GW - 32

REPORTS

YEAR(S):

1992 GW REPORT

BOOK I

ANNUAL OCD GROUNDWATER REPORT

1992

TABLE OF CONTENTS

MAY 28, 1993

PREPARED BY:

LYNN SHELTON

QUARTERLY AERATED LAGOON AND API EFFLUENT

Westech Laboratories Inc.

3737 East Broadway Road
Phoenix, Arizona 85040
(602) 437-1080 • fax 437-8706

CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205597
INVOICE NO.: 22120861
REPORT DATE: 05-01-92
REVIEWED BY mg AGN
PAGE 1 OF 1

CLIENT SAMPLE ID : API EFFLUENT
SAMPLE TYPE .....: WASTEWATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: API SEPARATOR

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : 3507
SAMPLE DATE ...: 04-20-92
SUBMITTAL DATE : 04-21-92
EXTRACTION DATE: --

Inorganic Non-Metals

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Biochemical Oxygen Demand .....:	380.	mg/L	5.	04-21-92
Chemical Oxygen Demand .....:	1100.	mg/L	10.	04-22-92
Total Dissolved Solids .....:	3000.	mg/L	2.0	04-27-92
Total Organic Carbon .....:	150.	mg/L	1.0	04-30-92

1ST QTR
OCD
92

(1) Copy to Client

Westech Laboratories Inc.
3737 East Broadway Road
Phoenix, Arizona 85040
(602) 437-1080 • fax 437-8706

CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205598
INVOICE NO.: 22120861
REPORT DATE: 05-01-92
REVIEWED BY: Q. AGK
PAGE : 1 OF 1

CLIENT SAMPLE ID : AER LAG EFF
SAMPLE TYPE .....: WASTEWATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: LAGOON EFFLUENT

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : 3507
SAMPLE DATE ...: 04-20-92
SUBMITTAL DATE : 04-21-92
EXTRACTION DATE: --

Inorganic Non-Metals

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Biochemical Oxygen Demand .....:	260.	mg/L	5.	04-21-92
Chemical Oxygen Demand .....:	830.	mg/L	10.	04-22-92
Oil and Grease .....:	20.	mg/L	5.	04-24-92
pH .....:	7.0	S.U.	1.0	04-21-92
Sulfide, Total .....:	4.2	mg/L	0.10	05-06-92
Total Dissolved Solids .....:	4200.	mg/L	2.0	04-27-92
Total Organic Carbon .....:	120.	mg/L	1.0	04-30-92

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SAMPLE NO. : 9205598
INVOICE NO.: 22120861
REPORT DATE: 05-01-92
REVIEWED BY: MG AGN
PAGE : 1 OF 1

CLIENT SAMPLE ID : AER LAG EFF
SAMPLE TYPE .....: WASTEWATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: LAGOON EFFLUENT

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : 3507
SAMPLE DATE ...: 04-20-92
SUBMITTAL DATE : 04-21-92
EXTRACTION DATE: --

Inorganic Chemistry - Total Metals

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Arsenic .....:	0.06	mg/L	0.05	04-29-92
Total Cadmium .....:	<0.05	mg/L	0.05	04-29-92
Total Chromium .....:	<0.05	mg/L	0.05	04-29-92
Total Lead .....:	<0.10	mg/L	0.10	04-29-92
Total Mercury .....:	0.002	mg/L	0.001	04-30-92
Total Nickel .....:	<0.05	mg/L	0.05	04-29-92
Total Selenium .....:	<0.05	mg/L	0.05	04-29-92

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SAMPLE NO. : 9205598
INVOICE NO.: 22120861
REPORT DATE: 05-01-92
REVIEWED BY: AGN
PAGE 1 OF 1

CLIENT SAMPLE ID : AER LAG EFF
SAMPLE TYPE .....: WASTEWATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: LAGOON EFFLUENT
ANALYST .....: I. HRABOVSKY

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : 3507
SAMPLE DATE ...: 04-20-92
SUBMITTAL DATE : 04-21-92
EXTRACTION DATE: 04-23-92
ANALYSIS DATE .: 04-23-92

Volatile Organics By Capillary GC/MS

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
1,2-Dichloroethane	<5.0	ug/L	5.0
Chloroform	<5.0	ug/L	5.0
Benzene	<5.0	ug/L	5.0
Toluene	<5.0	ug/L	5.0
Ethyl Benzene	<5.0	ug/L	5.0
Chlorobenzene	<5.0	ug/L	5.0
Total Xylenes	<5.0	ug/L	5.0
Metyl ethyl ketone	<100.	ug/L	100.
Carbon Disulfide	<20.	ug/L	20.
1,4-Dioxane	<20.	ug/L	20.
Styrene	<5.0	ug/L	5.0
1,2-Dibromoethane (EDB	<5.0	ug/L	5.0

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ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205598
INVOICE NO.: 22120861
REPORT DATE: 05-01-92
REVIEWED BY: MG AGN

CLIENT SAMPLE ID : AER LAG EFF
SAMPLE TYPE .....: WASTEWATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: LAGOON EFFLUENT
ANALYST .....: I. HRABOVSKY

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : 3507
SAMPLE DATE ...: 04-20-92
SUBMITTAL DATE : 04-21-92
EXTRACTION DATE: 04-24-92
ANALYSIS DATE .: 04-27-92

Semi-Volatiles by Gas Chromatography/ Mass Spectrometry

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
Phenol	<10.	ug/L	10.
1,3-Dichlorobenzene	<10.	ug/L	10.
1,4-Dichlorobenzene	<10.	ug/L	10.
1,2-Dichlorobenzene	<10.	ug/L	10.
2-Methylphenol	<10.	ug/L	10.
4-Methylphenol	<10.	ug/L	10.
2,4-Dimethylphenol	<10.	ug/L	10.
Napthalene	15.	ug/L	10.
Dimethyl phthalate	<10.	ug/L	10.
2,4-Dinitrophenol	<50.	ug/L	50.
4-Nitrophenol	<50.	ug/L	50.
Diethyl phthalate	11.	ug/L	10.
3-Methylphenol	<10.	ug/L	10.
Phenanthrene	80.	ug/L	10.
Anthracene	<10.	ug/L	10.
Di-n-butyl phthalate	<10.	ug/L	10.
Fluoranthene	<10.	ug/L	10.
Pyrene	17.	ug/L	10.
Butyl benzyl phthalate	<10.	ug/L	10.
Benzo(a)anthracene	<10.	ug/L	10.
Bis(2-ethylhexyl) phthalate	<10.	ug/L	10.
Chrysene	23.	ug/L	10.
Di-n-octyl phthalate	<10.	ug/L	10.
Benzo(b)fluoranthene	<10.	ug/L	10.
Benzo(k)fluoranthene	<10.	ug/L	10.
Benzo(a)pyrene	<10.	ug/L	10.
Dibenzo(a,h)anthracene	<10.	ug/L	10.
7,12-Dimethylbenz(a)-anthracene	<10.	ug/L	10.
Indene	<20.	ug/L	20.
1-Methylnaphthalene	<10.	ug/L	10.

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ATTN: LYNN SHELTON
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GALLUP, NM 87301

SAMPLE NO. : 9205598
INVOICE NO.: 22120861
REPORT DATE: 05-01-92
REVIEWED BY: MG AGN

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit
Pyridine .....:	<100.	ug/L	100.
Quinoline .....:	<20.	ug/L	20.
Benzenethiol .....:	<20.	ug/L	20.

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The Quality People
Since 1955

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Phoenix, Arizona 85040
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CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9211474
INVOICE NO.: 22121760
REPORT DATE: 08-17-92
REVIEWED BY: MH AGN
PAGE 1 OF 1

CLIENT SAMPLE ID : API SEPARATOR
SAMPLE TYPE .....: WATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: --

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : --
SAMPLE DATE ...: 07-29-92
SUBMITTAL DATE : 07-30-92
EXTRACTION DATE: --

Inorganic Non-Metals

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Biochemical Oxygen Demand .....:	250.	mg/L	5.	07-31-92
Chemical Oxygen Demand .....:	630.	mg/L	10.	08-14-92
pH .....:	9.39	S.U.	1.00	07-31-92
Total Dissolved Solids .....:	2300.	mg/L	2.0	08-03-92
Total Organic Carbon .....:	240.	mg/L	1.0	08-03-92

2nd QTR
OCD

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The Quality People
Since 1955

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Phoenix, Arizona 85040
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CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9211475
INVOICE NO.: 22121760
REPORT DATE: 08-17-92
REVIEWED BY: MG. AGN
PAGE : 1 OF 1

CLIENT SAMPLE ID : AERATED LAGOON EFF
SAMPLE TYPE .....: WATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: --

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : --
SAMPLE DATE ...: 07-29-92
SUBMITTAL DATE : 07-30-92
EXTRACTION DATE: --

Inorganic Non-Metals

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Biochemical Oxygen Demand .....:	230.	mg/L	5.	07-31-92
Chemical Oxygen Demand .....:	370.	mg/L	10.	08-14-92
pH .....:	8.36	S.U.	1.00	07-31-92
Total Dissolved Solids .....:	4200.	mg/L	2.0	08-03-92
Total Organic Carbon .....:	340.	mg/L	1.0	08-03-92

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Westech Laboratories Inc.

Phoenix • 3737 E. Broadway Rd. • AZ 85040 • (602) 437-1080 • fax 437-8706
Flagstaff • 2400 E. Huntington Dr. • AZ 86004 • (602) 774-8708 • fax 774-6469
El Paso • 10737 Gateway West #100 • TX 79935 • (915) 592-3591 • fax 592-3594

CHAIN OF CUSTODY RECORD

CLIENT	ADDRESS
GIANT REFINING CO	Rt 3 Box 7 GALLUP, NM 87301
TELEPHONE (605) 722 0227	PROJECT QUARTERLY OCD / JOB / P.O. NO.

• REFER TO FEE SCHEDULE FOR ANALYSES SELECTION •

SAMPLER (SIGNATURE): Lynn Shelton — SAMPLER (PLEASE PRINT): LYNN SHELTON

SAMPLE TYPE CODES: S – Soil, G – Sludge, X – Other, W – Water, T – Travel Blank, O – Oil, F – Field Blank

CLIENT SAMPLE IDENTIFICATION NUMBER	DATE	TIME	SAMPLE LOCATION	HOLD	COMPOSITE	GRAB	SAMPLE TYPE	NUMBER OF CONTAINERS	REQUESTED ANALYSES: TDS	TOC	BOD	COD	pH	COMMENTS	LABORATORY SAMPLE IDENTIFICATION NUMBER
														REPORT THESE ~~FOUR~~ 5	9211474
API SEPARATOR	7-29	10:30 AM			X		W	1	X	X	X	X	X	CONSTITUENTS FOR	
														EACH SAMPLE	
AERATED															
LAGOON EFF	7-29	10:40 AM			X		W	1	X	X	X	X	X		9211475

RELINQUISHED BY (SIGNATURE)	RECEIVED BY (SIGNATURE)	DATE	TIME	REMARKS
Lynn Shelton	Federal Express			24
RELINQUISHED BY (SIGNATURE): Federal Express	RECEIVED BY (SIGNATURE): Grace L. Got	DATE: 7/30/92	TIME: 10:30	
RELINQUISHED BY (SIGNATURE)	RECEIVED BY (SIGNATURE)	DATE	TIME	
RELINQUISHED BY (SIGNATURE)	RECEIVED BY (SIGNATURE)	DATE	TIME	

ASSAIGAI
ANALYTICAL LABORATORIES, INC. • 7300 Jefferson, N.E. • Albuquerque, New Mexico 87109
3711 Admiral, Suite C • El Paso, Texas 79925

Assaigai Analytical Labs
7300 Jefferson NE
Albuquerque, NM 87109

Attn: MARLEAH M. MARTIN
Phone: (505)345-8964

GIANT REFINERY
ROUTE 3 BOX 7
GALLUP, NM 87301

Attn: LYNN SHELTON

Purchase Order: 997-9009-14
Invoice Number:

Order #: 92-10-046
Date: 10/26/92 16:32
Work ID: QUARTELY OCD
Date Received: 10/06/92
Date Completed: 10/26/92

Client Code: GIA01

SAMPLE IDENTIFICATION

Sample Number	Sample Description
01	API EFFLUENT
02	AERATED LAGOON-EFFLUENT
03	API EFFLUENT
04	N. STRIPPER
05	S. STRIPPER

ND = None Detected D_F = Dilution Factor NT = Not Tested
B = Analyte was present in the blank J = Estimated value
E = Estimated Value,Concentration exceeds calibration range
MULTIPLY THE LIMIT BY THE DILUTION FACTOR.

Certified By
Marleah Martin

ASSAIGAI
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3711 Admiral, Suite C • El Paso, Texas 79925

REPORT

Work Order # 92-10-046

Received: 10/06/92

Results by Sample

SAMPLE ID API EFFLUENT FRACTION 01B TEST CODE BOD NAME Biochem oxygen demand/H2O

Date & Time Collected 10/05/92 01:25:00 Category WATER

PARAMETER	RESULT	LIMIT	D_F	DATE_ANAL
Biochemical Oxygen Demand	1.0	1.0	1.0	10/19/92

Notes and Definitions for this Report:

EXTRACTED 10/14/92
ANALYST TP
UNITS mg/L
BATCH_ID WBOD-0020
COMMENTS N/A

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3711 Admiral, Suite C • El Paso, Texas 79925

REPORT

Work Order # 92-10-046

Received: 10/06/92

Results by Sample

SAMPLE ID API EFFLUENT FRACTION 01A TEST CODE COD NAME Chemical Oxygen Demand/H2O
Date & Time Collected 10/05/92 01:25:00 Category WATER

PARAMETER	RESULT	LIMIT	D_F	DATE_ANAL
Chemical Oxygen Demand	700	1.0	1.0	10/09/92

Notes and Definitions for this Report:

EXTRACTED
ANALYST TP
UNITS mg/L
BATCH_ID WCOD-0014
COMMENTS N/A

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REPORT

Work Order # 92-10-046

Received: 10/06/92

Results by Sample

SAMPLE ID API EFFLUENT FRACTION 01C TEST CODE TDS NAME Tot Dis. solids(TDS)/water
Date & Time Collected 10/05/92 01:25:00 Category WATER

PARAMETER	RESULT	LIMIT	D_F	DATE_ANAL
Total Dissolved Solids	11,000	1.0	1.0	10/08/92

Notes and Definitions for this Report:

EXTRACTED
ANALYST DH
UNITS mg/L
BATCH_ID WTDS-0019
COMMENTS N/A

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3711 Admiral, Suite C • El Paso, Texas 79925

REPORT

Work Order # 92-10-046

Received: 10/06/92

Results by Sample

SAMPLE ID API EFFLUENT FRACTION 01D TEST CODE WPH NAME PH in water

Date & Time Collected 10/05/92 01:25:00 Category WATER

PARAMETER	RESULT	LIMIT	D_F	DATE_ANAL
pH	11.75	0.10	1.0	10/06/92

Notes and Definitions for this Report:

EXTRACTED

ANALYST TP

UNITS pH Units

BATCH_ID WPH-0031

COMMENTS N/A

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REPORT

Work Order # 92-10-046

Received: 10/06/92

Results by Sample

SAMPLE ID API EFFLUENT FRACTION 01E TEST CODE WTOC NAME Total Organic Carbon/water
Date & Time Collected 10/05/92 01:25:00 Category WATER

PARAMETER	RESULT	LIMIT	DATE_ANAL
Total Organic Carbon	85	5.0	10/08/92

Notes and Definitions for this Report:

ANALYST HUF
UNITS mg/L
COMMENTS N/A

ASSAIGAI
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REPORT

Work Order # 92-10-046

Received: 10/06/92

Results by Sample

SAMPLE ID AERATED LAGOON-EFFLUENT FRACTION 02A TEST CODE COD NAME Chemical Oxygen Demand/H2O
Date & Time Collected 10/05/92 13:40:00 Category WATER

PARAMETER	RESULT	LIMIT	D_F	DATE_ANAL
Chemical Oxygen Demand	1,000	1.0	1.0	10/09/92

Notes and Definitions for this Report:

EXTRACTED
ANALYST TP
UNITS mg/L
BATCH_ID WCOD-0014
COMMENTS N/A

ASSAIGAI
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3711 Admiral, Suite C • El Paso, Texas 79925

REPORT

Work Order # 92-10-046

Received: 10/06/92

Results by Sample

SAMPLE ID AERATED LAGOON-EFFFLUENT FRACTION 02B TEST CODE BOD NAME Biochem oxygen demand/H2O
Date & Time Collected 10/05/92 13:40:00 Category WATER

PARAMETER	RESULT	LIMIT	D_F	DATE_ANAL
Biochemical Oxygen Demand	106	1.0	1.0	10/19/92

Notes and Definitions for this Report:

EXTRACTED 10/14/92
ANALYST TP
UNITS mg/L
BATCH_ID WBOD-0020
COMMENTS N/A

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3711 Admiral, Suite C • El Paso, Texas 79925

REPORT

Work Order # 92-10-046

Received: 10/06/92

Results by Sample

SAMPLE ID AERATED LAGOON-EFFFLUENT FRACTION 02C TEST CODE TDS NAME Tot Dis. solids(TDS)/water
Date & Time Collected 10/05/92 13:40:00 Category WATER

PARAMETER	RESULT	LIMIT	D_F	DATE_ANAL
Total Dissolved Solids	5400	1.0	1.0	10/08/92

Notes and Definitions for this Report:

EXTRACTED
ANALYST DH
UNITS mg/L
BATCH_ID WTDS-0019
COMMENTS N/A

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3711 Admiral, Suite C • El Paso, Texas 79925

REPORT

Work Order # 92-10-046

Received: 10/06/92

Results by Sample

SAMPLE ID AERATED LAGOON-EFFFLUENT FRACTION 02D TEST CODE WPH NAME PH in water

Date & Time Collected 10/05/92 13:40:00 Category WATER

PARAMETER	RESULT	LIMIT	D_F	DATE_ANAL
pH	7.85	0.10	1.0	10/06/92

Notes and Definitions for this Report:

EXTRACTED

ANALYST TP

UNITS pH Units

BATCH_ID WPH-0031

COMMENTS N/A

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3711 Admiral, Suite C • El Paso, Texas 79925

REPORT

Work Order # 92-10-046

Received: 10/06/92

Results by Sample

SAMPLE ID AERATED LAGOON-EFFFLUENT FRACTION O2E TEST CODE WTOC NAME Total Organic Carbon/water
Date & Time Collected 10/05/92 13:40:00 Category WATER

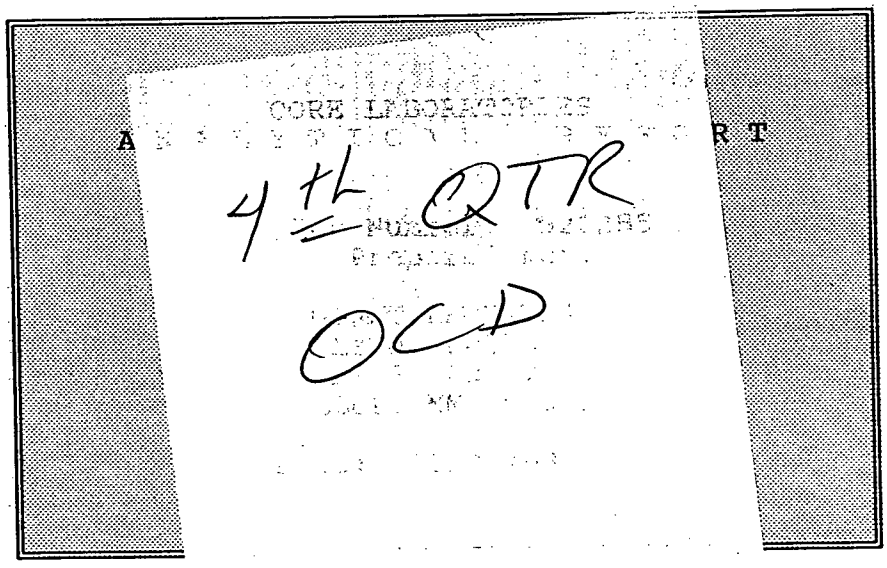
PARAMETER	RESULT	LIMIT	DATE_ANAL
Total Organic Carbon	231	5.0	10/08/92

Notes and Definitions for this Report:

ANALYST HUF
UNITS mg/L
COMMENTS N/A

Western Atlas International
A Litton/Dresser Company

CORE LABORATORIES



Signature David J. Marshall

Date: 1.26.93

Name: David J. Marshall

Title: PROJECT MANAGER

Core Laboratories
10703 East Bethany Drive
Aurora, CO 80014

Western Atlas International
A Litton/Dresser Company

CORE LABORATORIES

LABORATORY TESTS RESULTS
01/26/93

JOB NUMBER: 922255 CUSTOMER: GIANT REFINING ATTN: LYNN SHELTON

SAMPLE NUMBER: 1 DATE RECEIVED: 12/17/92 TIME RECEIVED: 10:00 SAMPLE DATE: 12/16/92 SAMPLE TIME: :

PROJECT: GIANT REFINING SAMPLE: API-EFF REM:

SAMPLE NUMBER: 2 DATE RECEIVED: 12/17/92 TIME RECEIVED: 10:00 SAMPLE DATE: 12/16/92 SAMPLE TIME: :

PROJECT: GIANT REFINING SAMPLE: AER-EFF REM:

TEST DESCRIPTION	SAMPLE 1	SAMPLE 2					UNITS OF MEASURE
Biochemical Oxygen Demand (BOD)	411	167					mg/L
Carbon, Total Organic (TOC)	117	45					mg/L
Chemical Oxygen Demand(COD)-Unfilt	614	622					mg/L
pH (Unfilt.)	8.53	7.82					pH Units
Solids, Total Dissolved (TDS)	2230	4130					mg/L

10703 East Bethany Drive
Aurora, CO 80014
(303) 751-1780

Western Atlas International
A Litton / Dresser Company

CORE LABORATORIES

1300 S. POTOMAC, SUITE 130
AURORA, CO 80012 (303) 751-1780

Analysis Request and Chain of Custody Record

Project No.	Client / Project Name	Project Location
	GIANT REFINING CO.	I40 EXIT 39 JAMESTOWN, NM 87347

Lab ID No.	Field Sample No. Identification	Date and Time	Grab	Comp	Sample Container (Size / Mat'l)	Sample Type (Liquid Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
	API EFF	12-16-92	X		1 l. PLASTIC	LIQUID		BOD, COD, TOC, TDS, pH	
	AER EFF	12-16-92	X		1 l. PLASTIC	LIQUID		BOD, COD, TOC, TDS, pH	

Samplers: (Signature)	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	COC Seal No.
Lynn Shelton	Lynn Shelton				
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	
GIANT REFINING CO	Relinquished by: (Signature)	Date: Time:	Received by Laboratory: (Signature) Josh Chilson	Date: 12-17-92 Time: 10:00	Contact:

REMARKS:	Data Results To: (Name / Address)	Laboratory No.
	1.	922256
	2.	

White - Return With Results Of Analysis Yellow - Lab Copy Pink - Samples Copy

TABULATED ANALYTICAL DATA - OW-1, 2, 3

OW-1 Giant Refining Gallup, New Mexico

TCL Volatile Organics
Method 8240

Parameter	07 MAR 91 Result	23 APR 92 Result	Units
Benzene	<0.5	ND	ug/L
Toluene	<0.5	ND	ug/L
Ethylbenzene	<0.5	ND	ug/L
Xylenes (total)	<0.5	ND	ug/L

0W−1 Giant Refining Co. Gallup, NM

Metals
Dissolved Metals

Parameter	07 MAR 91 Result	23 APR 92 Result	Units
Calcium	2.1	2.6	mg/L
Magnesium	0.3	1.5	mg/L
Potassium	<1.0	1.2	mg/L
Sodium	326	83	mg/L

OW-1 Giant Refining Gallup, New Mexico

General Inorganics

Parameter	07 MAR 91 Result	23 APR 92 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	376	410	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	12	60	mg/L
Chloride	41	58	mg/L
pH	8.47	8.8	units
pH	---	---	units
pH	---	---	units
pH	---	---	units
Sulfate	220	210	mg/L
Specific Conductance at 25 deg.C	1290	1300	umhos/cm
Specific Conductance at 25 deg.C	---	---	umhos/cm
Specific Conductance at 25 deg.C	---	---	umhos/cm
Specific Conductance at 25 deg.C	---	---	umhos/cm
Total Organic Carbon	---	---	mg/L
Total Organic Carbon	---	---	mg/L
Total Organic Carbon	---	---	mg/L
Total Organic Carbon	---	---	mg/L
Total Organic Halogen as Cl	---	---	ug/L
Total Organic Halogen as Cl	---	---	ug/L
Total Organic Halogen as Cl	---	---	ug/L
Total Organic Halogen as Cl	---	---	ug/L
Total Dissolved Solids	830	2800	mg/L
Water Elevation	---	---	ft

OW-2 Giant Refining Gallup, New Mexico

TCL Volatile Organics
Method 8240

Parameter	07 MAR 91 Result	23 APR 92 Result	Units
Benzene	<.5	ND	ug/L
Toluene	<.5	ND	ug/L
Ethylbenzene	<.5	ND	ug/L
Xylenes (total)	<.5	ND	ug/L

OW-2 Giant Refining Gallup, New Mexico

Metals
Dissolved Metals

PARAMETER	07 MAR 01 Result	23 APR 02 Result	Units
Calcium	10.5	6.8	mg/L
Magnesium	4.8	2.5	mg/L
Potassium	1.9	ND	mg/L
Sodium	338	88	mg/L

OW-2 Giant Refining Gallup, New Mexico

General Inorganics

Parameter	07 MAR 91 Result	23 APR 92 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	656	670	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	<1	ND	mg/L
Chloride	45	72	mg/L
pH	7.97	8.0	units
pH	---	---	units
pH	---	---	units
pH	---	---	units
Sulfate	---	15	mg/L
Specific Conductance at 25 deg.C	1220	1300	umhos/cm
Specific Conductance at 25 deg.C	---	---	umhos/cm
Specific Conductance at 25 deg.C	---	---	umhos/cm
Specific Conductance at 25 deg.C	---	---	umhos/cm
Total Organic Carbon	---	---	mg/L
Total Organic Carbon	---	---	mg/L
Total Organic Carbon	---	---	mg/L
Total Organic Carbon	---	---	mg/L
Total Organic Halogen as Cl	---	---	ug/L
Total Organic Halogen as Cl	---	---	ug/L
Total Organic Halogen as Cl	---	---	ug/L
Total Organic Halogen as Cl	---	---	ug/L
Total Dissolved Solids	910	1800	mg/L
Water Elevation	---	---	ft

OW-3 Giant Refining Gallup, New Mexico

TCL Volatile Organics
Method 8240

Parameter	07 MAR 91 Result	23 APR 92 Result	Units
Benzene	<.5	ND	ug/L
Toluene	<.5	ND	ug/L
Ethylbenzene	<.5	ND	ug/L
Xylenes (total)	<.5	ND	ug/L

OW-3 Giant Refining Gallup, New Mexico

Metals
Dissolved Metals

Parameter	07 MAR 91 Result	23 APR 92 Result	Units
Calcium	11.0	9.5	mg/L
Magnesium	4.4	3.0	mg/L
Potassium	1.1	ND	mg/L
Sodium	332	82	mg/L

OW-3 Giant Refining Gallup, New Mexico

General Inorganics

Parameter	07 MAR 91 Result	23 APR 92 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	624	580	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	<1	ND	mg/L
Chloride	41	39	mg/L
pH	8.06	7.9	units
pH	---	---	units
pH	---	---	units
pH	---	---	units
Sulfate	---	34	mg/L
Specific Conductance at 25 deg.C	1280	1200	umhos/cm
Specific Conductance at 25 deg.C	---	---	umhos/cm
Specific Conductance at 25 deg.C	---	---	umhos/cm
Specific Conductance at 25 deg.C	---	---	umhos/cm
Total Organic Carbon	---	---	mg/L
Total Organic Carbon	---	---	mg/L
Total Organic Carbon	---	---	mg/L
Total Organic Carbon	---	---	mg/L
Total Organic Halogen as Cl	---	---	ug/L
Total Organic Halogen as Cl	---	---	ug/L
Total Organic Halogen as Cl	---	---	ug/L
Total Organic Halogen as Cl	---	---	ug/L
Total Dissolved Solids	840	1100	mg/L
Water Elevation	---	---	ft

ORIGINAL ANALYTICAL DATA - OW-1, 2, 3

Westech Laboratories Inc.
3737 East Broadway Road
Phoenix, Arizona 85040
(602) 437-1080 • fax 437-8706

CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205900
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: GM 4- AGN
PAGE : 1 OF 1

CLIENT SAMPLE ID : OW1
SAMPLE TYPE .....: WATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: OBSERVATION WELLS
ANALYST .....: M. HILL

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : --
SAMPLE DATE ...: 04-23-92
SUBMITTAL DATE : 04-24-92
EXTRACTION DATE: 04-29-92
ANALYSIS DATE .: 04-29-92

REMARKS -

Report revised: 05/22/92.

Method 8020 - Aromatic Volatiles

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
Benzene .....:	<1.0	ug/L	1.0
Toluene .....:	<1.0	ug/L	1.0
Ethylbenzene .....:	<1.0	ug/L	1.0
Total Xylenes .....:	<0.3	ug/L	0.3

Surrogate Information -

	Percent Recovery	Range
a,a,a -Trifluorotoluene (8020) ...:	90.0	80-120

(1) Copy to Client

Westech Laboratories Inc.
3737 East Broadway Road
Phoenix, Arizona 85040
(602) 437-1080 • fax 437-8706

CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205900
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: G. AGN
PAGE 1 OF 1

CLIENT SAMPLE ID : OW1
SAMPLE TYPE .....: WATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: OBSERVATION WELLS

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : --
SAMPLE DATE ...: 04-23-92
SUBMITTAL DATE : 04-24-92
EXTRACTION DATE: --

Inorganic Chemistry

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Dissolved Calcium	2.6	mg/L	0.05	05-05-92
Dissolved Magnesium	1.5	mg/L	0.10	05-05-92
Dissolved Potassium	1.2	mg/L	1.0	05-06-92
Dissolved Sodium	83.	mg/L	0.05	05-05-92
Bicarbonate	410.	mg/L	2.0	04-28-92
Carbonate	60.	mg/L	2.0	04-28-92
Chloride	58.	mg/L	1.0	05-06-92
Electrical Conductivity	1300.	umhos/cm	0.1	04-24-92
pH	8.8	S.U.	1.0	04-24-92
Sulfate	210.	mg/L	5.0	05-06-92
Total Dissolved Solids	2800.	mg/L	2.0	04-29-92

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Westech Laboratories Inc.

3737 East Broadway Road
Phoenix, Arizona 85040
(602) 437-1080 • fax 437-8706

CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205901
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: MG AGN
PAGE : 1 OF 1

CLIENT SAMPLE ID : OW2
SAMPLE TYPE .....: WATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: OBSERVATION WELLS
ANALYST .....: M. HILL

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : --
SAMPLE DATE ...: 04-23-92
SUBMITTAL DATE : 04-24-92
EXTRACTION DATE: 04-29-92
ANALYSIS DATE .: 04-29-92

Method 8020 - Aromatic Volatiles

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
Benzene	<1.0	ug/L	1.0
Toluene	<1.0	ug/L	1.0
Ethylbenzene	<1.0	ug/L	1.0
Total Xylenes	<0.3	ug/L	0.3

Surrogate Information -

	Percent Recovery	Range
a,a,a -Trifluorotoluene (8020)	90.0	80-120

(1) Copy to Client

Westech Laboratories Inc.
3737 East Broadway Road
Phoenix, Arizona 85040
(602) 437-1080 • fax 437-8706

CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205901
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: MG AGN
PAGE : 1 OF 1

CLIENT SAMPLE ID : OW2
SAMPLE TYPE .....: WATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: OBSERVATION WELLS

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : --
SAMPLE DATE ...: 04-23-92
SUBMITTAL DATE : 04-24-92
EXTRACTION DATE: --

Inorganic Chemistry

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Dissolved Calcium	6.8	mg/L	0.05	05-05-92
Dissolved Magnesium	2.5	mg/L	0.10	05-05-92
Dissolved Potassium	<1.0	mg/L	1.0	05-06-92
Dissolved Sodium	88.	mg/L	0.05	05-05-92
Bicarbonate	670.	mg/L	2.0	04-28-92
Carbonate	<2.0	mg/L	2.0	04-28-92
Chloride	72.	mg/L	1.0	05-06-92
Electrical Conductivity	1300.	umhos/cm	0.1	04-24-92
pH	8.0	S.U.	1.0	04-24-92
Sulfate	15.	mg/L	5.0	05-01-92
Total Dissolved Solids	1800.	mg/L	2.0	04-29-92

(1) Copy to Client

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3737 East Broadway Road
Phoenix, Arizona 85040
(602) 437-1080 • fax 437-8706

CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205902
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: [illegible]
PAGE : 1 OF 1

CLIENT SAMPLE ID : OW3
SAMPLE TYPE .....: WATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: OBSERVATION WELLS
ANALYST .....: M. HILL

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : --
SAMPLE DATE ...: 04-23-92
SUBMITTAL DATE : 04-24-92
EXTRACTION DATE: 04-29-92
ANALYSIS DATE .: 04-29-92

Method 8020 - Aromatic Volatiles

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
Benzene	<1.0	ug/L	1.0
Toluene	<1.0	ug/L	1.0
Ethylbenzene	<1.0	ug/L	1.0
Total Xylenes	<0.3	ug/L	0.3

Surrogate Information -

	Percent Recovery	Range
a,a,a -Trifluorotoluene (8020)	91.0	80-120

(1) Copy to Client

Westech Laboratories Inc.

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Phoenix, Arizona 85040
(602) 437-1080 • fax 437-8706

CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205902
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: MG AGN
PAGE : 1 OF 1

CLIENT SAMPLE ID : OW3
SAMPLE TYPE .....: WATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: OBSERVATION WELLS

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : --
SAMPLE DATE ...: 04-23-92
SUBMITTAL DATE : 04-24-92
EXTRACTION DATE: --

Inorganic Chemistry

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Dissolved Calcium	9.5	mg/L	0.05	05-05-92
Dissolved Magnesium	3.0	mg/L	0.10	05-05-92
Dissolved Potassium	<1.0	mg/L	1.0	05-06-92
Dissolved Sodium	82.	mg/L	0.05	05-05-92
Bicarbonate	580.	mg/L	2.0	04-28-92
Carbonate	<2.0	mg/L	2.0	04-28-92
Chloride	39.	mg/L	1.0	05-06-92
Electrical Conductivity	1200.	umhos/cm	0.1	04-24-92
pH	7.9	S.U.	1.0	04-24-92
Sulfate	34.	mg/L	5.0	05-01-92
Total Dissolved Solids	1100.	mg/L	2.0	04-29-92

(1) Copy to Client

Westech Laboratories Inc.
3737 East Broadway Road
Phoenix, Arizona 85040
(602) 437-1080 • fax 437-8706

CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205903
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: [illegible]
PAGE : 1 OF 1

CLIENT SAMPLE ID : TRIP BLANK
SAMPLE TYPE .....: D. I. WATER
SAMPLED BY .....: WL/PERSONNEL
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: WESTECH LABS.
ANALYST .....: M. HILL

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : --
SAMPLE DATE ...: 04-01-92
SUBMITTAL DATE : 04-24-92
EXTRACTION DATE: 04-29-92
ANALYSIS DATE .: 04-29-92

Method 8020 - Aromatic Volatiles

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
Benzene	<1.0	ug/L	1.0
Toluene	<1.0	ug/L	1.0
Ethylbenzene	<1.0	ug/L	1.0
Total Xylenes	<0.3	ug/L	0.3

Surrogate Information -

	Percent Recovery	Range
a,a,a -Trifluorotoluene (8020)	90.0	80-120

(1) Copy to Client

Westech Laboratories Inc.

