

GW - 107

REPORTS

YEAR(S):

1998

RECEIVED

FEB 15 1999

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

**1998 ANNUAL
GROUNDWATER REMEDIATION
REPORT
JAL NO. 4 PLANT
LEA COUNTY, NEW MEXICO**

Prepared for:

**EL PASO ENERGY CORPORATION
1001 LOUISIANA STREET
HOUSTON, TEXAS 77002
(713) 420-3827**

Prepared by:

**ROBERTS/SCHORNICK & ASSOCIATES, INC.
ENVIRONMENTAL CONSULTANTS
2488 EAST 81ST STREET, SUITE 610
TULSA, OKLAHOMA 74137
(918) 496-0059**

February 12, 1999



TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
LIST OF TABLES	ii
LIST OF FIGURES	iii
LIST OF GRAPHS	iv
LIST OF APPENDICES	vii
1.0 <u>INTRODUCTION</u>	1-1
1.1 <u>Program Wells and Sampling Schedule</u>	1-1
1.2 <u>Non-Program Wells and Sampling Schedule</u>	1-3
1.3 <u>Depth to Groundwater Measurements</u>	1-3
1.4 <u>Sampling Procedures</u>	1-4
2.0 <u>RESULTS OF MONITORING ACTIVITIES</u>	2-1
2.1 <u>Field Measurements</u>	2-1
2.2 <u>Inorganic Constituents</u>	2-1
2.3 <u>Organic Constituents</u>	2-3
3.0 <u>GROUNDWATER REMEDIATION SYSTEM</u>	3-1
4.0 <u>CONCLUSIONS</u>	4-1
5.0 <u>RECOMMENDATIONS</u>	5-1

LIST OF TABLES

TABLE

- 1 Summary of Depth to Groundwater Measurements
- 2 Summary of Laboratory Analyses of Groundwater Samples

LIST OF FIGURES

FIGURE

- 1 Site Location and Topographic Features
- 2 Groundwater Potentiometric Surface of Uppermost Groundwater System on February 24, 1998
- 3 Groundwater Potentiometric Surface of Uppermost Groundwater System on May 12-14, 1998
- 4 Groundwater Potentiometric Surface of Uppermost Groundwater System on August 11, 1998
- 5 Groundwater Potentiometric Surface of Uppermost Groundwater System on October 20-22, 1998
- 6 Isopleth of Chloride Concentrations in Groundwater in 1998
- 7 Isopleth of Benzene Concentrations in Groundwater in 1998

LIST OF GRAPHS

GRAPH

- 1 Concentration Trend of Total Dissolved Solids in Groundwater Samples taken from Monitor Well ACW-01
- 2 Concentration Trends of Chloride and Sodium in Groundwater Samples taken from Monitor Well ACW-01
- 3 Concentration Trend of Benzene in Groundwater Samples taken from Monitor Well ACW-01
- 4 Concentration Trend of Total Dissolved Solids in Groundwater Samples taken from Monitor Well ACW-02A
- 5 Concentration Trends of Chloride and Sodium in Groundwater Samples taken from Monitor Well ACW-02A
- 6 Concentration Trend of Benzene in Groundwater Samples taken from Monitor Well ACW-02A
- 7 Concentration Trend of Total Dissolved Solids in Groundwater Samples taken from Monitor Well ACW-04
- 8 Concentration Trends of Chloride and Sodium in Groundwater Samples taken from Monitor Well ACW-04
- 9 Concentration Trend of Benzene in Groundwater Samples taken from Monitor Well ACW-04
- 10 Concentration Trend of Total Dissolved Solids in Groundwater Samples taken from Monitor Well ACW-05
- 11 Concentration Trends of Chloride and Sodium in Groundwater Samples taken from Monitor Well ACW-05
- 12 Concentration Trend of Benzene in Groundwater Samples taken from Monitor Well ACW-05
- 13 Concentration Trend of Total Dissolved Solids in Groundwater Samples taken from Monitor Well ACW-06

LIST OF GRAPHS - continued

GRAPH

- 14 Concentration Trends of Chloride and Sodium in Groundwater Samples taken from Monitor Well ACW-06
- 15 Concentration Trend of Benzene in Groundwater Samples taken from Monitor Well ACW-06
- 16 Concentration Trend of Total Dissolved Solids in Groundwater Samples taken from Monitor Well ACW-07
- 17 Concentration Trends of Chloride and Sodium in Groundwater Samples taken from Monitor Well ACW-07
- 18 Concentration Trend of Benzene in Groundwater Samples taken from Monitor Well ACW-07
- 19 Concentration Trend of Total Dissolved Solids in Groundwater Samples taken from Monitor Well ACW-08
- 20 Concentration Trends of Chloride and Sodium in Groundwater Samples taken from Monitor Well ACW-08
- 21 Concentration Trend of Benzene in Groundwater Samples taken from Monitor Well ACW-08
- 22 Concentration Trend of Total Dissolved Solids in Groundwater Samples taken from Monitor Well ACW-09
- 23 Concentration Trends of Chloride and Sodium in Groundwater Samples taken from Monitor Well ACW-09
- 24 Concentration Trend of Benzene in Groundwater Samples taken from Monitor Well ACW-09
- 25 Concentration Trend of Total Dissolved Solids in Groundwater Samples taken from Monitor Well ACW-10
- 26 Concentration Trends of Chloride and Sodium in Groundwater Samples taken from Monitor Well ACW-10

