File: GRC 1995 red

GIANT REFINING CO.

Route 3, Box 7
Gallup, New Mexico
87301

505
722-3833

July 6, 1995

VIII

JUL 11 1995

Benito Garcia
Bureau Chief
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
525 Camino De Los Marquez
Santa Fe, New Mexico 87502

Re: **Annual Groundwater Notification**
Permit No. NMD000333211-2

Dear Mr. Garcia:

Pursuant to Attachment G: Groundwater Monitoring Plan, 2.G. and H. of the indicated permit, Giant Refining Company - Ciniza submits the enclosed analytical and statistical data from the annual groundwater sampling event.

There are several significant items that should be noted. This was the first sampling event with the new dedicated pump system. The system worked flawlessly and significantly reduces the chance of contamination of groundwater samples. This is particularly evident in the absence of any volatiles in any of the samples.

Also significant is the overall reduction in chromium in SMW-3, SMW-4, and SMW-5. Giant is not sure if this is the result of the surging/redevelopment of all the predetection and detection wells or if it is the result of the dedicated pumps, which ostensibly could result in lower chrome values due to less movement of sampling equipment into and out of the well bores.

SMW-6 continues to show high levels of all metals (excluding lead) and electrical conductivity, as well as a decrease in pH, and confirms Giant's belief that the stainless steel casing in that well has become damaged. The damage could be a result of corrosion or from mechanical damage. Nevertheless, the water samples retrieved from SMW-6 are more similar to the water in the evaporation lagoons than what is normally observed within the Ciniza Sands.

The change in the analytical characteristics of the samples retrieved

from SMW-6 was first noted after the Fall, 1993 semi-annual sampling event. Graphs showing the various constituents are attached to illustrate the increase (or decrease in the case of pH) of those constituents. These increases are concurrent with renovation of the evaporation lagoons, which are adjacent to SMW-6. Although probably coincidental, it is conceivable that the earth moving activities may have exposed a recharge route from the evaporation lagoons to the SMW-6 completion zone.

Giant proposes to drill an offset to SMW-6, approximately 20 feet northwest and into the same sand lens, and abandon SMW-6 by plugging with a cement/bentonite slurry. The new well will be called SMW-6A. The drilling will be performed by a truck mounted rotary rig, using augers and coring constantly to insure that the well is completed in the same sand interval. The casing will be schedule 40 PVC with flush screw-type joints. A diagram of the proposed well bore is included with this letter. Please note that it is imperative that the new well be screened only across the Ciniza Sand in order to retrieve representative samples from that zone.

The indicator parameters for the detection wells once again show a significant statistical increase (Cochran's Approximation of the Behrens-Fisher Student's-T Test). Giant believes that this is a false positive, an inherent shortcoming of this statistical analysis technique with this type of very consistent data, as discussed with NMED on numerous occasions in the past, and proposes that the compliance sampling program not be initiated.

In summation, Giant requests NMED approval for the abandonment of SMW-6 and the replacement of that well with a new well to be identified as SMW-6A. Giant does not consider this to be a permit modification as it is a replacement in kind. Furthermore, Giant will appreciate a timely approval in order to facilitate the drilling and completion process prior to the required semi-annual sampling event which will occur in September or October.

Thank you for your consideration in this matter. Should you require additional information, please contact me at (505) 722-0227.

Sincerely,

Lynn Shelton
Senior Environmental Coordinator
Giant Refining Company

TLS:sp

cc: David C. Pavlich, HSE Manager, Giant Refining Company
Kim Bullerdick, Corporate Counsel, Giant Industries Arizona, Inc.
Roger Anderson, Oil Conservation Division, Santa Fe, NM

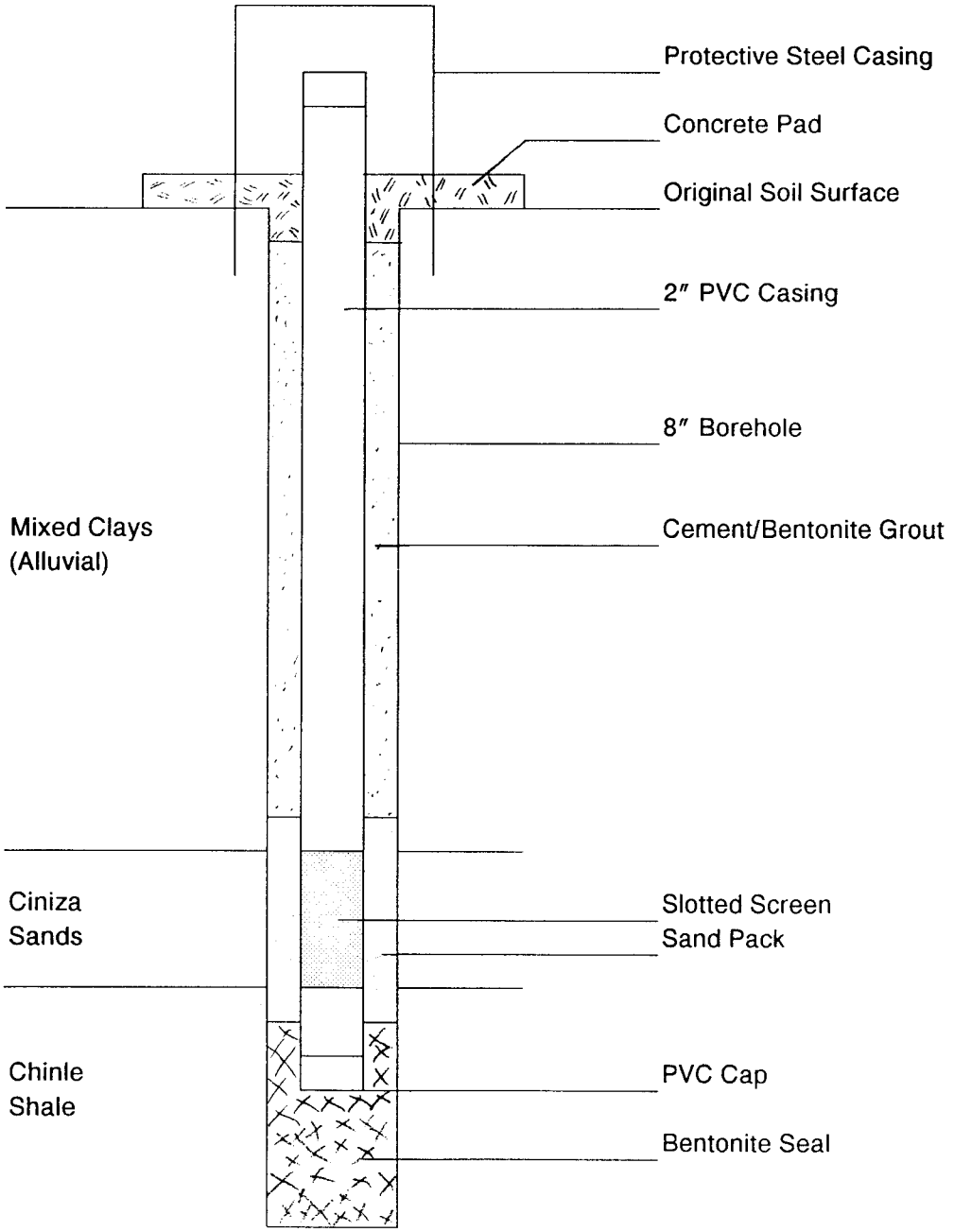
(SRP)[WPDOCS\TLS\NMED.706]

STATISTICAL ANALYSIS

ANNUAL GROUNDWATER
GIANT REFINING
CINIZA
7-10-95

GIANT REFINING – CINIZA

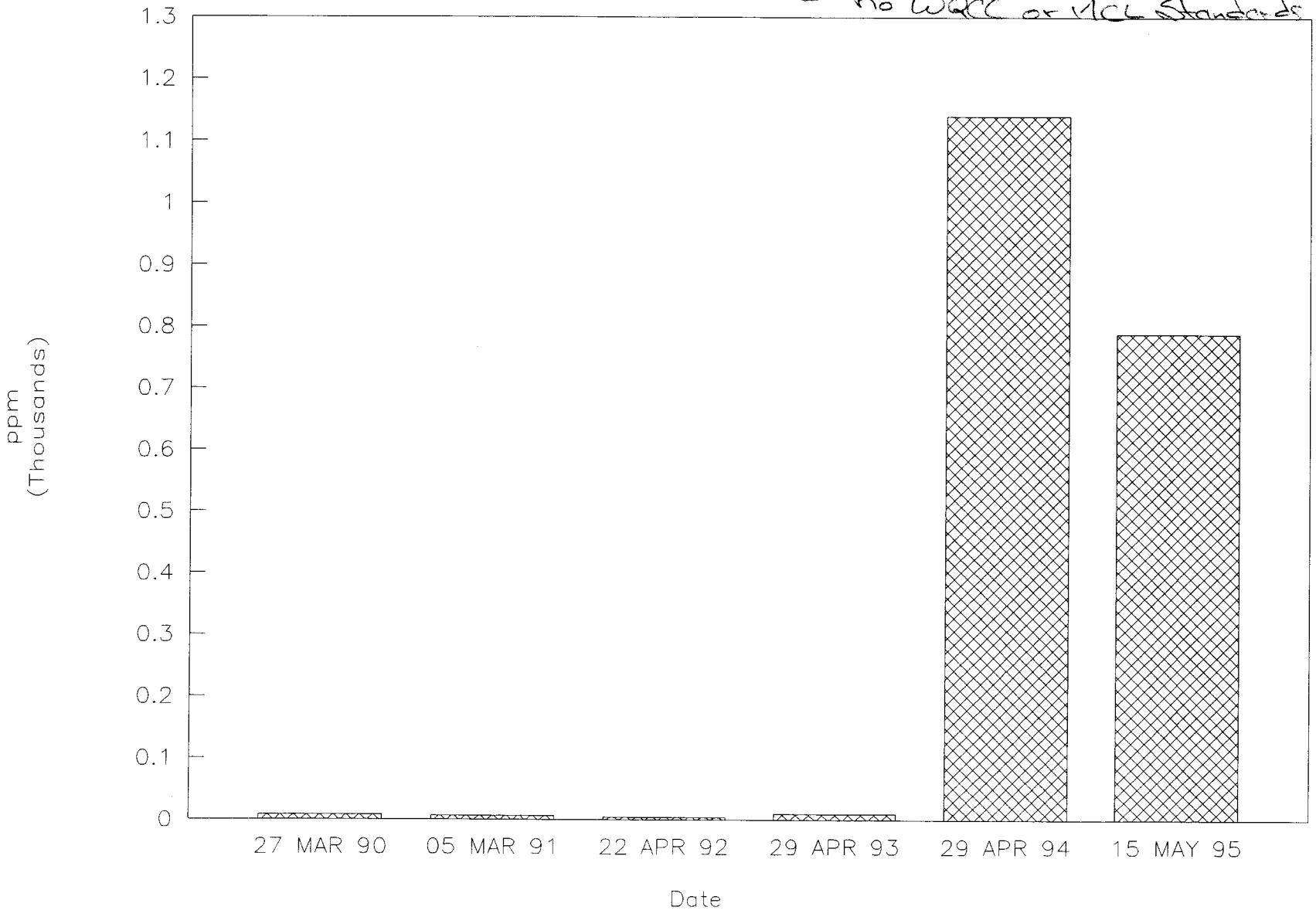
PROPOSED SMW–6A WELL DIAGRAM



TLS/95

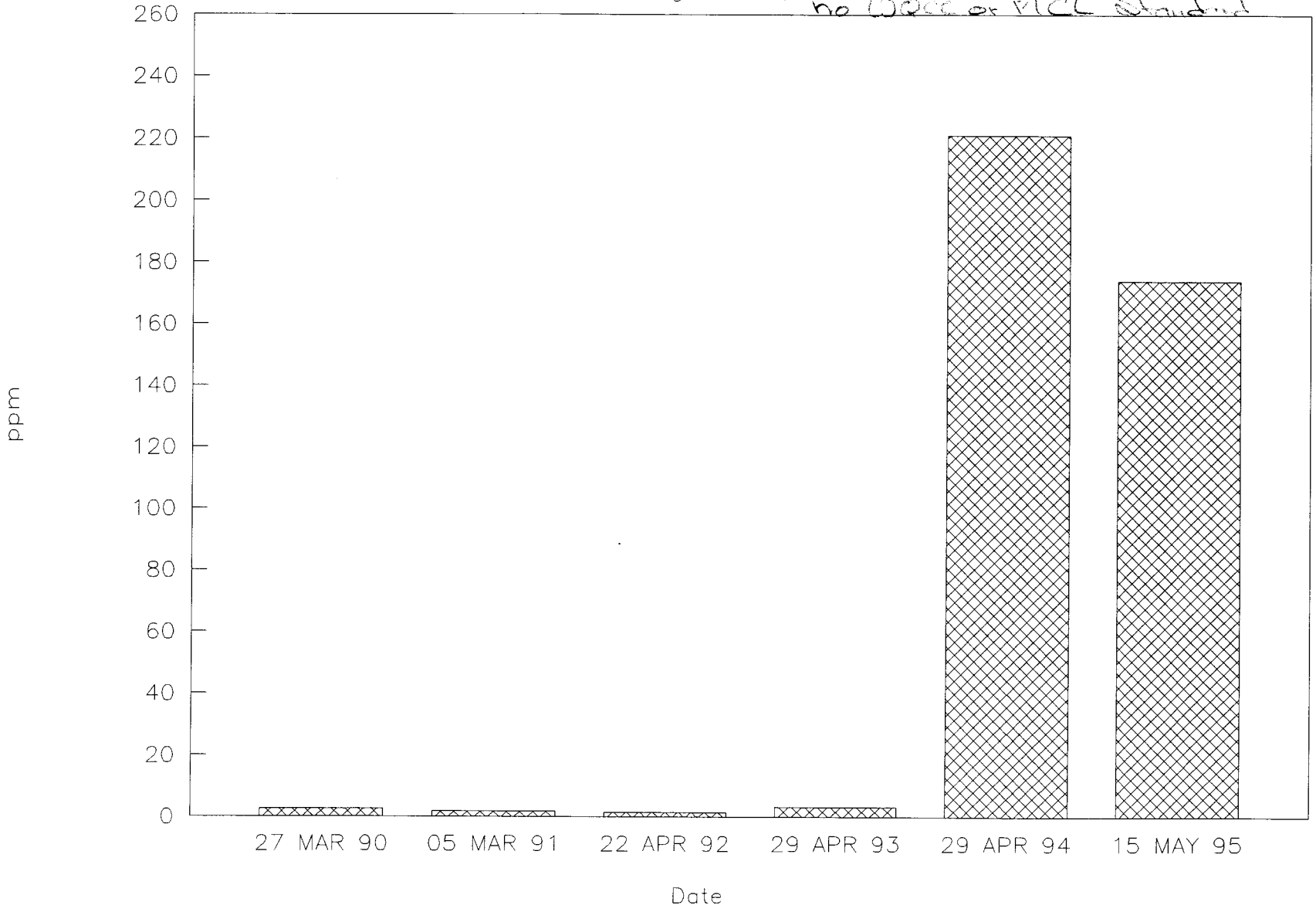
SMW 6

Calcium — no WQCC or MCL Standards



SMW 6

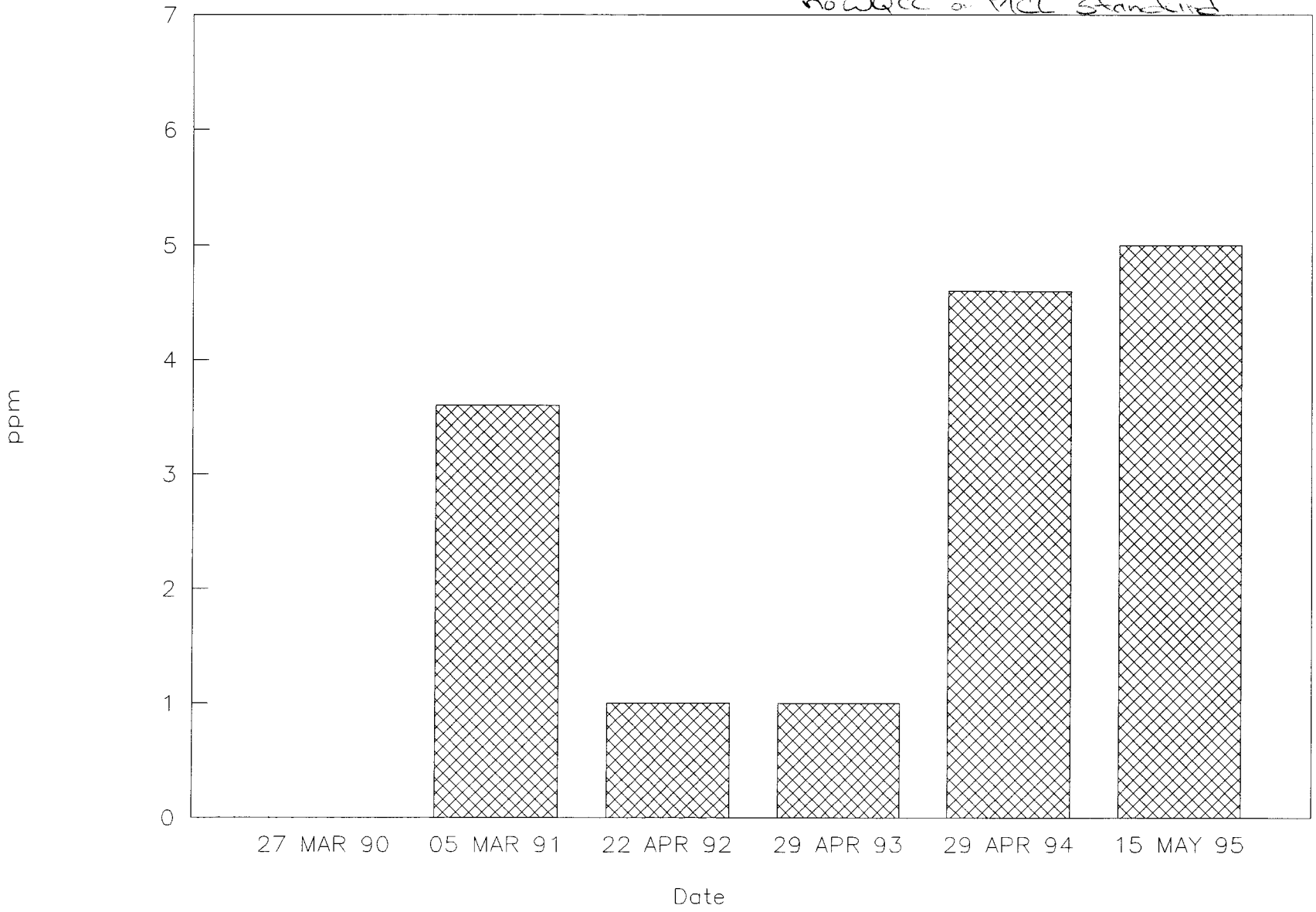
Magnesium - no WQCC or MCL standard



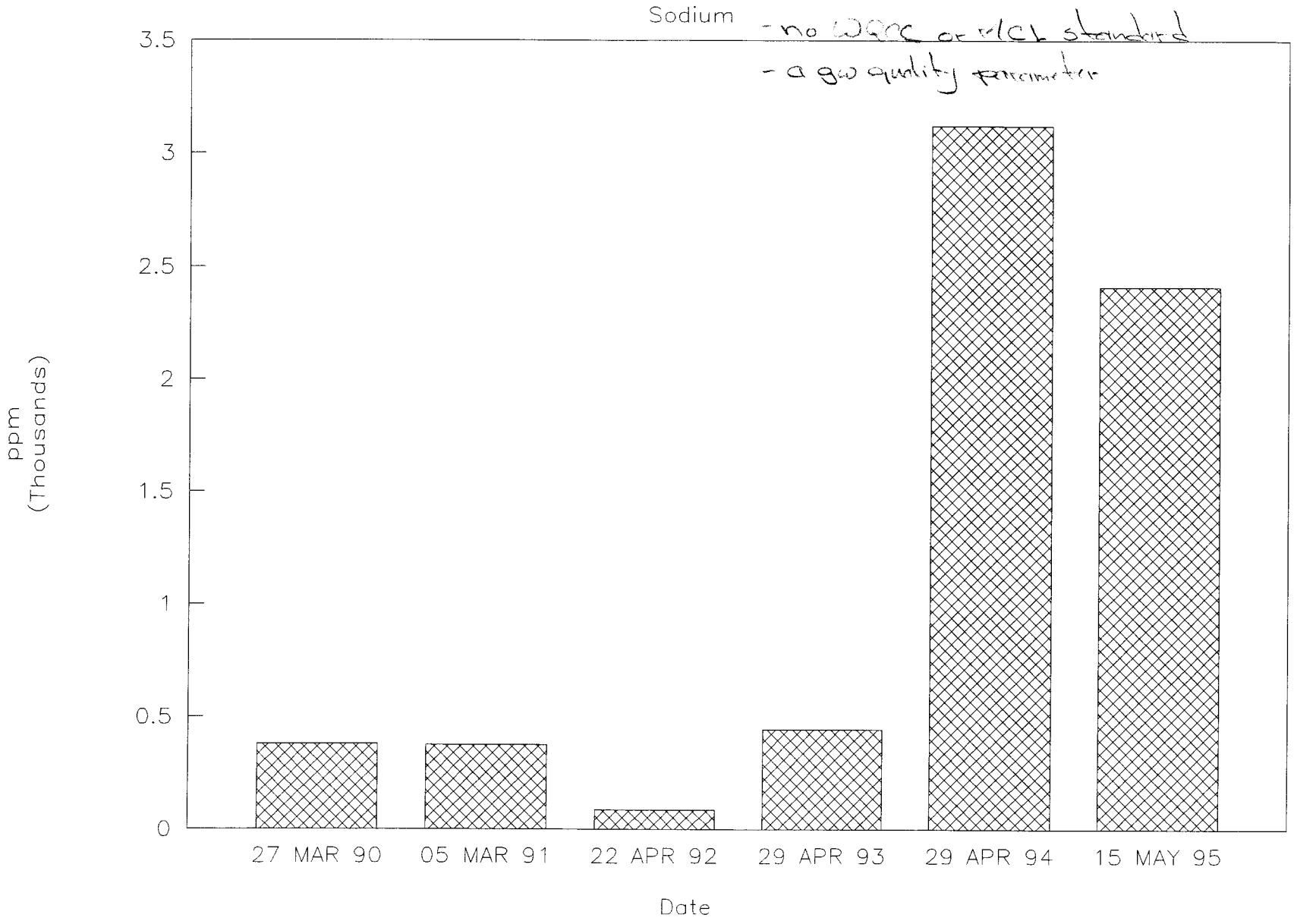
SMW 6

Potassium

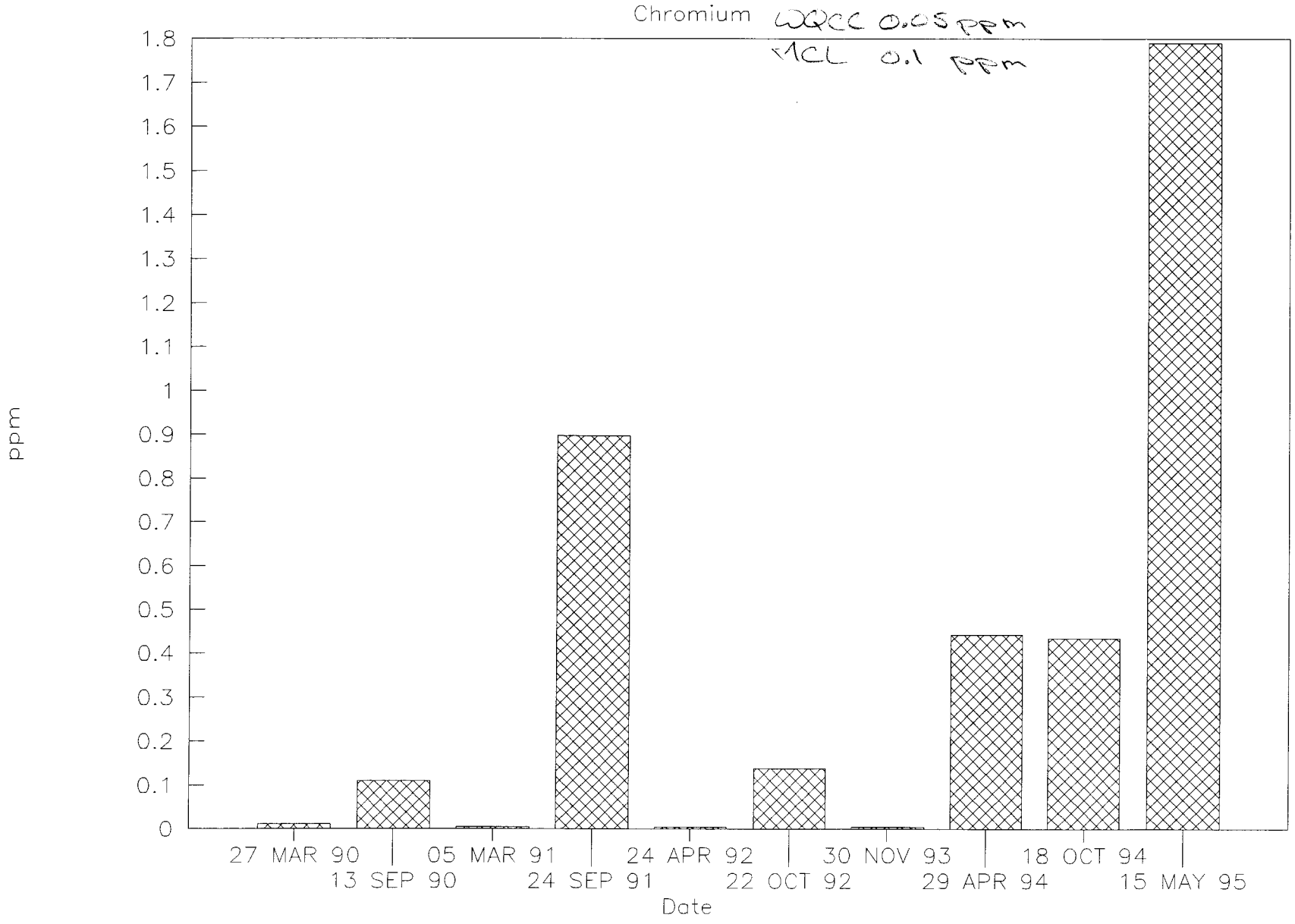
no WQCC or MCL standard



SMW 6


Sodium
- no WQCC or MCL standard
- a gw quality parameter
3.5
3
2.5
2
1.5
1
0.5
0
ppm
(Thousands)
27 MAR 90
05 MAR 91
22 APR 92
29 APR 93
29 APR 94
15 MAY 95
Date

SMW 6

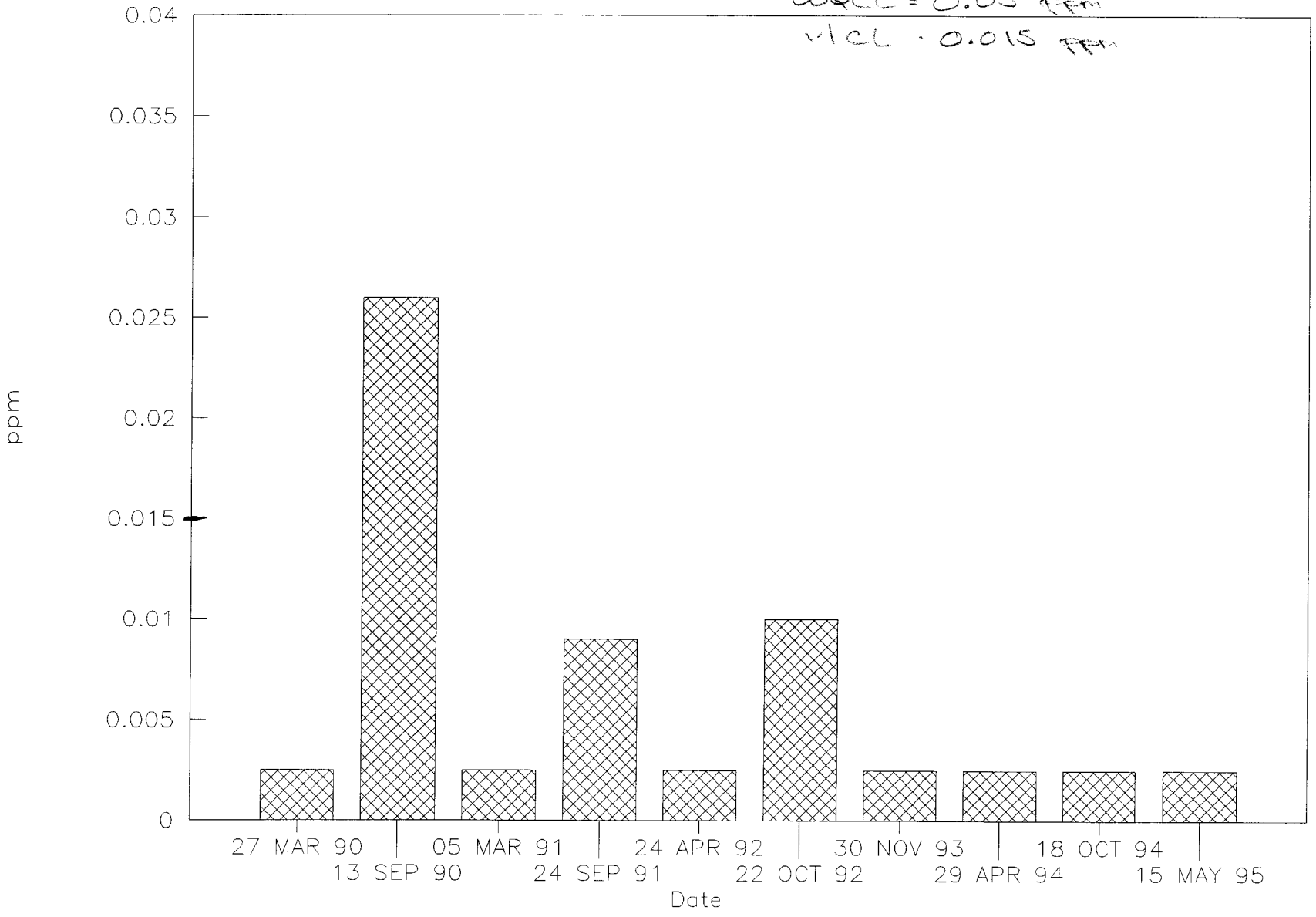

Chromium
WQCC 0.05 ppm
MCL 0.1 ppm
ppm
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
27 MAR 90
13 SEP 90
05 MAR 91
24 SEP 91
24 APR 92
22 OCT 92
30 NOV 93
29 APR 94
18 OCT 94
15 MAY 95
Date

SMW 6

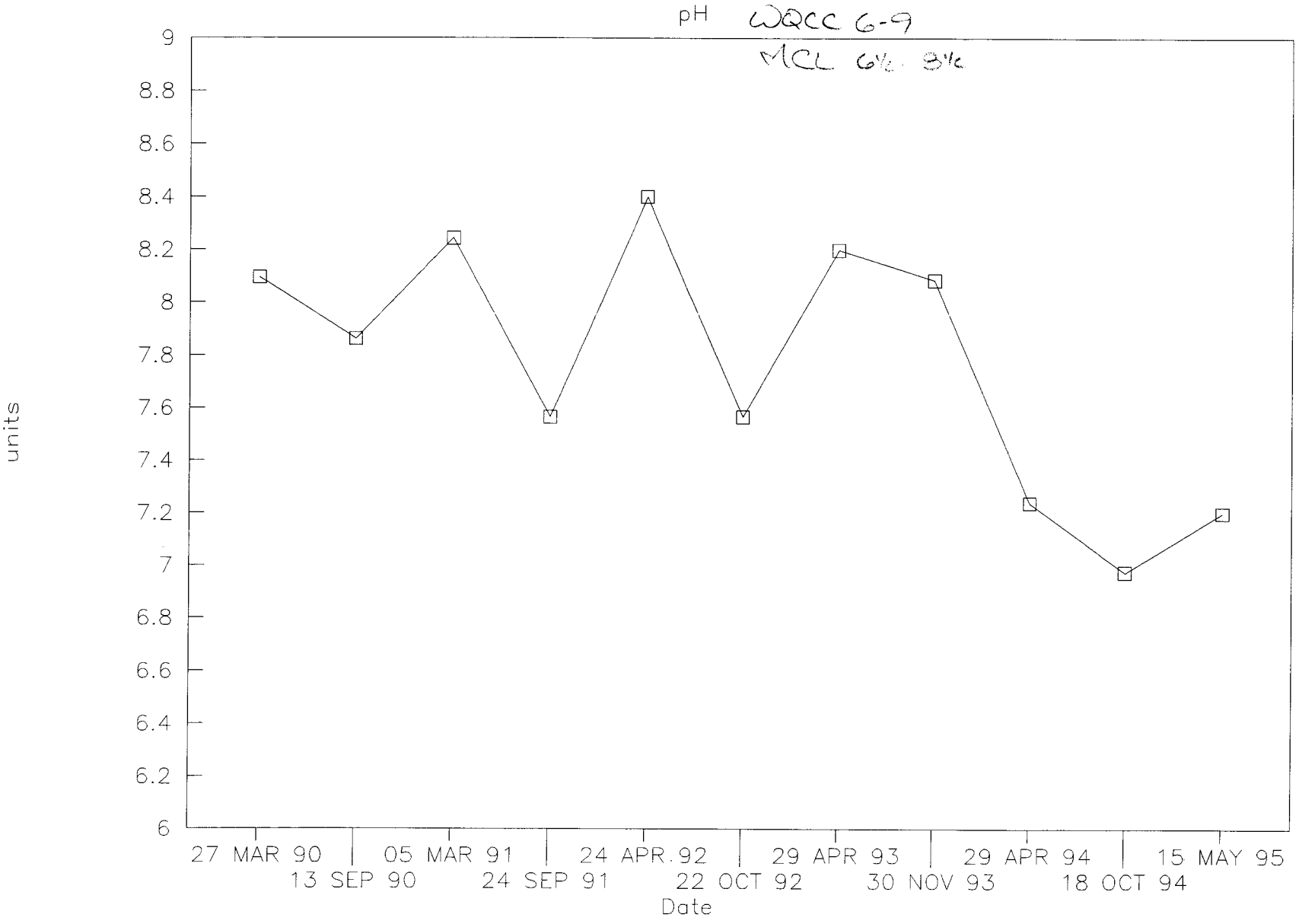
Lead

WQCC = 0.05 ppm

MCL = 0.015 ppm

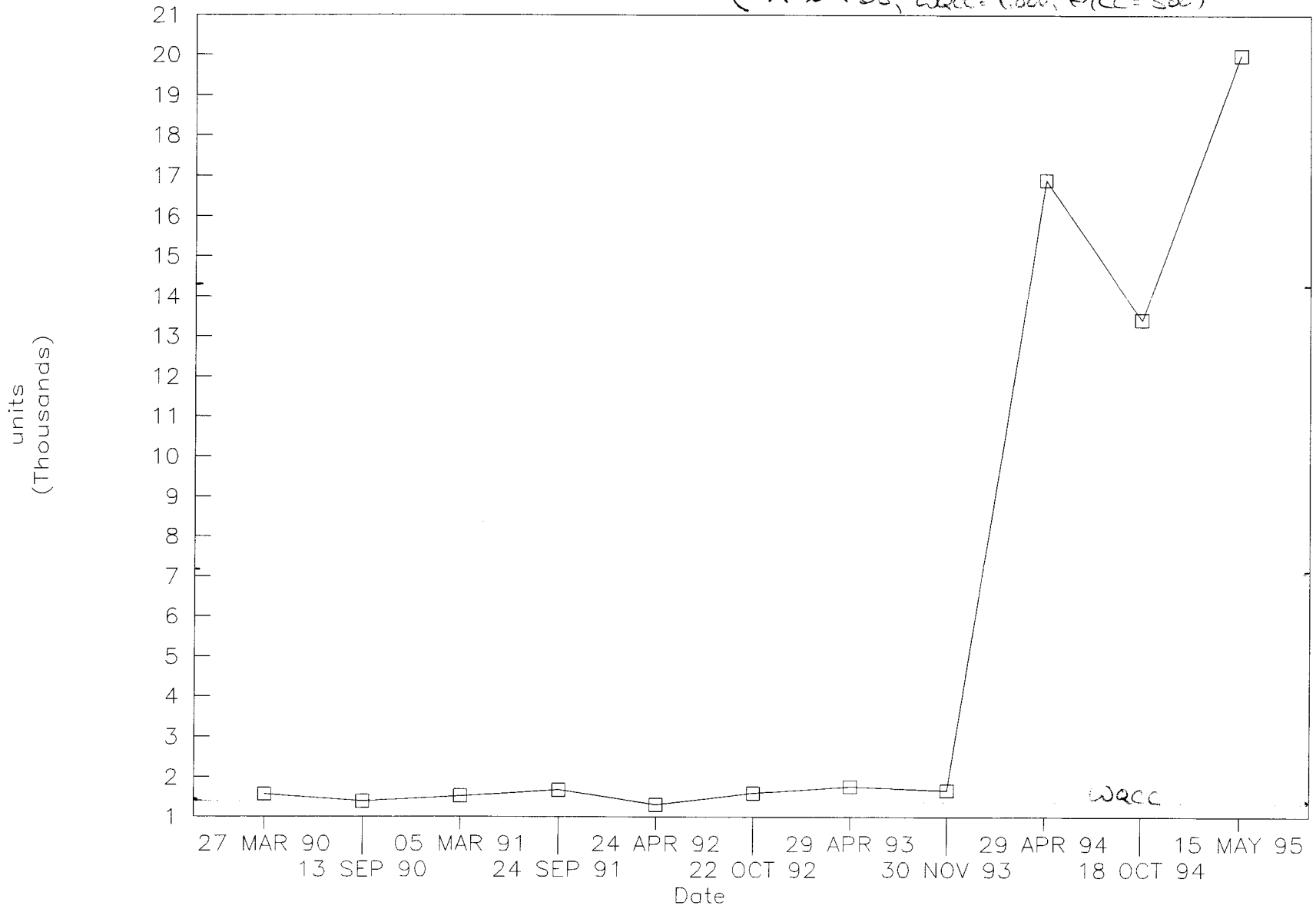


SMW 6


pH
WQCC 6-9
MCL 6% 8%
units
9
8.8
8.6
8.4
8.2
8
7.8
7.6
7.4
7.2
7
6.8
6.6
6.4
6.2
6
27 MAR 90
13 SEP 90
05 MAR 91
24 SEP 91
24 APR 92
22 OCT 92
29 APR 93
30 NOV 93
29 APR 94
18 OCT 94
15 MAY 95
Date

SMW 6

EC (x.7 ≈ TDS, WQCC = 1,000, MCL = 500)



Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Prepared by:	Lynn Shelton	Telephone:	722-0227
Facility Name:	GIANT CINIZA	EPA ID #:	NMD000333211-2
Date:	Spring, 95	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)=	0.0009375	n(b)=	16		

Please list the current values for this monitoring well.