3737 East Broadway Road
Phoenix, Arizona 85040
(602) 437-1080 • fax 437-8706

QUALITY CONTROL REPORT

QC IDENTIFIER .....: 106-042992-1
REFERENCE NOTEBOOK : CH-070
REFERENCE PAGE ....: 63

INSTRUMENT : Hewlett Packard GC w/ PID & FID
ANALYZED BY : M. HILL
ANALYZED ON : 04-29-92

TEST DESCRIPTION ..: Method 8020 - Aromatic Volatiles
TEST METHOD .....: Method 8020

SAMPLES IN THIS RUN: 9205885 9205900 9205901 9205902 9205903 9205921

CALIBRATION CHECK -

PARAMETER	UNIT	TRUE VALUE	FOUND VALUE	%RECOVERY
Ethylbenzene	ug/L	10.	7.9	79.0
Toluene	ug/L	10.	9.4	94.0
Total Xylenes	ug/L	30.	28.	93.3
Benzene	ug/L	10.	8.4	84.0
Ethylbenzene	ug/L	10.	8.3	83.0
Toluene	ug/L	10.	11.	110.0
Total Xylenes	ug/L	30.	33.	110.0
Benzene	ug/L	10.	8.8	88.0

REPLICATES -

SAMPLE NUMBER	PARAMETER	UNIT	RESULT	REPLICATE	RPD%
9205921	Ethylbenzene	ug/L	66.	62.	6.3
9205921	Toluene	ug/L	580.	550.	5.3
9205921	Total Xylenes	ug/L	1200.	1100.	8.7
9205921	Benzene	ug/L	300.	280.	6.9

SPIKES -

SAMPLE NUMBER	PARAMETER	UNIT	SAMPLE RESULT	SPIKE AMOUNT	SAMPLE+SPIKE RESULT	%RECOVERY
9205902	Ethylbenzene	ug/L	<1.0	1.0	1.1	110.0
9205902	Toluene	ug/L	<1.0	1.0	1.1	110.0
9205902	Total Xylenes	ug/L	<0.3	3.0	3.5	116.7
9205902	Benzene	ug/L	<1.0	1.0	1.1	110.0

WESTECH
LABORATORIES
INC.
QUALITY ASSURANCE OFFICER
Anne Nichols
DATE: 5/14/92

QUALITY CONTROL REPORT

QC IDENTIFIER .....: 106-042992-1
REFERENCE NOTEBOOK : CH-070
REFERENCE PAGE ....: 63

INSTRUMENT : Hewlett Packard GC w/ PID & FID
ANALYZED BY : M. HILL
ANALYZED ON : 04-29-92

METHOD BLANKS -

PARAMETER	UNIT	RESULT
Benzene	ug/L	<1.0
Toluene	ug/L	<1.0
Ethylbenzene	ug/L	<1.0
Total Xylenes	ug/L	<0.3

NOTE -

1) NC: Not Calculable because result is < 5 times the MDL

2) NP: Not Practical because sample result is 4 times or more greater than spike added.

3) Percent Recovery is:

$$\frac{\text{Sample+Spike Result - Sample Result}}{\text{Spike Amount}} \times 100$$

4) Relative Percent Difference (RPD) is:

$$\frac{\text{Sample Result - Replicate Result}}{(\text{Sample Result + Replicate Result})/2} \times 100$$

GW - 32

REPORTS

YEAR(S):

1992 GW REPORT

BOOK II

GIANT
REFINING CO.

Route 3, Box 7
Gallup, New Mexico
87301

505
722-3833

March 31, 1993

Ed Horst
Program Director
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
525 Camino De Lo Martuz
P.O. Box 26110
Santa Fe, New Mexico 87502

Re: Annual Groundwater Monitoring Report
Giant Refining Company - Ciniza
Gallup, New Mexico 87301
Permit No. NMD000333211-2

Dear Mr. Horst:

As required by the indicated permit, the Annual Groundwater Permit is enclosed. The report is organized as follows:

Section I	-	Well Identification Report
Section II	-	Statistical Analysis
		MW Series - Student T.
		MW Series - Graphs
		SMW Series - Tolerance Interval
Section III	-	Groundwater Measurements
Section IV	-	Groundwater Velocity
Section V	-	Groundwater Elevation Contour Map
Section VI	-	Tabulated Analytical Data
Section VII	-	Original Analytical Data

Please note that additional statistical analysis has been performed on the SMW series early detection wells back to 1990. This is to comply with Giant's requirements of the Part B Permit.

The statistical analysis on the SMW series wells indicates that chrome levels exceeded the tolerance limit in SMW-4 and SMW-6 in 1990 and 1991, and in SMW-3, SMW-4, and SMW-6 in 1992.

An interesting comparison of the graphs supplied for the indicator parameters of the MW series wells show fairly uniform increases and/or decreases when compared to when we changed analytical laboratories. To preclude any problems with analytical data, Giant has entered into a five year agreement with Analytical Technologies, Inc. for analytical services on sampling required by the Part B Permit.

ANNUAL GROUNDWATER REPORT

Table of Contents

MARCH 31, 1993

Prepared by: Lynn Shelton

GIANT
REFINING CO.

Route 3, Box 7
Gallup, New Mexico
87301

505
722-3833

March 31, 1993

Ed Horst
Program Director
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
525 Camino De Lo Martuz
P.O. Box 26110
Santa Fe, New Mexico 87502

Re: Annual Groundwater Monitoring Report
Giant Refining Company - Ciniza
Gallup, New Mexico 87301
Permit No. NMD000333211-2

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Section VII	-	Original Analytical Data

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An interesting comparison of the graphs supplied for the indicator parameters of the MW series wells show fairly uniform increases and/or decreases when compared to when we changed analytical laboratories. To preclude any problems with analytical data, Giant has entered into a five year agreement with Analytical Technologies, Inc. for analytical services on sampling required by the Part B Permit.

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

Sincerely,

Lynn Shelton

Lynn Shelton
Environmental Assistant
Ciniza Refinery

TLS:sp

cc: Kim Bullerdick, Corporate Counsel
Giant Industries Arizona, Inc.

Roger Anderson
New Mexico Oil Conservation Division

MONITORING WELL IDENTIFICATION REPORT

ENVIRONMENTAL IMPROVEMENT DIVISION
HAZARDOUS WASTE SECTION
1190 ST. FRANCIS DRIVE/HAROLD RUNNELS BLDG.
SANTA FE, NEW MEXICO 87503

FACILITY NAME Giant Refining Company - Ciniza

EPA I.D. NUMBER NMD000333211-2

COUNTY McKinley

WELL NUMBER MW-1

WELL LOCATION (LONGITUDE) 108° 25' 36"

WELL LOCATION (LATITUDE) 35° 29' 08"

NEW MEXICO STATE PLANE (X) 320, 903.76

(Y) 1,636,112.13

AQUIFER NAME Sonsela

AQUIFER CONFINED X UNCONFINED

WELL INSTALLATION DATE 10-14-81

DRILLING METHOD Cable

INNER CASING DIAMETER 5.0"

BOREHOLE DIAMETER 10.0"

CASING MATERIAL PVC

METHOD OF DEVELOPMENT Compr

ELEV BOTTOM OF BOREHOLE 6745.80

ELEV BOTTOM OF WELL CASING 6745.80

ELEV BOTTOM OF SCREENED INT 6750.80

ELEVATION OF SCREENED INT 6760.80

SURVEYED ELEV OF CASING TOP 6878.52

DATE OF REPORT 11-25-92 SIGNATURE Lynn Shelton

NAME (TYPED) Lynn Shelton

MONITORING WELL IDENTIFICATION REPORT

ENVIRONMENTAL IMPROVEMENT DIVISION
HAZARDOUS WASTE SECTION
1190 ST. FRANCIS DRIVE/HAROLD RUNNELS BLDG.
SANTA FE, NEW MEXICO 87503

FACILITY NAME Giant Refining Company - Ciniza

EPA I.D. NUMBER NMD000333211-2

COUNTY McKinley

WELL NUMBER MW-2

WELL LOCATION (LONGITUDE) 108° 26' 00"

WELL LOCATION (LATITUDE) 35° 29' 43"

NEW MEXICO STATE PLANE (X) 321,035.35

(Y) 1,636,184.06

AQUIFER NAME Sonsela

AQUIFER CONFINED X UNCONFINED

WELL INSTALLATION DATE 10-15-81

DRILLING METHOD Cable

INNER CASING DIAMETER 5.0"

BOREHOLE DIAMETER 10.0"

CASING MATERIAL PVC

METHOD OF DEVELOPMENT Compr

ELEV BOTTOM OF BOREHOLE 6741.90

ELEV BOTTOM OF WELL CASING 6741.90

ELEV BOTTOM OF SCREENED INT 6747.90

ELEVATION OF SCREENED INT 6757.90

SURVEYED ELEV OF CASING TOP 6880.84

DATE OF REPORT 11-25-92 SIGNATURE Lynn Shelton

NAME (TYPED) Lynn Shelton

MONITORING WELL IDENTIFICATION REPORT

ENVIRONMENTAL IMPROVEMENT DIVISION
HAZARDOUS WASTE SECTION
1190 ST. FRANCIS DRIVE/HAROLD RUNNELS BLDG.
SANTA FE, NEW MEXICO 87503

FACILITY NAME Giant Refining Company - Ciniza

EPA I.D. NUMBER NMD000333211-2

COUNTY McKinley

WELL NUMBER MW-4

WELL LOCATION (LONGITUDE) 108° 26' 54"

WELL LOCATION (LATITUDE) 35° 29' 30"

NEW MEXICO STATE PLANE (X) 321,602.07

(Y) 1,635,066.25

AQUIFER NAME Sonsela

AQUIFER CONFINED X UNCONFINED

WELL INSTALLATION DATE 10-16-81

DRILLING METHOD Cable

INNER CASING DIAMETER 5.0"

BOREHOLE DIAMETER 10.0"

CASING MATERIAL PVC

METHOD OF DEVELOPMENT Compr

ELEV BOTTOM OF BOREHOLE 6761.60

ELEV BOTTOM OF WELL CASING 6761.60

ELEV BOTTOM OF SCREENED INT 6761.60

ELEVATION OF SCREENED INT 6781.60

SURVEYED ELEV OF CASING TOP 6882.54

DATE OF REPORT 11-25-92 SIGNATURE Lynn Shelton

NAME (TYPED) Lynn Shelton

MONITORING WELL IDENTIFICATION REPORT

ENVIRONMENTAL IMPROVEMENT DIVISION
HAZARDOUS WASTE SECTION
1190 ST. FRANCIS DRIVE/HAROLD RUNNELS BLDG.
SANTA FE, NEW MEXICO 87503

FACILITY NAME	Giant Refining Company - Ciniza
EPA I.D. NUMBER	NMD000333211-2
COUNTY	McKinley
WELL NUMBER	MW-5
WELL LOCATION (LONGITUDE)	108° 25' 57"
WELL LOCATION (LATITUDE)	35° 29' 43"
NEW MEXICO STATE PLANE (X)	321,233.03
(Y)	1,636,212.58
AQUIFER NAME	Sonsela
AQUIFER CONFINED	X
UNCONFINED	
WELL INSTALLATION DATE	7-29-86
DRILLING METHOD	HLWAG & AIRRT
INNER CASING DIAMETER	4.0"
BOREHOLE DIAMETER	10.0"
CASING MATERIAL	PVC
METHOD OF DEVELOPMENT	Compr
ELEV BOTTOM OF BOREHOLE	6746.80
ELEV BOTTOM OF WELL CASING	6753.30
ELEV BOTTOM OF SCREENED INT	6758.30
ELEVATION OF SCREENED INT	6768.80
SURVEYED ELEV OF CASING TOP	6883.32

DATE OF REPORT 11-25-92 SIGNATURE Lynn Shelton

NAME (TYPED) Lynn Shelton

MONITORING WELL IDENTIFICATION REPORT

ENVIRONMENTAL IMPROVEMENT DIVISION
HAZARDOUS WASTE SECTION
1190 ST. FRANCIS DRIVE/HAROLD RUNNELS BLDG.
SANTA FE, NEW MEXICO 87503

FACILITY NAME	Giant Refining Company - Ciniza
EPA I.D. NUMBER	NMD000333211-2
COUNTY	McKinley
WELL NUMBER	OW-11
WELL LOCATION (LONGITUDE)	108° 25' 36"
WELL LOCATION (LATITUDE)	35° 29' 08"
NEW MEXICO STATE PLANE (X)	323,167,68
(Y)	1,632,185.21
AQUIFER NAME	Sonsela
AQUIFER CONFINED	X
UNCONFINED	
WELL INSTALLATION DATE	12-30-80
DRILLING METHOD	Cable
INNER CASING DIAMETER	4.0"
BOREHOLE DIAMETER	8.0"
CASING MATERIAL	PVC
METHOD OF DEVELOPMENT	Compr
ELEV BOTTOM OF BOREHOLE	6773.
ELEV BOTTOM OF WELL CASING	6773.
ELEV BOTTOM OF SCREENED INT	6858.
ELEVATION OF SCREENED INT	6880.
SURVEYED ELEV OF CASING TOP	6923.89

DATE OF REPORT 11-25-92 SIGNATURE Lynn Shelton

NAME (TYPED) Lynn Shelton

MONITORING WELL IDENTIFICATION REPORT

ENVIRONMENTAL IMPROVEMENT DIVISION
HAZARDOUS WASTE SECTION
1190 ST. FRANCIS DRIVE/HAROLD RUNNELS BLDG.
SANTA FE, NEW MEXICO 87503

FACILITY NAME Giant Refining Company - Ciniza

EPA I.D. NUMBER NMD000333211-2

COUNTY McKinley

WELL NUMBER SMW-1

WELL LOCATION (LONGITUDE) _____

WELL LOCATION (LATITUDE) _____

NEW MEXICO STATE PLANE (X) 321,501.32

(Y) 1,635,501.43

AQUIFER NAME Ciniza Sand

AQUIFER CONFINED X UNCONFINED _____

WELL INSTALLATION DATE 10-4-85

DRILLING METHOD HWLAG

INNER CASING DIAMETER 2.0"

BOREHOLE DIAMETER 6.5"

CASING MATERIAL SS304

METHOD OF DEVELOPMENT Compr

ELEV BOTTOM OF BOREHOLE 6832.73

ELEV BOTTOM OF WELL CASING 6834.23

ELEV BOTTOM OF SCREENED INT 6837.23

ELEVATION OF SCREENED INT 6857.23

SURVEYED ELEV OF CASING TOP 6883.29

DATE OF REPORT 11-25-92 SIGNATURE Lynn Shelton

NAME (TYPED) Lynn Shelton

MONITORING WELL IDENTIFICATION REPORT

ENVIRONMENTAL IMPROVEMENT DIVISION
HAZARDOUS WASTE SECTION
1190 ST. FRANCIS DRIVE/HAROLD RUNNELS BLDG.
SANTA FE, NEW MEXICO 87503

FACILITY NAME Giant Refining Company - Ciniza

EPA I.D. NUMBER NMD000333211-2

COUNTY McKinley

WELL NUMBER SMW-2

WELL LOCATION (LONGITUDE) _____

WELL LOCATION (LATITUDE) _____

NEW MEXICO STATE PLANE (X) 321,542.80

(Y) 1,635,592.65

AQUIFER NAME Ciniza Sand

AQUIFER CONFINED X UNCONFINED _____

WELL INSTALLATION DATE 9-26-85

DRILLING METHOD HLWAG

INNER CASING DIAMETER 2.0"

BOREHOLE DIAMETER 6.5"

CASING MATERIAL SS304

METHOD OF DEVELOPMENT Compr

ELEV BOTTOM OF BOREHOLE 6826.73

ELEV BOTTOM OF WELL CASING 6827.13

ELEV BOTTOM OF SCREENED INT 6830.13

ELEVATION OF SCREENED INT 6850.13

SURVEYED ELEV OF CASING TOP 6884.44

DATE OF REPORT 11-25-92 SIGNATURE Lynn Shelton

NAME (TYPED) Lynn Shelton

MONITORING WELL IDENTIFICATION REPORT

ENVIRONMENTAL IMPROVEMENT DIVISION
HAZARDOUS WASTE SECTION
1190 ST. FRANCIS DRIVE/HAROLD RUNNELS BLDG.
SANTA FE, NEW MEXICO 87503

FACILITY NAME Giant Refining Company - Ciniza

EPA I.D. NUMBER NMD000333211-2

COUNTY McKinley

WELL NUMBER SMW-3

WELL LOCATION (LONGITUDE) 108° 25' 56"

WELL LOCATION (LATITUDE) 35° 29' 40"

NEW MEXICO STATE PLANE (X) 321,397.90

(Y) 1,635,948.75

AQUIFER NAME Ciniza Sand

AQUIFER CONFINED X UNCONFINED

WELL INSTALLATION DATE 10-1-85

DRILLING METHOD HLWAG

INNER CASING DIAMETER 2.0"

BOREHOLE DIAMETER 6.5"

CASING MATERIAL SS304

METHOD OF DEVELOPMENT Compr

ELEV BOTTOM OF BOREHOLE 6836.15

ELEV BOTTOM OF WELL CASING 6838.65

ELEV BOTTOM OF SCREENED INT 6841.65

ELEVATION OF SCREENED INT 6861.65

SURVEYED ELEV OF CASING TOP 6884.56

DATE OF REPORT 11-25-92 SIGNATURE Lynn Shelton

NAME (TYPED) Lynn Shelton

MONITORING WELL IDENTIFICATION REPORT

ENVIRONMENTAL IMPROVEMENT DIVISION
HAZARDOUS WASTE SECTION
1190 ST. FRANCIS DRIVE/HAROLD RUNNELS BLDG.
SANTA FE, NEW MEXICO 87503

FACILITY NAME Giant Refining Company - Ciniza

EPA I.D. NUMBER NMD000333211-2

COUNTY McKinley

WELL NUMBER SMW-4

WELL LOCATION (LONGITUDE) 108° 26' 01"

WELL LOCATION (LATITUDE) 35° 29' 44"

NEW MEXICO STATE PLANE (X) 320,974.85

(Y) 1,636,153.54

AQUIFER NAME Ciniza Sand

AQUIFER CONFINED X UNCONFINED

WELL INSTALLATION DATE 9-25-85

DRILLING METHOD HLWAG

INNER CASING DIAMETER 2.0"

BOREHOLE DIAMETER 6.5"

CASING MATERIAL SS304

METHOD OF DEVELOPMENT Compr

ELEV BOTTOM OF BOREHOLE 6806.74

ELEV BOTTOM OF WELL CASING 6807.84

ELEV BOTTOM OF SCREENED INT 6810.84

ELEVATION OF SCREENED INT 6830.84

SURVEYED ELEV OF CASING TOP 6877.74

DATE OF REPORT 11-25-92 SIGNATURE Lynn Shelton

NAME (TYPED) Lynn Shelton

MONITORING WELL IDENTIFICATION REPORT

ENVIRONMENTAL IMPROVEMENT DIVISION
HAZARDOUS WASTE SECTION
1190 ST. FRANCIS DRIVE/HAROLD RUNNELS BLDG.
SANTA FE, NEW MEXICO 87503

FACILITY NAME	Giant Refining Company - Ciniza
EPA I.D. NUMBER	NMD000333211-2
COUNTY	McKinley
WELL NUMBER	SMW-5
WELL LOCATION (LONGITUDE)	108° 26' 03"
WELL LOCATION (LATITUDE)	35° 29' 41"
NEW MEXICO STATE PLANE (X)	320,778.61
(Y)	1,636,054.28
AQUIFER NAME	Ciniza Sand
AQUIFER CONFINED	X
UNCONFINED	
WELL INSTALLATION DATE	9-25-85
DRILLING METHOD	HLWAG
INNER CASING DIAMETER	2.0"
BOREHOLE DIAMETER	6.5"
CASING MATERIAL	SS304
METHOD OF DEVELOPMENT	Compr
ELEV BOTTOM OF BOREHOLE	6800.68
ELEV BOTTOM OF WELL CASING	6801.78
ELEV BOTTOM OF SCREENED INT	6804.78
ELEVATION OF SCREENED INT	6824.78
SURVEYED ELEV OF CASING TOP	6878.02

DATE OF REPORT 11-25-92 SIGNATURE Lynn Shelton

NAME (TYPED) Lynn Shelton

MONITORING WELL IDENTIFICATION REPORT

ENVIRONMENTAL IMPROVEMENT DIVISION
HAZARDOUS WASTE SECTION
1190 ST. FRANCIS DRIVE/HAROLD RUNNELS BLDG.
SANTA FE, NEW MEXICO 87503

FACILITY NAME	Giant Refining Company - Ciniza
EPA I.D. NUMBER	NMD000333211-2
COUNTY	McKinley
WELL NUMBER	SMW-6
WELL LOCATION (LONGITUDE)	108° 26' 02"
WELL LOCATION (LATITUDE)	35° 29' 38"
NEW MEXICO STATE PLANE (X)	320,839.52
(Y)	1,635,867.66
AQUIFER NAME	Ciniza Sand
AQUIFER CONFINED	X
UNCONFINED	
WELL INSTALLATION DATE	10-3-85
DRILLING METHOD	HLWAG
INNER CASING DIAMETER	2.0"
BOREHOLE DIAMETER	6.5"
CASING MATERIAL	SS304
METHOD OF DEVELOPMENT	Compr
ELEV BOTTOM OF BOREHOLE	6806.35
ELEV BOTTOM OF WELL CASING	6807.55
ELEV BOTTOM OF SCREENED INT	6810.55
ELEVATION OF SCREENED INT	6830.55
SURVEYED ELEV OF CASING TOP	6880.71

DATE OF REPORT 11-25-92 SIGNATURE Lynn Shelton

NAME (TYPED) Lynn Shelton

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Print Your Name: Lynn Shelton **Telephone:** 722-0227

Facility Name: GIANT CINIZA **EPA ID #:** NMD000333211-2

Date: Spring 92 **Parameter::** pH

Well Number: MW-1 **Up or Downgradient:** : DOWN

Please list the values calculated for the background parameters on the Background Indicator Parameter Calculation Sheet:

X(b)=	8.51	S(b)2=	0.015	t(b)=	2.947
W(b)=	0.000937	n(b)=	16		

Please list the current values for this monitoring well.

	Value	(Value - X(m))2
1	8.87	0.011025
2	8.9	0.018225
3	8.92	0.024025
4	8.94	0.030625
Total 1	35.63	Total 2 0.0839

Mean value X(m)	8.9075	t(m)=	5.841
Variance S(m)2	0.027966	W(m)=	0.006991

t(*)=	4.463991
t(c)=	5.498829

If t(*) absolute is less than t(c) there has not been an increase in the value

Lynn Shelton

Signature

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Print Your Name: Lynn Shelton **Telephone:** 722-0227

Facility Name: GIANT CINIZA **EPA ID #:** NMD000333211-2

Date: Spring 92 **Parameter::** pH

Well Number: MW-2 **Up or Downgradient:** : DOWN

Please list the values calculated for the background parameters on the Background Indicator Parameter Calculation Sheet:

X(b)=	8.51	S(b)2=	0.015	t(b)=	2.947
W(b)=	0.000937	n(b)=	16		

Please list the current values for this monitoring well.

	Value	(Value - X(m))2
1	8.88	0.013225
2	8.89	0.015625
3	8.8	0.001225
4	8.87	0.011025
Total 1	35.44	Total 2 0.0411

Mean value X(m)	8.86	t(m)=	5.841
Variance S(m)2	0.0137	W(m)=	0.003425

t(*)=	5.299078
t(c)=	5.219080

If t(*) absolute is less than t(c) there has not been an increase in the value

Lynn Shelton

Signature

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Print Your Name: Lynn Shelton **Telephone:** 722-0227

Facility Name: GIANT CINIZA **EPA ID #:** NMD000333211-2

Date: Spring 92 **Parameter::** pH

Well Number: MW-4 **Up or Downgradient:** UP

Please list the values calculated for the background parameters on the Background Indicator Parameter Calculation Sheet:

X(b)=	8.51	S(b)2=	0.015	t(b)=	2.947
W(b)=	0.000937	n(b)=	16		

Please list the current values for this monitoring well.

	Value	(Value - X(m))2
1	8.49	0.075625
2	8.43	0.112225
3	8.5	0.070225
4	8.5	0.070225
Total 1	33.92	Total 2 0.3283

Mean value X(m)	8.48	t(m)=	5.841
Variance S(m)2	0.109433	W(m)=	0.027358

t(*)=	-0.17834
t(c)=	5.745115

If t(*) absolute is less than t(c) there has not been an increase in the value

Lynn Shelton

Signature

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Print Your Name: Lynn Shelton **Telephone:** 722-0227

Facility Name: GIANT CINIZA **EPA ID #:** NMD000333211-2

Date: Spring 92 **Parameter::** pH

Well Number: MW-5 **Up or Downgradient:** : DOWN

Please list the values calculated for the background parameters on the Background Indicator Parameter Calculation Sheet:

X(b)=	8.51	S(b)2=	0.015	t(b)=	2.947
W(b)=	0.000937	n(b)=	16		

Please list the current values for this monitoring well.

	Value	(Value - X(m))2
1	8.68	0.007225
2	8.71	0.003025
3	8.79	0.000625
4	8.8	0.001225
Total 1	34.98	Total 2 0.0121

Mean value X(m)	8.745	t(m)=	5.841
Variance S(m)2	0.004033	W(m)=	0.001008

t(*)=	5.327396
t(c)=	4.446674

If t(*) absolute is less than t(c) there has not been an increase in the value

Lynn Shelton

Signature

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Print Your Name: Lynn Shelton **Telephone:** 722-0227

Facility Name: GIANT CINIZA **EPA ID #:** NMD000333211-2

Date: Fall 92 **Parameter::** pH

Well Number: MW-1 **Up or Downgradient:** : DOWN

Please list the values calculated for the background parameters on the Background Indicator Parameter Calculation Sheet:

X(b)=	8.51	S(b)2=	0.015	t(b)=	2.947
W(b)=	0.000937	n(b)=	16		

Please list the current values for this monitoring well.

	Value	(Value – X(m))2
1	8.76	0.000025
2	8.78	0.000225
3	8.78	0.000225
4	8.74	0.000625
Total 1	35.06	Total 2 0.0011

Mean value X(m)	8.765	t(m)=	5.841
Variance S(m)2	0.000366	W(m)=	0.000091

t(*)=	7.948722	If t(*) absolute is less than t(c) there has not been an increase in the value
t(c)=	3.204765	

Lynn Shelton

Signature

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Print Your Name: Lynn Shelton **Telephone:** 722-0227

Facility Name: GIANT CINIZA **EPA ID #:** NMD000333211-2

Date: Fall 92 **Parameter::** pH

Well Number: MW-2 **Up or Downgradient:** : DOWN

Please list the values calculated for the background parameters on the Background Indicator Parameter Calculation Sheet:

X(b)=	8.51	S(b)2=	0.015	t(b)=	2.947
W(b)=	0.000937	n(b)=	16		

Please list the current values for this monitoring well.

	Value	(Value - X(m))2
1	8.67	0.009025
2	8.61	0.024025
3	8.6	0.027225
4	8.61	0.024025
Total 1	34.49	Total 2 0.0843

Mean value X(m)	8.6225	t(m)=	5.841
Variance S(m)2	0.0281	W(m)=	0.007025

t(*)=	1.260746
t(c)=	5.500262

If t(*) absolute is less than t(c) there has not been an increase in the value

Lynn Shelton

Signature

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Print Your Name: Lynn Shelton **Telephone:** 722-0227

Facility Name: GIANT CINIZA **EPA ID #:** NMD000333211-2

Date: Fall 92 **Parameter::** pH

Well Number: MW-4 **Up or Downgradient:** UP

Please list the values calculated for the background parameters on the Background Indicator Parameter Calculation Sheet:

X(b)=	8.51	S(b)2=	0.015	t(b)=	2.947
W(b)=	0.000937	n(b)=	16		

Please list the current values for this monitoring well.

	Value	(Value - X(m))2
1	8.6	0.027225
2	8.58	0.034225
3	8.57	0.038025
4	8.57	0.038025
Total 1	34.32	Total 2 0.1375

Mean value X(m)	8.58	t(m)=	5.841
Variance S(m)2	0.045833	W(m)=	0.011458

t(*)=	0.628724
t(c)=	5.622126

If t(*) absolute is less than t(c) there has not been an increase in the value

Lynn Shelton

Signature

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Print Your Name: Lynn Shelton **Telephone:** 722-0227

Facility Name: GIANT CINIZA **EPA ID #:** NMD000333211-2

Date: Fall 92 **Parameter::** pH

Well Number: MW-5 **Up or Downgradient:** : DOWN

Please list the values calculated for the background parameters on the Background Indicator Parameter Calculation Sheet:

X(b)=	8.51	S(b)2=	0.015	t(b)=	2.947
W(b)=	0.000937	n(b)=	16		

Please list the current values for this monitoring well.

	Value	(Value - X(m))2
1	8.86	0.009025
2	8.86	0.009025
3	8.88	0.013225
4	8.87	0.011025
Total 1	35.47	Total 2 0.0423

Mean value X(m)	8.8675	t(m)=	5.841
Variance S(m)2	0.0141	W(m)=	0.003525

t(*)=	5.351640
t(c)=	5.233016

If t(*) absolute is less than t(c) there has not been an increase in the value

Lynn Shelton

Signature

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Print Your Name: Lynn Shelton **Telephone:** 722-0227

Facility Name: GIANT CINIZA **EPA ID #:** NMD000333211-2

Date: Spring 92 **Parameter::** SPEC. COND.

Well Number: MW-1 **Up or Downgradient:** : DOWN

Please list the values calculated for the background parameters on the Background Indicator Parameter Calculation Sheet:

X(b)=	984	S(b)2=	1487	t(b)=	2.602
W(b)=	92.9375	n(b)=	16		

Please list the current values for this monitoring well.

	Value	(Value - X(m))2
1	1021	3481
2	1027	2809
3	1033	2209
4	1033	2209
Total 1	4114	Total 2 10708

Mean value X(m)	1028.5	t(m)=	4.541
Variance S(m)2	3569.333	W(m)=	892.3333

t(*)= 1.417693

If t(*) is negative there has not been an increase in the value

t(c)= 4.358100

Lynn Shelton

Signature

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Print Your Name: Lynn Shelton **Telephone:** 722-0227

Facility Name: GIANT CINIZA **EPA ID #:** NMD000333211-2

Date: Spring 92 **Parameter::** SPEC. COND.

Well Number: MW-2 **Up or Downgradient:** DOWN

Please list the values calculated for the background parameters on the Background Indicator Parameter Calculation Sheet:

X(b)=	984	**S(b)2=**	1487	**t(b)=**	2.602
W(b)=	92.9375	**n(b)=**	16		

Please list the current values for this monitoring well.

	Value	(Value – X(m))2
1	1022	3364
2	1027	2809
3	1028	2704
4	1028	2704
Total 1	4105	Total 2 11581

Mean value X(m)	1026.25	**t(m)=**	4.541
Variance S(m)2	3860.333	**W(m)=**	965.0833

t(*)= 1.298911

t(c)= 4.370676

If t(*) is negative there has not been an increase in the value

Lynn Shelton

Signature

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Print Your Name: Lynn Shelton **Telephone:** 722-0227

Facility Name: GIANT CINIZA **EPA ID #:** NMD000333211-2

Date: Spring 92 **Parameter::** SPEC. COND.

Well Number: MW-4 **Up or Downgradient:** UP

Please list the values calculated for the background parameters on the Background Indicator Parameter Calculation Sheet:

X(b)=	984	S(b)2=	1487	t(b)=	2.602
W(b)=	92.9375	n(b)=	16		

Please list the current values for this monitoring well.

	Value	(Value - X(m))2
1	1103	529
2	1098	324
3	1088	64
4	1091	121
Total 1	4380	Total 2 1038

Mean value X(m)	1095	t(m)=	4.541
Variance S(m)2	346	W(m)=	86.5

t(*)= 8.286409

t(c)= 3.536718

If t(*) is negative there has not been an increase in the value

Lynn Shelton

Signature

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Print Your Name: Lynn Shelton **Telephone:** 722-0227

Facility Name: GIANT CINIZA **EPA ID #:** NMD000333211-2

Date: Spring 92 **Parameter::** SPEC. COND.

Well Number: MW-5 **Up or Downgradient:** : DOWN

Please list the values calculated for the background parameters on the Background Indicator Parameter Calculation Sheet:

X(b)=	984	S(b)2=	1487	t(b)=	2.602
W(b)=	92.9375	n(b)=	16		

Please list the current values for this monitoring well.

	Value	(Value - X(m))2
1	1026	2916
2	1027	2809
3	1021	3481
4	1022	3364
Total 1	4096	Total 2 12570

Mean value X(m)	1024	t(m)=	4.541
Variance S(m)2	4190	W(m)=	1047.5

t(*)= 1.184470

If t(*) is negative there has not been an increase in the value

t(c)= 4.382985

Lynn Shelton

Signature

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Print Your Name: Lynn Shelton **Telephone:** 722-0227

Facility Name: GIANT CINIZA **EPA ID #:** NMD000333211-2

Date: Fall 92 **Parameter::** SPEC. COND.

Well Number: MW-1 **Up or Downgradient:** : DOWN

Please list the values calculated for the background parameters on the Background Indicator Parameter Calculation Sheet:

X(b)=	984	S(b)2=	1487	t(b)=	2.602
W(b)=	92.9375	n(b)=	16		

Please list the current values for this monitoring well.

	Value	(Value - X(m))2
1	1070	100
2	1090	100
3	1070	100
4	1090	100
Total 1	4320	Total 2 400

Mean value X(m)	1080	t(m)=	4.541
Variance S(m)2	133.3333	W(m)=	33.33333

t(*)= 8.543183

t(c)= 3.113862

If t(*) is negative there has not been an increase in the value

Lynn Shelton

Signature

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Print Your Name: Lynn Shelton **Telephone:** 722-0227

Facility Name: GIANT CINIZA **EPA ID #:** NMD000333211-2

Date: Fall 92 **Parameter::** SPEC. COND.

Well Number: MW-2 **Up or Downgradient:** : DOWN

Please list the values calculated for the background parameters on the Background Indicator Parameter Calculation Sheet:

X(b)=	984	**S(b)2=**	1487	**t(b)=**	2.602
W(b)=	92.9375	**n(b)=**	16		

Please list the current values for this monitoring well.

	Value	(Value - X(m))2
1	1050	900
2	1130	2500
3	1100	400
4	1080	0
Total 1	4360	Total 2 3800

Mean value X(m)	1090	**t(m)=**	4.541
Variance S(m)2	1266.666	**W(m)=**	316.6666

t(*)= 5.237495

t(c)= 4.101048

If t(*) is negative there has not been an increase in the value

Lynn Shelton

Signature

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Print Your Name: Lynn Shelton **Telephone:** 722-0227

Facility Name: GIANT CINIZA **EPA ID #:** NMD000333211-2

Date: Fall 92 **Parameter::** SPEC. COND.

Well Number: MW-4 **Up or Downgradient:** UP

Please list the values calculated for the background parameters on the Background Indicator Parameter Calculation Sheet:

X(b)=	984	S(b)2=	1487	t(b)=	2.602
W(b)=	92.9375	n(b)=	16		

Please list the current values for this monitoring well.

	Value	(Value - X(m))2
1	1130	2500
2	1130	2500
3	1130	2500
4	1130	2500
Total 1	4520	Total 2 10000

Mean value X(m)	1130	t(m)=	4.541
Variance S(m)2	3333.333	W(m)=	833.3333

t(*)= 4.797156

t(c)= 4.346450

If t(*) is negative there has not been an increase in the value

Lynn Shelton

Signature

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Print Your Name: Lynn Shelton **Telephone:** 722-0227

Facility Name: GIANT CINIZA **EPA ID #:** NMD000333211-2

Date: Fall 92 **Parameter::** SPEC. COND.

Well Number: MW-5 **Up or Downgradient:** : DOWN

Please list the values calculated for the background parameters on the Background Indicator Parameter Calculation Sheet:

X(b)=	984	S(b)2=	1487	t(b)=	2.602
W(b)=	92.9375	n(b)=	16		

Please list the current values for this monitoring well.