LIST OF GRAPHS - continued

GRAPH

- 27 Concentration Trend of Benzene in Groundwater Samples taken from Monitor Well ACW-10
- 28 Concentration Trend of Total Dissolved Solids in Groundwater Samples taken from Monitor Well ACW-11
- 29 Concentration Trends of Chloride and Sodium in Groundwater Samples taken from Monitor Well ACW-11
- 30 Concentration Trend of Benzene in Groundwater Samples taken from Monitor Well ACW-11
- 31 Concentration Trend of Total Dissolved Solids in Groundwater Samples taken from Monitor Well ACW-12
- 32 Concentration Trends of Chloride and Sodium in Groundwater Samples taken from Monitor Well ACW-12
- 33 Concentration Trend of Benzene in Groundwater Samples taken from Monitor Well ACW-12
- 34 Concentration Trend of Total Dissolved Solids in Groundwater Samples taken from Monitor Well ACW-13
- 35 Concentration Trends of Chloride and Sodium in Groundwater Samples taken from Monitor Well ACW-13
- 36 Concentration Trend of Benzene in Groundwater Samples taken from Monitor Well ACW-13
- 37 Concentration Trend of Total Dissolved Solids in Groundwater Samples taken from Monitor Well ACW-14
- 38 Concentration Trends of Chloride and Sodium in Groundwater Samples taken from Monitor Well ACW-14
- 39 Concentration Trend of Benzene in Groundwater Samples taken from Monitor Well ACW-14

LIST OF APPENDICES

APPENDIX

- A Laboratory Analytical Reports for Groundwater Samples Collected During 1998

**1998 ANNUAL GROUNDWATER
REMEDATION REPORT
JAL NO. 4 PLANT
LEA COUNTY, NEW MEXICO**

1.0 INTRODUCTION

Roberts/Schornick & Associates, Inc. (RSA) has been retained by El Paso Energy Corporation (EPEC) to compile the 1998 Annual Groundwater Remediation Report for the Jal No. 4 Plant (Plant) located in Lea County, New Mexico. The remedial activities conducted at the Plant have been performed under EPEC's Project Work Plan, dated February 1995. This plan was approved by the New Mexico Oil Conservation Division (OCD) on April 27, 1995, with subsequent revisions approved on August 10, 1995 and July 8, 1997.

The Plant was constructed by an EPEC entity (El Paso Natural Gas Company) in 1952 to treat, compress and transport natural gas to EPEC's main transmission lines. Currently, the Plant is owned and operated by Christie Gas Corporation. The Plant property is comprised of approximately 181 acres of land located west of State Highway 18 approximately 9 miles north of the town of Jal, New Mexico. The location of the Plant property and topographic features are shown on Figure 1. As is shown, the Plant property occupies portions of Sections 31 and 32 of Township 23 South, Range 37 East, and Sections 5 and 6 of Township 24 South, Range 37 East, all in Lea County, New Mexico.

1.1 Program Wells and Sampling Schedule

To assess brine and hydrocarbon impacts to a shallow groundwater system in the Plant area, EPEC has installed 17 monitor wells, 1 piezometer, and 2 recovery wells on Plant property and adjoining properties to the east (located hydraulically downgradient). Of these wells, EPEC has designated thirteen (13) monitor wells as "*program monitor wells*" that are frequently sampled and analyzed for mineral

1998 ANNUAL GROUNDWATER REMEDIATION REPORT**El Paso Energy Corporation****February 12, 1999**

composition, organic compounds, and metal analytes. The locations of these program monitor wells are shown on Figures 2 through 7. A list of EPEC's program monitor wells and the sample collection schedule for each well is as follows:

Monitor Well	Sampled Quarterly	Sampled Annually
ACW-1		x
ACW-2A		x
ACW-4		x
ACW-5		x
ACW-6		x
ACW-7		x
ACW-8		x
ACW-9		x
ACW-10		x
ACW-11		x
ACW-12	x	x
ACW-13	x	x
ACW-14	x	x

Quarterly groundwater samples collected from these wells during the 1998 monitoring program were submitted to the laboratory for the following analyses: benzene, toluene, ethylbenzene, and total xylenes (collectively referred to as BTEX), total dissolved solids (TDS), and the major cations and anions (including boron, bromide, calcium, chloride, copper, fluoride, iron, magnesium, manganese, nitrate, potassium, silica, sodium, sulfate, zinc and alkalinity).

Annual groundwater samples collected from these wells during the 1998 monitoring program were submitted to the laboratory for the following analyses: BTEX, TDS, and the major cations and anions (including boron, bromide, calcium, chloride,

copper, fluoride, iron, magnesium, manganese, nitrate, potassium, silica, sodium, sulfate, zinc, and alkalinity).

1.2 Non-Program Wells and Sampling Schedule

In addition to these program monitor wells, EPEC also collects groundwater samples from three monitor wells (ENSR-1, ENSR-2 and ENSR-3) one (1) peizometer (PTP-1), one (1) upgradient water supply well (EPNG-1), and two (2) downgradient active water supply wells (Oxy Production Well and Doom Production Well). The ENSR monitor wells are located within the Plant process areas as shown on Figures 2 through 7. Water supply well EPNG-1 is located at the northwest corner of the Plant property. The Oxy Production Well is located approximately in the center of Section 5-T24S-R37E and provides potable water to Oxy's Myers Langlie Mattix Unit Water Injection Station. The locations of the Oxy injection station and supply well are shown on Figures 2 through 7. The Doom Production Well is a private water supply well that provides water to the residence of Jimmie J. and Rebecca J. Doom, and is located in the approximate center of the southeast quarter of Section 5-T24S-R37E. The location of the Doom Production Well is not shown on the Figures provided, however, the well is approximately 2,500 feet southeast of the Oxy water injection station.

To date, EPEC has collected groundwater samples from these non-program wells at least annually. With the exception of the Doom Production Well, the groundwater samples taken from these non-program wells are being submitted to the laboratory for the following analyses: BTEX, TDS, specific conductance, and chloride. The samples taken from the Doom Production Well are being submitted to the laboratory for the following analyses: BTEX, TDS, specific conductance, pH, and the major cations and anions (including boron, bromide, calcium, chloride, copper, fluoride, iron, magnesium, manganese, nitrate, potassium, silica, sodium, sulfate, zinc, and alkalinity).