	Value	(Value - X(m))2
1	9.09	0.0036
2	9.1	0.0025
3	9.1	0.0025
4	9.1	0.0025
Total 1	36.39	Total 2 0.0111

Mean value X(m)	9.0975	t(m)=	5.841
Variance S(m)2	0.0037	W(m)=	0.000925

t(*)=	13.6132
t(c)=	4.3843

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

Prepared by:	Lynn Shelton	Telephone:	722-0227
Facility Name:	GIANT CINIZA	EPA ID #:	NMD000333211-2
Date:	Spring, 95	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)=	0.0009375	n(b)=	16		

Please list the current values for this monitoring well.

	Value	(Value - X(m))2
1	9.11	0.0016
2	9.12	0.0009
3	9.1	0.0025
4	9.11	0.0016
Total 1	36.44	Total 2 0.0066

Mean value X(m)	9.11	t(m)=	5.841
Variance S(m)2	0.0022	W(m)=	0.00055

t(*)=	15.5569
t(c)=	4.0171

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

Prepared by:	Lynn Shelton	Telephone:	722-0227
Facility Name:	GIANT CINIZA	EPA ID #:	NMD000333211-2
Date:	Spring, 95	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)=	0.0009375	n(b)=	16		

Please list the current values for this monitoring well.

	Value	(Value - X(m))2
1	9.08	0.0049
2	9.08	0.0049
3	9.08	0.0049
4	9.07	0.0064
Total 1	36.31	Total 2 0.0211

Mean value X(m)	9.0775	t(m)=	5.841
Variance S(m)2	0.0070	W(m)=	0.001758

t(*)=	10.9300
t(c)=	4.8346

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

Prepared by:	Lynn Shelton	Telephone:	722-0227
Facility Name:	GIANT CINIZA	EPA ID #:	NMD000333211-2
Date:	Spring, 95	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)=	0.0009375	n(b)=	16		

Please list the current values for this monitoring well.

	Value	(Value - X(m))2
1	8.7	0.2025
2	8.65	0.2500
3	8.65	0.2500
4	8.63	0.2704
Total 1	34.63	Total 2 0.9729

Mean value X(m)	8.6575	t(m)=	5.841
Variance S(m)2	0.3243	W(m)=	0.081075

t(*)=	0.5151
t(c)=	5.8079

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

Prepared by:	Lynn Shelton	Telephone:	722-0227
Facility Name:	GIANT CINIZA	EPA ID #:	NMD000333211-2
Date:	Spring, 95	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	1100	156.25
2	1090	506.25
3	1070	1806.25
4	1080	1056.25
Total 1	4340	Total 2 3525.00

Mean value X(m)	1085	t(m)=	4.541
Variance S(m)2	1175.00	W(m)=	293.75

t(*)=	5.1362
t(c)=	4.0750

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

Prepared by:	Lynn Shelton	Telephone:	722-0227
Facility Name:	GIANT CINIZA	EPA ID #:	NMD000333211-2
Date:	Spring, 95	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	1090	506.25
2	1100	156.25
3	1110	6.25
4	1100	156.25
Total 1	4400	Total 2 825.00

Mean value X(m)	1100	t(m)=	4.541
Variance S(m)2	275.0000	W(m)=	68.75

t(*)=	9.1226
t(c)=	3.4265

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

Prepared by:	Lynn Shelton	Telephone:	722-0227
Facility Name:	GIANT CINIZA	EPA ID #:	NMD000333211-2
Date:	Spring, 95	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	1080	1056.25
2	1090	506.25
3	1090	506.25
4	1090	506.25
Total 1	4350	Total 2 2575.00

Mean value X(m)	1087.5	t(m)=	4.541
Variance S(m)2	858.3333	W(m)=	214.5833

t(*)=	5.9021
t(c)=	3.9550

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

Signature

Calculation Sheet for Semi-Annual Evaluation of Indicator Parameters

Prepared by:	Lynn Shelton	Telephone:	722-0227
Facility Name:	GIANT CINIZA	EPA ID #:	NMD000333211-2
Date:	Spring, 95	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	1112	0.25
2	1116	12.25
3	1116	12.25
4	1115	6.25
Total 1	4459	Total 2 31.00

Mean value X(m)	1114.75	t(m)=	4.541
Variance S(m)2	10.3333	W(m)=	2.583333

t(*)=	13.3780
t(c)=	2.6544

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

Signature

TOLERANCE INTERVAL

1995

LEAD

SMW-3 5-95

MEAN-	0.0019	SD	0.0015

DATE	RESULT		TOL LIMIT	UNITS	
5-95	0.0025	*	0.005	ppm	Does not exceed the tolerance limit.

SMW-4 5-95

MEAN-	0.002	SD	0.0014

DATE	RESULT		TOL LIMIT	UNITS	
5-95	0.0025	*	0.005	ppm	Does not exceed the tolerance limit.

SMW-5 5-95

MEAN-	0.0018	SD	0.0015

DATE	RESULT		TOL LIMIT	UNITS	
5-95	0.0025	*	0.005	ppm	Does not exceed the tolerance limit.

SMW-6 5-95

MEAN-	0.0018	SD	0.0015

DATE	RESULT		TOL LIMIT	UNITS	
5-95	0.0025		0.005	ppm	Does not exceed the tolerance limit.

* 1/2 of Reporting Limit.

TLS95

TOLERANCE INTERVAL

CHROME

SMW-3 5-95

MEAN-	0.0643	SD	0.1971

DATE	RESULT		TOL LIMIT	UNITS	
5-95	0.01		0.459	ppm	Does not exceed the tolerance limit.

SMW-4 5-95

MEAN-	0.0046	SD	0.0033

DATE	RESULT		TOL LIMIT	UNITS	
5-95	0.005	*	0.011	ppm	Does not exceed the tolerance limit.

SMW-5 5-95

MEAN-	0.0155	SD	0.0288

DATE	RESULT		TOL LIMIT	UNITS	
5-95	0.01		0.073	ppm	Does not exceed the tolerance limit.

SMW-6 5-95

MEAN-	0.1933	SD	0.4679

DATE	RESULT		TOL LIMIT	UNITS	
5-95	1.79		1.129	ppm	Exceeds the tolerance limit by 159%.

* 1/2 of reporting limit.

TLS95

TOLERANCE INTERVAL

pH

SMW-3 5-95

MEAN-	7.8235	SD	0.1378

DATE	RESULT		TOL LIMIT	UNITS	
5-95	7.8		8.099	---	Does not exceed the tolerance limit.

SMW-4 5-95

MEAN-	8.3629	SD	0.1633

DATE	RESULT		TOL LIMIT	UNITS	
5-95	8.5		8.690	---	Does not exceed the tolerance limit.

SMW-5 5-95

MEAN-	8.52	SD	0.327

DATE	RESULT		TOL LIMIT	UNITS	
5-95	8.8		9.171	---	Does not exceed the tolerance limit.

SMW-6 5-95

MEAN-	7.875	SD	0.4597

DATE	RESULT		TOL LIMIT	UNITS	
5-95	7.2		8.794	---	Does not exceed the tolerance limit.

TLS95

TOLERANCE INTERVAL

EC

SMW-3 5-95

MEAN-	3193.46	SD	329.4

DATE	RESULT		TOL LIMIT	UNITS	
5-95	2700		3852.260	---	Does not exceed the tolerance limit.

SMW-4 5-95

MEAN-	1233.39	SD	94.69

DATE	RESULT		TOL LIMIT	UNITS	
5-95	1300		1422.770	---	Does not exceed the tolerance limit.

SMW-5 5-95

MEAN-	1132.71	SD	73.09

DATE	RESULT		TOL LIMIT	UNITS	
5-95	1100		1278.890	---	Does not exceed the tolerance limit.

SMW-6 5-95

MEAN-	4804.82	SD	6376.63

DATE	RESULT		TOL LIMIT	UNITS	
5-95	20000		17558.08	---	Exceeds the tolerance limit by 114%.

TLS95

TOLERANCE INTERVAL

TEMPERATURE

SMW-3 5-95

MEAN-	54.93	SD	2.4

DATE	RESULT	TOL LIMIT	UNITS	
5-95	57	59.73	degrees	Does not exceed the tolerance limit.

SMW-4 5-95

MEAN-	55.52	SD	2.55

DATE	RESULT	TOL LIMIT	UNITS	
5-95	56.25	60.62	degrees	Does not exceed the tolerance limit.

SMW-5 5-95

MEAN-	54.61	SD	2.81

DATE	RESULT	TOL LIMIT	UNITS	
5-95	56.75	60.23	degrees	Does not exceed the tolerance limit.

SMW-6 5-95

MEAN-	54.98	SD	3.77

DATE	RESULT	TOL LIMIT	UNITS	
5-95	57.5	62.52	degrees	Does not exceed the tolerance limit.

TLS95

TOLERANCE INTERVAL

WATER LEVEL

SMW-3	5-95	MEAN-	6851.78	SD	2.18

DATE	RESULT		TOL LIMIT	UNITS	
5-95	6853.16		6856.14	feet	Does not exceed the tolerance limit.

SMW-4	5-95	MEAN-	6848.99	SD	1.34

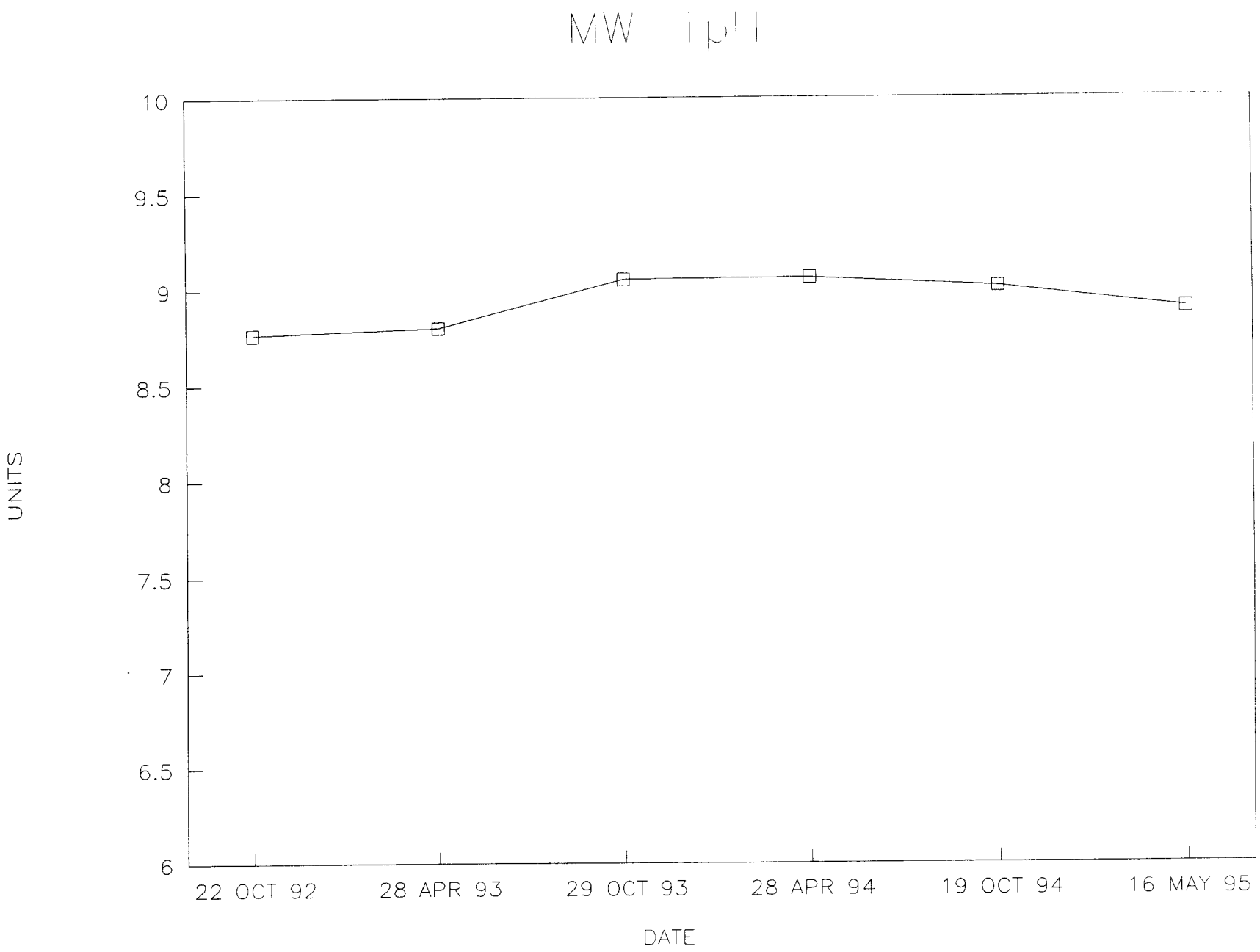
DATE	RESULT		TOL LIMIT	UNITS	
5-95	6849.30		6851.67	feet	Does not exceed the tolerance limit.

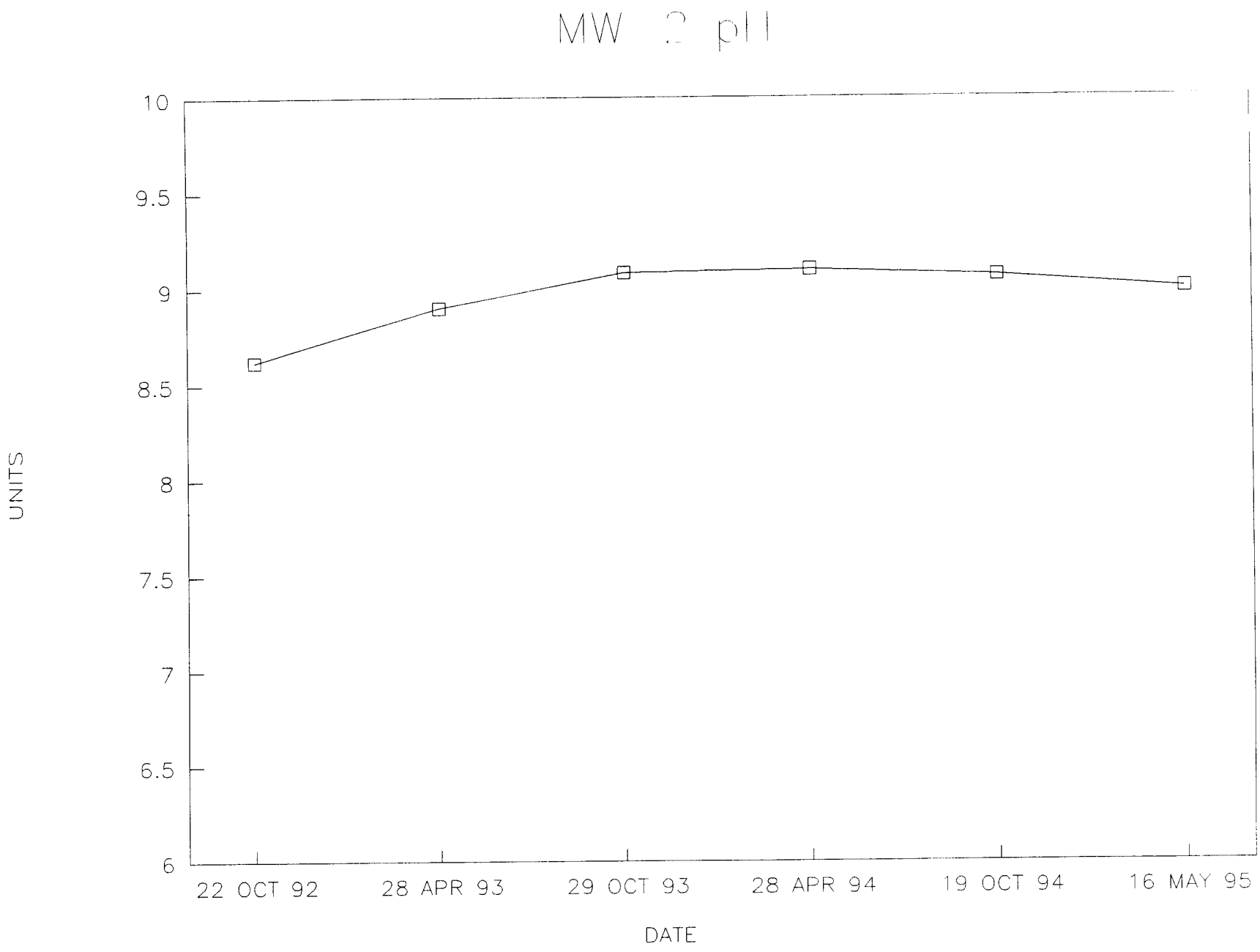
SMW-5	5-95	MEAN-	6847.47	SD	1.1

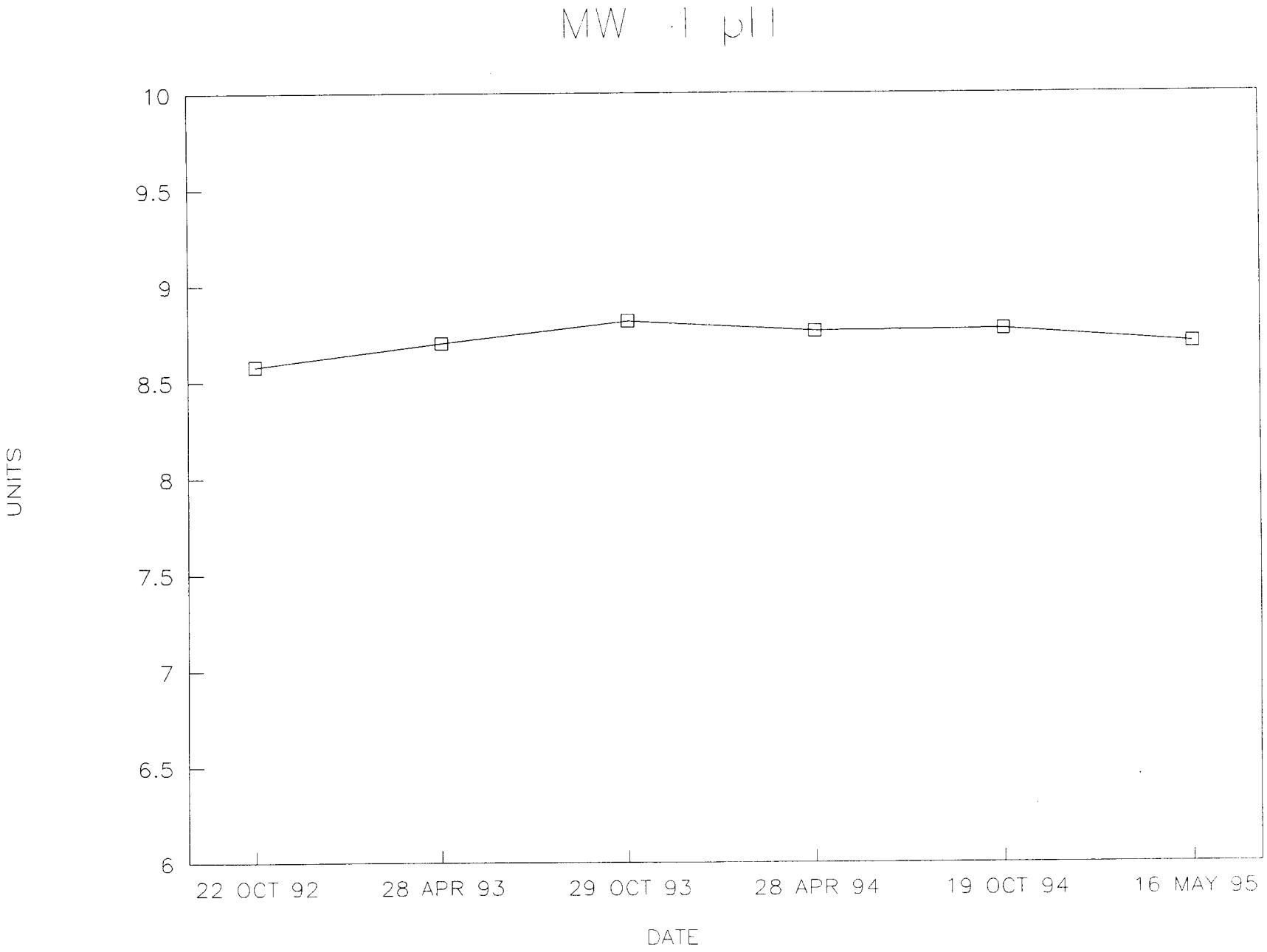
DATE	RESULT		TOL LIMIT	UNITS	
5-95	6848.38		6849.67	feet	Does not exceed the tolerance limit.

SMW-6	5-95	MEAN-	6852.98	SD	10.32

DATE	RESULT		TOL LIMIT	UNITS	
5-95	6832.46		6873.62	feet	Does not exceed the tolerance limit.


MW 1pH
10
9.5
9
8.5
8
7.5
7
6.5
6
UNITS
22 OCT 92
28 APR 93
29 OCT 93
28 APR 94
19 OCT 94
16 MAY 95
DATE


MW 2 pH
10
9.5
9
8.5
8
7.5
7
6.5
6
UNITS
22 OCT 92
28 APR 93
29 OCT 93
28 APR 94
19 OCT 94
16 MAY 95
DATE


MW -1 pH
10
9.5
9
8.5
8
7.5
7
6.5
6
UNITS
22 OCT 92
28 APR 93
29 OCT 93
28 APR 94
19 OCT 94
16 MAY 95
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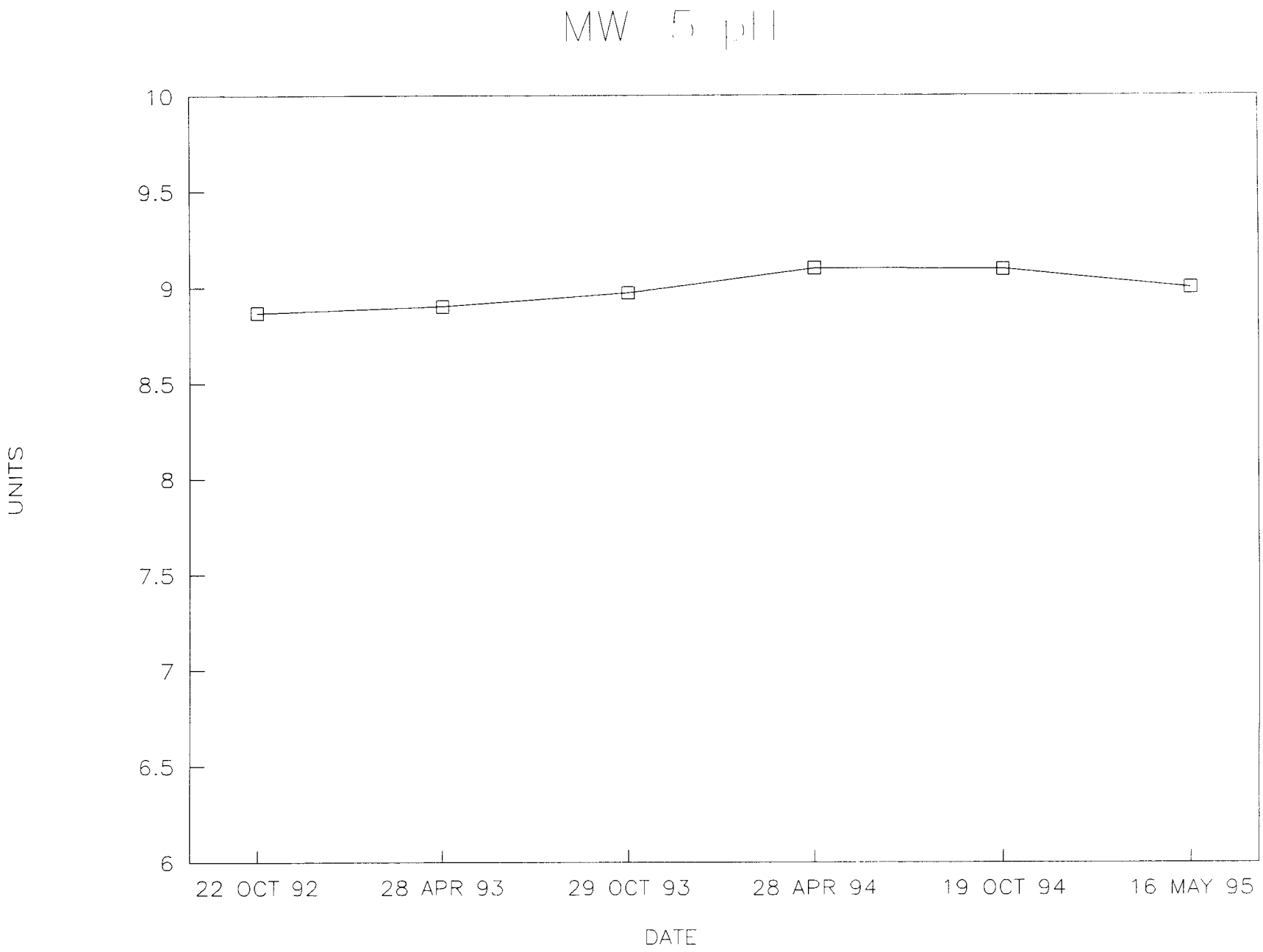
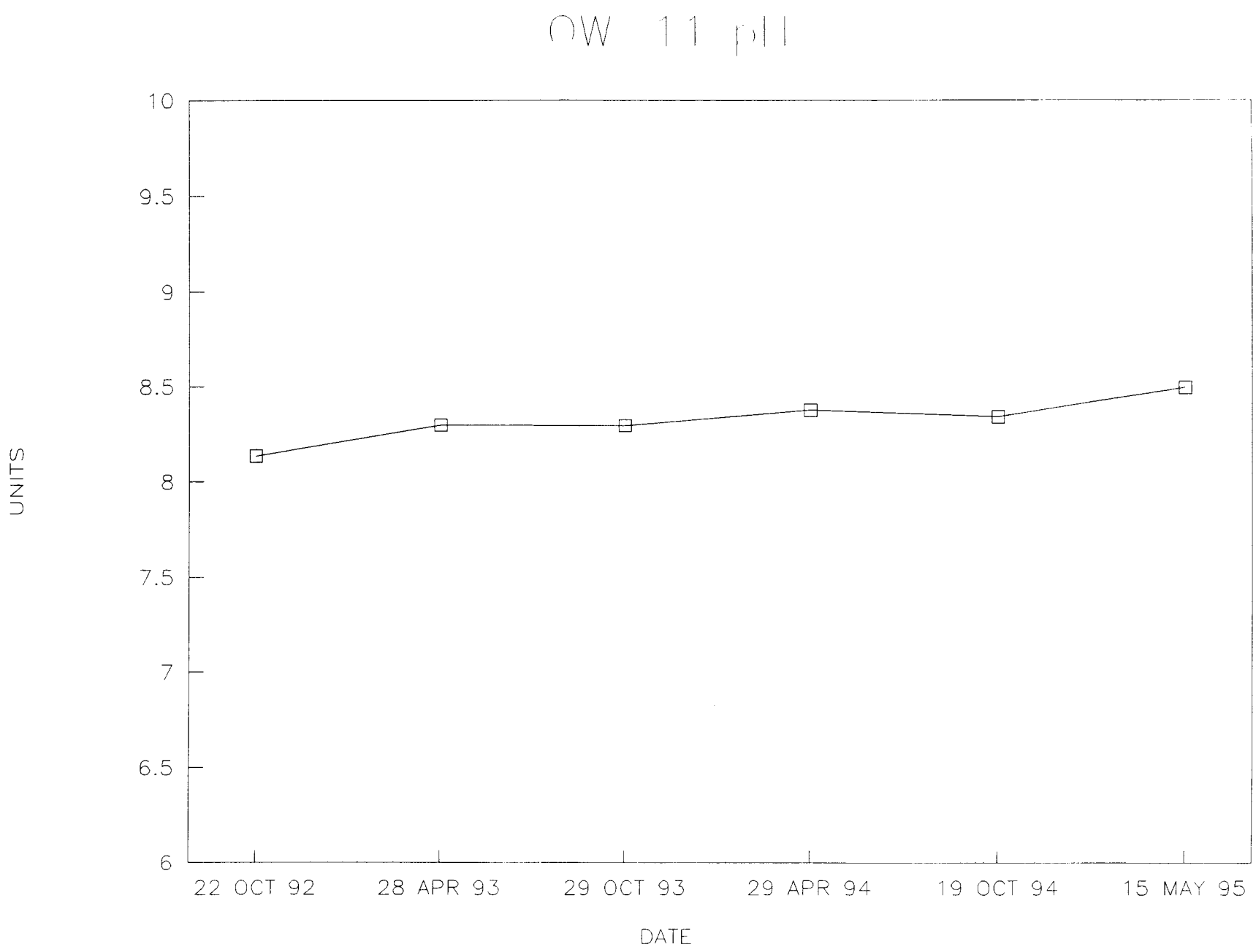
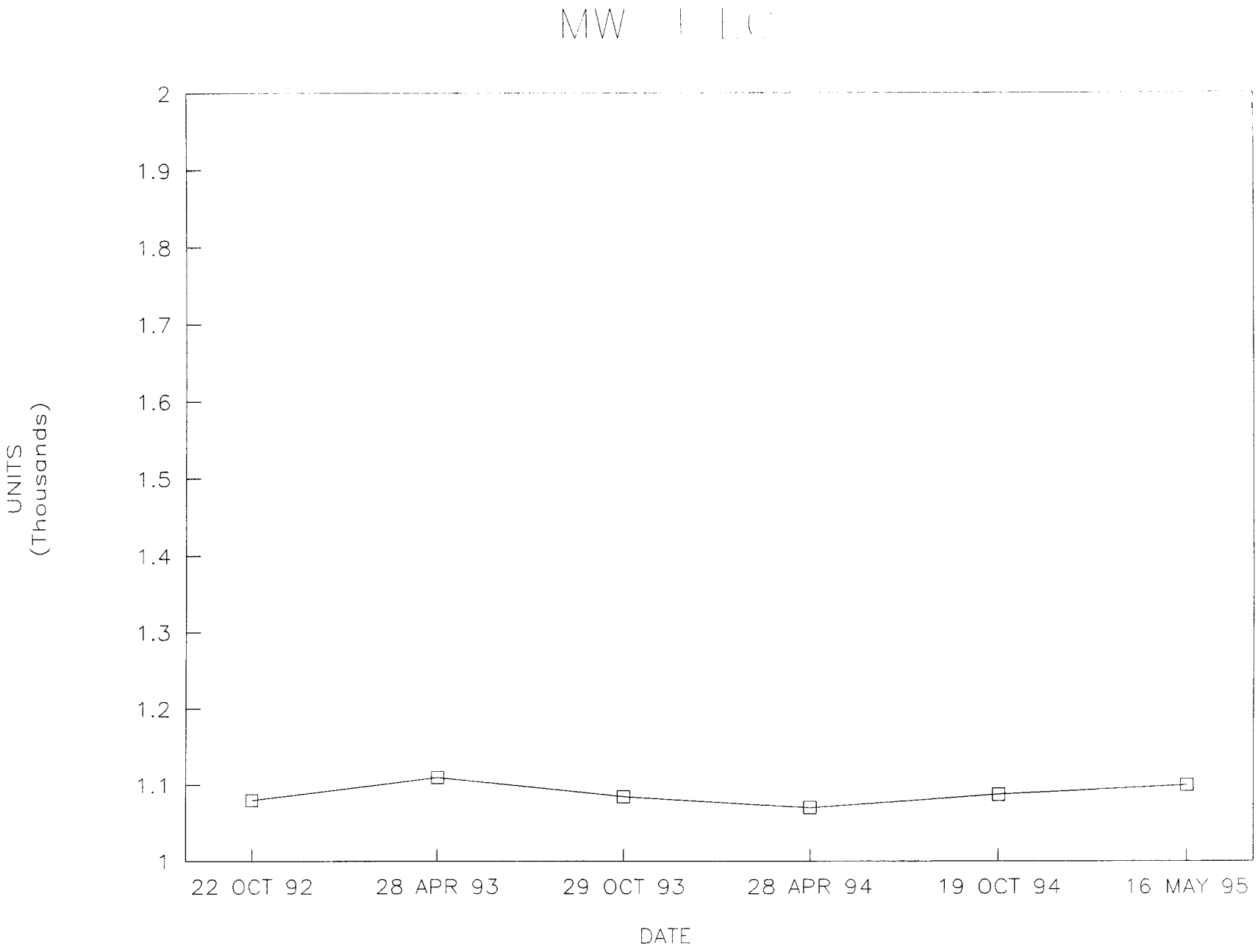

