW-14		
Collected by — Person/Agency		Collection site description			
Barley/Boyer/Anderson O&D		Ciniza Refinery			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87501

Attn: David Boyer

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	27'	Discharge	-	Sample type	Grab
pH (00400)	7.5	Conductivity (Uncorrected)	1160 μ mho	Water Temp. (00010)	14 °C	Conductivity at 25 °C (00094)	μ mho
Field comments							
Bailed after purging on 3/3, Half sweet hydrocarbon odor, frothed in bottle							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify:				

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	μ mho		☒ Calcium (00915)	40 mg/l	2-18
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	8.78 mg/l	"
☐ Other:			☒ Sodium (00930)	292 mg/l	"
☐ Other:			☒ Potassium (00935)	0 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	558 mg/l	3/13
			☒ Chloride (00940)	224 mg/l	3/19
			☒ Sulfate (00945)	40 mg/l	3/27
			☒ Total filterable residue (dissolved) (70300)	945 mg/l	4/17
			☒ Other: CO ₂	15.6	3/15
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				4/25/86	CO



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

PF

Heavy Metals
HEAVY METALS ANALYSIS

DATE RECEIVED	3/7/86	LAB NO.	1526	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	8/10/85	SITE INFORMATION	Sample location		
Collection TIME	1630		Ciniza Well OW-14		
Collected by		Collection site description			
Bailey/Boyer/Anderson/OCD		Ciniza Refinery			

SEND FINAL REPORT TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	27'	Discharge	Sample type
					GRAB
pH (00400)	7.5	Conductivity (Uncorrected)	1160 μ mho	Water Temp. (00010)	14 °C
				Conductivity at 25 °C (00094)	μ mho
Field comments					
Bailed after pumping on 3/3, Had sweet hydrocarbon odor					

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ membrane filter	☒ A: 2 mL H_2SO_4 added	4 mL HNO_3
☐ NA: No acid added ☐ Other-specify:					

ANALYTICAL RESULTS from SAMPLES

Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	μ mho	☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l	☐ Magnesium (00925)	mg/l	
☒ Other: ICAP	3/21/86	☐ Sodium (00930)	mg/l	
☒ Other: AS	4/10/86	☐ Potassium (00935)	mg/l	
☒ Other: Se	4/16/86	☐ Bicarbonate (00440)	mg/l	
		☐ Chloride (00940)	mg/l	
		☐ Sulfate (00945)	mg/l	
		☐ Total filterable residue (dissolved) (70300)	mg/l	
		☐ Other:		
NF, A-H ₂ SO ₄		F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l	☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l	☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l	☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l	☐ Other:		
☐ Total organic carbon ()	mg/l	Analyst		
☐ Other:		Date Reported		
☐ Other:		4/18/86		
Laboratory remarks		Reviewed by		
		Jim Ashby		

Lab Number: HM 526

Date Submitted: 3/7/86

By: Bailey

Sample Code: Ciniga Well OW-14

Date Analyzed: 3/21/86

Reviewed By: Jim Ashby

Date Reported: 4/18/86

<u>Element</u>	<u>ICAP VALUE (MG/L)</u>	<u>AA VALUE (MG/L)</u>
Aluminum	<u><0.1</u>	<u> </u>
Barium	<u><0.1</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>0.4</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>34.</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u><0.1</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>8.7</u>	<u> </u>
Manganese	<u>0.50</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>3.6</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>1.3</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u><0.1</u>	<u> </u>
Arsenic		<u><0.005</u>
Selenium		<u><0.005</u>
Mercury		<u> </u>

86-0443-C

STATE OF NEW MEXICO

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570REPORT TO:
PLEASE PRINT

DAVID G. BOYER

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.: OR- 443 A, B

DATE REC.: 4/17/86

SLD PRIORITY #: 3

PHONE(S): 827-5812

USER CODE: 8 2 2 3 5

SUBMITTER: BOYER

SUBMITTER CODE: | | | |

SAMPLE TYPE: WATER ☒, SOIL ☐, OTHER ☐

SAMPLE TYPE CODE: | |

COLLECTED: 86/04/15 - 17:55 BY DGB

CODE: | | | | | | | | | | | | | | | |

SOURCE: Well OW-A

CODE: | | | | | | | | | | | | | | | |

NEAREST CITY: Gallup

CODE: | | | | |

LOCATION: Giant Gypsum Refinery

CODE: | | | | | | | | | | | | | | | |

pH= 8.2; Conductivity= 1300 umho/cm at 13.5°C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity=; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Well purged 4/11, bailed for sampling 4/15
Slightly foamy, slight sweet hydrocarbon odor.

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities.

Method of shipment to the Laboratory Car & Hand Carried

This form accompanies 2 Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☐ P- $\text{Na}_2\text{S}_2\text{O}_3$; Sample preserved with $\text{Na}_2\text{S}_2\text{O}_3$ to remove chlorine residual.

I (we) certify that this sample was transferred from _____
to _____ at (location) _____ on _____

_____/_____/_____-_____: _____ and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____

(we) certify that this sample was transferred from _____
to _____ at (location) _____ on _____

_____/_____/_____-_____: _____ and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____

ANALYSES REQUESTED

LAB. NO.: ORG- 443

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
arom. purge screen	none detected		
1,2-dichloroethane	20		
		* DETECTION LIMIT	5 ug/ml

REMARKS: There are possible trace amounts of several compounds that were detected by the aromatic screen that were not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes NO. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 4-29-86, 5-8-86. Analyst's signature: *John Fairney*

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: *J. Meyer*



NEW MEXICO STATE LABORATORY DIVISION
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	WC 1693	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	4/15	SITE INFORMATION	Sample location		
Collection TIME	1735		Well OW-14		
Collected by — Person/Agency		Collection site description			
BOYER / OCD		North of Process Area Giant Linings Refinery			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	26.5'	Discharge	—	Sample type	Grab
pH (00400)	(Gerson) 8.2	Conductivity (Uncorrected)	1300 μ mho	Water Temp. (00010)	13.5°C	Conductivity at 25°C (00094)	μ mho
Field comments							
Gerson science and 1400 @ 13°C							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added		☐ Other-specify:	☐ A: 5ml conc. HNO ₃ added	☐ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

F, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho		☒ Calcium (00915)	82.4 mg/l	4-29
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	0.98 mg/l	"
☒ Other: Lab pH	8.11	4/18	☒ Sodium (00930)	315 mg/l	"
☐ Other:			☒ Potassium (00935)	0 mg/l	4
☐ Other:			☒ Bicarbonate (00440)	592.9 mg/l	4/18
			☒ Chloride (00940)	204 mg/l	4/28
			☒ Sulfate (00945)	48.9 mg/l	4/25
			☒ Total filterable residue (dissolved) (70300)	1014 mg/l	5/2
			☒ Other: CO ₃	0	
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N ⁺ , Nitrate-N total (00630)	mg/l		☐ Nitrate-N ⁺ , Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				5/7/86	



SCIENTIFIC LABORATORY
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy metal
GL... WATER CHEMISTRY
AND NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	HM 788	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	860415	SITE INFORMATION	Sample location	Well OW-14	
Collection TIME	1735		Collection site description	North of Process Area Giant Lining Refinery	
Collected by — Person/Agency					

BOYER /OCD

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	26.5'	Discharge	—	Sample type	Grab
pH (00400) (Geoscan) 8.2		Conductivity (Uncorrected) 1300 μ mho		Water Temp. (00010) 13.5°C		Conductivity at 25°C (00094) μ mho	
Field comments Geoscan 1400 @ 13°C							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☐ NA: No acid added		☐ Other-specify:		☐ A: 5ml conc. HNO ₃ added ☒ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho		☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l		☐ Magnesium (00925)	mg/l	
☒ Other: ICAP SCAN			☐ Sodium (00930)	mg/l	
☐ Other:			☐ Potassium (00935)	mg/l	
☐ Other:			☐ Bicarbonate (00440)	mg/l	
			☐ Chloride (00940)	mg/l	
			☐ Sulfate (00945)	mg/l	
			☐ Total filterable residue (dissolved) (70300)	mg/l	
			☐ Other:		
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N ⁺ , Nitrate-N total (00630)	mg/l		☐ Nitrate-N ⁺ , Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				5/2/86	Jim Ashby

Lab Number: HM 788
Date Submitted: 4/17/86
By: Boyer

Sample Code: Coniza Ref. OW-14
Date Analyzed: 4/28/86
Reviewed By: Jim Salby
Date Reported: 5/2/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u><0.1</u>	<u> </u>
Barium	<u>0.1</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>0.4</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>42.</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u><0.1</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>10.</u>	<u> </u>
Manganese	<u>0.56</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>2.5</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>1.4</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u><0.1</u>	<u> </u>
Arsenic		<u> </u>
Selenium		<u> </u>
Mercury		<u> </u>

86-0435-C

STATE OF NEW MEXICO

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570REPORT TO:
PLEASE PRINT

DAVID G. BOYER

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.: OR- 435 A,BDATE REC.: 4/17/86SLD PRIORITY #: 3

PHONE(S): 827-5812

USER CODE: 8 2 2 3 5

SUBMITTER:

BoyerSUBMITTER CODE: SAMPLE TYPE: WATER ☒, SOIL ☐, OTHER ☐SAMPLE TYPE CODE: COLLECTED: 86/04/15-13:15 BY DRBCODE:
Y Y M M D D H H M M I I ISOURCE: Well DW-16CODE:
AQUIFER DEPTHNEAREST CITY: GallupCODE: LOCATION: Giant Ciniya RefineryCODE:
TOWNSHIP RANGE SECTION TRACTSpH= 8.2; Conductivity= 900 umho/cm at 13.5 °C; Chlorine Residual= Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Purged 4/11, bailed for sampling 4/15I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. David G. BoyerMethod of shipment to the Laboratory Hand carried & CarThis form accompanies 2 Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☐ P- $\text{Na}_2\text{S}_2\text{O}_3$; Sample preserved with $\text{Na}_2\text{S}_2\text{O}_3$ to remove chlorine residual.

I (we) certify that this sample was transferred from
to at (location) on / / : and that the statements in this block are correct.Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐Signatures (we) certify that this sample was transferred from
to at (location) on / / : and that the statements in this block are correct.Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐Signatures

LAB. No.: ORG- 435

QUALITATIVE		QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE		QUANTITATIVE	EXTRACTABLE SCREENS
X	X	X	ALIPHATIC HYDROCARBON SCREEN				ALIPHATIC HYDROCARBONS
X	X	X	AROMATIC HYDROCARBON SCREEN				CHLORINATED HYDROCARBON PESTICIDES
X	X	X	HALOGENATED HYDROCARBON SCREEN				CHLOROPHENOXY ACID HERBICIDES
			GAS CHROMATOGRAPH/MASS SPECTROMETER				HYDROCARBON FUEL SCREEN
							ORGANOPHOSPHATE PESTICIDES
							POLYCHLORINATED BIPHENYLS (PCB's)
							POLYNUCLEAR AROMATIC HYDROCARBONS
							TRIAZINE HERBICIDES
			SPECIFIC COMPOUNDS				SPECIFIC COMPOUNDS

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
arom. burg. screen [⊗]	none detected		
1,2-dichloroethane	6		
		* DETECTION LIMIT	

REMARKS: $\otimes$ One compound was detected by the aromatic screen that was not identified.

Seal(s) Intact: Yes NOX. Seal(s) broken by: _____ date: _____
I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.
Date(s) of analysis: 4-29-86. Analyst's signature: [Signature]
I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: [Signature]



SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	WC 1694	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	86 04 15	Collection TIME	1815	SITE INFORMATION	Sample location: Well OW-16
Collected by — Person/Agency	Boyer/OCD		Collection site description: North of Tank Storage Area		

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	26.5	Discharge	-	Sample type	Grab
pH (00400)	(Geosci) 8.2	Conductivity (Uncorrected)	900 μ mho	Water Temp. (00010)	13.5 $^{\circ}$ C	Conductivity at 25 $^{\circ}$ C (00094)	μ mho
Field comments: Geoscience cond 1100 @ 13.5							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added		☐ Other-specify:	☐ A: 5ml conc. HNO ₃ added	☐ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

#F, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 $^{\circ}$ C (00095)	μ mho		☒ Calcium (00915)	10.0 mg/l	4-29
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	1.22 mg/l	"
Other: Lab pH	8.41	4/18	☒ Sodium (00930)	253 mg/l	"
☐ Other:			☒ Potassium (00935)	0 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	364.3 mg/l	4/18
			☒ Chloride (00940)	159.7 mg/l	4/28
			☒ Sulfate (00945)	30.3 mg/l	4/25
			☒ Total filterable residue (dissolved) (70300)	720 mg/l	5/2
			Other: CO ₃	5.0	4/18
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				5/7/86	



SCIENTIFIC LABORATORY
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy Metal
GENERAL WATER CHEMISTRY
AND NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	HM 789	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	860415	SITE INFORMATION	Sample location: Well OW-16		
Collection TIME	1235	Collected by — Person/Agency	Collection site description: North of Tank Storage Area		
	BOYER/OCD				

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	26.5	Discharge	-	Sample type	Grab
pH (00400)		Conductivity (Uncorrected)		Water Temp. (00010)		Conductivity at 25°C (00094)	
(Geosci) 8.2		900 µmho		13.5°C		µmho	
Field comments: Geoscience cond 1100@13.5							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 µmembrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☐ NA: No acid added		☐ Other-specify:		☐ A: 5ml conc. HNO ₃ added
		☒ A: 4ml fuming HNO ₃ added		

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho		☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l		☐ Magnesium (00925)	mg/l	
☒ Other: ICAP SCAN			☐ Sodium (00930)	mg/l	
☐ Other:			☐ Potassium (00935)	mg/l	
☐ Other:			☐ Bicarbonate (00440)	mg/l	
			☐ Chloride (00940)	mg/l	
			☐ Sulfate (00945)	mg/l	
			☐ Total filterable residue (dissolved) (70300)	mg/l	
			☐ Other:		
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N ⁺ , Nitrate-N total (00630)	mg/l		☐ Nitrate-N ⁺ , Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:			Analyst	Date Reported	Reviewed by
☐ Other:				5/2/86	J. Ashby
Laboratory remarks					

Lab Number: AM 789

Sample de: Ciniza Ref. DW-16

Date Submitted: 4/17/86

Date Analyzed: 4/28/86

By: Boyer

Reviewed By: Jim Ashby

Date Reported: 5/2/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u><0.1</u>	<u> </u>
Barium	<u><0.1</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>1.5</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>7.4</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u><0.1</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>1.3</u>	<u> </u>
Manganese	<u><0.05</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>3.0</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>0.3</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u><0.1</u>	<u> </u>
Arsenic		<u> </u>
Selenium		<u> </u>
Mercury		<u> </u>

ENVIRONMENT

APR 28 1986

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

DAVID G. CROUCH CONSERVATION DIVISION
NEW MEXICO OIL CONSERVATION DIV.
P.O. BOX 2088
SANTA FE, NM 87504-2088

S.L.D. No.: OR- 307A, B
DATE REC.: 3/7/86.
SLD PRIORITY #: 2

USER CODE: | 8 | 2 | 2 | 3 | 5 |

SUBMITTER CODE: | | | |

SAMPLE TYPE CODE: | |

CODE:

Y	Y	M	M	D	D	H	H	M	M	I	I	I

CODE: | | + | | + | | |

AQUIFER DEPTH

CODE: | | | | |

CODE:

--	--	--	--	--	--	--	--	--	--

TOWNSHIP RANGE SECTION TRACTS

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sweet Hydrocarbon odor. DTW 32' 10.5" from Top
of inner casing Well purged 3/3

Method of shipment to the Laboratory *Hand carried*

This form accompanies Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:

☐	NP:	No preservation; sample stored at room temperature.
☒	P-Ice	Sample stored in an ice bath (not frozen).
☐	P- $\text{Na}_2\text{S}_2\text{O}_3$:	Sample preserved with $\text{Na}_2\text{S}_2\text{O}_3$ to remove chlorine residual.