	Value	(Value - X(m))2
1	1170	8100
2	1000	6400
3	1130	2500
4	1110	900
Total 1	4410	Total 2 17900

Mean value X(m)	1102.5	t(m)=	4.541
Variance S(m)2	5966.666	W(m)=	1491.666

t(*)= 2.976856

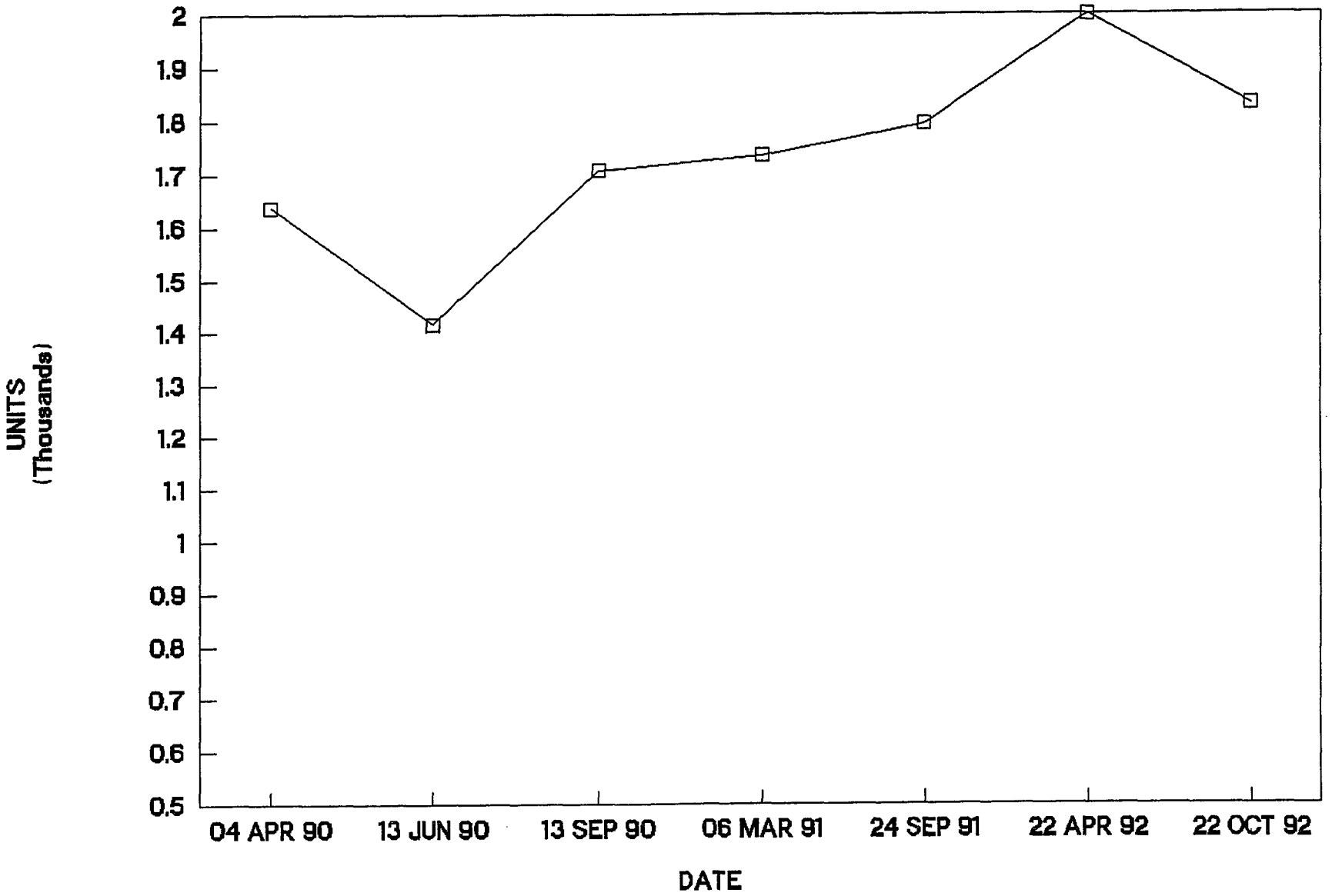
t(c)= 4.427277

If t(*) is negative there has not been an increase in the value

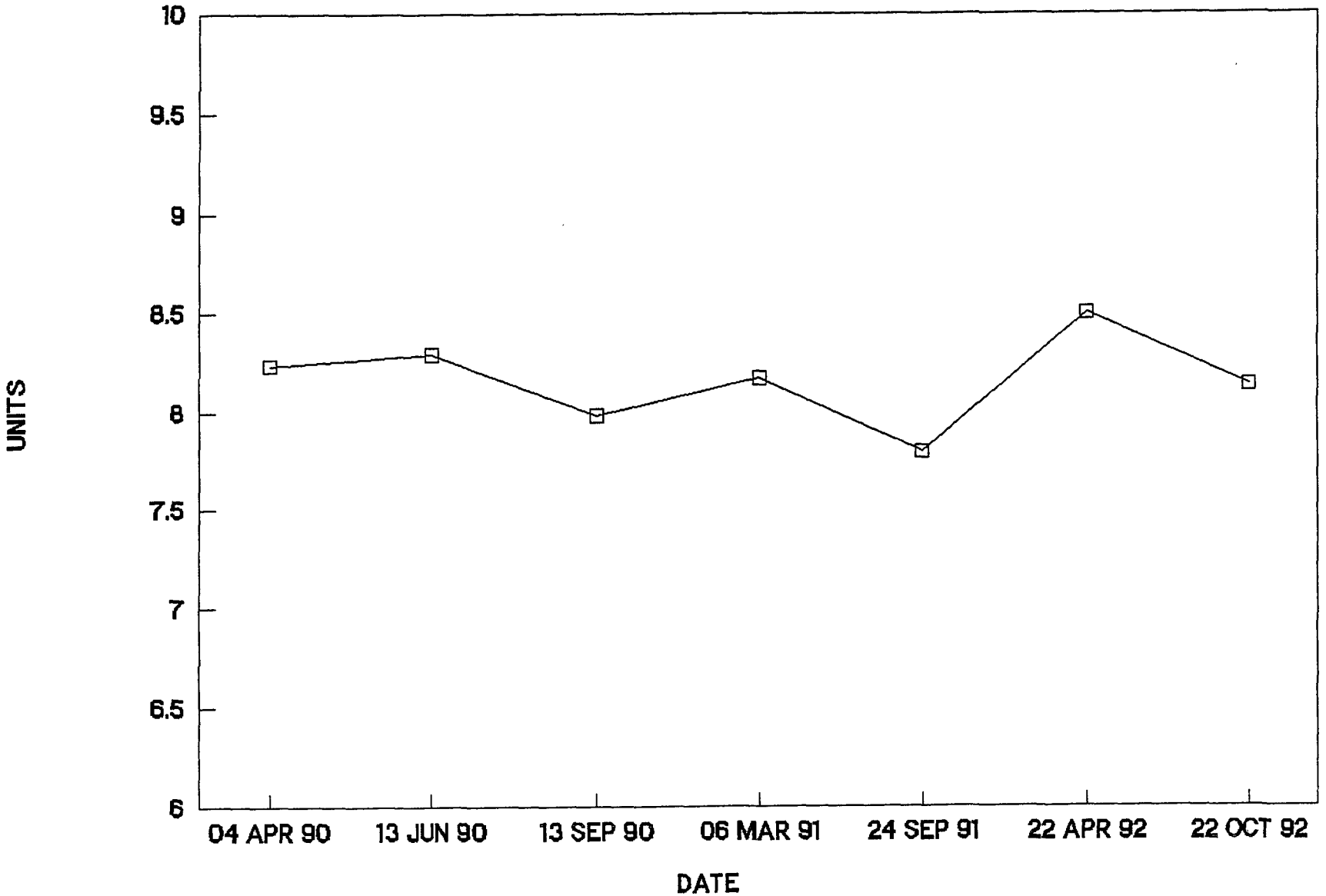
Lynn Shelton

Signature

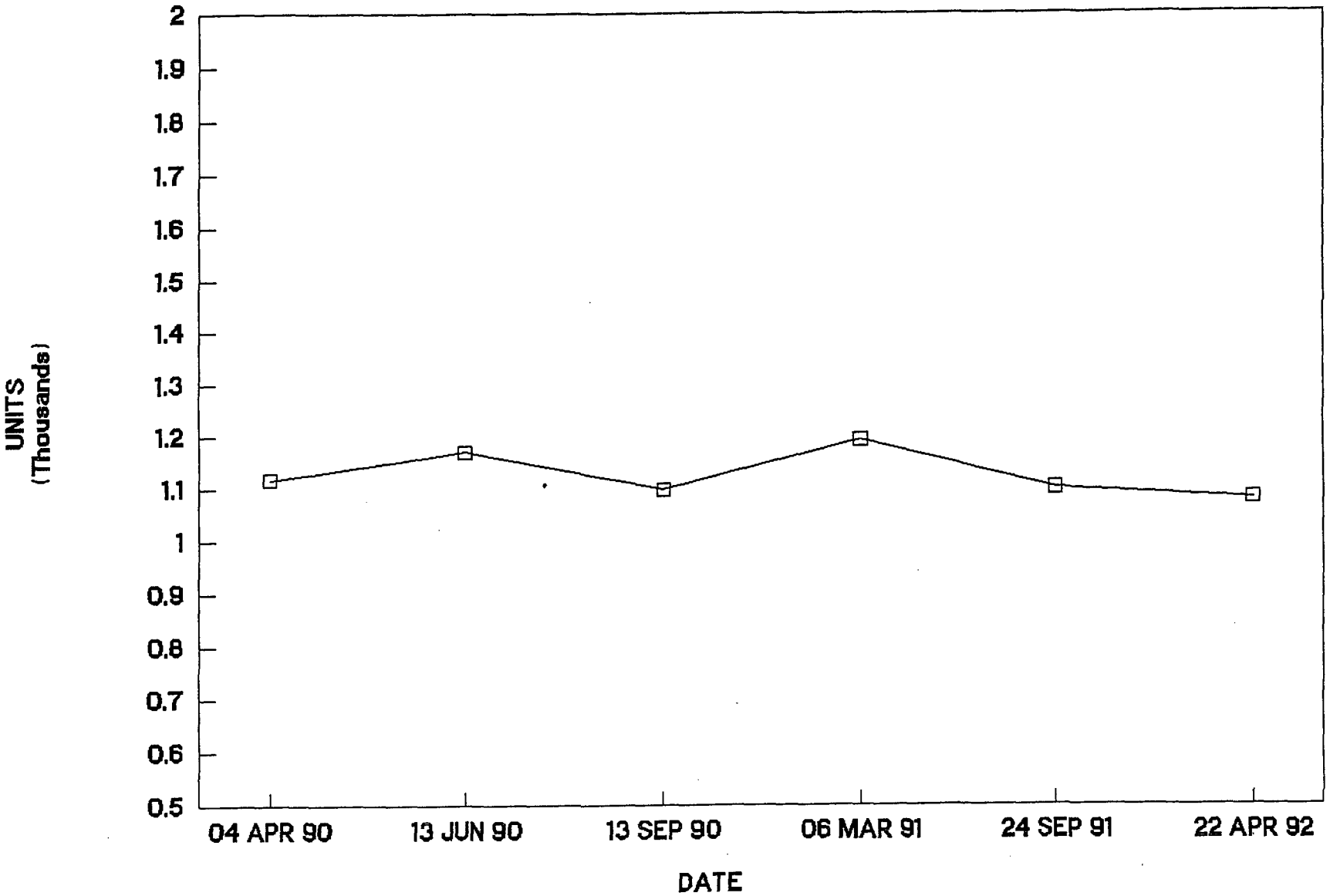
OW-11 SPECIFIC CONDUCTIVITY



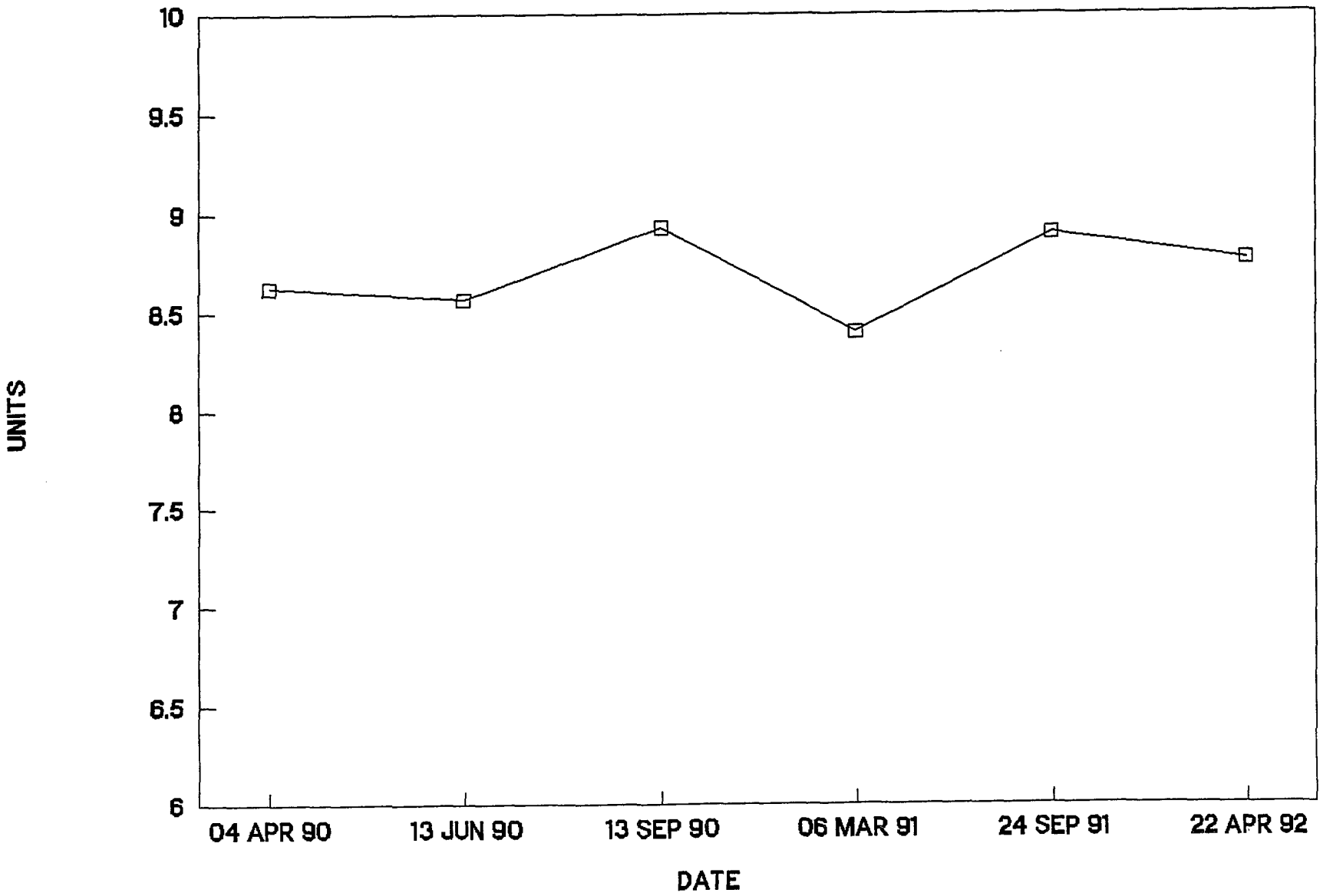
OW-11 pH


10
9.5
9
8.5
8
7.5
7
6.5
6
UNITS
04 APR 90
13 JUN 90
13 SEP 90
06 MAR 91
24 SEP 91
22 APR 92
22 OCT 92
DATE

MW-1 SPECIFIC CONDUCTIVITY



MW-1 pH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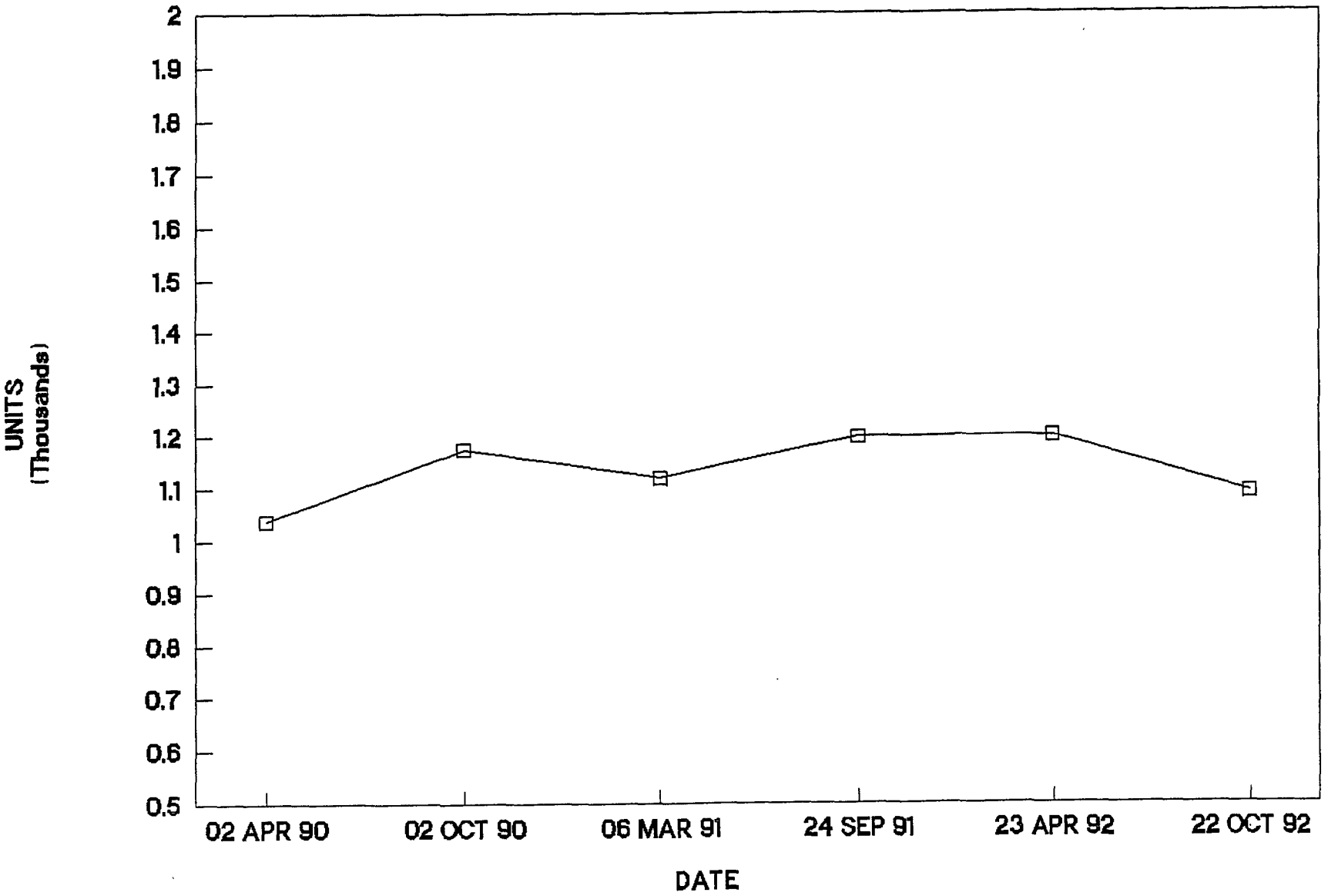
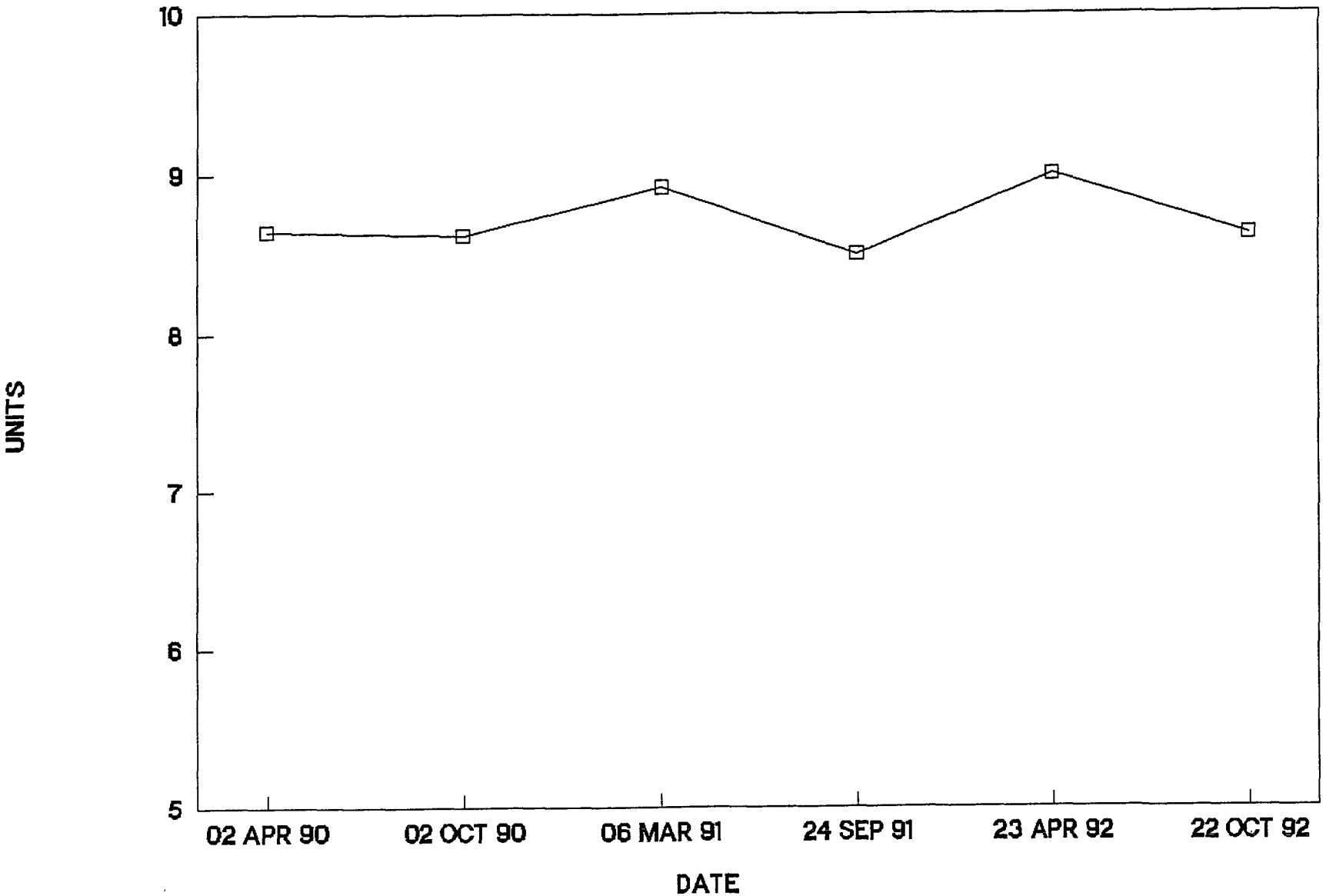
UNITS
04 APR 90
13 JUN 90
13 SEP 90
06 MAR 91
24 SEP 91
22 APR 92
DATE

MW-2 SPECIFIC CONDUCTIVITY



MW-2 pH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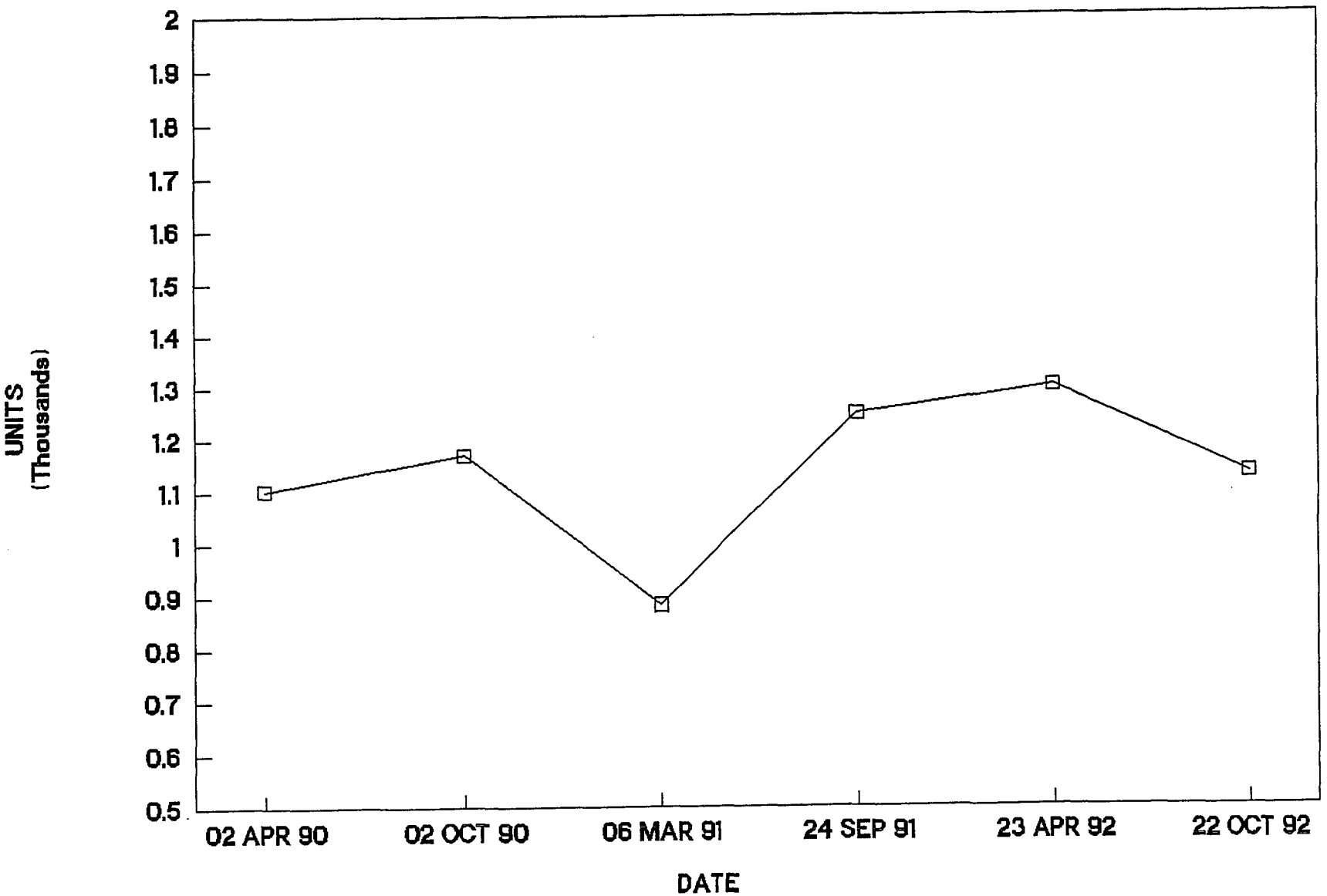
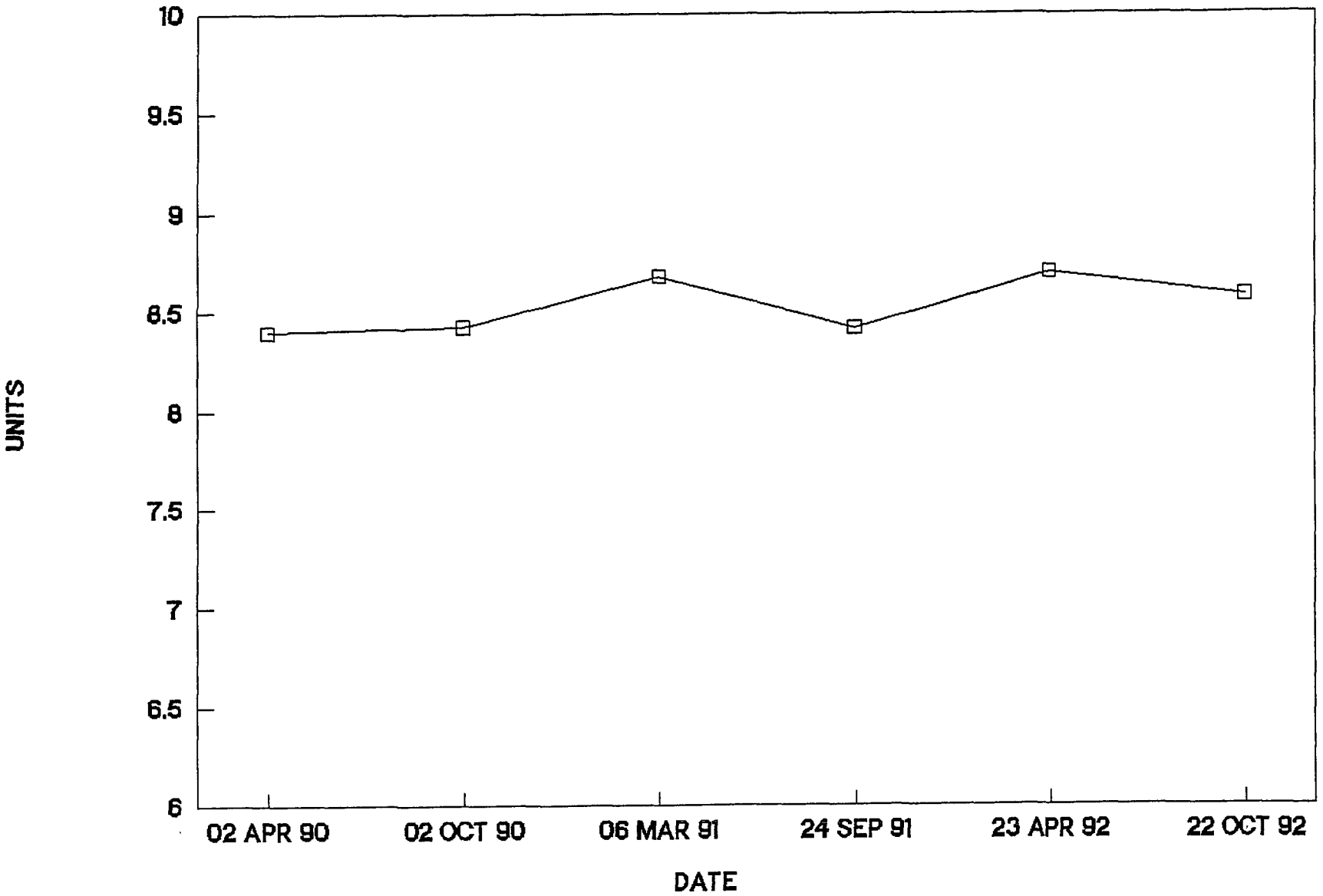
UNITS
02 APR 90
02 OCT 90
06 MAR 91
24 SEP 91
23 APR 92
22 OCT 92
DATE

MW-4 SPECIFIC CONDUCTIVITY



MW-4 pH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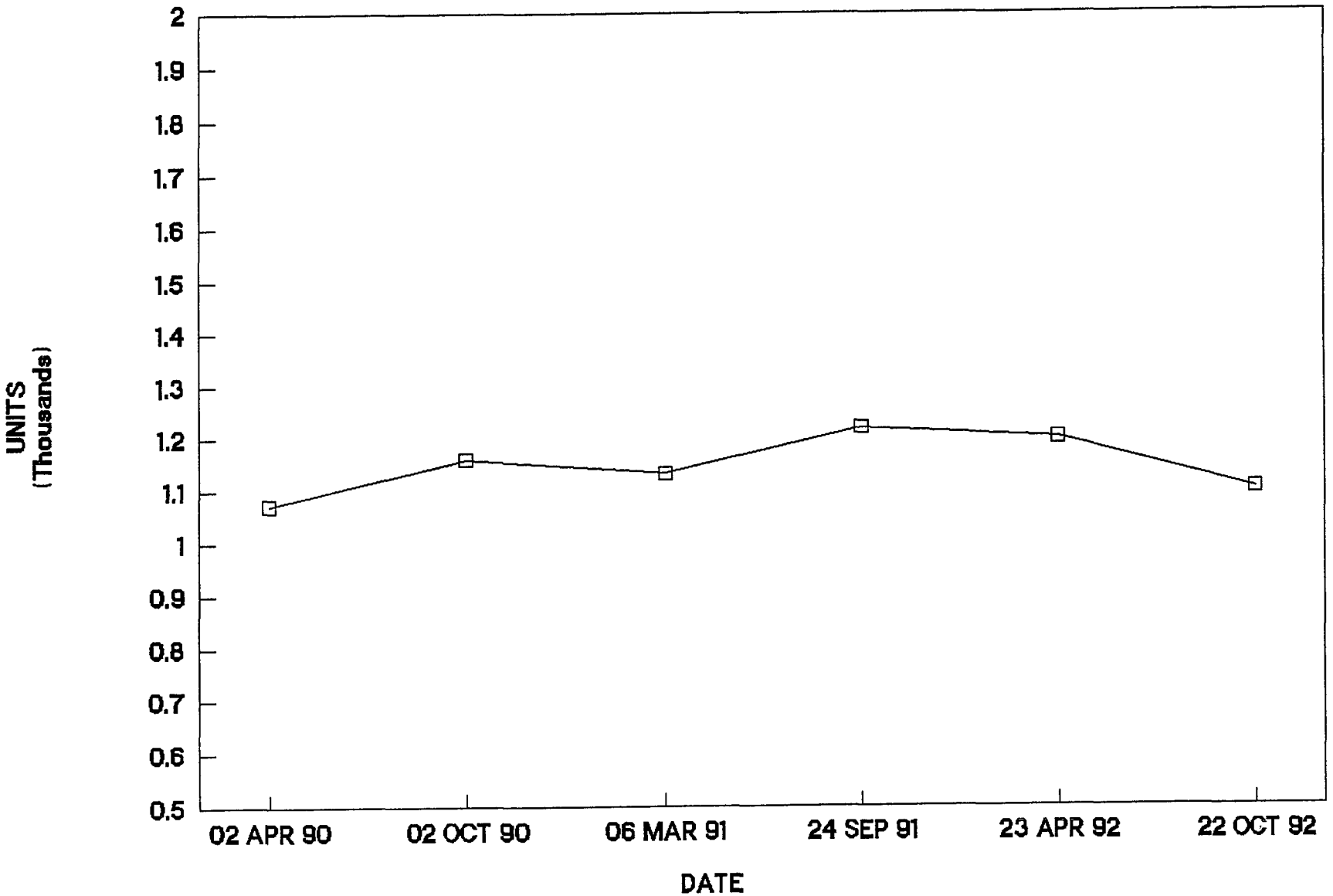
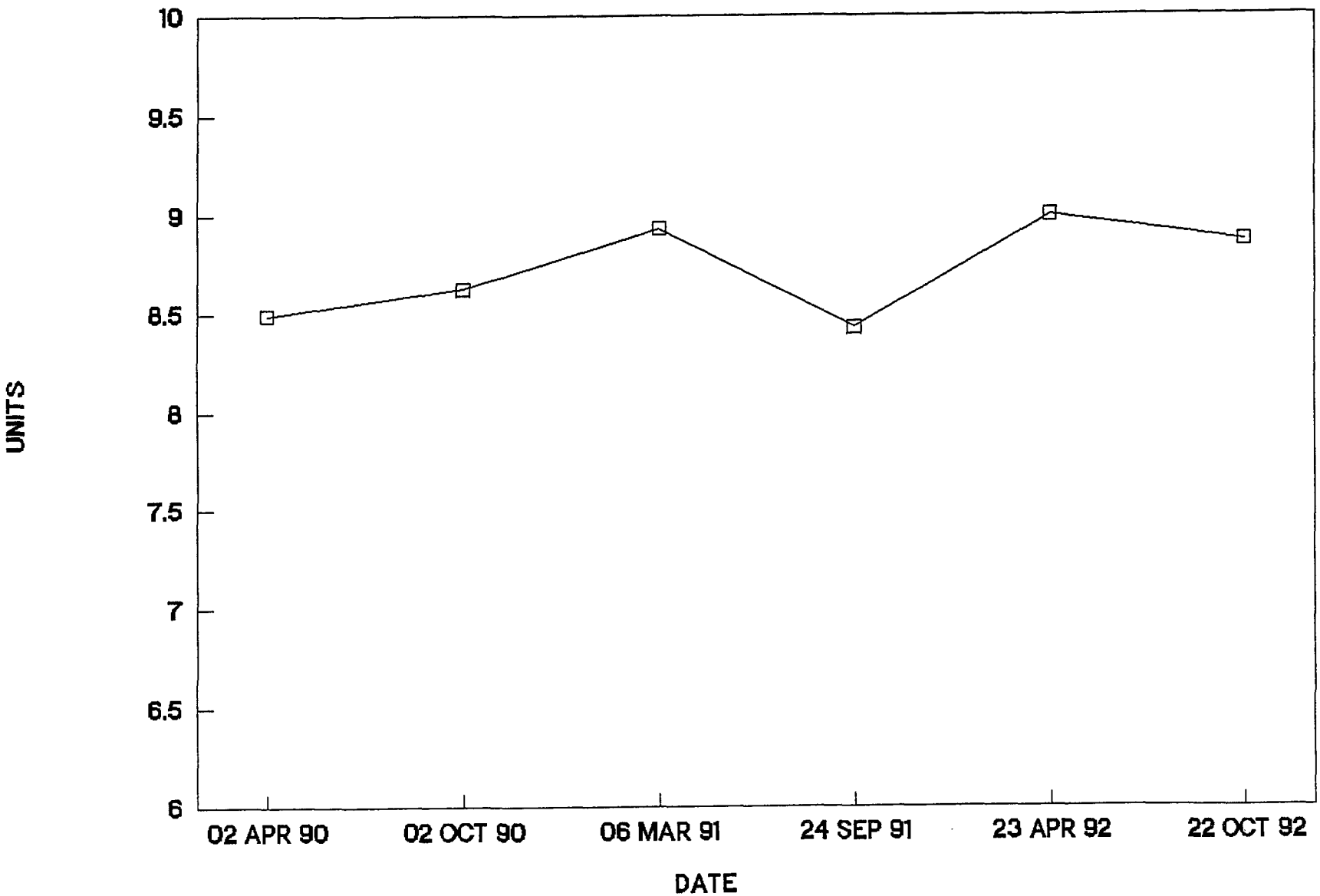
UNITS
02 APR 90
02 OCT 90
06 MAR 91
24 SEP 91
23 APR 92
22 OCT 92
DATE

MW-5 SPECIFIC CONDUCTIVITY



MW-5 pH


10
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UNITS
02 APR 90
02 OCT 90
06 MAR 91
24 SEP 91
23 APR 92
22 OCT 92
DATE

TOLERANCE INTERVAL

1990

LEAD

SMW-3	MEAN-	0.076	SD-	0.147	
	DATE	RESULT	TOL LIMIT	UNITS	
	3-90	0.0025 *	0.370	ppm	Does not exceed the tolerance limit.
	9-90	0.021	0.370	ppm	Does not exceed the tolerance limit.