MW 5 pH
10
9.5
9
8.5
8
7.5
7
6.5
6
UNITS
22 OCT 92
28 APR 93
29 OCT 93
28 APR 94
19 OCT 94
16 MAY 95
DATE


OW 11 pH
10
9.5
9
8.5
8
7.5
7
6.5
6
UNITS
22 OCT 92
28 APR 93
29 OCT 93
29 APR 94
19 OCT 94
15 MAY 95
DATE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19 OCT 94
16 MAY 95
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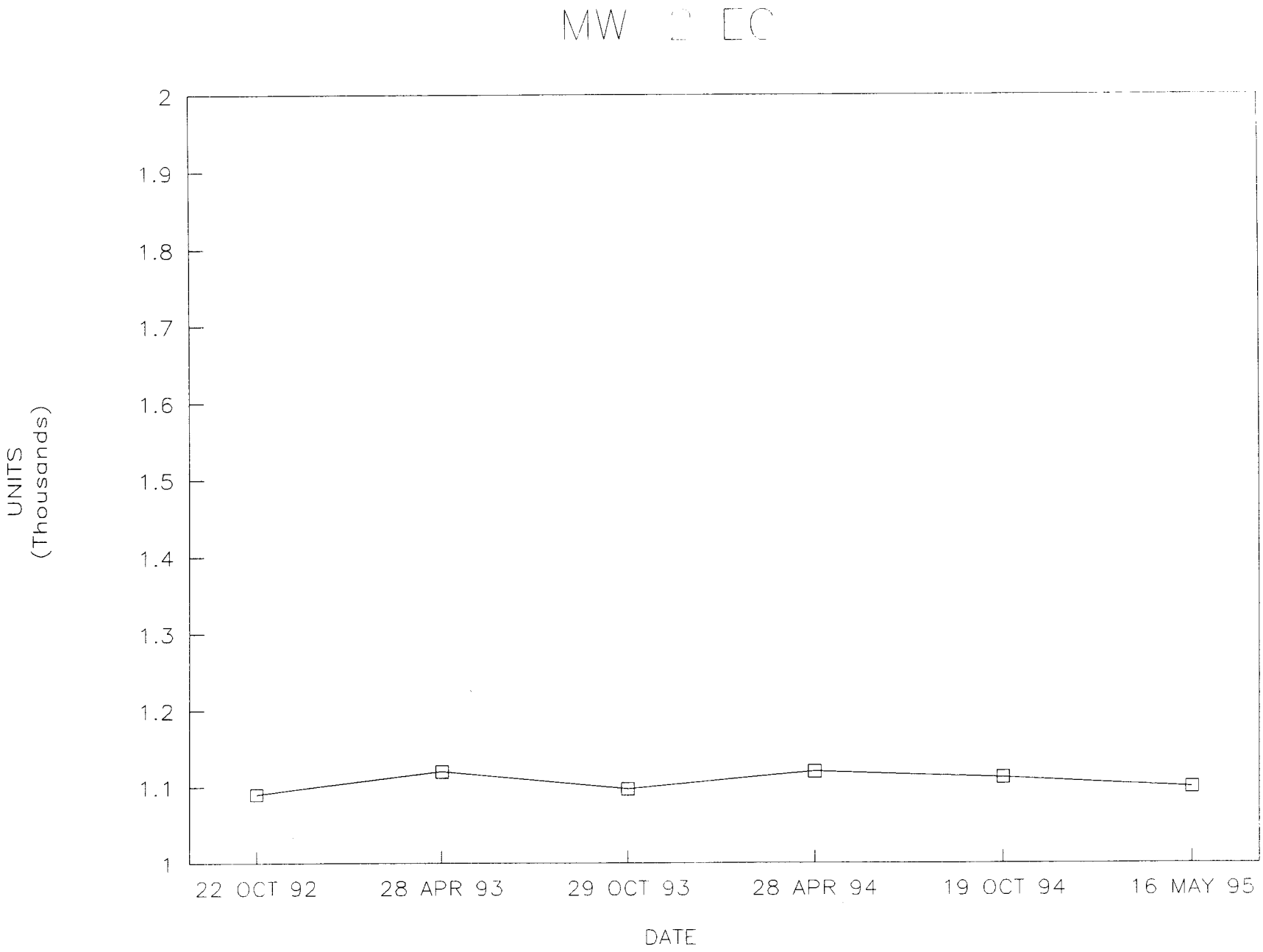
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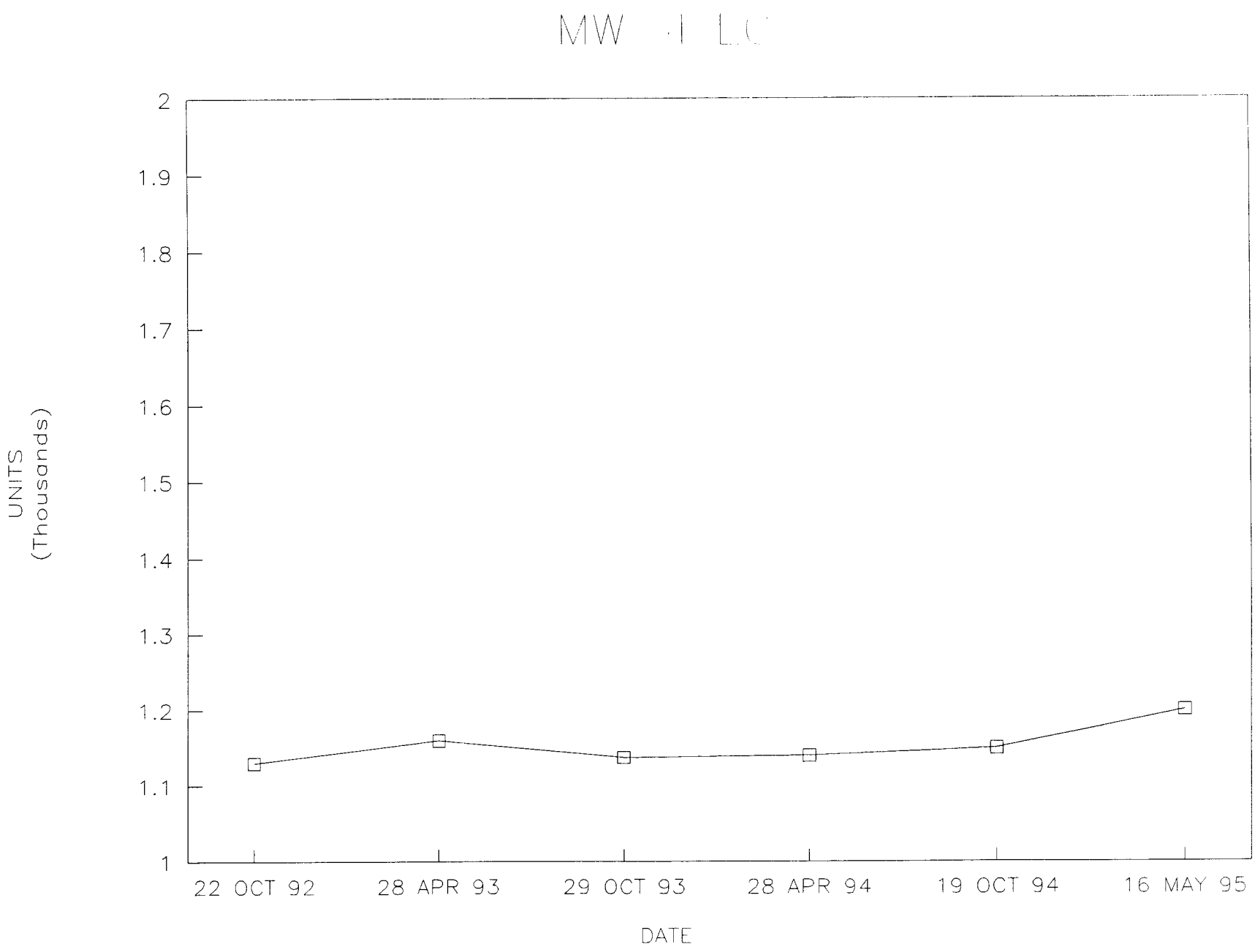
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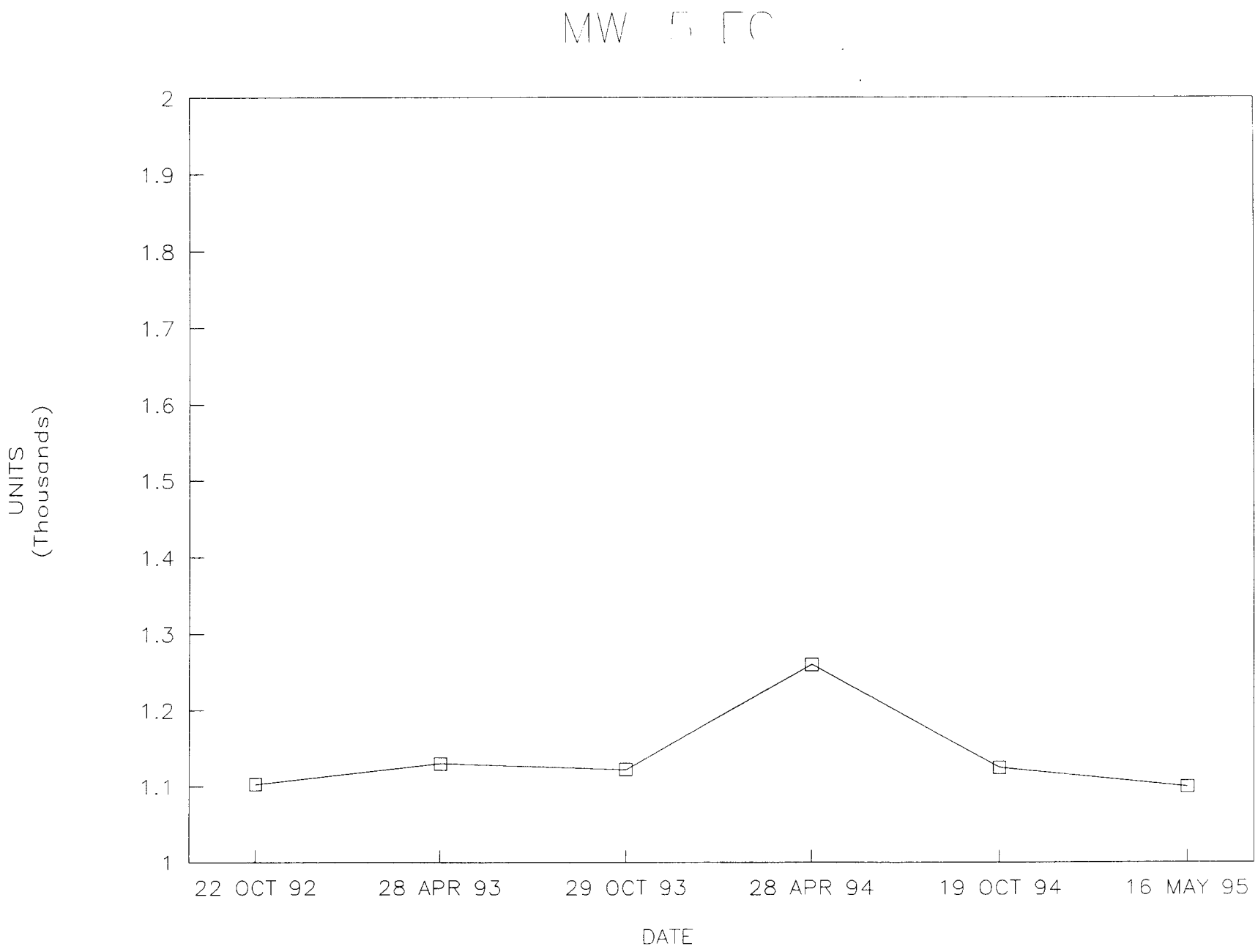
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22 OCT 92
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29 OCT 93
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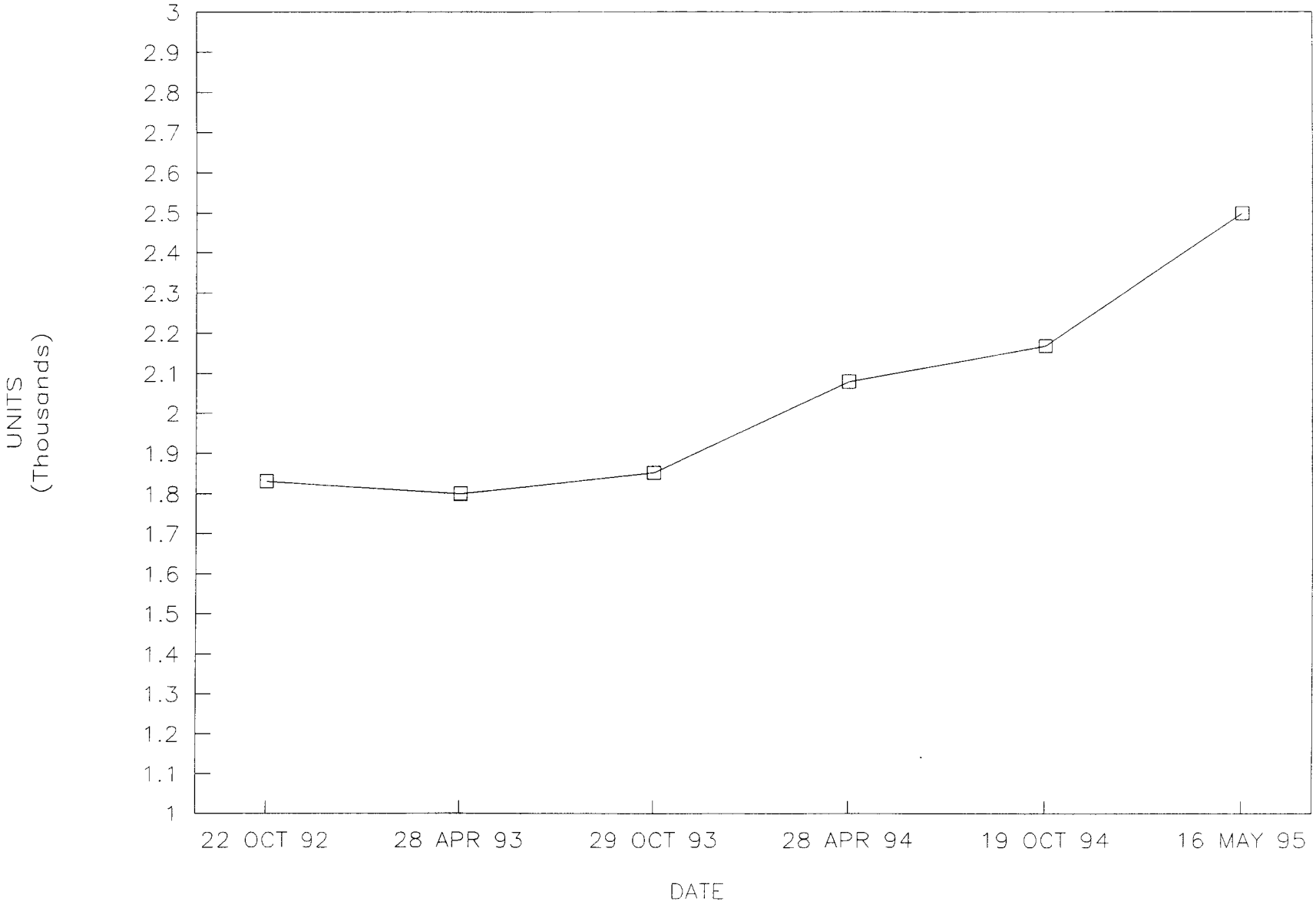
19 OCT 94
16 MAY 95
DATE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22 OCT 92
28 APR 93
29 OCT 93
28 APR 94
19 OCT 94
16 MAY 95
DATE

MW-1 GIANT REFINING - CINIZA

Volatile Organics (8240)

Parameter	29 OCT 93 Result	28 APR 94 Result	10 OCT 94 Result	16 MAY 95 Result	Units
Chloromethane	ND	ND	ND	ND	ug/L
Bromomethane	ND	ND	ND	ND	ug/L
Vinyl chloride	ND	ND	ND	ND	ug/L
Chloroethane	ND	ND	ND	ND	ug/L
Methylene chloride	ND	ND	ND	ND	ug/L
Acetone	ND	ND	ND	ND	ug/L
Carbon disulfide	ND	ND	ND	ND	ug/L
1,1-Dichloroethene	ND	ND	ND	ND	ug/L
1,1-Dichloroethane	ND	ND	ND	ND	ug/L
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ug/L
Chloroform	ND	ND	ND	ND	ug/L
1,2-Dichloroethane	ND	ND	ND	ND	ug/L
2-Butanone	ND	ND	ND	ND	ug/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ug/L
Carbon tetrachloride	ND	ND	ND	ND	ug/L
Vinyl acetate	ND	ND	ND	ND	ug/L
Bromodichloromethane	ND	ND	ND	ND	ug/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ug/L
Trichloroethene	ND	ND	ND	ND	ug/L
Chlorodibromomethane	ND	ND	ND	ND	ug/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ug/L
Benzene	ND	ND	ND	ND	ug/L
cis-1,3-Dichloropropene	ND	ND	ND	ND	ug/L
2-Chloroethyl vinyl ether	ND	ND	ND	ND	ug/L
Bromoform	ND	ND	ND	ND	ug/L
4-Methyl-2-pentanone	ND	ND	ND	ND	ug/L
2-Hexanone	ND	ND	ND	ND	ug/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ug/L
Tetrachoroethene	ND	ND	ND	ND	ug/L
Toluene	ND	ND	ND	ND	ug/L
Chlorobenzene	ND	ND	ND	ND	ug/L
Ethylbenzene	ND	ND	ND	ND	ug/L
Stryene	ND	ND	ND	ND	ug/L
Xylenes (total)	ND	ND	ND	ND	ug/L

MW-1 GIANT REFINING - CINIZA

Dissolved Metals

Parameter	23 APR 92 Result	28 APR 93 Result	29 APR 94 Result	16 MAY 95 Result	Units
Arsenic	ND	ND	ND	ND	mg/L
Barium	0.09	ND	0.016	0.01	mg/L
Cadmium	0.0012	ND	ND	ND	mg/L
Calcium	1.8	1.1	1.2	1.8	mg/L
Magnesium	0.26	0.2	0.3	0.2	mg/L
Manganese	0.10	ND	0.016	ND	mg/L
Potassium	ND	ND	ND	ND	mg/L
Selenium	ND	ND	ND	ND	mg/L
Silver	ND	ND	ND	ND	mg/L
Sodium	72		254	242	mg/L

MW-1 GIANT REFINING - CINIZA

Total Metals

Parameter	28 APR 93 Result	29 OCT 93 Result	28 APR 94 Result	19 OCT 94 Result	16 MAY 95 Result	Units
Chromium	ND	ND	ND	.021	ND	mg/L
Lead	ND	.036	ND	.004	.002	mg/L
Mercury	ND	---	ND	---	ND	mg/L

MW-1 GIANT REFINING - CINIZA

General Inorganics

Parameter	29 OCT 93 Result	28 APR 94 Result	19 OCT 94 Result	16 MAY 95 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	---	301	---	320	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	---	48	---	23	mg/L
Chloride	---	52	---	47	mg/L
pH	9.05	9.06	8.97	8.9	units
pH	9		9		units
pH	9.08		9.03		units
pH	9.08		9.05		units
	9.0525	9.06	9.0125	8.9	
Phenolics	ND	ND	---	ND	mg/L
Sulfate	---	160	---	150	mg/L
Specific Conductance at 25 deg.C	1090	1070	1090	1100	umhos/cm
Specific Conductance at 25 deg.C	1080	---	1080		umhos/cm
Specific Conductance at 25 deg.C	1080	---	1080		umhos/cm
Specific Conductance at 25 deg.C	1090	---	1100		umhos/cm
	1085	1070	1087.5	1100	
Total Organic Carbon	ND	ND	1.0	36	mg/L
Total Organic Carbon	ND	ND	1.0	36	mg/L
Total Organic Carbon	---	---	---	---	mg/L
Total Organic Carbon	---	---	---	---	mg/L
Total Organic Halogen as Cl	ND	ND	ND	30	ug/L
Total Organic Halogen as Cl	ND	20	ND	30	ug/L
Total Organic Halogen as Cl	---	---	---	---	ug/L
Total Organic Halogen as Cl	---	---	---	---	ug/L
Total Dissolved Solids	---	720	---	---	mg/L
Water Elevation	6864.61	6873.34	6872.97	6870.66	ft

MW-2 GIANT REFINING - CINIZA

Volatile Organics

Parameter	28 APR 93 Result	29 OCT 93 Result	28 APR 94 Result	19 OCT 94 Result	16 MAY 95 Result	Units
Chloromethane	ND	ND	ND	ND	ND	ug/L
Bromomethane	ND	ND	ND	ND	ND	ug/L
Vinyl chloride	ND	ND	ND	ND	ND	ug/L
Chloroethane	ND	ND	ND	ND	ND	ug/L
Methylene chloride	ND	ND	ND	ND	ND	ug/L
Acetone	ND	ND	ND	ND	ND	ug/L
Carbon disulfide	ND	ND	ND	ND	ND	ug/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	ug/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	ug/L
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ND	ug/L
Chloroform	ND	ND	ND	ND	ND	ug/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	ug/L
2-Butanone	ND	ND	ND	ND	ND	ug/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ug/L
Carbon tetrachloride	ND	ND	ND	ND	ND	ug/L
Vinyl acetate	ND	ND	ND	ND	ND	ug/L
Bromodichloromethane	ND	ND	ND	ND	ND	ug/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ug/L
Trichloroethene	ND	ND	ND	ND	ND	ug/L
Chlorodibromomethane	ND	ND	ND	ND	ND	ug/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ug/L
Benzene	ND	ND	ND	ND	ND	ug/L
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ug/L
2-Chloroethyl vinyl ether	ND	ND	ND	ND	ND	ug/L
Bromoform	ND	ND	ND	ND	ND	ug/L
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ug/L
2-Hexanone	ND	ND	ND	ND	ND	ug/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ug/L
Tetrachoroethene	ND	ND	ND	ND	ND	ug/L
Toluene	ND	ND	ND	ND	ND	ug/L
Chlorobenzene	ND	ND	ND	ND	ND	ug/L
Ethylbenzene	ND	ND	ND	ND	ND	ug/L
Stryene	ND	ND	ND	ND	ND	ug/L
Xylenes (total)	ND	ND	ND	ND	ND	ug/L

MW-2 GIANT REFINING - CINIZA

Dissolved Metals

Parameter	23 APR 92 Result	28 APR 93 Result	28 APR 94 Result	16 MAY 95 Result	Units
Arsenic	ND	ND	ND	ND	mg/L
Barium	ND	0.015	0.021	0.02	mg/L
Cadmium	ND	ND	ND	ND	mg/L
Calcium	1.6	0.9	0.6	1.4	mg/L
Magnesium	0.18	0.1	ND	0.1	mg/L
Manganese	ND	ND	ND	ND	mg/L
Potassium	ND	ND	ND	ND	mg/L
Selenium	ND	ND	ND	ND	mg/L
Silver	ND	ND	ND	ND	mg/L
Sodium	78		257	246	mg/L

MW-2 GIANT REFINING - CINIZA

Total Metals

Parameter	28 APR 93 Result	29 OCT 93 Result	28 APR 94 Result	19 OCT 94 Result	16 MAY 95 Result	Units
Chromium	ND	ND	0.011	ND	ND	mg/L
Lead	ND	.003	ND	ND	ND	mg/L
Mercury	ND	---	ND	---	ND	mg/L

MW-2 GIANT REFINING - CINIZA

General Inorganics

Parameter	29 OCT 93 Result	28 APR 94 Result	19 OCT 94 Result	16 MAY 95 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	---	294	---	320	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	---	42	---	ND	mg/L
Chloride	---	61	---	58	mg/L
pH	9.09	9.10	9.06	9.00	units
pH	9.08		9.07		units
pH	9.1		9.06		units
pH	9.07		9.08		units
	9.085	9.1	9.0675	9.00	
Phenolics	---	ND	---	ND	mg/L
Sulfate	---	160	---	170	mg/L
Specific Conductance at 25 deg.C	1100	1120	1130	1100	umhos/cm
Specific Conductance at 25 deg.C	1110		1100		umhos/cm
Specific Conductance at 25 deg.C	1090		1110		umhos/cm
Specific Conductance at 25 deg.C	1090		1110		umhos/cm
	1097.5	1120	1112.5	1100.0	
Total Organic Carbon	NDN	ND	ND	ND	mg/L
Total Organic Carbon	NDN	ND	ND	ND	mg/L
Total Organic Carbon	---	---	---	---	mg/L
Total Organic Carbon	---	---	---	---	mg/L
Total Organic Halogen as Cl	ND	20	ND	40	ug/L
Total Organic Halogen as Cl	ND	20	ND	20	ug/L
Total Organic Halogen as Cl	---	---	----	---	ug/L
Total Organic Halogen as Cl	---	---	----	---	ug/L
Total Dissolved Solids	---	700	---	---	mg/L
Water Elevation	6872.656	6873.62	6870.01	6873.13	ft

MW-4 GIANT REFINING - CINIZA

Volatile Organics

Parameter	28 APR 93 Result	29 OCT 93 Result	28 APR 94 Result	19 OCT 94 Result	16 MAY 95 Result	Units
Chloromethane	ND	ND	ND	ND	ND	ug/L
Bromomethane	ND	ND	ND	ND	ND	ug/L
Vinyl chloride	ND	ND	ND	ND	ND	ug/L
Chloroethane	ND	ND	ND	ND	ND	ug/L
Methylene chloride	ND	ND	ND	ND	ND	ug/L
Acetone	ND	ND	ND	ND	ND	ug/L
Carbon disulfide	ND	ND	ND	ND	ND	ug/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	ug/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	ug/L
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ND	ug/L
Chloroform	ND	ND	ND	ND	ND	ug/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	ug/L
2-Butanone	ND	ND	ND	ND	ND	ug/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ug/L
Carbon tetrachloride	ND	ND	ND	ND	ND	ug/L
Vinyl acetate	ND	ND	ND	ND	ND	ug/L
Bromodichloromethane	ND	ND	ND	ND	ND	ug/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ug/L
Trichloroethene	ND	ND	ND	ND	ND	ug/L
Chlorodibromomethane	ND	ND	ND	ND	ND	ug/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ug/L
Benzene	ND	ND	ND	ND	ND	ug/L
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ug/L
2-Chloroethyl vinyl ether	ND	ND	ND	ND	ND	ug/L
Bromoform	ND	ND	ND	ND	ND	ug/L
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ug/L
2-Hexanone	ND	ND	ND	ND	ND	ug/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ug/L
Tetrachoroethene	ND	ND	ND	ND	ND	ug/L
Tolukebe	ND	ND	ND	ND	ND	ug/L
Chlorobenzene	ND	ND	ND	ND	ND	ug/L
Ethylbenzene	ND	ND	ND	ND	ND	ug/L
Stryene	ND	ND	ND	ND	ND	ug/L
Xylenes (total)	ND	ND	ND	ND	ND	ug/L

MW-4 GIANT REFINING - CINIZA

Dissolved Metals

Parameter	23 APR 92 Result	28 APR 93 Result	28 APR 94 Result	16 MAY 95 Result	Units
Arsenic	ND	ND	ND	ND	mg/L
Barium	0.06	0.015	0.019	0.02	mg/L
Cadmium	ND	ND	ND	ND	mg/L
Calcium	1.5	1.5	0.8	1.7	mg/L
Magnesium	0.24	0.3	0.8	0.2	mg/L
Manganese	0.08	ND	0.010	ND	mg/L
Potassium	ND	ND	ND	ND	mg/L
Selenium	ND	ND	ND	ND	mg/L
Silver	ND	ND	ND	ND	mg/L
Sodium	78	295	283	257	mg/L

MW-4 GIANT REFINING - CINIZA

Total Metals

Parameter	28 APR 93 Result	29 OCT 93 Result	28 APR 94 Result	19 OCT 94 Result	16 MAY 95 Result	Units
Chromium	ND	ND	ND	.013	ND	mg/L
Lead	ND	ND	ND	ND	ND	mg/L
Mercury	ND	---	ND	---	ND	mg/L

MW-4 GIANT REFINING - CINIZA

General Inorganics

Parameter	29 OCT 93 Result	28 APR 94 Result	19 OCT 94 Result	16 MAY 95 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	---	431	---	440	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	---	33	---	21	mg/L
Chloride	---	17	---	180	mg/L
pH	8.82	8.76	8.77	8.70	units
pH	8.83	---	8.77		units
pH	8.8	---	8.78		units
pH	8.8	---	8.77		units
	8.8125	8.76	8.7725	8.70	
Phenolics	ND	ND	---	ND	mg/L
Sulfate	---	150	---	180	mg/L
Specific Conductance at 25 deg.C	1140	1140	1140	1200	umhos/cm
Specific Conductance at 25 deg.C	1130		1150		umhos/cm
Specific Conductance at 25 deg.C	1130		1150		umhos/cm
Specific Conductance at 25 deg.C	1150		1160		umhos/cm
	1137.5	1140	1150	1200	
Total Organic Carbon	ND	ND	ND	ND	mg/L
Total Organic Carbon	ND	ND	ND	ND	mg/L
Total Organic Carbon	---	---	---	---	mg/L
Total Organic Carbon	---	---	---	---	mg/L
Total Organic Halogen as Cl	ND	20	ND	20	ug/L
Total Organic Halogen as Cl	ND	40	ND	20	ug/L
Total Organic Halogen as Cl	---	---	---	---	ug/L
Total Organic Halogen as Cl	---	---	---	---	ug/L
Total Dissolved Solids	---	740	---	---	mg/L
Water Elevation	6877.10	6876.76	6876.06	6872.71	ft

MW-5 GIANT REFINING - CINIZA

Volatile Organics

Parameter	28 APR 93 Result	29 OCT 93 Result	27 APR 94 Result	19 OCT 94 Result	16 MAY 95 Result	Units
Chloromethane	ND	ND	ND	ND	ND	ug/L
Bromomethane	ND	ND	ND	ND	ND	ug/L
Vinyl chloride	ND	ND	ND	ND	ND	ug/L
Chloroethane	ND	ND	ND	ND	ND	ug/L
Methylene chloride	ND	ND	ND	ND	ND	ug/L
Acetone	ND	ND	ND	ND	ND	ug/L
Carbon disulfide	ND	ND	ND	ND	ND	ug/L
1,1-Dichloroethene	ND	ND	ND	ND	ND	ug/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	ug/L
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ND	ug/L
Chloroform	ND	ND	ND	ND	ND	ug/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	ug/L
2-Butanone	ND	ND	ND	ND	ND	ug/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ug/L
Carbon tetrachloride	ND	ND	ND	ND	ND	ug/L
Vinyl acetate	ND	ND	ND	ND	ND	ug/L
Bromodichloromethane	ND	ND	ND	ND	ND	ug/L
trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ug/L
Trichloroethene	ND	ND	ND	ND	ND	ug/L
Chlorodibromomethane	ND	ND	ND	ND	ND	ug/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ug/L
Benzene	ND	ND	ND	ND	ND	ug/L
cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ug/L
2-Chloroethyl vinyl ether	ND	ND	ND	ND	ND	ug/L
Bromoform	ND	ND	ND	ND	ND	ug/L
4-Methyl-2-pentanone	ND	ND	ND	ND	ND	ug/L
2-Hexanone	ND	ND	ND	ND	ND	ug/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ug/L
Tetrachoroethene	ND	ND	ND	ND	ND	ug/L
Tolukebe	ND	ND	ND	ND	ND	ug/L
Chlorobenzene	ND	ND	ND	ND	ND	ug/L
Ethylbenzene	ND	ND	ND	ND	ND	ug/L
Stryene	ND	ND	ND	ND	ND	ug/L
Xylenes (total)	ND	ND	ND	ND	ND	ug/L

MW-5 GIANT REFINING - CINIZA

Dissolved Metals

Parameter	23 APR 92 Result	28 APR 93 Result	27 APR 94 Result	16 MAY 95 Result	Units
Arsenic	ND	ND	ND	ND	mg/L
Barium	ND	0.015	0.018	0.02	mg/L
Cadmium	ND	ND	ND	ND	mg/L
Calcium	1.1	1.4	1.4	1.5	mg/L
Magnesium	0.15	0.2	0.1	0.1	mg/L
Manganese	ND	ND	ND	ND	mg/L
Potassium	ND	1.5	ND	ND	mg/L
Selenium	ND	ND	ND	ND	mg/L
Silver	ND	ND	0.010	ND	mg/L
Sodium	64	269	263	246	mg/L

MW-5 GIANT REFINING - CINIZA

Total Metals

Parameter	28 APR 93 Result	29 OCT 93 Result	27 APR 94 Result	19 OCT 94 Result	16 MAY 95 Result	Units
Chromium	ND	ND	ND	ND	ND	mg/L
Lead	ND	.002	ND	ND	ND	mg/L
Mercury	ND	---	ND	---	ND	mg/L

MW-5 GIANT REFINING - CINIZA

General Inorganics

Parameter	29 OCT 93 Result	27 APR 94 Result	19 OCT 94 Result	16 MAY 95 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	---	289	---	330	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	---	42	---	ND	mg/L
Chloride	---	66	---	63	mg/L
pH	8.96	9.10	9.09	9.00	units
pH	8.96		9.09		units
pH	9		9.09		units
pH	8.97		9.11		units
	8.9725	9.1	9.095	9.00	
Phenolics	---	ND	ND	ND	mg/L
Sulfate	---	170	ND	190	mg/L
Specific Conductance at 25 deg.C	1110	1260	1120	1100	umhos/cm
Specific Conductance at 25 deg.C	1130	---	1130		umhos/cm
Specific Conductance at 25 deg.C	1120	---	1130		umhos/cm
Specific Conductance at 25 deg.C	1130	---	1120		umhos/cm
	1122.5	1260	1125	1100	
Total Organic Carbon	ND		ND	ND	mg/L
Total Organic Carbon	ND		ND	ND	mg/L
Total Organic Carbon	---		---	---	mg/L
Total Organic Carbon	---		---	---	mg/L
Total Organic Halogen as Cl	ND		ND	20	ug/L
Total Organic Halogen as Cl	ND		ND	4	ug/L
Total Organic Halogen as Cl	---		---	---	ug/L
Total Organic Halogen as Cl	---		---	---	ug/L
Total Dissolved Solids	---	700	---	---	mg/L
Water Elevation	6873.53	6873.83	6869.39	6877.32	ft

OW-11 GIANT REFINING - CINIZA

Volatile Organics (8240)

Parameter	28 APR 93 Result	29 OCT 93 Result	3 MAY 94 Result	19 OCT 94 Result	15 MAY 95 Result	Units
1,1-Dichloroethene	ND	ND	ND	ND	ND	ug/L
2-Butanone	ND	ND	ND	ND	ND	ug/L
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ug/L
Benzene	ND	ND	ND	ND	ND	ug/L
Tetrachloroethene	ND	ND	ND	ND	ND	ug/L
Toluene	ND	ND	ND	ND	ND	ug/L
Ethylbenzene	ND	ND	ND	ND	ND	ug/L
Xylenes (total)	ND	ND	ND	ND	ND	ug/L
Acetone	ND	ND	ND	ND	ND	ug/L
Carbon Disulfide	ND	ND	ND	ND	ND	ug/L
Chloromethane	ND	ND	ND	ND	ND	ug/L
Bromomethane	ND	ND	ND	ND	ND	ug/L
Vinyl Chloride	ND	ND	ND	ND	ND	ug/L
Chloroethane	ND	ND	ND	ND	ND	ug/L
Methylene Chloride	ND	ND	ND	ND	ND	ug/L
Carbon Disulfide	ND	ND	ND	ND	ND	ug/L
1,1-Dichloroethane	ND	ND	ND	ND	ND	ug/L
1,2-Dichloroethene (Total)	ND	ND	ND	ND	ND	ug/L
Chloroform	ND	ND	ND	ND	ND	ug/L
1,2-Dichloroethane	ND	ND	ND	ND	ND	ug/L
Carbon Tetrachloride	ND	ND	ND	ND	ND	ug/L
Vinyl Acetate	ND	ND	ND	ND	ND	ug/L
Bromodichloromethane	ND	ND	ND	ND	ND	ug/L
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ug/L
1,2-Dichloropropane	ND	ND	ND	ND	ND	ug/L
Trans-1,3-Dichloropropene	ND	ND	ND	ND	ND	ug/L
Trichloroethene	ND	ND	ND	ND	ND	ug/L
Dibromochloromethane	ND	ND	ND	ND	ND	ug/L
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ug/L
Cis-1,3-Dichloropropene	ND	ND	ND	ND	ND	ug/L
2-Chloroethylvinylether	ND	ND	ND	ND	ND	ug/L
Bromoform	ND	ND	ND	ND	ND	ug/L
2-Hexanone (MBK)	ND	ND	ND	ND	ND	ug/L
4-Methyl-2-Pentanone (MIBK)	ND	ND	ND	ND	ND	ug/L
Chlorobenzene	ND	ND	ND	ND	ND	ug/L
Styrene	ND	ND	ND	ND	ND	ug/L
Acrolein	---	---	---	ND	ND	ug/L
Acrylonitrile	---	---	---	ND	ND	ug/L
Dibromomethane	---	---	---	ND	ND	ug/L
Dichlorodiflouromethane	---	---	---	ND	ND	ug/L
Methyl Iodide	---	---	---	ND	ND	ug/L
Trans-1,4-Dichloro-2-Butene	---	---	---	ND	ND	ug/L
Trichloromonoflouromethane	---	---	---	ND	ND	ug/L
1,2,3-Trichloropropane	---	---	---	ND	ND	ug/L
Ethyl Methacrylate	---	---	---	ND	ND	ug/L
Ethanol	---	---	---	ND	ND	ug/L
1,4-Dichloro-2-Butane	---	---	---	ND	ND	ug/L

OW-11 GIANT REFINING - CINIZA

Dissolved Metals

Parameter	22 APR 92 Result	28 APR 93 Result	29 APR 94 Result	15 MAY 95 Result	Units
Arsenic	ND	ND	ND	ND	mg/L
Barium	ND	ND	0.015	0.01	mg/L
Cadmium	ND	ND	ND	ND	mg/L
Calcium	7.1	4.8	5.5	7.6	mg/L
Copper	---	---	---	---	mg/L
Manganese	ND	ND	ND	ND	mg/L
Nickel	---	---	---	---	mg/L
Selenium	ND	ND	ND	ND	mg/L
Silver	ND	ND	ND	ND	mg/L
Sodium	140	421	505	480	mg/L
Zinc	---	---	---	---	mg/L
Potassium	1.2	1.1	1.1	ND	mg/L
Magnesium	---	---	---	0.8	mg/L

OW-11 GIANT REFINING - CINIZA

Total Metals

Parameter	22 OCT 92 Result	28 APR 93 Result	29 OCT 93 Result	29 APR 94 Result	19 OCT 94 Result	15 MAY 95 Result	Units
Chromium	0.010	ND	ND	ND	ND	ND	mg/L
Lead	ND	ND	ND	ND	ND	ND	mg/L
Mercury	---	ND	---	ND	---	ND	mg/L

OW-11 GIANT REFINING - CINIZA

General Inorganics

Parameter	28 APR 93 Result	29 OCT 93 Result	29 APR 94 Result	19 OCT 94 Result	15 MAY 95 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	485	---	374	---	330	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	ND	---	11	---	10	mg/L
Chloride	160	---	144	---	100	mg/L
pH	8.3	8.26	8.38	8.34	8.50	units
pH	---	8.31	---	8.34	---	units
pH	---	8.32	---	8.35	---	units
pH	---	8.3	---	8.35	---	units
	8.3	8.2975	8.38	8.345	8.50	
Phenolics	ND	ND	ND	---	ND	mg/L
Sulfate	200	---	600	---	680	mg/L
Specific Conductance at 25 deg.C	1800	1840	2080	2120	2500	mhos/c
Specific Conductance at 25 deg.C	---	1870	---	2180	---	mhos/c
Specific Conductance at 25 deg.C	---	1820	---	2190	---	mhos/c
Specific Conductance at 25 deg.C	---	1880	---	2190	---	mhos/c
	1800	1852.5	2080	2170	2500	
Total Organic Carbon	4	3	2	2	1	mg/L
Total Organic Carbon	---	3	2	2	1	mg/L
Total Organic Carbon	---	---	---	---	---	mg/L
Total Organic Carbon	---	---	---	---	---	mg/L
Total Organic Halogen as Cl	30	200	30	ND	30	ug/L
Total Organic Halogen as Cl	---	200	ND	ND	60	ug/L
Total Organic Halogen as Cl	---	---	---	---	---	ug/L
Total Organic Halogen as Cl	---	---	---	---	---	ug/L
Total Dissolved Solids	1100	---	1400	---	1600	mg/L
Water Elevation	6905.79	6905.62	6905.62	6890.82	6905.47	ft