I (we) certify that this sample was transferred from _____
to _____ at (location) _____ on _____

____/____/____ - ____:____ and that the statements in this block are correct.
DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

(we) certify that this sample was transferred from _____
to _____ at (location) _____ on _____

____/____/____-____:____ and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

ANALYSES REQUESTED

LAB. No.: ORG-307

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS
		Please identify major peaks Thanks. DJS			
REMARKS:					

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
aromatic hydrocarbons **		halogenated hydrocarbons	* none detected
Benzene	8265		
Toluene	15000		
Ethylbenzene	1240		
p-xylene	2120		
m-xylene	6285		
o-xylene	3425	** Detection Limit	1
		* DETECTION LIMIT	1
REMARKS:			

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ___ NO ___. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 3/25/86. Analyst's signature: Gary C. Eden

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: L. Meyerhew



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

FN

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	3 7 86	LAB NO.	21090	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	86 03 05	SITE INFORMATION	Sample location		
Collection TIME	1730		Caniza Refinery OW-17		
Collected by — Person/Agency		Collection site description			
BOYER/BAILEY 10CD		OW Series Monitor Wells			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	32' 10.5"	Discharge	—	Sample type	Grab
pH (00400)	7 (Paper)	Conductivity (Uncorrected)	1500 μ mho	Water Temp. (00010)	14 °C	Conductivity at 25°C (00094)	μ mho
Field comments							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify:				

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho		☒ Calcium (00915)	mg/l	3-18
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	mg/l	"
☐ Other:			☒ Sodium (00930)	mg/l	"
☐ Other:			☒ Potassium (00935)	mg/l	"
☐ Other:			☒ Bicarbonate (00440)	mg/l	3/13
			☒ Chloride (00940)	mg/l	3-19
			☒ Sulfate (00945)	mg/l	3/27
			☒ Total filterable residue (dissolved) (70300)	ma/l	4/17
			☒ Other: CO ₃	0.0	3/13
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					

Laboratory remarks	Analyst	Date Reported	Reviewed by
		4 25 86	Q



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

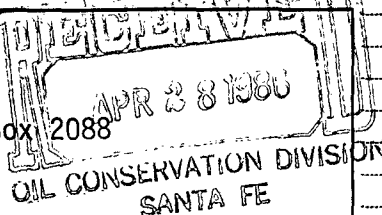
PF

Heavy metal
GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	3/7/86	LAB NO	527	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	86103105	SITE INFORMATION	Sample location		
Collection TIME	1730		CINIZA REFINERY OW-17		
Collected by — Person/Agency		Collection site description			
BOYER/BAILEY		OW Series Monitor Wells			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088



Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type
		32' 10.5"	—	Grab
pH (00400)	Conductivity (Uncorrected)	Water Temp. (00010)	Conductivity at 25°C (00094)	
7 (Paper)	1500 µmho	14 °C	µmho	
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 µm membrane filter	☒ A: 2 ml H ₂ SO ₄ /L added 4ml conc HNO ₃
☐ NA: No acid added ☐ Other-specify:			

ANALYTICAL RESULTS from SAMPLES

Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho	☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l	☐ Magnesium (00925)	mg/l	
☒ Other: ICAP SCAN	3/21/86	☐ Sodium (00930)	mg/l	
☒ Other: AS	4/10/86	☐ Potassium (00935)	mg/l	
☒ Other: SE	4/26/86	☐ Bicarbonate (00440)	mg/l	
		☐ Chloride (00940)	mg/l	
		☐ Sulfate (00945)	mg/l	
		☐ Total filterable residue (dissolved) (70300)	mg/l	
		☐ Other:		
NF, A-H ₂ SO ₄		F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l	☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l	☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l	☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l	☐ Other:		
☐ Total organic carbon ()	mg/l	Analyst		
☐ Other:		Date Reported		
☐ Other:		Reviewed by		
Laboratory remarks		4/18/86 Jim Ashby		

Lab Number: #10 527

Date Submitted: 3/17/86

By: Bayer

Sample Code: Ciniga OW-17

Date Analyzed: 3/21/86

Reviewed By: Jim Ashby

Date Reported: 4/18/86

<u>Element</u>	<u>ICAP VALUE (MG/L)</u>	<u>AA VALUE (MG/L)</u>
Aluminum	<u><0.1</u>	<u> </u>
Barium	<u>0.3</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>40.3</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>97.</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u><0.1</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>17.</u>	<u> </u>
Manganese	<u>2.2</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>2.9</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>3.5</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u><0.1</u>	<u> </u>
Arsenic		<u><0.005</u>
Selenium		<u><0.005</u>
Mercury		<u> </u>

86-0445-C

STATE OF NEW MEXICO

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570REPORT TO:
PLEASE PRINT

DAVID G. BOYER

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.: OR-

445A, B

DATE REC.:

4/17/86

SLD PRIORITY #:

J

PHONE(S):

827-5812

USER CODE: 8 2 2 3 5

SUBMITTER:

Boyer

SUBMITTER CODE: [] [] [] []

SAMPLE TYPE: WATER ☒, SOIL ☐, OTHER ☐

SAMPLE TYPE CODE: [] []

COLLECTED: 86/04/15-18:35

DATE

TIME

BY: DGB

INITIALS

CODE: [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []

Y Y H M D D H H M M I I I

SOURCE: Well OW-17

CODE: [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []

AQUIFER DEPTH

NEAREST CITY: Gallup

CODE: [] [] [] [] [] []

LOCATION: Giant Cimarron Refinery

CODE: [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []

TOWNSHIP RANGE SECTION TRACTS

pH= 7.4; Conductivity= 1700 umho/cm at 13.5 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Well purged 4/11, Bailed for sample 4/15
Strong hydrocarbon odor, well next to product
storage area. Resample of 3/5/86

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. David G. Boyer

Method of shipment to the Laboratory Car & Hand Carried

This form accompanies 2 Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
- ☒ P-Ice Sample stored in an ice bath (not frozen).
- ☐ P- $\text{Na}_2\text{S}_2\text{O}_3$; Sample preserved with $\text{Na}_2\text{S}_2\text{O}_3$ to remove chlorine residual.

I (we) certify that this sample was transferred from

to at (location) on

/ / - : and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

(we) certify that this sample was transferred from

to at (location) on

/ / - : and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

ANALYSIS REQUESTED

LAB. No.: ORG- 445

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
☒	☒	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
☒	☒	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
1,2-dichloroethane	150		
1,2-dibromoethane	80		
benzene	9100		
toluene	21000		
ethylbenzene	1200		
p-xylene	2400		
m-xylene	6700		
o-xylene	4100	* DETECTION LIMIT	50 ug/ml
REMARKS: Ten other compounds were detected by the aromatic screen that were not identified.			

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes NO ☒ Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 4-29-86 Analyst's signature: [Signature]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: [Signature]



SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	WC 1695	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	4/15/86	SITE INFORMATION	Sample location		
Collection TIME	1635		Well OW-17		
Collected by — Person/Agency		North of Tank Storage Area			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	32.0'	Discharge	—	Sample type	Grab
pH (00400)	7.4	Conductivity (Uncorrected)	1700 μ mho	Water Temp. (00010)	13.5 °C	Conductivity at 25 °C (00094)	μ mho
Field comments							
Grossing 2200 at 13.5							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added		☐ A: 5ml conc. HNO ₃ added		☐ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	μ mho	☒ Calcium (00915)	110.4 mg/l	4-29
☐ Total non-filterable residue (suspended) (00530)	mg/l	☒ Magnesium (00925)	23.4 mg/l	"
☒ Other: Lab pH	7.96	☒ Sodium (00930)	338.1 mg/l	"
☐ Other:		☒ Potassium (00935)	16.7 mg/l	"
☐ Other:		☒ Bicarbonate (00440)	276.5 mg/l	4/18
		☒ Chloride (00940)	246.1 mg/l	4/28
		☒ Sulfate (00945)	22.1 mg/l	4/25
		☒ Total filterable residue (dissolved) (70300)	1350 mg/l	5/4
		☒ Other: CO ₃	0	4/18
NF, A-H ₂ SO ₄		F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l	☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l	☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l	☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l	☐ Other:		
☐ Total organic carbon ()	mg/l			
☐ Other:				
☐ Other:				
Laboratory remarks		Analyst	Date Reported	Reviewed by
			5/7/86	CO



SCIENTIFIC LABORATORY
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy metal
GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	HM 790	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	4/15/86	SITE INFORMATION	Sample location: Well OW-17		
Collection TIME	1835	Collection site description	North of Tank Storage Area		
Collected by — Person/Agency	Boyer /OCD				

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	32.0'	Discharge	—	Sample type	Grab
pH (00400)	7.4	Conductivity (Uncorrected)	1700 μ mho	Water Temp. (00010)	13.5 °C	Conductivity at 25 °C (00094)	μ mho
Field comments: Cassi LMR 2200 at 13.5							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☐ NA: No acid added		☐ Other-specify:		☐ A: 5ml conc. HNO ₃ added ☒ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	μ mho		☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l		☐ Magnesium (00925)	mg/l	
☒ Other: ICAP SCAN			☐ Sodium (00930)	mg/l	
☒ Other: CR (AA)			☐ Potassium (00935)	mg/l	
NF, A-H ₂ SO ₄			☐ Bicarbonate (00440)	mg/l	
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Chloride (00940)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Sulfate (00945)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total filterable residue (dissolved) (70300)	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l		F, A-H ₂ SO ₄		
☐ Other:			☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Other:			☐ Ammonia-N dissolved (00608)	mg/l	
			☐ Total Kjeldahl-N ()	mg/l	
			☐ Other:		
Laboratory remarks			Analyst	Date Reported	Reviewed by
				5/9/86	Jim Ashby

Lab Number: #M 790

Sample Code: Shant Cinija 00-17

Date Submitted: 4/17/86

Date Analyzed: 4/28/86

By: Boyer

Reviewed By: Jim Ashby

Date Reported: 5/9/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u><0.1</u>	<u> </u>
Barium	<u>0.4</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>0.4</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>110.</u>	<u> </u>
Chromium	<u><0.1</u>	<u><0.005</u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u><0.1</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>20.</u>	<u> </u>
Manganese	<u>2.1</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>1.8</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>4.1</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u><0.1</u>	<u> </u>
Arsenic		<u> </u>
Selenium		<u> </u>
Mercury		<u> </u>

86-0438-C

ENVIRONMENT

STATE OF NEW MEXICO

CONSERVATION DIVISION

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

REPORT TO:

DAVID G. BOYER

PLEASE PRINT

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.:

OR-

438 A, B

DATE REC. :

4/17/86

SLD PRIORITY #:

3

PHONE(S):

827-5812

USER CODE: 8 2 2 3 5

SUBMITTER:

BOYER

SUBMITTER CODE: | | | | |

SAMPLE TYPE: WATER ☒ SOIL ☐ OTHER ☐

SAMPLE TYPE CODE: | | |

COLLECTED:

86/04/15-17:15

BY

LGB

CODE:

Y Y M M D D H H M M I I I

SOURCE:

Well OW-20

CODE:

AQUIFER DEPTH

NEAREST CITY:

Gallup

CODE:

LOCATION:

Giant Cininga Refinery

CODE:

TOWNSHIP RANGE SECTION TRACTS

pH=12.2; Conductivity=7500 umho/cm at 14.5°C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity=; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Slightly foamy
well purged 4/11, bailed for sampling 4/15

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities.