1.3 Depth to Groundwater Measurements

During each groundwater sampling event, and prior to disturbing the water columns within each well, EPEC personnel measured the static depths to groundwater within the well casings using an electronic water level indicator. All depths to groundwater

were measured relative to the surveyed top of casing (TOC) datums so that groundwater elevations could be determined. Table 1 provides a summary of the depths to groundwater, TOC elevations, and groundwater elevations that have been compiled throughout EPEC's monitoring program.

1.4 Sampling Procedures

The groundwater samples were collected by EPEC personnel in accordance with EPA methods and quality assurance/quality control. All monitor wells were purged thoroughly prior to sample collection using electric submersible pumps. Groundwater produced during purging operations was contained and disposed of properly in an injection well.

Samples were collected in laboratory-prepared containers, labeled as to source, packed in ice, and placed under chain-of-custody control for transfer to the laboratory. Samples collected during the February and May events were submitted to Paragon Analytics, Inc. (Fort Collins, Colorado). Samples collected during the August and October events were submitted to Nevada Environmental Laboratories (Reno, Nevada). The results of these analyses are summarized on Table 2. The complete laboratory analytical reports and chain-of-custody documents are provided in Appendix A.

It should be noted that the groundwater samples taken from monitor well ACW-14 throughout the 1998 sampling events were inadvertently labeled and submitted to the laboratories as "ACW-15". RSA has corrected this error on the data summary tables and figures provided herein, however, the laboratory analytical reports and chain-of-custody documents were not changed.

2.0 RESULTS OF MONITORING ACTIVITIES

The following sections summarize the field measurements and laboratory analytical results obtained throughout the 1998 groundwater sampling program. These data, where appropriate, are compared with historic data to assess any trends that may be apparent. Thirty-nine (39) trend graphs have been prepared that show the TDS, chloride/sodium, and benzene concentrations that have been detected within the groundwater samples taken from the thirteen (13) program monitor wells. These graphs are presented in the section tabbed "Graphs".

2.1 Field Measurements

Depth to groundwater measurements that have been taken during the sampling events are shown on Table 1. These data indicate that the depths to groundwater across the Site are approximately 100 feet below ground surface, and that the saturated thickness of the groundwater system exhibits little variability. In fact, the fluctuations in the groundwater elevations observed in most wells have been less than one (1) foot since monitoring began in 1997.

Groundwater potentiometric surface maps have been prepared from these data for each sampling quarter. These maps are presented on Figures 2 through 5. As is shown on these figures, the groundwater flow direction across the Site is from northwest to southeast (S49E). The hydraulic gradient across the Site is approximately 0.002 feet per foot. Both groundwater flow direction and hydraulic gradient appear to have changed little since 1997.

2.2 Inorganic Constituents

The primary inorganic parameters that are being used to assess plume migration at the Site include: TDS, chloride and sodium. RSA has reviewed the concentration trend graphs for these parameters in each of the program monitor wells. It is RSA's opinion, based upon our review, that certain trends are apparent in the levels of these parameters. The following table summarizes RSA's opinions of the trends that are observable from the inorganic database provided herein.

MONITOR WELL	CONCENTRATION TRENDS		
	TDS	CHLORIDE	SODIUM
ACW-1	▲	▲	●
ACW-2A	●	▼	●
ACW-4	▲	▲	●
ACW-5	▼	▼	●
ACW-6	▲	●	●
ACW-7	●	●	●
ACW-8	▼	●	●
ACW-9	●	●	▼
ACW-10	▲	●	●
ACW-11	▲	▲	▲
ACW-12	▲	▲	▲
ACW-13	●	●	●
ACW-14	●	●	●

Key: ● denotes no observable trend, ▼ denotes a decreasing trend, ▲ denotes an increasing trend

In general, these trends indicate that TDS and chloride levels are increasing slightly across the Site, and that sodium levels are remaining level. Of particular interest are the increasing trends in the chloride concentrations in wells ACW-1, ACW-4 and ACW-11, located along the eastern Plant property boundary, and in downgradient well ACW-12.

On Figure 6, RSA has prepared an isopleth of the chloride concentrations detected in groundwater during the 1998 sampling program. The chloride concentration posted at each well location is the highest level detected in any sample taken during 1998. These data indicate that the leading edge of the chloride plume has migrated approximately 2,100 feet east of the Plant's property boundary.

2.3 Organic Constituents

The primary inorganic constituent that is being used to assess plume migration at the Site is benzene. RSA has reviewed the concentration trend graphs for benzene concentrations in each of the program monitor wells. It is RSA's opinion, based upon our review, that certain trends are apparent in the levels of this compound. The following table summarizes RSA's opinions of the trends that are observable from the benzene database provided herein.

MONITOR WELL	BENZENE CONCENTRATION TREND
ACW-1	▲
ACW-2A	●
ACW-4	▲
ACW-5	▼
ACW-6	▲
ACW-7	●
ACW-8	●
ACW-9	▲
ACW-10	▼
ACW-11	▲
ACW-12	▲
ACW-13	●
ACW-14	●

Key: ● denotes no observable trend, ▼ denotes a decreasing trend, ▲ denotes an increasing trend

In general, these trends indicate that benzene levels are remaining constant or may be increasing slightly across the Site. Of particular interest are the slightly increasing benzene trends indicated in wells ACW-1, ACW-4 and ACW-11, located along the eastern Plant property boundary, and in leading-edge wells ACW-6, ACW-9 and ACW-12.

1998 ANNUAL GROUNDWATER REMEDIATION REPORT

El Paso Energy Corporation

February 12, 1999

On Figure 7, RSA has prepared an isopleth of the benzene concentrations detected in groundwater during the 1998 sampling program. The benzene concentration posted at each well location is the highest level detected in any sample taken during 1998. These data indicate that the leading edge of the benzene plume has migrated approximately 1,700 feet to the east of the Plant property boundary.