SMW-3 GIANT REFINING - CINIZA

Volatile Organics (8240)

Parameter	30 NOV 93 Result	29 APR 94 Result	18 OCT 94 Result	15 MAY 95 Result	Units	Reporting Limit
Chloromethane	ND	ND	ND	ND	ug/L	10
Bromomethane	ND	ND	ND	ND	ug/L	10
Vinyl chloride	ND	ND	ND	ND	ug/L	10
Chloroethane	ND	ND	ND	ND	ug/L	10
Methylene chloride	ND	ND	ND	ND	ug/L	5.0
Acetone	ND	ND	ND	ND	ug/L	10
Carbon disulfide	ND	ND	ND	ND	ug/L	5.0
1,1-Dichloroethene	ND	ND	ND	ND	ug/L	5.0
1,1-Dichloroethane	ND	ND	ND	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ug/L	5.0
Chloroform	ND	ND	ND	ND	ug/L	5.0
1,2-Dichloroethane	ND	ND	ND	ND	ug/L	5.0
2-Butanone	---	---	---	---	ug/L	5.0
1,1,1-Trichloroethane	ND	ND	ND	ND	ug/L	10
Carbon tetrachloride	ND	ND	ND	ND	ug/L	5.0
Vinyl acetate	ND	ND	ND	ND	ug/L	5.0
Bromodichloromethane	ND	ND	ND	ND	ug/L	10
trans-1,3-Dichloropropene	ND	ND	ND	ND	ug/L	5.0
Trichloroethene	ND	ND	ND	ND	ug/L	5.0
Chlorodibromomethane	---	---	---	---	ug/L	5.0
1,1,2-Trichloroethane	ND	ND	ND	ND	ug/L	5.0
Benzene	ND	ND	ND	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ND	ND	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ND	ND	ND	ug/L	10
Bromoform	ND	ND	ND	ND	ug/L	5.0
4-Methyl-2-pentanone	ND	ND	ND	ND	ug/L	10
2-Hexanone	ND	ND	ND	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ug/L	5.0
Tetrachloroethene	ND	ND	ND	ND	ug/L	5.0
Toluene	ND	ND	ND	ND	ug/L	5.0
Chlorobenzene	ND	ND	ND	ND	ug/L	5.0
Ethylbenzene	ND	ND	ND	ND	ug/L	5.0
Stryene	ND	ND	ND	ND	ug/L	5.0
Xylenes (total)	ND	ND	6.0	ND	ug/L	5.0
Acetonitrile	---	---	ND	---	ug/L	10.0
Acrolein	---	---	ND	ND	ug/L	20.0
Acrylonitrile	---	---	ND	ND	ug/L	10.0
1,2-Dibromoethane	---	---	ND	ND	ug/L	5.0
Dibromomethane	---	---	ND	ND	ug/L	5.0
Dichlorodiflouromethane	---	---	ND	ND	ug/L	5.0
Methyl Iodide	---	---	ND	ND	ug/L	5.0
Trans-1,4-Dichloro-2-Butene	---	---	ND	ND	ug/L	5.0
Trichloromonoflouromethane	---	---	ND	ND	ug/L	5.0
1,2,3-Trichloropropane	---	---	ND	ND	ug/L	5.0
Ethyl Methacrylate	---	---	ND	ND	ug/L	5.0

SMW-3 GIANT REFINING - CINIZA

Dissolved Metals

Parameter	29 APR 93 Result	29 APR 94 Result	15 MAY 95 Result	Units	Reporting Limit
Calcium	43.5	45	37.7	mg/L	0.40
Magnesium	15.6	13.9	12.1	mg/L	0.40
Potassium	ND	ND	ND	mg/L	10.0
Sodium	820	744	564	mg/L	10.0

SMW-3 GIANT REFINING - CINIZA

Total Metals

Parameter	30 NOV 93 Result	29 APR 94 Result	18 OCT 94 Result	15 MAY 95 Result	Units	Reporting Limit
Chromium	ND	0.062	.718	0.01	mg/L	0.010
Lead	ND	ND	.043	ND	mg/L	0.0050

SMW-3 GIANT REFINING - CINIZA

General Inorganics

Parameter	30 NOV 93 Result	29 APR 94 Result	18 OCT 94 Result	15 MAY 95 Result	Units	Reporting Limit
Alkalinity, Bicarb. as CaCO3 at pH 4.5	---	660	---	590	mg/L	5.0
Alkalinity, Carb. as CaCO3 at pH 8.3	---	ND	---	3	mg/L	5.0
Chloride	---	83	---	69	mg/L	3.0
pH	7.66	7.81	7.63	7.80	units	---
pH	7.68	---	7.68	---	units	---
pH	7.71	---	7.7	---	units	---
pH	7.72	---	7.79	---	units	---
Average pH	7.6925		7.7	7.80	units	---
Sulfate	---	1000	---	680	mg/L	5.0
Specific Conductance at 25 deg.C	3220	3160	3360	2700	umhos/cm	1.0
Specific Conductance at 25 deg.C	3250	---	3340	---	umhos/cm	1.0
Specific Conductance at 25 deg.C	3190	---	3500	---	umhos/cm	1.0
Specific Conductance at 25 deg.C	3230	---	3520	---	umhos/cm	1.0
Average Specific Conductance at 25 deg.C	3222.5		3430	2700	umhos/cm	1.0
Total Organic Carbon	2	2	5	5	mg/L	0.50
Total Organic Carbon	2	2	5	5	mg/L	0.50
Total Organic Carbon	---	---	---	---	mg/L	0.50
Total Organic Carbon	---	---	---	---	mg/L	0.50
Total Organic Halogen as Cl	30	30	20	80	ug/L	30
Total Organic Halogen as Cl	30	30	20	70	ug/L	30
Total Organic Halogen as Cl	---	---	---	---	ug/L	30
Total Organic Halogen as Cl	---	---	---	---	ug/L	30
Total Dissolved Solids	---	2300	---	1900	mg/L	10
Water Elevation	6852.43	6855.35	6852.76	6853.16	ft	

SMW-4 GIANT REFINING - CINIZA

Volatile Organics (8240)

Parameter	29 APR 94 Result	18 OCT 94 Result	15 MAY 95 Result	Units	Reporting Limit
Chloromethane	ND	ND	ND	ug/L	10
Bromomethane	ND	ND	ND	ug/L	10
Vinyl chloride	ND	ND	ND	ug/L	10
Chloroethane	ND	ND	ND	ug/L	10
Methylene chloride	ND	ND	ND	ug/L	5.0
Acetone	ND	ND	ND	ug/L	10
Carbon disulfide	ND	ND	ND	ug/L	5.0
1,1-Dichloroethene	ND	ND	ND	ug/L	5.0
1,1-Dichloroethane	ND	ND	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ug/L	5.0
Chloroform	ND	ND	ND	ug/L	5.0
1,2-Dichloroethane	ND	ND	ND	ug/L	5.0
2-Butanone	---	---	---	ug/L	5.0
1,1,1-Trichloroethane	ND	ND	ND	ug/L	10
Carbon tetrachloride	ND	ND	ND	ug/L	5.0
Vinyl acetate	ND	ND	ND	ug/L	5.0
Bromodichloromethane	ND	ND	ND	ug/L	10
trans-1,3-Dichloropropene	ND	ND	ND	ug/L	5.0
Trichloroethene	ND	ND	ND	ug/L	5.0
Chlorodibromomethane	---	---	---	ug/L	5.0
1,1,2-Trichloroethane	ND	ND	ND	ug/L	5.0
Benzene	ND	ND	ND	ug/L	5.0
Bromoform	ND	ND	ND	ug/L	5.0
4-Methyl-2-Pentanone	ND	ND	ND	ug/L	10
2-Hexanone	ND	ND	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ND	ND	ug/L	10
Tetrachloroethene	ND	ND	ND	ug/L	10
Toluene	ND	ND	ND	ug/L	5.0
Chlorobenzene	ND	ND	ND	ug/L	5.0
Ethylbenzene	ND	ND	ND	ug/L	5.0
Styrene	ND	ND	ND	ug/L	5.0
Xylenes (Total)	ND	ND	ND	ug/L	5.0
Acetonitrile	ND	ND	---	ug/L	10.0
Acrolein	ND	ND	ND	ug/L	20.0
Acrylonitrile	---	ND	ND	ug/L	10.0
1,2-Dibromoethane	---	ND	ND	ug/L	5.0
Dichlorodifluoromethane	---	ND	ND	ug/L	5.0
Methyl Iodide	---	ND	ND	ug/L	5.0
Trans-1,4-Dichloro-2-Butene	---	ND	ND	ug/L	5.0
Trichloromonofluoromethane	---	ND	ND	ug/L	5.0
1,2,3-Tichloropropane	---	ND	ND	ug/L	5.0
Ethyl Methacrylate	---	ND	ND	ug/L	5.0

SMW-4 GIANT REFINING - CINIZA

Dissolved Metals

Parameter	29 APR 93 DUP	29 APR 94 Result	15 MAY 95 Result	Units	Reporting Limit
Calcium	4.6	2.6	3.3	mg/L	0.40
Magnesium	1.5	0.7	0.7	mg/L	0.40
Potassium	ND	ND	ND	mg/L	10.0
Sodium	321	286	266	mg/L	10.0

SMW-4 GIANT REFINING - CINIZA

Total Metals

Parameter	29 APR 94 Result	18 OCT 94 Result	15 MAY 95 Result	Units	Reporting Limit
Chromium	ND	0.03	ND	mg/L	0.010
Lead	ND	ND	ND	mg/L	0.0050

SMW-4 GIANT REFINING - CINIZA

General Inorganics

Parameter	29 APR 93 DUP	30 NOV 93 Result	29 APR 94 Result	18 OCT 94 Result	15 MAY 95 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	426	---	393	---	380	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	ND	---	18	---	11	mg/L
Chloride	60	---	56	---	53	mg/L
pH	8.2	8.52	8.49	8.53	8.50	units
pH	---	8.48	---	8.48		units
pH	---	8.48	---	8.51		units
pH	---	8.52	---	8.48		units
Average pH		8.5		8.5	8.50	units
Sulfate	180	---	160	---	220	mg/L
Specific Conductance at 25 deg.C	1300	1260	1190	1270	1300	umhos/cm
Specific Conductance at 25 deg.C	---	1270	---	1280	---	umhos/cm
Specific Conductance at 25 deg.C	---	1280	---	1250	---	umhos/cm
Specific Conductance at 25 deg.C	---	1270	---	1230	---	umhos/cm
Average Specific Conductance at 25 deg.C		1270		1257.5	1300	umhos/cm
Total Organic Carbon	4	ND	3	ND	ND	mg/L
Total Organic Carbon	---	ND	3	ND	ND	mg/L
Total Organic Carbon	---	---	---	---	---	mg/L
Total Organic Carbon	---	---	---	---	---	mg/L
Total Organic Halogen as Cl	90	ND	80	ND	30	ug/L
Total Organic Halogen as Cl	---	ND	50	ND	20	ug/L
Total Organic Halogen as Cl	---	---	---	---	---	ug/L
Total Organic Halogen as Cl	---	---	---	---	---	ug/L
Total Dissolved Solids	840	---	760	---	790	mg/L
Water Elevation	6848.84	6848.99	6850.29	6849.88	6849.30	ft

SMW-5 GIANT REFINING - CINIZA

Volatile Organics (8240)

Parameter	30 NOV 93 Result	29 APR 94 Result	18 OCT 94 Result	15 MAY 95 Result	Units	Reporting Limit
Chloromethane	ND	ND	ND	ND	ug/L	10
Bromomethane	ND	ND	ND	ND	ug/L	10
Vinyl chloride	ND	ND	ND	ND	ug/L	10
Chloroethane	ND	ND	ND	ND	ug/L	10
Methylene chloride	ND	ND	ND	ND	ug/L	5.0
Acetone	ND	ND	ND	ND	ug/L	10
Carbon disulfide	ND	ND	ND	ND	ug/L	5.0
1,1-Dichloroethene	ND	ND	ND	ND	ug/L	5.0
1,1-Dichloroethane	ND	ND	ND	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ug/L	5.0
Chloroform	ND	ND	ND	ND	ug/L	5.0
1,2-Dichloroethane	ND	ND	ND	ND	ug/L	5.0
2-Butanone	---	---	---	---	ug/L	5.0
1,1,1-Trichloroethane	ND	ND	ND	ND	ug/L	10
Carbon tetrachloride	ND	ND	ND	ND	ug/L	5.0
Vinyl acetate	ND	ND	ND	ND	ug/L	5.0
Bromodichloromethane	ND	ND	ND	ND	ug/L	10
trans-1,3-Dichloropropene	ND	ND	ND	ND	ug/L	5.0
Trichloroethene	ND	ND	ND	ND	ug/L	5.0
Chlorodibromomethane	---	---	---	---	ug/L	5.0
1,1,2-Trichloroethane	ND	ND	ND	ND	ug/L	5.0
Benzene	ND	ND	ND	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ND	ND	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ND	ND	ND	ug/L	10
Bromoform	ND	ND	ND	ND	ug/L	5.0
4-Methyl-2-pentanone	ND	ND	ND	ND	ug/L	10
2-Hexanone	ND	ND	ND	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ug/L	5.0
Tetrachloroethene	ND	ND	ND	ND	ug/L	5.0
Toluene	ND	ND	ND	ND	ug/L	5.0
Chlorobenzene	ND	ND	ND	ND	ug/L	5.0
Ethylbenzene	ND	ND	ND	ND	ug/L	5.0
Stryene	ND	ND	ND	ND	ug/L	5.0
Xylenes (total)	ND	ND	ND	ND	ug/L	5.0
Acetonitrile	---	---	---	---	ug/L	10.0
Acrolein	---	---	---	---	ug/L	20.0
Acrylonitrile	---	---	---	---	ug/L	10.0
1,2-Dibromoethane	---	---	---	---	ug/L	5.0
Dibromomethane	---	---	---	---	ug/L	5.0
Dichlorodifluoromethane	---	---	---	---	ug/L	5.0
Methyl Iodide	---	---	---	---	ug/L	5.0
Trans-1,4-Dichloro-2-Butene	---	---	---	---	ug/L	5.0
Trichloromonofluoromethane	---	---	---	---	ug/L	5.0
1,2,3-Trichloropropane	---	---	---	---	ug/L	5.0
Ethyl Methacrylate	---	---	---	---	ug/L	5.0

SMW-5 GIANT REFINING - CINIZA

Dissolved Metals

Parameter	29 APR 94 Result	15 MAY 95 Result	Result	Reporting Units	Limit
Calcium	3.4	1.6	2.2	mg/L	0.40
Magnesium	1.5	0.7	0.5	mg/L	0.40
Potassium	1.3	ND	ND	mg/L	10.0
Sodium	256	267	250	mg/L	10.0

SMW-5 GIANT REFINING - CINIZA

Total Metals

Parameter	29 APR 94 Result	19 OCT 94 Result	15 MAY 95 Result	Units	Reporting Limit
Chromium	0.094	.076	0.01	mg/L	0.010
Lead	ND	.008	ND	mg/L	0.0050

SMW-5 GIANT REFINING - CINIZA

General Organics

Parameter	30 NOV 93 Result	29 APR 94 Result	18 OCT 94 Result	15 MAY 95 Result	Units	Reporting Limit
Alkalinity, Bicarb. as CaCO3 at pH 4.5	---	349	---	350	mg/L	5.0
Alkalinity, Carb. as CaCO3 at pH 8.3	---	24	---	21	mg/L	5.0
Chloride	---	67	---	54	mg/L	3.0
pH	8.74	8.85	8.58	8.80	units	---
pH	8.71	---	8.6		units	---
pH	8.76	---	8.6		units	---
pH	8.76	---	8.64		units	---
Average pH	8.7425		8.605	8.80	units	---
Sulfate	---	150	---	1800	mg/L	5.0
Specific Conductance at 25 deg.C	1140	1130	1120	1100	umhos/cm	1.0
Specific Conductance at 25 deg.C	1140	---	1130	---	umhos/cm	1.0
Specific Conductance at 25 deg.C	1150	---	1120	---	umhos/cm	1.0
Specific Conductance at 25 deg.C	1150	---	1150	---	umhos/cm	1.0
Average Specific Conductance at 25 deg.C	1145		1130	1100	umhos/cm	1.0
Total Organic Carbon	ND	2	8	ND	mg/L	0.50
Total Organic Carbon	ND	2	8	ND	mg/L	0.50
Total Organic Carbon	---	---	---	---	mg/L	0.50
Total Organic Carbon	---	---	---	---	mg/L	0.50
Total Organic Halogen as Cl	ND	30	ND	16	ug/L	30
Total Organic Halogen as Cl	ND	ND	ND	30	ug/L	30
Total Organic Halogen as Cl	---	---	---	---	ug/L	30
Total Organic Halogen as Cl	---	---	---	---	ug/L	30
Total Dissolved Solids	---	720	---	790	mg/L	10
Water Elevation	6846.98	6848.13	6848.02	6848.38	ft	

SMW-6 GIANT REFINING - CINIZA

Volatile Organics

Parameter	29 APR 94 Result	6 JUL 94 Result	18 OCT 94 Result	15 MAY 95 Result	Units	Reporting Limit
Chloromethane	ND	ND	ND	ND	ug/L	10
Bromomethane	ND	ND	ND	ND	ug/L	10
Vinyl chloride	ND	ND	ND	ND	ug/L	10
Chloroethane	ND	ND	ND	ND	ug/L	10
Methylene chloride	ND	ND	ND	ND	ug/L	5.0
Acetone	11.0	ND	ND	ND	ug/L	10
Carbon disulfide	ND	ND	ND	ND	ug/L	5.0
1,1-Dichloroethene	ND	ND	ND	ND	ug/L	5.0
1,1-Dichloroethane	ND	ND	ND	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ND	ND	ND	ug/L	5.0
Chloroform	ND	ND	ND	ND	ug/L	5.0
1,2-Dichloroethane	ND	ND	ND	ND	ug/L	5.0
2-Butanone	---	ND	ND	ND	ug/L	5.0
1,1,1-Trichloroethane	ND	ND	ND	ND	ug/L	10
Carbon tetrachloride	ND	ND	ND	ND	ug/L	5.0
Vinyl acetate	---	ND	ND	ND	ug/L	5.0
Bromodichloromethane	ND	ND	ND	ND	ug/L	10
trans-1,3-Dichloropropene	ND	ND	ND	ND	ug/L	5.0
Trichloroethene	---	ND	ND	ND	ug/L	5.0
Chlorodibromomethane	---	ND	ND	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ND	ND	ND	ug/L	5.0
Benzene	ND	ND	ND	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ND	ND	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ND	ND	ND	ug/L	10
Bromoform	ND	ND	ND	ND	ug/L	5.0
4-Methyl-2-pentanone	---	ND	ND	ND	ug/L	10
2-Hexanone	ND	ND	ND	ND	ug/L	10
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ug/L	5.0
Tetrachloroethene	---	ND	ND	ND	ug/L	5.0
Toluene	ND	ND	ND	ND	ug/L	5.0
Chlorobenzene	ND	ND	ND	ND	ug/L	5.0
Ethylbenzene	ND	ND	ND	ND	ug/L	5.0
Styrene	---	ND	ND	ND	ug/L	5.0
Xylenes (total)	ND	ND	ND	ND	ug/L	5.0
Acetonitrile	---	---	ND	---	ug/L	10.0
Acrolein	---	---	ND	ND	ug/L	20.0
Acrylonitrile	---	---	ND	ND	ug/L	10.0
1,2-Dibromoethane	---	---	ND	ND	ug/L	5.0
Dibromomethane	---	---	ND	ND	ug/L	5.0
Dichlorodifluoromethane	---	---	ND	ND	ug/L	5.0
Methyl Iodide	---	---	ND	ND	ug/L	5.0
Trans-1,4-Dichloro-2-Butene	---	---	ND	ND	ug/L	5.0
Trichloromonofluoromethane	---	---	ND	ND	ug/L	5.0
1,2,3-Trichloropropane	---	---	ND	ND	ug/L	5.0
Ethyl Methacrylate	---	---	ND	ND	ug/L	5.0

SMW-6 GIANT REFINING - CINIZA

Dissolved Metals

Parameter	22 APR 92 Result	29 APR 94 Result	15 MAY 95 Result	Units	Reporting Limit
Calcium	4.6	1140	709	mg/L	0.40
Magnesium	1.4	221	174	mg/L	0.40
Potassium	1.0	4.6	5	mg/L	10.0
Sodium	86	3120	2410	mg/L	10.0

SMW-6 GIANT REFINING - CINIZA

Total Metals

Parameter	29 APR 94 Result	18 OCT 94 Result	15 MAY 95 Result	Units	Reporting Limit
Chromium	0.442	0.434	1.79	mg/L	0.010
Lead	ND	ND	ND	mg/L	0.0050

SMW-6 GIANT REFINING - CINIZA

General Inorganics

Parameter	30 NOV 93 Result	29 APR 94 Result	18 OCT 94 Result	15 MAY 95 Result	Units	Reporting Limit
Alkalinity, Bicarb. as CaCO3 at pH 4.5	---	374	---	150	mg/L	10
Alkalinity, Carb. as CaCO3 at pH 8.3	---	ND	---	ND	mg/L	10 10
Chloride	---	5400	---	6300	mg/L	5.0
pH	8.14	7.24	6.98	7.20	units	10
pH	8.15	---	6.98		units	5.0
pH	8.05	---	6.97		units	5.0
pH	8	---	6.97		units	5.0
Average pH	8.085		6.975	7.20	units	
Sulfate	---	2100	---	1800	mg/L	5.0
Specific Conductance at 25 deg.C	1670	16900	13600	20000	umhos/cm	5.0
Specific Conductance at 25 deg.C	1650	---	13600	---	umhos/cm	10
Specific Conductance at 25 deg.C	1680	---	13300	---	umhos/cm	5.0
Specific Conductance at 25 deg.C	1670	---	13200	---	umhos/cm	5.0
Average Specific Conductance at 25 deg.C	1667.5		13425	20000	umhos/cm	5.0
Total Organic Carbon	ND	32	23	20	mg/L	5.0
Total Organic Carbon	ND	31	22	19	mg/L	5.0
Total Organic Carbon	---	---	---	---	mg/L	5.0
Total Organic Carbon	---	---	---	---	mg/L	10
Total Organic Halogen as Cl	20	290	130	170	ug/L	5.0 10
Total Organic Halogen as Cl	20	210	140	180	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 Halogen as Cl	---	---	---	---	ug/L	5.0
Total Dissolved Solids	---	13000	---	13000	mg/L	5.0
Water Elevation	6849.01	6875.88	6848.93	6832.46	ft	

Giant Refining-Ciniza

OW-1 Volatile Organics Method 8240

Parameter	27 APR 94 Result	6 JUL 94 Result	11 AUG 94 Result	15 MAY 95 Result	Units
Benzene	ND	ND	ND	ND	ug/L
Toluene	0.9	ND	ND	ND	ug/L
Ethylbenzene	ND	ND	ND	ND	ug/L
Xylenes (total)	2.7	ND	ND	ND	ug/L

OW-1 Dissolved Metals

Parameter	23 APR 92 Result	28 APR 93 Result	27 APR 94 Result	15 MAY 95 Result	Units
Calcium	2.6	3.6	1.1	2.0	mg/L
Magnesium	1.5	4.5	0.2	0.2	mg/L
Potassium	1.2	2.1	ND	ND	mg/L
Sodium	83	326	306	287	mg/L

OW-1 General Inorganics

Parameter	23 APR 92 Result	28 APR 93 Result	27 APR 94 Result	15 MAY 95 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	410	387	388	410	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	60	22	37	19	mg/L
Chloride	58	41	55	46	mg/L
pH	8.8	8.7	8.82	8.70	units
pH	---	---	---	---	units
pH	---	---	---	---	units
pH	---	---	---	---	units
Sulfate	210	210	210	10	mg/L
Specific Conductance at 25 deg.C	1300	1260	1270	1300	umhos/c
Specific Conductance at 25 deg.C	---	---	---	---	umhos/c
Specific Conductance at 25 deg.C	---	---	---	---	umhos/c
Specific Conductance at 25 deg.C	---	---	---	---	umhos/c
Total Organic Carbon	---	---	---	---	mg/L
Total Organic Carbon	---	---	---	---	mg/L
Total Organic Carbon	---	---	---	---	mg/L
Total Organic Carbon	---	---	---	---	mg/L
Total Organic Halogen as Cl	---	---	---	---	ug/L
Total Organic Halogen as Cl	---	---	---	---	ug/L
Total Organic Halogen as Cl	---	---	---	---	ug/L
Total Organic Halogen as Cl	---	---	---	---	ug/L
Total Dissolved Solids	2800	870	840	830	mg/L

Giant Refining-Ciniza

OW-2 Volatile Organics

Parameter	27 APR 94 Result	7 JUL 94 Result	11 AUG 94 Result	15 MAY 95 Result	Units
Benzene	ND	ND	ND	ND	ug/L
Toluene	ND	ND	ND	ND	ug/L
Ethylbenzene	ND	ND	ND	ND	ug/L
Xylenes (total)	1.1	2.2	ND	ND	ug/L

OW-2 Dissolved Metals

Parameter	23 APR 92 Result	28 APR 93 Result	27 APR 94 Result	15 MAY 95 Result	Units
Calcium	6.8	8.7	7.6	8.9	mg/L
Magnesium	2.5	3.7	3.1	3.6	mg/L
Potassium	ND	ND	ND	ND	mg/L
Sodium	88	336	318	297	mg/L

OW-2 General Inorganics

Parameter	23 APR 92 Result	28 APR 93 Result	27 APR 94 Result	15 MAY 95 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	670	662	668	660	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	ND	ND	ND	5	mg/L
Chloride	72	42	46	41	mg/L
pH	8.0	8.1	8.04	7.09	units
pH	---	---	---	---	units
pH	---	---	---	---	units
pH	---	---	---	---	units
Sulfate	15	19	20	19	mg/L
Specific Conductance at 25 deg.C	1300	1220	1260	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	1800	1100	890	840	mg/L

Giant Refining–Ciniza

OW–3 Volatile Organics

Parameter	23 APR 92 Result	28 APR 93 Result	27 APR 94 Result	15 MAY 95 Result	Units
Benzene	ND	ND	ND	ND	ug/L
Toluene	ND	ND	ND	ND	ug/L
Ethylbenzene	ND	ND	ND	ND	ug/L
Xylenes (total)	ND	ND	ND	ND	ug/L

OW–3 Dissolved Metals

Parameter	23 APR 92 Result	28 APR 93 Result	27 APR 95 Result	15 MAY 95 Result	Units
Calcium	9.5	9.5	8.1	8.1	mg/L
Magnesium	3.0	3.6	3.1	2.7	mg/L
Potassium	ND	ND	ND	ND	mg/L
Sodium	82	340	313	276	mg/L

OW–3 General Chemistry

Parameter	23 APR 92 Result	28 APR 93 Result	27 APR 94 Result	15 MAY 95 Result	Units
Alkalinity, Bicarb. as CaCO3 at pH 4.5	580	660	662	670	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	ND	ND	ND	6	mg/L
Chloride	39	41	42	39	mg/L
pH	7.9	8.2	7.88	8.00	units
pH	---	---	---	---	units
pH	---	---	---	---	units
pH	---	---	---	---	units
Sulfate	34	16	18	29	mg/L
Specific Conductance at 25 deg.C	1200	1260	1240	1300	umhos/c
Specific Conductance at 25 deg.C	---	---	---	---	umhos/c
Specific Conductance at 25 deg.C	---	---	---	---	umhos/c
Specific Conductance at 25 deg.C	---	---	---	---	umhos/c
Total Organic Carbon	---	---	---	---	mg/L
Total Organic Carbon	---	---	---	---	mg/L
Total Organic Carbon	---	---	---	---	mg/L
Total Organic Carbon	---	---	---	---	mg/L
Total Organic Halogen as Cl	---	---	---	---	ug/L
Total Organic Halogen as Cl	---	---	---	---	ug/L
Total Organic Halogen as Cl	---	---	---	---	ug/L
Total Organic Halogen as Cl	---	---	---	---	ug/L
Total Dissolved Solids	1100	840	800	980	mg/L

Analytical **Technologies,** Inc.

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

ATI I.D. **505383**

June 14, 1995

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

Project Name/Number: ANN. GRNDH$_2$O

Attention: Lynn Shelton

On **05/23/95**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

All analyses were performed by Analytical Technologies, Inc., 11 East Olive Road, Pensacola, FL.

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

for

Letitia Krakowski, Ph.D.
Project Manager

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jt

Enclosure

Analytical Technologies, Inc.

CLIENT : GIANT REFINING
PROJECT # : (NONE)
PROJECT NAME : ANN. GRNDH$_2$O

DATE RECEIVED : 05/23/95
REPORT DATE : 06/14/95

ATI ID: 505383

	ATI PENSACOLA ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	505383-01	MW-1	AQUEOUS	05/19/95
02	505383-02	MW-2	AQUEOUS	05/19/95

---TOTALS---

MATRIX	#SAMPLES
AQUEOUS	2

ATI STANDARD DISPOSAL PRACTICE

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

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession: 505678
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505383
Project Name: GIANT REFINING
Project Location: ANNUAL GROUNDWATER
Test: VOLATILES (8240)
Analysis Method: 8240 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992
Extraction Method: N/A
Matrix: LIQUID
QC Level: II

Lab Id: 001
Client Sample Id: 505383-01
Sample Date/Time: 19-MAY-95 1002
Received Date: 25-MAY-95

Batch: NAW063
Blank: A
Dry Weight %: N/A
Extraction Date: N/A
Analysis Date: 31-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACETONE	UG/L	ND	50	
TRANS-1,4-DICHLORO-2-BUTENE	UG/L	ND	5	
1,1 DICHLOROETHYLENE	UG/L	ND	5	
TRANS 1,2 DICHLOROETHYLENE	UG/L	ND	5	
ETHANOL	UG/L	ND	100	
METHYL ETHYL KETONE	UG/L	ND	10	
TETRACHLOROETHYLENE	UG/L	ND	5	
TRICHLOROETHYLENE	UG/L	ND	5	
ACROLEIN	UG/L	ND	100	
ACRYLONITRILE	UG/L	ND	100	
BENZENE	UG/L	ND	5	
BROMODICHLOROMETHANE	UG/L	ND	5	
BROMOFORM	UG/L	ND	5	
BROMOMETHANE	UG/L	ND	10	
CARBON DISULFIDE	UG/L	ND	5	
CARBON TETRACHLORIDE	UG/L	ND	5	
CHLOROBENZENE	UG/L	ND	5	
CHLORODIBROMOMETHANE	UG/L	ND	5	
CHLOROETHANE	UG/L	ND	10	
2-CHLOROETHYLVINYL ETHER	UG/L	ND	10	
CHLOROFORM	UG/L	ND	5	
CHLOROMETHANE	UG/L	ND	10	
DIBROMOMETHANE	UG/L	ND	5	
DICHLORODIFLUOROMETHANE	UG/L	ND	20	
1,1-DICHLOROETHANE	UG/L	ND	5	
1,2-DICHLOROETHANE	UG/L	ND	5	
1,2-DICHLOROPROPANE	UG/L	ND	5	
CIS-1,3-DICHLOROPROPENE	UG/L	ND	5	
TRANS-1,3-DICHLOROPROPENE	UG/L	ND	5	
ETHYL BENZENE	UG/L	ND	5	
ETHYL METHACRYLATE	UG/L	ND	10	
2-HEXANONE	UG/L	ND	10	
IODOMETHANE	UG/L	ND	5	
METHYLENE CHLORIDE	UG/L	ND	5	
4-METHYL-2-PENTANONE	UG/L	ND	10	
STYRENE	UG/L	ND	5	
1,1,2,2-TETRACHLOROETHANE	UG/L	ND	5	
TOLUENE	UG/L	ND	5	
1,1,1-TRICHLOROETHANE	UG/L	ND	5	
1,1,2-TRICHLOROETHANE	UG/L	ND	5	

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	505678
Client:	ANALYTICAL TECHNOLOGIES, INC.
Project Number:	505383
Project Name:	GIANT REFINING
Project Location:	ANNUAL GROUNDWATER
Test:	VOLATILES (8240)
Analysis Method:	8240 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992
Extraction Method:	N/A
Matrix:	LIQUID
QC Level:	II

Lab Id: 001
Client Sample Id: 505383-01

Sample Date/Time: 19-MAY-95 1002
Received Date: 25-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TRICHLOROFLUOROMETHANE	UG/L	ND	5	
1,2,3 TRICHLOROPROPANE	UG/L	ND	5	
VINYL ACETATE	UG/L	ND	10	
VINYL CHLORIDE	UG/L	ND	10	
TOTAL XYLENES	UG/L	ND	5	
BROMOFLUOROBENZENE	%REC/SURR	97	86-115	
1,2-DICHLOROETHANE-D4	%REC/SURR	86	76-114	
TOLUENE-D8	%REC/SURR	99	88-110	
ANALYST	INITIALS	DWB		

Comments:

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession: 505678
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505383
Project Name: GIANT REFINING
Project Location: ANNUAL GROUNDWATER
Test: VOLATILES (8240)
Analysis Method: 8240 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992
Extraction Method: N/A
Matrix: LIQUID
QC Level: II

Lab Id: 002
Client Sample Id: 505393-02

Sample Date/Time: 19-MAY-95 1034
Received Date: 25-MAY-95

Batch: NAW063
Blank: A

Dry Weight %: N/A

Extraction Date: N/A
Analysis Date: 31-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACETONE	UG/L	ND	50	
TRANS-1,4-DICHLORO-2-BUTENE	UG/L	ND	5	
1,1 DICHLOROETHYLENE	UG/L	ND	5	
TRANS 1,2 DICHLOROETHYLENE	UG/L	ND	5	
ETHANOL	UG/L	ND	100	
METHYL ETHYL KETONE	UG/L	ND	10	
TETRACHLOROETHYLENE	UG/L	ND	5	
TRICHLOROETHYLENE	UG/L	ND	5	
ACROLEIN	UG/L	ND	100	
ACRYLONITRILE	UG/L	ND	100	
BENZENE	UG/L	ND	5	
BROMODICHLOROMETHANE	UG/L	ND	5	
BROMOFORM	UG/L	ND	5	
BROMOMETHANE	UG/L	ND	10	
CARBON DISULFIDE	UG/L	ND	5	
CARBON TETRACHLORIDE	UG/L	ND	5	
CHLOROBENZENE	UG/L	ND	5	
CHLORODIBROMOMETHANE	UG/L	ND	5	
CHLOROETHANE	UG/L	ND	10	
2-CHLOROETHYLVINYL ETHER	UG/L	ND	10	
CHLOROFORM	UG/L	ND	5	
CHLOROMETHANE	UG/L	ND	10	
DIBROMOMETHANE	UG/L	ND	5	
DICHLORODIFLUOROMETHANE	UG/L	ND	20	
1,1-DICHLOROETHANE	UG/L	ND	5	
1,2-DICHLOROETHANE	UG/L	ND	5	
1,2-DICHLOROPROPANE	UG/L	ND	5	
CIS-1,3-DICHLOROPROPENE	UG/L	ND	5	
TRANS-1,3-DICHLOROPROPENE	UG/L	ND	5	
ETHYL BENZENE	UG/L	ND	5	
ETHYL METHACRYLATE	UG/L	ND	10	
2-HEXANONE	UG/L	ND	10	
IODOMETHANE	UG/L	ND	5	
METHYLENE CHLORIDE	UG/L	ND	5	
4-METHYL-2-PENTANONE	UG/L	ND	10	
STYRENE	UG/L	ND	5	
1,1,2,2-TETRACHLOROETHANE	UG/L	ND	5	
TOLUENE	UG/L	ND	5	
1,1,1-TRICHLOROETHANE	UG/L	ND	5	
1,1,2-TRICHLOROETHANE	UG/L	ND	5	

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	505678
Client:	ANALYTICAL TECHNOLOGIES, INC.
Project Number:	505383
Project Name:	GIANT REFINING
Project Location:	ANNUAL GROUNDWATER
Test:	VOLATILES (8240)
Analysis Method:	8240 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992
Extraction Method:	N/A
Matrix:	LIQUID
QC Level:	II

Lab Id:	002	Sample Date/Time:	19-MAY-95 1034
Client Sample Id:	505393-02	Received Date:	25-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
TRICHLOROFLUOROMETHANE	UG/L	ND	5	
1,2,3 TRICHLOROPROPANE	UG/L	ND	5	
VINYL ACETATE	UG/L	ND	10	
VINYL CHLORIDE	UG/L	ND	10	
TOTAL XYLENES	UG/L	ND	5	
BROMOFLUOROBENZENE	%REC/SURR	103	86-115	
1,2-DICHLOROETHANE-D4	%REC/SURR	98	76-114	
TOLUENE-D8	%REC/SURR	98	88-110	
ANALYST	INITIALS	DWB		

Comments:

Analytical Technologies, Inc.