Method of shipment to the Laboratory

Car & Hand Carried

This form accompanies 2 Septum Vials, Glass Jugs,

Containers are marked as follows to indicate preservation:

☐ NP: No preservation; sample stored at room temperature.☒ P-Ice Sample stored in an ice bath (not frozen).☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from

to at (location) on

DATE AND TIME and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

(we) certify that this sample was transferred from

to at (location) on

DATE AND TIME and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

ANALYSES REQUESTED

LAB. NO.: ORG- 438

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
halo. purg. screen	none detected		
benzene	110		
toluene	130		
ethylbenzene	4		
p-xylene	5		
m-xylene	12		
o-xylene	5		
		* DETECTION LIMIT	5 ug/ml

REMARKS:

6 other major peaks were also detected that were not identified by the aromatic screen that were not identified; but then later identified by GC/MS, as: hexane, methylpentene, tetrahydrofuran, butanone, methylcyclopentanone, and some trimethylbenzenes.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ___ NO X. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 4-29-86; 5-22-86 Analyst's signature: J. J. Timney

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: K. Meyer



SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	WC1696	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	86 04 15	SITE INFORMATION	Sample location		
Collection TIME	1715		Well OW-20		
Collected by — Person/Agency		South mouth of Tank Storage Area in process area beside cooling towers			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	47.0'	Discharge	—	Sample type	Grab
pH (00400)	12.2	Conductivity (Uncorrected)	7500 μ mho	Water Temp. (00010)	14.5 °C	Conductivity at 25°C (00094)	μ mho
Field comments Geosci and 7700 @ 14							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added		☐ Other-specify:	☐ A: 5ml conc. HNO ₃ added	☐ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

QF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho		☒ Calcium (00915)	480 mg/l	4/29
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	5.86 mg/l	"
☒ Other: Lab pH	11.58	4/18	☒ Sodium (00930)	409.4 mg/l	"
☐ Other:			☒ Potassium (00935)	58.1 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	0.0 mg/l	
			☒ Chloride (00940)	362.9 mg/l	4/28
			☒ Sulfate (00945)	17.5 mg/l	4/25
			☒ Total filterable residue (dissolved) (70300)	2340 mg/l	5/4
			☒ Other: CO ₃	0.0	
NF, A-H ₂ SO ₄			Hydroxide Ion Present		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		F, A-H ₂ SO ₄		
☐ Ammonia-N total (00610)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Total organic carbon ()	mg/l		☐ Other:		
☐ Other:			Analyst	Date Reported	Reviewed by
☐ Other:				5/7/86	GD

Laboratory remarks

CO₂: 25.46



SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	WC1696	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	860415	SITE INFORMATION	Sample location		
Collection TIME	1715		Well OW-20		
Collected by — Person/Agency		Collection site description			
Boyer/OCD		South of Tank Storage Area in process area beside cooling towers			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	47.0'	Discharge	—	Sample type	Grab
pH (00400)	12.2	Conductivity (Uncorrected)	7500 μ mho	Water Temp. (00010)	14.5 °C	Conductivity at 25 °C (00094)	μ mho
Field comments							
Geoscience and 7700 @ 14							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added		☐ Other-specify:	☐ A: 5ml conc. HNO ₃ added	☐ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

F, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	μ mho		☒ Calcium (00915)	480 mg/l	4/28
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	5.86 mg/l	4
☒ Other: Lab pH	11.58	4/18	☒ Sodium (00930)	409.4 mg/l	4
☐ Other:			☒ Potassium (00935)	58.1 mg/l	4
☐ Other:			☒ Bicarbonate (00440)	0.0 mg/l	
			☒ Chloride (00940)	362.9 mg/l	4/28
			☒ Sulfate (00945)	17.5 mg/l	4/25
			☒ Total filterable residue (dissolved) (70300)	2340 mg/l	5/4
			☒ Other: CO ₃	0.0	
NF, A-H ₂ SO ₄			Hydroxide Ion Present		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		F, A-H ₂ SO ₄		
☐ Ammonia-N total (00610)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Total organic carbon ()	mg/l		☐ Other:		
☐ Other:			Analyst	Date Reported	Reviewed by
☐ Other:				5/7/86	CD

Laboratory remarks: Recalculation of CO₃²⁻ and OH⁻ ion according to standard methods. CO₃²⁻ = 0.0 mg/l OH⁻ = 2928 mg/l



SCIENTIFIC LABORATORY
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy metal
GENERAL WATER CHEMISTRY
AND NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	HM 791	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	86 04 15	SITE INFORMATION	Sample location	JUN Well 86 OW-20	
Collection TIME	1715			Collection site description	
Collected by — Person/Agency		Bayer/OCD			
		SANTA FE			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	47.0'	Discharge	—	Sample type	Grab
pH (00400)	12.2	Conductivity (Uncorrected)	7500 μ mho	Water Temp. (00010)	14.5 °C	Conductivity at 25 °C (00094)	μ mho
Field comments							
Geoscience and 7700 @ 14							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☐ NA: No acid added		☐ Other-specify:		☐ A: 5ml conc. HNO ₃ added ☒ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	μ mho		☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l		☐ Magnesium (00925)	mg/l	
☒ Other: ICAP SCW			☐ Sodium (00930)	mg/l	
☒ Other: Cu (AA)			☐ Potassium (00935)	mg/l	
☐ Other:			☐ Bicarbonate (00440)	mg/l	
			☐ Chloride (00940)	mg/l	
			☐ Sulfate (00945)	mg/l	
			☐ Total filterable residue (dissolved) (70300)	mg/l	
			☐ Other:		
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N ⁺ , Nitrate-N total (00630)	mg/l		☐ Nitrate-N ⁺ , Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:			Analyst	Date Reported	Reviewed by
☐ Other:				6/2/86	Jim Ashby
Laboratory remarks					

Lab Number: MM 791

Sample de: Grant Cinniz OW-20

Date Submitted: 4/17/86

Date Analyzed: 4/28/86

By: Boyer

Reviewed By: Jim Sahly

Date Reported: 6/2/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u><0.1</u>	<u> </u>
Barium	<u>2.8</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u><0.1</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>510.</u>	<u> </u>
Chromium	<u><0.1</u>	<u>0.043</u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u><0.1</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u><0.1</u>	<u> </u>
Manganese	<u><0.05</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u><0.1</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>11.</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u><0.1</u>	<u> </u>
Arsenic	<u> </u>	<u> </u>
Selenium	<u> </u>	<u> </u>
Mercury	<u> </u>	<u> </u>

ENVIRONMENT

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

STATE OF NEW MEXICO

APR 28 1986

DAVID G. BOYER
NEW MEXICO OIL CONSERVATION DIV.
P.O. BOX 2088
SANTA FE, NM 87504-2088

SLD PRIORITY #: 3

USER CODE: | 8 | 2 | 2 | 3 | 5 |

SUBMITTER CODE: | | | | |

SAMPLE TYPE CODE: | | |

CODE:

V	V	M	M	D	D	H	H	M	M	I	I	I

CODE: |

AQUIFER DEPTH

CODE: | | | | |

CODE:

--	--	--	--	--	--	--	--	--	--

TOWNSHIP RANGE SECTION TRACTS

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e., odors, etc.)

Bailed after purging on 3/3

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. *David J. Kozlowski*

Method of shipment to the Laboratory Hand Carried

This form accompanies 2 Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:

☐ NP: No preservation; sample stored at room temperature.

 P-Ice Sample stored in an ice bath (not frozen).

P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from _____
to _____ at (location) _____ on _____

____/____/____-____:____ and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

(we) certify that this sample was transferred from _____
to _____ at (location) _____ on _____

____/____/____-____:____ and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

ANALYSES REQUESTED

LAB. NO.: ORG- 301

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
arom. purge screen	none detected		
halo. purge screen	none detected		
		* DETECTION LIMIT	1 µg/mL

REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes NO X. Seal(s) broken by: date:

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 13 March 86. Analyst's signature: J. J. J. J.

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: K. M. Meyerhen



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	3/7/86	LAB NO.	C 1098	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	86/03/05	SITE INFORMATION	Sample location	Ciniza OW - 24	
Collection TIME	1210			Collection site description	
Collected by — Person/Agency	Boyer/Bailey/Anderson /OCD			Ciniza Refinery	

SEND FINAL REPORT TO
ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	From top of well	Discharge	—	Sample type	Grab
pH (00400)	7/papers	Conductivity (Uncorrected)	800 µmho	Water Temp. (00010)	13 °C	Conductivity at 25 °C (00094)	µmho
Field comments: Bailed after purging on 3/3							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 µm membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify:				

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	µmho		☒ Calcium (00915)	13.6 mg/l	2-18
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	6.34 mg/l	"
☐ Other:			☒ Sodium (00930)	246 mg/l	"
☐ Other:			☒ Potassium (00935)	1.95 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	645 mg/l	3/19
			☒ Chloride (00940)	33.5 mg/l	3-19
			☒ Sulfate (00945)	40.3 mg/l	3/27
			☒ Total filterable residue (dissolved) (70300)	805 mg/l	4/17
			☒ Other: CO ₂	20.4	3/19
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:			Analyst	Date Reported	Reviewed by
☐ Other:				4/25/86	CS

Laboratory remarks



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

ff

Heavy Metal
**GENERAL WATER CHEMISTRY
AND NITROGEN ANALYSIS**

DATE RECEIVED 3/7/86	LAB NO. HMS24	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE 3/10/86	SITE INFORMATION	Sample location Ciniza Old-24
Collection TIME 1210		Collection site description Ciniza Refinery
Collected by — Person/Agency Boyer/Bailey/Anderson/OCD		

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: **David Boyer**

Phone: **827-5812**

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level 32' 11"	Discharge -	Sample type Grab
pH (00400) 7 (paper)	Conductivity (Uncorrected) 800 µmho	Water Temp. (00010) 13 °C	Conductivity at 25°C (00094) µmho	
Field comments Bailed after pumping on 3/3				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted 1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 µmembrane filter	☒ A: 2 mL H ₂ SO ₄ added 4 mL conc HNO₃
☐ NA: No acid added ☐ Other-specify:			

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho		☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l		☐ Magnesium (00925)	mg/l	
☒ Other: ICAP SCAN		3/26/86	☐ Sodium (00930)	mg/l	
☒ Other: Se	<0.005	4/16/86	☐ Potassium (00935)	mg/l	
☒ Other: As	0.006	4/10/86	☐ Bicarbonate (00440)	mg/l	
			☐ Chloride (00940)	mg/l	
			☐ Sulfate (00945)	mg/l	
			☐ Total filterable residue (dissolved) (70300)	mg/l	
			☐ Other:		
NF, A-H₂SO₄			F, A-H₂SO₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:			Analyst	Date Reported	Reviewed by
☐ Other:				5/2/86	Jim Ashby

Laboratory remarks

Lab Number: 524

Sample ID: Ciniza OW 24

Date Submitted: 3/7/86

Date Analyzed: 3/20/86

By: Bayer

Reviewed By: Jm Ashby

Date Reported: 5/2/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u>0.4</u>	<u> </u>
Barium	<u><0.1</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>0.6</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>11.</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u>0.3</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>3.3</u>	<u> </u>
Manganese	<u><0.05</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>4.4</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>0.4</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u><0.1</u>	<u> </u>
Arsenic		<u>0.006</u>
Selenium		<u><0.005</u>
Mercury		<u> </u>

86- 0312-C

STATE OF NEW MEXICO

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

ENVIRONMENT

REPORT TO:
PLEASE PRINT

DAVID G. BOYER

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.: OR- 312 A, BDATE REC.: 3/7/86SLD PRIORITY #: 3

PHONE(S):

827-5812

USER CODE: 8 2 2 3 5

SUBMITTER:

ROGER ANDERSONSUBMITTER CODE: SAMPLE TYPE: WATER ☒, SOIL ☐, OTHER ☐SAMPLE TYPE CODE: COLLECTED: 86/03/06-15:05 BY RCA

DATE

TIME

INITIALS

CODE:
Y Y M M D D H H M M I I ISOURCE: CATHODIC PROTECTION Well @ Pond 9BCODE:
AQUIFER DEPTHNEAREST CITY: GALLUPCODE:

LOCATION:

CODE:
TOWNSHIP RANGE SECTION TRACTSpH= 7.7; Conductivity= 1220 umho/cm at 13.5 °C; Chlorine Residual= Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Taken from flow line from cathodic protection well at N.E. corner of pond 9BI certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. Roger AndersonMethod of shipment to the Laboratory Hand carriedThis form accompanies 2 Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from
to at (location) on / / : and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐Signatures (we) certify that this sample was transferred from
to at (location) on / / : and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐Signatures

ANALYSES REQUESTED

LAB. NO.: ORG- 312

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
☒	☒	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
☒	☒	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
<i>aromatic hydrocarbons</i>	<i>** none detected</i>	<i>halogenated hydrocarbons</i>	<i>* none detected</i>
		<i>** Detection Limit</i>	<i>1</i>
		<i>* DETECTION LIMIT</i>	<i>1</i>

REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ___ NO ___. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: *3/26/92*. Analyst's signature: *Mary C. Edger*I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: *R. Meyerhen*



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

FN

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED 3/7/86	LAB NO. 1093	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE 86/03/06	SITE INFORMATION	Sample location Cathodic protection well @ Pond 9B
Collection TIME 1505		Collection site description Cathodic protection well at N.E. corner of Pond 9B
Collected by — Person/Agency Bailey/Anderson / OCD		

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: **David Boyer**

Phone: 827-5812

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type Grab
pH (00400) 7.7 (Paper)	Conductivity (Uncorrected) 1220 μ mho	Water Temp. (00010) 13.5 $^{\circ}$ C	Conductivity at 25 $^{\circ}$ C (00094) μ mho	
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted 1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify:			

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 $^{\circ}$ C (00095)	μ mho		☒ Calcium (00915)	16.0 mg/l	3-18
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	1.22 mg/l	"
☐ Other:			☒ Sodium (00930)	345 mg/l	"
☐ Other:			☒ Potassium (00935)	1.17 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	467 mg/l	3/19
			☒ Chloride (00940)	108 mg/l	3-19
			☒ Sulfate (00945)	844 mg/l	3/27
			☒ Total filterable residue (dissolved) (70300)	1123 mg/l	4/17
			☒ Other: CO₃	16.8	3/19
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N ⁺ , Nitrate-N total (00630)	mg/l		☐ Nitrate-N ⁺ , Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					

Laboratory remarks	Analyst	Date Reported 4/25/86	Reviewed by CD
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New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

PF

Heavy Metal
~~GENERAL WATER CHEMISTRY~~
~~AND NITROGEN ANALYSIS~~

DATE RECEIVED	3/7/86	LAB NO.	HM528	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	8610306	SITE INFORMATION	Sample location	Cinija Refinery Cathodic protection well at Pond 9B	
Collection TIME	1505			Collection site description	
Collected by — Person/Agency		BAILEY/ANDERSON/10CD			
		Cathodic protection well at NE corner of Pond 9B			