3.0 GROUNDWATER REMEDIATION SYSTEM

To date, EPEC has installed two (2) groundwater recovery wells to mitigate impacts to the shallow groundwater system. These wells are identified as RW-1 and RW-2, and the locations of these wells are shown on Figures 2 through 7. As is shown on these figures, RW-1 is located on Plant property in an area that has likely been a source for brines and hydrocarbons. RW-2 is located downgradient approximately 780 feet east of the Plant property boundary. EPEC has also installed a below-grade pipeline that connects recovery wells RW-1 and RW-2 to a Class II water injection well located immediately north of the Plant in the northwest quarter of the southwest quarter of Section 32-T23S-R37E. This injection well is currently owned by Christie Gas Corporation. EPEC's agreement to dispose of groundwater within this well is short-term, and currently EPEC is pursuing a long-term agreement with Oxy U.S.A., Inc. to dispose of the recovered groundwater at the Myers Langlie Mattix Unit Water Injection Station.

Electrical power has been established at recovery well RW-1. EPEC is currently contracting with Southwestern Public Service Company (Hobbs, New Mexico) to construct an overhead electric powerline to recovery well RW-2. Once electrical power is installed, both recovery wells will be equipped with electric submersible pumps and groundwater recovery will begin.

4.0 CONCLUSIONS

Based upon RSA's review of the data presented herein, the following conclusions are presented:

- The uppermost occurrence of groundwater in the Site area occurs within a shallow groundwater system with saturations occurring at approximately 100 feet below ground surface.
- The saturated thickness of the shallow groundwater system is locally very stable fluctuating less than 1-foot over the last two years.
- Groundwater flow directions at the Site within the shallow groundwater system appear quite stable with flows occurring from northwest to southeast (S49E) and a hydraulic gradient of approximately 0.002 feet per foot.
- The shallow groundwater system in the area has been impacted by chloride. These data indicate that a plume containing elevated levels of chloride is migrating downgradient from the Plant area. The leading edge of the chloride plume has migrated approximately 2,100 feet to the east of the Plant property boundary.
- In general, chloride concentrations in groundwater appear to be increasing slightly along the eastern property boundary of the Plant and at downgradient recovery well RW-2.
- The shallow groundwater system in the area has been impacted by benzene. These data indicate that a plume containing levels of benzene is migrating downgradient from the Plant area. The leading edge of the benzene plume has migrated approximately 1,700 feet to the east of the Plant property boundary.
- In general, benzene concentrations in groundwater appear to be remaining constant or may be increasing slightly along the eastern property boundary of the Plant and along the leading edge of the benzene plume.

5.0 RECOMMENDATIONS

RSA recommends that the groundwater remediation system be made functional as quickly as possible. EPEC should continue with efforts to secure a permanent disposal facility with the anticipation that additional recovery wells may be required to mitigate plume migration.

Once the groundwater recovery system is operational, EPEC should evaluate the capture zones for the two recovery wells and determine if the installation of additional recovery wells are necessary. If additional wells are needed, EPEC should conduct the assessments necessary to determine the appropriate locations for installation and propose each to the OCD for approval.

TABLES

**TABLE 1: SUMMARY OF DEPTH TO GROUNDWATER MEASUREMENTS,
JAL NO. 4 PLANT, EL PASO ENERGY CORPORATION, LEA COUNTY, NEW MEXICO**

MONITOR WELL	SCREENED INTERVAL (FEET-BGL)	TOP OF CASING ELEVATION (FEET-AMSL)	DEPTH TO GROUNDWATER MEASUREMENT DATE	DEPTH TO GROUNDWATER (FEET-TOC)	GROUNDWATER ELEVATION (FEET-AMSL)
ACW-01	110 to 130	3,300.87	02/19/97	106.65	3194.22
			05/07/97	105.59	3195.28
			08/19/97	105.61	3195.26
			10/21/97	105.71	3195.16
			02/24/98	105.62	3195.25
			05/12/98	105.59	3195.28
			08/11/98	105.61	3195.26
			10/20/98	105.67	3195.20
ACW-05	105 to 115	3,294.75	02/19/97	103.08	3191.67
			05/07/97	103.06	3191.69
			08/19/97	103.07	3191.68
			10/22/97	103.06	3191.69
			02/24/98	103.10	3191.65
			05/13/98	103.10	3191.65
			08/11/98	103.15	3191.60
			10/21/98	103.22	3191.53
ACW-06	110 to 120	3,300.53	02/19/97	107.53	3193.00
			05/08/97	107.50	3193.03
			08/18/97	107.51	3193.02
			10/22/97	107.57	3192.96
			02/24/98	107.54	3192.99
			05/13/98	107.55	3192.98
			08/11/98	107.57	3192.96
			10/21/98	107.70	3192.83
ACW-09	140 to 160	3,302.47	02/19/97	110.24	3192.23
			05/08/97	110.25	3192.22
			08/19/97	110.26	3192.21
			10/23/97	110.28	3192.19
			02/24/98	110.29	3192.18
			05/13/98	110.30	3192.17
			08/11/98	110.32	3192.15
			10/21/98	110.40	3192.07
ACW-10	140 to 160	3,297.57	02/19/97	106.31	3191.26
			05/08/97	106.32	3191.25
			08/19/97	106.33	3191.24
			10/23/97	106.35	3191.22
			02/24/98	106.38	3191.19
			05/14/98	106.38	3191.19
			08/11/98	106.41	3191.16
			10/22/98	106.54	3191.03
ACW-11	140 to 160	3,299.33	02/19/97	106.01	3193.32
			05/06/97	105.95	3193.38
			08/19/97	106.00	3193.33
			10/21/97	106.02	3193.31
			02/24/98	106.02	3193.31
			05/12/98	106.00	3193.33
			08/11/98	106.07	3193.26
			10/20/98	106.17	3193.16
ACW-12	150 to 170	3,299.56	02/19/97	109.32	3190.24
			05/08/97	109.32	3190.24
			08/20/97	99.29	3200.27
			10/23/97	109.39	3190.17
			02/24/98	109.38	3190.18
			05/14/98	109.35	3190.21
			08/11/98	109.40	3190.16
			10/22/98	109.51	3190.05