"QC Report"

Title: Water Blank
Batch: NAW063
Analysis Method: 8240 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992
Extraction Method: N/A

Blank Id: A Date Analyzed: 31-MAY-95 Date Extracted: N/A

Parameters:	Units:	Results:	Reporting Limits:
ACETONE	UG/L	ND	10
ACETONITRILE	UG/L	ND	100
ACROLEIN	UG/L	ND	100
ACRYLONITRILE	UG/L	ND	100
ALLYL CHLORIDE	UG/L	ND	100
BENZENE	UG/L	ND	1
BIS(CHLOROMETHYL)ETHER	UG/L	ND	5
BROMODICHLOROMETHANE	UG/L	ND	1
BROMOFORM	UG/L	ND	2
BROMOMETHANE	UG/L	ND	1
CARBON DISULFIDE	UG/L	ND	1
CARBON TETRACHLORIDE	UG/L	ND	2
CHLOROBENZENE	UG/L	ND	1
CHLOROETHANE	UG/L	ND	1
2-CHLOROETHYLVINYL ETHER	UG/L	ND	5
CHLOROFORM	UG/L	ND	2
CHLOROMETHANE	UG/L	ND	2
CHLOROPRENE	UG/L	ND	5
DIBROMOCHLOROMETHANE	UG/L	ND	1
DIBROMOMETHANE	UG/L	ND	5
1,2-DIBROMO-3-CHLOROPROPANE	UG/L	ND	5
DICHLORODIFLUOROMETHANE	UG/L	ND	5
1,1-DICHLOROETHANE	UG/L	ND	1
1,2-DICHLOROETHANE	UG/L	ND	2
1,1-DICHLOROETHENE	UG/L	ND	1
1,2-DICHLOROETHENE (TOTAL)	UG/L	ND	2
1,2-DICHLOROPROPANE	UG/L	ND	2
CIS-1,3-DICHLOROPROPENE	UG/L	ND	1
TRANS-1,3-DICHLOROPROPENE	UG/L	ND	1
TRANS-1,4-DICHLORO-2-BUTENE	UG/L	ND	5
1,4-DIOXANE	UG/L	ND	10
ETHYLBENZENE	UG/L	ND	1
ETHYL METHACRYLATE	UG/L	ND	5
2-HEXANONE (MBK)	UG/L	ND	3
IODOMETHANE	UG/L	ND	5
ISOBUTYL ALCOHOL	UG/L	ND	10
METHACRYLONITRILE	UG/L	ND	5
METHYLENE CHLORIDE	UG/L	ND	3
METHYL ETHYL KETONE	UG/L	ND	3
METHYL METHACRYLATE	UG/L	ND	5
4-METHYL-2-PENTANONE (MIBK)	UG/L	ND	3
PROPIONITRILE	UG/L	ND	5
STYRENE	UG/L	ND	2
TETRACHLOROETHENE	UG/L	ND	1
1,1,1,2-TETRACHLOROETHANE	UG/L	ND	2
1,1,2,2-TETRACHLOROETHANE	UG/L	ND	2

Analytical Technologies, Inc.

"QC Report"

Title: Water Blank
Batch: NAW063
Analysis Method: 8240 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992
Extraction Method: N/A

Parameters:	Units:	Results:	Reporting Limits:
TOLUENE	UG/L	ND	5
1,1,1-TRICHLOROETHANE	UG/L	ND	5
1,1,2-TRICHLOROETHANE	UG/L	ND	2
TRICHLOROETHENE	UG/L	ND	1
TRICHLOROFLUOROMETHANE	UG/L	ND	1
1,2,3 TRICHLOROPROPANE	UG/L	ND	5
VINYL ACETATE	UG/L	ND	2
VINYL CHLORIDE	UG/L	ND	1
XYLENES (TOTAL)	UG/L	ND	2
BROMOFLUOROBENZENE	%REC/SURR	99	86-115
1,2-DICHLOROETHANE-D4	%REC/SURR	94	76-114
TOLUENE-D8	%REC/SURR	99	88-110
ANALYST	INITIALS	DWB	

Comments:

Analytical Technologies, Inc.

"QC Report"

Title: Water Reagent
Batch: NAW063
Analysis Method: 8240 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992
Extraction Method: N/A

RS Date Analyzed: 31-MAY-95
RSD Date Analyzed: 31-MAY-95

RS Date Extracted: N/A
RSD Date Extracted: N/A

Parameters:	Spike Added	Sample Conc	RS Conc	RS %Rec	RSD Conc	RSD %Rec	RPD	RPD Lmts	Rec Lmts
1,1-DICHLOROETHENE	50	<1	47	94	47	94	0	12	81-115
TRICHLOROETHENE	50	<1	52	104	52	104	0	15	90-115
BENZENE	50	<1	51	102	52	104	2	15	84-116
TOLUENE	50	<5	51	102	50	100	2	11	90-119
CHLOROBENZENE	50	<1	52	104	52	104	0	15	87-115
Surrogates:									
1,2-DICHLOROETHANE-D4				97		97			76-114
TOLUENE-D8				99		97			88-110
BROMOFLUOROBENZENE				103		99			86-115

Comments:

Notes:
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT
UG/L = PARTS PER BILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

Analytical Technologies, Inc.

"QC Report"

Title: Water Matrix
Batch: NAW063
Analysis Method: 8240 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992
Extraction Method: N/A

Dry Weight %: N/A
Sample Spiked: 505690-1

MS Date Analyzed: 01-JUN-95
MSD Date Analyzed: 01-JUN-95

MS Date Extracted: N/A
MSD Date Extracted: N/A

Parameters:	Spike Added	Sample Conc	MS Conc	MS %Rec	MSD Conc	MSD %Rec	RPD	RPD Lmts	Rec Lmts
1,1-DICHLOROETHENE	50	<1	45	90	46	92	2	12	78-119
TRICHLOROETHENE	50	<1	47	94	49	98	4	15	90-116
BENZENE	50	<1	46	92	48	96	4	10	84-118
TOLUENE	50	<5	48	96	49	98	2	11	84-129
CHLOROBENZENE	50	<1	48	96	49	98	2	15	87-117
Surrogates:									
1,2-DICHLOROETHANE-D4				87		86			76-114
TOLUENE-D8				99		96			88-110
BROMOFLUOROBENZENE				99		99			86-115

Comments:

Notes:
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT
UG/L = PARTS PER BILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

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

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

CHAIN OF CUSTODY

DATE: 5/19/95 PAGE 1 OF 1

ATI LAB I.D. 505383

PROJECT MANAGER:

COMPANY: GIANT REFINING CO.
ADDRESS: ROUTE 3, BOX 7
GALLUP, NM 87301
PHONE: (505) 722-3833
FAX: (505) 722-0210

BILL TO: LYNN SHELTON
COMPANY: SAME
ADDRESS: SAME

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/MTBE (8020)	Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240) *	Polynuclear Aromatics (610/8310)	SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal	The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion	RCRA Metals by TCLP (1311)	NUMBER OF CONTAINERS
MW-1	5/19/95	10:02	H_2O	01											X									2
MW-2	5/19/95	10:34	H_2O	02											X									2

PROJECT INFORMATION		SAMPLE RECEIPT	
PROJ. NO.:	—	NO. CONTAINERS	4
PROJ. NAME:	ANN. GRND H_2O	CUSTODY SEALS	Y / N / NA
P.O. NO.:	—	RECEIVED INTACT	Y
SHIPPED VIA:	FED EX	RECEIVED COLD	Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) [ ] 24hr [ ] 48hr [ ] 72hr [ ] 1 WEEK (NORMAL) [X] 2 WEEK

Comments:

* SEE ATTACHED LIST.

SAMPLED & RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: [signature] Time: 0945	Signature: Time:	Signature: Time:
Printed Name: WALT TOOMER Date: 5/22/95	Printed Name: Date:	Printed Name: Date:
Company: GIANT Phone: (505) 722-0212	Company:	Company:

RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY: (LAB) 3.
Signature: Time:	Signature: Time:	Signature: [signature] Time: 1500
Printed Name: Date:	Printed Name: Date:	Printed Name: [signature] Date: 5/23/95
Company:	Company:	Analytical Technologies, Inc.

Analytical Technologies, Inc. Albuquerque, NM

Chain of Custody

DATE 5/23/95 PAGE 1 OF 1

NETWORK PROJECT MANAGER: LETITIA KRAKOWSKI

COMPANY: **Analytical Technologies, Inc.**

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

CLIENT PROJECT MANAGER:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)		632/632 MOD	619/619 MOD	610/8310			8240 (TCLP 1311) ZHE		Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)		NACE	ASBESTOS		BOD	TOTAL COLIFORM	FECAL COLIFORM		GROSS ALPHA/BETA	RADIUM 226/228		AIR - O2, CO2, METHANE	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
505383-01	5/19	1002	AQ																X															2
-02	↓	1031	↓																X															2

PROJECT INFORMATION	
PROJECT NUMBER:	505383
PROJECT NAME:	GRC2
QC LEVEL:	STD IV
QC REQUIRED:	MS MSD BLANK
TAT:	STANDARD RUSH!

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	4
CHAIN OF CUSTODY SEALS	4
INTACT?	4
RECEIVED GOOD COND./COLD	4
LAB NUMBER	505678

DUE DATE: 6/2

RUSH SURCHARGE:

CLIENT DISCOUNT: 1220 ea. 1A

See Attached list

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

RELINQUISHED BY: 1.
Signature: [illegible] Time: 1730
Printed Name: [illegible] Date: 5/23/95
Analytical Technologies, Inc Albuquerque

RECEIVED BY: (LAB) 1.
Signature: David R. Boyd Time: 1441
Printed Name: DAVID R. BOYD Date: 5/25/95
Company: ATI/ RCVS

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

RECEIVED BY: (LAB) 2.
Signature: Time:
Printed Name: Date:
Company:

Common notation for Organic reporting

N/S = NOT SUBMITTED
N/A = NOT APPLICABLE
D = DILUTED OUT
UG/L = PARTS PER BILLION.
UG/KG = PARTS PER BILLION.
MG/KG = PARTS PER MILLION.
MG/L = PARTS PER MILLION.
MG/M3 = MILLIGRAMS PER CUBIC METER.
NG = NANOGRAMS.
UG = MICROGRAMS.
PPBV = PARTS PER BILLION/VOLUME.
< = LESS THAN DETECTION LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS
J = THE REPORTED VALUE IS EITHER LESS THAN THE REPORTING LIMIT BUT GREATER THAN ZERO, OR QUANTITATED AS A TIC; THEREFORE, IT IS ESTIMATED.
JJ = REPORTED VALUE IS ESTIMATED DUE TO MATRIX INTERFERENCE.
ND = NOT DETECTED ABOVE REPORT LIMIT.
RPT LIMIT = REPORTING LIMITS BASED ON METHOD DETECTION LIMIT STUDIES.
RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION)

SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

ORGANIC SOILS ARE REPORTED ON A DRY WEIGHT BASIS.

DUE TO THE NATURE OF THE SAMPLE MATRIX, MATRIX SPIKE/MATRIX SPIKE DUPLICATE ANALYSIS CANNOT BE PERFORMED FOR AIR ANALYSIS.

LP = LEVERNE PETERSON
DWB = DAVID BOWERS
DB = DENNIS BESON
LL = LANCE LARSON
JA = JENNIFER ALEXANDER
RW = RITA WINGO
LD = LARRY DILMORE
DC = DAVID CELESTIAL
RB = RAFAEL BARRAZA

Analytical **Technologies,** Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 8710
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. **505362**

June 19, 1995

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

Project Name/Number: ANNUAL GROUNDWATER

Attention: Lynn Shelton

On **05/17/95**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

Metal analyses were performed by Analytical Technologies, Inc., 17400 SW Upper Boones Ferry Road, Suite 270, Durham, OR.

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

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

All other analyses were performed by Analytical Technologies, Inc., 11 East Olive Road, Pensacola, FL.

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

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jt

Enclosure

Analytical Technologies, Inc.

CLIENT	: GIANT REFINING CO.	DATE RECEIVED	: 05/17/95
PROJECT #	: (NONE)		
PROJECT NAME	: ANNUAL GROUNDWATER	REPORT DATE	: 06/19/95

ATI ID: 505362

	ATI PENSACOLA ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	505362-01	OW-1	AQUEOUS	05/15/95
02	505362-02	OW-2	AQUEOUS	05/15/95
03	505362-03	OW-3	AQUEOUS	05/15/95
04	505362-04	SMW-3	AQUEOUS	05/15/95
05	505362-05	SMW-4	AQUEOUS	05/15/95
06	505362-06	SMW-5	AQUEOUS	05/15/95
07	505362-07	SMW-6	AQUEOUS	05/15/95
08	505362-08	OW-11	AQUEOUS	05/15/95
09	505362-09	TRIP BLANK	AQUEOUS	05/11/95

---TOTALS---

MATRIX	#SAMPLES
AQUEOUS	9

ATI STANDARD DISPOSAL PRACTICE

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

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - MULTIPLE"

Accession: 505434
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505362
Project Name: GIANT REFINING ANNUAL GROUNDWATER
Project Location: GALLUP, NM
Test: Group of Single Wetchem
QcLevel: II

Parameter:	Unit:	Result:	R.L:	Batch:	Q:
Client ID: 505362-01			Lab ID: 001		
CHLORIDE (325.2)	MG/L	46	2	CKW14B	
CONDUCTIVITY (120.1)	UMH/CM	1300	1	CDW037	
PH (150.1)	UNITS	8.7	NA	PHW106	
SULFATE (375.4)	MG/L	ND	10	SEW048	
TOTAL DISSOLVED SOLIDS (160.1)	MG/L	830	5	TDW032	
Comments:					
Client ID: 505362-02			Lab ID: 002		
CHLORIDE (325.2)	MG/L	41	2	CKW14B	
CONDUCTIVITY (120.1)	UMH/CM	1300	1	CDW037	
PH (150.1)	UNITS	7.9	NA	PHW106	
SULFATE (375.4)	MG/L	19	10	SEW048	
TOTAL DISSOLVED SOLIDS (160.1)	MG/L	840	5	TDW032	
Comments:					
Client ID: 505362-03			Lab ID: 003		
CHLORIDE (325.2)	MG/L	39	2	CKW14B	
CONDUCTIVITY (120.1)	UMH/CM	1300	1	CDW037	
PH (150.1)	UNITS	8.0	NA	PHW106	
SULFATE (375.4)	MG/L	29	10	SEW048	
TOTAL DISSOLVED SOLIDS (160.1)	MG/L	980	5	TDW032	
Comments:					
Client ID: 505362-04			Lab ID: 004		
CHLORIDE (325.2)	MG/L	69	2	CKW14B	
CONDUCTIVITY (120.1)	UMH/CM	2700	1	CDW037	
PH (150.1)	UNITS	7.8	NA	PHW106	
SULFATE (375.4)	MG/L	680	250	SEW048	+
TOTAL DISSOLVED SOLIDS (160.1)	MG/L	1900	5	TDW032	
Comments:					
Client ID: 505362-05			Lab ID: 005		
CHLORIDE (325.2)	MG/L	53	2	CKW14B	
CONDUCTIVITY (120.1)	UMH/CM	1300	1	CDW037	
PH (150.1)	UNITS	8.5	NA	PHW106	
SULFATE (375.4)	MG/L	220	50	SEW048	+
TOTAL DISSOLVED SOLIDS (160.1)	MG/L	790	5	TDW032	

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - MULTIPLE"

Accession: 505434
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505362
Project Name: GIANT REFINING ANNUAL GROUNDWATER
Project Location: GALLUP, NM
Test: Group of Single Wetchem
QcLevel: II

Parameter:	Unit:	Result:	R.L:	Batch:	Q:
Client ID: 505362-06			Lab ID: 006		
CHLORIDE (325.2)	MG/L	54	2	CKW14B	
CONDUCTIVITY (120.1)	UMH/CM	1100	1	CDW037	
PH (150.1)	UNITS	8.8	NA	PHW106	
SULFATE (375.4)	MG/L	210	50	SEW048	+
TOTAL DISSOLVED SOLIDS (160.1)	MG/L	790	5	TDW032	
Comments:					
Client ID: 505362-07			Lab ID: 007		
CHLORIDE (325.2)	MG/L	6300	100	CKW14B	+
CONDUCTIVITY (120.1)	UMH/CM	20000	1	CDW037	
PH (150.1)	UNITS	7.2	NA	PHW106	
SULFATE (375.4)	MG/L	1800	500	SEW048	+
TOTAL DISSOLVED SOLIDS (160.1)	MG/L	13000	5	TDW032	
Comments:					
Client ID: 505362-08			Lab ID: 008		
CHLORIDE (325.2)	MG/L	100	2	CKW14B	
CONDUCTIVITY (120.1)	UMH/CM	2500	1	CDW037	
PH (150.1)	UNITS	8.5	NA	PHW106	
PHENOLS, TOTAL (420.1)	MG/L	ND	0.005	PEW018	
SULFATE (375.4)	MG/L	680	200	SEW048	+
TOTAL DISSOLVED SOLIDS (160.1)	MG/L	1600	5	TDW032	
Comments:					

Analytical Technologies, Inc.

"Method Report Summary"

Accession Number: 505434
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505362
Project Name: GIANT REFINING ANNUAL GROUNDWATER
Project Location: GALLUP, NM
Test: Group of Single Wetchem

Client Sample Id:	Parameter:	Unit:	Result:
505362-01	CHLORIDE (325.2)	MG/L	46
	CONDUCTIVITY (120.1)	UMH/CM	1300
	PH (150.1)	UNITS	8.7
	TOTAL DISSOLVED SOLIDS (160.1)	MG/L	830
505362-02	CHLORIDE (325.2)	MG/L	41
	CONDUCTIVITY (120.1)	UMH/CM	1300
	PH (150.1)	UNITS	7.9
	SULFATE (375.4)	MG/L	19
	TOTAL DISSOLVED SOLIDS (160.1)	MG/L	840
505362-03	CHLORIDE (325.2)	MG/L	39
	CONDUCTIVITY (120.1)	UMH/CM	1300
	PH (150.1)	UNITS	8.0
	SULFATE (375.4)	MG/L	29
	TOTAL DISSOLVED SOLIDS (160.1)	MG/L	980
505362-04	CHLORIDE (325.2)	MG/L	69
	CONDUCTIVITY (120.1)	UMH/CM	2700
	PH (150.1)	UNITS	7.8
	SULFATE (375.4)	MG/L	680
	TOTAL DISSOLVED SOLIDS (160.1)	MG/L	1900
505362-05	CHLORIDE (325.2)	MG/L	53
	CONDUCTIVITY (120.1)	UMH/CM	1300
	PH (150.1)	UNITS	8.5
	SULFATE (375.4)	MG/L	220
	TOTAL DISSOLVED SOLIDS (160.1)	MG/L	790
505362-06	CHLORIDE (325.2)	MG/L	54
	CONDUCTIVITY (120.1)	UMH/CM	1100
	PH (150.1)	UNITS	8.8
	SULFATE (375.4)	MG/L	210
	TOTAL DISSOLVED SOLIDS (160.1)	MG/L	790
505362-07	CHLORIDE (325.2)	MG/L	6300
	CONDUCTIVITY (120.1)	UMH/CM	20000
	PH (150.1)	UNITS	7.2
	SULFATE (375.4)	MG/L	1800
	TOTAL DISSOLVED SOLIDS (160.1)	MG/L	13000
505362-08	CHLORIDE (325.2)	MG/L	100
	CONDUCTIVITY (120.1)	UMH/CM	2500
	PH (150.1)	UNITS	8.5
	SULFATE (375.4)	MG/L	680
	TOTAL DISSOLVED SOLIDS (160.1)	MG/L	1600

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - MULTIPLE"

Accession: 505434
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505362
Project Name: GIANT REFINING ANNUAL GROUNDWATER
Project Location: GALLUP, NM
Test: TOTAL ALKALINITY
QcLevel: II

Parameter:	Unit:	Result:	R.L:	Batch:	Q:
Client ID: 505362-01			Lab ID: 001		
ALKALINITY, TOTAL (2320B)	MG/L	430	1	ASW023	
PH (150.1)	UNITS	8.7	NA	PHW106	
BICARBONATE, CACO3 (2330B)	MG/L	410	1	NONE	
CARBONATE, CACO3 (2330B)	MG/L	19	1	NONE	
CARBON DIOXIDE, FREE AS CACO3	MG/L	2	1	NONE	
HYDROXIDE (2330B) AS CACO3	MG/L	ND	1	NONE	
Comments:					
Client ID: 505362-02			Lab ID: 002		
ALKALINITY, TOTAL (2320B)	MG/L	660	1	ASW023	
PH (150.1)	UNITS	7.9	NA	PHW106	
BICARBONATE, CACO3 (2330B)	MG/L	660	1	NONE	
CARBONATE, CACO3 (2330B)	MG/L	5	1	NONE	
CARBON DIOXIDE, FREE AS CACO3	MG/L	16	1	NONE	
HYDROXIDE (2330B) AS CACO3	MG/L	ND	1	NONE	
Comments:					
Client ID: 505362-03			Lab ID: 003		
ALKALINITY, TOTAL (2320B)	MG/L	680	1	ASW023	
PH (150.1)	UNITS	8.0	NA	PHW106	
BICARBONATE, CACO3 (2330B)	MG/L	670	1	NONE	
CARBONATE, CACO3 (2330B)	MG/L	6	1	NONE	
CARBON DIOXIDE, FREE AS CACO3	MG/L	13	1	NONE	
HYDROXIDE (2330B) AS CACO3	MG/L	ND	1	NONE	
Comments:					

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - MULTIPLE"

Accession: 505434
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505362
Project Name: GIANT REFINING ANNUAL GROUNDWATER
Project Location: GALLUP, NM
Test: TOTAL ALKALINITY
QcLevel: II

Parameter:	Unit:	Result:	R.L:	Batch:	Q:
Client ID: 505362-04			Lab ID: 004		
ALKALINITY, TOTAL (2320B)	MG/L	590	1	ASW023	
PH (150.1)	UNITS	7.8	NA	PHW106	
BICARBONATE, CACO3 (2330B)	MG/L	590	1	NONE	
CARBONATE, CACO3 (2330B)	MG/L	3	1	NONE	
CARBON DIOXIDE, FREE AS CACO3	MG/L	19	1	NONE	
HYDROXIDE (2330B) AS CACO3	MG/L	ND	1	NONE	
Comments:					
Client ID: 505362-05			Lab ID: 005		
ALKALINITY, TOTAL (2320B)	MG/L	390	1	ASW023	
PH (150.1)	UNITS	8.5	NA	PHW106	
BICARBONATE, CACO3 (2330B)	MG/L	380	1	NONE	
CARBONATE, CACO3 (2330B)	MG/L	11	1	NONE	
CARBON DIOXIDE, FREE AS CACO3	MG/L	2	1	NONE	
HYDROXIDE (2330B) AS CACO3	MG/L	ND	1	NONE	
Comments:					
Client ID: 505362-06			Lab ID: 006		
ALKALINITY, TOTAL (2320B)	MG/L	370	1	ASW023	
PH (150.1)	UNITS	8.8	NA	PHW106	
BICARBONATE, CACO3 (2330B)	MG/L	350	1	NONE	
CARBONATE, CACO3 (2330B)	MG/L	21	1	NONE	
CARBON DIOXIDE, FREE AS CACO3	MG/L	1	1	NONE	
HYDROXIDE (2330B) AS CACO3	MG/L	ND	1	NONE	
Comments:					

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - MULTIPLE"

Accession: 505434
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505362
Project Name: GIANT REFINING ANNUAL GROUNDWATER
Project Location: GALLUP, NM
Test: TOTAL ALKALINITY
QcLevel: II

Parameter:	Unit:	Result:	R.L:	Batch:	Q:
Client ID: 505362-07			Lab ID: 007		
ALKALINITY, TOTAL (2320B)	MG/L	150	1	ASW023	
PH (150.1)	UNITS	7.2	NA	PHW106	
BICARBONATE, CACO3 (2330B)	MG/L	150	1	NONE	
CARBONATE, CACO3 (2330B)	MG/L	ND	1	NONE	
CARBON DIOXIDE, FREE AS CACO3	MG/L	19	1	NONE	
HYDROXIDE (2330B) AS CACO3	MG/L	ND	1	NONE	

Comments:

Client ID: 505362-08			Lab ID: 008		
ALKALINITY, TOTAL (2320B)	MG/L	340	1	ASW023	
PH (150.1)	UNITS	8.5	NA	PHW106	
BICARBONATE, CACO3 (2330B)	MG/L	330	1	NONE	
CARBONATE, CACO3 (2330B)	MG/L	10	1	NONE	
CARBON DIOXIDE, FREE AS CACO3	MG/L	2	1	NONE	
HYDROXIDE (2330B) AS CACO3	MG/L	ND	1	NONE	

Comments:

Analytical Technologies, Inc.

"Method Report Summary"

Accession Number: 505434
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505362
Project Name: GIANT REFINING ANNUAL GROUNDWATER
Project Location: GALLUP, NM
Test: TOTAL ALKALINITY

Client Sample Id:	Parameter:	Unit:	Result:
505362-01	ALKALINITY, TOTAL (2320B)	MG/L	430
	PH (150.1)	UNITS	8.7
	BICARBONATE, CACO3 (2330B)	MG/L	410
	CARBONATE, CACO3 (2330B)	MG/L	19
	CARBON DIOXIDE, FREE AS CACO3	MG/L	2
505362-02	ALKALINITY, TOTAL (2320B)	MG/L	660
	PH (150.1)	UNITS	7.9
	BICARBONATE, CACO3 (2330B)	MG/L	660
	CARBONATE, CACO3 (2330B)	MG/L	5
	CARBON DIOXIDE, FREE AS CACO3	MG/L	16
505362-03	ALKALINITY, TOTAL (2320B)	MG/L	680
	PH (150.1)	UNITS	8.0
	BICARBONATE, CACO3 (2330B)	MG/L	670
	CARBONATE, CACO3 (2330B)	MG/L	6
	CARBON DIOXIDE, FREE AS CACO3	MG/L	13
505362-04	ALKALINITY, TOTAL (2320B)	MG/L	590
	PH (150.1)	UNITS	7.8
	BICARBONATE, CACO3 (2330B)	MG/L	590
	CARBONATE, CACO3 (2330B)	MG/L	3
	CARBON DIOXIDE, FREE AS CACO3	MG/L	19
505362-05	ALKALINITY, TOTAL (2320B)	MG/L	390
	PH (150.1)	UNITS	8.5
	BICARBONATE, CACO3 (2330B)	MG/L	380
	CARBONATE, CACO3 (2330B)	MG/L	11
	CARBON DIOXIDE, FREE AS CACO3	MG/L	2
505362-06	ALKALINITY, TOTAL (2320B)	MG/L	370
	PH (150.1)	UNITS	8.8
	BICARBONATE, CACO3 (2330B)	MG/L	350
	CARBONATE, CACO3 (2330B)	MG/L	21
	CARBON DIOXIDE, FREE AS CACO3	MG/L	1
505362-07	ALKALINITY, TOTAL (2320B)	MG/L	150
	PH (150.1)	UNITS	7.2
	BICARBONATE, CACO3 (2330B)	MG/L	150
	CARBON DIOXIDE, FREE AS CACO3	MG/L	19
505362-08	ALKALINITY, TOTAL (2320B)	MG/L	340
	PH (150.1)	UNITS	8.5
	BICARBONATE, CACO3 (2330B)	MG/L	330
	CARBONATE, CACO3 (2330B)	MG/L	10
	CARBON DIOXIDE, FREE AS CACO3	MG/L	2

Analytical Technologies, Inc.

"WetChem Quality Control Report"

Parameter:	ALKALINITY	PH
Batch Id:	ASW023	PHW106
Blank Result:	<1	N/A
Anal. Method:	2320B	150.1
Prep. Method:	N/A	N/A
Analysis Date:	25-MAY-95	18-MAY-95
Prep. Date:	25-MAY-95	18-MAY-95

Sample Duplication

Sample Dup:	505434-1	505434-1
Rept Limit:	<1	N/A
Sample Result:	426	8.72
Dup Result:	424	8.70
Sample RPD:	0	0.02
Max RPD:	4	0.12
Dry Weight%	N/A	N/A

Matrix Spike

Sample Spiked:	505434-1	N/A
Rept Limit:	<1	N/A
Sample Result:	426	
Spiked Result:	450	
Spike Added:	25F	
% Recovery:	96	
% Rec Limits:	80-113	
Dry Weight%	N/A	

ICV

ICV Result:	233	9.93
True Result:	250	10.00
% Recovery:	93	99
% Rec Limits:	90-110	90-110

LCS

LCS Result:	6.81
True Result:	6.87
% Recovery:	99
% Rec Limits:	97-103

Analytical Technologies, Inc.

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

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

(CA) = SEE CORRECTIVE ACTIONS FORM.

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

1. COLIFORM. COLIFORM PRECISION IS MEASURED BY THE ABSOLUTE DIFFERENCE BETWEEN THE LOGARITHM OF COLONIES PER 100 MLS OF SAMPLE ON DUPLICATE PLATES.

2. PH. PH PRECISION IS MEASURED BY THE ABSOLUTE DIFFERENCE BETWEEN THE SAMPLE AND THE DUPLICATE ANALYSIS.

3. FLASHPOINT. FLASHPOINT PRECISION IS MEASURED BY THE ABSOLUTE DIFFERENCE BETWEEN THE SAMPLE AND DUPLICATE ANALYSIS. IF FLASHPOINT IS LESS THAN 25 DEGREES CELSIUS, THE DETECTION LIMIT BECOMES THE INITIAL STARTING TEMPERATURE.

RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION).

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

DPH = DOLLY P. HWANG	RB = REBECCA BROWN	CD = CHRISTY DRAPER
DBH = DONALD B. HAND	BF = BLANCA FACH	SL = STEPHANIE LOWRY
TT = TONY TINEO	NB = NANCY L. BRASCH	FB = FREDDIE BROWN
JHS = JOSEPH SAUNDERS	MM = MARY MOLONEY	
NSB = NANCY S. BUTLER	CF = CHRISTINE FOSTER	

Analytical Technologies, Inc.

"WetChem Quality Control Report"

Parameter:	CHLORIDE	CONDUCT'Y	PH	SULFATE	TDS	PHENOL
Batch Id:	CKW14B	CDW037	PHW106	SEW048	TDW032	PEW018
Blank Result:	<2	<1	N/A	<10	<5	<0.005
Anal. Method:	325.2	120.1	150.1	375.4	160.1	420.1
Prep. Method:	N/A	N/A	N/A	N/A	N/A	N/A
Analysis Date:	22-MAY-95	25-MAY-95	18-MAY-95	20-MAY-95	21-MAY-95	26-MAY-95
Prep. Date:	22-MAY-95	25-MAY-95	18-MAY-95	20-MAY-95	21-MAY-95	23-MAY-95
Sample Duplication						
Sample Dup:	505358-1	505434-1	505434-1	505434-1	505434-1	505434-8
Rept Limit:	<2	<1	N/A	<10	<5	<0.005
Sample Result:	6.2	1311	8.72	<10	828	<0.005
Dup Result:	6.3	1317	8.70	<10	794	<0.005
Sample RPD:	0.1G	0	0.02	N/C	4	N/C
Max RPD:	2	4	0.12	10	16	0.005
Dry Weight%	N/A	N/A	N/A	N/A	N/A	N/A
Matrix Spike						
Sample Spiked:	505358-1	N/A	N/A	505434-1	N/A	505434-8
Rept Limit:	<2	N/A	N/A	<10	N/A	<0.005
Sample Result:	6.2			<10		<0.005
Spiked Result:	27.9			29.1		0.21
Spike Added:	20.0			20.0		0.20
% Recovery:	109			146		105
% Rec Limits:	77-130			51-151		59-151
Dry Weight%	N/A			N/A		N/A
ICV						
ICV Result:	54	1384	9.93	18.9		0.044
True Result:	55	1413	10.00	20.0		0.040
% Recovery:	98	98	99	95		110
% Rec Limits:	90-110	90-110	90-110	90-110		90-110
LCS						
LCS Result:		316	6.81		291	
True Result:		303	6.87		293	
% Recovery:		104	99		99	
% Rec Limits:		84-110	97-103		66-122	

Analytical Technologies, Inc.

"WetChem Quality Control Report"

Parameter:	TDS
Batch Id:	TDW032
Blank Result:	<5
Anal. Method:	160.1
Prep. Method:	N/A
Analysis Date:	21-MAY-95
Prep. Date:	21-MAY-95

Sample Duplication

Sample Dup:	505434-1
Rept Limit:	<5
Sample Result:	828
Dup Result:	794
Sample RPD:	4
Max RPD:	16
Dry Weight%	N/A

Matrix Spike

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

ICV

ICV Result:	
True Result:	
% Recovery:	
% Rec Limits:	

LCS

LCS Result:	291
True Result:	293
% Recovery:	99
% Rec Limits:	66-122

Analytical Technologies, Inc.

TOTAL ORGANIC CARBON
Method 415.2

Lab Name: Analytical Technologies, Inc.

Date Collected: 05/15/95

Client Name: ATI-NM

Date Analyzed: 05/23/95

Client Project ID: GRCZ -- 505362

Sample Matrix: Water

Lab Workorder Number: 95-05-118

Sample ID	Lab Sample ID	Volume Injected (mL)	TOC Conc. (mg/L)	TOC AVG	RPD
Reagent Blank	RB 95-05-118	1	< 1.0	< 1.0	N/A
SMW-3	95-05-118-01	1	5		
	95-05-118-01DUP	1	5	5	0
SMW-4	95-05-118-02	1	< 1.0		
	95-05-118-02DUP	1	< 1.0	< 1.0	N/A
SMW-5	95-05-118-03	1	< 1.0		
	95-05-118-03DUP	1	< 1.0	< 1.0	N/A
SMW-6	95-05-118-04	1	20		
	95-05-118-04DUP	1	19	19.5	5
OW-11	95-05-118-05	1	1		
	95-05-118-05DUP	1	1	1	0

Analytical Technologies, Inc.

TOTAL ORGANIC HALIDE

Modified Method 9020 TOX

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Client Project ID: GRCZ--505362

Lab Workorder Number: 95-05-118

Date Collected: 05/15/95

Date Extracted: 05/30/95

Date Analyzed: 05/30/95

Sample Matrix: Water

Sample ID	Lab Sample ID	Sample Volume (mL)	TOX Conc. (ug/L)	TOX AVG	RPD
Reagent Blank	WRB95-05-118	100	< 20	< 20	N/A
SMW-3	95-05-118-01	100	80		
	95-05-118-01DUP	100	70	75	13
SMW-4	95-05-118-02	100	30		
	95-05-118-02DUP	100	20	25	40
SMW-5	95-05-118-03	100	16		
	95-05-118-03DUP	100	30	23	61

Analytical Technologies, Inc.

TOTAL ORGANIC HALIDE

Modified Method 9020 TOX

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Client Project ID: GRCZ--505362

Lab Workorder Number: 95-05-118

Date Collected: 05/15/95

Date Extracted: 05/31/95

Date Analyzed: 05/31/95

Sample Matrix: Water

Sample ID	Lab Sample ID	Sample Volume (mL)	TOX Conc. (ug/L)	TOX AVG	RPD
Reagent Blank	WRB95-05-118	100	< 20	< 20	N/A
SMW-6	95-05-118-04	50	170		
	95-05-118-04DUP	50	180	175	6
OW-11	95-05-118-05	100	30		
	95-05-118-05DUP	100	60	45	67

Analytical Technologies, Inc.

TOTAL ORGANIC HALIDE MATRIX SPIKE RESULTS

Modified Method 9020 TOX

Sample ID

SMW-3

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Lab Sample ID: 95-05-118-01

Sample Matrix: Water

Date Extracted: 05/30/95

Date Analyzed: 05/30/95

Analyte	Spike Added (ug/L)	Sample Concentration (ug/L)	MS Concentration (ug/L)	MS Percent Recovery
2,4,6-Trichlorophenol	200	75	260	93

Analytical Technologies, Inc.

DISSOLVED METALS RESULTS

CLIENT:	ATI-Albuquerque	**ATI I.D.:**	505615
PROJECT #:	505362	**DATE SAMPLED:**	05/15/95
PROJECT NAME:	Annual Groundwater	**DATE RECEIVED:**	05/18/95
SAMPLE MATRIX:	WATER	**DATE DIGESTED:**	05/19/95
		DATE ANALYZED:	05/23/95
		UNITS:	mg/L

	ATI I.D.:	505615-0	505615-1	505615-2
	Client I.D.:	Method Blank	OW-1	OW-2
PARAMETER	**METHOD**			
CALCIUM	6010	< 0.1	2.0	8.9
MAGNESIUM	6010	< 0.1	0.2	3.6
POTASSIUM	6010	< 2	< 2	< 2
SODIUM	6010	< 0.1	287	297

Analytical Technologies, Inc.

DISSOLVED METALS RESULTS

CLIENT:	ATI-Albuquerque	**ATI I.D.:**	505615
PROJECT #:	505362	**DATE SAMPLED:**	05/15/95
PROJECT NAME:	Annual Groundwater	**DATE RECEIVED:**	05/18/95
SAMPLE MATRIX:	WATER	**DATE DIGESTED:**	05/19/95
		DATE ANALYZED:	05/23/95
		UNITS:	mg/L

	ATI I.D.:	505615-3	505615-4	505615-5
	Client I.D.:	OW-3	SMW-3	SMW-4
PARAMETER	**METHOD**			
CALCIUM	6010	8.1	37.7	3.3
MAGNESIUM	6010	2.7	12.1	0.7
POTASSIUM	6010	< 2	< 2	< 2
SODIUM	6010	276	564 D	266

D - Value from a two fold dilution.

Analytical Technologies, Inc.