SEND FINAL REPORT TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812



SAMPLING CONDITIONS

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type
pH (00400)		Conductivity (Uncorrected)	Water Temp. (00010)	Conductivity at 25°C (00094)
7.7 (Paper)		1220 μ mho	13.5 °C	μ mho
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☒ A: 2 ml H ₂ SO ₄ /L added 4 ml conc HNO ₃
☐ NA: No acid added ☐ Other-specify:			

ANALYTICAL RESULTS from SAMPLES

Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho	☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l	☐ Magnesium (00925)	mg/l	
☒ Other: ICAP SCAN	3/21/86	☐ Sodium (00930)	mg/l	
☒ Other: AS	20.005	☐ Potassium (00935)	mg/l	
☒ Other: Se	0.017	☐ Bicarbonate (00440)	mg/l	
		☐ Chloride (00940)	mg/l	
		☐ Sulfate (00945)	mg/l	
		☐ Total filterable residue (dissolved) (70300)	mg/l	
		☐ Other:		
NF, A-H ₂ SO ₄		F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l	☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l	☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l	☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l	☐ Other:		
☐ Total organic carbon ()	mg/l			
☐ Other:				
☐ Other:				

Laboratory remarks

Lab Number: MM 528

Date Submitted: 3/7/86

By: Bailey

Sample Code: Ciniza Wellat Pond 9-8

Date Analyzed: 3/21/86

Reviewed By: Jim Ashby

Date Reported: 4/18/86

<u>Element</u>	<u>ICAP VALUE (MG/L)</u>	<u>AA VALUE (MG/L)</u>
Aluminum	<u>40.1</u>	<u> </u>
Barium	<u>40.1</u>	<u> </u>
Beryllium	<u>40.1</u>	<u> </u>
Boron	<u>0.4</u>	<u> </u>
Cadmium	<u>40.1</u>	<u> </u>
Calcium	<u>11.</u>	<u> </u>
Chromium	<u>40.1</u>	<u> </u>
Cobalt	<u>40.1</u>	<u> </u>
Copper	<u>40.1</u>	<u> </u>
Iron	<u>40.1</u>	<u> </u>
Lead	<u>40.1</u>	<u> </u>
Magnesium	<u>1.1</u>	<u> </u>
Manganese	<u>40.05</u>	<u> </u>
Molybdenum	<u>40.1</u>	<u> </u>
Nickel	<u>40.1</u>	<u> </u>
Silicon	<u>1.7</u>	<u> </u>
Silver	<u>40.1</u>	<u> </u>
Strontium	<u>1.4</u>	<u> </u>
Tin	<u>40.1</u>	<u> </u>
Vanadium	<u>40.1</u>	<u> </u>
Zinc	<u>40.1</u>	<u> </u>
Arsenic		<u>40.005</u>
Selenium		<u>0.017</u>
Mercury		<u> </u>

A L T H ENVIRONMENT

STATE OF NEW MEXICO
JUN 1 1963

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

DAVID G. BOYER

P.O. BOX 2088

SANTA FE, NM 87504-2088

PHONE(S) : 827-5812

SUBMITTER:

Boyer

SAMPLE TYPE: WATER ☒ SOIL ☐ , OTHER

COLLECTED: 86/04/15-08:50

BY AKB
INITIALS

SOURCE: well SM4-1

NEAREST CITY:

Gallup

LOCATION:

Giant China Refinery

pH= 6.8 ; Conductivity= 5100 umho/cm at 14 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e., odors, etc.)

well bailed (purged) 4/11, bailed for sample

S.L.D. No.: OR-

OR- 432A, B

DATE REC. :

SLD PRIORITY #:

3

USER CODE: | 8 | 2 | 2 | 3 | 5 |

SUBMITTER CODE: | | | |

SAMPLE TYPE CODE: | |

CODE: | | | | | | | | | | | | | |

CODE: | | + | | + | |

CODE: | | | | |

CODE: | | | | | | | | |
 TOWNSHIP RANGE SECTION TRACTS

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. *Harold G. Reed*

Method of shipment to the Laboratory

This form accompanies 2 Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:

☐ NP: No preservation; sample stored at room temperature.

☒ P-Ice Sample stored in an ice bath (not frozen).

P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from

to at (location) on

____/____/____-____:____ and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

(we) certify that this sample was transferred from

to at (location) on

____/____/____-____:____ and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

ANALYSES REQUESTED

LAB. No.: ORG- 432

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
halo. purg. screen	none detected		
benzene	none detected		
toluene	none detected		
ethylbenzene	none detected		
p-xylene	none detected		
m-xylene	none detected		
o-xylene	none detected		
		* DETECTION LIMIT	2 ug/ml

REMARKS:

~~Four sulfur compounds were detected by GC/MS that were not identified. One compound with an apparent molecular weight = 144 was detected by GC/MS, but it was not identified.~~

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes NO X. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 4-29-86; 5-21-86 Analyst's signature: St. J. J. J.I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: R. Meyer



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

FN

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	WC 1685	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	86/04/15	SITE INFORMATION	Sample location	Well SMW-1	
Collection TIME	0850		Collection site description	Land Treatment area	
Collected by — Person/Agency		Boyer/OCD			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type
		HW 25.54'	—	Grab
pH (00400)	6.8	Conductivity (Uncorrected)	Water Temp. (00010)	Conductivity at 25°C (00094)
(Gensl)		5100 µmho	14 °C	— µmho
Field comments: Geosience cond. 6000 @ 14°C				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 µm membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added		☐ Other-specify:	☐ A: 5ml conc. HNO ₃ added	☐ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

F, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho		☒ Calcium (00915)	244.0 mg/l	4/28
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	34.2 mg/l	"
☒ Other: pH (Lab)	7.90	4/18	☒ Sodium (00930)	1474 mg/l	"
☐ Other:			☒ Potassium (00935)	0.78 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	645.4 mg/l	4/18
			☒ Chloride (00940)	1428 mg/l	4/28
			☒ Sulfate (00945)	1544 mg/l	4/25
			☒ Total filterable residue (dissolved) (70300)	5333 mg/l	5/2
			☒ Other: CO3	0	4/18
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N ⁺ , Nitrate-N total (00630)	mg/l		☐ Nitrate-N ⁺ , Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				5/7/86	



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

RF

Heavy Metal
GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	4/18/86	LAB NO.	HM 780	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	86/04/15	SITE INFORMATION	Sample location		
Collection TIME	0850		Well SMW-1		
Collected by — Person/Agency		Land Treatment area			
Boyer/OCD		Client: Conoco Refinery			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type
		25.54'	—	Grab
pH (00400)	6.8	Conductivity (Uncorrected)	Water Temp. (00010)	Conductivity at 25°C (00094)
		5100 µmho	14 °C	— µmho
Field comments: Geoscience cond. 6000 @ 14°C				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 µm membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☐ NA: No acid added		☐ Other-specify:		☐ A: 5ml conc. HNO ₃ added ☒ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095) _____ µmho		☐ Calcium (00915) _____ mg/l		
☐ Total non-filterable residue (suspended) (00530) _____ mg/l		☐ Magnesium (00925) _____ mg/l		
Other: ICAP SCAN		☐ Sodium (00930) _____ mg/l		
☐ Other: _____		☐ Potassium (00935) _____ mg/l		
☐ Other: _____		☐ Bicarbonate (00440) _____ mg/l		
		☐ Chloride (00940) _____ mg/l		
		☐ Sulfate (00945) _____ mg/l		
		☐ Total filterable residue (dissolved) (70300) _____ mg/l		
		☐ Other: _____		
NF, A-H₂SO₄				
☐ Nitrate-N +, Nitrate-N total (00630) _____ mg/l		F, A-H₂SO₄		
☐ Ammonia-N total (00610) _____ mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631) _____ mg/l		
☐ Total Kjeldahl-N () _____ mg/l		☐ Ammonia-N dissolved (00608) _____ mg/l		
☐ Chemical oxygen demand (00340) _____ mg/l		☐ Total Kjeldahl-N () _____ mg/l		
☐ Total organic carbon () _____ mg/l		☐ Other: _____		
☐ Other: _____		Analyst		
☐ Other: _____		Date Reported		
		5/2/86		
		Reviewed by		
		J. Ashby		
Laboratory remarks				

Lab Number: M 780

Sample de: Plant Ciriza SMW-1

Date Submitted: 4/17/86

Date Analyzed: 4/24/86

By: Boyer

Reviewed By: J. Ashley

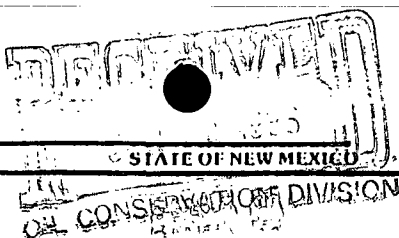
Date Reported: 5/2/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u><0.1</u>	<u> </u>
Barium	<u><0.1</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>1.2</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>270.</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u><0.1</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>75.</u>	<u> </u>
Manganese	<u>0.11</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>3.2</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>8.9</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u><0.1</u>	<u> </u>
Arsenic		<u> </u>
Selenium		<u> </u>
Mercury		<u> </u>

High in Sodium. JTH

86-0433-C

ENVIRONMENT



SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570REPORT TO:
PLEASE PRINT

DAVID G. BOYER

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.: OR-

433A,B

DATE REC. :

4/17/86

SLD PRIORITY #:

3

PHONE(S) :

827-5812

USER CODE: 8 2 2 3 5

SUBMITTER:

BOYER

SUBMITTER CODE: | | | | |

SAMPLE TYPE: WATER ☒ SOIL ☐ OTHER ☐

SAMPLE TYPE CODE: | | |

COLLECTED: 860415-07:45 BY: DGB

DATE

TIME

INITIALS

CODE: | | | | | | | | | | | | | | | |

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SOURCE: Well 5MW-2

CODE: | | | | | | | | | | | | | | | |

AQUIFER

DEPTH

NEAREST CITY: Gallup

CODE: | | | | | | | | | | | | | | | |

LOCATION: Grant Caniza Refinery

CODE: | | | | | | | | | | | | | | | |

TOWNSHIP

RANGE

SECTION

TRACTS

pH= 7.3; Conductivity= 7800 umho/cm at 15.5°C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Well purged 4/11, bailed 4/15 for sample

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. David G. Boyer

Method of shipment to the Laboratory Hand Carried in Car

This form accompanies 2 Septum Vials, Glass Jugs,

Containers are marked as follows to indicate preservation:

☐ NP: No preservation; sample stored at room temperature.☒ P-Ice Sample stored in an ice bath (not frozen).☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from

to at (location) on

/ / - : and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

(we) certify that this sample was transferred from

to at (location) on

/ / - : and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

LAB. NO.: ORG- 433

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE		QUANTITATIVE		PURGEABLE SCREENS		QUALITATIVE		QUANTITATIVE		EXTRACTABLE SCREENS	
					ALIPHATIC HYDROCARBON SCREEN						ALIPHATIC HYDROCARBONS
☒	☒				AROMATIC HYDROCARBON SCREEN						CHLORINATED HYDROCARBON PESTICIDES
☒	☒				HALOGENATED HYDROCARBON SCREEN						CHLOROPHENOXY ACID HERBICIDES
					GAS CHROMATOGRAPH/MASS SPECTROMETER						HYDROCARBON FUEL SCREEN
											ORGANOPHOSPHATE PESTICIDES
											POLYCHLORINATED BIPHENYLS (PCB's)
											POLYNUCLEAR AROMATIC HYDROCARBONS
											TRIAZINE HERBICIDES
					SPECIFIC COMPOUNDS						SPECIFIC COMPOUNDS
REMARKS :											

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
1,2-dichloroethane ^(*)	possible trace < 1 ppb		
1,1,1-trichloroethane	not detected		
aromatic purgables	none detected		
		* DETECTION LIMIT	1 µg/m³

REMARKS: These results were not confirmed. Four sulfur compounds were detected by GC/MS that were not identified. One compound with an apparent molecular weight = 144, was detected by GC/MS, but it was not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes NO X. Seal(s) broken by: _____ date: _____
 I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.
 Date(s) of analysis: 4-29-86; 5-22-86 Analyst's signature: [Signature]
 I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: [Signature]



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	WC 1686	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	06/04/85	SITE INFORMATION	Sample location		
Collection TIME	0945		Well 5MW-2		
Collected by — Person/Agency		Land treatment Area Giant Energy Refinery			
Boyer/OCD					

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	DTW 32.13'	Discharge	-	Sample type	Grab
pH (00400)	7.3	Conductivity (Uncorrected)	7000 μ mho	Water Temp. (00010)	15.5°C	Conductivity at 25°C (00094)	μ mho
Field comments: Geosci cond 7600 @ 15.5							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added		☐ Other-specify:		☐ A: 5ml conc. HNO ₃ added ☐ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

F, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho		☒ Calcium (00915)	204.0 mg/l	4-29
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	68.3 mg/l	"
☒ Other: lab pH	7.93	4/18	☒ Sodium (00930)	2049 mg/l	"
☐ Other:			☒ Potassium (00935)	0.78 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	534.4 mg/l	4/18
			☒ Chloride (00940)	2454 mg/l	4/28
			☒ Sulfate (00945)	1597 mg/l	4/25
			☒ Total filterable residue (dissolved) (70300)	6765 mg/l	5/2
			☒ Other: CO ₃	0	4/18
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				5/7/86	CD



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy Metal
GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	AM 781	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	06/04/85	SITE INFORMATION	Sample location		
Collection TIME	0945		Well 5MW-2		
Collected by — Person/Agency	Boyer / OCD		Collection site description		
			Land treatment Area		
			Giant Energy Refinery		