**TABLE 1: SUMMARY OF DEPTH TO GROUNDWATER MEASUREMENTS,
JAL NO. 4 PLANT, EL PASO ENERGY CORPORATION, LEA COUNTY, NEW MEXICO**

MONITOR WELL	SCREENED INTERVAL (FEET-BGL)	TOP OF CASING ELEVATION (FEET-AMSL)	DEPTH TO GROUNDWATER MEASUREMENT DATE	DEPTH TO GROUNDWATER (FEET-TOC)	GROUNDWATER ELEVATION (FEET-AMSL)
ACW-13	153 to 173	3,289.46	02/20/97	99.28	3190.18
			05/08/97	99.29	3190.17
			08/20/97	99.29	3190.17
			10/23/97	99.27	3190.19
			02/24/98	99.31	3190.15
			05/14/98	99.31	3190.15
			08/11/98	99.36	3190.10
			10/22/98	99.40	3190.06
ACW-14	157 to 177	3,291.18	02/19/97	NM	NM
			05/06/97	NM	NM
			08/20/97	100.41	3190.77
			10/22/97	100.38	3190.80
			02/24/98	100.47	3190.71
			05/13/98	100.42	3190.76
			08/11/98	100.47	3190.71
			10/21/98	100.54	3190.64

NOTES:

1. TOC : Top of Casing
2. AMSL : Above Mean Sea Level
3. NM : No Measurement Taken
4. BGL: Below Ground Level

TABLE 2: SUMMARY OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES,
JAL NO. 4 GAS PLANT, EL PASO NATURAL GAS COMPANY, LEA COUNTY, NEW MEXICO

Sample Description	Sample Date	Benzene, µg/l	Toluene, µg/l	Ethylbenzene, µg/l	Total Xylene, µg/l	Specific Conductance, umho/cm	pH, a.u.	Total Dissolved Solids, mg/l	Chloride, mg/l	Sulfate, mg/l	pH Temperature, °C	Bromide, mg/l	Fluoride, mg/l	Nitrate-N, mg/l	Nitrate as NO ₃ , mg/l	Boron, mg/l	Calcium, mg/l	Copper, mg/l	Iron, mg/l	Magnesium, mg/l	Manganese, mg/l	Potassium, mg/l	Silica, mg/l	Sodium, mg/l	Zinc, mg/l	Alkalinity (as CaCO ₃), mg/l	Alkalinity, mg/l
ACW #01	05-Mar-83	—	—	—	—	14,350	—	8,505	4,045	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #01	15-Sep-83	—	—	—	—	10,360	—	6,016	2,915	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #01	10-Nov-83	—	—	—	—	11,780	—	7,340	3,683	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #01	20-Apr-84	—	—	—	—	16,520	—	8,430	5,400	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #01	27-Oct-84	—	—	—	—	14,630	—	8,440	3,700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #01	16-May-85	<5	<10	<5	0	14,000	8.3	8,200	4,100	240	—	1.8	25	<2.0	—	0.9	66	<0.025	0.38	72	0.062	12	33	2,600	<0.020	700	—
ACW #01	27-Jun-85	4.6	4.6	<2.5	140	1,400	8.4	8,400	6,700	260	—	1.9	22	<2.0	—	1.0	74	<0.025	0.59	92	0.077	15	35	3,200	<0.02	710	—
ACW #01	28-Aug-85	6	<10	<5	<15	21,000	8.2	12,000	3,300	210	—	2.2	18	<2.0	—	0.8	67	<0.025	0.18	78	0.069	11	28	2,400	<0.02	820	—
ACW #01	06-Feb-86	6.1	3	1.9	2.8	16,000	8.3	9,700	5,200	280	—	2.1	0.88	0.02	—	1.0	78	<0.006	0.56	100	0.069	16	36	4,300	<0.010	830	—
ACW #01	06-Feb-86	5.6	2.7	3	<7.5	16,170	8.2	9,440	5,770	283	—	2.06	2.1	<1.25	—	1.1	84	<0.1	0.7	102	0.1	17	41	3,900	<0.1	769	—
ACW #01	08-May-86	6.3	2.03	<1.0	<3.0	14,620	8.2	8,190	4,130	268	—	<1.25	2.2	<1.25	—	1.0	93	0.01	0.6	118	0.09	18	84	3,070	<0.05	310	—
ACW #01	13-Aug-86	3.5	1.2	<1.0	<2.0	12,000	8.1	7,400	3,500	270	—	1.9	4.9	<0.05	—	1.1	110	0.019	0.68	100	0.078	8.6	41	2,400	0.008	730	—
ACW #01	05-Nov-86	5.6	2.5	<1.0	1.3	11,000	8.1	7,200	3,700	250	—	2	4.4	<0.05	—	1.0	81	<0.007	0.59	98	0.062	11	16	3,000	0.011	810	—
ACW #01	08-May-87	14	15	<5.0	5.7	14,800	—	8,800	5,200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #01	21-Nov-87	6.1	4.8	<0.5	2.4	20,800	8.4	12,000	7,800	320	—	<2	2.1	<0.5	—	1.0	83	<0.01	0.6	110	0.06	20	14	3,900	0.04	680	—
ACW #01D	21-Nov-87	6.7	5.7	<0.5	2.1	20,700	8.2	12,000	7,500	320	—	2	2.2	<0.5	—	0.9	76	<0.01	0.5	100	0.07	20	13	4,900	0.03	670	—
ACW #01	12-May-88	6.8	11	4.4	3.4	16,000	—	9,600	5,200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #01	20-Oct-88	7	4	<2.5	<2.5	20,300	8.18	12,900	6,100	260	17.7	<5	2.3	<0.05	—	1.1	100	<0.0025	0.74	110	0.062	16	15	3,800	<0.05	840	840
ACW #02A	06-May-87	140	100	<50	<100	26,800	—	17,000	11,000	<10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #02A	20-Oct-87	89	100	13	26	24,400	9.2	16,000	8,600	<10	—	5	7.6	<0.5	—	1.1	3	<0.01	0.2	<1	<0.01	12	10	6,000	<0.02	2,200	—
ACW #02A	11-May-88	120	210	20	33	26,000	—	16,000	8,200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #02A	19-Oct-88	180	340	38	72	25,200	9.40	20,200	7,800	17	18.3	<5	12	<0.05	—	1.4	3.0	<0.0025	0.37	0.96	<0.0025	12	12	6,400	<0.05	2,400	1500
ACW #03	06-May-87	350	22	110	43	18,500	—	11,000	6,900	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #03	20-Oct-87	160	8.2	69	32	23,000	—	13,000	7,800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #03	11-May-88	130	21	41	19	24,000	—	15,000	8,500	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #03	19-Oct-88	—	—	—	—	20,800	—	12,400	7,700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #04	06-May-87	29	12	<5.0	<10	48,500	—	25,000	21,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #04	20-Oct-87	170	150	<5.0	110	172,000	7.3	94,000	59,000	2,100	—	33	<0.5	<0.5	—	0.7	580	<0.01	0.2	360	6.1	250	13	33,000	<0.02	500	—
ACW #04	12-May-88	190	170	60	100	160,000	—	98,000	74,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #04	19-Oct-88	190	140	49	90	121,000	8.74	83,100	56,000	1,800	17.6	<20	0.51	<0.5	—	1.1	610	<0.0025	0.14	370	7.0	170	10	37,000	<0.05	480	480
ACW #05	10-Mar-83	—	—	—	—	10,400	—	6,110	2,544	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #05	17-Jun-83	—	—	—	—	4,480	—	323	1,228	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #05	16-Sep-83	—	—	—	—	4,140	—	3,064	650	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #05	09-Nov-83	—	—	—	—	4,390	—	3,202	720	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #05	21-Apr-84	—	—	—	—	4,131	—	3,300	800	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #05	28-Oct-84	—	—	—	—	4,500	—	3,112	550	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #05	31-Jan-85	—	—	—	—	4,050	—	2,848	499	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #05	16-May-85	<5	<10	<5	0	3,900	7.0	2,800	530	1,100	—	1.3	<1.0	3.5	—	0.9	270	<0.025	0.46	39	0.026	6.6	57	540	<0.020	320	—
ACW #05	27-Jun-85	<2.5	<2.5	<2.5	<5.0	3,800	7.3	2,800	460	800	—	1.1	<1.0	3.4	—	1.0	270	<0.025	0.34	40	0.02	6.9	56	530	<0.020	320	—
ACW #05	30-Aug-85	<5	<10	<5	<15	3,900	7.0	2,700	510	890	—	1	<1.0	<2.0	—	1.1	240	<0.025	<0.10	36	<0.015	8.7	44	550	<0.020	310	—
ACW #05	06-Feb-86	<1.0	<1.0	<1.0	<2.0	3,800	7.5	2,200	510	920	—	0.92	0.12	4.7	—	1.4	240	<0.006	1.5	32	0.026	6.5	64	580	0.015	260	—