DISSOLVED METALS RESULTS

CLIENT:	ATI-Albuquerque	**ATI I.D.:**	505615
PROJECT #:	505362	**DATE SAMPLED:**	05/15/95
PROJECT NAME:	Annual Groundwater	**DATE RECEIVED:**	05/18/95
SAMPLE MATRIX:	WATER	**DATE DIGESTED:**	05/19/95
		DATE ANALYZED:	05/23/95
		UNITS:	mg/L

	ATI I.D.:	505615-6	505615-7
	Client I.D.:	SMW-5	SMW-6
PARAMETER	**METHOD**		
CALCIUM	6010	2.2	709 D
MAGNESIUM	6010	0.5	174 D
POTASSIUM	6010	< 2	5
SODIUM	6010	250	2410 D

D - Value from a ten fold dilution.

Analytical Technologies, Inc.

DISSOLVED METALS RESULTS

CLIENT:	ATI-Albuquerque	**ATI I.D.:**	505615
PROJECT #:	505362	**DATE SAMPLED:**	05/15/95
PROJECT NAME:	Annual Groundwater	**DATE RECEIVED:**	05/18/95
SAMPLE MATRIX:	WATER	**DATE DIGESTED:**	05/19/95
		DATE ANALYZED:	05/19,22,23/95
		UNITS:	mg/L

	ATI I.D.:	505615-0	505615-8
	Client I.D.:	Method Blank	OW-11
PARAMETER	**METHOD**		
ARSENIC	7060	< 0.005	< 0.005
BARIUM	6010	< 0.01	0.01
CADMIUM	6010	< 0.005	< 0.005
CALCIUM	6010	< 0.1	7.6
MAGNESIUM	6010	< 0.1	0.8
MANGANESE	6010	< 0.01	< 0.01
POTASSIUM	6010	< 2	< 2
SELENIUM	7740	< 0.005	< 0.005
SILVER	6010	< 0.01	< 0.01
SODIUM	6010	< 0.1	480

Analytical Technologies, Inc.

TOTAL METALS RESULTS

CLIENT:	ATI-Albuquerque	**ATI I.D.:**	505615
PROJECT #:	505362	**DATE SAMPLED:**	05/15/95
PROJECT NAME:	Annual Groundwater	**DATE RECEIVED:**	05/18/95
SAMPLE MATRIX:	WATER	**DATE DIGESTED:**	05/19/95
		DATE ANALYZED:	05/19,23/95
		UNITS:	mg/L

	ATI I.D.:	505615-0	505615-4	505615-5
	Client I.D.:	Method Blank	SMW-3	SMW-4
PARAMETER	**METHOD**			
CHROMIUM	6010	< 0.01	0.01	< 0.01
LEAD	7421	< 0.002	< 0.002	< 0.002
MERCURY	7470	< 0.0002		

Analytical Technologies, Inc.

TOTAL METALS RESULTS

CLIENT:	ATI-Albuquerque	**ATI I.D.:**	505615
PROJECT #:	505362	**DATE SAMPLED:**	05/15/95
PROJECT NAME:	Annual Groundwater	**DATE RECEIVED:**	05/18/95
SAMPLE MATRIX:	WATER	**DATE DIGESTED:**	05/19/95
		DATE ANALYZED:	05/19,23/95
		UNITS:	mg/L

	ATI I.D.:	505615-6	505615-7	505615-8
	Client I.D.:	SMW-5	SMW-6	OW-11
PARAMETER	**METHOD**			
CHROMIUM	6010	0.01	1.79	< 0.01
LEAD	7421	< 0.002	< 0.002	< 0.002
MERCURY	7470			< 0.0002

Analytical Technologies, Inc.

METALS DUPLICATE RESULTS

METHOD:	6010	ATI I.D.:	505615
CLIENT:	ATI-Albuquerque	QC SAMPLE:	505615-1 Dissolved
PROJECT #:	505362	DATE DIGESTED:	05/19/95
PROJECT NAME:	Annual Groundwater	DATE ANALYZED:	05/23/95
SAMPLE MATRIX:	WATER	DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	DUPLICATE RESULT	RPD	RPD CONTROL LIMIT
CALCIUM	2.0	2.1	5	20
MAGNESIUM	0.2	0.2	0	20
POTASSIUM	< 2	< 2	NA	20
SODIUM	287	294	2	20

Analytical Technologies, Inc.

METALS DUPLICATE RESULTS

METHOD:	6010 / 7000 series	ATI I.D.:	505615
CLIENT:	ATI-Albuquerque	QC SAMPLE:	505615-4 Total
PROJECT #:	505362	DATE DIGESTED:	05/18/95
PROJECT NAME:	Annual Groundwater	DATE ANALYZED:	05/19,22,23/95
SAMPLE MATRIX:	WATER	DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	DUPLICATE RESULT	RPD		RPD CONTROL LIMIT
ARSENIC	< 0.005	< 0.005	NA	*	20
BARIUM	0.03	0.03	0		20
CALCIUM	37.7	37.0	2		20
CADMIUM	< 0.005	< 0.005	NA		20
CHROMIUM	0.01	< 0.01	NC		20
COPPER	< 0.01	< 0.01	NA		20
LEAD	< 0.002	< 0.002	NA	*	20
MAGNESIUM	12.3	12.1	2		20
MANGANESE	0.02	0.02	0		20
MERCURY	< 0.0002	< 0.0002	NA	**	20
POTASSIUM	< 2	< 2	NA		20
SELENIUM	< 0.005	< 0.005	NA	*	20
SILVER	< 0.01	< 0.01	NA		20
SODIUM	600 D	628 D	5		20

NC - Not Calculable

D - Value from a two fold dilution.

* Quality control for arsenic, lead and selenium performed on sample 505621-1 (Dissolved).

** Quality control for mercury performed on sample 505615-8 (Dissolved).

Analytical Technologies, Inc.

METALS SPIKE RESULTS

METHOD:	6010 / 7000 series	ATI I.D.:	505615
CLIENT:	ATI-Albuquerque	QC SAMPLE:	505615-4 Total
PROJECT #:	505362	DATE DIGESTED:	05/18/95
PROJECT NAME:	Annual Groundwater	DATE ANALYZED:	05/19,22,23/95
SAMPLE MATRIX:	WATER	DILUTION FACTOR:	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	SPIKE CONC	SPIKE RESULT	% RECOV		CONTROL LIMIT
ARSENIC	< 0.005	0.040	0.039	98	*	75-125%
BARIUM	0.03	2.00	1.98	98		75-125%
CADMIUM	< 0.005	1.00	0.984	98		75-125%
CHROMIUM	0.01	1.00	0.98	97		75-125%
COPPER	< 0.01	1.00	0.95	95		75-125%
LEAD	< 0.002	0.020	0.018	90	*	75-125%
MANGANESE	0.02	1.00	0.98	96		75-125%
MERCURY	< 0.0002	0.0020	0.0021	105	**	75-125%
SELENIUM	< 0.005	0.020	0.018	90	*	75-125%
SILVER	< 0.01	1.00	0.98	98		75-125%

* Quality control for arsenic, lead and selenium performed on sample 505621-1 (Dissolved).

** Quality control for mercury performed on sample 505615-8 (Dissolved).

Analytical Technologies, Inc.

METALS BLANK SPIKE RESULTS

METHOD:	6010 / 7000 series	**ATI I.D.:**	505615
CLIENT:	ATI-Albuquerque	**QC SAMPLE:**	Method Blank
PROJECT #:	505362	**DATE DIGESTED:**	05/18/95
PROJECT NAME:	Annual Groundwater	**DATE ANALYZED:**	05/19,22,23/95
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SPIKE RESULT	SPIKE CONC	% RECOV	CONTROL LIMIT
ARSENIC	0.040	0.040	100	80-120%
BARIUM	2.00	2.00	100	80-120%
CADMIUM	0.991	1.00	99	80-120%
CHROMIUM	0.99	1.00	99	80-120%
COPPER	0.96	1.00	96	80-120%
LEAD	0.018	0.020	90	80-120%
MANGANESE	0.99	1.00	99	80-120%
MERCURY	0.0021	0.0020	105	80-120%
SELENIUM	0.017	0.020	85	80-120%
SILVER	1.00	1.00	100	80-120%

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : BTEX, MTBE (EPA 8020)

CLIENT : GIANT REFINING CO. ATI I.D.: 505362

PROJECT # : (NONE)

PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	OW-1	AQUEOUS	05/15/95	NA	05/20/95	1
02	OW-2	AQUEOUS	05/15/95	NA	05/20/95	1
03	OW-3	AQUEOUS	05/15/95	NA	05/20/95	1

PARAMETER	UNITS	01	02	03
BENZENE	UG/L	<0.5	<0.5	<0.5
TOLUENE	UG/L	<0.5	<0.5	<0.5
ETHYLBENZENE	UG/L	<0.5	<0.5	<0.5
TOTAL XYLENES	UG/L	<0.5	<0.5	<0.5
METHYL-t-BUTYL ETHER	UG/L	<2.5	<2.5	<2.5

SURROGATE:

TRIFLUOROTOLUENE (%)	98	97	97

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : BTEX, MTBE (EPA 8020)

CLIENT : GIANT REFINING CO. ATI I.D.: 505362

PROJECT # : (NONE)

PROJECT NAME : ANNUAL GROUNDWATER

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
09	TRIP BLANK	AQUEOUS	05/11/95	NA	05/20/95	1

PARAMETER	UNITS	09
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5
METHYL-t-BUTYL ETHER	UG/L	<2.5

SURROGATE:

TRIFLUOROTOLUENE (%) 93

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

REAGENT BLANK

TEST	: BTEX, MTBE (EPA 8020)	ATI I.D.	: 505362
BLANK I.D.	: 051995	MATRIX	: AQUEOUS
CLIENT	: GIANT REFINING CO.	DATE EXTRACTED	: NA
PROJECT #	: (NONE)	DATE ANALYZED	: 05/19/95
PROJECT NAME	: ANNUAL GROUNDWATER	DILUTION FACTOR	: 1

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

SURROGATE:

TRIFLUOROTOLUENE (%)	100

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

TEST	: BTEX, MTBE (EPA 8020)		
MSMSD #	: 50536506	ATI I.D.	: 505362
CLIENT	: GIANT REFINING CO.	DATE EXTRACTED	: NA
PROJECT #	: (NONE)	DATE ANALYZED	: 05/19/95
PROJECT NAME	: ANNUAL GROUNDWATER	SAMPLE MATRIX	: AQUEOUS
REF. I.D.	: 50536506	UNITS	: UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD
BENZENE	<0.5	10	10	100	11	110	10
TOLUENE	1.2	10	11	98	11	98	0
ETHYLBENZENE	<0.5	10	11	110	11	110	0
TOTAL XYLENES	1.3	30	33	105	34	109	3
METHYL-t-BUTYL ETHER	<2.5	10	10	100	11	110	10

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

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

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	505501
Client:	ANALYTICAL TECHNOLOGIES, INC.
Project Number:	505362
Project Name:	GRC
Project Location:	N/S
Test:	ETHANOL
Analysis Method:	ATI SOP 641
Extraction Method:	N/A
Matrix:	WATER
QC Level:	II

Lab Id:	001	Sample Date/Time:	15-MAY-95 1525
Client Sample Id:	505362-04	Received Date:	20-MAY-95
Batch: GEW050		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	26-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ETHANOL	MG/L	ND	5	

Comments:
ANALYST: KW

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	505501
Client:	ANALYTICAL TECHNOLOGIES, INC.
Project Number:	505362
Project Name:	GRC
Project Location:	N/S
Test:	ETHANOL
Analysis Method:	ATI SOP 641
Extraction Method:	N/A
Matrix:	WATER
QC Level:	II

Lab Id:	002	Sample Date/Time:	15-MAY-95 1409
Client Sample Id:	505362-05	Received Date:	20-MAY-95
Batch: GEW050		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	26-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ETHANOL	MG/L	ND	5	

Comments:
ANALYST: KW

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	505501
Client:	ANALYTICAL TECHNOLOGIES, INC.
Project Number:	505362
Project Name:	GRC
Project Location:	N/S
Test:	ETHANOL
Analysis Method:	ATI SOP 641
Extraction Method:	N/A
Matrix:	WATER
QC Level:	II

Lab Id:	003	Sample Date/Time:	15-MAY-95 1335
Client Sample Id:	505362-06	Received Date:	20-MAY-95
Batch: GEW050		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	26-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ETHANOL	MG/L	ND	5	

Comments:
ANALYST: KW

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	505501
Client:	ANALYTICAL TECHNOLOGIES, INC.
Project Number:	505362
Project Name:	GRC
Project Location:	N/S
Test:	ETHANOL
Analysis Method:	ATI SOP 641
Extraction Method:	N/A
Matrix:	WATER
QC Level:	II

Lab Id:	004	Sample Date/Time:	15-MAY-95 1145
Client Sample Id:	505362-07	Received Date:	20-MAY-95
Batch: GEW050		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	26-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ETHANOL	MG/L	ND	5	

Comments:
ANALYST: KW

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	505501
Client:	ANALYTICAL TECHNOLOGIES, INC.
Project Number:	505362
Project Name:	GRC
Project Location:	N/S
Test:	ETHANOL
Analysis Method:	ATI SOP 641
Extraction Method:	N/A
Matrix:	WATER
QC Level:	II

Lab Id:	005	Sample Date/Time:	15-MAY-95 1609
Client Sample Id:	505362-08	Received Date:	20-MAY-95
Batch: GEW050		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	26-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ETHANOL	MG/L	ND	5	

Comments:
ANALYST: KW

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	505501
Client:	ANALYTICAL TECHNOLOGIES, INC.
Project Number:	505362
Project Name:	GRC
Project Location:	N/S
Test:	ETHANOL
Analysis Method:	ATI SOP 641
Extraction Method:	N/A
Matrix:	WATER
QC Level:	II

Lab Id:	006	Sample Date/Time:	11-MAY-95 N/S
Client Sample Id:	505362-09 (TB)	Received Date:	20-MAY-95
Batch: GEW050		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	26-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ETHANOL	MG/L	ND	5	

Comments:
ANALYST: KW

Analytical Technologies, Inc.

"QC Report"

Title: Water Blank
Batch: GEW050
Analysis Method: ATI SOP 641
Extraction Method: N/A

Blank Id: A Date Analyzed: 26-MAY-95 Date Extracted: N/A

Parameters:	Units:	Results:	Reporting Limits:
ETHANOL	MG/L	ND	5

Comments:
ANALYST: KW

Analytical Technologies, Inc.

"QC Report"

Title: Water Reagent
Batch: GEW050
Analysis Method: ATI SOP 641
Extraction Method: N/A

RS Date Analyzed: 26-MAY-95
RSD Date Analyzed: 26-MAY-95

RS Date Extracted: N/A
RSD Date Extracted: N/A

Parameters:	Spike Added	Sample Conc	RS Conc	RS %Rec	RSD Conc	RSD %Rec	RPD	RPD Lmts	Rec Lmts
ETHANOL	25	<5	22	88	24	96	9	50	50-150

Surrogates:

Comments:

Notes:
MG/L = PARTS PER MILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCE FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCE METHOD.
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT

Analytical Technologies, Inc.

"QC Report"

Title: Water Matrix
Batch: GEW050
Analysis Method: ATI SOP 641
Extraction Method: N/A

Dry Weight %: N/A
Sample Spiked: 505500-1

MS Date Analyzed: 26-MAY-95
MSD Date Analyzed: 26-MAY-95

MS Date Extracted: N/A
MSD Date Extracted: N/A

Parameters:	Spike Added	Sample Conc	MS Conc	MS %Rec	MSD Conc	MSD %Rec	RPD	RPD Lmts	Rec Lmts
ETHANOL	100	<5	106	106	118	118	11	50	50-150

Surrogates:

Comments:

Notes:
MG/L = PARTS PER MILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCE FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCE METHOD.
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession: 505501
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505362
Project Name: GRC
Project Location: N/S
Test: SW 846 8260 TABLE SIX
Analysis Method: 8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A
Matrix: WATER
QC Level: II

Lab Id: 001
Client Sample Id: 505362-04

Sample Date/Time: 15-MAY-95 1525
Received Date: 20-MAY-95

Batch: MAW077
Blank: B Dry Weight %: N/A

Extraction Date: N/A
Analysis Date: 25-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
BENZENE	UG/L	ND	5	
ACETONE	UG/L	ND	50	
ACROLEIN	UG/L	ND	100	
ACRYLONITRILE	UG/L	ND	100	
CARBON DISULFIDE	UG/L	ND	5	
2-CHLOROETHYLVINYL ETHER	UG/L	ND	10	
1,4-DICHLORO-2-BUTENE	UG/L	ND	5	
TRANS-1,4-DICHLORO-2-BUTENE	UG/L	ND	5	
1,1 DICHLOROETHYLENE	UG/L	ND	5	
ETHYL METHACRYLATE	UG/L	ND	10	
2-HEXANONE	UG/L	ND	5	
IODOMETHANE	UG/L	ND	5	
METHYL ETHYL KETONE	UG/L	ND	10	
METHYL ISOBUTYL KETONE	UG/L	ND	10	
TETRACHLOROETHYLENE	UG/L	ND	5	
TRICHLOROETHYLENE	UG/L	ND	5	
VINYL ACETATE	UG/L	ND	10	
BROMODICHLOROMETHANE	UG/L	ND	1	
BROMOFORM	UG/L	ND	5	
BROMOMETHANE	UG/L	ND	10	
CARBON TETRACHLORIDE	UG/L	ND	5	
CHLOROBENZENE	UG/L	ND	5	
CHLOROETHANE	UG/L	ND	10	
CHLOROFORM	UG/L	ND	5	
CHLOROMETHANE	UG/L	ND	10	
CHLORODIBROMOMETHANE	UG/L	ND	10	
DIBROMOMETHANE	UG/L	ND	5	
DICHLORODIFLUOROMETHANE	UG/L	ND	20	
1,1-DICHLOROETHANE	UG/L	ND	5	
1,2-DICHLOROETHANE	UG/L	ND	5	
1,2-DICHLOROPROPANE	UG/L	ND	5	
CIS-1,3-DICHLOROPROPENE	UG/L	ND	5	
TRANS-1,3-DICHLOROPROPENE	UG/L	ND	5	
ETHYL BENZENE	UG/L	ND	5	
METHYLENE CHLORIDE	UG/L	ND	5	
STYRENE	UG/L	ND	5	
1,1,2,2-TETRACHLOROETHANE	UG/L	ND	5	
TOLUENE	UG/L	ND	5	
TRANS 1,2 DICHLOROETHYLENE	UG/L	ND	5	
1,1,1-TRICHLOROETHANE	UG/L	ND	5	

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	505501
Client:	ANALYTICAL TECHNOLOGIES, INC.
Project Number:	505362
Project Name:	GRC
Project Location:	N/S
Test:	SW 846 8260 TABLE SIX
Analysis Method:	8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method:	N/A
Matrix:	WATER
QC Level:	II

Lab Id: 001
Client Sample Id: 505362-04

Sample Date/Time: 15-MAY-95 1525
Received Date: 20-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
1,1,2-TRICHLOROETHANE	UG/L	ND	5	
TRICHLOROFLUOROMETHANE	UG/L	ND	5	
1,2,3 TRICHLOROPROPANE	UG/L	ND	5	
VINYL CHLORIDE	UG/L	ND	10	
M,P-XYLENE	UG/L	ND	5	
O-XYLENE	UG/L	ND	5	
DIBROMOFLUOROMETHANE	%REC/SURR	103	89-116	
TOLUENE-D8	%REC/SURR	99	88-110	
BROMOFLUOROBENZENE	%REC/SURR	105	86-115	
ANALYST	INITIALS	LL		

Comments:

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession: 505501
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505362
Project Name: GRC
Project Location: N/S
Test: SW 846 8260 TABLE SIX
Analysis Method: 8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A
Matrix: WATER
QC Level: II

Lab Id: 002
Client Sample Id: 505362-05

Sample Date/Time: 15-MAY-95 1409
Received Date: 20-MAY-95

Batch: MAW077
Blank: B
Dry Weight %: N/A

Extraction Date: N/A
Analysis Date: 25-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
BENZENE	UG/L	ND	5	
ACETONE	UG/L	ND	50	
ACROLEIN	UG/L	ND	100	
ACRYLONITRILE	UG/L	ND	100	
CARBON DISULFIDE	UG/L	ND	5	
2-CHLOROETHYLVINYL ETHER	UG/L	ND	10	
1,4-DICHLORO-2-BUTENE	UG/L	ND	5	
TRANS-1,4-DICHLORO-2-BUTENE	UG/L	ND	5	
1,1 DICHLOROETHYLENE	UG/L	ND	5	
ETHYL METHACRYLATE	UG/L	ND	10	
2-HEXANONE	UG/L	ND	5	
IODOMETHANE	UG/L	ND	5	
METHYL ETHYL KETONE	UG/L	ND	10	
METHYL ISOBUTYL KETONE	UG/L	ND	10	
TETRACHLOROETHYLENE	UG/L	ND	5	
TRICHLOROETHYLENE	UG/L	ND	5	
VINYL ACETATE	UG/L	ND	10	
BROMODICHLOROMETHANE	UG/L	ND	1	
BROMOFORM	UG/L	ND	5	
BROMOMETHANE	UG/L	ND	10	
CARBON TETRACHLORIDE	UG/L	ND	5	
CHLOROBENZENE	UG/L	ND	5	
CHLOROETHANE	UG/L	ND	10	
CHLOROFORM	UG/L	ND	5	
CHLOROMETHANE	UG/L	ND	10	
CHLORODIBROMOMETHANE	UG/L	ND	10	
DIBROMOMETHANE	UG/L	ND	5	
DICHLORODIFLUOROMETHANE	UG/L	ND	20	
1,1-DICHLOROETHANE	UG/L	ND	5	
1,2-DICHLOROETHANE	UG/L	ND	5	
1,2-DICHLOROPROPANE	UG/L	ND	5	
CIS-1,3-DICHLOROPROPENE	UG/L	ND	5	
TRANS-1,3-DICHLOROPROPENE	UG/L	ND	5	
ETHYL BENZENE	UG/L	ND	5	
METHYLENE CHLORIDE	UG/L	ND	5	
STYRENE	UG/L	ND	5	
1,1,2,2-TETRACHLOROETHANE	UG/L	ND	5	
TOLUENE	UG/L	ND	5	
TRANS 1,2 DICHLOROETHYLENE	UG/L	ND	5	
1,1,1-TRICHLOROETHANE	UG/L	ND	5	

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession: 505501
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505362
Project Name: GRC
Project Location: N/S
Test: SW 846 8260 TABLE SIX
Analysis Method: 8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A
Matrix: WATER
QC Level: II

Lab Id: 002
Client Sample Id: 505362-05
Sample Date/Time: 15-MAY-95 1409
Received Date: 20-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
1,1,2-TRICHLOROETHANE	UG/L	ND	5	
TRICHLOROFLUOROMETHANE	UG/L	ND	5	
1,2,3 TRICHLOROPROPANE	UG/L	ND	5	
VINYL CHLORIDE	UG/L	ND	10	
M,P-XYLENE	UG/L	ND	5	
O-XYLENE	UG/L	ND	5	
DIBROMOFLUOROMETHANE	%REC/SURR	103	89-116	
TOLUENE-D8	%REC/SURR	101	88-110	
BROMOFLUOROBENZENE	%REC/SURR	102	86-115	
ANALYST	INITIALS	LL		

Comments:

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession: 505501
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505362
Project Name: GRC
Project Location: N/S
Test: SW 846 8260 TABLE SIX
Analysis Method: 8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A
Matrix: WATER
QC Level: II

Lab Id: 003
Client Sample Id: 505362-06
Sample Date/Time: 15-MAY-95 1335
Received Date: 20-MAY-95

Batch: MAW077
Blank: B
Dry Weight %: N/A
Extraction Date: N/A
Analysis Date: 25-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
BENZENE	UG/L	ND	5	
ACETONE	UG/L	ND	50	
ACROLEIN	UG/L	ND	100	
ACRYLONITRILE	UG/L	ND	100	
CARBON DISULFIDE	UG/L	ND	5	
2-CHLOROETHYLVINYL ETHER	UG/L	ND	10	
1,4-DICHLORO-2-BUTENE	UG/L	ND	5	
TRANS-1,4-DICHLORO-2-BUTENE	UG/L	ND	5	
1,1 DICHLOROETHYLENE	UG/L	ND	5	
ETHYL METHACRYLATE	UG/L	ND	10	
2-HEXANONE	UG/L	ND	5	
IODOMETHANE	UG/L	ND	5	
METHYL ETHYL KETONE	UG/L	ND	10	
METHYL ISOBUTYL KETONE	UG/L	ND	10	
TETRACHLOROETHYLENE	UG/L	ND	5	
TRICHLOROETHYLENE	UG/L	ND	5	
VINYL ACETATE	UG/L	ND	10	
BROMODICHLOROMETHANE	UG/L	ND	1	
BROMOFORM	UG/L	ND	5	
BROMOMETHANE	UG/L	ND	10	
CARBON TETRACHLORIDE	UG/L	ND	5	
CHLOROBENZENE	UG/L	ND	5	
CHLOROETHANE	UG/L	ND	10	
CHLOROFORM	UG/L	ND	5	
CHLOROMETHANE	UG/L	ND	10	
CHLORODIBROMOMETHANE	UG/L	ND	10	
DIBROMOMETHANE	UG/L	ND	5	
DICHLORODIFLUOROMETHANE	UG/L	ND	20	
1,1-DICHLOROETHANE	UG/L	ND	5	
1,2-DICHLOROETHANE	UG/L	ND	5	
1,2-DICHLOROPROPANE	UG/L	ND	5	
CIS-1,3-DICHLOROPROPENE	UG/L	ND	5	
TRANS-1,3-DICHLOROPROPENE	UG/L	ND	5	
ETHYL BENZENE	UG/L	ND	5	
METHYLENE CHLORIDE	UG/L	ND	5	
STYRENE	UG/L	ND	5	
1,1,2,2-TETRACHLOROETHANE	UG/L	ND	5	
TOLUENE	UG/L	ND	5	
TRANS 1,2 DICHLOROETHYLENE	UG/L	ND	5	
1,1,1-TRICHLOROETHANE	UG/L	ND	5	

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession: 505501
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505362
Project Name: GRC
Project Location: N/S
Test: SW 846 8260 TABLE SIX
Analysis Method: 8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A
Matrix: WATER
QC Level: II

Lab Id: 003
Client Sample Id: 505362-06
Sample Date/Time: 15-MAY-95 1335
Received Date: 20-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
1,1,2-TRICHLOROETHANE	UG/L	ND	5	
TRICHLOROFLUOROMETHANE	UG/L	ND	5	
1,2,3 TRICHLOROPROPANE	UG/L	ND	5	
VINYL CHLORIDE	UG/L	ND	10	
M,P-XYLENE	UG/L	ND	5	
O-XYLENE	UG/L	ND	5	
DIBROMOFLUOROMETHANE	%REC/SURR	99	89-116	
TOLUENE-D8	%REC/SURR	102	88-110	
BROMOFLUOROBENZENE	%REC/SURR	99	86-115	
ANALYST	INITIALS	LL		

Comments:

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession: 505501
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505362
Project Name: GRC
Project Location: N/S
Test: SW 846 8260 TABLE SIX
Analysis Method: 8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A
Matrix: WATER
QC Level: II

Lab Id: 004
Client Sample Id: 505362-07

Sample Date/Time: 15-MAY-95 1145
Received Date: 20-MAY-95

Batch: MAW077
Blank: B

Dry Weight %: N/A

Extraction Date: N/A
Analysis Date: 25-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
BENZENE	UG/L	ND	5	
ACETONE	UG/L	ND	50	
ACROLEIN	UG/L	ND	100	
ACRYLONITRILE	UG/L	ND	100	
CARBON DISULFIDE	UG/L	ND	5	
2-CHLOROETHYLVINYL ETHER	UG/L	ND	10	
1,4-DICHLORO-2-BUTENE	UG/L	ND	5	
TRANS-1,4-DICHLORO-2-BUTENE	UG/L	ND	5	
1,1 DICHLOROETHYLENE	UG/L	ND	5	
ETHYL METHACRYLATE	UG/L	ND	10	
2-HEXANONE	UG/L	ND	5	
IODOMETHANE	UG/L	ND	5	
METHYL ETHYL KETONE	UG/L	ND	10	
METHYL ISOBUTYL KETONE	UG/L	ND	10	
TETRACHLOROETHYLENE	UG/L	ND	5	
TRICHLOROETHYLENE	UG/L	ND	5	
VINYL ACETATE	UG/L	ND	10	
BROMODICHLOROMETHANE	UG/L	ND	1	
BROMOFORM	UG/L	ND	5	
BROMOMETHANE	UG/L	ND	10	
CARBON TETRACHLORIDE	UG/L	ND	5	
CHLOROBENZENE	UG/L	ND	5	
CHLOROETHANE	UG/L	ND	10	
CHLOROFORM	UG/L	ND	5	
CHLOROMETHANE	UG/L	ND	10	
CHLORODIBROMOMETHANE	UG/L	ND	10	
DIBROMOMETHANE	UG/L	ND	5	
DICHLORODIFLUOROMETHANE	UG/L	ND	20	
1,1-DICHLOROETHANE	UG/L	ND	5	
1,2-DICHLOROETHANE	UG/L	ND	5	
1,2-DICHLOROPROPANE	UG/L	ND	5	
CIS-1,3-DICHLOROPROPENE	UG/L	ND	5	
TRANS-1,3-DICHLOROPROPENE	UG/L	ND	5	
ETHYL BENZENE	UG/L	ND	5	
METHYLENE CHLORIDE	UG/L	ND	5	
STYRENE	UG/L	ND	5	
1,1,2,2-TETRACHLOROETHANE	UG/L	ND	5	
TOLUENE	UG/L	ND	5	
TRANS 1,2 DICHLOROETHYLENE	UG/L	ND	5	
1,1,1-TRICHLOROETHANE	UG/L	ND	5	

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession: 505501
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505362
Project Name: GRC
Project Location: N/S
Test: SW 846 8260 TABLE SIX
Analysis Method: 8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A
Matrix: WATER
QC Level: II

Lab Id: 004
Client Sample Id: 505362-07
Sample Date/Time: 15-MAY-95 1145
Received Date: 20-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
1,1,2-TRICHLOROETHANE	UG/L	ND	5	
TRICHLOROFLUOROMETHANE	UG/L	ND	5	
1,2,3 TRICHLOROPROPANE	UG/L	ND	5	
VINYL CHLORIDE	UG/L	ND	10	
M,P-XYLENE	UG/L	ND	5	
O-XYLENE	UG/L	ND	5	
DIBROMOFLUOROMETHANE	%REC/SURR	100	89-116	
TOLUENE-D8	%REC/SURR	102	88-110	
BROMOFLUOROBENZENE	%REC/SURR	99	86-115	
ANALYST	INITIALS	LL		

Comments:

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession: 505501
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505362
Project Name: GRC
Project Location: N/S
Test: SW 846 8260 TABLE SIX
Analysis Method: 8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A
Matrix: WATER
QC Level: II

Lab Id: 005
Client Sample Id: 505362-08

Sample Date/Time: 15-MAY-95 1609
Received Date: 20-MAY-95

Batch: MAW077
Blank: B

Dry Weight %: N/A

Extraction Date: N/A
Analysis Date: 25-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
BENZENE	UG/L	ND	5	
ACETONE	UG/L	ND	50	
ACROLEIN	UG/L	ND	100	
ACRYLONITRILE	UG/L	ND	100	
CARBON DISULFIDE	UG/L	ND	5	
2-CHLOROETHYLVINYL ETHER	UG/L	ND	10	
1,4-DICHLORO-2-BUTENE	UG/L	ND	5	
TRANS-1,4-DICHLORO-2-BUTENE	UG/L	ND	5	
1,1 DICHLOROETHYLENE	UG/L	ND	5	
ETHYL METHACRYLATE	UG/L	ND	10	
2-HEXANONE	UG/L	ND	5	
IODOMETHANE	UG/L	ND	5	
METHYL ETHYL KETONE	UG/L	ND	10	
METHYL ISOBUTYL KETONE	UG/L	ND	10	
TETRACHLOROETHYLENE	UG/L	ND	5	
TRICHLOROETHYLENE	UG/L	ND	5	
VINYL ACETATE	UG/L	ND	10	
BROMODICHLOROMETHANE	UG/L	ND	1	
BROMOFORM	UG/L	ND	5	
BROMOMETHANE	UG/L	ND	10	
CARBON TETRACHLORIDE	UG/L	ND	5	
CHLOROBENZENE	UG/L	ND	5	
CHLOROETHANE	UG/L	ND	10	
CHLOROFORM	UG/L	ND	5	
CHLOROMETHANE	UG/L	ND	10	
CHLORODIBROMOMETHANE	UG/L	ND	10	
DIBROMOMETHANE	UG/L	ND	5	
DICHLORODIFLUOROMETHANE	UG/L	ND	20	
1,1-DICHLOROETHANE	UG/L	ND	5	
1,2-DICHLOROETHANE	UG/L	ND	5	
1,2-DICHLOROPROPANE	UG/L	ND	5	
CIS-1,3-DICHLOROPROPENE	UG/L	ND	5	
TRANS-1,3-DICHLOROPROPENE	UG/L	ND	5	
ETHYL BENZENE	UG/L	ND	5	
METHYLENE CHLORIDE	UG/L	ND	5	
STYRENE	UG/L	ND	5	
1,1,2,2-TETRACHLOROETHANE	UG/L	ND	5	
TOLUENE	UG/L	ND	5	
TRANS 1,2 DICHLOROETHYLENE	UG/L	ND	5	
1,1,1-TRICHLOROETHANE	UG/L	ND	5	

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	505501
Client:	ANALYTICAL TECHNOLOGIES, INC.
Project Number:	505362
Project Name:	GRC
Project Location:	N/S
Test:	SW 846 8260 TABLE SIX
Analysis Method:	8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method:	N/A
Matrix:	WATER
QC Level:	II

Lab Id:	005	Sample Date/Time:	15-MAY-95 1609
Client Sample Id:	505362-08	Received Date:	20-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
1,1,2-TRICHLOROETHANE	UG/L	ND	5	
TRICHLOROFLUOROMETHANE	UG/L	ND	5	
1,2,3 TRICHLOROPROPANE	UG/L	ND	5	
VINYL CHLORIDE	UG/L	ND	10	
M,P-XYLENE	UG/L	ND	5	
O-XYLENE	UG/L	ND	5	
DIBROMOFLUOROMETHANE	%REC/SURR	99	89-116	
TOLUENE-D8	%REC/SURR	100	88-110	
BROMOFLUOROBENZENE	%REC/SURR	97	86-115	
ANALYST	INITIALS	LL		

Comments:

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession: 505501
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505362
Project Name: GRC
Project Location: N/S
Test: SW 846 8260 TABLE SIX
Analysis Method: 8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A
Matrix: WATER
QC Level: II

Lab Id: 006
Client Sample Id: 505362-09 (TB)
Sample Date/Time: 11-MAY-95 N/S
Received Date: 20-MAY-95

Batch: MAW077
Blank: B
Dry Weight %: N/A
Extraction Date: N/A
Analysis Date: 25-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
BENZENE	UG/L	ND	5	
ACETONE	UG/L	ND	50	
ACROLEIN	UG/L	ND	100	
ACRYLONITRILE	UG/L	ND	100	
CARBON DISULFIDE	UG/L	ND	5	
2-CHLOROETHYLVINYL ETHER	UG/L	ND	10	
1,4-DICHLORO-2-BUTENE	UG/L	ND	5	
TRANS-1,4-DICHLORO-2-BUTENE	UG/L	ND	5	
1,1 DICHLOROETHYLENE	UG/L	ND	5	
ETHYL METHACRYLATE	UG/L	ND	10	
2-HEXANONE	UG/L	ND	5	
IODOMETHANE	UG/L	ND	5	
METHYL ETHYL KETONE	UG/L	ND	10	
METHYL ISOBUTYL KETONE	UG/L	ND	10	
TETRACHLOROETHYLENE	UG/L	ND	5	
TRICHLOROETHYLENE	UG/L	ND	5	
VINYL ACETATE	UG/L	ND	10	
BROMODICHLOROMETHANE	UG/L	ND	1	
BROMOFORM	UG/L	ND	5	
BROMOMETHANE	UG/L	ND	10	
CARBON TETRACHLORIDE	UG/L	ND	5	
CHLOROBENZENE	UG/L	ND	5	
CHLOROETHANE	UG/L	ND	10	
CHLOROFORM	UG/L	ND	5	
CHLOROMETHANE	UG/L	ND	10	
CHLORODIBROMOMETHANE	UG/L	ND	10	
DIBROMOMETHANE	UG/L	ND	5	
DICHLORODIFLUOROMETHANE	UG/L	ND	20	
1,1-DICHLOROETHANE	UG/L	ND	5	
1,2-DICHLOROETHANE	UG/L	ND	5	
1,2-DICHLOROPROPANE	UG/L	ND	5	
CIS-1,3-DICHLOROPROPENE	UG/L	ND	5	
TRANS-1,3-DICHLOROPROPENE	UG/L	ND	5	
ETHYL BENZENE	UG/L	ND	5	
METHYLENE CHLORIDE	UG/L	ND	5	
STYRENE	UG/L	ND	5	
1,1,2,2-TETRACHLOROETHANE	UG/L	ND	5	
TOLUENE	UG/L	ND	5	
TRANS 1,2 DICHLOROETHYLENE	UG/L	ND	5	
1,1,1-TRICHLOROETHANE	UG/L	ND	5	

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession: 505501
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505362
Project Name: GRC
Project Location: N/S
Test: SW 846 8260 TABLE SIX
Analysis Method: 8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A
Matrix: WATER
QC Level: II

Lab Id: 006
Client Sample Id: 505362-09 (TB)
Sample Date/Time: 11-MAY-95 N/S
Received Date: 20-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
1,1,2-TRICHLOROETHANE	UG/L	ND	5	
TRICHLOROFLUOROMETHANE	UG/L	ND	5	
1,2,3 TRICHLOROPROPANE	UG/L	ND	5	
VINYL CHLORIDE	UG/L	ND	10	
M,P-XYLENE	UG/L	ND	5	
O-XYLENE	UG/L	ND	5	
DIBROMOFLUOROMETHANE	%REC/SURR	103	89-116	
TOLUENE-D8	%REC/SURR	101	88-110	
BROMOFLUOROBENZENE	%REC/SURR	103	86-115	
ANALYST	INITIALS	LL		

Comments:

Analytical Technologies, Inc.