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type
		DTW 32.13'	~	Grab
pH (00400)	7.3	Conductivity (Uncorrected)	Water Temp. (00010)	Conductivity at 25°C (00094)
(Geosci)		7000 µmho	15.5°C	µmho
Field comments				
Geoscience cont 7600 @ 15.5				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 µm membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☐ NA: No acid added		☐ Other-specify:		☐ A: 5ml conc. HNO ₃ added
				☒ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho		☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l		☐ Magnesium (00925)	mg/l	
☒ Other: IAP SCAN			☐ Sodium (00930)	mg/l	
☐ Other:			☐ Potassium (00935)	mg/l	
☐ Other:			☐ Bicarbonate (00440)	mg/l	
			☐ Chloride (00940)	mg/l	
			☐ Sulfate (00945)	mg/l	
			☐ Total filterable residue (dissolved) (70300)	mg/l	
			☐ Other:		
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				5/2/86	Jim Ashby

Lab Number: M 781
Date Submitted: 04/17/86
By: Boyer

Sample Code: Saint Cecilia SMW-2
Date Analyzed: 4/24/86
Reviewed By: Jim Ashby
Date Reported: 5/2/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u><0.1</u>	<u> </u>
Barium	<u><0.1</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>1.5</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>230.</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u><0.1</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>58.</u>	<u> </u>
Manganese	<u>0.19</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>3.1</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>8.7</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u><0.1</u>	<u> </u>
Arsenic		<u> </u>
Selenium		<u> </u>
Mercury		<u> </u>

High in Sodium. J7A

86- 0434-C

STATE OF NEW MEXICO

ENVIRONMENT

JAY 8 1986

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570REPORT TO:
PLEASE PRINT

DAVID G. BOYER

NEW MEXICO GAME CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.: OR- 434 A, BDATE REC.: 4/17/86SLD PRIORITY #: 3

PHONE(S):

827-5812

USER CODE: 8 2 2 3 5

SUBMITTER:

BoyerSUBMITTER CODE: SAMPLE TYPE: WATER ☒ SOIL ☐ OTHER ☐SAMPLE TYPE CODE: COLLECTED: 06/04/85 - 10:30 BY DRBCODE:
Y Y M M D D H H M M I I ISOURCE: Well SMW-3CODE:
AQUIFER DEPTHNEAREST CITY: GallupCODE: LOCATION: Cinco RefineryCODE:
TOWNSHIP RANGE SECTION TRACTSpH= 7.8; Conductivity= 3300 umho/cm at 17 °C; Chlorine Residual= Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

well purged 4/11, bailed for sample 4/15I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. David G. BoyerMethod of shipment to the Laboratory Car & Hand CarriedThis form accompanies 2 Septum Vials, Glass Jugs,

Containers are marked as follows to indicate preservation:

☐ NP: No preservation; sample stored at room temperature.☒ P-Ice Sample stored in an ice bath (not frozen).☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.I (we) certify that this sample was transferred from to at (location) on / / : and that the statements in this block are correct.Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐Signatures (we) certify that this sample was transferred from to at (location) on / / : and that the statements in this block are correct.Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐Signatures

ANALYSES REQUESTED

LAB. NO.: ORG- 434

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
☒	☒	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
☒	☒	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
arom. purg. screen	none detected		
halo. purg. screen	none detected		
		* DETECTION LIMIT	1 µg/ml

REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ___ NO X . Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 29 April 86 . Analyst's signature: [Signature]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: [Signature]



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	NC1687	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	8/10/11	SITE INFORMATION	Sample location		
Collection TIME	1030		Well SNW-113		
Collected by — Person/Agency		Boyer /OCD			
		Collection site description			
		hand treatment Area			
		Grant Cuiya Refinery			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	35.13'	Discharge	—	Sample type	Grab
pH (00400)	7.8	Conductivity (Uncorrected)	3300 μ mho	Water Temp. (00010)	17 °C	Conductivity at 25 °C (00094)	μ mho
Field comments							
Geoscience cond 3800 @ 17 °C							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added		☐ Other-specify:		☐ A: 5ml conc. HNO ₃ added ☐ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

F, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	μ mho		☒ Calcium (00915)	88.0 mg/l	4-29
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	139.1 mg/l	"
☒ Other: lab pH	8.27	4/18	☒ Sodium (00930)	926 mg/l	"
☐ Other:			☒ Potassium (00935)	0 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	817.4 mg/l	4/18
			☒ Chloride (00940)	92.7 mg/l	4/28
			☒ Sulfate (00945)	1543 mg/l	4/25
			☒ Total filterable residue (dissolved) (70300)	3005 mg/l	5/2
			☒ Other: CO ₃	0	4/18
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				5/7/86	



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy metal
GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	HM 782	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	4/15	SITE INFORMATION	Sample location		
Collection TIME	1030		Well Smw-M3		
Collected by — Person/Agency		Collection site description			
Boyer /OCD		hand treatment area			

SEND FINAL REPORT TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	35.13'	Discharge	-	Sample type	Grab
pH (00400)	7.8	Conductivity (Uncorrected)	3300 μ mho	Water Temp. (00010)	17 °C	Conductivity at 25°C (00094)	
Field comments							
Geoscience cont 3800 @ 17°C							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☐ NA: No acid added		☐ Other-specify:		☐ A: 5ml conc. HNO ₃ added ☒ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho		☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l		☐ Magnesium (00925)	mg/l	
☒ Other: ICAP SCAN			☐ Sodium (00930)	mg/l	
☐ Other:			☐ Potassium (00935)	mg/l	
☐ Other:			☐ Bicarbonate (00440)	mg/l	
			☐ Chloride (00940)	mg/l	
			☐ Sulfate (00945)	mg/l	
			☐ Total filterable residue (dissolved) (70300)	mg/l	
			☐ Other:		
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				5/2/86	Jim Ashby

Lab Number: MM 782

Sample de: Swat Ciniza SMW-3

Date Submitted: 04/17/86

Date Analyzed: 4/24/86

By: Boyer

Reviewed By: Jim Ashby

Date Reported: 5/2/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u>0.1</u>	<u> </u>
Barium	<u><0.1</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>1.1</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>75.</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u><0.1</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>20.</u>	<u> </u>
Manganese	<u><0.05</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>4.3</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>2.4</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u><0.1</u>	<u> </u>
Arsenic		<u> </u>
Selenium		<u> </u>
Mercury		<u> </u>

86- 0436-c

STATE OF NEW MEXICO

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

ENVIRONMENT

REPORT TO: DAVID G. BOYER
PLEASE PRINT
NEW MEXICO OIL CONSERVATION DIV.
P.O. BOX 2088
SANTA FE, NM 87504-2088

S.L.D. No.: OR- 436A,B
DATE REC.: 4/17/86
SLD PRIORITY #: 3

PHONE(S): 827-5812

USER CODE: 82235SUBMITTER: BoyerSUBMITTER CODE: SAMPLE TYPE: WATER ☒ SOIL ☐ OTHER ☐SAMPLE TYPE CODE: COLLECTED: 86/04/15-11:25 BY AGB
DATE TIME INITIALSCODE:
Y Y M M D D H H M M I I ISOURCE: Well SMW-4CODE:
AQUIFER DEPTHNEAREST CITY: Gallup CODE: LOCATION: Giant Cining RefineryCODE:
TOWNSHIP RANGE SECTION TRACTSpH= 8.2; Conductivity= 990 umho/cm at 16.5°C; Chlorine Residual= Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Geoscience had well purged 4/11, bailed for sampling 4/15

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. David G. Boyer

Method of shipment to the Laboratory Car & Handcarried

This form accompanies 2 Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:

☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from
to at (location) on

 / / : and that the statements in this block are correct.
DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐Signatures

(we) certify that this sample was transferred from
to at (location) on

 / / : and that the statements in this block are correct.
DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐Signatures



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	WC 1688	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	8/04/13	SITE INFORMATION	Sample location		
Collection TIME	1125		well SMW-4		
Collected by — Person/Agency		Land Treatment Area			
Boyer/OCD		Giantcino Refinery			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	DTW 33.14'	Discharge	—	Sample type	Grab
pH (00400)	(Geosci) 8.2	Conductivity (Uncorrected)	990 μ mho	Water Temp. (00010)	16.5 °C	Conductivity at 25 °C (00094)	μ mho
Field comments							
Geoscience Cond 1200 @ 16.5							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify: ☐ A: 5ml conc. HNO ₃ added ☐ A: 4ml fuming HNO ₃ added				

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	μ mho		☒ Calcium (00915)	5.4 mg/l	4-29
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	1.34 mg/l	"
☒ Other: Lab pH	8.31	4/18	☒ Sodium (00930)	308 mg/l	"
☐ Other:			☒ Potassium (00935)	0 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	519.7 mg/l	4/18
			☒ Chloride (00940)	52.5 mg/l	4/28
			☒ Sulfate (00945)	169 mg/l	4/25
			☒ Total filterable residue (dissolved) (70300)	835 mg/l	5/2
			☒ Other: CO ₂	20	4/18
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
Solids				5/7/86	



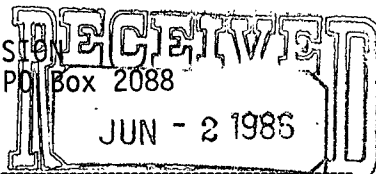
New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy metal
GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	H14723	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	6/10/86	SITE INFORMATION	Sample location		
Collection TIME	1125		well SMW-4		
Collected by — Person/Agency		Collection site description			
Boyer/OCD		Land Treatment Area Giantcane Refinery			

SEND FINAL REPORT TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088



Attn: David Boyer

OIL CONSERVATION DIVISION
SANTA FE

Phone: 827-5812

Station/
well code
Owner

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type
		STW 33.14'	—	Grab
pH (00400)	Conductivity (Uncorrected)	Water Temp. (00010)	Conductivity at 25°C (00094)	
(Geosci) 8.2	990 µmho	16.5 °C	µmho	
Field comments				
Geosience Cond 1200 @ 16.5				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 µm membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
1	☐ NA: No acid added	☐ Other-specify:	☐ A: 5ml conc. HNO ₃ added ☒ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho		☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l		☐ Magnesium (00925)	mg/l	
☒ Other: ICAP SCAN			☐ Sodium (00930)	mg/l	
☐ Other:			☐ Potassium (00935)	mg/l	
☐ Other:			☐ Bicarbonate (00440)	mg/l	
			☐ Chloride (00940)	mg/l	
			☐ Sulfate (00945)	mg/l	
			☐ Total filterable residue (dissolved) (70300)	mg/l	
			☐ Other:		
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				5/27/86	Jim Ashby

Lab Number: MM 783

Sample Code: Plant Cincin SMW-4

Date Submitted: 4/17/86

Date Analyzed: 4/28/86

By: Boyer

Reviewed By: Jim Ashby

Date Reported: 5/27/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u>0.7</u>	<u> </u>
Barium	<u><0.1</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>1.9</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>4.6</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u>0.3</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>1.2</u>	<u> </u>
Manganese	<u><0.05</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>3.0</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>0.2</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u><0.1</u>	<u> </u>
Arsenic		<u> </u>
Selenium		<u> </u>
Mercury		<u> </u>

86-0440-C

STATE OF NEW MEXICO

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

ENVIRONMENT

REPORT TO:
PLEASE PRINTDAVID G. BOYER
NEW MEXICO OIL CONSERVATION DIV.
P.O. BOX 2088
SANTA FE, NM 87504-2088S.L.D. No.: OR- 440 A,B
DATE REC.: 4/17/86
SLD PRIORITY #: 3

PHONE(S): 827-5812

USER CODE: 8 2 2 3 5

SUBMITTER:

BOYER

SUBMITTER CODE: | | | | |

SAMPLE TYPE: WATER ☒ SOIL ☐ OTHER ☐

SAMPLE TYPE CODE: | | |

COLLECTED: 86/04/15-12:10 BY DGB
DATE TIME INITIALSCODE: | | | | | | | | | | | | | | | |
Y Y M M D D H H M M I I I

SOURCE: Well SMW-5

CODE: | | | | | | | | | | | | | | | |
AQUIFER DEPTH

NEAREST CITY: Gallup

CODE: | | | | |

LOCATION: Giant Oil Refinery

CODE: | | | | | | | | | | | | | | | |
TOWNSHIP RANGE SECTION TRACTS

pH= 8.6; Conductivity= 910 umho/cm at 18 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e., odors, etc.)

well purged 4/11, bailed for sampling 4/15

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. David G. Boyer

Method of shipment to the Laboratory Hand Carried & Car

This form accompanies 2 Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
☒ P-Ice Sample stored in an ice bath (not frozen).
☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from _____
to _____ at (location) _____ on _____

_____/_____/_____: and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____

(we) certify that this sample was transferred from _____
to _____ at (location) _____ on _____

_____/_____/_____: and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____

ANALYSES REQUESTED

LAB. NO.: ORG-

440

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
☒	☒	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
☒	☒	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
arom. purg. screen	none detected		
halo. purg. screen	none detected		
		* DETECTION LIMIT	1 µg/mL

REMARKS: A trace of one compound was detected by the aromatic screen that was not identified.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ☐ NO ☒ . Seal(s) broken by: _____ date: _____
 I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.
 Date(s) of analysis: 4-29-86 . Analyst's signature: *[Signature]*
 I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: *[Signature]*



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	NC 1689	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	4/15	SITE INFORMATION	Sample location		
Collection TIME	1210		Well SMW-5		
Collected by — Person/Agency		Boyer/OCD			
		Collection site description			
		Land Treatment Area			
		Giant Cincya Refinery			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	31.63'	Discharge	—	Sample type	Grab
pH (00400)	8.6	Conductivity (Uncorrected)	910 μ mho	Water Temp. (00010)	18 °C	Conductivity at 25 °C (00094)	μ mho
Field comments							
Gerscience and 1100 @ 17.5 °C							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added		☐ Other-specify:		☐ A: 5ml conc. HNO ₃ added ☐ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

F, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	μ mho		☒ Calcium (00915)	6.6 mg/l	4-29
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	0.12 mg/l	"
☒ Other: Lab pH	8.62	4/18	☒ Sodium (00930)	269 mg/l	"
☐ Other:			☒ Potassium (00935)	0 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	420.9 mg/l	4/18
			☒ Chloride (00940)	61.8 mg/l	4/28
			☒ Sulfate (00945)	141 mg/l	4/25
			☒ Total filterable residue (dissolved) (70300)	753 mg/l	5/2
			☒ Other: CO ₃	12.2	4/18
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
Solidify				5/7/86	CD