SMW-4	MEAN-	0.0159	SD-	0.0356	
	DATE	RESULT	TOL LIMIT	UNITS	
	3-90	0.0025 *	0.087	ppm	Does not exceed the tolerance limit.
	9-90	0.015	0.087	ppm	Does not exceed the tolerance limit.

SMW-5	MEAN-	0.03	SD-	0.078	
	DATE	RESULT	TOL LIMIT	UNITS	
	3-90	0.018	0.186	ppm	Does not exceed the tolerance limit.
	9-90	0.012	0.186	ppm	Does not exceed the tolerance limit.

SMW-6	MEAN-	0.026	SD-	0.069	
	DATE	RESULT	TOL LIMIT	UNITS	
	3-90	0.0025 *	0.164	ppm	Does not exceed the tolerance limit.
	9-90	0.026	0.164	ppm	Does not exceed the tolerance limit.

* 1/2 of Reporting Limit.

CHROME

SMW-3	MEAN-	0.026	SD-	0.0258
DATE	RESULT	TOL LIMIT	UNITS	
3-90	0.005 *	0.078	ppm	Does not exceed the tolerance limit.
9-90	0.034	0.078	ppm	Does not exceed the tolerance limit.

SMW-4	MEAN-	0.006	SD-	0.002
DATE	RESULT	TOL LIMIT	UNITS	
3-90	0.005 *	0.010	ppm	Does not exceed the tolerance limit.
9-90	0.019	0.010	ppm	Exceeds the tolerance limit by 90%.

SMW-5	MEAN-	0.0178	SD-	0.0361
DATE	RESULT	TOL LIMIT	UNITS	
3-90	0.025	0.090	ppm	Does not exceed the tolerance limit.
9-90	0.037	0.090	ppm	Does not exceed the tolerance limit.

SMW-6	MEAN-	0.0144	SD-	0.0205
DATE	RESULT	TOL LIMIT	UNITS	
3-90	0.011	0.055	ppm	Does not exceed the tolerance limit.
9-90	0.11	0.055	ppm	Exceeds the tolerance limit by 100%.

* 1/2 of reporting limit.

pH

SMW-3	MEAN-	7.9	SD-	0.21
DATE	RESULT	TOL LIMIT	UNITS	
3-90	7.85	8.320	ppm	Does not exceed the tolerance limit.
9-90	7.95	8.320	ppm	Does not exceed the tolerance limit.

SMW-4	MEAN-	8.23	SD-	0.164
DATE	RESULT	TOL LIMIT	UNITS	
3-90	8.13	8.558	ppm	Does not exceed the tolerance limit.
9-90	8.39	8.558	ppm	Does not exceed the tolerance limit.

SMW-5	MEAN-	7.59	SD-	2.69
DATE	RESULT	TOL LIMIT	UNITS	
3-90	8.65	12.970	ppm	Does not exceed the tolerance limit.
9-90	8.54	12.970	ppm	Does not exceed the tolerance limit.

SMW-6	MEAN-	6.31	SD-	3.38
DATE	RESULT	TOL LIMIT	UNITS	
3-90	8.1	13.070	ppm	Does not exceed the tolerance limit.
9-90	7.86	13.070	ppm	Does not exceed the tolerance limit.

EC

SMW-3	MEAN-	3377.8	SD-	223.28
DATE	RESULT	TOL LIMIT	UNITS	
3-90	3003	3824.360	ppm	Does not exceed the tolerance limit.
9-90	3223	3824.360	ppm	Does not exceed the tolerance limit.

SMW-4	MEAN-	1427.63	SD-	228.27
DATE	RESULT	TOL LIMIT	UNITS	
3-90	1220	1884.170	ppm	Does not exceed the tolerance limit.
9-90	1050	1884.170	ppm	Does not exceed the tolerance limit.

SMW-5	MEAN-	1135.89	SD-	66.63
DATE	RESULT	TOL LIMIT	UNITS	
3-90	1075	1269.150	ppm	Does not exceed the tolerance limit.
9-90	1005	1269.150	ppm	Does not exceed the tolerance limit.

SMW-6	MEAN-	1312.56	SD-	478.8
DATE	RESULT	TOL LIMIT	UNITS	
3-90	1570	2270.160	ppm	Does not exceed the tolerance limit.
9-90	1395	2270.160	ppm	Does not exceed the tolerance limit.

TEMPERATURE

SMW-3	MEAN-	54.67	SD-	2.69
DATE	RESULT	TOL LIMIT	UNITS	
3-90	52	60.050	ppm	Does not exceed the tolerance limit.
9-90	57	60.050	ppm	Does not exceed the tolerance limit.

SMW-4	MEAN-	55.25	SD-	3.16
DATE	RESULT	TOL LIMIT	UNITS	
3-90	52	61.570	ppm	Does not exceed the tolerance limit.
9-90	59	61.570	ppm	Does not exceed the tolerance limit.

SMW-5	MEAN-	54.42	SD-	2.92
DATE	RESULT	TOL LIMIT	UNITS	
3-90	52	60.260	ppm	Does not exceed the tolerance limit.
9-90	56	60.260	ppm	Does not exceed the tolerance limit.

SMW-6	MEAN-	54.2	SD-	3.87
DATE	RESULT	TOL LIMIT	UNITS	
3-90	50	61.940	ppm	Does not exceed the tolerance limit.
9-90	57	61.940	ppm	Does not exceed the tolerance limit.

WATER LEVEL

SMW-3	MEAN- 6851.61	SD- 0.959		
DATE	RESULT	TOL LIMIT	UNITS	
3-90	6849.7	6853.528	ppm	Does not exceed the tolerance limit.
9-90	6851.08	6853.528	ppm	Does not exceed the tolerance limit.

SMW-4	MEAN- 6848.59	SD- 1.638		
DATE	RESULT	TOL LIMIT	UNITS	
3-90	6845.07	6851.866	ppm	Does not exceed the tolerance limit.
9-90	6848.38	6851.866	ppm	Does not exceed the tolerance limit.

SMW-5	MEAN- 6847.27	SD- 1.358		
DATE	RESULT	TOL LIMIT	UNITS	
3-90	6849.83	6849.986	ppm	Does not exceed the tolerance limit.
9-90	6845.64	6849.986	ppm	Does not exceed the tolerance limit.

SMW-6	MEAN- 6857.35	SD- 4.411		
DATE	RESULT	TOL LIMIT	UNITS	
3-90	6857.78	6866.172	ppm	Does not exceed the tolerance limit.
9-90	6848.8	6866.172	ppm	Does not exceed the tolerance limit.

TOLERANCE INTERVAL

1991

LEAD

SMW-3	MEAN-	0.076	SD-	0.147	
DATE	RESULT	TOL LIMIT	UNITS		
3-91	0.01	0.370	ppm	Does not exceed the tolerance limit.	
9-91	0.011	0.370	ppm	Does not exceed the tolerance limit.	

SMW-4	MEAN-	0.0159	SD-	0.0356	
DATE	RESULT	TOL LIMIT	UNITS		
3-91	0.008	0.087	ppm	Does not exceed the tolerance limit.	
9-91	0.005	0.087	ppm	Does not exceed the tolerance limit.	

SMW-5	MEAN-	0.03	SD-	0.078	
DATE	RESULT	TOL LIMIT	UNITS		
3-91	0.0025 *	0.186	ppm	Does not exceed the tolerance limit.	
9-91	0.003	0.186	ppm	Does not exceed the tolerance limit.	

SMW-6	MEAN-	0.026	SD-	0.069	
DATE	RESULT	TOL LIMIT	UNITS		
3-91	0.0025 *	0.164	ppm	Does not exceed the tolerance limit.	
9-91	0.009	0.164	ppm	Does not exceed the tolerance limit.	

* 1/2 of Reporting Limit.

CHROME

SMW-3	MEAN-	0.026	SD-	0.0258	
DATE	RESULT	TOL LIMIT	UNITS		
3-91	0.038	0.078	ppm	Does not exceed the tolerance limit.	
9-91	0.01	0.078	ppm	Does not exceed the tolerance limit.	

SMW-4	MEAN-	0.006	SD-	0.002	
DATE	RESULT	TOL LIMIT	UNITS		
3-91	0.032	0.010	ppm	Exceeds the tolerance limit by 220%.	
9-91	0.005 *	0.010	ppm	Does not exceed the tolerance limit.	

SMW-5	MEAN-	0.0178	SD-	0.0361	
DATE	RESULT	TOL LIMIT	UNITS		
3-91	0.042	0.090	ppm	Does not exceed the tolerance limit.	
9-91	0.035	0.090	ppm	Does not exceed the tolerance limit.	

SMW-6	MEAN-	0.0144	SD-	0.0205	
DATE	RESULT	TOL LIMIT	UNITS		
3-91	0.005 *	0.055	ppm	Does not exceed the tolerance limit.	
9-91	0.097	0.055	ppm	Exceeds the tolerance limit by 76%.	

* 1/2 of reporting limit.

pH

SMW-3	MEAN-	7.9	SD-	0.21	
	DATE	RESULT	TOL LIMIT	UNITS	
	3-91	8	8.320	ppm	Does not exceed the tolerance limit.
	9-91	7.76	8.320	ppm	Does not exceed the tolerance limit.

SMW-4	MEAN-	8.23	SD-	0.164	
	DATE	RESULT	TOL LIMIT	UNITS	
	3-91	8.42	8.558	ppm	Does not exceed the tolerance limit.
	9-91	8.3	8.558	ppm	Does not exceed the tolerance limit.

SMW-5	MEAN-	7.59	SD-	2.69	
	DATE	RESULT	TOL LIMIT	UNITS	
	3-91	8.03	12.970	ppm	Does not exceed the tolerance limit.
	9-91	7.6	12.970	ppm	Does not exceed the tolerance limit.

SMW-6	MEAN-	6.31	SD-	3.38	
	DATE	RESULT	TOL LIMIT	UNITS	
	3-91	8.25	13.070	ppm	Does not exceed the tolerance limit.
	9-91	7.57	13.070	ppm	Does not exceed the tolerance limit.

EC

SMW-3	MEAN-	3377.8	SD-	223.28	
	DATE	RESULT	TOL LIMIT	UNITS	
	3-91	3433	3824.360	ppm	Does not exceed the tolerance limit.
	9-91	3370	3824.360	ppm	Does not exceed the tolerance limit.

SMW-4	MEAN-	1427.63	SD-	228.27	
	DATE	RESULT	TOL LIMIT	UNITS	
	3-91	1225	1884.170	ppm	Does not exceed the tolerance limit.
	9-91	1352.5	1884.170	ppm	Does not exceed the tolerance limit.

SMW-5	MEAN-	1135.89	SD-	66.63	
	DATE	RESULT	TOL LIMIT	UNITS	
	3-91	1145	1269.150	ppm	Does not exceed the tolerance limit.
	9-91	1258	1269.150	ppm	Does not exceed the tolerance limit.

SMW-6	MEAN-	1312.56	SD-	478.8	
	DATE	RESULT	TOL LIMIT	UNITS	
	3-91	1517.5	2270.160	ppm	Does not exceed the tolerance limit.
	9-91	1672.5	2270.160	ppm	Does not exceed the tolerance limit.

TEMPERATURE

SMW-3	MEAN-	54.67	SD-	2.69
DATE	RESULT	TOL LIMIT	UNITS	
3-91	50	60.050	ppm	Does not exceed the tolerance limit.
9-91	56	60.050	ppm	Does not exceed the tolerance limit.

SMW-4	MEAN-	55.25	SD-	3.16
DATE	RESULT	TOL LIMIT	UNITS	
3-91	50	61.570	ppm	Does not exceed the tolerance limit.
9-91	57	61.570	ppm	Does not exceed the tolerance limit.

SMW-5	MEAN-	54.42	SD-	2.92
DATE	RESULT	TOL LIMIT	UNITS	
3-91	49	60.260	ppm	Does not exceed the tolerance limit.
9-91	56	60.260	ppm	Does not exceed the tolerance limit.

SMW-6	MEAN-	54.2	SD-	3.87
DATE	RESULT	TOL LIMIT	UNITS	
3-91	49	61.940	ppm	Does not exceed the tolerance limit.
9-91	58	61.940	ppm	Does not exceed the tolerance limit.

WATER LEVEL

SMW-3	MEAN-	6851.61	SD-	0.959
DATE	RESULT	TOL LIMIT	UNITS	
3-91	6852.45	6853.528	ppm	Does not exceed the tolerance limit.
9-91	6852.04	6853.528	ppm	Does not exceed the tolerance limit.

SMW-4	MEAN-	6848.59	SD-	1.638
DATE	RESULT	TOL LIMIT	UNITS	
3-91	6849.71	6851.866	ppm	Does not exceed the tolerance limit.
9-91	6849.52	6851.866	ppm	Does not exceed the tolerance limit.

SMW-5	MEAN-	6847.27	SD-	1.358
DATE	RESULT	TOL LIMIT	UNITS	
3-91	6847.4	6849.986	ppm	Does not exceed the tolerance limit.
9-91	6846.48	6849.986	ppm	Does not exceed the tolerance limit.

SMW-6	MEAN-	6857.35	SD-	4.411
DATE	RESULT	TOL LIMIT	UNITS	
3-91	6860.51	6866.172	ppm	Does not exceed the tolerance limit.
9-91	6860.75	6866.172	ppm	Does not exceed the tolerance limit.

TOLERANCE INTERVAL

1992

LEAD

SMW-3 MEAN- 0.076 0.147

DATE	RESULT	TOL LIMIT	UNITS	
4-92	0.0025 *	0.370	ppm	Does not exceed the tolerance limit.
10-92	0.034	0.370	ppm	Does not exceed the tolerance limit.

SMW-4 MEAN- 0.0159 SD- 0.0356

DATE	RESULT	TOL LIMIT	UNITS	
4-92	0.0025 *	0.087	ppm	Does not exceed the tolerance limit.
10-92	0.007	0.087	ppm	Does not exceed the tolerance limit.

SMW-5 MEAN- 0.03 SD- 0.078

DATE	RESULT	TOL LIMIT	UNITS	
4-92	0.0025 *	0.186	ppm	Does not exceed the tolerance limit.
10-92	0.007	0.186	ppm	Does not exceed the tolerance limit.

SMW-6 MEAN- 0.026 SD- 0.069

DATE	RESULT	TOL LIMIT	UNITS	
4-92	0.0025 *	0.164	ppm	Does not exceed the tolerance limit.
10-92	0.01	0.164	ppm	Does not exceed the tolerance limit.

* 1/2 of Reporting Limit.

CHROME

SMW-3	MEAN-	0.026	SD-	0.0258	
DATE	RESULT	TOL LIMIT	UNITS		
4-92	0.005 *	0.078	ppm	Does not exceed the tolerance limit.	
10-92	0.08	0.078	ppm	Exceeds the tolerance limit by 2.6%.	

SMW-4	MEAN-	0.006	SD-	0.002	
DATE	RESULT	TOL LIMIT	UNITS		
4-92	0.005 *	0.010	ppm	Does not exceed the tolerance limit.	
10-92	0.068	0.010	ppm	Exceeds the tolerance limit by 580%.	

SMW-5	MEAN-	0.0178	SD-	0.0361	
DATE	RESULT	TOL LIMIT	UNITS		
4-92	0.005 *	0.090	ppm	Does not exceed the tolerance limit.	
10-92	0.055	0.090	ppm	Does not exceed the tolerance limit.	

SMW-6	MEAN-	0.0144	SD-	0.0205	
DATE	RESULT	TOL LIMIT	UNITS		
4-92	0.005 *	0.055	ppm	Does not exceed the tolerance limit.	
10-92	0.138	0.055	ppm	Exceeds the tolerance limit by 151%.	

* 1/2 of reporting limit.

pH

SMW-3 MEAN- 7.9 SD- 0.21

DATE	RESULT	TOL LIMIT	UNITS	
4-92	7.6	8.320	ppm	Does not exceed the tolerance limit.
10-92	7.72	8.320	ppm	Does not exceed the tolerance limit.

SMW-4 MEAN- 8.23 SD- 0.164

DATE	RESULT	TOL LIMIT	UNITS	
4-92	8.3	8.558	ppm	Does not exceed the tolerance limit.
10-92	7.93	8.558	ppm	Does not exceed the tolerance limit.

SMW-5 MEAN- 7.59 SD- 2.69

DATE	RESULT	TOL LIMIT	UNITS	
4-92	8.47	12.970	ppm	Does not exceed the tolerance limit.
10-92	8.7	12.970	ppm	Does not exceed the tolerance limit.

SMW-6 MEAN- 6.31 SD- 3.38

DATE	RESULT	TOL LIMIT	UNITS	
4-92	8.4	13.070	ppm	Does not exceed the tolerance limit.
10-92	7.57	13.070	ppm	Does not exceed the tolerance limit.

EC

SMW-3	MEAN-	3377.8	SD-	223.28	
	DATE	RESULT	TOL LIMIT	UNITS	
	4-92	2600	3824.360	ppm	Does not exceed the tolerance limit.
	10-92	3100	3824.360	ppm	Does not exceed the tolerance limit.

SMW-4	MEAN-	1427.63	SD-	228.27	
	DATE	RESULT	TOL LIMIT	UNITS	
	4-92	1100	1884.170	ppm	Does not exceed the tolerance limit.
	10-92	1252.5	1884.170	ppm	Does not exceed the tolerance limit.

SMW-5	MEAN-	1135.89	SD-	66.63	
	DATE	RESULT	TOL LIMIT	UNITS	
	4-92	1000	1269.150	ppm	Does not exceed the tolerance limit.
	10-92	1100	1269.150	ppm	Does not exceed the tolerance limit.

SMW-6	MEAN-	1312.56	SD-	478.8	
	DATE	RESULT	TOL LIMIT	UNITS	
	4-92	1300	2270.160	ppm	Does not exceed the tolerance limit.
	10-92	1600	2270.160	ppm	Does not exceed the tolerance limit.

TEMPERATURE

SMW-3	MEAN-	54.67	SD-	2.69	
	DATE	RESULT	TOL LIMIT	UNITS	
	4-92	57	60.050	ppm	Does not exceed the tolerance limit.
	10-92	56	60.050	ppm	Does not exceed the tolerance limit.

SMW-4	MEAN-	55.25	SD-	3.16	
	DATE	RESULT	TOL LIMIT	UNITS	
	4-92	57	61.570	ppm	Does not exceed the tolerance limit.
	10-92	56.5	61.570	ppm	Does not exceed the tolerance limit.

SMW-5	MEAN-	54.42	SD-	2.92	
	DATE	RESULT	TOL LIMIT	UNITS	
	4-92	57	60.260	ppm	Does not exceed the tolerance limit.
	10-92	56.5	60.260	ppm	Does not exceed the tolerance limit.

SMW-6	MEAN-	54.2	SD-	3.87	
	DATE	RESULT	TOL LIMIT	UNITS	
	4-92	57	61.940	ppm	Does not exceed the tolerance limit.
	10-92	56.5	61.940	ppm	Does not exceed the tolerance limit.

WATER LEVEL

SMW-3	MEAN- 6851.61	SD- 0.959		
DATE	RESULT	TOL LIMIT	UNITS	
4-92	6852.31	6853.528	ppm	Does not exceed the tolerance limit.
10-92	6852.06	6853.528	ppm	Does not exceed the tolerance limit.

SMW-4	MEAN- 6848.59	SD- 1.638		
DATE	RESULT	TOL LIMIT	UNITS	
4-92	6849.69	6851.866	ppm	Does not exceed the tolerance limit.
10-92	6849.17	6851.866	ppm	Does not exceed the tolerance limit.

SMW-5	MEAN- 6847.27	SD- 1.358		
DATE	RESULT	TOL LIMIT	UNITS	
4-92	6847.89	6849.986	ppm	Does not exceed the tolerance limit.
10-92	6846.36	6849.986	ppm	Does not exceed the tolerance limit.

SMW-6	MEAN- 6857.35	SD- 4.411		
DATE	RESULT	TOL LIMIT	UNITS	
4-92	6858.91	6866.172	ppm	Does not exceed the tolerance limit.
10-92	6860.81	6866.172	ppm	Does not exceed the tolerance limit.

GIANT REFINING CO.-CINIZA

ANNUAL GROUNDWATER MEASUREMENT - 1992

Well No.	Date	Casing Elevation	Depth to Water	Groundwater Elevation
MW-1	04-21-92	6878.52	7.17	6871.35
	10-20-92		5.71	6872.81
MW-2	04-21-92	6880.84	7.96	6872.88
	10-20-92		8.79	6872.05
MW-4	04-21-92	6882.54	6.26	6876.28
	10-20-92		7.39	6875.15
MW-5	04-21-92	6883.32	9.64	6873.68
	10-20-92		11.71	6871.61
OW-11	04-21-92	6923.89	19.33	6904.56
	10-20-92		18.88	6905.01
SMW-1	04-23-92	6883.29	24.38	6858.91
	10-21-92		22.48	6860.81
SMW-2	04-23-92	6884.44	29.93	6854.51
	10-21-92		30.31	6854.13
SMW-3	04-23-92	6884.56	32.25	6852.31
	10-21-92		32.5	6852.06
SMW-4	04-23-92	6880.08	30.39	6849.69
	10-21-92		30.91	6849.17
SMW-5	04-23-92	6878.02	30.13	6847.89
	10-21-92		31.66	6846.36
SMW-6	04-23-92	6880.71	30.53	6850.18
	10-21-92		31.1	6849.61

The groundwater velocity in the Sonsela aquifier under the land treatment area is estimated to be .00822 ft/day (3.0003 ft/yr) by the following calculation:

$V = (KI/n)$

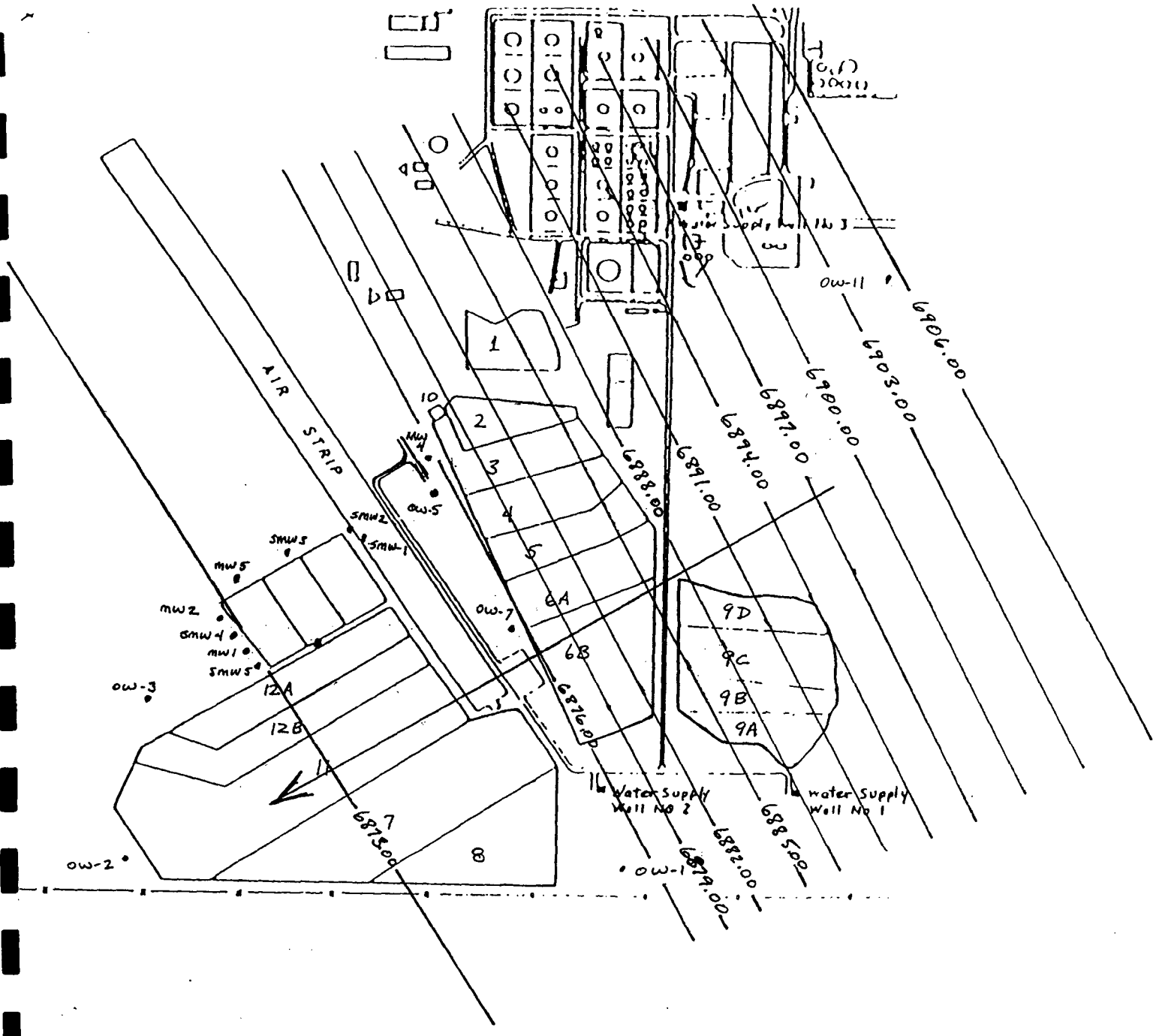
V = Velocity, ft/day

K = Horizontal Hydraulic Conductivity, 0.35 ft/day

I = Potentiometric Gradient, .002348 ft/day

n = Porosity, 10%

"I" was calculated by using the differential elevation between wells MW-2 and MW-2 in 1992.



1992
GROUNDWATER
ELEVATION
CONTOUR MAP
12-15-92 TLS

MW-1	6872.81
MW-2	6872.05
MW-4	6875.15
MW-5	6871.61
OW-11	6905.01

MW-1 GIANT REFINING GALLUP, NEW MEXICO

TCL Volatile Organics
Method 8240

Date:	23 APR 92	22 OCT 92	
Parameter	Result	Result	Units
Chloromethane	ND	ND	ug/L
Bromomethane	ND	ND	ug/L
Vinyl chloride	ND	ND	ug/L
Chloroethane	ND	ND	ug/L
Methylene chloride	ND	ND	ug/L
Acetone	ND	4.1 J	ug/L
Carbon disulfide	ND	36	ug/L
1,1-Dichloroethene	ND	ND	ug/L
1,1-Dichloroethane	ND	ND	ug/L
1,2-Dichloroethene (cis/trans)	ND	ND	ug/L
Chloroform	ND	ND	ug/L
1,2-Dichloroethane	ND	ND	ug/L
2-Butanone	ND	---	ug/L
1,1,1-Trichloroethane	ND	ND	ug/L
Carbon tetrachloride	ND	ND	ug/L
Vinyl acetate	ND	ND	ug/L
Bromodichloromethane	ND	ND	ug/L
trans-1,3-Dichloropropene	ND	ND	ug/L
Trichloroethene	ND	ND	ug/L
Chlorodibromomethane	ND	ND	ug/L
1,1,2-Trichloroethane	ND	ND	ug/L
Benzene	ND	ND	ug/L
cis-1,3-Dichloropropene	ND	ND	ug/L
2-Chloroethyl vinyl ether	ND	ND	ug/L
Bromoform	ND	ND	ug/L
4-Methyl-2-pentanone	ND	---	ug/L
2-Hexanone	ND	ND	ug/L
1,1,2,2-Tetrachloroethane	ND	ND	ug/L
Tetrachoroethene	ND	ND	ug/L
Toluene	ND	ND	ug/L
Chlorobenzene	ND	ND	ug/L
Ethylbenzene	ND	ND	ug/L
Styrene	ND	ND	ug/L
Xylenes (total)	ND	ND	ug/L
1,1,2 Trichloro-1,2,2-trifluoroethane	ND	---	ug/L
1,2-Dibromoethane (EDB)	---	---	ug/L
1,2-Dichlorobenzene	ND	---	ug/L
1,3-Dichlorobenzene	ND	---	ug/L

TCL Volatile Organics
Method 8240

Date:	23 APR 92	22 OCT 92	
Parameter	Result	Result	Units
Acrolein	---	ND	ug/L
Acrylonitrile	---	ND	ug/L
Dibromomethane	ND	ND	ug/L
Dichlorodiflouromethane	ND	ND	ug/L
Methyl Iodide	---	ND	ug/L
Trans-1,4-Dichloro-2-Butene	---	---	ug/L
Trichloromonoflouromethane	---	ND	ug/L
1,2,3-Trichloropropane	---	ND	ug/L
Ethyl Methacrylate	---	ND	ug/L
Ethanol	---	---	ug/L
1,4-Dichloro-2-Butane	---	---	ug/L

MW-1 GIANT REFINING GALLUP, NEW MEXICO

Metals
Dissolved Metals

Parameter	Date: 06 MAR 91 Result*	23 APR 92 Result	Units	Reporting Limit
Arsenic	<0.005	ND	mg/L	0.0050
Barium	<0.010	0.09	mg/L	0.010
Cadmium	<0.005	0.0012	mg/L	0.0050
Calcium	1.9	1.8	mg/L	0.20
Magnesium	0.3	0.26	mg/L	0.20
Manganese	<0.010	0.10	mg/L	0.010
Potassium	<1.0	ND	mg/L	5.00
Selenium	<0.005	ND	mg/L	0.0050
Silver	<0.010	ND	mg/L	0.010
Sodium	267	72	mg/L	5.0

* Data from Analytical Technologies, Inc.

MW-1 Giant Refining Gallup, New Mexico

Metals
Total Metals

Parameter	Date: 23 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Chromium	ND	0.025	mg/L	0.010
Lead	0.084	0.004	mg/L	0.0050
Mercury	ND	----	mg/L	0.00020

MW-1 Giant Refining Gallup, New Mexico

General Inorganics

Parameter	Date: 23 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Alkalinity, Bicarb. as CaCO3 at pH 4.5	270	---	mg/L	5.0
Alkalinity, Carb. as CaCO3 at pH 8.3	80	---	mg/L	5.0
Chloride	56	---	mg/L	3.0
pH	8.9	8.76	units	---
pH		8.78	units	---
pH		8.78	units	---
pH		8.74	units	---
Phenolics	0.02	---	mg/L	0.010
Sulfate	160	---	mg/L	5.0
Specific Conductance at 25 deg.C	1100	1070	umhos/cm	1.0
Specific Conductance at 25 deg.C		1090	umhos/cm	1.0
Specific Conductance at 25 deg.C		1070	umhos/cm	1.0
Specific Conductance at 25 deg.C		1090	umhos/cm	1.0
Total Organic Carbon	15	1.5	mg/L	1.0
Total Organic Carbon		3.0	mg/L	1.0
Total Organic Carbon		---	mg/L	1.0
Total Organic Carbon		---	mg/L	1.0
Total Organic Halogen as Cl	ND	0.015	ug/L	30.0
Total Organic Halogen as Cl		0.020	ug/L	30.0
Total Organic Halogen as Cl		---	ug/L	30.0
Total Organic Halogen as Cl		---	ug/L	30.0
Total Dissolved Solids	1400	---	mg/L	10.0
Water Elevation	6871.35	6872.82	ft	---

MW-2 Giant Refining Gallup, New Mexico

TCL Volatile Organics
Method 8240

Parameter	Date: 23 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Chloromethane	ND	ND	ug/L	10
Bromomethane	ND	ND	ug/L	10
Vinyl chloride	ND	ND	ug/L	10
Chloroethane	ND	ND	ug/L	10
Methylene chloride	ND	ND	ug/L	5.0
Acetone	ND	4.3 J	ug/L	10
Carbon disulfide	ND	17	ug/L	5.0
1,1-Dichloroethene	ND	ND	ug/L	5.0
1,1-Dichloroethane	ND	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ND	ug/L	5.0
Chloroform	ND	ND	ug/L	5.0
1,2-Dichloroethane	ND	ND	ug/L	5.0
2-Butanone	ND	---	ug/L	10
1,1,1-Trichloroethane	ND	ND	ug/L	5.0
Carbon tetrachloride	ND	ND	ug/L	5.0
Vinyl acetate	ND	ND	ug/L	10
Bromodichloromethane	ND	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ND	ug/L	5.0
Trichloroethene	ND	ND	ug/L	5.0
Chlorodibromomethane	ND	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ND	ug/L	5.0
Benzene	ND	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ND	ug/L	10
Bromoform	ND	ND	ug/L	5.0
4-Methyl-2-pentanone	ND	---	ug/L	10
2-Hexanone	ND	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ND	ug/L	5.0
Tetrachoroethene	ND	ND	ug/L	5.0
Tolukebe	ND	ND	ug/L	5.0
Chlorobenzene	ND	ND	ug/L	5.0
Ethylbenzene	ND	ND	ug/L	5.0
Stryene	ND	ND	ug/L	5.0
Xylenes (total)	ND	ND	ug/L	5.0
1,1,2 Trichloro-1,2,2-trifluoroethane	---	---	ug/L	5.0
1,2-Dibromoethane (EDB)	---	---	ug/L	5.0
1,2-Dichlorobenzene	ND	---	ug/L	5.0
1,3-Dichlorobenzene	ND	---	ug/L	5.0

Method 8240
TCL Volatile Organics

Parameter	Date: 23 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Acrolein	---	ND	ug/L	---
Acrylonitrile	---	ND	ug/L	---
Dibromomethane	ND	ND	ug/L	---
Dichlorodifluoromethane	ND	ND	ug/L	---
Methyl Iodide	---	ND	ug/L	---
Trans-1,4-Dichloro-2-Butene	---	---	ug/L	---
Trichloromonofluoromethane	---	ND	ug/L	---
1,2,3-Trichloropropane	---	ND	ug/L	---
Ethyl Methacrylate	---	ND	ug/L	---
Ethanol	---	---	ug/L	---
1,4-Dichloro-2-Butane	---	---	ug/L	---

MW-2 GIANT REFINING GALLUP, NEW MEXICO

Metals
Dissolved Metals

Parameter	Date: 06 MAR 91 Result*	23 APR 92 Result	Units	Reporting Limit
Arsenic	<0.005	ND	mg/L	0.010
Barium	0.019	ND	mg/L	0.010
Cadmium	<0.005	ND	mg/L	0.0050
Calcium	1.7	1.6	mg/L	0.20
Magnesium	0.2	0.18	mg/L	0.20
Manganese	<0.010	ND	mg/L	0.010
Potassium	<1.0	ND	mg/L	5.00
Selenium	<0.005	ND	mg/L	0.0050
Silver	<0.010	ND	mg/L	0.010
Sodium	270	78	mg/L	5.0

* Data from Analytical Technologies, Inc.