"QC Report"

Title: Water Blank
Batch: MAW077
Analysis Method: 8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A

Blank Id: B Date Analyzed: 25-MAY-95 Date Extracted: N/A

Parameters:	Units:	Results:	Reporting Limits:
ACROLEIN	UG/L	ND	100
ACETONE	UG/L	ND	10
ACETONITRILE	UG/L	ND	100
ACRYLONITRILE	UG/L	ND	100
ALLYL CHLORIDE	UG/L	ND	100
BENZENE	UG/L	ND	5
BROMOCHLOROMETHANE	UG/L	ND	5
BROMOBENZENE	UG/L	ND	5
BROMODICHLOROMETHANE	UG/L	ND	5
BROMOFORM	UG/L	ND	5
BROMOMETHANE	UG/L	ND	5
2-BUTANONE	UG/L	ND	5
CARBON DISULFIDE	UG/L	ND	5
CHLOROPRENE	UG/L	ND	5
CARBON TETRACHLORIDE	UG/L	ND	5
CHLOROBENZENE	UG/L	ND	5
CHLOROETHANE	UG/L	ND	5
CHLOROFORM	UG/L	ND	5
CHLOROMETHANE	UG/L	ND	5
2-CHLOROTOLUENE	UG/L	ND	5
4-CHLOROTOLUENE	UG/L	ND	5
CIS 1,2 DICHLOROETHYLENE	UG/L	ND	5
CHLORODIBROMOMETHANE	UG/L	ND	5
1,2 DIBROMOETHANE	UG/L	ND	5
1,2-DIBROMO-3-CHLOROPROPANE	UG/L	ND	5
1,4-DICHLORO-2-BUTENE	UG/L	ND	5
DIBROMOMETHANE	UG/L	ND	5
1,4-DICHLOROBENZENE	UG/L	ND	5
1,3-DICHLOROBENZENE	UG/L	ND	5
1,2-DICHLOROBENZENE	UG/L	ND	5
DICHLORODIFLUOROMETHANE	UG/L	ND	5
1,1-DICHLOROETHANE	UG/L	ND	5
1,2-DICHLOROETHANE	UG/L	ND	5
1,1-DICHLOROETHENE	UG/L	ND	5
1,3 DICHLOROPROPANE	UG/L	ND	5
2,2-DICHLOROPROPANE	UG/L	ND	5
1,2-DICHLOROPROPANE	UG/L	ND	5
CIS-1,3-DICHLOROPROPENE	UG/L	ND	5
TRANS-1,3-DICHLOROPROPENE	UG/L	ND	5
1,1 DICHLOROPROPENE	UG/L	ND	5
ETHYL BENZENE	UG/L	ND	5
METHYL METHACRYLATE	UG/L	ND	5
METHACRYLONITRILE	UG/L	ND	5
4-METHYL-2-PENTANONE	UG/L	ND	5
HEXACHLOROBUTADIENE	UG/L	ND	5
2-HEXANONE	UG/L	ND	5

Analytical Technologies, Inc.

"QC Report"

Title: Water Blank
Batch: MAW077
Analysis Method: 8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A

Parameters:	Units:	Results:	Reporting Limits:
ISOPROPYL BENZENE	UG/L	ND	5
ISOBUTYL ALCOHOL	UG/L	ND	10
IODOMETHANE	UG/L	ND	5
P-ISOPROPYLTOLUENE	UG/L	ND	5
METHYLENE CHLORIDE	UG/L	ND	5
NAPHTHALENE	UG/L	ND	5
N-BUTYL BENZENE	UG/L	ND	5
N-PROPYL BENZENE	UG/L	ND	5
PROPIONITRILE	UG/L	ND	5
SEC-BUTYL BENZENE	UG/L	ND	5
STYRENE	UG/L	ND	5
TERT-BUTYL BENZENE	UG/L	ND	5
1,1,1,2-TETRACHLOROETHANE	UG/L	ND	5
1,1,2,2-TETRACHLOROETHANE	UG/L	ND	5
TETRACHLOROETHENE	UG/L	ND	5
TOLUENE	UG/L	ND	5
TOLUENE DIISOCYANATE	UG/L	ND	10
TOLUENE DIAMINE	UG/L	ND	10
TRANS 1,2 DICHLOROETHYLENE	UG/L	ND	5
1,1,1-TRICHLOROETHANE	UG/L	ND	5
1,1,2-TRICHLOROETHANE	UG/L	ND	5
1,2,3 TRICHLOROBENZENE	UG/L	ND	5
1,2,4 TRICHLOROBENZENE	UG/L	ND	5
TRICHLOROETHENE	UG/L	ND	5
TRICHLOROFLUOROMETHANE	UG/L	ND	5
1,2,3 TRICHLOROPROPANE	UG/L	ND	5
1,2,4-TRIMETHYLBENZENE	UG/L	ND	5
1,3,5-TRIMETHYLBENZENE	UG/L	ND	5
VINYL ACETATE	UG/L	ND	5
VINYL CHLORIDE	UG/L	ND	5
M,P-XYLENE	UG/L	ND	5
O-XYLENE	UG/L	ND	5
DIBROMOFLUOROMETHANE	%REC/SURR	100	89-116
TOLUENE-D8	%REC/SURR	99	88-110
BROMOFLUOROBENZENE	%REC/SURR	100	86-115
ANALYST	INITIALS	LL	

Comments:

Analytical Technologies, Inc.

"QC Report"

Title: Water Reagent
Batch: MAW077
Analysis Method: 8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A

RS Date Analyzed: 24-MAY-95
RSD Date Analyzed: 24-MAY-95

RS Date Extracted: N/A
RSD Date Extracted: N/A

Parameters:	Spike Added	Sample Conc	RS Conc	RS %Rec	RSD Conc	RSD %Rec	RPD	RPD Lmts	Rec Lmts
1,1-DICHLOROETHENE	50	<5	44	88	43	86	2	30	72-122
TRICHLOROETHENE	50	<5	45	90	45	90	0	30	81-114
BENZENE	50	<5	49	98	49	98	0	30	87-120
TOLUENE	50	<5	45	90	47	94	4	30	83-120
CHLOROBENZENE	50	<5	46	92	48	96	4	30	87-113
Surrogates:									
DIBROMOFLUOROMETHANE				106		100			89-116
TOLUENE-D8				100		100			88-110
BROMOFLUOROBENZENE				103		100			86-115

Comments:

Notes:
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT
UG/L = PARTS PER BILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

Analytical Technologies, Inc.

"QC Report"

Title: Water Matrix
Batch: MAW077
Analysis Method: 8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A

Dry Weight %: N/A
Sample Spiked: 505501-2

MS Date Analyzed: 24-MAY-95
MSD Date Analyzed: 24-MAY-95

MS Date Extracted: N/A
MSD Date Extracted: N/A

Parameters:	Spike Added	Sample Conc	MS Conc	MS %Rec	MSD Conc	MSD %Rec	RPD	RPD Lmts	Rec Lmts
1,1-DICHLOROETHENE	50	<5	43	86	44	88	2	14	74-124
TRICHLOROETHENE	50	<5	43	86	45	90	5	24	79-116
BENZENE	50	<5	50	100	50	100	0	16	65-142
TOLUENE	50	<5	45	90	47	94	4	15	89-114
CHLOROBENZENE	50	<5	48	96	49	98	2	15	85-116
Surrogates:									
DIBROMOFLUOROMETHANE				103		105			89-116
TOLUENE-D8				103		107			88-110
BROMOFLUOROBENZENE				104		103			86-115

Comments:

Notes:
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT
UG/L = PARTS PER BILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

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

CHAIN OF CUSTODY

DATE: 5-15-95 PAGE 1 OF ____

ATI LAB I.D. 505360

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

PROJECT MANAGER: LYNN SHELTON

COMPANY: GIANT REFINING CO.
ADDRESS: Rt 3 Box 7
GALLUP NM 87301
PHONE: (505) 722 0227
FAX: (505) 722 0210

BILL TO:
COMPANY:
ADDRESS:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/MTBE (8020)	pH, EC, TDS, Cl, SO4	ALKALINITY	Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.	DISSOLVED METALS*	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)*	Polynuclear Aromatics (610/8310)	TOTAL METALS*	PHENOLS	SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal	TOC	TOX	The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion	RCRA Metals by TCLP (1311)	NUMBER OF CONTAINERS
OW-1	5-15	1525	AQ	01				X	X	X				X																	4
OW-2	5-15	1405		02				X	X	X				X																	4
OW-3	5-15	1057		03				X	X	X				X																	4
SMW-3	5-15	1525		04					X	X				X				X		X						X	X				11
SMW-4	5-15	1409		05					X	X				X				X		X						X	X				11
SMW-5	5-15	1335		06					X	X				X				X		X						X	X				11
SMW-6	5-15	1145		07					X	X				X				X		X						X	X				11
OW-11	5-15	1609		08					X	X				X				X		X	X					X	X				13

PROJECT INFORMATION

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

SAMPLE RECEIPT

NO. CONTAINERS	71
CUSTODY SEALS	Y (N) NA
RECEIVED INTACT	Y
RECEIVED COLD	Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

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

Comments
* SEE ATTACHED LIST

SAMPLED & RELINQUISHED BY: 1.

Signature: [signature] Time: 1000
Printed Name: WALT TOOMER Date: 5/16/95
Company: GIANT Phone: (505) 722-0212

RELINQUISHED BY: 2.

Signature: Time:
Printed Name: Date:
Company:

RELINQUISHED BY: 3.

Signature: Time:
Printed Name: Date:
Company:

RECEIVED BY: 1.

Signature: Time:
Printed Name: Date:
Company:

RECEIVED BY: 2.

Signature: Time:
Printed Name: Date:
Company:

RECEIVED BY: (LAB) 3.

Signature: [signature] Time: 0900
Printed Name: Dianne [signature] Date: 5/17/95
Analytical Technologies, Inc.

Analytical Technologies, Inc. Albuquerque, NM

Chain of Custody

DATE 5/17 PAGE 1 OF 1

NETWORK PROJECT MANAGER: LETITIA KRAKOWSKI

COMPANY: **Analytical Technologies, Inc.**

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

CLIENT PROJECT MANAGER:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)		632/632 MOD	619/619 MOD	610/8310	Diesel/Ca Mg K Na	Asbestos Ca Mg K Na Hg Se Ag	8240 (TCLP 1311) ZHE		Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)	Total Metals Cr Pb	~~TTLE~~	ASBESTOS.	Diss Metals - Asbs Ca Ca Mg Mn K Na Se Ag	BOD	TOTAL COLIFORM	FECAL COLIFORM	Total Metals Cr Pb Hg	GROSS ALPHA/BETA	RADIUM 226/228		AIR - O2, CO2, METHANE	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
505362-01	5/15	0905	AQ	1										X																			1
-02		0910		2										X																			1
-03		1057		3										X																			1
-04		1525		4										X						X													2
05		1409		5										X						X													2
06		1335		6										X						X													2
07		1145		7										X						X													2
08		1609		8																			X				X						

PROJECT INFORMATION	
PROJECT NUMBER:	505362
PROJECT NAME:	GRC
QC LEVEL:	STD. IV
QC REQUIRED:	MS MSD BLANK
TAT:	STANDARD RUSH!

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS	
INTACT?	
RECEIVED GOOD COND./COLD	
LAB NUMBER	505615

DUE DATE: 6/1

RUSH SURCHARGE: —

CLIENT DISCOUNT: See quote

SAMPLES SENT TO:
- SAN DIEGO
- FT. COLLINS
- RENTON
- PENSACOLA
- PORTLAND
- PHOENIX
- FIBEROUANT

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.
Signature: Time: 1600	Signature: Time:
Printed Name: Date: 5/17/05	Printed Name: Date
Analytical Technologies, Inc. Albuquerque	Company:
RECEIVED BY: (LAB) 1.	**RECEIVED BY: (LAB) 2.**
Signature: Time: 1010	Signature: Time:
Printed Name: Date: 5/18	Printed Name: Date:
Company: ATI	Company:

Analytic chnologies, Inc. Albuquerque, NM

Chain of Custody 95-05-118

DATE 5/17/95 PAGE 1 OF 1

NETWORK PROJECT MANAGER: LETITIA KRAKOWSKI

COMPANY: **Analytical Technologies, Inc.**

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

Only report compounds on 8240 list AND at reporting limits as requested by client. no J values

CLIENT PROJECT MANAGER:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)	632/632 MOD	619/619 MOD	610/8310	8240 (TCLP 1311) ZHE	Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)	NACE	ASBESTOS	BOD	TOTAL COLIFORM	FECAL COLIFORM	GROSS ALPHA/BETA	RADIUM 226/228	AIR - O2, CO2, METHANE	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
505362 -04	5/15		AQ	01	X	X									X										8
-05				02	X	X									X										8
-06				03	X	X									X										8
-07				04	X	X									X										8
-08				05	X	X									X										8
-09 (TB)	5/11			06	X										X										1
															X										

PROJECT INFORMATION	
PROJECT NUMBER:	505362
PROJECT NAME:	GRC2
QC LEVEL:	STD IV
QC REQUIRED:	MS MSD BLANK
TAT:	STANDARD RUSH!

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	41
CHAIN OF CUSTODY SEALS	NA
INTACT?	NA
RECEIVED GOOD COND/COLD	Y
LAB NUMBER	

DUE DATE: 6/1
RUSH SURCHARGE: 0
CLIENT DISCOUNT: See Quote

WO# LK445

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

RELINQUISHED BY: 1.
Signature: [signature] Time: 1730
Printed Name: Dianne Letter Date: 5/17/95
Analytical Technologies, Inc. Albuquerque
Company: FPDX

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

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

RECEIVED BY: (LAB) 2.
Signature: [signature] Time: 9:00
Printed Name: L. Kelly Date: 5-18-95
Company:

Analytical Technologies, Inc. Albuquerque, NM

Chain of Custody

DATE 5/17/95 PAGE 1 OF 1

NETWORK PROJECT MANAGER: LETITIA KRAKOWSKI

COMPANY: **Analytical Technologies, Inc.**

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

CLIENT PROJECT MANAGER:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)		632/632 MOD	619/619 MOD	610/8310	pH, EC, TDS, Cl, SO4, Alk.	Phenolics	8240 (TCLP 1311) ZHE		Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)		NACE	ASBESTOS		BOD	TOTAL COLIFORM	FECAL COLIFORM		GROSS ALPHA/BETA	RADIUM 226/228		AIR - O2, CO2, METHANE	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
505362 -01	5/15	0905	AQ											X	X																			1
-02		0910												X	X																			1
-03		1057												X	X																			1
-04		1525												X	X																		4	2
-05		1409												X	X																		4	2
-06		1335												X	X																		4	2
-07		1145												X	X																		4	2
-08	↓	1609	↓											X	X																			2

PROJECT INFORMATION	
PROJECT NUMBER:	505362
PROJECT NAME:	GPCO
QC LEVEL:	STD IV
QC REQUIRED:	MS MSD BLANK
TAT:	STANDARD RUSH!

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	10
CHAIN OF CUSTODY SEALS	Y
INTACT?	Y
RECEIVED GOOD COND./COLD	Y
LAB NUMBER	505434

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

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.
Signature: Diane Hutton Time: 1730	Signature: Time:
Printed Name: Diane Hutton Date: 5/17/95	Printed Name: Date
Analytical Technologies, Inc. Albuquerque	Company:

RECEIVED BY: (LAB) 1.	RECEIVED BY: (LAB) 2.
Signature: Time:	Signature: Time: 1002
Printed Name: Date:	Printed Name: R. ELSPERMAN Date: 5/18/95
Company:	Company: ATI - PNS

DUE DATE: 6/1

RUSH SURCHARGE: 0

CLIENT DISCOUNT: See Quote

WO# LK446

Common notation for Organic reporting

N/S = NOT SUBMITTED
N/A = NOT APPLICABLE
D = DILUTED OUT
UG = MICROGRAMS
UG/L = PARTS PER BILLION.
UG/KG = PARTS PER BILLION.
MG/M3 = MILLIGRAM PER CUBIC METER.
PPMV = PART PER MILLION BY VOLUME.
MG/KG = PARTS PER MILLION.
MG/L = PARTS PER MILLION.
< = LESS THAN DETECTION LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS

SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

ORGANIC SOILS ARE REPORTED ON A DRYWEIGHT BASIS.

ND = NOT DETECTED ABOVE REPORTING LIMIT.

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

RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION)

ATI/GC/FID
ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME IONIZATION DETECTOR (FID).

ATI/GC/FIX
ATI GAS CHROMATOGRAPHIC METHOD FOR ANALYSIS OF FIXED GASES EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD) AND FLAME IONIZATION DETECTOR (FID).

ATI/GC/FPD
ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME PHOTOMETRIC DETECTOR (FPD) IN SULFUR-SPECIFIC MODE.

ATI/GC/PID
ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH PHOTOIONIZATION DETECTOR (PID).

ATI/GC/TCD
ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD).

LJT = LISA THOMASON
DGH = DARREL HALSELL
TLH = TARA HELTON
KW = KAREN WADSWORTH
MV = MONIQUE VERHEYDEN
SW = STEVE WILHITE
SJF = STEVE FILOROMO
PL = PAUL LESCHENSKY
RW = ROBERT WOLFE
BV = BEN VAUGHN
KS = KENDALL SMITH

Common notation for Organic reporting

N/S = NOT SUBMITTED
N/A = NOT APPLICABLE
D = DILUTED OUT
UG/L = PARTS PER BILLION.
UG/KG = PARTS PER BILLION.
MG/KG = PARTS PER MILLION.
MG/L = PARTS PER MILLION.
MG/M3 = MILLIGRAMS PER CUBIC METER.
NG = NANOGRAMS.
UG = MICROGRAMS.
PPBV = PARTS PER BILLION/VOLUME.
< = LESS THAN DETECTION LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS
J = THE REPORTED VALUE IS EITHER LESS THAN THE REPORTING LIMIT BUT GREATER THAN ZERO, OR QUANTITATED AS A TIC; THEREFORE, IT IS ESTIMATED.
JJ = REPORTED VALUE IS ESTIMATED DUE TO MATRIX INTERFERENCE.
ND = NOT DETECTED ABOVE REPORT LIMIT.
RPT LIMIT = REPORTING LIMITS BASED ON METHOD DETECTION LIMIT STUDIES.
RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION)

SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

ORGANIC SOILS ARE REPORTED ON A DRY WEIGHT BASIS.

DUE TO THE NATURE OF THE SAMPLE MATRIX, MATRIX SPIKE/MATRIX SPIKE DUPLICATE ANALYSIS CANNOT BE PERFORMED FOR AIR ANALYSIS.

LP = LEVERNE PETERSON
DWB = DAVID BOWERS
DB = DENNIS BESON
LL = LANCE LARSON
JA = JENNIFER ALEXANDER
RW = RITA WINGO
LD = LARRY DILMORE
DC = DAVID CELESTIAL
RB = RAFAEL BARRAZA

Analytical **Technologies,** Inc.

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

ATI I.D. **505368**

June 28, 1995

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

Project Name/Number: ANNUAL GROUNDWATER

Attention: Lynn Shelton

On **05/18/95**, Analytical Technologies, Inc., (ADHS License No. AZ0015), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

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

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

All other analyses were performed by Analytical Technologies, Inc., 11 East Olive Road, Pensacola, FL.

The report has been reissued in part to correct the Conductivity value for sample MW-1 (ATI ID - 505368-01).

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

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph.D.
Laboratory Manager

MR:jt

Enclosure

Analytical Technologies, Inc.

CLIENT	: GIANT REFINING CO.	DATE RECEIVED	: 05/18/95
PROJECT #	: (NONE)		
PROJECT NAME	: ANNUAL GROUNDWATER	REPORT DATE	: 06/28/95

ATI ID: 505368

	ATI PENSACOLA ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	505368-01	MW-1	AQUEOUS	05/16/95
02	505368-02	MW-2	AQUEOUS	05/16/95
03	505368-03	MW-4	AQUEOUS	05/16/95
04	505368-04	MW-5	AQUEOUS	05/16/95

---TOTALS---

MATRIX	#SAMPLES
AQUEOUS	4

ATI STANDARD DISPOSAL PRACTICE

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

Analytical Technologies, Inc.

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"FINAL REPORT FORMAT - MULTIPLE"

Accession: 505481
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505368
Project Name: GIANT REFINING ANNUAL GROUNDWATER
Project Location: GALLUP, NM
Test: Group of Single Wetchem
QcLevel: II

Parameter:	Unit:	Result:	R.L:	Batch:	Q:
Client ID: 505368-01			Lab ID: 001		
CHLORIDE (325.2)	MG/L	47	2	CKW15A	
CONDUCTIVITY (120.1)	UMH/CM	1100	1	CDW037	
PH (150.1)	UNITS	8.9	NA	PHW107	
PHENOLS, TOTAL (420.1)	MG/L	ND	0.005	PEW018	
SULFATE (375.4)	MG/L	150	50	SEW053	+
Comments:					
Client ID: 505368-02			Lab ID: 002		
CHLORIDE (325.2)	MG/L	58	2	CKW15A	
CONDUCTIVITY (120.1)	UMH/CM	1100	1	CDW037	
PH (150.1)	UNITS	9.0	NA	PHW107	
PHENOLS, TOTAL (420.1)	MG/L	ND	0.005	PEW018	
SULFATE (375.4)	MG/L	170	50	SEW053	+
Comments:					
Client ID: 505368-03			Lab ID: 003		
CHLORIDE (325.2)	MG/L	18	2	CKW15A	
CONDUCTIVITY (120.1)	UMH/CM	1200	1	CDW037	
PH (150.1)	UNITS	8.7	NA	PHW107	
PHENOLS, TOTAL (420.1)	MG/L	ND	0.005	PEW018	
SULFATE (375.4)	MG/L	180	50	SEW053	+
Comments:					
Client ID: 505368-04			Lab ID: 004		
CHLORIDE (325.2)	MG/L	63	2	CKW15A	
CONDUCTIVITY (120.1)	UMH/CM	1100	1	CDW037	
PH (150.1)	UNITS	9.0	NA	PHW107	
PHENOLS, TOTAL (420.1)	MG/L	ND	0.005	PEW018	
SULFATE (375.4)	MG/L	190	50	SEW053	+
Comments:					

Analytical Technologies, Inc.

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

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

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

(CA) = SEE CORRECTIVE ACTIONS FORM.

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

1. COLIFORM. COLIFORM PRECISION IS MEASURED BY THE ABSOLUTE DIFFERENCE BETWEEN THE LOGARITHM OF COLONIES PER 100 MLS OF SAMPLE ON DUPLICATE PLATES.

2. PH. PH PRECISION IS MEASURED BY THE ABSOLUTE DIFFERENCE BETWEEN THE SAMPLE AND THE DUPLICATE ANALYSIS.

3. FLASHPOINT. FLASHPOINT PRECISION IS MEASURED BY THE ABSOLUTE DIFFERENCE BETWEEN THE SAMPLE AND DUPLICATE ANALYSIS. IF FLASHPOINT IS LESS THAN 25 DEGREES CELSIUS, THE DETECTION LIMIT BECOMES THE INITIAL STARTING TEMPERATURE.

RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION).

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

DPH = DOLLY P. HWANG	RB = REBECCA BROWN	CD = CHRISTY DRAPER
DBH = DONALD B. HAND	BF = BLANCA FACH	SL = STEPHANIE LOWRY
TT = TONY TINEO	NB = NANCY L. BRASCH	FB = FREDDIE BROWN
JHS = JOSEPH SAUNDERS	MM = MARY MOLONEY	
NSB = NANCY S. BUTLER	CF = CHRISTINE FOSTER	

Analytical Technologies, Inc.

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"WetChem Quality Control Report"

Parameter:	CHLORIDE	CONDUCT'Y	PH	PHENOL	SULFATE
Batch Id:	CKW15A	CDW037	PHW107	PEW018	SEW053
Blank Result:	<2	<1	N/A	<0.005	<10
Anal. Method:	325.2	120.1	150.1	420.1	375.4
Prep. Method:	N/A	N/A	N/A	N/A	N/A
Analysis Date:	30-MAY-95	25-MAY-95	19-MAY-95	26-MAY-95	25-MAY-95
Prep. Date:	30-MAY-95	25-MAY-95	19-MAY-95	23-MAY-95	25-MAY-95
Sample Duplication					
Sample Dup:	505481-1	505434-1	505471-1	505434-8	505481-1
Rept Limit:	<2	<1	N/A	<0.005	<50+
Sample Result:	47	1311	6.68	<0.005	149.5
Dup Result:	48	1317	6.67	<0.005	147.0
Sample RPD:	2	0	0.01	N/C	2.5G
Max RPD:	13	4	0.12	0.005	50
Dry Weight%	N/A	N/A	N/A	N/A	N/A
Matrix Spike					
Sample Spiked:	505481-1	N/A	N/A	505434-8	505481-1
Rept Limit:	<2	N/A	N/A	<0.005	<50+
Sample Result:	47			<0.005	149.5
Spiked Result:	67			0.21	257.5
Spike Added:	20			0.20	100.0
% Recovery:	100			105	108
% Rec Limits:	89-110			59-151	51-151
Dry Weight%	N/A			N/A	N/A
ICV					
ICV Result:	56	1384	10.01	0.044	19.4
True Result:	55	1413	10.00	0.040	20.0
% Recovery:	102	98	100	110	97
% Rec Limits:	90-110	90-110	90-110	90-110	90-110
LCS					
LCS Result:		316	6.94		
True Result:		303	6.87		
% Recovery:		104	101		
% Rec Limits:		84-110	97-103		

Analytical Technologies, Inc.

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

Quality Control Report

Analysis: Group of Single Wetchem

Accession:	505481
Client:	ANALYTICAL TECHNOLOGIES, INC.
Project Number:	505368
Project Name:	GIANT REFINING ANNUAL GROUNDWATER
Project Location:	GALLUP, NM
Department:	WET CHEM

Analytical Technologies, Inc.

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"Method Report Summary"

Accession Number: 505481
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505368
Project Name: GIANT REFINING ANNUAL GROUNDWATER
Project Location: GALLUP, NM
Test: Group of Single Wetchem

Client Sample Id:	Parameter:	Unit:	Result:
505368-01	CHLORIDE (325.2)	MG/L	47
	CONDUCTIVITY (120.1)	UMH/CM	1100
	PH (150.1)	UNITS	8.9
	SULFATE (375.4)	MG/L	150
505368-02	CHLORIDE (325.2)	MG/L	58
	CONDUCTIVITY (120.1)	UMH/CM	1100
	PH (150.1)	UNITS	9.0
	SULFATE (375.4)	MG/L	170
505368-03	CHLORIDE (325.2)	MG/L	18
	CONDUCTIVITY (120.1)	UMH/CM	1200
	PH (150.1)	UNITS	8.7
	SULFATE (375.4)	MG/L	180
505368-04	CHLORIDE (325.2)	MG/L	63
	CONDUCTIVITY (120.1)	UMH/CM	1100
	PH (150.1)	UNITS	9.0
	SULFATE (375.4)	MG/L	190

Analytical Technologies, Inc.

ANALYTICAL TECHNOLOGIES, INC. 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"FINAL REPORT FORMAT - MULTIPLE"

Accession: 505481
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505368
Project Name: GIANT REFINING ANNUAL GROUNDWATER
Project Location: GALLUP, NM
Test: Group of Single Wetchem

Client ID:	Lab ID:	Matrix:	Date/Time Sampled:	Date Received:
505368-01	001	WATER	16-MAY-95 N/S	19-MAY-95
505368-02	002	WATER	16-MAY-95 N/S	19-MAY-95
505368-03	003	WATER	16-MAY-95 N/S	19-MAY-95
505368-04	004	WATER	16-MAY-95 N/S	19-MAY-95

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - MULTIPLE"

Accession: 505481
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505368
Project Name: GIANT REFINING ANNUAL GROUNDWATER
Project Location: GALLUP, NM
Test: TOTAL ALKALINITY
QcLevel: II

Parameter:	Unit:	Result:	R.L:	Batch:	Q:
Client ID: 505368-01			Lab ID: 001		
ALKALINITY, TOTAL (2320B)	MG/L	330	1	ASW024	
PH (150.1)	UNITS	8.9	NA	PHW107	
BICARBONATE, CACO3 (2330B)	MG/L	310	1	NONE	
CARBONATE, CACO3 (2330B)	MG/L	23	1	NONE	
CARBON DIOXIDE, FREE AS CACO3	MG/L	1	1	NONE	
HYDROXIDE (2330B) AS CACO3	MG/L	ND	1	NONE	
Comments:					
Client ID: 505368-02			Lab ID: 002		
ALKALINITY, TOTAL (2320B)	MG/L	320	1	ASW024	
PH (150.1)	UNITS	9.0	NA	PHW107	
BICARBONATE, CACO3 (2330B)	MG/L	320	1	NONE	
CARBONATE, CACO3 (2330B)	MG/L	ND	1	NONE	
CARBON DIOXIDE, FREE AS CACO3	MG/L	1	1	NONE	
HYDROXIDE (2330B) AS CACO3	MG/L	1	1	NONE	
Comments:					
Client ID: 505368-03			Lab ID: 003		
ALKALINITY, TOTAL (2320B)	MG/L	460	1	ASW024	
PH (150.1)	UNITS	8.7	NA	PHW107	
BICARBONATE, CACO3 (2330B)	MG/L	440	1	NONE	
CARBONATE, CACO3 (2330B)	MG/L	21	1	NONE	
CARBON DIOXIDE, FREE AS CACO3	MG/L	2	1	NONE	
HYDROXIDE (2330B) AS CACO3	MG/L	ND	1	NONE	
Comments:					

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - MULTIPLE"

Accession: 505481
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505368
Project Name: GIANT REFINING ANNUAL GROUNDWATER
Project Location: GALLUP, NM
Test: TOTAL ALKALINITY
QcLevel: II

Parameter:	Unit:	Result:	R.L:	Batch:	Q:
Client ID: 505368-04			Lab ID: 004		
ALKALINITY, TOTAL (2320B)	MG/L	330	1	ASW024	
PH (150.1)	UNITS	9.0	NA	PHW107	
BICARBONATE, CACO3 (2330B)	MG/L	330	1	NONE	
CARBONATE, CACO3 (2330B)	MG/L	ND	1	NONE	
CARBON DIOXIDE, FREE AS CACO3	MG/L	1	1	NONE	
HYDROXIDE (2330B) AS CACO3	MG/L	1	1	NONE	

Comments:

Analytical Technologies, Inc. "Method Report Summary"

Accession Number: 505481
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505368
Project Name: GIANT REFINING ANNUAL GROUNDWATER
Project Location: GALLUP, NM
Test: TOTAL ALKALINITY

Client Sample Id:	Parameter:	Unit:	Result:
505368-01	ALKALINITY, TOTAL (2320B)	MG/L	330
	PH (150.1)	UNITS	8.9
	BICARBONATE, CACO3 (2330B)	MG/L	310
	CARBONATE, CACO3 (2330B)	MG/L	23
	CARBON DIOXIDE, FREE AS CACO3	MG/L	1
505368-02	ALKALINITY, TOTAL (2320B)	MG/L	320
	PH (150.1)	UNITS	9.0
	BICARBONATE, CACO3 (2330B)	MG/L	320
	CARBON DIOXIDE, FREE AS CACO3	MG/L	1
	HYDROXIDE (2330B) AS CACO3	MG/L	1
505368-03	ALKALINITY, TOTAL (2320B)	MG/L	460
	PH (150.1)	UNITS	8.7
	BICARBONATE, CACO3 (2330B)	MG/L	440
	CARBONATE, CACO3 (2330B)	MG/L	21
	CARBON DIOXIDE, FREE AS CACO3	MG/L	2
505368-04	ALKALINITY, TOTAL (2320B)	MG/L	330
	PH (150.1)	UNITS	9.0
	BICARBONATE, CACO3 (2330B)	MG/L	330
	CARBON DIOXIDE, FREE AS CACO3	MG/L	1
	HYDROXIDE (2330B) AS CACO3	MG/L	1

Analytical Technologies, Inc.

"WetChem Quality Control Report"

Parameter:	ALKALINITY	PH
Batch Id:	ASW024	PHW107
Blank Result:	<1	N/A
Anal. Method:	2320B	150.1
Prep. Method:	N/A	N/A
Analysis Date:	25-MAY-95	19-MAY-95
Prep. Date:	25-MAY-95	19-MAY-95

Sample Duplication

Sample Dup:	505481-1	505471-1
Rept Limit:	<1	N/A
Sample Result:	333	6.68
Dup Result:	330	6.67
Sample RPD:	1	0.01
Max RPD:	4	0.12
Dry Weight%	N/A	N/A

Matrix Spike

Sample Spiked:	505481-1	N/A
Rept Limit:	<1	N/A
Sample Result:	333	
Spiked Result:	359	
Spike Added:	25F	
% Recovery:	104	
% Rec Limits:	80-113	
Dry Weight%	N/A	

ICV

ICV Result:	227	10.01
True Result:	250	10.00
% Recovery:	91	100
% Rec Limits:	90-110	90-110

LCS

LCS Result:	6.94
True Result:	6.87
% Recovery:	101
% Rec Limits:	97-103

TOTAL ORGANIC CARBON

Method 415.2

Analytical Technologies, Inc.

Lab Name: Analytical Technologies, Inc.

Date Collected: 05/16/95

Client Name: ATI-NM

Date Analyzed: 05/23/95

Client Project ID: GRCZ -- 505368

Sample Matrix: Water

Lab Workorder Number: 95-05-133

Sample ID	Lab Sample ID	Volume Injected (mL)	TOC Conc. (mg/L)	TOC AVG	RPD
Reagent Blank	RB 95-05-133	1	< 1.0	< 1.0	N/A
MW-1	95-05-133-01	1	36		
	95-05-133-01DUP	1	36	36	0
MW-2	95-05-133-02	1	< 1.0		
	95-05-133-02DUP	1	< 1.0	< 1.0	N/A
MW-4	95-05-133-03	1	< 1.0		
	95-05-133-03DUP	1	< 1.0	< 1.0	N/A
MW-5	95-05-133-04	1	< 1.0		
	95-05-133-04DUP	1	< 1.0	< 1.0	N/A

Analytical Technologies, Inc.

TOTAL ORGANIC HALIDE

Modified Method 9020 TOX

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Client Project ID: GRCZ--505368

Lab Workorder Number: 95-05-133

Date Collected: 05/16/95

Date Extracted: 05/31/95

Date Analyzed: 05/31/95

Sample Matrix: Water

Sample ID	Lab Sample ID	Sample Volume (mL)	TOX Conc. (ug/L)	TOX AVG	RPD
Reagent Blank	WRB95-05-133	100	< 20	< 20	N/A
MW-1	95-05-133-01	100	30		
	95-05-133-01DUP	100	30	30	0
MW-2	95-05-133-02	100	40		
	95-05-133-02DUP	100	20	30	67
MW-4	95-05-133-03	100	20		
	95-05-133-03DUP	100	20	20	0
MW-5	95-05-133-04	100	20		
	95-05-133-04DUP	100	4	12	133

Analytical Technologies, Inc.

TOTAL ORGANIC HALIDE MATRIX SPIKE RESULTS

Modified Method 9020 TOX

Sample ID

In House

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Lab Sample ID: 95-05-118-01

Sample Matrix: Water

Date Extracted: 05/30/95

Date Analyzed: 05/30/95

Analyte	Spike Added (ug/L)	Sample Concentration (ug/L)	MS Concentration (ug/L)	MS Percent Recovery
2,4,6-Trichlorophenol	200	75	260	93

TOTAL METALS RESULTS

Analytical **Technologies,** Inc.

CLIENT:	ATI-Albuquerque	**ATI I.D.:**	505621
PROJECT #:	505368	**DATE SAMPLED:**	05/16/95
PROJECT NAME:	Annual Groundwater	**DATE RECEIVED:**	05/19/95
SAMPLE MATRIX:	WATER	**DATE DIGESTED:**	05/19/95
		DATE ANALYZED:	05/19,23/95
		UNITS:	mg/L

	ATI I.D.:	505621-0	505621-1	505621-2
	Client I.D.:	Method Blank	MW-1	MW-2
PARAMETER	**METHOD**			
CHROMIUM	6010	< 0.01	< 0.01	< 0.01
LEAD	7421	< 0.002	0.002	< 0.002
MERCURY	7470	< 0.0002	< 0.0002	< 0.0002

TOTAL METALS RESULTS

Analytical **Technologies,** Inc.