TABLE 2: SUMMARY OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES,
JAL NO. 4 GAS PLANT, EL PASO NATURAL GAS COMPANY, LEA COUNTY, NEW MEXICO

Sample Description	Sample Date	Alkalinity - Carbonate, mg/l	Alkalinity - Hydroxide, mg/l	Hardness (as CaCO ₃), mg/l
ACW #01	05-Mar-93	—	—	—
ACW #01	15-Sep-93	—	—	—
ACW #01	10-Nov-93	—	—	—
ACW #01	20-Apr-94	—	—	—
ACW #01	27-Oct-94	—	—	—
ACW #01	16-May-95	—	—	470
ACW #01	27-Jun-95	—	—	510
ACW #01	29-Aug-95	—	—	590
ACW #01	06-Feb-96	—	—	620
ACW #01	08-Feb-96	—	—	630
ACW #01	08-May-96	—	—	718
ACW #01	13-Aug-96	—	—	690
ACW #01	05-Nov-96	—	—	610
ACW #01	06-May-97	—	—	—
ACW #01	21-Nov-97	—	—	—
ACW #01D	21-Nov-97	—	—	—
ACW #01	12-May-98	—	—	—
ACW #01	20-Oct-98	<25	<25	700
ACW #02A	06-May-97	—	—	—
ACW #02A	20-Oct-97	—	—	—
ACW #02A	11-May-98	—	—	—
ACW #02A	19-Oct-98	860	<25	11
ACW #03	06-May-97	—	—	—
ACW #03	20-Oct-97	—	—	—
ACW #03	11-May-98	—	—	—
ACW #03	19-Oct-98	—	—	—
ACW #04	06-May-97	—	—	—
ACW #04	20-Oct-97	—	—	—
ACW #04	12-May-98	—	—	—
ACW #04	19-Oct-98	<25	<25	3100
ACW #05	10-Mar-93	—	—	—
ACW #05	17-Jun-93	—	—	—
ACW #05	16-Sep-93	—	—	—
ACW #05	09-Nov-93	—	—	—
ACW #05	21-Apr-94	—	—	—
ACW #05	28-Oct-94	—	—	—
ACW #05	31-Jan-95	—	—	—
ACW #05	18-May-95	—	—	980
ACW #05	27-Jun-95	—	—	240
ACW #05	30-Aug-95	—	—	810
ACW #05	06-Feb-96	—	—	740