MW-2 Giant Refining Gallup, New Mexico

Metals
Total Metals

Parameter	Date: 23 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Chromium	ND	0.012	mg/L	0.010
Lead	ND	ND	mg/L	0.010
Mercury	ND	---	mg/L	0.00020

MW-2 Giant Refining Gallup, New Mexico

General Inorganics

Parameter	Date: 23 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Alkalinity, Bicarb. as CaCO3 at pH 4.5	250	---	mg/L	5.0
Alkalinity, Carb. as CaCO3 at pH 8.3	100	---	mg/L	5.0
Chloride	64	---	mg/L	3.0
pH	9.0	8.67	units	---
pH		8.61	units	---
pH		8.60	units	---
pH		8.61	units	---
Phenolics	ND	---	mg/L	0.010
Sulfate	170	---	mg/L	5.0
Specific Conductance at 25 deg.C	1200	1050	umhos/cm	1.0
Specific Conductance at 25 deg.C		1130	umhos/cm	1.0
Specific Conductance at 25 deg.C		1100	umhos/cm	1.0
Specific Conductance at 25 deg.C		1080	umhos/cm	1.0
Total Organic Carbon	ND	1.60	mg/L	1.0
Total Organic Carbon		ND	mg/L	1.0
Total Organic Carbon		---	mg/L	1.0
Total Organic Carbon		---	mg/L	1.0
Total Organic Halogen as Cl	ND	ND	ug/L	30.0
Total Organic Halogen as Cl		ND	ug/L	30.0
Total Organic Halogen as Cl		---	ug/L	30.0
Total Organic Halogen as Cl		---	ug/L	30.0
Total Dissolved Solids	1200	---	mg/L	10.0
Water Elevation	6872.88	6872.05	ft	---

MW-4 Giant Refining Gallup, New Mexico

TCL Volatile Organics
Method 8240

Parameter	Date: 23 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Chloromethane	ND	ND	ug/L	10
Bromomethane	ND	ND	ug/L	10
Vinyl chloride	ND	ND	ug/L	10
Chloroethane	ND	ND	ug/L	10
Methylene chloride	ND	ND	ug/L	5.0
Acetone	ND	4.7 J	ug/L	10
Carbon disulfide	ND	2.8	ug/L	5.0
1,1-Dichloroethene	ND	ND	ug/L	5.0
1,1-Dichloroethane	ND	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ND	ug/L	5.0
Chloroform	ND	ND	ug/L	5.0
1,2-Dichloroethane	ND	ND	ug/L	5.0
2-Butanone	ND	---	ug/L	5.0
1,1,1-Trichloroethane	ND	ND	ug/L	10
Carbon tetrachloride	ND	ND	ug/L	5.0
Vinyl acetate	ND	ND	ug/L	5.0
Bromodichloromethane	ND	ND	ug/L	10
trans-1,3-Dichloropropene	ND	ND	ug/L	5.0
Trichloroethene	ND	ND	ug/L	5.0
Chlorodibromomethane	ND	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ND	ug/L	5.0
Benzene	ND	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ND	ug/L	10
Bromoform	ND	ND	ug/L	5.0
4-Methyl-2-pentanone	ND	---	ug/L	10
2-Hexanone	ND	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ND	ug/L	5.0
Tetrachoroethene	ND	ND	ug/L	5.0
Tolukebe	ND	ND	ug/L	5.0
Chlorobenzene	ND	ND	ug/L	5.0
Ethylbenzene	ND	ND	ug/L	5.0
Stryene	ND	ND	ug/L	5.0
Xylenes (total)	ND	ND	ug/L	5.0
1,1,2 Trichloro-1,2,2-trifluoroethane	---	---	ug/L	5.0
1,2-Dibromoethane (EDB)	---	---	ug/L	5.0
1,2-Dichlorobenzene	ND	---	ug/L	5.0
1,3-Dichlorobenzene	ND	---	ug/L	5.0

TCL Volatile Organics
Method 8240

Parameter	Date: 23 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Acrolein	---	ND	ug/L	---
Acrylonitrile	---	ND	ug/L	---
Dibromomethane	ND	ND	ug/L	---
Dichlorodiflouromethane	ND	ND	ug/L	---
Methyl Iodide	---	ND	ug/L	---
Trans-1,4-Dichloro-2-Butene	---	---	ug/L	---
Trichloromonoflouromethane	---	ND	ug/L	---
1,2,3-Trichloropropane	---	ND	ug/L	---
Ethyl Methacrylate	---	ND	ug/L	---
Ethanol	---	---	ug/L	---
1,4-Dichloro-2-Butane	---	---	ug/L	---

MW-4 GIANT REFINING GALLUP, NEW MEXICO

Metals
Dissolved Metals

Parameter	06 MAR 91 Result*	23 APR 92 Result	Units	Reporting Limit
Arsenic	<0.005	ND	mg/L	0.010
Barium	0.019	0.06	mg/L	0.010
Cadmium	<0.005	ND	mg/L	0.0050
Calcium	2.0	1.5	mg/L	0.20
Magnesium	0.3	0.24	mg/L	0.20
Manganese	0.010	0.08	mg/L	0.010
Potassium	<1.0	ND	mg/L	5.00
Selenium	<0.0005	ND	mg/L	0.0050
Silver	0.016	ND	mg/L	0.010
Sodium	292	78	mg/L	5.0

MW-4 Giant Refining Gallup, New Mexico

Metals
Total Metals

Parameter	23 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Chromium	ND	0.032	mg/L	0.010
Lead	ND	0.008	mg/L	0.0050
Mercury	ND	---	mg/L	0.00020

* Data from Analytical Technologies, Inc.

MW-4 Giant Refining Gallup, New Mexico

General Inorganics

Parameter	22 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Alkalinity, Bicarb. as CaCO3 at pH 4.5	390	---	mg/L	5.0
Alkalinity, Carb. as CaCO3 at pH 8.3	60	---	mg/L	5.0
Chloride	19	---	mg/L	3.0
pH	8.7	8.60	units	--
pH		8.58	units	--
pH		8.57	units	--
pH		8.57	units	--
Phenolics	ND	ND	mg/L	0.010
Sulfate	150	---	mg/L	5.0
Specific Conductance at 25 deg C	1300	1130	umhos/cm	1.0
Specific Conductance at 25 deg C		1130	umhos/cm	1.0
Specific Conductance at 25 deg C		1130	umhos/cm	1.0
Specific Conductance at 25 deg C		1130	umhos/cm	1.0
Total Organic Carbon	12	3.00	mg/L	1.0
Total Organic Carbon		ND	mg/L	1.0
Total Organic Carbon		---	mg/L	1.0
Total Organic Carbon		---	mg/L	1.0
Total Organic Halogen as Cl	230	0.028	ug/L	30.0
Total Organic Halogen as Cl		0.013	ug/L	30.0
Total Organic Halogen as Cl		---	ug/L	30.0
Total Organic Halogen as Cl		---	ug/L	30.0
Total Dissolved Solids	1700	---	mg/L	10.0
Water Elevation	6876.28	6875.15	ft	--

MW-5 Giant Refining Gallup, NM

TCL VOLATILE ORGANICS
METHOD 8240

Parameter	Date: 22 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Chloromethane	ND	ND	ug/L	10
Bromomethane	ND	ND	ug/L	10
Vinyl chloride	ND	ND	ug/L	10
Chloroethane	ND	ND	ug/L	10
Methylene chloride	ND	ND	ug/L	5.0
Acetone	ND	5.4 J	ug/L	10
Carbon disulfide	ND	4.3 J	ug/L	5.0
1,1-Dichloroethene	ND	ND	ug/L	5.0
1,1-Dichloroethane	ND	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ND	ug/L	5.0
Chloroform	ND	ND	ug/L	5.0
1,2-Dichloroethane	ND	ND	ug/L	5.0
2-Butanone	ND	---	ug/L	5.0
1,1,1-Trichloroethane	ND	ND	ug/L	10
Carbon tetrachloride	ND	ND	ug/L	5.0
Vinyl acetate	ND	ND	ug/L	5.0
Bromodichloromethane	ND	ND	ug/L	10
trans-1,3-Dichloropropene	ND	ND	ug/L	5.0
Trichloroethene	ND	ND	ug/L	5.0
Chlorodibromomethane	ND	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ND	ug/L	5.0
Benzene	ND	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ND	ug/L	10
Bromoform	ND	ND	ug/L	5.0
4-Methyl-2-pentanone	ND	---	ug/L	10
2-Hexanone	ND	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ND	ug/L	5.0
Tetrachloroethene	ND	ND	ug/L	5.0
Toluene	ND	ND	ug/L	5.0
Chlorobenzene	ND	ND	ug/L	5.0
Ethylbenzene	ND	ND	ug/L	5.0
Styrene	ND	ND	ug/L	5.0
Xylenes (total)	ND	ND	ug/L	5.0
1,1,2 Trichloro-1,2,2-trifluoroethane	---	---	ug/L	10

1,2-Dibromoethane (EDB)	---	---	ug/L	10
1,2-Dichlorobenzene	ND	---	ug/L	5.0
1,3-Dichlorobenzene	ND	---	ug/L	5.0
Acrolein	---	ND	ug/L	
Acrylonitrile	---	ND	ug/L	
Dibromomethane	ND	ND	ug/L	
Dichlorodifluoromethane	ND	ND	ug/L	
Methyl Iodide	---	ND	ug/L	
Trans-1,4-Dichloro-2-Butene	---	---	ug/L	
Trichloromonofluoromethane	---	ND	ug/L	
1,2,3-Trichloropropane	---	ND	ug/L	
Ethyl Methacrylate	---	ND	ug/L	
Ethanol	---	---	ug/L	
1,4-Dichloro-2-Butane	---	---	ug/L	

MW-5 Giant Refinery Gallup, New Mexico

Metals
Dissolved Metals

Parameter	Date: 02 APR 90 Result	06 MAR 91 Result*	23 APR 92 Result	Units	Reporting Limit
Arsenic	ND	<0.005	ND	mg/L	0.010
Barium	0.12	0.017	ND	mg/L	0.010
Cadmium	ND	<0.005	ND	mg/L	0.0050
Calcium	1.9	1.7	1.1	mg/L	0.20
Magnesium	0.20	0.2	0.15	mg/L	0.20
Manganese	ND	<0.010	ND	mg/L	0.010
Potassium	ND	<1.0	ND	mg/L	5.00
Selenium	ND	0.005	ND	mg/L	0.0050
Silver	ND	<0.010	ND	mg/L	0.010
Sodium	255	270	64	mg/L	5.0

* Data from Analytical Technologies, Inc.

MW-5 Giant Refining Gallup, New Mexico

Metals
Total Metals

Parameter	23 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Chromium	ND	ND	mg/L	0.010
Lead	ND	0.003	mg/L	0.0050
Mercury	ND	---	mg/L	0.00020

* Data from Analytical Technologies, Inc.

MW-5 Giant Refining Gallup, New Mexico

General Inorganics

Parameter	Date: 23 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Alkalinity, Bicarb. as CaCO3 at pH 4.5	310	---	mg/L	5.0
Alkalinity, Carb. as CaCO3 at pH 8.3	100	---	mg/L	5.0
Chloride	74	---	mg/L	3.0
pH	9.0	8.86	units	--
pH		8.86	units	--
pH		8.88	units	--
pH		8.87	units	--
Phenolics	ND	---	mg/L	0.010
Sulfate	170	---	mg/L	5.0
Specific Conductance at 25 deg.C	1200	1170	umhos/cm	1.0
Specific Conductance at 25 deg.C		1000	umhos/cm	1.0
Specific Conductance at 25 deg.C		1130	umhos/cm	1.0
Specific Conductance at 25 deg.C		1110	umhos/cm	1.0
Total Organic Carbon	21	5.20	mg/L	1.0
Total Organic Carbon		5.30	mg/L	1.0
Total Organic Carbon		---	mg/L	1.0
Total Organic Carbon		---	mg/L	1.0
Total Organic Halogen as Cl	64	0.010	ug/L	30.0
Total Organic Halogen as Cl		0.025	ug/L	30.0
Total Organic Halogen as Cl		---	ug/L	30.0
Total Organic Halogen as Cl		---	ug/L	30.0
Total Dissolved Solids	1300	---	mg/L	10.0
Water Elevation	6873.68	6871.61	ft	--

* Data from Analytical Technologies, Inc.

(1) Total Organic Halide as reported by ATI.

OW-11 Giant Refining Gallup, New Mexico

TCL Volatile Organics
Method 8240

Parameter	22 APR 92 Result	22 OCT 92 Result	Units
1,1-Dichloroethene	ND	ND	ug/L
2-Butanone	ND	---	ug/L
1,1,1-Trichloroethane	ND	ND	ug/L
Benzene	ND	ND	ug/L
Tetrachloroethene	ND	ND	ug/L
Toluene	ND	ND	ug/L
Ethylbenzene	ND	ND	ug/L
Xylenes (total)	ND	ND	ug/L
Acetone	---	6.2 J	ug/L
Carbon Disulfide	---	16	ug/L
Chloromethane	ND	ND	ug/L
Bromomethane	ND	ND	ug/L
Vinyl Chloride	ND	ND	ug/L
Chloroethane	ND	ND	ug/L
Methylene Chloride	ND	ND	ug/L
Carbon Disulfide	ND	ND	ug/L
1,1-Dichloroethane	ND	ND	ug/L
1,2-Dichloroethene (Total)	ND	ND	ug/L
Chloroform	ND	ND	ug/L
1,2-Dichloroethane	ND	ND	ug/L
Carbon Tetrachloride	ND	ND	ug/L
Vinyl Acetate	ND	ND	ug/L
Bromodichloromethane	ND	ND	ug/L
1,1,2,2-Tetrachloroethane	ND	ND	ug/L
1,2-Dichloropropane	ND	ND	ug/L
Trans-1,3-Dichloropropene	ND	ND	ug/L
Trichloroethene	ND	ND	ug/L
Dibromochloromethane	ND	---	ug/L
1,1,2-Trichloroethane	ND	ND	ug/L
Cis-1,3-Dichloropropene	ND	ND	ug/L
2-Chloroethylvinylether	ND	ND	ug/L
Bromoform	ND	ND	ug/L
2-Hexanone (MBK)	ND	ND	ug/L
4-Methyl-2-Pentanone (MIBK)	ND	ND	ug/L
Chlorobenzene	ND	ND	ug/L
Styrene	ND	ND	ug/L

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TCL Volatile Organics
Method 8240

Parameter	22 APR 92 Result	22 OCT 92 Result	Units
Acrolein	---	ND	ug/L
Acrylonitrile	---	ND	ug/L
Dibromomethane	ND	ND	ug/L
Dichlorodiflouromethane	ND	ND	ug/L
Methyl Iodide	---	ND	ug/L
Trans-1,4-Dichloro-2-Butene	---	---	ug/L
Trichloromonoflouromethane	---	ND	ug/L

OW-11 Giant Refining Gallup, New Mexico

Metals
Total Metals

Parameter	22 APR 92 Result	22 OCT 92 Result	Units
Chromium	ND	0.010	mg/L
Lead	ND	ND	mg/L
Mercury	ND	---	mg/L

OW-11 Giant Refining Gallup, New Mexico

General Inorganics

Parameter	22 APR 92 Result	22 OCT 92 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	450	---	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	ND	---	mg/L
Chloride	160	---	mg/L
pH	8.5	8.12	units
pH	---	8.12	units
pH	---	8.11	units
pH	---	8.20	units
Phenolics	ND	ND	mg/L
Sulfate	410	---	mg/L
Specific Conductance at 25 deg.C	2000	1820	umhos/cm
Specific Conductance at 25 deg.C	---	1840	umhos/cm
Specific Conductance at 25 deg.C	---	1840	umhos/cm
Specific Conductance at 25 deg.C	---	1820	umhos/cm
Total Organic Carbon	10	6.80	mg/L
Total Organic Carbon	---	6.20	mg/L
Total Organic Carbon	---	---	mg/L
Total Organic Carbon	---	---	mg/L
Total Organic Halogen as Cl	170	0.021	ug/L
Total Organic Halogen as Cl	---	0.023	ug/L
Total Organic Halogen as Cl	---	---	ug/L
Total Organic Halogen as Cl	---	---	ug/L
Total Dissolved Solids	---	---	mg/L
Water Elevation	6904.56	6905.01	ft

SMW-1 Giant Refining Gallup, New Mexico

TCL Volatile Organics
Method 8240

Parameter	22 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Chloromethane	ND	ND	ug/L	10
Bromomethane	ND	ND	ug/L	10
Vinyl chloride	ND	ND	ug/L	10
Chloroethane	ND	ND	ug/L	10
Methylene chloride	ND	ND	ug/L	5.0
Acetone	ND	5.8 J	ug/L	10
Carbon disulfide	---	6.5	ug/L	5.0
1,1-Dichloroethene	ND	ND	ug/L	5.0
1,1-Dichloroethane	ND	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ND	ug/L	5.0
Chloroform	ND	ND	ug/L	5.0
1,2-Dichloroethane	ND	ND	ug/L	5.0
2-Butanone	---	---	ug/L	5.0
1,1,1-Trichloroethane	ND	ND	ug/L	10
Carbon tetrachloride	ND	ND	ug/L	5.0
Vinyl acetate	---	ND	ug/L	5.0
Bromodichloromethane	ND	ND	ug/L	10
trans-1,3-Dichloropropene	ND	ND	ug/L	5.0
Trichloroethene	---	ND	ug/L	5.0
Chlorodibromomethane	---	---	ug/L	5.0
1,1,2-Trichloroethane	ND	ND	ug/L	5.0
Benzene	ND	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ND	ug/L	10
Bromoform	ND	ND	ug/L	5.0
4-Methyl-2-pentanone	---	ND	ug/L	10
2-Hexanone	ND	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ND	ug/L	5.0
Tetrachloroethene	---	ND	ug/L	5.0
Toluene	ND	ND	ug/L	5.0
Chlorobenzene	ND	ND	ug/L	5.0
Ethylbenzene	ND	ND	ug/L	5.0
Styrene	---	ND	ug/L	5.0

Xylenes (total)	ND	ND	ug/L	5.0
1,1,2 Trichloro-1,2,2-trifluoroethane	ND	---	ug/L	10
1,2-Dibromoethane (EDB)	---	---	ug/L	10
1,2-Dichlorobenzene	ND	---	ug/L	5.0
1,4-Dichlorobenzene	ND	---	ug/L	5.0
Acrolein	---	ND	ug/L	
Acrylonitrile	---	ND	ug/L	
Dibromomethane	ND	ND	ug/L	
Dichlorodifluoromethane	ND	ND	ug/L	
Methyl Iodide	---	ND	ug/L	
Trans-1,4-dichloro-2-Butene	---	ND	ug/L	
Trichloromonofluoromethane	---	ND	ug/L	
1,2,3-Trichloropropane	---	ND	ug/L	
Ethyl Methacrylate	---	ND	ug/L	
Ethanol	ND	---	ug/L	
1,4-Dichloro-2-Butane	---	---	ug/L	

* Data from Analytical Technologies, Inc.

SMW-1 Giant Refining Gallup, New Mexico

Metals
Dissolved Metals

Parameter	Date: 05 MAR 91 Result*	22 APR 92 Result	Units	Reporting Limit
Calcium	185	140	mg/L	0.40
Magnesium	50.6	38	mg/L	0.40
Potassium	1.9	ND	mg/L	10.0
Sodium	1390	340	mg/L	10.0

* Data from Analytical Technologies, Inc.

SMW-1 Giant Refining Gallup, New Mexico

Metals
Total Metals

Parameter	22 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Chromium	0.13	0.094	mg/L	0.010
Lead	ND	0.004	mg/L	0.0050

* Data from Analytical Technologies, Inc.

SMW-1 Giant Refining Gallup, New Mexico

General Inorganics

Parameter	22 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Alkalinity, Bicarb. as CaCO3 at pH 4.5	620	---	mg/L	5.0
Alkalinity, Carb. as CaCO3 at pH 8.3	ND	---	mg/L	5.0
Chloride	1200	---	mg/L	3.0
pH	---	7.28	units	---
pH	---	7.30	units	---
pH	---	7.30	units	---
pH	---	7.30	units	---
Average pH			units	---
Sulfate	1400	---	mg/L	5.0
Specific Conductance at 25 deg.C	4200	5980	umhos/cm	1.0
Specific Conductance at 25 deg.C	---	5980	umhos/cm	1.0
Specific Conductance at 25 deg.C	---	5980	umhos/cm	1.0
Specific Conductance at 25 deg.C	---	5980	umhos/cm	1.0
Average Specific Conductance at 25 deg.C			umhos/cm	1.0
Total Organic Carbon	63	15.4	mg/L	0.50
Total Organic Carbon	---	14.2	mg/L	0.50
Total Organic Carbon	---	---	mg/L	0.50
Total Organic Carbon	---	---	mg/L	0.50
Total Organic Halogen as Cl	ND	0.038	ug/L	30
Total Organic Halogen as Cl	---	0.039	ug/L	30
Total Organic Halogen as Cl	---	---	ug/L	30
Total Organic Halogen as Cl	---	---	ug/L	30
Total Dissolved Solids	4500	---	mg/L	10

Water Elevation	6858.91	6860.81	ft	

* Data from Analytical Technologies, Inc.

(1) Total Organic Halide as reported by ATI

SMW-2 Giant Refining Gallup, New Mexico

TCL Volatile Organics
Method 8240

Parameter	22 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Chloromethane	ND	ND	ug/L	10
Bromomethane	ND	ND	ug/L	10
Vinyl chloride	ND	ND	ug/L	10
Chloroethane	ND	ND	ug/L	10
Methylene chloride	ND	ND	ug/L	5.0
Acetone	ND	6.9 J	ug/L	10
Carbon disulfide	---	120	ug/L	5.0
1,1-Dichloroethene	ND	ND	ug/L	5.0
1,1-Dichloroethane	ND	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ND	ug/L	5.0
Chloroform	ND	ND	ug/L	5.0
1,2-Dichloroethane	ND	ND	ug/L	5.0
2-Butanone	---	---	ug/L	5.0
1,1,1-Trichloroethane	ND	ND	ug/L	10
Carbon tetrachloride	ND	ND	ug/L	5.0
Vinyl acetate	---	ND	ug/L	5.0
Bromodichloromethane	ND	ND	ug/L	10
trans-1,3-Dichloropropene	ND	ND	ug/L	5.0
Trichloroethene	---	ND	ug/L	5.0
Chlorodibromomethane	---	---	ug/L	5.0
1,1,2-Trichloroethane	ND	ND	ug/L	5.0
Benzene	ND	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ND	ug/L	10
Bromoform	ND	ND	ug/L	5.0
4-Methyl-2-pentanone	---	ND	ug/L	10
2-Hexanone	ND	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ND	ug/L	5.0
Tetrachloroethene	---	ND	ug/L	5.0
Toluene	ND	ND	ug/L	5.0
Chlorobenzene	ND	ND	ug/L	5.0
Ethylbenzene	ND	ND	ug/L	5.0
Styrene	---	ND	ug/L	5.0

Xylenes (total)	ND	ND	ug/L	5.0
1,1,2 Trichloro-1,2,2-trifluoroethane	ND	---	ug/L	10
1,2-Dibromoethane (EDB)	---	---	ug/L	10
1,2-Dichlorobenzene	ND	---	ug/L	5.0
1,4-Dichlorobenzene	ND	---	ug/L	5.0
Acrolein	---	ND	ug/L	
Acrylonitrile	---	ND	ug/L	
Dibromomethane	ND	ND	ug/L	
Dichlorodifluoromethane	ND	ND	ug/L	
Methyl Iodide	---	ND	ug/L	
Trans-1,4-dichloro-2-Butene	---	ND	ug/L	
Trichloromonofluoromethane	---	ND	ug/L	
1,2,3-Trichloropropane	---	ND	ug/L	
Ethyl Methacrylate	---	ND	ug/L	
Ethanol	ND	---	ug/L	
1,4-Dichloro-2-Butane	---	---	ug/L	

* Data from Analytical Technologies, Inc.

SMW-2 Giant Refining Gallup, New Mexico

Metals
Dissolved Metals

Parameter	05 MAR 91 Result*	22 APR 92 Result	Units	Reporting Limit
Calcium	132	100	mg/L	0.40
Magnesium	37.8	29	mg/L	0.40
Potassium	<1.0	ND	mg/L	10.0
Sodium	1620	420	mg/L	10.0

* Data from Analytical Technologies, Inc.

SMW-2 Giant Refining Gallup, New Mexico

Total Metals

Parameter	22 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Chromium	0.09	0.333	mg/L	0.010
Lead	ND	0.013	mg/L	0.0050

* Data from Analytical Technologies, Inc.

SMW-2 Giant Refining Gallup, New Mexico

General Inorganics

Parameter	22 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Alkalinity, Bicarb. as CaCO3 at pH 4.5	620	---	mg/L	5.0
Alkalinity, Carb. as CaCO3 at pH 8.3	ND	---	mg/L	5.0
Chloride	1300	---	mg/L	3.0
pH	7.2	7.31	units	---
pH	---	7.29	units	---
pH	---	7.29	units	---
pH	---	7.37	units	---
Average pH			units	---
Sulfate	1600	---	mg/L	5.0
Specific Conductance at 25 deg.C	4600	6410	umhos/cm	1.0
Specific Conductance at 25 deg.C	---	6410	umhos/cm	1.0
Specific Conductance at 25 deg.C	---	6300	umhos/cm	1.0
Specific Conductance at 25 deg.C	---	6410	umhos/cm	1.0
Average Specific Conductance at 25 deg.C			umhos/cm	1.0
Total Organic Carbon	58	11.5	mg/L	0.50
Total Organic Carbon	---	11.6	mg/L	0.50
Total Organic Carbon	---	---	mg/L	0.50
Total Organic Carbon	---	---	mg/L	0.50
Total Organic Halogen as Cl	72	0.034	ug/L	30
Total Organic Halogen as Cl	---	0.032	ug/L	30
Total Organic Halogen as Cl	---	---	ug/L	30
Total Organic Halogen as Cl	---	---	ug/L	30
Total Dissolved Solids	5200	---	mg/L	10

Water Elevation	6854.51	6854.13	ft	

* Data from Analytical Technologies, Inc.

(1) Total Organic Halide as reported by ATI.

SMW-3 Giant Refining Gallup, New Mexico

TCL Volatile Organics
Method 8240

Parameter	22 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Chloromethane	ND	ND	ug/L	10
Bromomethane	ND	ND	ug/L	10
Vinyl chloride	ND	ND	ug/L	10
Chloroethane	ND	ND	ug/L	10
Methylene chloride	ND	ND	ug/L	5.0
Acetone	ND	4.2 BJ	ug/L	10
Carbon disulfide	---	11	ug/L	5.0
1,1-Dichloroethene	ND	ND	ug/L	5.0
1,1-Dichloroethane	ND	ND	ug/L	5.0
1,2-Dichloroethene				
(cis/trans)	ND	ND	ug/L	5.0
Chloroform	ND	ND	ug/L	5.0
1,2-Dichloroethane	ND	ND	ug/L	5.0
2-Butanone	---	---	ug/L	5.0
1,1,1-Trichloroethane	ND	ND	ug/L	10
Carbon tetrachloride	ND	ND	ug/L	5.0
Vinyl acetate	---	ND	ug/L	5.0
Bromodichloromethane	ND	ND	ug/L	10
trans-1,3-Dichloropropene	ND	ND	ug/L	5.0
Trichloroethene	---	ND	ug/L	5.0
Chlorodibromomethane	---	---	ug/L	5.0
1,1,2-Trichloroethane	ND	ND	ug/L	5.0
Benzene	ND	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ND	ug/L	10
Bromoform	ND	ND	ug/L	5.0
4-Methyl-2-pentanone	---	ND	ug/L	10
2-Hexanone	ND	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ND	ug/L	5.0
Tetrachloroethene	---	ND	ug/L	5.0
Toluene	ND	ND	ug/L	5.0
Chlorobenzene	ND	ND	ug/L	5.0
Ethylbenzene	ND	ND	ug/L	5.0
Styrene	---	ND	ug/L	5.0

Xylenes (total)	ND	ND	ug/L	5.0
1,1,2 Trichloro-1,2,2-trifluoroethane	ND	---	ug/L	10
1,2-Dibromoethane (EDB)	---	---	ug/L	10
1,2-Dichlorobenzene	ND	---	ug/L	5.0
1,4-Dichlorobenzene	ND	---	ug/L	5.0
Acrolein	---	ND	ug/L	
Acrylonitrile	---	ND	ug/L	
Dibromomethane	ND	ND	ug/L	
Dichlorodifluoromethane	ND	ND	ug/L	
Methyl Iodide	---	ND	ug/L	
Trans-1,4-dichloro-2-Butene	---	ND	ug/L	
Trichloromonofluoromethane	---	ND	ug/L	
1,2,3-Trichloropropane	---	ND	ug/L	
Ethyl Methacrylate	---	ND	ug/L	
Ethanol	ND	---	ug/L	
1,4-Dichloro-2-Butane	---	---	ug/L	

* Data from Analytical Technologies, Inc.

SMW-3 Giant Refining Gallup, New Mexico

Metals
Dissolved Metals

Parameter	05 MAR 91 Result*	22 APR 92 Result	Units	Reporting Limit
Calcium	50.4	42	mg/L	0.40
Magnesium	14.7	12	mg/L	0.40
Potassium	1.3	ND	mg/L	10.0
Sodium	815	220	mg/L	10.0

* Data from Analytical Technologies, Inc.

SMW-3 Giant Refining Gallup, New Mexico

Total Metals

Parameter	22 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Chromium	ND	0.080	mg/L	0.010
Lead	ND	0.034	mg/L	0.0050

* Data from Analytical Technologies, Inc.

SMW-3 Giant Refining Gallup, New Mexico

General Inorganics

Parameter	22 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Alkalinity, Bicarb. as CaCO3 at pH 4.5	680	---	mg/L	5.0
Alkalinity, Carb. as CaCO3 at pH 8.3	ND	---	mg/L	5.0
Chloride	71	---	mg/L	3.0
pH	7.6	7.73	units	---
pH	---	7.73	units	---
pH	---	7.69	units	---
pH	---	7.74	units	---
Average pH			units	---
Sulfate	1100	---	mg/L	5.0
Specific Conductance at 25 deg C	2600	3100	umhos/cm	1.0
Specific Conductance at 25 deg C	---	3100	umhos/cm	1.0
Specific Conductance at 25 deg C	---	3100	umhos/cm	1.0
Specific Conductance at 25 deg C	---	3100	umhos/cm	1.0
Average Specific Conductance at 25 deg C			umhos/cm	1.0
Total Organic Carbon	46	5.20	mg/L	0.50
Total Organic Carbon	---	5.10	mg/L	0.50
Total Organic Carbon	---	---	mg/L	0.50
Total Organic Carbon	---	---	mg/L	0.50
Total Organic Halogen as Cl	ND	0.012	ug/L	30
Total Organic Halogen as Cl	ND	0.015	ug/L	30
Total Organic Halogen as Cl	ND	---	ug/L	30
Total Organic Halogen as Cl	ND	---	ug/L	30
Total Dissolved Solids	3200	---	mg/L	10
Water Elevation	6852.31	6852.06	ft	

SMW-4 Giant Refining Gallup, New Mexico

TCL Volatile Organics
Method 8240

Parameter	22 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Chloromethane	ND	ND	ug/L	10
Bromomethane	ND	ND	ug/L	10
Vinyl chloride	ND	ND	ug/L	10
Chloroethane	ND	ND	ug/L	10
Methylene chloride	ND	ND	ug/L	5.0
Acetone	ND	4.9 J	ug/L	10
Carbon disulfide	---	ND	ug/L	5.0
1,1-Dichloroethene	ND	ND	ug/L	5.0
1,1-Dichloroethane	ND	ND	ug/L	5.0
1,2-Dichloroethene				
(cis/trans)	ND	ND	ug/L	5.0
Chloroform	ND	ND	ug/L	5.0
1,2-Dichloroethane	ND	ND	ug/L	5.0
2-Butanone	---	---	ug/L	5.0
1,1,1-Trichloroethane	ND	ND	ug/L	10
Carbon tetrachloride	ND	ND	ug/L	5.0
Vinyl acetate	---	ND	ug/L	5.0
Bromodichloromethane	ND	ND	ug/L	10
trans-1,3-Dichloropropene	ND	ND	ug/L	5.0
Trichloroethene	---	ND	ug/L	5.0
Chlorodibromomethane	---	---	ug/L	5.0
1,1,2-Trichloroethane	ND	ND	ug/L	5.0
Benzene	ND	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ND	ug/L	10
Bromoform	ND	ND	ug/L	5.0
4-Methyl-2-pentanone	---	ND	ug/L	10
2-Hexanone	ND	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ND	ug/L	5.0
Tetrachloroethene	---	ND	ug/L	5.0
Toluene	ND	ND	ug/L	5.0
Chlorobenzene	ND	ND	ug/L	5.0
Ethylbenzene	ND	ND	ug/L	5.0
Styrene	---	ND	ug/L	5.0

Xylenes (total)	ND	ND	ug/L	5.0
1,1,2 Trichloro-1,2,2-trifluoroethane	ND	---	ug/L	10
1,2-Dibromomethane (EDB)	---	---	ug/L	10
1,2-Dichlorobenzene	ND	---	ug/L	5.0
1,4-Dichlorobenzene	ND	---	ug/L	5.0
Acrolein	---	ND	ug/L	
Acrylonitrile	---	ND	ug/L	
Dibromomethane	ND	ND	ug/L	
Dichlorodifluoromethane	ND	ND	ug/L	
Methyl Iodide	---	ND	ug/L	
Trans-1,4-dichloro-2-Butene	---	ND	ug/L	
Trichloromonofluoromethane	---	ND	ug/L	
1,2,3-Trichloropropane	---	ND	ug/L	
Ethyl Methacrylate	---	ND	ug/L	
Ethanol	ND	---	ug/L	
1,4-Dichloro-2-Butane	---	---	ug/L	

* Data from Analytical Technologies, Inc.

SMW-4 Giant Refinery Gallup, New Mexico

Dissolved Metals

Parameter	05 MAR 91 Result*	22 APR 92 Result	Units	Reporting Limit
Calcium	4.5	2.8	mg/L	0.40
Magnesium	1.1	0.78	mg/L	0.40
Potassium	1.3	ND	mg/L	10.0
Sodium	306	82	mg/L	10.0

* Data from Analytical Technologies, Inc.

SMW-4 Giant Refining Gallup, New Mexico

Total Metals

Parameter	22 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Chromium	ND	0.068	mg/L	0.010
Lead	ND	0.007	mg/L	0.0050

* Data from Analytical Technologies, Inc.

SMW-4 Giant Refining Gallup, New Mexico

General Inorganics

Parameter	22 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Alkalinity, Bicarb. as CaCO3 at pH 4.5	430	---	mg/L	5.0
Alkalinity, Carb. as CaCO3 at pH 8.3	ND	---	mg/L	5.0
Chloride	63	---	mg/L	3.0
pH	8.3	7.93	units	---
pH	---	7.94	units	---
pH	---	7.95	units	---
pH	---	7.91	units	---
Average pH			units	---
Sulfate	170	---	mg/L	5.0
Specific Conductance at 25 deg.C	1100	1260	umhos/cm	1.0
Specific Conductance at 25 deg.C	---	1240	umhos/cm	1.0
Specific Conductance at 25 deg.C	---	1260	umhos/cm	1.0
Specific Conductance at 25 deg.C	---	1250	umhos/cm	1.0
Average Specific Conductance at 25 deg.C			umhos/cm	1.0
Total Organic Carbon	68	4.60	mg/L	0.50
Total Organic Carbon	---	5.30	mg/L	0.50
Total Organic Carbon	---	---	mg/L	0.50
Total Organic Carbon	---	---	mg/L	0.50
Total Organic Halogen as Cl	43	ND	ug/L	30
Total Organic Halogen as Cl	---	ND	ug/L	30
Total Organic Halogen as Cl	---	---	ug/L	30
Total Organic Halogen as Cl	---	---	ug/L	30
Total Dissolved Solids	1400	---	mg/L	10

Water Elevation	6849.69	6849.17	ft	

* Data from Analytical Technologies, Inc.

(1) Total Organic Halide as reported by ATI.

SMW-5 Giant Refining Gallup, New Mexico

TCL Volatile Organics
Method 8240

Parameter	22 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Chloromethane	ND	ND	ug/L	10
Bromomethane	ND	ND	ug/L	10
Vinyl chloride	ND	ND	ug/L	10
Chloroethane	ND	ND	ug/L	10
Methylene chloride	ND	ND	ug/L	5.0
Acetone	ND	4.6 BJ	ug/L	10
Carbon disulfide	---	ND	ug/L	5.0
1,1-Dichloroethene	ND	ND	ug/L	5.0
1,1-Dichloroethane	ND	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ND	ug/L	5.0
Chloroform	ND	ND	ug/L	5.0
1,2-Dichloroethane	ND	ND	ug/L	5.0
2-Butanone	---	---	ug/L	5.0
1,1,1-Trichloroethane	ND	ND	ug/L	10
Carbon tetrachloride	ND	ND	ug/L	5.0
Vinyl acetate	---	ND	ug/L	5.0
Bromodichloromethane	ND	ND	ug/L	10
trans-1,3-Dichloropropene	ND	ND	ug/L	5.0
Trichloroethene	---	ND	ug/L	5.0
Chlorodibromomethane	---	---	ug/L	5.0
1,1,2-Trichloroethane	ND	ND	ug/L	5.0
Benzene	ND	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ND	ug/L	10
Bromoform	ND	ND	ug/L	5.0
4-Methyl-2-pentanone	---	ND	ug/L	10
2-Hexanone	ND	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ND	ug/L	5.0
Tetrachloroethene	---	ND	ug/L	5.0
Toluene	ND	ND	ug/L	5.0
Chlorobenzene	ND	ND	ug/L	5.0
Ethylbenzene	ND	ND	ug/L	5.0
Styrene	---	ND	ug/L	5.0

Xylenes (total)	ND	ND	ug/L	5.0
1,1,2 Trichloro-1,2,2-trifluoroethane	ND	---	ug/L	10
1,2-Dibromoethane (EDB)	---	---	ug/L	10
1,2-Dichlorobenzene	ND	---	ug/L	5.0
1,4-Dichlorobenzene	ND	---	ug/L	5.0
Acrolein	---	ND	ug/L	
Acrylonitrile	---	ND	ug/L	
Dibromomethane	ND	ND	ug/L	
Dichlorodifluoromethane	ND	ND	ug/L	
Methyl Iodide	---	ND	ug/L	
Trans-1,4-dichloro-2-Butene	---	ND	ug/L	
Trichloromonofluoromethane	---	ND	ug/L	
1,2,3-Trichloropropane	---	ND	ug/L	
Ethyl Methacrylate	---	ND	ug/L	
Ethanol	ND	---	ug/L	
1,4-Dichloro-2-Butane	---	---	ug/L	

* Data from Analytical Technologies, Inc.