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy metal
GENERAL WATER CHEMISTRY
AND NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	HM 784	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	6/14/86	SITE INFORMATION	Sample location		
Collection TIME	1210		Well SMW-5		
Collected by — Person/Agency		Boyer/OCD			
		Collection site description			
		Oilfield Water Land Treatment Area			
		Giant Cincya Refinery			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

JUN - 2 1986

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	31.63'	Discharge	-	Sample type	Grab
pH (00400)	8.6	Conductivity (Uncorrected)	910 μ mho	Water Temp. (00010)	18 °C	Conductivity at 25°C (00094)	μ mho
Field comments							
Gesscience and 1100 @ 17.5 °C							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☐ NA: No acid added		☐ Other-specify:		☐ A: 5ml conc. HNO ₃ added
				☒ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho		☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l		☐ Magnesium (00925)	mg/l	
☒ Other: ICAP SCAN			☐ Sodium (00930)	mg/l	
☐ Other:			☐ Potassium (00935)	mg/l	
☐ Other:			☐ Bicarbonate (00440)	mg/l	
			☐ Chloride (00940)	mg/l	
			☐ Sulfate (00945)	mg/l	
			☐ Total filterable residue (dissolved) (70300)	mg/l	
			☐ Other:		
NF, A-H₂SO₄			F, A-H₂SO₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				5/27/86	JFA

Lab Number: HM 784
Date Submitted: 4/17/86
By: Boyer

Sample Code: Yaint Cinga - SMW-5
Date Analyzed: 4/28/86
Reviewed By: Jim Kahly
Date Reported: 5/27/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u>1.1</u>	<u> </u>
Barium	<u><0.1</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>1.4</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>3.4</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u>0.4</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>0.8</u>	<u> </u>
Manganese	<u><0.05</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>3.3</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>0.2</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u><0.1</u>	<u> </u>
Arsenic		<u> </u>
Selenium		<u> </u>
Mercury		<u> </u>

86- 0441-C

STATE OF NEW MEXICO

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

ENVIRONMENT

REPORT TO:
PLEASE PRINT

DAVID G. BOYER

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.: OR- 441A, BDATE REC.: 4/17/86SLD PRIORITY #: 3PHONE(S): 827-5812USER CODE: 8 2 2 3 5SUBMITTER: BoyerSUBMITTER CODE: SAMPLE TYPE: WATER ☒, SOIL ☐, OTHER ☐SAMPLE TYPE CODE: COLLECTED: 86/04/15 - 13:05 BY DGBCODE:
Y Y H H D D H H M M I I ISOURCE: Well SMW-6CODE:
AQUIFER DEPTHNEAREST CITY: GallupCODE: LOCATION: Giant Cn's RefineryCODE:
TOWNSHIP RANGE SECTION TRACTSpH= ; Conductivity= 1130 umho/cm at 17 °C; Chlorine Residual= Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

well purged 4/11, bailed for sampling 4/15I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. David G. BoyerMethod of shipment to the Laboratory Car & Hand carriedThis form accompanies 2 Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
- ☒ P-Ice Sample stored in an ice bath (not frozen).
- ☒ P- $\text{Na}_2\text{S}_2\text{O}_3$; Sample preserved with $\text{Na}_2\text{S}_2\text{O}_3$ to remove chlorine residual.

I (we) certify that this sample was transferred from
to at (location) on / / : and that the statements in this block are correct.Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐Signatures (we) certify that this sample was transferred from
to at (location) on / / : and that the statements in this block are correct.Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐Signatures

ANALYSES REQUESTED

LAB. NO.: ORG- 441

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
☒	☒	ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
☒	☒	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
☒	☒	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
arom. purg. screen	none detected		
halo. purg. screen	none detected		
		* DETECTION LIMIT	1 µg/ml

REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ___ NO X. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 29 April 86. Analyst's signature: R. TenneyI certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: R. Meyerhen



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED	4/17/86	LAB NO.	40C1689	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	86/04/13	Collection TIME	1305	Sample location	Well SMW-6
Collected by — Person/Agency	Boyer /OCD		SITE INFORMATION	Collection site description	Land Treatment Area

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	33.25'	Discharge	—	Sample type	Grab
pH (00400)	—	Conductivity (Uncorrected)	1130 μ mho	Water Temp. (00010)	17 °C	Conductivity at 25°C (00094)	μ mho
Field comments Conscience ADD @ 16.5							

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☒ NF: Whole sample (Non-filtered)	☐ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added		☐ Other-specify:	☐ A: 5ml conc. HNO ₃ added	☐ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

F, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho		☒ Calcium (00915)	6.6 mg/l	4/29
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	0.12 mg/l	"
☒ Other: Lab pH	8.42	4/18	☒ Sodium (00930)	381 mg/l	"
☐ Other:			☒ Potassium (00935)	1.56 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	573.4 mg/l	4/18
			☒ Chloride (00940)	73.0 mg/l	4/28
			☒ Sulfate (00945)	223 mg/l	4/25
			☒ Total filterable residue (dissolved) (70300)	1098 mg/l	5/2
			☒ Other: CO ₃	9.6	4/18
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l		Analyst	Date Reported	Reviewed by
☐ Other:				5/7/86	CD
☐ Other:			Laboratory remarks		



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy metal
GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED 4/17/86	LAB NO. HM 725	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE 86/04/13	SITE INFORMATION Boyer / OCD	Sample location Well SMW-6
Collecting TIME 1305		Collection site description Land Treatment Area Grant Mining Refinery
Collected by — Person/Agency		

SEND
FINAL
REPORT
TO
▶

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088
OIL CONSERVATION DIVISION
SANTA FE

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level DNW 33.25'	Discharge —	Sample type Grab
pH (00400) —	Conductivity (Uncorrected) 1130 µmho	Water Temp. (00010) 17°C	Conductivity at 25°C (00094) µmho	
Field comments Geoscience ADD @ 16.5				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted 1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 µmembrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☐ NA: No acid added		☐ Other-specify:	☐ A: 5ml conc. HNO ₃ added ☒ A: 4ml fuming HNO ₃ added

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho		☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l		☐ Magnesium (00925)	mg/l	
☒ Other: ICAP SCAN			☐ Sodium (00930)	mg/l	
☐ Other:			☐ Potassium (00935)	mg/l	
☐ Other:			☐ Bicarbonate (00440)	mg/l	
			☐ Chloride (00940)	mg/l	
			☐ Sulfate (00945)	mg/l	
			☐ Total filterable residue (dissolved) (70300)	mg/l	
			☐ Other:		
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported 5/27/86	Reviewed by Jim Ashby

Lab Number: HM 785

Sample Code: Grant Cnija SMW-6

Date Submitted: Boyer 4/17/86

Date Analyzed: 4/28/86

By: Boyer

Reviewed By: Jimbly

Date Reported: 5/27/86

Element	ICAP VALUE(MG/L)	AA VALUE(MG/L)
Aluminum	<u>2.1</u>	<u> </u>
Barium	<u><0.1</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>2.0</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>6.0</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u>.7</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>1.8</u>	<u> </u>
Manganese	<u><0.05</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>6.0</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>0.2</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u><0.1</u>	<u> </u>
Arsenic		<u> </u>
Selenium		<u> </u>
Mercury		<u> </u>

86- 0300-C

STATE OF NEW MEXICO

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

ENVIRONMENT

APR 28 1986

REPORT TO:

PLEASE PRINT

DAVID G. BOYER CONSERVATION DIVISION

SANTA FE

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.: OR-300A,B

DATE REC.: 3/7/86

SLD PRIORITY #: 3

PHONE(S): 827-5812

USER CODE: 8 2 2 3 5

SUBMITTER: DAVID BOYER

SUBMITTER CODE: | | | |

SAMPLE TYPE: WATER ☒ SOIL ☐ OTHER ☐

SAMPLE TYPE CODE: | |

COLLECTED: 86/03/05-10:15 BY JBB

DATE

TIME

INITIALS

CODE: | | | | | | | | | | | |

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SOURCE: Marsh Drain @ W. Property

CODE: | | | | | | | | | | | |

AQUIFER

DEPTH

NEAREST CITY: Gallup Boundary

CODE: | | | | |

LOCATION: Cining Refinery

CODE: | | | | | | | | | | | |

TOWNSHIP

RANGE

SECTION TRACTS

pH= 7.5; Conductivity= 1500 umho/cm at 12 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity=; Flow Rate= ~ 7.5 gpm

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Dipped from ditch

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities.

Method of shipment to the Laboratory

This form accompanies Septum Vials, Glass Jugs,
Containers are marked as follows to indicate preservation:

- ☐ NP: No preservation; sample stored at room temperature.
- ☐ P-Ice Sample stored in an ice bath (not frozen).
- ☐ P- $\text{Na}_2\text{S}_2\text{O}_3$; Sample preserved with $\text{Na}_2\text{S}_2\text{O}_3$ to remove chlorine residual.

I (we) certify that this sample was transferred from _____
to _____ at (location) _____ on _____

_____/_____/_____-_____: and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____

(we) certify that this sample was transferred from _____
to _____ at (location) _____ on _____

_____/_____/_____-_____: and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____

ANALYSES REQUESTED

LAB. No.: ORG- 300

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
arom. purge screen	none detected		
halo. purge screen	none detected		
		* DETECTION LIMIT	1 ug/ml

REMARKS: Teflon septum was upside down on sample vial 300-B.

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ___ NO X. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 13 March 06. Analyst's signature: [Signature]

I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: [Signature]



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

FN

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

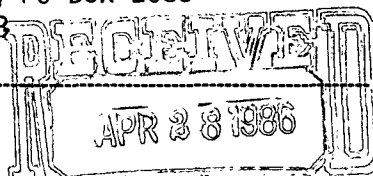
DATE RECEIVED	3/7/86	LAB NO.	1080	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	8/10/85	SITE INFORMATION	Sample location		
Collection TIME	1215		Marsh Drain @ W. Property Boundary		
Collected by	Person/Agency		Collection site description		
1246R/Bailey/Anderson/OCD		Ciniza Refinery			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812



SAMPLING CONDITIONS

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type
pH (00400)	7.5	Conductivity (Uncorrected)	1500 μ mho	Grab
Field comments		Water Temp. (00010)	12°C	Conductivity at 25°C (00094) μ mho

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify:				

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μ mho		☒ Calcium (00915)	86 mg/l	3-18
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	2.44 mg/l	"
☐ Other:			☒ Sodium (00930)	432 mg/l	"
☐ Other:			☒ Potassium (00935)	5.46 mg/l	"
☐ Other:			☒ Bicarbonate (00440)	447 mg/l	3/13
			☒ Chloride (00940)	134 mg/l	3-19
			☒ Sulfate (00945)	677 mg/l	3/27
			☒ Total filterable residue (dissolved) (70300)	1590 mg/l	4/8
			☒ Other: CO ₃	0.0	
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				4/15/86	CS



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

Heavy Metal
GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	3/07/86	LAB NO.	HA 519	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	03/05	SITE INFORMATION	Sample location		
Collection TIME	1015		Marsh Drain @ W. Property Boundary		
Collected by — Person/Agency		Collection site description			
Boyer/Bailley/Anderson/OCD		Ciniza Refinery			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type
			~ 7.5 gpm	Grab
pH (00400)	7.5	Conductivity (Uncorrected)	Water Temp. (00010)	Conductivity at 25°C (00094)
		1500 µmho	12°C	µmho
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 µmembrane filter	☒ A: 2 ml 15% H ₂ SO ₄ added 4 ml conc HNO ₃
☐ NA: No acid added ☐ Other-specify:			

ANALYTICAL RESULTS from SAMPLES

Units	Date analyzed	F, NA	Units	Date analyzed
NE, NA				
☐ Conductivity (Corrected) 25°C (00095)	µmho	☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l	☐ Magnesium (00925)	mg/l	
☒ Other: ICAP SCAN	3/20/86	☐ Sodium (00930)	mg/l	
☒ Other: AS	4/10/86	☐ Potassium (00935)	mg/l	
☒ Other: SE	4/16/86	☐ Bicarbonate (00440)	mg/l	
		☐ Chloride (00940)	mg/l	
		☐ Sulfate (00945)	mg/l	
		☐ Total filterable residue (dissolved) (70300)	mg/l	
		☐ Other:		
NF, A-H₂SO₄				
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l	F, A-H₂SO₄		
☐ Ammonia-N total (00610)	mg/l	☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Total Kjeldahl-N ()	mg/l	☐ Ammonia-N dissolved (00608)	mg/l	
☐ Chemical oxygen demand (00340)	mg/l	☐ Total Kjeldahl-N ()	mg/l	
☐ Total organic carbon ()	mg/l	☐ Other:		
☐ Other:		Analyst	Date Reported	Reviewed by
☐ Other:			4/18/86	Jim Ashby
Laboratory remarks				

Lab Number: 519

Sample de: Marsh Grain

Date Submitted: 3/7/86

Date Analyzed: 3/20/86

By: Boyer

Reviewed By: Jim Ashby

Date Reported: 4/18/86

Element	ICAP VALUE (MG/L)	AA VALUE (MG/L)
Aluminum	<u><0.1</u>	<u> </u>
Barium	<u><0.1</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>0.4</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>63.</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u><0.1</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u>14.</u>	<u> </u>
Manganese	<u><0.05</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>2.7</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u>1.7</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u><0.1</u>	<u> </u>
Arsenic		<u><0.005</u>
Selenium		<u><0.005</u>
Mercury		<u> </u>

86- 0299-C

STATE OF NEW MEXICO

SCIENTIFIC LABORATORY DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

ENVIRONMENT

APR 28 1986

REPORT TO:

PLEASE PRINT

DAVID G. BOYER, CONSERVATION DIVISION

NEW MEXICO OIL CONSERVATION DIV.