TABLE 2: SUMMARY OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES.
JAL NO. 4 GAS PLANT, EL PASO NATURAL GAS COMPANY, LEA COUNTY, NEW MEXICO

Sample Description	Sample Date	Benzene, µg/l	Toluene, µg/l	Ethylbenzene, µg/l	Total Xylenes, µg/l	Specific Conductance, umho/cm	pH, s.u.	Total Dissolved Solids, mg/l	Chloride, mg/l	Sulfate, mg/l	pH Temperature °C	Bromide, mg/l	Fluoride, mg/l	Nitrate-N, mg/l	Nitrate as NO ₃ , mg/l	Boron, mg/l	Calcium, mg/l	Copper, mg/l	Iron, mg/l	Magnesium, mg/l	Manganese, mg/l	Potassium, mg/l	Silica, mg/l	Sodium, mg/l	Zinc, mg/l	Alkalinity (as CaCO ₃), mg/l	Alkalinity - Bicarbonate, mg/l
ACW #05	06-Feb-96	<2.5	<2.5	<2.5	<7.5	3,060	7.3	2,745	506	835	—	<1.25	0.29	4.9	—	1.4	240	<0.1	2	32	0.1	8.1	66	580	<0.1	284	—
ACW #05	08-May-96	<1.0	<1.0	<1.0	<3.0	3,650	7.2	2,460	519	653	—	4.5	0.42	5	—	0.8	167	0.01	0.2	24	<0.05	8	35	506	<0.05	190	—
ACW #05	13-Aug-96	<1.0	1.2	<1.0	<2.0	3,400	7.3	2,500	500	710	—	1	0.7	5.4	—	2.0	200	<0.006	0.024	28	<0.007	6.3	58	520	0.033	320	—
ACW #05	06-Nov-96	1.1	1.4	1.2	<2.0	3,300	7.5	2,300	500	710	—	1.2	0.57	<0.05	—	1.9	180	<0.007	0.3	25	0.008	6	27	520	0.022	350	—
ACW #05	07-May-97	0.84	1.2	0.93	<1.0	3,020	—	2,000	430	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #05	22-Oct-97	0.9	1.6	0.8	1.9	3,160	7.7	2,000	470	320	—	1.7	0.6	6	—	1.3	170	<0.01	0.5	24	<0.01	5	26	480	<0.02	320	—
ACW #05	13-May-98	0.79	1.5	0.77	12*	3,100	—	2,800	570	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #05	21-Oct-98	—	—	—	—	2,930	—	1,910	440	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #06	18-Jun-93	—	—	—	—	8,220	—	5,027	2,108	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #06	18-Sep-93	—	—	—	—	11,130	—	6,656	2,737	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #06	08-Nov-93	—	—	—	—	8,540	—	5,646	2,154	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #06	21-Apr-94	—	—	—	—	11,080	—	6,930	3,600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #06	28-Oct-94	—	—	—	—	11,988	—	6,910	2,100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #06	31-Jan-95	—	—	—	—	11,530	—	6,755	2,873	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #06	16-May-95	<5	<10	<5	0	10,000	8.1	6,400	2,800	110	—	1.4	31	<2.0	—	0.9	70	<0.025	3.9	19	0.079	<5.0	48	2,200	<0.020	1,300	—
ACW #06	27-Jun-95	14	<2.5	<2.5	<5.0	10,000	9.0	8,600	3,500	110	—	1.8	44	<2.0	—	1.1	64	<0.025	5.8	16	0.082	<5.0	44	3,000	<0.080	1,500	—
ACW #06	29-Aug-95	7	<10	<5	<15	12,000	8.4	7,100	3,000	110	—	1.8	26	<2.0	—	0.9	42	<0.025	0.54	16	0.04	<5.0	42	2,500	<0.020	1,500	—
ACW #06	06-Feb-96	6.6	3.2	<1.0	<2.0	11,000	8.0	6,600	2,600	72	—	1.3	3.8	<0.0071	—	1.1	91	<0.006	4.6	23	0.12	3.6	62	2,700	0.029	1,400	—
ACW #06	06-Feb-96	<2.5	<2.5	<2.5	<7.5	10,320	7.8	5,630	3,180	79	—	1.52	10	<1.25	—	1.3	76	<0.1	5	21	0.1	3.6	50	2,400	<0.1	1,315	—
ACW #06	08-May-96	4.08	1.58	<1.0	<3.0	10,620	7.7	6,460	2,880	48	—	<1.25	6.4	<1.25	—	1.3	35	0.02	4.1	21	0.14	4	40	2,380	<0.05	1,396	—
ACW #06	14-Aug-96	4.2	2.6	<2.0	<2.0	11,000	7.9	7,100	2,900	88	—	1.8	21	<0.05	—	1.2	85	<0.006	4.5	23	0.13	3.4	60	2,900	0.024	1,400	—
ACW #06	06-Nov-96	4.5	1.5	<1.0	<2.0	12,000	8.6	7,700	3,400	74	—	1.3	18	<0.05	—	1.2	86	<0.007	5.3	27	0.16	3.8	32	2,800	0.032	1,600	—
ACW #06	06-Nov-96	4.6	1.5	<1.0	<2.0	12,000	8.6	7,700	3,600	62	—	1.3	18	<0.05	—	1.1	88	<0.007	4	22	0.13	3.6	27	2,400	0.019	1,600	—
ACW #06	08-May-97	8.2	2.8	2.6	2.7	8,450	—	5,500	2,300	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #06	22-Oct-97	10	3.8	1.4	1.2	10,200	8.2	6,500	2,900	100	—	3	16.5	<0.05	—	0.9	68	<0.01	2.6	19	0.11	3	21	2,200	<0.02	1,400	—
ACW #06D	22-Oct-97	9.5	3.1	1.2	1.2	10,700	8.3	6,200	2,900	98	—	3	17.2	<0.05	—	0.9	68	<0.01	2.3	19	0.11	3	21	2,200	<0.02	1,400	—
ACW #06	13-May-98	15	12	<0.50	3.8	12,000	—	10,000	3,300	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #06	07-May-97	7.3	2.5	3.1	1.7	13,200	—	8,100	3,600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #07	22-Oct-97	6.4	3.4	3	3	13,800	7.3	7,500	4,400	50	—	4	4	<0.05	—	0.6	200	<0.01	14.4	80	0.2	3	18	2,500	<0.2	730	—
ACW #07	13-May-98	7.0	3.2	2.1*	1.7*	14,000	—	11,000	4,300	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #07	21-Oct-98	8	3	2	<2	14,000	7.06	8,290	4,400	130	20.3	<5	3.8	<0.05	—	0.77	220	<0.0025	15	91	0.15	4.3	23	3,100	<0.05	830	830
ACW #08	06-May-97	99	10	4.1	3.9	89,200	—	50,000	29,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #08	21-Nov-97	36	3.9	2	14	49,200	7.0	29,000	17,000	800	—	<5	0.6	<0.5	—	0.6	440	<0.01	1.3	210	2.2	57	19	9,300	<0.02	520	—
ACW #08	12-May-98	37	4.5	2.9	1.6	48,000	—	28,000	34,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #08	20-Oct-98	140	13	6	6	44,200	6.79	28,700	24,000	740	17.9	<10	0.82	<0.05	—	0.62	370	<0.0025	1.5	200	1.7	46	19	11,000	<0.05	430	430
ACW #09	17-Jun-93	—	—	—	—	5,900	—	4,435	2,288	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #09	14-Sep-93	—	—	—	—	3,100	—	2,119	915	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #09	09-Nov-93	—	—	—	—	3,670	—	2,300	1,184	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #09	22-Apr-94	—	—	—	—	3,900	—	2,508	1,150	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #09	01-Dec-94	—	—	—	—	5,450	—	3,510	1,650	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