SMW-5 Giant Refinery Gallup, New Mexico

Metals
Dissolved Metals

Parameter	05 MAR 91 Result*	22 APR 92 Result	Units	Reporting Limit
Calcium	3.3	2.7	mg/L	0.40
Magnesium	0.8	0.64	mg/L	0.40
Potassium	<1.0	ND	mg/L	10.0
Sodium	281	ND	mg/L	10.0

* Data from Analytical Technologies, Inc.

SMW-5 Giant Refining Gallup, New Mexico

Metals
Total Metals

Parameter	22 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Chromium	ND	0.055	mg/L	0.010
Lead	ND	0.007	mg/L	0.0050

* Data from Analytical Technologies, Inc.

SMW-5 Giant Refining Gallup, New Mexico

General Inorganics

Parameter	22 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Alkalinity, Bicarb. as CaCO3 at pH 4.5	310	---	mg/L	5.0
Alkalinity, Carb. as CaCO3 at pH 8.3	ND	---	mg/L	5.0
Chloride	77	---	mg/L	3.0
pH	7.6	8.47	units	---
pH	---	8.45	units	---
pH	---	8.47	units	---
pH	---	8.47	units	---
Average pH			units	---
Sulfate	160	---	mg/L	5.0
Specific Conductance at 25 deg.C	1000	1090	umhos/cm	1.0
Specific Conductance at 25 deg.C	---	1110	umhos/cm	1.0
Specific Conductance at 25 deg.C	---	1090	umhos/cm	1.0
Specific Conductance at 25 deg.C	---	1110	umhos/cm	1.0
Average Specific Conductance at 25 deg.C			umhos/cm	1.0
Total Organic Carbon	39	5.30	mg/L	0.50
Total Organic Carbon	---	6.70	mg/L	0.50
Total Organic Carbon	---	---	mg/L	0.50
Total Organic Carbon	---	---	mg/L	0.50
Total Organic Halogen as Cl	24	ND	ug/L	30
Total Organic Halogen as Cl	---	ND	ug/L	30
Total Organic Halogen as Cl	---	---	ug/L	30
Total Organic Halogen as Cl	---	---	ug/L	30
Total Dissolved Solids	1700	---	mg/L	10

Water Elevation	6847.89	6846.36	ft	

* Data from Analytical Technologies, Inc.

(1) Total Organic Halide as reported by ATI.

SMW-6 Giant Refining Gallup, New Mexico

TCL Volatile Organics
Method 8240

Parameter	22 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Chloromethane	ND	ND	ug/L	10
Bromomethane	ND	ND	ug/L	10
Vinyl chloride	ND	ND	ug/L	10
Chloroethane	ND	ND	ug/L	10
Methylene chloride	ND	ND	ug/L	5.0
Acetone	ND	5.4 BJ	ug/L	10
Carbon disulfide	---	3.5 J	ug/L	5.0
1,1-Dichloroethene	ND	ND	ug/L	5.0
1,1-Dichloroethane	ND	ND	ug/L	5.0
1,2-Dichloroethene				
(cis/trans)	ND	ND	ug/L	5.0
Chloroform	ND	ND	ug/L	5.0
1,2-Dichloroethane	ND	ND	ug/L	5.0
2-Butanone	---	---	ug/L	5.0
1,1,1-Trichloroethane	ND	ND	ug/L	10
Carbon tetrachloride	ND	ND	ug/L	5.0
Vinyl acetate	---	ND	ug/L	5.0
Bromodichloromethane	ND	ND	ug/L	10
trans-1,3-Dichloropropene	ND	ND	ug/L	5.0
Trichloroethene	---	ND	ug/L	5.0
Chlorodibromomethane	---	---	ug/L	5.0
1,1,2-Trichloroethane	ND	ND	ug/L	5.0
Benzene	ND	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ND	ug/L	10
Bromoform	ND	ND	ug/L	5.0
4-Methyl-2-pentanone	---	ND	ug/L	10
2-Hexanone	ND	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ND	ug/L	5.0
Tetrachloroethene	---	ND	ug/L	5.0
Toluene	ND	ND	ug/L	5.0
Chlorobenzene	ND	ND	ug/L	5.0
Ethylbenzene	ND	ND	ug/L	5.0
Styrene	---	ND	ug/L	5.0

Xylenes (total)	ND	ND	ug/L	5.0
1,1,2 Trichloro-1,2,2-trifluoroethane	ND	---	ug/L	
1,2-Dibromoethane (EDB)	---	---	ug/L	
1,2-Dichlorobenzene	ND	---	ug/L	
1,4-Dichlorobenzene	ND	---	ug/L	
Acrolein	---	ND	ug/L	
Acrylonitrile	---	ND	ug/L	
Dibromomethane	ND	ND	ug/L	
Dichlorodifluoromethane	ND	ND	ug/L	
Methyl Iodide	---	ND	ug/L	
Trans-1,4-dichloro-2-Butene	---	ND	ug/L	
Trichloromonofluoromethane	---	ND	ug/L	
1,2,3-Trichloropropane	---	ND	ug/L	
Ethyl Methacrylate	---	ND	ug/L	
Ethanol	ND	---	ug/L	
1,4-Dichloro-2-Butane	---	---	ug/L	

* Data from Analytical Technologies, Inc.

SMW-6 Giant Refinery Gallup, New Mexico

Metals
Dissolved Metals

Parameter	05 MAR 91 Result*	22 APR 92 Result	Units	Reporting Limit
Calcium	6.6	4.6	mg/L	0.40
Magnesium	1.9	1.4	mg/L	0.40
Potassium	3.6	1.0	mg/L	10.0
Sodium	376	86	mg/L	10.0

* Data from Analytical Technologies, Inc.

SMW-6 Giant Refining Gallup, New Mexico

Total Metals

Parameter	24 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Chromium	ND	0.138	mg/L	0.010
Lead	ND	0.010	mg/L	0.0050

* Data from Analytical Technologies, Inc.

SMW-6 Giant Refining Gallup, New Mexico

General Inorganics

Parameter	24 APR 92 Result	22 OCT 92 Result	Units	Reporting Limit
Alkalinity, Bicarb. as CaCO3 at pH 4.5	550	---	mg/L	10
Alkalinity, Carb. as CaCO3 at pH 8.3	ND	---	mg/L	10 10
Chloride	89	---	mg/L	5.0
pH	8.4	7.56	units	10
pH	---	7.55	units	5.0
pH	---	7.57	units	5.0
pH	---	7.58	units	5.0
Average pH			units	
Sulfate	190	---	mg/L	5.0
Specific Conductance at 25 deg C	1300	1600	umhos/cm	5.0
Specific Conductance at 25 deg C	---	1600	umhos/cm	10
Specific Conductance at 25 deg C	---	1600	umhos/cm	5.0
Specific Conductance at 25 deg C	---	1600	umhos/cm	5.0
Average Specific Conductance at 25 deg C			umhos/cm	5.0
Total Organic Carbon	72	5.9	mg/L	5.0
Total Organic Carbon	---	5.4	mg/L	5.0
Total Organic Carbon	---	---	mg/L	5.0
Total Organic Carbon	---	---	mg/L	10
Total Organic Halogen as Cl	120	0.006	ug/L	5.0 10
Total Organic Halogen as Cl	---	ND	ug/L	10 5.0
Total Organic Halogen as Cl	---	---	ug/L	5.0 5.0
Total Organic Halogen as Cl	---	---	ug/L	5.0 5.0
Total Dissolved Solids	1700	---	mg/L	5.0 5.0
Water Elevation	6850.18	6849.61	ft	

Westech Laboratories Inc.

3737 East Broadway Road
Phoenix, Arizona 85040
(602) 437-1080 • fax 437-8706

CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205895
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: G. AGN
PAGE 1 OF 2

CLIENT SAMPLE ID : MW1
SAMPLE TYPE .....: WATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: MONITOR WELLS

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : --
SAMPLE DATE ...: 04-23-92
SUBMITTAL DATE : 04-24-92
EXTRACTION DATE: --

Inorganic Chemistry

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Arsenic	<0.05	mg/L	0.05	05-05-92
Total Barium	<0.05	mg/L	0.05	05-05-92
Total Cadmium	<0.05	mg/L	0.05	05-05-92
Total Calcium	2.2	mg/L	0.05	05-05-92
Total Chromium	<0.05	mg/L	0.05	05-05-92
Total Lead	<0.10	mg/L	0.10	05-05-92
Total Magnesium	0.22	mg/L	0.10	05-05-92
Total Manganese	<0.05	mg/L	0.05	05-05-92
Total Mercury	<0.001	mg/L	0.001	05-05-92
Total Potassium	<1.0	mg/L	1.0	05-06-92
Total Selenium	<0.05	mg/L	0.05	05-05-92
Total Silver	<0.05	mg/L	0.05	05-05-92
Total Sodium	77.	mg/L	0.05	05-05-92
Dissolved Arsenic	<0.010	mg/L	0.010	05-04-92
Dissolved Barium	0.09	mg/L	0.05	05-05-92
Dissolved Cadmium	0.0012	mg/L	0.0005	05-06-92
Dissolved Calcium	1.8	mg/L	0.05	05-05-92
Dissolved Chromium	<0.005	mg/L	0.005	05-06-92
Dissolved Lead	.006 0.084	mg/L	0.005	05-05-92
Dissolved Magnesium	0.26	mg/L	0.10	05-05-92
Dissolved Manganese	0.10	mg/L	0.05	05-05-92
Dissolved Mercury	<0.001	mg/L	0.001	05-05-92
Dissolved Potassium	<1.0	mg/L	1.0	05-06-92
Dissolved Selenium	<0.005	mg/L	0.005	05-04-92
Dissolved Silver	<0.002	mg/L	0.002	05-01-92
Dissolved Sodium	72.	mg/L	0.05	05-05-92
Bicarbonate	270.	mg/L	2.0	04-28-92
Carbonate	80.	mg/L	2.0	04-28-92
Chloride	56.	mg/L	1.0	05-06-92
Electrical Conductivity	1100.	umhos/cm	0.1	04-24-92

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ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205895
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: MG AGN

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit	Analysis Date
pH	8.9	S.U.	1.0	04-24-92
Phenol, Total	0.02	mg/L	0.005	05-03-92
Sulfate	160.	mg/L	5.0	05-06-92
Total Dissolved Solids	1400.	mg/L	2.0	04-27-92
Total Organic Carbon	15.	mg/L	1.0	05-05-92
Total Organic Halogens	<10.	mg/L	10.	05-02-92

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CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205896
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: M. AGN

CLIENT SAMPLE ID : MW2
SAMPLE TYPE .....: WATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: MONITOR WELLS
ANALYST .....: I. HRABOVSKY

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : --
SAMPLE DATE ...: 04-23-92
SUBMITTAL DATE : 04-24-92
EXTRACTION DATE: 04-27-92
ANALYSIS DATE .: 04-27-92

Volatile Organics By Capillary GC/MS

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
1,1,2,2-Tetrachloroethane	<5.0	ug/L	5.0
1,1,2,2-Tetrachloroethene(Perc.)	<5.0	ug/L	5.0
1,1,1-Trichloroethane	<5.0	ug/L	5.0
1,1,2-Trichloroethane	<5.0	ug/L	5.0
1,1,2-Trichloroethene (TCE)	<5.0	ug/L	5.0
1,1,2-Trichloro 1,2,2-Trifluoro ethane (freon 113)	<5.0	ug/L	5.0
1,1-Dichloroethane	<5.0	ug/L	5.0
1,1-Dichloroethene	<5.0	ug/L	5.0
1,2-Dichloroethane	<5.0	ug/L	5.0
trans-1,2-Dichloroethene	<5.0	ug/L	5.0
1,3-Dichlorobenzene	<5.0	ug/L	5.0
1,4-Dichlorobenzene	<5.0	ug/L	5.0
1,2-Dichlorobenzene	<5.0	ug/L	5.0
cis-1,3-Dichloropropene	<5.0	ug/L	5.0
trans-1,3-Dichloropropene	<5.0	ug/L	5.0
2-Chloroethylvinyl ether	<15.	ug/L	15.
Vinyl chloride	<10.	ug/L	10.
Trichlorofluoromethane	<10.	ug/L	10.
Chloromethane	<10.	ug/L	10.
Chloroethane	<10.	ug/L	10.
Methylene Chloride	<5.0	ug/L	5.0
Chloroform	<5.0	ug/L	5.0
Bromodichloromethane	<5.0	ug/L	5.0
Dibromochloromethane	<5.0	ug/L	5.0
Bromoform	<5.0	ug/L	5.0
Dibromomethane	<10.	ug/L	10.
Bromomethane	<10.	ug/L	10.
Carbon tetrachloride	<5.0	ug/L	5.0
Benzene	<5.0	ug/L	5.0

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GALLUP, NM 87301

SAMPLE NO. : 9205896
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: G. AGN

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit
Toluene	<5.0	ug/L	5.0
Ethyl Benzene	<5.0	ug/L	5.0
Chlorobenzene	<5.0	ug/L	5.0
Total Xylenes	<5.0	ug/L	5.0
1,2-Dichloropropane	<5.0	ug/L	5.0
Dichlorodifluoromethane	<10.	ug/L	10.
Acetone	<100.	ug/L	100.
Methyl tert-butyl ether	<100.	ug/L	100.
Metyl ethyl ketone	<100.	ug/L	100.
Methyl isobutyl ketone	<100.	ug/L	100.
2-Hexanone	<100.	ug/L	100.

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GALLUP, NM 87301

SAMPLE NO. : 9205896
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: JM 4 AGN
PAGE : 1 OF 2

CLIENT SAMPLE ID : MW2
SAMPLE TYPE .....: WATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: MONITOR WELLS

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : --
SAMPLE DATE ...: 04-23-92
SUBMITTAL DATE : 04-24-92
EXTRACTION DATE: --

Inorganic Chemistry

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Arsenic	<0.05	mg/L	0.05	05-05-92
Total Barium	<0.05	mg/L	0.05	05-05-92
Total Cadmium	<0.05	mg/L	0.05	05-05-92
Total Calcium	2.0	mg/L	0.05	05-05-92
Total Chromium	<0.05	mg/L	0.05	05-05-92
Total Lead	<0.10	mg/L	0.10	05-05-92
Total Magnesium	0.17	mg/L	0.10	05-05-92
Total Manganese	<0.05	mg/L	0.05	05-05-92
Total Mercury	<0.001	mg/L	0.001	05-05-92
Total Potassium	<1.0	mg/L	1.0	05-06-92
Total Selenium	<0.05	mg/L	0.05	05-05-92
Total Silver	<0.05	mg/L	0.05	05-05-92
Total Sodium	79.	mg/L	0.05	05-05-92
Dissolved Arsenic	<0.010	mg/L	0.010	05-04-92
Dissolved Barium	<0.05	mg/L	0.05	05-05-92
Dissolved Cadmium	<0.0005	mg/L	0.0005	05-06-92
Dissolved Calcium	1.6	mg/L	0.05	05-05-92
Dissolved Chromium	<0.005	mg/L	0.005	05-06-92
Dissolved Lead	<0.005	mg/L	0.005	05-05-92
Dissolved Magnesium	0.18	mg/L	0.10	05-05-92
Dissolved Manganese	<0.05	mg/L	0.05	05-05-92
Dissolved Mercury	<0.001	mg/L	0.001	05-05-92
Dissolved Potassium	<1.0	mg/L	1.0	05-06-92
Dissolved Selenium	<0.005	mg/L	0.005	05-04-92
Dissolved Silver	<0.002	mg/L	0.002	05-01-92
Dissolved Sodium	78.	mg/L	0.05	05-05-92
Bicarbonate	250.	mg/L	2.0	04-28-92
Carbonate	100.	mg/L	2.0	04-28-92
Chloride	64.	mg/L	1.0	05-06-92
Electrical Conductivity	1200.	umhos/cm	0.1	04-24-92

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GALLUP, NM 87301

SAMPLE NO. : 9205896
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: MH. AGN
PAGE : 2 OF 2

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit	Analysis Date
pH	9.0	S.U.	1.0	04-24-92
Phenol, Total	<0.005	mg/L	0.005	05-03-92
Sulfate	170.	mg/L	5.0	05-06-92
Total Dissolved Solids	1200.	mg/L	2.0	04-27-92
Total Organic Carbon	<1.0	mg/L	1.0	05-05-92
Total Organic Halogens	<10.	mg/L	10.	05-02-92

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Phoenix, Arizona 85040
(602) 437-1080 • fax 437-8706

CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205897
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: MG AGN

CLIENT SAMPLE ID : MW4
SAMPLE TYPE .....: WATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: MONITOR WELLS
ANALYST .....: I. HRABOVSKY

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : --
SAMPLE DATE ...: 04-22-92
SUBMITTAL DATE : 04-24-92
EXTRACTION DATE: 04-27-92
ANALYSIS DATE .: 04-27-92

Volatile Organics By Capillary GC/MS

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
1,1,2,2-Tetrachloroethane	<5.0	ug/L	5.0
1,1,2,2-Tetrachloroethene(Perc.)	<5.0	ug/L	5.0
1,1,1-Trichloroethane	<5.0	ug/L	5.0
1,1,2-Trichloroethane	<5.0	ug/L	5.0
1,1,2-Trichloroethene (TCE)	<5.0	ug/L	5.0
1,1,2-Trichloro 1,2,2-Trifluoro ethane (freon 113)	<5.0	ug/L	5.0
1,1-Dichloroethane	<5.0	ug/L	5.0
1,1-Dichloroethene	<5.0	ug/L	5.0
1,2-Dichloroethane	<5.0	ug/L	5.0
trans-1,2-Dichloroethene	<5.0	ug/L	5.0
1,3-Dichlorobenzene	<5.0	ug/L	5.0
1,4-Dichlorobenzene	<5.0	ug/L	5.0
1,2-Dichlorobenzene	<5.0	ug/L	5.0
cis-1,3-Dichloropropene	<5.0	ug/L	5.0
trans-1,3-Dichloropropene	<5.0	ug/L	5.0
2-Chloroethylvinyl ether	<15.	ug/L	15.
Vinyl chloride	<10.	ug/L	10.
Trichlorofluoromethane	<10.	ug/L	10.
Chloromethane	<10.	ug/L	10.
Chloroethane	<10.	ug/L	10.
Methylene Chloride	<5.0	ug/L	5.0
Chloroform	<5.0	ug/L	5.0
Bromodichloromethane	<5.0	ug/L	5.0
Dibromochloromethane	<5.0	ug/L	5.0
Bromoform	<5.0	ug/L	5.0
Dibromomethane	<10.	ug/L	10.
Bromomethane	<10.	ug/L	10.
Carbon tetrachloride	<5.0	ug/L	5.0
Benzene	<5.0	ug/L	5.0

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CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205897
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: AGN

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit
Toluene	<5.0	ug/L	5.0
Ethyl Benzene	<5.0	ug/L	5.0
Chlorobenzene	<5.0	ug/L	5.0
Total Xylenes	<5.0	ug/L	5.0
1,2-Dichloropropane	<5.0	ug/L	5.0
Dichlorodifluoromethane	<10.	ug/L	10.
Acetone	<100.	ug/L	100.
Methyl tert-butyl ether	<100.	ug/L	100.
Metyl ethyl ketone	<100.	ug/L	100.
Methyl isobutyl ketone	<100.	ug/L	100.
2-Hexanone	<100.	ug/L	100.

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CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205897
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: JG AGN

CLIENT SAMPLE ID : MW4
SAMPLE TYPE .....: WATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: MONITOR WELLS

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : --
SAMPLE DATE ...: 04-22-92
SUBMITTAL DATE : 04-24-92
EXTRACTION DATE: --

Inorganic Chemistry

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Arsenic	<0.05	mg/L	0.05	05-05-92
Total Barium	<0.05	mg/L	0.05	05-05-92
Total Cadmium	<0.05	mg/L	0.05	05-05-92
Total Calcium	2.6	mg/L	0.05	05-05-92
Total Chromium	<0.05	mg/L	0.05	05-05-92
Total Lead	<0.10	mg/L	0.10	05-05-92
Total Magnesium	0.30	mg/L	0.10	05-05-92
Total Manganese	<0.05	mg/L	0.05	05-05-92
Total Mercury	<0.001	mg/L	0.001	05-05-92
Total Potassium	<1.0	mg/L	1.0	05-06-92
Total Selenium	<0.05	mg/L	0.05	05-05-92
Total Silver	<0.05	mg/L	0.05	05-05-92
Total Sodium	86.	mg/L	0.05	05-05-92
Dissolved Arsenic	<0.010	mg/L	0.010	05-04-92
Dissolved Barium	0.06	mg/L	0.05	05-05-92
Dissolved Cadmium	<0.0005	mg/L	0.0005	05-06-92
Dissolved Calcium	1.5	mg/L	0.05	05-05-92
Dissolved Chromium	<0.005	mg/L	0.005	05-06-92
Dissolved Lead	0.007	mg/L	0.005	05-05-92
Dissolved Magnesium	0.24	mg/L	0.10	05-05-92
Dissolved Manganese	0.08	mg/L	0.05	05-05-92
Dissolved Mercury	<0.001	mg/L	0.001	05-05-92
Dissolved Potassium	<1.0	mg/L	1.0	05-06-92
Dissolved Selenium	<0.005	mg/L	0.005	05-04-92
Dissolved Silver	<0.002	mg/L	0.002	05-01-92
Dissolved Sodium	78.	mg/L	0.05	05-05-92
Bicarbonate	390.	mg/L	2.0	04-28-92
Carbonate	60.	mg/L	2.0	04-28-92
Chloride	19.	mg/L	1.0	05-01-92
Electrical Conductivity	1300.	umhos/cm	0.1	04-24-92

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ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205897
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: AGN

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit	Analysis Date
pH	8.7	S.U.	1.0	04-24-92
Phenol, Total	<0.005	mg/L	0.005	05-03-92
Sulfate	150.	mg/L	5.0	05-06-92
Total Dissolved Solids	1700.	mg/L	2.0	04-27-92
Total Organic Carbon	12.	mg/L	1.0	05-05-92
Total Organic Halogens	230.	mg/L	10.	05-02-92

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ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205898
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: AGN

CLIENT SAMPLE ID : MW5
SAMPLE TYPE .....: WATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: MONITOR WELLS

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : --
SAMPLE DATE ...: 04-23-92
SUBMITTAL DATE : 04-24-92
EXTRACTION DATE: --

Inorganic Chemistry

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Arsenic	<0.05	mg/L	0.05	05-05-92
Total Barium	0.29	mg/L	0.05	05-05-92
Total Cadmium	<0.05	mg/L	0.05	05-05-92
Total Calcium	4.2	mg/L	0.05	05-05-92
Total Chromium	<0.05	mg/L	0.05	05-05-92
Total Lead	<0.10	mg/L	0.10	05-05-92
Total Magnesium	0.38	mg/L	0.10	05-05-92
Total Manganese	<0.05	mg/L	0.05	05-05-92
Total Mercury	<0.001	mg/L	0.001	05-05-92
Total Potassium	<1.0	mg/L	1.0	05-06-92
Total Selenium	<0.05	mg/L	0.05	05-05-92
Total Silver	<0.05	mg/L	0.05	05-05-92
Total Sodium	150.	mg/L	0.05	05-05-92
Dissolved Arsenic	<0.010	mg/L	0.010	05-04-92
Dissolved Barium	<0.05	mg/L	0.05	05-05-92
Dissolved Cadmium	<0.0005	mg/L	0.0005	05-06-92
Dissolved Calcium	1.1	mg/L	0.05	05-05-92
Dissolved Chromium	<0.005	mg/L	0.005	05-06-92
Dissolved Lead	<0.005	mg/L	0.005	05-05-92
Dissolved Magnesium	0.15	mg/L	0.10	05-05-92
Dissolved Manganese	<0.05	mg/L	0.05	05-05-92
Dissolved Mercury	<0.001	mg/L	0.001	05-05-92
Dissolved Potassium	<1.0	mg/L	1.0	05-06-92
Dissolved Selenium	<0.005	mg/L	0.005	05-04-92
Dissolved Silver	<0.002	mg/L	0.002	05-01-92
Dissolved Sodium	64.	mg/L	0.05	05-05-92
Bicarbonate	310.	mg/L	2.0	04-28-92
Carbonate	100.	mg/L	2.0	04-28-92
Chloride	74.	mg/L	1.0	05-06-92
Electrical Conductivity	1200.	umhos/cm	0.1	04-24-92

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SAMPLE NO. : 9205898
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: MG. AGN

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit	Analysis Date
pH	9.0	S.U.	1.0	04-24-92
Phenol, Total	<0.005	mg/L	0.005	05-13-92
Sulfate	170.	mg/L	5.0	05-06-92
Total Dissolved Solids	1300.	mg/L	2.0	04-27-92
Total Organic Carbon	21.	mg/L	1.0	05-05-92
Total Organic Halogens	64.	mg/L	10.	05-02-92

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SAMPLE NO. : 9205898
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: MG. AGN

CLIENT SAMPLE ID : MW5
SAMPLE TYPE .....: WATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: MONITOR WELLS
ANALYST .....: I. HRABOVSKY

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : --
SAMPLE DATE ...: 04-23-92
SUBMITTAL DATE : 04-24-92
EXTRACTION DATE: 04-27-92
ANALYSIS DATE .: 04-27-92

Volatile Organics By Capillary GC/MS

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
1,1,2,2-Tetrachloroethane	<5.0	ug/L	5.0
1,1,2,2-Tetrachloroethene(Perc.)	<5.0	ug/L	5.0
1,1,1-Trichloroethane	<5.0	ug/L	5.0
1,1,2-Trichloroethane	<5.0	ug/L	5.0
1,1,2-Trichloroethene (TCE)	<5.0	ug/L	5.0
1,1,2-Trichloro 1,2,2-Trifluoro ethane (freon 113)	<5.0	ug/L	5.0
1,1-Dichloroethane	<5.0	ug/L	5.0
1,1-Dichloroethene	<5.0	ug/L	5.0
1,2-Dichloroethane	<5.0	ug/L	5.0
trans-1,2-Dichloroethene	<5.0	ug/L	5.0
1,3-Dichlorobenzene	<5.0	ug/L	5.0
1,4-Dichlorobenzene	<5.0	ug/L	5.0
1,2-Dichlorobenzene	<5.0	ug/L	5.0
cis-1,3-Dichloropropene	<5.0	ug/L	5.0
trans-1,3-Dichloropropene	<5.0	ug/L	5.0
2-Chloroethylvinyl ether	<15.	ug/L	15.
Vinyl chloride	<10.	ug/L	10.
Trichlorofluoromethane	<10.	ug/L	10.
Chloromethane	<10.	ug/L	10.
Chloroethane	<10.	ug/L	10.
Methylene Chloride	<5.0	ug/L	5.0
Chloroform	<5.0	ug/L	5.0
Bromodichloromethane	<5.0	ug/L	5.0
Dibromochloromethane	<5.0	ug/L	5.0
Bromoform	<5.0	ug/L	5.0
Dibromomethane	<10.	ug/L	10.
Bromomethane	<10.	ug/L	10.
Carbon tetrachloride	<5.0	ug/L	5.0
Benzene	<5.0	ug/L	5.0

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SAMPLE NO. : 9205898
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: MG AGN

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit
Toluene	<5.0	ug/L	5.0
Ethyl Benzene	<5.0	ug/L	5.0
Chlorobenzene	<5.0	ug/L	5.0
Total Xylenes	<5.0	ug/L	5.0
1,2-Dichloropropane	<5.0	ug/L	5.0
Dichlorodifluoromethane	<10.	ug/L	10.
Acetone	<100.	ug/L	100.
Methyl tert-butyl ether	<100.	ug/L	100.
Metyl ethyl ketone	<100.	ug/L	100.
Methyl isobutyl ketone	<100.	ug/L	100.
2-Hexanone	<100.	ug/L	100.

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CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
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GALLUP, NM 87301

SAMPLE NO. : 9205899
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: MG AGN

CLIENT SAMPLE ID : OW11
SAMPLE TYPE .....: WATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: OBSERVATION WELLS
ANALYST .....: I. HRABOVSKY

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : --
SAMPLE DATE ...: 04-22-92
SUBMITTAL DATE : 04-24-92
EXTRACTION DATE: 04-27-92
ANALYSIS DATE .: 04-27-92

Volatile Organics By Capillary GC/MS

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
1,1,2,2-Tetrachloroethane	<5.0	ug/L	5.0
1,1,2,2-Tetrachloroethene(Perc.)	<5.0	ug/L	5.0
1,1,1-Trichloroethane	<5.0	ug/L	5.0
1,1,2-Trichloroethane	<5.0	ug/L	5.0
1,1,2-Trichloroethene (TCE)	<5.0	ug/L	5.0
1,1,2-Trichloro 1,2,2-Trifluoro ethane (freon 113)	<5.0	ug/L	5.0
1,1-Dichloroethane	<5.0	ug/L	5.0
1,1-Dichloroethene	<5.0	ug/L	5.0
1,2-Dichloroethane	<5.0	ug/L	5.0
trans-1,2-Dichloroethene	<5.0	ug/L	5.0
1,3-Dichlorobenzene	<5.0	ug/L	5.0
1,4-Dichlorobenzene	<5.0	ug/L	5.0
1,2-Dichlorobenzene	<5.0	ug/L	5.0
cis-1,3-Dichloropropene	<5.0	ug/L	5.0
trans-1,3-Dichloropropene	<5.0	ug/L	5.0
2-Chloroethylvinyl ether	<15.	ug/L	15.
Vinyl chloride	<10.	ug/L	10.
Trichlorofluoromethane	<10.	ug/L	10.
Chloromethane	<10.	ug/L	10.
Chloroethane	<10.	ug/L	10.
Methylene Chloride	<5.0	ug/L	5.0
Chloroform	<5.0	ug/L	5.0
Bromodichloromethane	<5.0	ug/L	5.0
Dibromochloromethane	<5.0	ug/L	5.0
Bromoform	<5.0	ug/L	5.0
Dibromomethane	<10.	ug/L	10.
Bromomethane	<10.	ug/L	10.
Carbon tetrachloride	<5.0	ug/L	5.0
Benzene	<5.0	ug/L	5.0

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GALLUP, NM 87301

SAMPLE NO. : 9205899
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: G. AGN

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit
Toluene	<5.0	ug/L	5.0
Ethyl Benzene	<5.0	ug/L	5.0
Chlorobenzene	<5.0	ug/L	5.0
Total Xylenes	<5.0	ug/L	5.0
1,2-Dichloropropane	<5.0	ug/L	5.0
Dichlorodifluoromethane	<10.	ug/L	10.
Acetone	<100.	ug/L	100.
Methyl tert-butyl ether	<100.	ug/L	100.
Metyl ethyl ketone	<100.	ug/L	100.
Methyl isobutyl ketone	<100.	ug/L	100.
2-Hexanone	<100.	ug/L	100.

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GALLUP, NM 87301

SAMPLE NO. : 9205899
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: G. AGN

CLIENT SAMPLE ID : OW11
SAMPLE TYPE .....: WATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: OBSERVATION WELLS

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : --
SAMPLE DATE ...: 04-22-92
SUBMITTAL DATE : 04-24-92
EXTRACTION DATE: --

Inorganic Chemistry

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Arsenic	<0.05	mg/L	0.05	05-05-92
Total Barium	<0.05	mg/L	0.05	05-05-92
Total Cadmium	<0.05	mg/L	0.05	05-05-92
Total Calcium	7.1	mg/L	0.05	05-05-92
Total Chromium	<0.05	mg/L	0.05	05-05-92
Total Lead	<0.10	mg/L	0.10	05-05-92
Total Magnesium	0.70	mg/L	0.10	05-05-92
Total Manganese	<0.05	mg/L	0.05	05-05-92
Total Mercury	<0.001	mg/L	0.001	05-05-92
Total Potassium	1.2	mg/L	1.0	05-06-92
Total Selenium	<0.05	mg/L	0.05	05-05-92
Total Silver	<0.05	mg/L	0.05	05-05-92
Total Sodium	140.	mg/L	0.05	05-05-92
Dissolved Arsenic	<0.010	mg/L	0.010	05-04-92
Dissolved Barium	<0.05	mg/L	0.05	05-05-92
Dissolved Cadmium	<0.0005	mg/L	0.0005	05-06-92
Dissolved Calcium	4.9	mg/L	0.05	05-05-92
Dissolved Chromium	0.006	mg/L	0.005	05-06-92
Dissolved Lead	<0.005	mg/L	0.005	05-05-92
Dissolved Magnesium	0.52	mg/L	0.10	05-05-92
Dissolved Manganese	0.08	mg/L	0.05	05-05-92
Dissolved Mercury	<0.001	mg/L	0.001	05-05-92
Dissolved Potassium	1.2	mg/L	1.0	05-06-92
Dissolved Selenium	0.010	mg/L	0.005	05-04-92
Dissolved Silver	0.004	mg/L	0.002	05-01-92
Dissolved Sodium	130.	mg/L	0.05	05-05-92
Bicarbonate	450.	mg/L	2.0	04-28-92
Carbonate	<2.0	mg/L	2.0	04-28-92
Chloride	160.	mg/L	1.0	05-06-92
Electrical Conductivity	2000.	umhos/cm	0.1	04-24-92

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CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205899
INVOICE NO.: 22120904
REPORT DATE: 05-08-92
REVIEWED BY: AGN

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit	Analysis Date
pH	8.5	S.U.	1.0	04-24-92
Phenol, Total	<0.005	mg/L	0.005	05-13-92
Sulfate	410.	mg/L	5.0	05-06-92
Total Dissolved Solids	2300.	mg/L	2.0	04-27-92
Total Organic Carbon	10.	mg/L	1.0	05-05-92
Total Organic Halogens	170.	mg/L	10.	05-02-92

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CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205906
INVOICE NO.: 22120905
REPORT DATE: 05-08-92
REVIEWED BY: AGN

CLIENT SAMPLE ID : SMW1
SAMPLE TYPE .....: GROUNDWATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: SHALLOW MONITOR WELLS
ANALYST .....: I. HRABOVSKY

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : 3507
SAMPLE DATE ...: 04-24-92
SUBMITTAL DATE : 04-25-92
EXTRACTION DATE: 04-27-92
ANALYSIS DATE .: 04-27-92

Volatile Organics By Capillary GC/MS

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
1,1,2,2-Tetrachloroethane	<5.0	ug/L	5.0
1,1,2,2-Tetrachloroethene(Perc.)	<5.0	ug/L	5.0
1,1,1-Trichloroethane	<5.0	ug/L	5.0
1,1,2-Trichloroethane	<5.0	ug/L	5.0
1,1,2-Trichloroethene (TCE)	<5.0	ug/L	5.0
1,1,2-Trichloro 1,2,2-Trifluoro ethane (freon 113)	<5.0	ug/L	5.0
1,1-Dichloroethane	<5.0	ug/L	5.0
1,1-Dichloroethene	<5.0	ug/L	5.0
1,2-Dichloroethane	<5.0	ug/L	5.0
trans-1,2-Dichloroethene	<5.0	ug/L	5.0
1,3-Dichlorobenzene	<5.0	ug/L	5.0
1,4-Dichlorobenzene	<5.0	ug/L	5.0
1,2-Dichlorobenzene	<5.0	ug/L	5.0
cis-1,3-Dichloropropene	<5.0	ug/L	5.0
trans-1,3-Dichloropropene	<5.0	ug/L	5.0
2-Chloroethylvinyl ether	<15.	ug/L	15.
Vinyl chloride	<10.	ug/L	10.
Trichlorofluoromethane	<10.	ug/L	10.
Chloromethane	<10.	ug/L	10.
Chloroethane	<10.	ug/L	10.
Methylene Chloride	<5.0	ug/L	5.0
Chloroform	<5.0	ug/L	5.0
Bromodichloromethane	<5.0	ug/L	5.0
Dibromochloromethane	<5.0	ug/L	5.0
Bromoform	<5.0	ug/L	5.0
Dibromomethane	<10.	ug/L	10.
Bromomethane	<10.	ug/L	10.
Carbon tetrachloride	<5.0	ug/L	5.0
Benzene	<5.0	ug/L	5.0

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CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205906
INVOICE NO.: 22120905
REPORT DATE: 05-08-92
REVIEWED BY: AGN
PAGE : 2 OF 2

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit
Toluene	<5.0	ug/L	5.0
Ethyl Benzene	<5.0	ug/L	5.0
Chlorobenzene	<5.0	ug/L	5.0
Total Xylenes	<5.0	ug/L	5.0
1,2-Dichloropropane	<5.0	ug/L	5.0
Dichlorodifluoromethane	<10.	ug/L	10.
Acetone	<100.	ug/L	100.
Methyl tert-butyl ether	<100.	ug/L	100.
Metyl ethyl ketone	<100.	ug/L	100.
Methyl isobutyl ketone	<100.	ug/L	100.
2-Hexanone	<100.	ug/L	100.