P.O. BOX 2088

SANTA FE, NM 87504-2088

S.L.D. No.: OR-

DATE REC. :

SLD PRIORITY #:

PHONE(S):

827-5812

USER CODE: 8 2 2 3 5

SUBMITTER:

DAVID BOYER

SUBMITTER CODE: | | | | |

SAMPLE TYPE: WATER ☒ , SOIL ☐ , OTHER ☐

SAMPLE TYPE CODE: | | |

COLLECTED: 86/03/05-09:45 BY DGB

DATE

TIME

INITIALS

CODE: | | | | | | | | | | | | | | | |

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SOURCE: Ciénega Swamp

CODE: | | | | | | | | | | | | | | | |

AQUIFER

DEPTH

NEAREST CITY: Gallup

CODE: | | | | |

LOCATION: Swampy area South of Pond 9A

CODE: | | | | | | | | | | | | | | | |

TOWNSHIP

RANGE

SECTION

TRACTS

pH= 6.2 ; Conductivity= 1130 umho/cm at 4 °C; Chlorine Residual=

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

Sample from west end of area in ditch drain a few hundred feet
the south of pond 9A. Broke ice to dip.I certify that the statements in this block accurately reflect the results
of my field analyses, observations and activities. David G. Boyer

Method of shipment to the Laboratory Hand carried

This form accompanies 2 Septum Vials, Glass Jugs,

Containers are marked as follows to indicate preservation:

☐ NP: No preservation; sample stored at room temperature.☒ P-Ice Sample stored in an ice bath (not frozen).☐ P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.I (we) certify that this sample was transferred from _____
to _____ at (location) _____ on _____

_____/_____/_____-_____: and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____

(we) certify that this sample was transferred from _____
to _____ at (location) _____ on _____

_____/_____/_____-_____: and that the statements in this block are correct.

DATE AND TIME

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures _____

ANALYSES REQUESTED

LAB. No.: ORG- 299

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS

REMARKS:

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
arom. purg. screen	none detected		
halo. purg. screen	none detected		
		* DETECTION LIMIT	1 µgm/l

REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes NO X. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 13 March 86. Analyst's signature: [Signature]I certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: [Signature]



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

FN

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

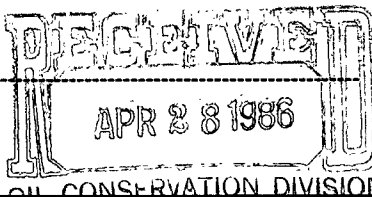
DATE RECEIVED 13	7 186	LAB/NO. 21083	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE 8/10/85	SITE INFORMATION	Sample location Ciniza Swamp - Ciniza Refinery	Collection site description Swamp area ~ 200' south of pond 9B. Sampled from ditch at west end of area
Collection TIME 0943		Collected by — Person/Agency Boyer/Bailey/under. 10CD	

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU,
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812



SAMPLING CONDITIONS

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water level —	Discharge Flowing	Sample type Grab
pH (00400) 6.2	Conductivity (Uncorrected) 1150 µmho	Water Temp. (00010) 40 °C	Conductivity at 25 °C (00094) µmho	
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted 1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 µm membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify:			

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25 °C (00095)	µmho		☒ Calcium (00915)	mg/l	8-18
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	mg/l	12.2
☐ Other:			☒ Sodium (00930)	mg/l	430.1
☐ Other:			☒ Potassium (00935)	mg/l	5.85
☐ Other:			☒ Bicarbonate (00440)	mg/l	697
☐ Other:			☒ Chloride (00940)	mg/l	81.2
			☒ Sulfate (00945)	mg/l	563
			☒ Total filterable residue (dissolved) (70300)	mg/l	1555
			☒ Other: CO₃	mg/l	16.8
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported 4/15/86	Reviewed by CS



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

p F

Heavy Metal
GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

DATE RECEIVED	3/7/86	LAB NO.	HM 537	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	8/10/85	SITE INFORMATION	Sample location		
Collection TIME	0945		Ciniza Swamp - Ciniza Refinery		
Collected by — Person/Agency			Collection site description		
Boyer/Bailey/Anderson/OC			Swamp area ~200' South of pond 9th. Sample from ditch at west end of area		

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☐ Bailed ☒ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type
		-	Flowing	Grab
pH (00400)	6.2	Conductivity (Uncorrected)	Water Temp. (00010)	Conductivity at 25°C (00094)
		1150 µmho	4 °C	µmho
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 µm membrane filter	☐ A: 2 ml H₂SO₄ added 4 ml conc HNO ₃
☐ NA: No acid added ☐ Other-specify:				

ANALYTICAL RESULTS from SAMPLES

Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho	☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l	☐ Magnesium (00925)	mg/l	
☒ Other: ICAP Scan	3/21/86	☐ Sodium (00930)	mg/l	
☒ Other: AS	4/10/86	☐ Potassium (00935)	mg/l	
☒ Other: SE	4/16/86	☐ Bicarbonate (00440)	mg/l	
		☐ Chloride (00940)	mg/l	
		☐ Sulfate (00945)	mg/l	
		☐ Total filterable residue (dissolved) (70300)	mg/l	
		☐ Other:		
NF, A-H ₂ SO ₄		F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l	☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l	☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l	☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l	☐ Other:		
☐ Total organic carbon ()	mg/l	Analyst		
☐ Other:		Date Reported		
☐ Other:		Reviewed by		
Laboratory remarks		4/18/86 J7A		
		Sample Digested		

Lab Number: HM 537

Date Submitted: 3/7/86

By: Boyer

Sample Code: Ciniza Swamp

Date Analyzed: 3/21/86

Reviewed By: Jim Ashby

Date Reported: 4/18/86

<u>Element</u>	<u>ICAP VALUE (MG/L)</u>	<u>AA VALUE (MG/L)</u>
Aluminum	<u>40.1</u>	<u> </u>
Barium	<u>40.1</u>	<u> </u>
Beryllium	<u>40.1</u>	<u> </u>
Boron	<u>0.3</u>	<u> </u>
Cadmium	<u>40.1</u>	<u> </u>
Calcium	<u>77.</u>	<u> </u>
Chromium	<u>40.1</u>	<u> </u>
Cobalt	<u>40.1</u>	<u> </u>
Copper	<u>40.1</u>	<u> </u>
Iron	<u>40.1</u>	<u> </u>
Lead	<u>40.1</u>	<u> </u>
Magnesium	<u>13.</u>	<u> </u>
Manganese	<u>0.57</u>	<u> </u>
Molybdenum	<u>40.1</u>	<u> </u>
Nickel	<u>40.1</u>	<u> </u>
Silicon	<u>5.3</u>	<u> </u>
Silver	<u>40.1</u>	<u> </u>
Strontium	<u>1.6</u>	<u> </u>
Tin	<u>40.1</u>	<u> </u>
Vanadium	<u>40.1</u>	<u> </u>
Zinc	<u>40.1</u>	<u> </u>
Arsenic		<u><0.005</u>
Selenium		<u><0.005</u>
Mercury		<u> </u>



RECEIVED
STATE OF NEW MEXICO
APR 25 1966
OIL CONSERVATION DIVISION

700 Camino de Salud NE
Albuquerque, NM 87106 841-2570

DAVID G. BOYER
NEW MEXICO OIL CONSERVATION DIV.
P.O. BOX 2088
SANTA FE, NM 87504-2088

S.L.D. No.: OR- 292A, B
DATE REC.: 3/7/86
SLD PRIORITY #: 2

USER CODE: | 8 | 2 | 2 | 3 | 5 |

SUBMITTER CODE: | | | |

SAMPLE TYPE CODE: | |

CODE: 860306161008
Y Y M M D D H H M M I I I

CODE: | | + | | + | | | |

AQUIFER DEPTH

CODE: | | | | |

CODE:

--	--	--	--	--	--	--	--

TOWNSHIP RANGE SECTION TRACTS

Dissolved Oxygen= mg/l; Alkalinity= ; Flow Rate=

Sampling Location, Methods and Remarks (i.e. odors, etc.)

PRESSURE GAUGE TAP BEFORE PRESSURE TANK. SMELLS
GASSY- MAYBE H_2S

I certify that the statements in this block accurately reflect the results of my field analyses, observations and activities. *Danni Pauls*

Method of shipment to the Laboratory *Long? carrier?*

This form accompanies 2 Septum Vials, Glass Jugs,

Containers are marked as follows to indicate preservation:

☐ NP: No preservation; sample stored at room temperature.

☒ P-Ice: Sample stored in an ice bath (not frozen).

P-Na₂S₂O₃; Sample preserved with Na₂S₂O₃ to remove chlorine residual.

I (we) certify that this sample was transferred from _____
to _____ at (location) _____ on _____

/ / - : and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

(we) certify that this sample was transferred from _____
 o _____ at (location) _____ on _____

____/____/____ - ____ : _____ and that the statements in this block are correct.

Evidentiary Seals: Not Sealed ☐ Seals Intact: Yes ☐ No ☐

Signatures

ANALYSES REQUESTED

LAB. No.: ORG- 292

PLEASE CHECK THE APPROPRIATE BOXES BELOW TO INDICATE THE TYPE OF ANALYTICAL SCREENS REQUIRED. WHENEVER POSSIBLE LIST SPECIFIC COMPOUNDS SUSPECTED OR REQUIRED.

QUALITATIVE	QUANTITATIVE	PURGEABLE SCREENS	QUALITATIVE	QUANTITATIVE	EXTRACTABLE SCREENS
		ALIPHATIC HYDROCARBON SCREEN			ALIPHATIC HYDROCARBONS
X	X	AROMATIC HYDROCARBON SCREEN			CHLORINATED HYDROCARBON PESTICIDES
X	X	HALOGENATED HYDROCARBON SCREEN			CHLOROPHENOXY ACID HERBICIDES
		GAS CHROMATOGRAPH/MASS SPECTROMETER			HYDROCARBON FUEL SCREEN
					ORGANOPHOSPHATE PESTICIDES
					POLYCHLORINATED BIPHENYLS (PCB's)
					POLYNUCLEAR AROMATIC HYDROCARBONS
					TRIAZINE HERBICIDES
		SPECIFIC COMPOUNDS			SPECIFIC COMPOUNDS
REMARKS:					

ANALYTICAL RESULTS

COMPOUND	[PPB]	COMPOUND	[PPB]
arom. purg. screen	none detected		
halo. purg. screen	none detected		
		* DETECTION LIMIT	2 ug/ml

REMARKS:

CERTIFICATE OF ANALYTICAL PERSONNEL

Seal(s) Intact: Yes ___ NO X. Seal(s) broken by: _____ date: _____

I certify that I followed standard laboratory procedures on handling and analysis of this sample unless otherwise noted and that the statements in this block and the analytical data on this page accurately reflect the analytical results for this sample.

Date(s) of analysis: 13 March 06. Analyst's signature: R. TimneyI certify that I have reviewed and concur with the analytical results for this sample and with the statements in this block. Reviewers signature: R. Meyerhew



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

FN

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

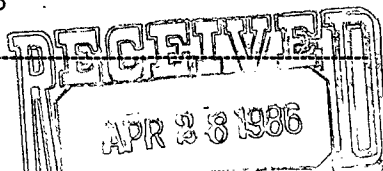
DATE RECEIVED	3/7/86	LAB NO.	14081	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	3/6/86	SITE INFORMATION	Sample location		
Collection TIME	1610		CLYDE CLARK PO BOX 298 FORT WINGATE 87316		
Collected by — Person/Agency			Collection site description		
BOYER/OCDO			PRESSURE GAUGE TAP IN PUMP HOUSE BEFORE PRESSURE TANK		

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812



SAMPLING CONDITIONS

☐ Bailed ☐ Dipped	☒ Pump ☐ Tap	Water level	150-002 CONSERVATION DIVISION SANTA FE	Sample type
pH (00400)	Conductivity (Uncorrected)	µmho	Water Temp. (00010)	°C
Field comments		SAMPLE HAS STRONG ODOR - GASSY MAYBE H ₂ S ODOR		

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☒ Whole sample (Non-filtered)	☒ Filtered in field with 0.45 µm membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☒ NA: No acid added ☐ Other-specify:				

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	µmho		☒ Calcium (00915)	mg/l	8-18
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	mg/l	"
☐ Other:			☒ Sodium (00930)	mg/l	"
☐ Other:			☒ Potassium (00935)	mg/l	"
☐ Other:			☒ Bicarbonate (00440)	mg/l	3/13
			☒ Chloride (00940)	mg/l	3/19
			☒ Sulfate (00945)	mg/l	3/27
			☒ Total filterable residue (dissolved) (70300)	mg/l	4/8
			☒ Other: CO ₃	mg/l	0.0
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				4/15/86	



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

PF

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED	3/7/86	LAB NO.	C/100	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	3/6/86	SITE INFORMATION	Sample location		
Collection TIME	1610		CLYDE CLARK P.O. BOX 298 FORT WINSATE 87316		
Collected by — Person/Agency		Collection site description			
BOYER/DCD		PRESSURE GAUGE TAP IN PUMP HOUSE BEFORE PRESSURE TANK			

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, PO Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812

SAMPLING CONDITIONS

☐ Bailed ☐ Dipped	☒ Pump ☐ Tap	Water level	Discharge	Sample type
		150-300		
pH (00400)	Conductivity (Uncorrected)	Water Temp. (00010)	Conductivity at 25°C (00094)	
	μmho	°C	μmho	
Field comments				
SAMPLE HAS STRONG ODDOR - GASSY, MAYBE H ₂ S ODDOR				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	☐ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μmembrane filter	☒ A: 2 ml H ₂ SO ₄ /L added
☐ NA: No acid added ☐ Other-specify:			

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μmho		☐ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l		☐ Magnesium (00925)	mg/l	
☐ Other:			☐ Sodium (00930)	mg/l	
☐ Other:			☐ Potassium (00935)	mg/l	
☐ Other:			☐ Bicarbonate (00440)	mg/l	
			☐ Chloride (00940)	mg/l	
			☐ Sulfate (00945)	mg/l	
			☐ Total filterable residue (dissolved) (70300)	ma/l	
			☐ Other:		
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☒ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	3/26
☐ Ammonia-N total (00610)	mg/l		☒ Ammonia-N dissolved (00608)	mg/l	4/2
☐ Total Kjeldahl-N ()	mg/l		☒ Total Kjeldahl-N ()	mg/l	3/17
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				4/7/86	CG