CLIENT:	ATI-Albuquerque	**ATI I.D.:**	505621
PROJECT #:	505368	**DATE SAMPLED:**	05/16/95
PROJECT NAME:	Annual Groundwater	**DATE RECEIVED:**	05/19/95
SAMPLE MATRIX:	WATER	**DATE DIGESTED:**	05/19/95
		DATE ANALYZED:	05/19,23/95
		UNITS:	mg/L

	ATI I.D.:	505621-3	505621-4
	Client I.D.:	MW-4	MW-5
PARAMETER	**METHOD**		
CHROMIUM	6010	< 0.01	< 0.01
LEAD	7421	< 0.002	< 0.002
MERCURY	7470	< 0.0002	< 0.0002

DISSOLVED METALS RESULTS

Analytical **Technologies,** Inc.

CLIENT:	ATI-Albuquerque	**ATI I.D.:**	505621
PROJECT #:	505368	**DATE SAMPLED:**	05/16/95
PROJECT NAME:	Annual Groundwater	**DATE RECEIVED:**	05/19/95
SAMPLE MATRIX:	WATER	**DATE DIGESTED:**	05/19/95
		DATE ANALYZED:	05/19,22,23/95
		UNITS:	mg/L

	ATI I.D.:	505621-0	505621-1	505621-2
	Client I.D.:	Method Blank	MW-1	MW-2
PARAMETER	**METHOD**			
ARSENIC	7060	< 0.005	< 0.005	< 0.005
BARIUM	6010	< 0.01	0.01	0.02
CADMIUM	6010	< 0.005	< 0.005	< 0.005
CALCIUM	6010	< 0.1	1.8	1.4
MAGNESIUM	6010	< 0.1	0.2	0.1
MANGANESE	6010	< 0.01	< 0.01	< 0.01
POTASSIUM	6010	< 2	< 2	< 2
SELENIUM	7740	< 0.005	< 0.005	< 0.005
SILVER	6010	< 0.01	< 0.01	< 0.01
SODIUM	6010	< 0.1	242	246

DISSOLVED METALS RESULTS

Analytical **Technologies,** Inc.

CLIENT:	ATI-Albuquerque	**ATI I.D.:**	505621
PROJECT #:	505368	**DATE SAMPLED:**	05/16/95
PROJECT NAME:	Annual Groundwater	**DATE RECEIVED:**	05/19/95
SAMPLE MATRIX:	WATER	**DATE DIGESTED:**	05/19/95
		DATE ANALYZED:	05/19,22,23/95
		UNITS:	mg/L

	ATI I.D.:	505621-3	505621-4
	Client I.D.:	MW-4	MW-5
PARAMETER	**METHOD**		
ARSENIC	7060	< 0.005	< 0.005
BARIUM	6010	0.02	0.02
CADMIUM	6010	< 0.005	< 0.005
CALCIUM	6010	1.7	1.5
MAGNESIUM	6010	0.2	0.1
MANGANESE	6010	< 0.01	< 0.01
POTASSIUM	6010	< 2	< 2
SELENIUM	7740	< 0.005	< 0.005
SILVER	6010	< 0.01	< 0.01
SODIUM	6010	257	246

METALS DUPLICATE RESULTS

Analytical **Technologies,** Inc.

METHOD:	6010 / 7000 series	**ATI I.D.:**	505621
CLIENT:	ATI-Albuquerque	**QC SAMPLE:**	505615-4 Total
PROJECT #:	505368	**DATE DIGESTED:**	05/18/95
PROJECT NAME:	Annual Groundwater	**DATE ANALYZED:**	05/19,22,23/95
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	DUPLICATE RESULT	RPD		RPD CONTROL LIMIT
ARSENIC	< 0.005	< 0.005	NA	*	20
BARIUM	0.03	0.03	0		20
CALCIUM	37.7	37.0	2		20
CADMIUM	< 0.005	< 0.005	NA		20
CHROMIUM	0.01	< 0.01	NC		20
COPPER	< 0.01	< 0.01	NA		20
LEAD	< 0.002	< 0.002	NA	*	20
MAGNESIUM	12.3	12.1	2		20
MANGANESE	0.02	0.02	0		20
MERCURY	< 0.0002	< 0.0002	NA	**	20
POTASSIUM	< 2	< 2	NA		20
SELENIUM	< 0.005	< 0.005	NA	*	20
SILVER	< 0.01	< 0.01	NA		20
SODIUM	600 D	628 D	5		20

NC - Not Calculable

D - Value from a two fold dilution.

* Quality control for arsenic, lead and selenium performed on sample 505621-1 (Dissolved).

** Quality control for mercury performed on sample 505615-8 (Dissolved).

METALS SPIKE RESULTS

Analytical **Technologies,** Inc.

METHOD:	6010 / 7000 series	**ATI I.D.:**	505621
CLIENT:	ATI-Albuquerque	**QC SAMPLE:**	505615-4 Total
PROJECT #:	505368	**DATE DIGESTED:**	05/18/95
PROJECT NAME:	Annual Groundwater	**DATE ANALYZED:**	05/19,22,23/95
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SAMPLE RESULT	SPIKE CONC	SPIKE RESULT	% RECOV		CONTROL LIMIT
ARSENIC	< 0.005	0.040	0.039	98	*	75-125%
BARIUM	0.03	2.00	1.98	98		75-125%
CADMIUM	< 0.005	1.00	0.984	98		75-125%
CHROMIUM	0.01	1.00	0.98	97		75-125%
COPPER	< 0.01	1.00	0.95	95		75-125%
LEAD	< 0.002	0.020	0.018	90	*	75-125%
MANGANESE	0.02	1.00	0.98	96		75-125%
MERCURY	< 0.0002	0.0020	0.0021	105	**	75-125%
SELENIUM	< 0.005	0.020	0.018	90	*	75-125%
SILVER	< 0.01	1.00	0.98	98		75-125%

* Quality control for arsenic, lead and selenium performed on sample 505621-1 (Dissolved).

** Quality control for mercury performed on sample 505615-8 (Dissolved).

METALS BLANK SPIKE RESULTS

Analytical **Technologies,** Inc.

METHOD:	6010 / 7000 series	**ATI I.D.:**	505621
CLIENT:	ATI-Albuquerque	**QC SAMPLE:**	Method Blank
PROJECT #:	505368	**DATE DIGESTED:**	05/18/95
PROJECT NAME:	Annual Groundwater	**DATE ANALYZED:**	05/19,22,23/95
SAMPLE MATRIX:	WATER	**DILUTION FACTOR:**	1
		UNITS:	mg/L

PARAMETER	SPIKE RESULT	SPIKE CONC	% RECOV	CONTROL LIMIT
ARSENIC	0.040	0.040	100	80-120%
BARIUM	2.00	2.00	100	80-120%
CADMIUM	0.991	1.00	99	80-120%
CHROMIUM	0.99	1.00	99	80-120%
COPPER	0.96	1.00	96	80-120%
LEAD	0.018	0.020	90	80-120%
MANGANESE	0.99	1.00	99	80-120%
MERCURY	0.0021	0.0020	105	80-120%
SELENIUM	0.017	0.020	85	80-120%
SILVER	1.00	1.00	100	80-120%

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	505500
Client:	ANALYTICAL TECHNOLOGIES, INC.
Project Number:	505368
Project Name:	GIANT REFINERY
Project Location:	GALLUP, NM
Test:	ETHANOL
Analysis Method:	ATI SOP 641
Extraction Method:	N/A
Matrix:	WATER
QC Level:	II

Lab Id:	001	Sample Date/Time:	16-MAY-95 N/S
Client Sample Id:	505368-03	Received Date:	20-MAY-95
Batch: GEW050		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	26-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ETHANOL	MG/L	ND	5	

Comments:
ANALYST: KW

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	505500
Client:	ANALYTICAL TECHNOLOGIES, INC.
Project Number:	505368
Project Name:	GIANT REFINERY
Project Location:	GALLUP, NM
Test:	ETHANOL
Analysis Method:	ATI SOP 641
Extraction Method:	N/A
Matrix:	WATER
QC Level:	II

Lab Id:	002	Sample Date/Time:	16-MAY-95 N/S
Client Sample Id:	505368-04	Received Date:	20-MAY-95
Batch: GEW050		Extraction Date:	N/A
Blank: A	Dry Weight %: N/A	Analysis Date:	26-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ETHANOL	MG/L	ND	5	

Comments:
ANALYST: KW

Analytical Technologies, Inc.

"QC Report"

Title: Water Blank
Batch: GEW050
Analysis Method: ATI SOP 641
Extraction Method: N/A

Blank Id: A Date Analyzed: 26-MAY-95 Date Extracted: N/A

Parameters:	Units:	Results:	Reporting Limits:
ETHANOL	MG/L	ND	5

Comments:
ANALYST: KW

Analytical Technologies, Inc.

"QC Report"

Title: Water Reagent
Batch: GEW050
Analysis Method: ATI SOP 641
Extraction Method: N/A

RS Date Analyzed: 26-MAY-95
RSD Date Analyzed: 26-MAY-95

RS Date Extracted: N/A
RSD Date Extracted: N/A

Parameters:	Spike Added	Sample Conc	RS Conc	RS %Rec	RSD Conc	RSD %Rec	RPD	RPD Lmts	Rec Lmts
ETHANOL	25	<5	22	88	24	96	9	50	50-150

Surrogates:

Comments:

Notes:
MG/L = PARTS PER MILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCE FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCE METHOD.
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT

Analytical Technologies, Inc.

"QC Report"

Title: Water Matrix
Batch: GEW050
Analysis Method: ATI SOP 641
Extraction Method: N/A

Dry Weight %: N/A
Sample Spiked: 505500-1

MS Date Analyzed: 26-MAY-95
MSD Date Analyzed: 26-MAY-95

MS Date Extracted: N/A
MSD Date Extracted: N/A

Parameters:	Spike Added	Sample Conc	MS Conc	MS %Rec	MSD Conc	MSD %Rec	RPD	RPD Lmts	Rec Lmts
ETHANOL	100	<5	106	106	118	118	11	50	50-150

Surrogates:

Comments:

Notes:
MG/L = PARTS PER MILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCE FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCE METHOD.
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession: 505500
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505368
Project Name: GIANT REFINERY
Project Location: GALLUP, NM
Test: SW 846 8260 TABLE SIX
Analysis Method: 8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A
Matrix: WATER
QC Level: II

Lab Id: 001
Client Sample Id: 505368-03

Sample Date/Time: 16-MAY-95 N/S
Received Date: 20-MAY-95

Batch: MAW077
Blank: C Dry Weight %: N/A

Extraction Date: N/A
Analysis Date: 26-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
BENZENE	UG/L	ND	5	
ACETONE	UG/L	ND	50	
ACROLEIN	UG/L	ND	100	
ACRYLONITRILE	UG/L	ND	100	
CARBON DISULFIDE	UG/L	ND	5	
2-CHLOROETHYLVINYL ETHER	UG/L	ND	10	
1,4-DICHLORO-2-BUTENE	UG/L	ND	5	
TRANS-1,4-DICHLORO-2-BUTENE	UG/L	ND	5	
1,1 DICHLOROETHYLENE	UG/L	ND	5	
ETHYL METHACRYLATE	UG/L	ND	10	
2-HEXANONE	UG/L	ND	5	
IODOMETHANE	UG/L	ND	5	
METHYL ETHYL KETONE	UG/L	ND	10	
METHYL ISOBUTYL KETONE	UG/L	ND	10	
TETRACHLOROETHYLENE	UG/L	ND	5	
TRICHLOROETHYLENE	UG/L	ND	5	
VINYL ACETATE	UG/L	ND	10	
BROMODICHLOROMETHANE	UG/L	ND	1	
BROMOFORM	UG/L	ND	5	
BROMOMETHANE	UG/L	ND	10	
CARBON TETRACHLORIDE	UG/L	ND	5	
CHLOROBENZENE	UG/L	ND	5	
CHLOROETHANE	UG/L	ND	10	
CHLOROFORM	UG/L	ND	5	
CHLOROMETHANE	UG/L	ND	10	
CHLORODIBROMOMETHANE	UG/L	ND	10	
DIBROMOMETHANE	UG/L	ND	5	
DICHLORODIFLUOROMETHANE	UG/L	ND	20	
1,1-DICHLOROETHANE	UG/L	ND	5	
1,2-DICHLOROETHANE	UG/L	ND	5	
1,2-DICHLOROPROPANE	UG/L	ND	5	
CIS-1,3-DICHLOROPROPENE	UG/L	ND	5	
TRANS-1,3-DICHLOROPROPENE	UG/L	ND	5	
ETHYL BENZENE	UG/L	ND	5	
METHYLENE CHLORIDE	UG/L	ND	5	
STYRENE	UG/L	ND	5	
1,1,2,2-TETRACHLOROETHANE	UG/L	ND	5	
TOLUENE	UG/L	ND	5	
TRANS 1,2 DICHLOROETHYLENE	UG/L	ND	5	
1,1,1-TRICHLOROETHANE	UG/L	ND	5	

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession:	505500
Client:	ANALYTICAL TECHNOLOGIES, INC.
Project Number:	505368
Project Name:	GIANT REFINERY
Project Location:	GALLUP, NM
Test:	SW 846 8260 TABLE SIX
Analysis Method:	8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method:	N/A
Matrix:	WATER
QC Level:	II

Lab Id:	001	Sample Date/Time:	16-MAY-95 N/S
Client Sample Id:	505368-03	Received Date:	20-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
1,1,2-TRICHLOROETHANE	UG/L	ND	5	
TRICHLOROFLUOROMETHANE	UG/L	ND	5	
1,2,3 TRICHLOROPROPANE	UG/L	ND	5	
VINYL CHLORIDE	UG/L	ND	10	
M,P-XYLENE	UG/L	ND	5	
O-XYLENE	UG/L	ND	5	
DIBROMOFLUOROMETHANE	%REC/SURR	98	89-116	
TOLUENE-D8	%REC/SURR	104	88-110	
BROMOFLUOROBENZENE	%REC/SURR	99	86-115	
ANALYST	INITIALS	LL		

Comments:

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession: 505500
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505368
Project Name: GIANT REFINERY
Project Location: GALLUP, NM
Test: SW 846 8260 TABLE SIX
Analysis Method: 8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A
Matrix: WATER
QC Level: II

Lab Id: 002
Client Sample Id: 505368-04

Sample Date/Time: 16-MAY-95 N/S
Received Date: 20-MAY-95

Batch: MAW077
Blank: C Dry Weight %: N/A

Extraction Date: N/A
Analysis Date: 26-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
BENZENE	UG/L	ND	5	
ACETONE	UG/L	ND	50	
ACROLEIN	UG/L	ND	100	
ACRYLONITRILE	UG/L	ND	100	
CARBON DISULFIDE	UG/L	ND	5	
2-CHLOROETHYLVINYL ETHER	UG/L	ND	10	
1,4-DICHLORO-2-BUTENE	UG/L	ND	5	
TRANS-1,4-DICHLORO-2-BUTENE	UG/L	ND	5	
1,1 DICHLOROETHYLENE	UG/L	ND	5	
ETHYL METHACRYLATE	UG/L	ND	10	
2-HEXANONE	UG/L	ND	5	
IODOMETHANE	UG/L	ND	5	
METHYL ETHYL KETONE	UG/L	ND	10	
METHYL ISOBUTYL KETONE	UG/L	ND	10	
TETRACHLOROETHYLENE	UG/L	ND	5	
TRICHLOROETHYLENE	UG/L	ND	5	
VINYL ACETATE	UG/L	ND	10	
BROMODICHLOROMETHANE	UG/L	ND	1	
BROMOFORM	UG/L	ND	5	
BROMOMETHANE	UG/L	ND	10	
CARBON TETRACHLORIDE	UG/L	ND	5	
CHLOROBENZENE	UG/L	ND	5	
CHLOROETHANE	UG/L	ND	10	
CHLOROFORM	UG/L	ND	5	
CHLOROMETHANE	UG/L	ND	10	
CHLORODIBROMOMETHANE	UG/L	ND	10	
DIBROMOMETHANE	UG/L	ND	5	
DICHLORODIFLUOROMETHANE	UG/L	ND	20	
1,1-DICHLOROETHANE	UG/L	ND	5	
1,2-DICHLOROETHANE	UG/L	ND	5	
1,2-DICHLOROPROPANE	UG/L	ND	5	
CIS-1,3-DICHLOROPROPENE	UG/L	ND	5	
TRANS-1,3-DICHLOROPROPENE	UG/L	ND	5	
ETHYL BENZENE	UG/L	ND	5	
METHYLENE CHLORIDE	UG/L	ND	5	
STYRENE	UG/L	ND	5	
1,1,2,2-TETRACHLOROETHANE	UG/L	ND	5	
TOLUENE	UG/L	ND	5	
TRANS 1,2 DICHLOROETHYLENE	UG/L	ND	5	
1,1,1-TRICHLOROETHANE	UG/L	ND	5	

Analytical Technologies, Inc.

"FINAL REPORT FORMAT - SINGLE"

Accession: 505500
Client: ANALYTICAL TECHNOLOGIES, INC.
Project Number: 505368
Project Name: GIANT REFINERY
Project Location: GALLUP, NM
Test: SW 846 8260 TABLE SIX
Analysis Method: 8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A
Matrix: WATER
QC Level: II

Lab Id: 002
Client Sample Id: 505368-04
Sample Date/Time: 16-MAY-95 N/S
Received Date: 20-MAY-95

Parameter:	Units:	Results:	Rpt Lmts:	Q:
1,1,2-TRICHLOROETHANE	UG/L	ND	5	
TRICHLOROFLUOROMETHANE	UG/L	ND	5	
1,2,3 TRICHLOROPROPANE	UG/L	ND	5	
VINYL CHLORIDE	UG/L	ND	10	
M,P-XYLENE	UG/L	ND	5	
O-XYLENE	UG/L	ND	5	
DIBROMOFLUOROMETHANE	%REC/SURR	104	89-116	
TOLUENE-D8	%REC/SURR	102	88-110	
BROMOFLUOROBENZENE	%REC/SURR	100	86-115	
ANALYST	INITIALS	LL		

Comments:

Analytical Technologies, Inc.

"QC Report"

Title: Water Blank
Batch: MAW077
Analysis Method: 8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A

Blank Id: C Date Analyzed: 25-MAY-95 Date Extracted: N/A

Parameters:	Units:	Results:	Reporting Limits:
ACROLEIN	UG/L	ND	100
ACETONE	UG/L	ND	10
ACETONITRILE	UG/L	ND	100
ACRYLONITRILE	UG/L	ND	100
ALLYL CHLORIDE	UG/L	ND	100
BENZENE	UG/L	ND	5
BROMOCHLOROMETHANE	UG/L	ND	5
BROMOBENZENE	UG/L	ND	5
BROMODICHLOROMETHANE	UG/L	ND	5
BROMOFORM	UG/L	ND	5
BROMOMETHANE	UG/L	ND	5
2-BUTANONE	UG/L	ND	5
CARBON DISULFIDE	UG/L	ND	5
CHLOROPRENE	UG/L	ND	5
CARBON TETRACHLORIDE	UG/L	ND	5
CHLOROBENZENE	UG/L	ND	5
CHLOROETHANE	UG/L	ND	5
CHLOROFORM	UG/L	ND	5
CHLOROMETHANE	UG/L	ND	5
2-CHLOROTOLUENE	UG/L	ND	5
4-CHLOROTOLUENE	UG/L	ND	5
CIS 1,2 DICHLOROETHYLENE	UG/L	ND	5
CHLORODIBROMOMETHANE	UG/L	ND	5
1,2 DIBROMOETHANE	UG/L	ND	5
1,2-DIBROMO-3-CHLOROPROPANE	UG/L	ND	5
1,4-DICHLORO-2-BUTENE	UG/L	ND	5
DIBROMOMETHANE	UG/L	ND	5
1,4-DICHLOROBENZENE	UG/L	ND	5
1,3-DICHLOROBENZENE	UG/L	ND	5
1,2-DICHLOROBENZENE	UG/L	ND	5
DICHLORODIFLUOROMETHANE	UG/L	ND	5
1,1-DICHLOROETHANE	UG/L	ND	5
1,2-DICHLOROETHANE	UG/L	ND	5
1,1-DICHLOROETHENE	UG/L	ND	5
1,3 DICHLOROPROPANE	UG/L	ND	5
2,2-DICHLOROPROPANE	UG/L	ND	5
1,2-DICHLOROPROPANE	UG/L	ND	5
CIS-1,3-DICHLOROPROPENE	UG/L	ND	5
TRANS-1,3-DICHLOROPROPENE	UG/L	ND	5
1,1 DICHLOROPROPENE	UG/L	ND	5
ETHYL BENZENE	UG/L	ND	5
METHYL METHACRYLATE	UG/L	ND	5
METHACRYLONITRILE	UG/L	ND	5
4-METHYL-2-PENTANONE	UG/L	ND	5
HEXACHLOROBUTADIENE	UG/L	ND	5
2-HEXANONE	UG/L	ND	5

Analytical Technologies, Inc.

"QC Report"

Title: Water Blank
Batch: MAW077
Analysis Method: 8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A

Parameters:	Units:	Results:	Reporting Limits:
ISOPROPYL BENZENE	UG/L	ND	5
ISOBUTYL ALCOHOL	UG/L	ND	10
IODOMETHANE	UG/L	ND	5
P-ISOPROPYLTOLUENE	UG/L	ND	5
METHYLENE CHLORIDE	UG/L	ND	5
NAPHTHALENE	UG/L	ND	5
N-BUTYL BENZENE	UG/L	ND	5
N-PROPYL BENZENE	UG/L	ND	5
PROPIONITRILE	UG/L	ND	5
SEC-BUTYL BENZENE	UG/L	ND	5
STYRENE	UG/L	ND	5
TERT-BUTYL BENZENE	UG/L	ND	5
1,1,1,2-TETRACHLOROETHANE	UG/L	ND	5
1,1,2,2-TETRACHLOROETHANE	UG/L	ND	5
TETRACHLOROETHENE	UG/L	ND	5
TOLUENE	UG/L	ND	5
TOLUENE DIISOCYANATE	UG/L	ND	10
TOLUENE DIAMINE	UG/L	ND	10
TRANS 1,2 DICHLOROETHYLENE	UG/L	ND	5
1,1,1-TRICHLOROETHANE	UG/L	ND	5
1,1,2-TRICHLOROETHANE	UG/L	ND	5
1,2,3 TRICHLOROBENZENE	UG/L	ND	5
1,2,4 TRICHLOROBENZENE	UG/L	ND	5
TRICHLOROETHENE	UG/L	ND	5
TRICHLOROFLUOROMETHANE	UG/L	ND	5
1,2,3 TRICHLOROPROPANE	UG/L	ND	5
1,2,4-TRIMETHYLBENZENE	UG/L	ND	5
1,3,5-TRIMETHYLBENZENE	UG/L	ND	5
VINYL ACETATE	UG/L	ND	5
VINYL CHLORIDE	UG/L	ND	5
M,P-XYLENE	UG/L	ND	5
O-XYLENE	UG/L	ND	5
DIBROMOFLUOROMETHANE	%REC/SURR	104	89-116
TOLUENE-D8	%REC/SURR	100	88-110
BROMOFLUOROBENZENE	%REC/SURR	100	86-115
ANALYST	INITIALS	LL	

Comments:

Analytical Technologies, Inc.

"QC Report"

Title: Water Reagent
Batch: MAW077
Analysis Method: 8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A

RS Date Analyzed: 24-MAY-95
RSD Date Analyzed: 24-MAY-95

RS Date Extracted: N/A
RSD Date Extracted: N/A

Parameters:	Spike Added	Sample Conc	RS Conc	RS %Rec	RSD Conc	RSD %Rec	RPD	RPD Lmts	Rec Lmts
1,1-DICHLOROETHENE	50	<5	44	88	43	86	2	30	72-122
TRICHLOROETHENE	50	<5	45	90	45	90	0	30	81-114
BENZENE	50	<5	49	98	49	98	0	30	87-120
TOLUENE	50	<5	45	90	47	94	4	30	83-120
CHLOROBENZENE	50	<5	46	92	48	96	4	30	87-113
Surrogates:									
DIBROMOFLUOROMETHANE				106		100			89-116
TOLUENE-D8				100		100			88-110
BROMOFLUOROBENZENE				103		100			86-115

Comments:

Notes:
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT
UG/L = PARTS PER BILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

Analytical Technologies, Inc.

"QC Report"

Title: Water Matrix
Batch: MAW077
Analysis Method: 8260 / SW-846, 3rd Edition, September 1986 and Rev. 1, July 1992.
Extraction Method: N/A

Dry Weight %: N/A
Sample Spiked: 505501-2

MS Date Analyzed: 24-MAY-95
MSD Date Analyzed: 24-MAY-95

MS Date Extracted: N/A
MSD Date Extracted: N/A

Parameters:	Spike Added	Sample Conc	MS Conc	MS %Rec	MSD Conc	MSD %Rec	RPD	RPD Lmts	Rec Lmts
1,1-DICHLOROETHENE	50	<5	43	86	44	88	2	14	74-124
TRICHLOROETHENE	50	<5	43	86	45	90	5	24	79-116
BENZENE	50	<5	50	100	50	100	0	16	65-142
TOLUENE	50	<5	45	90	47	94	4	15	89-114
CHLOROBENZENE	50	<5	48	96	49	98	2	15	85-116
Surrogates:									
DIBROMOFLUOROMETHANE				103		105			89-116
TOLUENE-D8				103		107			88-110
BROMOFLUOROBENZENE				104		103			86-115

Comments:

Notes:
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT
UG/L = PARTS PER BILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

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

CHAIN OF CUSTODY

DATE: 5/17/95 PAGE 1 OF 1

ATI LAB I.D. 505368

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

PROJECT MANAGER:

COMPANY: GIANT REFINING CO.
ADDRESS: ROUTE 3, BOX 7
GALLUP, NM 87301
PHONE: (505) 722-3833
FAX: (505) 722-0212

BILL TO: LYNN SHELTON
COMPANY: SAME
ADDRESS: SAME

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/MTBE (8020)	TOC	TOX	Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.	PHENOL	TOTAL METALS	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240) *	Polynuclear Aromatics (610/8310)	DISSOLVED METALS	pH, EC, CL, SO4, ALK.	SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal			The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion	RCRA Metals by TCLP (1311)		NUMBER OF CONTAINERS
MW-1	5/16/95		H_2O	01					X	X				X	X						X	X											11
MW-2	5/16/95		H_2O	02					X	X				X	X						X	X											11
MW-4	5/16/95		H_2O	03					X	X				X	X				X		X	X											13
MW-5	5/16/95		H_2O	04					X	X				X	X				X		X	X											13

PROJECT INFORMATION

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

SAMPLE RECEIPT

NO. CONTAINERS	48
CUSTODY SEALS	Y (N) NA
RECEIVED INTACT	Y
RECEIVED COLD	Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) [ ] 24hr [ ] 48hr [ ] 72hr [ ] 1 WEEK (NORMAL) [X] 2 WEEK

Comments:

* SEE ATTACHED LIST!

SAMPLED & RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: [signature] Time: 1100	Signature: Time:	Signature: Time:
Printed Name: WALT TOOMEY Date: 5/17/95	Printed Name: Date:	Printed Name: Date:
Company: GIANT Phone: (505) 722-0212	Company:	Company:

RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY: (LAB) 3.
Signature: Time:	Signature: Time:	Signature: [signature] Time: 0920
Printed Name: Date:	Printed Name: Date:	Printed Name: Dianne [signature] Date: 5/18/95
Company:	Company:	Analytical Technologies, Inc.

Analytic echnologies, Inc. Albuquerque, NM

Chain o. Custody

DATE 5/18/95 PAGE 1 OF 1

NETWORK PROJECT MANAGER: LETITIA KRAKOWSKI

COMPANY: **Analytical Technologies, Inc.**

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

CLIENT PROJECT MANAGER:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)		632/632 MOD	619/619 MOD	610/8310			8240 (TCLP 1311) ZHE		Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)		NACE	ASBESTOS		BOD	TOTAL COLIFORM	FECAL COLIFORM		GROSS ALPHA/BETA	RADIUM 226/228		AIR - O2, CO2, METHANE	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
505368 -01	5/16	—	AQ	01	X	X																												6
-02	↓	—	↓	02	X	X																												6
-03		—		03	X	X																												6
-04	↓	—	↓	04	X	X																												6

Duplicates Duplicates

PROJECT INFORMATION	
PROJECT NUMBER:	505368
PROJECT NAME:	GRCZ
QC LEVEL:	STD IV
QC REQUIRED:	MS MSD BLANK
TAT:	STANDARD RUSH!

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	24
CHAIN OF CUSTODY SEALS	Y
INTACT?	Y
RECEIVED GOOD COND./COLD	Y
LAB NUMBER	95-05-133

DUE DATE: 6/2
RUSH SURCHARGE: 0
CLIENT DISCOUNT: See Quote

Well LK447
* - 1 bottle broke in transit

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

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.
Signature: D. Little Time: 1730	Signature: Time:
Printed Name: Dianne Little Date: 5/18/95	Printed Name: Date
Analytical Technologies, Inc. Albuquerque	Company: Fed Ex
RECEIVED BY: (LAB) 1.	**RECEIVED BY: (LAB) 2.**
Signature: Time:	Signature: Time: 9:00
Printed Name: Date:	Printed Name: Date: 5-18-95
Company: Fed Ex	Company: ATI

Analytical Technologies, Inc. Albuquerque, NM

Chain of Custody

DATE 5/19/95 PG. 1 OF 1

NETWORK PROJECT MANAGER: LETITIA KRAKOWSKI

COMPANY: **Analytical Technologies, Inc.**

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

OK to run as 8260 & ethanol separate

CLIENT PROJECT MANAGER:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)		632/632 MOD	619/619 MOD	610/8310	8240 (TCLP 1311) ZHE	Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)	NACE	ASBESTOS	BOD	TOTAL COLIFORM	FECAL COLIFORM	GROSS ALPHA/BETA	RADIUM 226/228	AIR - O2, CO2, METHANE	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
505368-03	5/16	—	AQ											X 8240 + special List												
-04	5/16	—	"																							

PROJECT INFORMATION	
PROJECT NUMBER:	505368
PROJECT NAME:	GRC
QC LEVEL:	STD. IV
QC REQUIRED:	MS MSD BLANK
TAT:	STANDARD RUSH!

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	3
CHAIN OF CUSTODY SEALS	Y
INTACT?	Y
RECEIVED GOOD COND./COLD	Y
LAB NUMBER	505540

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

DUE DATE: 6/5
RUSH SURCHARGE: —
CLIENT DISCOUNT: — %
quote

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.
Signature: [signature] Time: 1600	Signature: Time:
Printed Name: [signature] Date 5/19/95	Printed Name: Date
Analytical Technologies, Inc Albuquerque	Company:
RECEIVED BY: (LAB) 1.	**RECEIVED BY: (LAB) 2.**
Signature: [signature] Time: 0900	Signature: Time:
Printed Name: DAVID R. BARR Date: 5/20/95	Printed Name: Date:
Company: ATI / ARS	Company:

Analytical Technologies, Inc. Albuquerque, NM

Chain of Custody

DATE 5/18/95 PAGE 1 OF 1

NETWORK PROJECT MANAGER: LETITIA KRAKOWSKI

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

Ph checked

CLIENT PROJECT MANAGER:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	TOX	TOC	ORGANIC LEAD	SULFIDE	SURFACTANTS (MBAS)		632/632 MOD	619/619 MOD	610/8310	Total metals: Cr, Pb, Hg	Dissolved: As, Ba, Cd, Ca, Mg, Mn, K, Se, Ag		Diesel/Gasoline/BTXE/MTBE/ (MOD 8015/8020)	Volatile Organics GC/MS (624/8240)		NACE	ASBESTOS		BOD	TOTAL COLIFORM	FECAL COLIFORM		GROSS ALPHA/BETA	RADIUM 226/228		AIR - O2, CO2, METHANE	AIR/Diesel/Gasoline/BTXE/ (MOD 8015/8020)	NUMBER OF CONTAINERS
505368-01	5/14	—	AQ	1										X	X	X																2
-02	↓	—	↓	2										X	X	X																2
-03		—		3										X	X	X																2
-04	✓	—	✓	4										X	X	X																2

PROJECT INFORMATION	
PROJECT NUMBER:	505368
PROJECT NAME:	GRC2
QC LEVEL:	STD. IV
QC REQUIRED:	MS MSD BLANK
TAT	STANDARD RUSH!

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS	
INTACT?	
RECEIVED GOOD COND./COLD	
LAB NUMBER	505621

DUE DATE: 6/2
RUSH SURCHARGE: 0
CLIENT DISCOUNT: 15 %
See Quote

#505368-03, the Dissolved metals bottle is unfiltered.

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

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.
Signature: D. Utter Time: 1730	Signature: Time:
Printed Name: Diane Utter Date: 5/18/95	Printed Name: Date
Analytical Technologies, Inc. Albuquerque	Company:
RECEIVED BY: (LAB) 1.	**RECEIVED BY: (LAB) 2.**
Signature: Time: 955	Signature: Time:
Printed Name: Date: 5/19/95	Printed Name: Date:
Company: ATI	Company:

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

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

(CA) = SEE CORRECTIVE ACTIONS FORM.

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

1. COLIFORM. COLIFORM PRECISION IS MEASURED BY THE ABSOLUTE DIFFERENCE BETWEEN THE LOGARITHM OF COLONIES PER 100 MLS OF SAMPLE ON DUPLICATE PLATES.

2. PH. PH PRECISION IS MEASURED BY THE ABSOLUTE DIFFERENCE BETWEEN THE SAMPLE AND THE DUPLICATE ANALYSIS.

3. FLASHPOINT. FLASHPOINT PRECISION IS MEASURED BY THE ABSOLUTE DIFFERENCE BETWEEN THE SAMPLE AND DUPLICATE ANALYSIS. IF FLASHPOINT IS LESS THAN 25 DEGREES CELSIUS, THE DETECTION LIMIT BECOMES THE INITIAL STARTING TEMPERATURE.

RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION).

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

DPH = DOLLY P. HWANG	RB = REBECCA BROWN	CD = CHRISTY DRAPER
DBH = DONALD B. HAND	BF = BLANCA FACH	SL = STEPHANIE LOWRY
TT = TONY TINEO	NB = NANCY L. BRASCH	FB = FREDDIE BROWN
JHS = JOSEPH SAUNDERS	MM = MARY MOLONEY	
NSB = NANCY S. BUTLER	CF = CHRISTINE FOSTER	

Common notation for Organic reporting

N/S = NOT SUBMITTED
N/A = NOT APPLICABLE
D = DILUTED OUT
UG = MICROGRAMS
UG/L = PARTS PER BILLION.
UG/KG = PARTS PER BILLION.
MG/M3 = MILLIGRAM PER CUBIC METER.
PPMV = PART PER MILLION BY VOLUME.
MG/KG = PARTS PER MILLION.
MG/L = PARTS PER MILLION.
< = LESS THAN DETECTION LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS

SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

ORGANIC SOILS ARE REPORTED ON A DRYWEIGHT BASIS.

ND = NOT DETECTED ABOVE REPORTING LIMIT.

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

RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION)

ATI/GC/FID
ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME IONIZATION DETECTOR (FID).

ATI/GC/FIX
ATI GAS CHROMATOGRAPHIC METHOD FOR ANALYSIS OF FIXED GASES EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD) AND FLAME IONIZATION DETECTOR (FID).

ATI/GC/FPD
ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME PHOTOMETRIC DETECTOR (FPD) IN SULFUR-SPECIFIC MODE.

ATI/GC/PID
ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH PHOTOIONIZATION DETECTOR (PID).

ATI/GC/TCD
ATI GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD).

LJT = LISA THOMASON
DGH = DARREL HALSELL
TLH = TARA HELTON
KW = KAREN WADSWORTH
MV = MONIQUE VERHEYDEN
SW = STEVE WILHITE
SJF = STEVE FILOROMO
PL = PAUL LESCHENSKY
RW = ROBERT WOLFE
BV = BEN VAUGHN
KS = KENDALL SMITH

Common notation for Organic reporting

N/S = NOT SUBMITTED
N/A = NOT APPLICABLE
D = DILUTED OUT
UG/L = PARTS PER BILLION.
UG/KG = PARTS PER BILLION.
MG/KG = PARTS PER MILLION.
MG/L = PARTS PER MILLION.
MG/M3 = MILLIGRAMS PER CUBIC METER.
NG = NANOGRAMS.
UG = MICROGRAMS.
PPBV = PARTS PER BILLION/VOLUME.
< = LESS THAN DETECTION LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS
J = THE REPORTED VALUE IS EITHER LESS THAN THE REPORTING LIMIT BUT GREATER THAN ZERO, OR QUANTITATED AS A TIC; THEREFORE, IT IS ESTIMATED.
JJ = REPORTED VALUE IS ESTIMATED DUE TO MATRIX INTERFERENCE.
ND = NOT DETECTED ABOVE REPORT LIMIT.
RPT LIMIT = REPORTING LIMITS BASED ON METHOD DETECTION LIMIT STUDIES.
RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION)

SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

ORGANIC SOILS ARE REPORTED ON A DRY WEIGHT BASIS.

DUE TO THE NATURE OF THE SAMPLE MATRIX, MATRIX SPIKE/MATRIX SPIKE DUPLICATE ANALYSIS CANNOT BE PERFORMED FOR AIR ANALYSIS.

LP = LEVERNE PETERSON	RW = RITA WINGO
DWB = DAVID BOWERS	LD = LARRY DILMORE
DB = DENNIS BESON	DC = DAVID CELESTIAL
LL = LANCE LARSON	RB = RAFAEL BARRAZA
JA = JENNIFER ALEXANDER	