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GALLUP, NM 87301

SAMPLE NO. : 9205906
INVOICE NO.: 22120905
REPORT DATE: 05-08-92
REVIEWED BY: AGN
PAGE : 1 OF 1

CLIENT SAMPLE ID : SMW1
SAMPLE TYPE .....: GROUNDWATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: SHALLOW MONITOR WELLS

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : 3507
SAMPLE DATE ...: 04-24-92
SUBMITTAL DATE : 04-25-92
EXTRACTION DATE: 05-01-92

Inorganic Chemistry

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Chromium	0.13	mg/L	0.05	05-05-92
Total Lead	<0.10	mg/L	0.10	05-05-92
Dissolved Calcium	140.	mg/L	0.05	05-05-92
Dissolved Magnesium	38.	mg/L	0.10	05-05-92
Dissolved Potassium	<1.0	mg/L	1.0	05-06-92
Dissolved Sodium	340.	mg/L	0.05	05-05-92
Bicarbonate	620.	mg/L	2.0	04-28-92
Carbonate	<2.0	mg/L	2.0	04-28-92
Chloride	1200.	mg/L	1.0	05-06-92
Electrical Conductivity	4200.	umhos/cm	0.1	04-25-92
pH	7.7	S.U.	1.0	04-25-92
Sulfate	1400.	mg/L	5.0	05-06-92
Total Dissolved Solids	4500.	mg/L	2.0	04-29-92
Total Organic Carbon	63.	mg/L	1.0	05-05-92
Total Organic Halogens	<10.	mg/L	10.	05-02-92

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SAMPLE NO. : 9205907
INVOICE NO.: 22120905
REPORT DATE: 05-08-92
REVIEWED BY: JM 4 AGN

CLIENT SAMPLE ID : SMW2
SAMPLE TYPE .....: GROUNDWATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: SHALLOW MONITOR WELLS
ANALYST .....: I. HRABOVSKY

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : 3507
SAMPLE DATE ...: 04-24-92
SUBMITTAL DATE : 04-25-92
EXTRACTION DATE: 04-27-92
ANALYSIS DATE .: 04-27-92

Volatile Organics By Capillary GC/MS

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
1,1,2,2-Tetrachloroethane	<5.0	ug/L	5.0
1,1,2,2-Tetrachloroethene(Perc.)	<5.0	ug/L	5.0
1,1,1-Trichloroethane	<5.0	ug/L	5.0
1,1,2-Trichloroethane	<5.0	ug/L	5.0
1,1,2-Trichloroethene (TCE)	<5.0	ug/L	5.0
1,1,2-Trichloro 1,2,2-Trifluoro ethane (freon 113)	<5.0	ug/L	5.0
1,1-Dichloroethane	<5.0	ug/L	5.0
1,1-Dichloroethene	<5.0	ug/L	5.0
1,2-Dichloroethane	<5.0	ug/L	5.0
trans-1,2-Dichloroethene	<5.0	ug/L	5.0
1,3-Dichlorobenzene	<5.0	ug/L	5.0
1,4-Dichlorobenzene	<5.0	ug/L	5.0
1,2-Dichlorobenzene	<5.0	ug/L	5.0
cis-1,3-Dichloropropene	<5.0	ug/L	5.0
trans-1,3-Dichloropropene	<5.0	ug/L	5.0
2-Chloroethylvinyl ether	<15.	ug/L	15.
Vinyl chloride	<10.	ug/L	10.
Trichlorofluoromethane	<10.	ug/L	10.
Chloromethane	<10.	ug/L	10.
Chloroethane	<10.	ug/L	10.
Methylene Chloride	<5.0	ug/L	5.0
Chloroform	<5.0	ug/L	5.0
Bromodichloromethane	<5.0	ug/L	5.0
Dibromochloromethane	<5.0	ug/L	5.0
Bromoform	<5.0	ug/L	5.0
Dibromomethane	<10.	ug/L	10.
Bromomethane	<10.	ug/L	10.
Carbon tetrachloride	<5.0	ug/L	5.0
Benzene	<5.0	ug/L	5.0

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SAMPLE NO. : 9205907
INVOICE NO.: 22120905
REPORT DATE: 05-08-92
REVIEWED BY: AGN

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit
Toluene	<5.0	ug/L	5.0
Ethyl Benzene	<5.0	ug/L	5.0
Chlorobenzene	<5.0	ug/L	5.0
Total Xylenes	<5.0	ug/L	5.0
1,2-Dichloropropane	<5.0	ug/L	5.0
Dichlorodifluoromethane	<10.	ug/L	10.
Acetone	<100.	ug/L	100.
Methyl tert-butyl ether	<100.	ug/L	100.
Metyl ethyl ketone	<100.	ug/L	100.
Methyl isobutyl ketone	<100.	ug/L	100.
2-Hexanone	<100.	ug/L	100.

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GALLUP, NM 87301

SAMPLE NO. : 9205907
INVOICE NO.: 22120905
REPORT DATE: 05-08-92
REVIEWED BY: M. Q. AGN
PAGE : 1 OF 1

CLIENT SAMPLE ID : SMW2
SAMPLE TYPE .....: GROUNDWATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: SHALLOW MONITOR WELLS

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : 3507
SAMPLE DATE ...: 04-24-92
SUBMITTAL DATE : 04-25-92
EXTRACTION DATE: 05-01-92

Inorganic Chemistry

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Chromium	0.09	mg/L	0.05	05-05-92
Total Lead	<0.10	mg/L	0.10	05-05-92
Dissolved Calcium	100.	mg/L	0.05	05-05-92
Dissolved Magnesium	29.	mg/L	0.10	05-05-92
Dissolved Potassium	<1.0	mg/L	1.0	05-06-92
Dissolved Sodium	420.	mg/L	0.05	05-05-92
Bicarbonate	620.	mg/L	2.0	04-28-92
Carbonate	<2.0	mg/L	2.0	04-28-92
Chloride	1300.	mg/L	1.0	05-06-92
Electrical Conductivity	4600.	umhos/cm	0.1	04-25-92
pH	7.2	S.U.	1.0	04-25-92
Sulfate	1600.	mg/L	5.0	05-06-92
Total Dissolved Solids	5200.	mg/L	2.0	04-29-92
Total Organic Carbon	58.	mg/L	1.0	05-05-92
Total Organic Halogens	72.	mg/L	10.	05-02-92

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SAMPLE NO. : 9205908
INVOICE NO.: 22120905
REPORT DATE: 05-08-92
REVIEWED BY: MG AGN

CLIENT SAMPLE ID : SMW3
SAMPLE TYPE .....: GROUNDWATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: SHALLOW MONITOR WELLS
ANALYST .....: I. HRABOVSKY

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : 3507
SAMPLE DATE ...: 04-24-92
SUBMITTAL DATE : 04-25-92
EXTRACTION DATE: 04-27-92
ANALYSIS DATE .: 04-27-92

Volatile Organics By Capillary GC/MS

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
1,1,2,2-Tetrachloroethane	<5.0	ug/L	5.0
1,1,2,2-Tetrachloroethene(Perc.)	<5.0	ug/L	5.0
1,1,1-Trichloroethane	<5.0	ug/L	5.0
1,1,2-Trichloroethane	<5.0	ug/L	5.0
1,1,2-Trichloroethene (TCE)	<5.0	ug/L	5.0
1,1,2-Trichloro 1,2,2-Trifluoro ethane (freon 113)	<5.0	ug/L	5.0
1,1-Dichloroethane	<5.0	ug/L	5.0
1,1-Dichloroethene	<5.0	ug/L	5.0
1,2-Dichloroethane	<5.0	ug/L	5.0
trans-1,2-Dichloroethene	<5.0	ug/L	5.0
1,3-Dichlorobenzene	<5.0	ug/L	5.0
1,4-Dichlorobenzene	<5.0	ug/L	5.0
1,2-Dichlorobenzene	<5.0	ug/L	5.0
cis-1,3-Dichloropropene	<5.0	ug/L	5.0
trans-1,3-Dichloropropene	<5.0	ug/L	5.0
2-Chloroethylvinyl ether	<15.	ug/L	15.
Vinyl chloride	<10.	ug/L	10.
Trichlorofluoromethane	<10.	ug/L	10.
Chloromethane	<10.	ug/L	10.
Chloroethane	<10.	ug/L	10.
Methylene Chloride	<5.0	ug/L	5.0
Chloroform	<5.0	ug/L	5.0
Bromodichloromethane	<5.0	ug/L	5.0
Dibromochloromethane	<5.0	ug/L	5.0
Bromoform	<5.0	ug/L	5.0
Dibromomethane	<10.	ug/L	10.
Bromomethane	<10.	ug/L	10.
Carbon tetrachloride	<5.0	ug/L	5.0
Benzene	<5.0	ug/L	5.0

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SAMPLE NO. : 9205908
INVOICE NO.: 22120905
REPORT DATE: 05-08-92
REVIEWED BY: MH AGN
PAGE : 2 OF 2

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit
Toluene	<5.0	ug/L	5.0
Ethyl Benzene	<5.0	ug/L	5.0
Chlorobenzene	<5.0	ug/L	5.0
Total Xylenes	<5.0	ug/L	5.0
1,2-Dichloropropane	<5.0	ug/L	5.0
Dichlorodifluoromethane	<10.	ug/L	10.
Acetone	<100.	ug/L	100.
Methyl tert-butyl ether	<100.	ug/L	100.
Metyl ethyl ketone	<100.	ug/L	100.
Methyl isobutyl ketone	<100.	ug/L	100.
2-Hexanone	<100.	ug/L	100.

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SAMPLE NO. : 9205908
INVOICE NO.: 22120905
REPORT DATE: 05-08-92
REVIEWED BY: MG AGN

CLIENT SAMPLE ID : SMW3
SAMPLE TYPE .....: GROUNDWATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: SHALLOW MONITOR WELLS

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : 3507
SAMPLE DATE ...: 04-24-92
SUBMITTAL DATE : 04-25-92
EXTRACTION DATE: 05-01-92

Inorganic Chemistry

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Chromium	<0.05	mg/L	0.05	05-05-92
Total Lead	<0.10	mg/L	0.10	05-05-92
Dissolved Calcium	42.	mg/L	0.05	05-05-92
Dissolved Magnesium	12.	mg/L	0.10	05-05-92
Dissolved Potassium	<1.0	mg/L	1.0	05-06-92
Dissolved Sodium	220.	mg/L	0.05	05-05-92
Bicarbonate	680.	mg/L	2.0	04-28-92
Carbonate	<2.0	mg/L	2.0	04-28-92
Chloride	71.	mg/L	1.0	05-06-92
Electrical Conductivity	2600.	umhos/cm	0.1	04-25-92
pH	7.6	S.U.	1.0	04-25-92
Sulfate	1100.	mg/L	5.0	05-06-92
Total Dissolved Solids	3200.	mg/L	2.0	04-29-92
Total Organic Carbon	46.	mg/L	1.0	05-05-92
Total Organic Halogens	<10.	mg/L	10.	05-02-92

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GALLUP, NM 87301

SAMPLE NO. : 9205909
INVOICE NO.: 22120905
REPORT DATE: 05-08-92
REVIEWED BY: mq AGN

CLIENT SAMPLE ID : SMW4
SAMPLE TYPE .....: GROUNDWATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: SHALLOW MONITOR WELLS
ANALYST .....: I. HRABOVSKY

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : 3507
SAMPLE DATE ...: 04-24-92
SUBMITTAL DATE : 04-25-92
EXTRACTION DATE: 04-27-92
ANALYSIS DATE .: 04-27-92

Volatile Organics By Capillary GC/MS

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
1,1,2,2-Tetrachloroethane .....:	<5.0	ug/L	5.0
1,1,2,2-Tetrachloroethene(Perc.) .:	<5.0	ug/L	5.0
1,1,1-Trichloroethane .....:	<5.0	ug/L	5.0
1,1,2-Trichloroethane .....:	<5.0	ug/L	5.0
1,1,2-Trichloroethene (TCE) .....:	<5.0	ug/L	5.0
1,1,2-Trichloro 1,2,2-Trifluoro ..:	<5.0	ug/L	5.0
ethane (freon 113) .....:			
1,1-Dichloroethane .....:	<5.0	ug/L	5.0
1,1-Dichloroethene .....:	<5.0	ug/L	5.0
1,2-Dichloroethane .....:	<5.0	ug/L	5.0
trans-1,2-Dichloroethene .....:	<5.0	ug/L	5.0
1,3-Dichlorobenzene .....:	<5.0	ug/L	5.0
1,4-Dichlorobenzene .....:	<5.0	ug/L	5.0
1,2-Dichlorobenzene .....:	<5.0	ug/L	5.0
cis-1,3-Dichloropropene .....:	<5.0	ug/L	5.0
trans-1,3-Dichloropropene .....:	<5.0	ug/L	5.0
2-Chloroethylvinyl ether .....:	<15.	ug/L	15.
Vinyl chloride .....:	<10.	ug/L	10.
Trichlorofluoromethane .....:	<10.	ug/L	10.
Chloromethane .....:	<10.	ug/L	10.
Chloroethane .....:	<10.	ug/L	10.
Methylene Chloride .....:	<5.0	ug/L	5.0
Chloroform .....:	<5.0	ug/L	5.0
Bromodichloromethane .....:	<5.0	ug/L	5.0
Dibromochloromethane .....:	<5.0	ug/L	5.0
Bromoform .....:	<5.0	ug/L	5.0
Dibromomethane .....:	<10.	ug/L	10.
Bromomethane .....:	<10.	ug/L	10.
Carbon tetrachloride .....:	<5.0	ug/L	5.0
Benzene .....:	<5.0	ug/L	5.0

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CLIENT GIANT REFINING COMPANY
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GALLUP, NM 87301

SAMPLE NO. : 9205909
INVOICE NO.: 22120905
REPORT DATE: 05-08-92
REVIEWED BY: J.G. AGN

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit
Toluene	<5.0	ug/L	5.0
Ethyl Benzene	<5.0	ug/L	5.0
Chlorobenzene	<5.0	ug/L	5.0
Total Xylenes	<5.0	ug/L	5.0
1,2-Dichloropropane	<5.0	ug/L	5.0
Dichlorodifluoromethane	<10.	ug/L	10.
Acetone	<100.	ug/L	100.
Methyl tert-butyl ether	<100.	ug/L	100.
Metyl ethyl ketone	<100.	ug/L	100.
Methyl isobutyl ketone	<100.	ug/L	100.
2-Hexanone	<100.	ug/L	100.

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SAMPLE NO. : 9205909
INVOICE NO.: 22120905
REPORT DATE: 05-08-92
REVIEWED BY: [illegible]
PAGE : 1 OF 1

CLIENT SAMPLE ID : SMW4
SAMPLE TYPE .....: GROUNDWATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: SHALLOW MONITOR WELLS

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : 3507
SAMPLE DATE ...: 04-24-92
SUBMITTAL DATE : 04-25-92
EXTRACTION DATE: 05-01-92

Inorganic Chemistry

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Chromium	<0.05	mg/L	0.05	05-05-92
Total Lead	<0.10	mg/L	0.10	05-05-92
Dissolved Calcium	2.8	mg/L	0.05	05-05-92
Dissolved Magnesium	0.78	mg/L	0.10	05-05-92
Dissolved Potassium	<1.0	mg/L	1.0	05-06-92
Dissolved Sodium	82.	mg/L	0.05	05-05-92
Bicarbonate	430.	mg/L	2.0	04-28-92
Carbonate	<2.0	mg/L	2.0	04-28-92
Chloride	63.	mg/L	1.0	05-06-92
Electrical Conductivity	1100.	umhos/cm	0.1	04-25-92
pH	8.3	S.U.	1.0	04-25-92
Sulfate	170.	mg/L	5.0	05-06-92
Total Dissolved Solids	1400.	mg/L	2.0	04-29-92
Total Organic Carbon	68.	mg/L	1.0	05-05-92
Total Organic Halogens	43.	mg/L	10.	05-02-92

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SAMPLE NO. : 9205910
INVOICE NO.: 22120905
REPORT DATE: 05-08-92
REVIEWED BY: MG AGN

CLIENT SAMPLE ID : SMW5
SAMPLE TYPE .....: GROUNDWATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: SHALLOW MONITOR WELLS
ANALYST .....: I. HRABOVSKY

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : 3507
SAMPLE DATE ...: 04-24-92
SUBMITTAL DATE : 04-25-92
EXTRACTION DATE: 04-27-92
ANALYSIS DATE .: 04-27-92

Volatile Organics By Capillary GC/MS

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
1,1,2,2-Tetrachloroethane	<5.0	ug/L	5.0
1,1,2,2-Tetrachloroethene(Perc.)	<5.0	ug/L	5.0
1,1,1-Trichloroethane	<5.0	ug/L	5.0
1,1,2-Trichloroethane	<5.0	ug/L	5.0
1,1,2-Trichloroethene (TCE)	<5.0	ug/L	5.0
1,1,2-Trichloro 1,2,2-Trifluoro ethane (freon 113)	<5.0	ug/L	5.0
1,1-Dichloroethane	<5.0	ug/L	5.0
1,1-Dichloroethene	<5.0	ug/L	5.0
1,2-Dichloroethane	<5.0	ug/L	5.0
trans-1,2-Dichloroethene	<5.0	ug/L	5.0
1,3-Dichlorobenzene	<5.0	ug/L	5.0
1,4-Dichlorobenzene	<5.0	ug/L	5.0
1,2-Dichlorobenzene	<5.0	ug/L	5.0
cis-1,3-Dichloropropene	<5.0	ug/L	5.0
trans-1,3-Dichloropropene	<5.0	ug/L	5.0
2-Chloroethylvinyl ether	<15.	ug/L	15.
Vinyl chloride	<10.	ug/L	10.
Trichlorofluoromethane	<10.	ug/L	10.
Chloromethane	<10.	ug/L	10.
Chloroethane	<10.	ug/L	10.
Methylene Chloride	<5.0	ug/L	5.0
Chloroform	<5.0	ug/L	5.0
Bromodichloromethane	<5.0	ug/L	5.0
Dibromochloromethane	<5.0	ug/L	5.0
Bromoform	<5.0	ug/L	5.0
Dibromomethane	<10.	ug/L	10.
Bromomethane	<10.	ug/L	10.
Carbon tetrachloride	<5.0	ug/L	5.0
Benzene	<5.0	ug/L	5.0

(1) Copy to Client

Westech Laboratories Inc.

3737 East Broadway Road
Phoenix, Arizona 85040
(602) 437-1080 • fax 437-8706

CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205910
INVOICE NO.: 22120905
REPORT DATE: 05-08-92
REVIEWED BY: MS AGN

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit
Toluene	<5.0	ug/L	5.0
Ethyl Benzene	<5.0	ug/L	5.0
Chlorobenzene	<5.0	ug/L	5.0
Total Xylenes	<5.0	ug/L	5.0
1,2-Dichloropropane	<5.0	ug/L	5.0
Dichlorodifluoromethane	<10.	ug/L	10.
Acetone	<100.	ug/L	100.
Methyl tert-butyl ether	<100.	ug/L	100.
Metyl ethyl ketone	<100.	ug/L	100.
Methyl isobutyl ketone	<100.	ug/L	100.
2-Hexanone	<100.	ug/L	100.

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CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205910
INVOICE NO.: 22120905
REPORT DATE: 05-08-92
REVIEWED BY: MG AGN
PAGE : 1 OF 1

CLIENT SAMPLE ID : SMW5
SAMPLE TYPE .....: GROUNDWATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: SHALLOW MONITOR WELLS

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : 3507
SAMPLE DATE ...: 04-24-92
SUBMITTAL DATE : 04-25-92
EXTRACTION DATE: 05-01-92

Inorganic Chemistry

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Chromium	<0.05	mg/L	0.05	05-05-92
Total Lead	<0.10	mg/L	0.10	05-05-92
Dissolved Calcium	2.7	mg/L	0.05	05-05-92
Dissolved Magnesium	0.64	mg/L	0.10	05-05-92
Dissolved Potassium	<1.0	mg/L	1.0	05-06-92
Dissolved Sodium	77.	mg/L	0.05	05-05-92
Bicarbonate	310.	mg/L	2.0	04-28-92
Carbonate	<2.0	mg/L	2.0	04-28-92
Chloride	77.	mg/L	1.0	05-06-92
Electrical Conductivity	1000.	umhos/cm	0.1	04-25-92
pH	7.6	S.U.	1.0	04-25-92
Sulfate	160.	mg/L	5.0	05-06-92
Total Dissolved Solids	1700.	mg/L	2.0	04-29-92
Total Organic Carbon	39.	mg/L	1.0	05-05-92
Total Organic Halogens	24.	mg/L	10.	05-02-92

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Phoenix, Arizona 85040
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CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205911
INVOICE NO.: 22120905
REPORT DATE: 05-08-92
REVIEWED BY: MA & AGN

CLIENT SAMPLE ID : SMW6
SAMPLE TYPE .....: GROUNDWATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: SHALLOW MONITOR WELLS
ANALYST .....: I. HRABOVSKY

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : 3507
SAMPLE DATE ...: 04-24-92
SUBMITTAL DATE : 04-25-92
EXTRACTION DATE: 04-27-92
ANALYSIS DATE .: 04-27-92

Volatile Organics By Capillary GC/MS

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
1,1,2,2-Tetrachloroethane	<5.0	ug/L	5.0
1,1,2,2-Tetrachloroethene(Perc.)	<5.0	ug/L	5.0
1,1,1-Trichloroethane	<5.0	ug/L	5.0
1,1,2-Trichloroethane	<5.0	ug/L	5.0
1,1,2-Trichloroethene (TCE)	<5.0	ug/L	5.0
1,1,2-Trichloro 1,2,2-Trifluoro ethane (freon 113)	<5.0	ug/L	5.0
1,1-Dichloroethane	<5.0	ug/L	5.0
1,1-Dichloroethene	<5.0	ug/L	5.0
1,2-Dichloroethane	<5.0	ug/L	5.0
trans-1,2-Dichloroethene	<5.0	ug/L	5.0
1,3-Dichlorobenzene	<5.0	ug/L	5.0
1,4-Dichlorobenzene	<5.0	ug/L	5.0
1,2-Dichlorobenzene	<5.0	ug/L	5.0
cis-1,3-Dichloropropene	<5.0	ug/L	5.0
trans-1,3-Dichloropropene	<5.0	ug/L	5.0
2-Chloroethylvinyl ether	<15.	ug/L	15.
Vinyl chloride	<10.	ug/L	10.
Trichlorofluoromethane	<10.	ug/L	10.
Chloromethane	<10.	ug/L	10.
Chloroethane	<10.	ug/L	10.
Methylene Chloride	<5.0	ug/L	5.0
Chloroform	<5.0	ug/L	5.0
Bromodichloromethane	<5.0	ug/L	5.0
Dibromochloromethane	<5.0	ug/L	5.0
Bromoform	<5.0	ug/L	5.0
Dibromomethane	<10.	ug/L	10.
Bromomethane	<10.	ug/L	10.
Carbon tetrachloride	<5.0	ug/L	5.0
Benzene	<5.0	ug/L	5.0

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Phoenix, Arizona 85040
(602) 437-1080 • fax 437-8706

CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205911
INVOICE NO.: 22120905
REPORT DATE: 05-08-92
REVIEWED BY: MG AEN

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit
Toluene	<5.0	ug/L	5.0
Ethyl Benzene	<5.0	ug/L	5.0
Chlorobenzene	<5.0	ug/L	5.0
Total Xylenes	<5.0	ug/L	5.0
1,2-Dichloropropane	<5.0	ug/L	5.0
Dichlorodifluoromethane	<10.	ug/L	10.
Acetone	<100.	ug/L	100.
Methyl tert-butyl ether	<100.	ug/L	100.
Metyl ethyl ketone	<100.	ug/L	100.
Methyl isobutyl ketone	<100.	ug/L	100.
2-Hexanone	<100.	ug/L	100.

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Phoenix, Arizona 85040
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CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205911
INVOICE NO.: 22120905
REPORT DATE: 05-08-92
REVIEWED BY: AGN
PAGE : 1 OF 1

CLIENT SAMPLE ID : SMW6
SAMPLE TYPE .....: GROUNDWATER
SAMPLED BY .....: L. SHELTON
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: SHALLOW MONITOR WELLS

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : 3507
SAMPLE DATE ...: 04-24-92
SUBMITTAL DATE : 04-25-92
EXTRACTION DATE: 05-01-92

Inorganic Chemistry

D A T A T A B L E

Parameter	Result	Unit	Detection Limit	Analysis Date
Total Chromium	<0.05	mg/L	0.05	05-05-92
Total Lead	<0.10	mg/L	0.10	05-05-92
Dissolved Calcium	4.6	mg/L	0.05	05-05-92
Dissolved Magnesium	1.4	mg/L	0.10	05-05-92
Dissolved Potassium	1.0	mg/L	1.0	05-06-92
Dissolved Sodium	86.	mg/L	0.05	05-05-92
Bicarbonate	550.	mg/L	2.0	04-28-92
Carbonate	<2.0	mg/L	2.0	04-28-92
Chloride	89.	mg/L	1.0	05-06-92
Electrical Conductivity	1300.	umhos/cm	0.1	04-25-92
pH	8.4	S.U.	1.0	04-25-92
Sulfate	190.	mg/L	5.0	05-06-92
Total Dissolved Solids	1700.	mg/L	2.0	04-29-92
Total Organic Carbon	72.	mg/L	1.0	05-05-92
Total Organic Halogens	120.	mg/L	10.	05-02-92

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Flagstaff • 2400 E. Huntington Dr. • AZ 86004 • (602) 774-8708 • fax 774-6469
El Paso • 10737 Gateway West #100 • TX 79935 • (915) 592-3591 • fax 592-3594

CHAIN OF CUSTODY RECORD

CLIENT	ADDRESS
GIANT REFINING CO	Rt 3 Box 7 GALLUP, NM 87301
TELEPHONE: (505) 722 0227	PROJECT: ANNUAL GROUNDWATER
	JOB/P.O. NO.: 3507

• REFER TO FEE SCHEDULE FOR ANALYSES SELECTION •

SAMPLER (SIGNATURE): Lynn Shelton
SAMPLER (PLEASE PRINT): LYNN SHELTON

Sample Type Codes: S – Soil; G – Sludge; X – Other; W – Water; T – Travel Blank; O – Oil; F – Field Blank

CLIENT SAMPLE IDENTIFICATION NUMBER	DATE	TIME	SAMPLE LOCATION	HOLD	COMPOSITE	GRAB	SAMPLE TYPE	NUMBER OF CONTAINERS	REQUESTED ANALYSES: pH, CONDUCTIVITY	TDS, BICARB-CARB	CHLORIDE-SULFATE	PHENOL	8240	TOTAL METALS*	DISSOLVED METALS**	TDL + TDL		COMMENTS	LABORATORY SAMPLE IDENTIFICATION NUMBER
SMW 1	4-24	1:25	SHALLOW MONITOR WELLS		~~X~~		W	7	X	X	X		X	X	X	X			SEE ATTACHED LISTS	9205906
SMW 2	4-24	1:00					W	7	X	X	X		X	X	X	X				5907
SMW 3	9-24	1:25					W	7	X	X	X		X	X	X	X				5908
SMW 4	4-24	1:45					W	7	X	X	X		X	X	X	X				5909
SMW 5	4-24	1:59					W	7	X	X	X		X	X	X	X				5910
SMW 6	4-24	2:15					W	7	X	X	X		X	X	X	X				5911

RELINQUISHED BY (SIGNATURE)	RECEIVED BY (SIGNATURE)	DATE	TIME	REMARKS
Lynn Shelton	P. Mac Sweeney	4/25/92	10:15	* - Cr & Pb
RELINQUISHED BY (SIGNATURE)	RECEIVED BY (SIGNATURE)	DATE	TIME	
RELINQUISHED BY (SIGNATURE)	RECEIVED BY (SIGNATURE)	DATE	TIME	** - Ca, Mg, K, Na
RELINQUISHED BY (SIGNATURE)	RECEIVED BY (SIGNATURE)	DATE	TIME	

White - Testing Laboratory; Yellow - Department Job File; Pink - Client

Westech Laboratories Inc.

3737 East Broadway Road
Phoenix, Arizona 85040
(602) 437-1080 • fax 437-8706

CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205599
INVOICE NO.: 22120861
REPORT DATE: 05-01-92
REVIEWED BY: AGN

CLIENT SAMPLE ID : TRIP BLANK
SAMPLE TYPE .....: D. I. WATER
SAMPLED BY .....: WL/PERSONNEL
SUBMITTED BY ....: L. SHELTON
SAMPLE SOURCE ...: WESTECH LABS.
ANALYST .....: I. HRABOVSKY

AUTHORIZED BY : L. SHELTON
CLIENT P.O. : 3507
SAMPLE DATE ...: 04-09-92
SUBMITTAL DATE : 04-21-92
EXTRACTION DATE: 04-23-92
ANALYSIS DATE .: 04-23-92

Volatile Organics By Capillary GC/MS

D A T A T A B L E

Parameter	Result	Unit	Detection Limit
1,1,2,2-Tetrachloroethane	<5.0	ug/L	5.0
1,1,2,2-Tetrachloroethene(Perc.)	<5.0	ug/L	5.0
1,1,1-Trichloroethane	<5.0	ug/L	5.0
1,1,2-Trichloroethane	<5.0	ug/L	5.0
1,1,2-Trichloroethene (TCE)	<5.0	ug/L	5.0
1,1,2-Trichloro 1,2,2-Trifluoro ethane (freon 113)	<5.0	ug/L	5.0
1,1-Dichloroethane	<5.0	ug/L	5.0
1,1-Dichloroethene	<5.0	ug/L	5.0
1,2-Dichloroethane	<5.0	ug/L	5.0
trans-1,2-Dichloroethene	<5.0	ug/L	5.0
1,3-Dichlorobenzene	<5.0	ug/L	5.0
1,4-Dichlorobenzene	<5.0	ug/L	5.0
1,2-Dichlorobenzene	<5.0	ug/L	5.0
cis-1,3-Dichloropropene	<5.0	ug/L	5.0
trans-1,3-Dichloropropene	<5.0	ug/L	5.0
2-Chloroethylvinyl ether	<15.	ug/L	15.
Vinyl chloride	<10.	ug/L	10.
Trichlorofluoromethane	<10.	ug/L	10.
Chloromethane	<10.	ug/L	10.
Chloroethane	<10.	ug/L	10.
Methylene Chloride	<5.0	ug/L	5.0
Chloroform	<5.0	ug/L	5.0
Bromodichloromethane	<5.0	ug/L	5.0
Dibromochloromethane	<5.0	ug/L	5.0
Bromoform	<5.0	ug/L	5.0
Dibromomethane	<10.	ug/L	10.
Bromomethane	<10.	ug/L	10.
Carbon tetrachloride	<5.0	ug/L	5.0
Benzene	<5.0	ug/L	5.0

(1) Copy to Client

Westech Laboratories Inc.

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Phoenix, Arizona 85040
(602) 437-1080 • fax 437-8706

CLIENT GIANT REFINING COMPANY
ATTN: LYNN SHELTON
ROUTE 3, BOX 7
GALLUP, NM 87301

SAMPLE NO. : 9205599
INVOICE NO.: 22120861
REPORT DATE: 05-01-92
REVIEWED BY: mg AGN

D A T A T A B L E (Cont.)

Parameter	Result	Unit	Detection Limit
Toluene	<5.0	ug/L	5.0
Ethyl Benzene	<5.0	ug/L	5.0
Chlorobenzene	<5.0	ug/L	5.0
Total Xylenes	<5.0	ug/L	5.0
1,2-Dichloropropane	<5.0	ug/L	5.0
Dichlorodifluoromethane	<10.	ug/L	10.
Acetone	<100.	ug/L	100.
Methyl tert-butyl ether	<100.	ug/L	100.
Metyl ethyl ketone	<100.	ug/L	100.
Methyl isobutyl ketone	<100.	ug/L	100.
2-Hexanone	<100.	ug/L	100.

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El Paso • 10737 Gateway West #100 • TX 79935 • (915) 592-3591 • fax 592-3594

CHAIN OF CUSTODY RECORD

CLIENT	ADDRESS	
GIANT REFINING CO	R+3 BOX 7 GALLUP, NM 87301	
TELEPHONE (505) 722 0227	PROJECT ANNUAL WASTEWATER	JOB/P.O. NO. 3507

• REFER TO FEE SCHEDULE FOR ANALYSES SELECTION •

SAMPLER (SIGNATURE): Lynn Shelton
SAMPLER (PLEASE PRINT): LYNN SHELTON

SAMPLE TYPE CODES
S – Soil G – Sludge X – Other
W – Water T – Travel Blank
O – Oil F – Field Blank

CLIENT SAMPLE IDENTIFICATION NUMBER	DATE	TIME	SAMPLE LOCATION	HOLD	COMPOSITE	GRAB	SAMPLE TYPE	NUMBER OF CONTAINERS	BOD	COD	TOC	TDS	PH	TOTAL SULFIDE	METALS *	OIL + GREASE	8240 *	8270 *	COMMENTS	LABORATORY SAMPLE IDENTIFICATION NUMBER
API EFFLUENT	~~4-13-92~~ 4-20-92	8:20AM	API SEPARATOR		X	X	W	3	X	X	X	X								9205597
AER LAG EFF	4-20-92 ~~4-13-92~~	8:45	LAGOON EFFLUENT			X	W	12	X	X	X	X	X	X	X	X	X	X		9205598
TRIP BLANK	~~4-13-92~~ 4-9-92	—	—				W	1								X				9205599

RELINQUISHED BY (SIGNATURE)	RECEIVED BY (SIGNATURE)	DATE	TIME	REMARKS
Lynn Shelton	Fed Ex ICE			* SEE ATTACHED LIST
Fed Ex COD	Ann M. Clan	4/21/92	1150	One glass amber broken in transit.
RELINQUISHED BY (SIGNATURE)	RECEIVED BY (SIGNATURE)	DATE	TIME	
RELINQUISHED BY (SIGNATURE)	RECEIVED BY (SIGNATURE)	DATE	TIME	

White - Testfuo Laboratory; Yellow - Department Job File; Pink - Client

BETZ
Analytical Services

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

Date Submitted: 10/22/92
Date Reported: 11/17/92
P.O. #RFE997-9009-14
Project Semi-Annual GDWTR

Attn: Lynn Shelton

Sample Description: MW1
Date Sampled: 10/21/92

Laboratory ID: C1022514

TEST	VALUE	UNIT	METHOD
Chromium, total	0.025	mg/L	EPA 6010
Lead, total	0.004	mg/L	EPA 7421
TOC (run 1)	1.50	mg/L	EPA 9060
TOC (run 2)	3.00	mg/L	EPA 9060
Conductivity, 25 deg. C (run 1)	1070	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 2)	1090	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 3)	1070	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 4)	1090	UMHOS	EPA 120.1
pH (run 1)	8.76	pH units	EPA 150.1
pH (run 2)	8.78	pH units	EPA 150.1
pH (run 3)	8.78	pH units	EPA 150.1
pH (run 4)	8.74	pH units	EPA 150.1
TOX (run 1)	0.015	mg/L	EPA 9020
TOX (run 2)	0.020	mg/L	EPA 9020

Sample Description: MW1
Date Sampled: 10/21/92
Analyst: RSL

Laboratory ID: C1022514
Date Analyzed: 10/28/92 18:59

VOLATILE ORGANICS (EPA 8240)

Compound	ug/L
Acetone	4.1J [20]
Acrolein	ND [20]
Acrylonitrile	ND [20]
Benzene	ND
Bromodichloromethane	ND
Bromoform	ND
Bromomethane	ND [10]
Carbon Disulfide	36
Carbon Tetrachloride	ND
Chlorobenzene	ND
Chlorodibromoethene	ND
Chloroethane	ND [10]
2-Chloroethylvinylether	ND [10]
Chloroform	ND
Chloromethane	ND [10]
Dibromomethane	ND
Dichlorodifluoromethane	ND [10]
1,1-Dichloroethane	ND

VOLATILE ORGANICS (EPA 8240)
Laboratory ID C1022514 (continued)

Compound	ug/L
1,2-Dichloroethane	ND
1,1-Dichloroethylene	ND
Trans-1,2-Dichloroethylene	ND
1,2-Dichloropropane	ND
cis-1,3,Dichloropropene	ND
trans-1,3-Dichloropropene	ND
Ethylbenzene	ND
Ethyl methacrylate	ND
2-Hexanone	ND [10]
Idomethane	ND
Methylene Chloride	ND
Methyl ethyl ketone	ND [10]
Methyl isobutyl ketone	ND [10]
Styrene	ND
1,1,2,2-Tetrachloroethane	ND
Tetrachloroethylene	ND
Toluene	ND
1,1,1-Trichloroethane	ND
1,1,2-Trichloroethane	ND
Trichloroethylene	ND
Trichlorofluoromethane	ND
1,2,3-Trichloropropane	ND [10]
Vinyl acetate	ND [10]
Vinyl chloride	ND [10]
Xylenes	ND

Limit of Practical Quantitation is 5 ug/L, unless otherwise noted in brackets.