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

HEAVY METAL
GENERAL WATER CHEMISTRY
and NITROGEN ANALYSIS

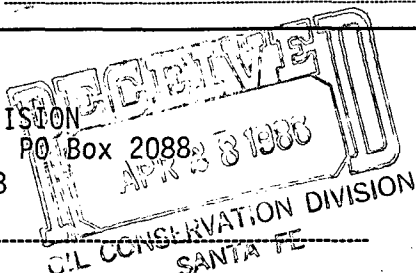
DATE RECEIVED	3/27/86	LAB NO.	HM-520	USER CODE	☐ 59300 ☐ 59600 ☒ OTHER: 82235
Collection DATE	3/16/86	SITE INFORMATION	Sample location		
Collection TIME	1610		CLYDE CLARK P.O. BOX 298 FORT WINGATE 87516		
Collected by — Person/Agency		Collection site description			
BOYER /OCD					

SEND
FINAL
REPORT
TO

ENVIRONMENTAL BUREAU
NM OIL CONSERVATION DIVISION
State Land Office Bldg, P.O. Box 2088
Santa Fe, NM 87504-2088

Attn: David Boyer

Phone: 827-5812



PRESSURE GAUGE TAP
IN PUMPHOUSE BEFORE
PRESSURE TANK

Station/
well code
Owner

SAMPLING CONDITIONS

☐ Bailed ☐ Dipped	☒ Pump ☐ Tap	Water level	Discharge	Sample type
		150-300"		
pH (00400)	Conductivity (Uncorrected)	Water Temp. (00010)	Conductivity at 25°C (00094)	
	μmho	°C	μmho	
Field comments				
SAMPLE HAS STRONG ODOOR - GASSY, MAYBE H ₂ S ODOOR				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted	1	☒ NF: Whole sample (Non-filtered)	☒ F: Filtered in field with 0.45 μm membrane filter	☒ A: 2 ml H ₂ SO ₄ /L added 4 ml HNO ₃
☐ NA: No acid added ☐ Other-specify:				

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☐ Conductivity (Corrected) 25°C (00095)	μmho		☒ Calcium (00915)	mg/l	
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	mg/l	
☒ Other: ICAP		3/20/86	☒ Sodium (00930)	mg/l	
☒ Other: AS	10.005	4/10	☒ Potassium (00935)	mg/l	
☒ Other: SE	<0.005	4/16	☒ Bicarbonate (00440)	mg/l	
			☒ Chloride (00940)	mg/l	
			☒ Sulfate (00945)	mg/l	
			☒ Total filterable residue (dissolved) (70300)	mg/l	
			☒ Other: CO ₃		
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☐ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☐ Total organic carbon ()	mg/l				
☐ Other:			Analyst	Date Reported	Reviewed by
☐ Other:				4/18/86	J. Ashby
Laboratory remarks					
This water is extremely low in ICAP acid parameters unless this person has a water softener.					

Lab Number: HM-520

Sample Code: CLYDE CLARK

Date Submitted: 3/7/86

Date Analyzed: 3/20/86

By: Boyer

Reviewed By: Jim Ashby

Date Reported: 4/18/86

<u>Element</u>	<u>ICAP VALUE (MG/L)</u>	<u>AA VALUE (MG/L)</u>
Aluminum	<u><0.1</u>	<u> </u>
Barium	<u><0.1</u>	<u> </u>
Beryllium	<u><0.1</u>	<u> </u>
Boron	<u>0.4</u>	<u> </u>
Cadmium	<u><0.1</u>	<u> </u>
Calcium	<u>2.5</u>	<u> </u>
Chromium	<u><0.1</u>	<u> </u>
Cobalt	<u><0.1</u>	<u> </u>
Copper	<u><0.1</u>	<u> </u>
Iron	<u><0.1</u>	<u> </u>
Lead	<u><0.1</u>	<u> </u>
Magnesium	<u><0.1</u>	<u> </u>
Manganese	<u><0.05</u>	<u> </u>
Molybdenum	<u><0.1</u>	<u> </u>
Nickel	<u><0.1</u>	<u> </u>
Silicon	<u>1.8</u>	<u> </u>
Silver	<u><0.1</u>	<u> </u>
Strontium	<u><0.1</u>	<u> </u>
Tin	<u><0.1</u>	<u> </u>
Vanadium	<u><0.1</u>	<u> </u>
Zinc	<u><0.1</u>	<u> </u>
Arsenic		<u><0.005</u>
Selenium		<u><0.005</u>
Mercury		<u> </u>



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED	LAB NO.	USER CODE
Collection DATE 08/13/85		☐ 59300 ☐ 59600 ☒ OTHER: 53300
Collection TIME 9:15 AM	SITE INFORMATION	Sample location GIANT CINIZA REFINERY
Collected by — Person/Agency SID HW, 16670 HAMILTON		Collection site description MW-1

SEND
FINAL
REPORT
TO

GROUND WATER & HAZARDOUS WASTE BUREAU
NM ENVIRONMENT IMPROVEMENT DIVISION/HED
Crown Building, PO Box 968
Santa Fe, NM 87504-0968

Attn: ANN CLAASSEN

MIDDLE OF N. SP. OF
LAND TREATMENT
AREA

Station/
well code MW-1

Owner GIANT

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type GRAB
pH (00400) 7.0	Conductivity (Uncorrected) 1000 μ mho	Water Temp. (00010) 6.5 $^{\circ}$ C	Conductivity at 25 $^{\circ}$ C (00094) μ mho	
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted 3	☒ NF: Whole sample (Non-filtered)	☐ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☐ NA: No acid added ☐ Other-specify: 2 10-ml vials, 5 drops H ₂ SO ₄ each 2 30-ml containers w/ no acid			

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☒ Conductivity (Corrected) 25 $^{\circ}$ C (00095)	μ mho	4/11	☒ Calcium (00915)	mg/l	2/18
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	mg/l	13/1
☒ Other: pH		4/11	☒ Sodium (00930)	mg/l	43.2
☐ Other:			☒ Potassium (00935)	mg/l	8.58
☐ Other:			☒ Bicarbonate (00440)	mg/l	272.3
			☒ Chloride (00940)	mg/l	52.5
			☒ Sulfate (00945)	mg/l	157.5
			☒ Total filterable residue (dissolved) (70300)	mg/l	72.5
			☒ Other: Fluoride	mg/l	0.84
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☒ Nitrate-N + Nitrate-N total (00630)	mg/l		☐ Nitrate-N + Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☒ Total organic carbon (1185)	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				4/11/85	CA



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED	LAB NO.	USER CODE
Collection DATE 02/13/85		☐ 59300 ☐ 59600 ☒ OTHER: 53300
Collection TIME 10:15 AM	SITE INFORMATION	Sample location GIANT CIVILIA
Collected by — Person/Agency EID HW		Collection site description NW-2, NORTH CORNER OF LAND TREATMENT AREA

SEND
FINAL
REPORT
TO

GROUND WATER & HAZARDOUS WASTE BUREAU
NM ENVIRONMENT IMPROVEMENT DIVISION/HED
Crown Building, PO Box 968
Santa Fe, NM 87504-0968

Attn:

ANN CLAASSEN

Station/
well code
NW-2

Owner
GIANT

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level	Discharge	Sample type GAS
pH (00400) 9.1	Conductivity (Uncorrected) 880 μ mho	Water Temp. (00010) 8 $^{\circ}$ C	Conductivity at 25 $^{\circ}$ C (00094) μ mho	
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted 3	☒ NF: Whole sample (Non-filtered)	☐ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☐ NA: No acid added ☒ Other-specify: 2 40-ml vials, 8 drops H ₂ SO ₄ each 1 3-gal cubitainer, NA			

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☒ Conductivity (Corrected) 25 $^{\circ}$ C (00095)	μ mho	4/9	☒ Calcium (00915)	mg/l	2/18
☐ Total non-filterable residue (suspended) (00530)			☒ Magnesium (00925)	mg/l	2/18
☒ Other: pH	mg/l	4/9	☒ Sodium (00930)	mg/l	2/18
☐ Other:			☒ Potassium (00935)	mg/l	2/18
☐ Other:			☒ Bicarbonate (00440)	mg/l	4/3
			☒ Chloride (00940)	mg/l	3/11
			☒ Sulfate (00945)	mg/l	3/11
			☒ Total filterable residue (dissolved) (70300)	mg/l	4/8
			☒ Other: Fluoride	mg/l	2/25
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☒ Nitrate-N + Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☒ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported	Reviewed by
				4/11/85	



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED	LAB NO.	USER CODE ☐ 59300 ☐ 59600 ☒ OTHER: 53300
Collection DATE 02/13/85	SITE INFORMATION	Sample location GIANT CINIZA
Collection TIME 11:00 AM		Collection site description NW-3
Collected by — Person/Agency EID HW, C. GARD HARRISON		

SEND
FINAL
REPORT
TO

GROUND WATER & HAZARDOUS WASTE BUREAU
NM ENVIRONMENT IMPROVEMENT DIVISION/HED
Crown Building, PO Box 968
Santa Fe, NM 87504-0968

Attn:

ANN CLAASSEN

Station/
well code NW-3

Owner GIANT

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level 21.01' BSW MP	Discharge	Sample type GRAB
pH (00400) 8.6	Conductivity (Uncorrected) 220 μ mho	Water Temp. (00010) 10° C	Conductivity at 25°C (00094) μ mho	
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted 3	☒ NF: Whole sample (Non-filtered)	☐ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☐ NA: No acid added ☒ Other-specify: 2 40-ml vials, 5 drops H ₂ SO ₄ each 1 1-gal cubitainer, NA			

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☒ Conductivity (Corrected) 25°C (00095) 1150 μ mho	μ mho	4/9	☐ Calcium (00915) 11.6 mg/l	mg/l	2/18
☐ Total non-filterable residue (suspended) (00530)	mg/l		☐ Magnesium (00925) 20.1 mg/l	mg/l	13/1
☒ Other: pH 8.03		4/9	☐ Sodium (00930) 258 mg/l	mg/l	2/20
☐ Other:			☐ Potassium (00935) 3.90 mg/l	mg/l	2/20
☐ Other:			☐ Bicarbonate (00440) 45.1 mg/l	mg/l	1/4/3
			☐ Chloride (00940) 60.0 mg/l	mg/l	2/1
			☐ Sulfate (00945) 153.2 mg/l	mg/l	3/14
			☐ Total filterable residue (dissolved) (70300) 719 mg/l	mg/l	4/8
			☐ Other:		
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☒ Nitrate-N + Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☒ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					
Laboratory remarks			Analyst	Date Reported 4/11/85	Reviewed by



New Mexico Health and Environment Department
SCIENTIFIC LABORATORY DIVISION
700 Camino de Salud NE
Albuquerque, NM 87106 — (505) 841-2555

GENERAL WATER CHEMISTRY and NITROGEN ANALYSIS

DATE RECEIVED	LAB NO.	USER CODE
Collection DATE 02/13/85		☐ 59300 ☐ 59600 ☒ OTHER: 53300
Collection TIME 12:15	SITE INFORMATION	Sample location GIANT CINDER
Collected by — Person/Agency EID HW, GARY HAMICTON		Collection site description AW-4

SEND
FINAL
REPORT
TO

GROUND WATER & HAZARDOUS WASTE BUREAU
NM ENVIRONMENT IMPROVEMENT DIVISION/HED
Crown Building, PO Box 968
Santa Fe, NM 87504-0968

Attn: _____

ANN CLAASSEN

Station/
well code
AW-4

Owner
GIANT

SAMPLING CONDITIONS

☒ Bailed ☐ Dipped	☐ Pump ☐ Tap	Water level 6.5' BMP	Discharge	Sample type GRAIB
pH (00400) 9.0	Conductivity (Uncorrected) 840 μ mho	Water Temp. (00010) 7 $^{\circ}$ C	Conductivity at 25 $^{\circ}$ C (00094) μ mho	
Field comments				

SAMPLE FIELD TREATMENT — Check proper boxes

No. of samples submitted 3	☒ NF: Whole sample (Non-filtered)	☐ F: Filtered in field with 0.45 μ m membrane filter	☐ A: 2 ml H ₂ SO ₄ /L added
☐ NA: No acid added ☒ Other-specify: 2 40-ml vials, 5 drops H ₂ SO ₄ each in 1-gal container, etc.			

ANALYTICAL RESULTS from SAMPLES

NF, NA	Units	Date analyzed	F, NA	Units	Date analyzed
☒ Conductivity (Corrected) 25 $^{\circ}$ C (00095)	μ mho	4/9	☒ Calcium (00915)	mg/l	4/8
☐ Total non-filterable residue (suspended) (00530)	mg/l		☒ Magnesium (00925)	mg/l	13/1
☒ Other: pH		4/9	☒ Sodium (00930)	mg/l	2/20
☐ Other:			☒ Potassium (00935)	mg/l	4/20
☐ Other:			☒ Bicarbonate (00440)	mg/l	4/3
			☒ Chloride (00940)	mg/l	3/1
			☒ Sulfate (00945)	mg/l	3/14
			☒ Total filterable residue (dissolved) (70300)	mg/l	4/3
			☒ Other: Fluoride		2/25
NF, A-H ₂ SO ₄			F, A-H ₂ SO ₄		
☒ Nitrate-N +, Nitrate-N total (00630)	mg/l		☐ Nitrate-N +, Nitrate-N dissolved (00631)	mg/l	
☐ Ammonia-N total (00610)	mg/l		☐ Ammonia-N dissolved (00608)	mg/l	
☐ Total Kjeldahl-N ()	mg/l		☐ Total Kjeldahl-N ()	mg/l	
☐ Chemical oxygen demand (00340)	mg/l		☐ Other:		
☒ Total organic carbon ()	mg/l				
☐ Other:					
☐ Other:					

Analyst

Date Reported

Reviewed by

Laboratory remarks