Surrogate Recovery:		Recovery Limits
1,2-Dichloroethane-d4	101 %	76-114 %
Toluene-d8	101 %	88-110 %
Bromofluorobenzene	104 %	86-115 %

BETZ Analytical Services

Sample Description: MW2
Date Sampled: 10/21/92

Laboratory ID: C1022518

TEST	VALUE	UNIT	METHOD
Chromium, total	0.012	mg/L	EPA 6010
Lead, total	< 0.003	mg/L	EPA 7421
TOC (run 1)	1.60	mg/L	EPA 9060
TOC (run 2)	< 1.00	mg/L	EPA 9060
Conductivity, 25 deg. C (run 1)	1050	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 2)	1130	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 3)	1100	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 4)	1080	UMHOS	EPA 120.1
pH (run 1)	8.67	pH units	EPA 150.1
pH (run 2)	8.61	pH units	EPA 150.1
pH (run 3)	8.60	pH units	EPA 150.1
pH (run 4)	8.61	pH units	EPA 150.1
TOX (run 1)	< 0.005	mg/L	EPA 9020
TOX (run 2)	< 0.005	mg/L	EPA 9020

Sample Description: MW2
Date Sampled: 10/21/92
Analyst: RSL

Laboratory ID: C1022518
Date Analyzed: 10/29/92 19:41

VOLATILE ORGANICS (EPA 8240)

Compound	ug/L
Acetone	4.3J [20]
Acrolein	ND [20]
Acrylonitrile	ND [20]
Benzene	ND
Bromodichloromethane	ND
Bromoform	ND
Bromomethane	ND [10]
Carbon Disulfide	17
Carbon Tetrachloride	ND
Chlorobenzene	ND
Chlorodibromoethene	ND
Chloroethane	ND [10]
2-Chloroethylvinylether	ND [10]
Chloroform	ND
Chloromethane	ND [10]
Dibromomethane	ND
Dichlorodifluoromethane	ND [10]
1,1-Dichloroethane	ND

BETZ Analytical Services

VOLATILE ORGANICS (EPA 8240)
Laboratory ID C1022518 (continued)

Compound	ug/L
1,2-Dichloroethane	ND
1,1-Dichloroethylene	ND
Trans-1,2-Dichloroethylene	ND
1,2-Dichloropropane	ND
cis-1,3,Dichloropropene	ND
trans-1,3-Dichloropropene	ND
Ethylbenzene	ND
Ethyl methacrylate	ND
2-Hexanone	ND [10]
Idomethane	ND
Methylene Chloride	ND
Methyl ethyl ketone	ND [10]
Methyl isobutyl ketone	ND [10]
Styrene	ND
1,1,2,2-Tetrachloroethane	ND
Tetrachloroethylene	ND
Toluene	ND
1,1,1-Trichloroethane	ND
1,1,2-Trichloroethane	ND
Trichloroethylene	ND
Trichlorofluoromethane	ND
1,2,3-Trichloropropane	ND [10]
Vinyl acetate	ND [10]
Vinyl chloride	ND [10]
Xylenes	ND

Limit of Practical Quantitation is 5 ug/L, unless otherwise noted in brackets.

Surrogate Recovery:		Recovery Limits
1,2-Dichloroethane-d4	103 %	76-114 %
Toluene-d8	100 %	88-110 %
Bromofluorobenzene	101 %	86-115 %

J = Result is less than quantitation limit but greater than zero.

BETZ
Analytical Services

Sample Description: MW4
Date Sampled: 10/21/92

Laboratory ID: C1022522

TEST	VALUE	UNIT	METHOD
Chromium, total	0.032	mg/L	EPA 6010
Lead, total	0.008	mg/L	EPA 7421
TOC (run 1)	2.20	mg/L	EPA 9060
TOC (run 2)	3.00	mg/L	EPA 9060
Phenols, total	< 0.010	mg/L	EPA 9066
Conductivity, 25 deg. C (run 1)	1130	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 2)	1130	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 3)	1130	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 4)	1130	UMHOS	EPA 120.1
pH (run 1)	8.60	pH units	EPA 150.1
pH (run 2)	8.58	pH units	EPA 150.1
pH (run 3)	8.57	pH units	EPA 150.1
pH (run 4)	8.57	pH units	EPA 150.1
TOX (run 1)	0.028	mg/L	EPA 9020
TOX (run 2)	0.013	mg/L	EPA 9020

Sample Description: MW4
Date Sampled: 10/21/92
Analyst: RSL

Laboratory ID: C1022522
Date Analyzed: 10/28/92 20:22

VOLATILE ORGANICS (EPA 8240)

Compound	ug/L
Acetone	4.7J [20]
Acrolein	ND [20]
Acrylonitrile	ND [20]
Benzene	ND
Bromodichloromethane	ND
Bromoform	ND
Bromomethane	ND [10]
Carbon Disulfide	2.8
Carbon Tetrachloride	ND
Chlorobenzene	ND
Chlorodibromoethene	ND
Chloroethane	ND [10]
2-Chloroethylvinylether	ND [10]
Chloroform	ND
Chloromethane	ND [10]
Dibromomethane	ND
Dichlorodifluoromethane	ND [10]
1,1-Dichloroethane	ND

VOLATILE ORGANICS (EPA 8240)
Laboratory ID C102252 (continued)

Compound	ug/L
1,2-Dichloroethane	ND
1,1-Dichloroethylene	ND
Trans-1,2-Dichloroethylene	ND
1,2-Dichloropropane	ND
cis-1,3,Dichloropropene	ND
trans-1,3-Dichloropropene	ND
Ethylbenzene	ND
Ethyl methacrylate	ND
2-Hexanone	ND [10]
Idomethane	ND
Methylene Chloride	ND
Methyl ethyl ketone	ND [10]
Methyl isobutyl ketone	ND [10]
Styrene	ND
1,1,2,2-Tetrachloroethane	ND
Tetrachloroethylene	ND
Toluene	ND
1,1,1-Trichloroethane	ND
1,1,2-Trichloroethane	ND
Trichloroethylene	ND
Trichlorofluoromethane	ND
1,2,3-Trichloropropane	ND [10]
Vinyl acetate	ND [10]
Vinyl chloride	ND [10]
Xylenes	ND

Limit of Practical Quantitation is 5 ug/L, unless otherwise noted in brackets.

Surrogate Recovery:		Recovery Limits
1,2-Dichloroethane-d4	103 %	76-114 %
Toluene-d8	100 %	88-110 %
Bromofluorobenzene	104 %	86-115 %

J = Result is less than quantitation limit but greater than zero.

BETZ Analytical Services

Sample Description: MW5
Date Sampled: 10/21/92

Laboratory ID: C1022526

TEST	VALUE	UNIT	METHOD
Chromium, total	< 0.010	mg/L	EPA 6010
Lead, total	0.003	mg/L	EPA 7421
TOC (run 1)	5.20	mg/L	EPA 9060
TOC (run 2)	5.30	mg/L	EPA 9060
Conductivity, 25 deg. C (run 1)	1170	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 2)	1000	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 3)	1130	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 4)	1110	UMHOS	EPA 120.1
pH (run 1)	8.86	pH units	EPA 150.1
pH (run 2)	8.86	pH units	EPA 150.1
pH (run 3)	8.88	pH units	EPA 150.1
pH (run 4)	8.87	pH units	EPA 150.1
TOX (run 1)	0.010	mg/L	EPA 9020
TOX (run 2)	0.025	mg/L	EPA 9020

Sample Description: MW5
Date Sampled: 10/21/92
Analyst: RSL

Laboratory ID: C1022526
Date Analyzed: 10/28/92 21:04

VOLATILE ORGANICS (EPA 8240)

Compound	ug/L
Acetone	5.4J [20]
Acrolein	ND [20]
Acrylonitrile	ND [20]
Benzene	ND
Bromodichloromethane	ND
Bromoform	ND
Bromomethane	ND [10]
Carbon Disulfide	4.3J
Carbon Tetrachloride	ND
Chlorobenzene	ND
Chlorodibromoethene	ND
Chloroethane	ND [10]
2-Chloroethylvinylether	ND [10]
Chloroform	ND
Chloromethane	ND [10]
Dibromomethane	ND
Dichlorodifluoromethane	ND [10]
1,1-Dichloroethane	ND

VOLATILE ORGANICS (EPA 8240)
Laboratory ID C1022526 (continued)

Compound	ug/L
1,2-Dichloroethane	ND
1,1-Dichloroethylene	ND
Trans-1,2-Dichloroethylene	ND
1,2-Dichloropropane	ND
cis-1,3,Dichloropropene	ND
trans-1,3-Dichloropropene	ND
Ethylbenzene	ND
Ethyl methacrylate	ND
2-Hexanone	ND [10]
Idomethane	ND
Methylene Chloride	ND
Methyl ethyl ketone	ND [10]
Methyl isobutyl ketone	ND [10]
Styrene	ND
1,1,2,2-Tetrachloroethane	ND
Tetrachloroethylene	ND
Toluene	ND
1,1,1-Trichloroethane	ND
1,1,2-Trichloroethane	ND
Trichloroethylene	ND
Trichlorofluoromethane	ND
1,2,3-Trichloropropane	ND [10]
Vinyl acetate	ND [10]
Vinyl chloride	ND [10]
Xylenes	ND

Limit of Practical Quantitation is 5 ug/L, unless otherwise noted in brackets.

Surrogate Recovery:		Recovery Limits
1,2-Dichloroethane-d4	105 %	76-114 %
Toluene-d8	99 %	88-110 %
Bromofluorobenzene	102 %	86-115 %

J = Result is less than quantitation limit but greater than zero.

BETZ Analytical Services

Sample Description: OW11 Laboratory ID: C1022530
Date Sampled: 10/21/92

TEST	VALUE	UNIT	METHOD
Chromium, total	0.010	mg/L	EPA 6010
Lead, total	< 0.003	mg/L	EPA 7421
TOC (run 1)	6.80	mg/L	EPA 9060
TOC (run 2)	6.20	mg/L	EPA 9060
Phenols, total	< 0.010	mg/L	EPA 9066
Conductivity, 25 deg. C (run 1)	1820	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 2)	1840	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 3)	1840	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 4)	1820	UMHOS	EPA 120.1
pH (run 1)	8.12	pH units	EPA 150.1
pH (run 2)	8.12	pH units	EPA 150.1
pH (run 3)	8.11	pH units	EPA 150.1
pH (run 4)	8.20	pH units	EPA 150.1
TOX (run 1)	0.021	mg/L	EPA 9020
TOX (run 2)	0.023	mg/L	EPA 9020

Sample Description: OW11 Laboratory ID: C1022530
Date Sampled: 10/21/92 Date Analyzed: 10/28/92 21:45
Analyst: RSL

VOLATILE ORGANICS (EPA 8240)

Compound	ug/L
Acetone	6.2J [20]
Acrolein	ND [20]
Acrylonitrile	ND [20]
Benzene	ND
Bromodichloromethane	ND
Bromoform	ND
Bromomethane	ND [10]
Carbon Disulfide	16
Carbon Tetrachloride	ND
Chlorobenzene	ND
Chlorodibromoethene	ND
Chloroethane	ND [10]
2-Chloroethylvinylether	ND [10]
Chloroform	ND
Chloromethane	ND [10]
Dibromomethane	ND
Dichlorodifluoromethane	ND [10]
1,1-Dichloroethane	ND

VOLATILE ORGANICS (EPA 8240)
Laboratory ID C1022530 (continued)

Compound	ug/L
1,2-Dichloroethane	ND
1,1-Dichloroethylene	ND
Trans-1,2-Dichloroethylene	ND
1,2-Dichloropropane	ND
cis-1,3,Dichloropropene	ND
trans-1,3-Dichloropropene	ND
Ethylbenzene	ND
Ethyl methacrylate	ND
2-Hexanone	ND [10]
Idomethane	ND
Methylene Chloride	ND
Methyl ethyl ketone	ND [10]
Methyl isobutyl ketone	ND [10]
Styrene	ND
1,1,2,2-Tetrachloroethane	ND
Tetrachloroethylene	ND
Toluene	ND
1,1,1-Trichloroethane	ND
1,1,2-Trichloroethane	ND
Trichloroethylene	ND
Trichlorofluoromethane	ND
1,2,3-Trichloropropane	ND [10]
Vinyl acetate	ND [10]
Vinyl chloride	ND [10]
Xylenes	ND

Limit of Practical Quantitation is 5 ug/L, unless otherwise noted in brackets.

Surrogate Recovery:		Recovery Limits
1,2-Dichloroethane-d4	106 %	76-114 %
Toluene-d8	102 %	88-110 %
Bromofluorobenzene	105 %	86-115 %

J = Result is less than quantitation limit but greater than zero.

BETZ Analytical Services

Sample Description: SMW1
Date Sampled: 10/21/92

Laboratory ID: C1022534

TEST	VALUE	UNIT	METHOD
Chromium, total	0.094	mg/L	EPA 6010
Lead, total	0.004	mg/L	EPA 7421
TOC (run 1)	15.4	mg/L	EPA 9060
TOC (run 2)	14.2	mg/L	EPA 9060
Conductivity, 25 deg. C (run 1)	5980	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 2)	5980	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 3)	5980	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 4)	5980	UMHOS	EPA 120.1
pH (run 1)	7.28	pH units	EPA 150.1
pH (run 2)	7.30	pH units	EPA 150.1
pH (run 3)	7.30	pH units	EPA 150.1
pH (run 4)	7.30	pH units	EPA 150.1
TOX (run 1)	0.038	mg/L	EPA 9020
TOX (run 2)	0.039	mg/L	EPA 9020

Sample Description: SMW1
Date Sampled: 10/21/92
Analyst: RSL

Laboratory ID: C1022534
Date Analyzed: 10/28/92 23:07

VOLATILE ORGANICS (EPA 8240)

Compound	ug/L
Acetone	5.8J [20]
Acrolein	ND [20]
Acrylonitrile	ND [20]
Benzene	ND
Bromodichloromethane	ND
Bromoform	ND
Bromomethane	ND [10]
Carbon Disulfide	6.5
Carbon Tetrachloride	ND
Chlorobenzene	ND
Chlorodibromoethene	ND
Chloroethane	ND [10]
2-Chloroethylvinylether	ND [10]
Chloroform	ND
Chloromethane	ND [10]
Dibromomethane	ND
Dichlorodifluoromethane	ND [10]
1,1-Dichloroethane	ND

VOLATILE ORGANICS (EPA 8240)
Laboratory ID C1022534 (continued)

Compound	ug/L
1,2-Dichloroethane	ND
1,1-Dichloroethylene	ND
Trans-1,2-Dichloroethylene	ND
1,2-Dichloropropane	ND
cis-1,3,Dichloropropene	ND
trans-1,3-Dichloropropene	ND
Ethylbenzene	ND
Ethyl methacrylate	ND
2-Hexanone	ND [10]
Idomethane	ND
Methylene Chloride	ND
Methyl ethyl ketone	ND [10]
Methyl isobutyl ketone	ND [10]
Styrene	ND
1,1,2,2-Tetrachloroethane	ND
Tetrachloroethylene	ND
Toluene	ND
1,1,1-Trichloroethane	ND
1,1,2-Trichloroethane	ND
Trichloroethylene	ND
Trichlorofluoromethane	ND
1,2,3-Trichloropropane	ND [10]
Vinyl acetate	ND [10]
Vinyl chloride	ND [10]
Xylenes	ND

Limit of Practical Quantitation is 5 ug/L, unless otherwise noted in brackets.

Surrogate Recovery:		Recovery Limits
1,2-Dichloroethane-d4	107 %	76-114 %
Toluene-d8	102 %	88-110 %
Bromofluorobenzene	111 %	86-115 %

J = Result is less than quantitation limit but greater than zero.

BETZ Analytical Services

Sample Description: SMW2 Laboratory ID: C1022538
Date Sampled: 10/21/92

TEST	VALUE	UNIT	METHOD
Chromium, total	0.333	mg/L	EPA 6010
Lead, total	0.013	mg/L	EPA 7421
TOC (run 1)	11.5	mg/L	EPA 9060
TOC (run 2)	11.6	mg/L	EPA 9060
Conductivity, 25 deg. C (run 1)	6410	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 2)	6410	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 3)	6300	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 4)	6410	UMHOS	EPA 120.1
pH (run 1)	7.31	pH units	EPA 150.1
pH (run 2)	7.29	pH units	EPA 150.1
pH (run 3)	7.29	pH units	EPA 150.1
pH (run 4)	7.37	pH units	EPA 150.1
TOX (run 1)	0.034	mg/L	EPA 9020
TOX (run 2)	0.032	mg/L	EPA 9020

Sample Description: SMW2 Laboratory ID: C1022538
Date Sampled: 10/21/92 Date Analyzed: 10/28/92 23:48
Analyst: RSL

VOLATILE ORGANICS (EPA 8240)

Compound	ug/L
Acetone	6.9J [20]
Acrolein	ND [20]
Acrylonitrile	ND [20]
Benzene	ND
Bromodichloromethane	ND
Bromoform	ND
Bromomethane	ND [10]
Carbon Disulfide	120
Carbon Tetrachloride	ND
Chlorobenzene	ND
Chlorodibromoethene	ND
Chloroethane	ND [10]
2-Chloroethylvinylether	ND [10]
Chloroform	ND
Chloromethane	ND [10]
Dibromomethane	ND
Dichlorodifluoromethane	ND [10]
1,1-Dichloroethane	ND

VOLATILE ORGANICS (EPA 8240)
Laboratory ID C1022538 (continued)

Compound	ug/L
1,2-Dichloroethane	ND
1,1-Dichloroethylene	ND
Trans-1,2-Dichloroethylene	ND
1,2-Dichloropropane	ND
cis-1,3,Dichloropropene	ND
trans-1,3-Dichloropropene	ND
Ethylbenzene	ND
Ethyl methacrylate	ND
2-Hexanone	ND [10]
Idomethane	ND
Methylene Chloride	ND
Methyl ethyl ketone	ND [10]
Methyl isobutyl ketone	ND [10]
Styrene	ND
1,1,2,2-Tetrachloroethane	ND
Tetrachloroethylene	ND
Toluene	ND
1,1,1-Trichloroethane	ND
1,1,2-Trichloroethane	ND
Trichloroethylene	ND
Trichlorofluoromethane	ND
1,2,3-Trichloropropane	ND [10]
Vinyl acetate	ND [10]
Vinyl chloride	ND [10]
Xylenes	ND

Limit of Practical Quantitation is 5 ug/L, unless otherwise noted in brackets.

Surrogate Recovery:		Recovery Limits
1,2-Dichloroethane-d4	107 %	76-114 %
Toluene-d8	99 %	88-110 %
Bromofluorobenzene	113 %	86-115 %

J = Result is less than quantitation limit burt greater than zero.

Sample Description: SMW3 Laboratory ID: C1022542
Date Sampled: 10/21/92

TEST	VALUE	UNIT	METHOD
Chromium, total	0.080	mg/L	EPA 6010
Lead, total	0.034	mg/L	EPA 7421
TOC (run 1)	5.20	mg/L	EPA 9060
TOC (run 2)	5.10	mg/L	EPA 9060
Conductivity, 25 deg. C (run 1)	3100	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 2)	3100	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 3)	3100	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 4)	3100	UMHOS	EPA 120.1
pH (run 1)	7.73	pH units	EPA 150.1
pH (run 2)	7.73	pH units	EPA 150.1
pH (run 3)	7.69	pH units	EPA 150.1
pH (run 4)	7.74	pH units	EPA 150.1
TOX (run 1)	0.012	mg/L	EPA 9020
TOX (run 2)	0.015	mg/L	EPA 9020

Sample Description: SMW3 Laboratory ID: C1022542
Date Sampled: 10/21/92 Date Analyzed: 10/29/92 16:20
Analyst: RSL

VOLATILE ORGANICS (EPA 8240)

Compound	ug/L
Acetone	4.2BJ [20]
Acrolein	ND [20]
Acrylonitrile	ND [20]
Benzene	ND
Bromodichloromethane	ND
Bromoform	ND
Bromomethane	ND [10]
Carbon Disulfide	11
Carbon Tetrachloride	ND
Chlorobenzene	ND
Chlorodibromoethene	ND
Chloroethane	ND [10]
2-Chloroethylvinylether	ND [10]
Chloroform	ND
Chloromethane	ND [10]
Dibromomethane	ND
Dichlorodifluoromethane	ND [10]
1,1-Dichloroethane	ND

VOLATILE ORGANICS (EPA 8240)
Laboratory ID C1022542 (continued)

Compound	ug/L
1,2-Dichloroethane	ND
1,1-Dichloroethylene	ND
Trans-1,2-Dichloroethylene	ND
1,2-Dichloropropane	ND
cis-1,3,Dichloropropene	ND
trans-1,3-Dichloropropene	ND
Ethylbenzene	ND
Ethyl methacrylate	ND
2-Hexanone	ND [10]
Idomethane	ND
Methylene Chloride	ND
Methyl ethyl ketone	ND [10]
Methyl isobutyl ketone	ND [10]
Styrene	ND
1,1,2,2-Tetrachloroethane	ND
Tetrachloroethylene	ND
Toluene	ND
1,1,1-Trichloroethane	ND
1,1,2-Trichloroethane	ND
Trichloroethylene	ND
Trichlorofluoromethane	ND
1,2,3-Trichloropropane	ND [10]
Vinyl acetate	ND [10]
Vinyl chloride	ND [10]
Xylenes	ND

Limit of Practical Quantitation is 5 ug/L, unless otherwise noted in brackets.

Surrogate Recovery:		Recovery Limits
1,2-Dichloroethane-d4	97 %	76-114 %
Toluene-d8	99 %	88-110 %
Bromofluorobenzene	100 %	86-115 %

B = Analyte also found in associated Method Blank.
J = Result is less than quantitation limit but greater than zero.

BETZ Analytical Services

Sample Description: SMW4 Laboratory ID: C1022546
Date Sampled: 10/21/92

TEST	VALUE	UNIT	METHOD
Chromium, total	0.068	mg/L	EPA 6010
Lead, total	0.007	mg/L	EPA 7421
TOC (run 1)	4.60	mg/L	EPA 9060
TOC (run 2)	5.30	mg/L	EPA 9060
Conductivity, 25 deg. C (run 1)	1260	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 2)	1240	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 3)	1260	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 4)	1250	UMHOS	EPA 120.1
pH (run 1)	7.93	pH units	EPA 150.1
pH (run 2)	7.94	pH units	EPA 150.1
pH (run 3)	7.95	pH units	EPA 150.1
pH (run 4)	7.91	pH units	EPA 150.1
TOX (run 1)	< 0.005	mg/L	EPA 9020
TOX (run 1)	< 0.005	mg/L	EPA 9020

Sample Description: SMW4 Laboratory ID: C1022546
Date Sampled: 10/21/92 Date Analyzed: 10/28/92 22:26
Analyst: RSL

VOLATILE ORGANICS (EPA 8240)

Compound	ug/L
Acetone	4.9J [20]
Acrolein	ND [20]
Acrylonitrile	ND [20]
Benzene	ND
Bromodichloromethane	ND
Bromoform	ND
Bromomethane	ND [10]
Carbon Disulfide	ND
Carbon Tetrachloride	ND
Chlorobenzene	ND
Chlorodibromoethene	ND
Chloroethane	ND [10]
2-Chloroethylvinylether	ND [10]
Chloroform	ND
Chloromethane	ND [10]
Dibromomethane	ND
Dichlorodifluoromethane	ND [10]
1,1-Dichloroethane	ND

VOLATILE ORGANICS (EPA 8240)
Laboratory ID C1022546 (continued)

Compound	ug/L
1,2-Dichloroethane	ND
1,1-Dichloroethylene	ND
Trans-1,2-Dichloroethylene	ND
1,2-Dichloropropane	ND
cis-1,3,Dichloropropene	ND
trans-1,3-Dichloropropene	ND
Ethylbenzene	ND
Ethyl methacrylate	ND
2-Hexanone	ND [10]
Idomethane	ND
Methylene Chloride	ND
Methyl ethyl ketone	ND [10]
Methyl isobutyl ketone	ND [10]
Styrene	ND
1,1,2,2-Tetrachloroethane	ND
Tetrachloroethylene	ND
Toluene	ND
1,1,1-Trichloroethane	ND
1,1,2-Trichloroethane	ND
Trichloroethylene	ND
Trichlorofluoromethane	ND
1,2,3-Trichloropropane	ND [10]
Vinyl acetate	ND [10]
Vinyl chloride	ND [10]
Xylenes	ND

Limit of Practical Quantitation is 5 ug/L, unless otherwise noted in brackets.

Surrogate Recovery:		Recovery Limits
1,2-Dichloroethane-d4	106 %	76-114 %
Toluene-d8	101 %	88-110 %
Bromofluorobenzene	103 %	86-115 %

J = Result is less than quantitation limit but greater than zero.

Sample Description: SMW5 Laboratory ID: C1022550
Date Sampled: 10/21/92

TEST	VALUE	UNIT	METHOD
Chromium, total	0.055	mg/L	EPA 6010
Lead, total	0.007	mg/L	EPA 7421
TOC (run 1)	5.30	mg/L	EPA 9060
TOC (run 2)	6.70	mg/L	EPA 9060
Conductivity, 25 deg. C (run 1)	1090	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 2)	1110	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 3)	1090	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 4)	1110	UMHOS	EPA 120.1
pH (run 1)	8.47	pH units	EPA 150.1
pH (run 2)	8.45	pH units	EPA 150.1
pH (run 3)	8.47	pH units	EPA 150.1
pH (run 4)	8.47	pH units	EPA 150.1
TOX (run 1)	< 0.005	mg/L	EPA 9020
TOX (run 2)	< 0.005	mg/L	EPA 9020

Sample Description: SMW5 Laboratory ID: C1022550
Date Sampled: 10/21/92 Date Analyzed: 10/29/92 17:11
Analyst: RSL

VOLATILE ORGANICS (EPA 8240)

Compound	ug/L
Acetone	4.6BJ [20]
Acrolein	ND [20]
Acrylonitrile	ND [20]
Benzene	ND
Bromodichloromethane	ND
Bromoform	ND
Bromomethane	ND [10]
Carbon Disulfide	ND
Carbon Tetrachloride	ND
Chlorobenzene	ND
Chlorodibromoethene	ND
Chloroethane	ND [10]
2-Chloroethylvinylether	ND [10]
Chloroform	ND
Chloromethane	ND [10]
Dibromomethane	ND
Dichlorodifluoromethane	ND [10]
1,1-Dichloroethane	ND

VOLATILE ORGANICS (EPA 8240)
Laboratory ID C1022550 (continued)

Compound	ug/L
1,2-Dichloroethane	ND
1,1-Dichloroethylene	ND
Trans-1,2-Dichloroethylene	ND
1,2-Dichloropropane	ND
cis-1,3,Dichloropropene	ND
trans-1,3-Dichloropropene	ND
Ethylbenzene	ND
Ethyl methacrylate	ND
2-Hexanone	ND [10]
Idomethane	ND
Methylene Chloride	ND
Methyl ethyl ketone	ND [10]
Methyl isobutyl ketone	ND [10]
Styrene	ND
1,1,2,2-Tetrachloroethane	ND
Tetrachloroethylene	ND
Toluene	ND
1,1,1-Trichloroethane	ND
1,1,2-Trichloroethane	ND
Trichloroethylene	ND
Trichlorofluoromethane	ND
1,2,3-Trichloropropane	ND [10]
Vinyl acetate	ND [10]
Vinyl chloride	ND [10]
Xylenes	ND

Limit of Practical Quantitation is 5 ug/L, unless otherwise noted in brackets.

Surrogate Recovery:		Recovery Limits
1,2-Dichloroethane-d4	101 %	76-114 %
Toluene-d8	100 %	88-110 %
Bromofluorobenzene	102 %	86-115 %

B = Analyte also found in associated Method Blank.
J = Result is less than quantitation limit but greater than zero.

BETZ Analytical Services

Sample Description: SMW6
Date Sampled: 10/21/92

Laboratory ID: C1022554

TEST	VALUE	UNIT	METHOD
Chromium, total	0.138	mg/L	EPA 6010
Lead, total	0.010	mg/L	EPA 7421
TOC (run 1)	5.90	mg/L	EPA 9060
TOC (run 2)	5.40	mg/L	EPA 9060
Conductivity, 25 deg. C (run 1)	1600	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 2)	1600	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 3)	1600	UMHOS	EPA 120.1
Conductivity, 25 deg. C (run 4)	1600	UMHOS	EPA 120.1
pH (run 1)	7.56	pH units	EPA 150.1
pH (run 2)	7.55	pH units	EPA 150.1
pH (run 3)	7.57	pH units	EPA 150.1
pH (run 4)	7.58	pH units	EPA 150.1
TOX (run 1)	0.006	mg/L	EPA 9020
TOX (run 2)	< 0.005	mg/L	EPA 9020

Sample Description: SMW6
Date Sampled: 10/21/92
Analyst: RSL

Laboratory ID: C1022554
Date Analyzed: 10/29/92 17:55

VOLATILE ORGANICS (EPA 8240)

Compound	ug/L
Acetone	5.4BJ [20]
Acrolein	ND [20]
Acrylonitrile	ND [20]
Benzene	ND
Bromodichloromethane	ND
Bromoform	ND
Bromomethane	ND [10]
Carbon Disulfide	3.5J
Carbon Tetrachloride	ND
Chlorobenzene	ND
Chlorodibromoethene	ND
Chloroethane	ND [10]
2-Chloroethylvinylether	ND [10]
Chloroform	ND
Chloromethane	ND [10]
Dibromomethane	ND
Dichlorodifluoromethane	ND [10]
1,1-Dichloroethane	ND

VOLATILE ORGANICS (EPA 8240)
Laboratory ID C1022554 (continued)

Compound	ug/L
1,2-Dichloroethane	ND
1,1-Dichloroethylene	ND
Trans-1,2-Dichloroethylene	ND
1,2-Dichloropropane	ND
cis-1,3,Dichloropropene	ND
trans-1,3-Dichloropropene	ND
Ethylbenzene	ND
Ethyl methacrylate	ND
2-Hexanone	ND [10]
Idomethane	ND
Methylene Chloride	ND
Methyl ethyl ketone	ND [10]
Methyl isobutyl ketone	ND [10]
Styrene	ND
1,1,2,2-Tetrachloroethane	ND
Tetrachloroethylene	ND
Toluene	ND
1,1,1-Trichloroethane	ND
1,1,2-Trichloroethane	ND
Trichloroethylene	ND
Trichlorofluoromethane	ND
1,2,3-Trichloropropane	ND [10]
Vinyl acetate	ND [10]
Vinyl chloride	ND [10]
Xylenes	ND

Limit of Practical Quantitation is 5 ug/L, unless otherwise noted in brackets.

Surrogate Recovery:		Recovery Limits
1,2-Dichloroethane-d4	102 %	76-114 %
Toluene-d8	99 %	88-110 %
Bromofluorobenzene	99 %	86-115 %

B = Analyte was also found in assocated Method Blank.
J = Result is less than quantitation limit but greater than zero.

Sample Description: Method Blank Date Analyzed: 10/29/92 15:00
Analyst: RSL

VOLATILE ORGANICS (EPA 8240)

Compound	ug/L
Acetone	3.84J [20]
Acrolein	ND [20]
Acrylonitrile	ND [20]
Benzene	ND
Bromodichloromethane	ND
Bromoform	ND
Bromomethane	ND [10]
Carbon Disulfide	ND
Carbon Tetrachloride	ND
Chlorobenzene	ND
Chlorodibromoethene	ND
Chloroethane	ND [10]
2-Chloroethylvinylether	ND [10]
Chloroform	ND
Chloromethane	ND [10]
1,1-Dichloroethane	ND
1,2-Dichloroethane	ND
1,1-Dichloroethylene	ND
Trans-1,2-Dichloroethylene	ND
1,2-Dichloropropane	ND
cis-1,3,Dichloropropene	ND
trans-1,3-Dichloropropene	ND
Ethylbenzene	ND
Ethyl methacrylate	ND
2-Hexanone	ND [10]
Idomethane	ND
Methylene Chloride	ND
Methyl ethyl ketone	ND [10]
Methyl isobutyl ketone	ND [10]
Styrene	ND
1,1,2,2-Tetrachloroethane	ND
Tetrachloroethylene	ND
Toluene	ND
1,1,1-Trichloroethane	ND
1,1,2-Trichloroethane	ND
Trichloroethylene	ND
Trichlorofluoromethane	ND
1,2,3-Trichloropropane	ND [10]
Vinyl acetate	ND [10]
Vinyl chloride	ND [10]

Limit of Practical Quantitation is 5 ug/L, unless otherwise noted in brackets.

Surrogate Recovery:		Recovery Limits
1,2-Dichloroethane-d4	96 %	76-114 %
Toluene-d8	100 %	88-110 %
Bromofluorobenzene	99 %	86-115 %

J = Result is less than quantitation limit but greater than zero.

BETZ ANALYTICAL SERVICES — Chain of Custody

P.O. Box 4300 • 9669 Grogans Mill Road • The Woodlands, TX 77380 • 713-367-6201 • Fax 713-367-3189

Client Name/Address: GIANT REFINING CO. RT3 BOX 7 - GALLUP, NM 87301

Send Report to: LYNN SHELTON

P.O. Number: RFE 997-9009-14

Invoice to: ABOVE

Samplers (Signature): Lynn Shelton

Project Number: SEMI-ANNUAL GDWTR

Sta No.	Date	Time	Comp.	Grab	Station Location	Number of Containers	pH & CONDUCT.*	TOC*	TDS	CHROME, LEAD	8240	PHENOL	Remarks
	10-21	1045		X	MW1	8	X	X	X	X	X		* 4 REPLICATES
	10-21	1020		X	MW2	8	X	X	X	X	X		* 2 DUPLICATES
	10-21	1225		X	MW4	9	X	X	X	X	X	X	
	10-21	940		X	MW5	8	X	X	X	X	X		
	10-21	1200		X	OW11	9	X	X	X	X	X	X	
	10-21	1250		X	SMW1	8	X	X	X	X	X	X	(NO PHENOLICS ON SMW1)
	10-21	110		X	SMW2	8	X	X	X	X	X		
	10-21	125		X	SMW3	8	X	X	X	X	X		
	10-21	145		X	SMW4	8	X	X	X	X	X		
	10-21	200		X	SMW5	8	X	X	X	X	X		
	10-21	215		X	SMW6	8	X	X	X	X	X		

Relinquished by (Signature)	Date / Time	Received by (Signature)	Relinquished by (Signature)	Date / Time	Received by (Signature)
Lynn Shelton	10-21-92 3:30				

Relinquished by (Signature)	Date / Time	Received for Laboratory by (Sig.)	Date / Time	Sample condition upon receipt:
		M Sawlock	10/22/92 9:30 am	

Method of Shipment: FED-EX OVERNIGHT

Cooler temperature upon receipt 6°C, 3°C, 0°C

LAB 170 9206 (3 part)