TABLE 2: SUMMARY OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES,
JAL NO. 4 GAS PLANT, EL PASO NATURAL GAS COMPANY, LEA COUNTY, NEW MEXICO

Sample Description	Sample Date	Alkalinity -		Hardness (as
		Carbonate, mg/l	Hydroxide, mg/l	
ACW #05	06-Feb-96	—	—	730
ACW #05	08-May-96	—	—	515
ACW #05	13-Aug-96	—	—	620
ACW #05	06-Nov-96	—	—	560
ACW #05	07-May-97	—	—	—
ACW #05	22-Oct-97	—	—	—
ACW #05	13-May-98	—	—	—
ACW #05	21-Oct-98	—	—	—
ACW #06	18-Jun-93	—	—	—
ACW #06	16-Sep-93	—	—	—
ACW #06	08-Nov-93	—	—	—
ACW #06	21-Apr-94	—	—	—
ACW #06	28-Oct-94	—	—	—
ACW #06	31-Jan-95	—	—	—
ACW #06	16-May-95	—	—	200
ACW #06	27-Jun-95	—	—	130
ACW #06	29-Aug-95	—	—	200
ACW #06	06-Feb-96	—	—	320
ACW #06	06-Feb-96	—	—	275
ACW #06	08-May-96	—	—	175
ACW #06	14-Aug-96	—	—	310
ACW #06	06-Nov-96	—	—	360
ACW #06	06-Nov-96	—	—	310
ACW #06	08-May-97	—	—	—
ACW #06	22-Oct-97	—	—	—
ACW #06D	22-Oct-97	—	—	—
ACW #06	13-May-98	—	—	—
ACW #06	21-Oct-98	<25	<25	250
ACW #07	07-May-97	—	—	—
ACW #07	22-Oct-97	—	—	—
ACW #07	13-May-98	—	—	—
ACW #07	21-Oct-98	<25	<25	920
ACW #08	06-May-97	—	—	—
ACW #08	21-Nov-97	—	—	—
ACW #08	12-May-98	—	—	—
ACW #08	20-Oct-98	<25	<25	1,700
ACW #09	17-Jun-93	—	—	—
ACW #09	14-Sep-93	—	—	—
ACW #09	09-Nov-93	—	—	—
ACW #09	22-Apr-94	—	—	—
ACW #09	01-Dec-94	—	—	—

TABLE 2: SUMMARY OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES,
JAL NO. 4 GAS PLANT, EL PASO NATURAL GAS COMPANY, LEA COUNTY, NEW MEXICO

Sample Description	Sample Date	Benzene, µg/l	Toluene, µg/l	Ethylbenzene, µg/l	Total Xylene, µg/l	Specific Conductance, umh/cm	pH, s.u.	Total Dissolved Solids, mg/l	Chloride, mg/l	Sulfate, mg/l	pH Temperature, °C	Bromide, mg/l	Fluoride, mg/l	Nitrate-N, mg/l	Nitrate as NO ₃ , mg/l	Boron, mg/l	Calcium, mg/l	Copper, mg/l	Iron, mg/l	Magnesium, mg/l	Manganese, mg/l	Potassium, mg/l	Silica, mg/l	Sodium, mg/l	Zinc, mg/l	Alkalinity (as CaCO ₃), mg/l	Alkalinity - Bicarbonate, mg/l
ACW #09	31-Jan-95	—	—	—	—	7,110	—	4,240	2,083	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #09	17-May-95	<5	22	<5	0	11,000	6.6	6,800	5,600	440	—	2.1	<1.0	<2.0	—	0.4	820	<0.025	0.17	280	1	16	49	910	0.025	320	—
ACW #09	28-Jun-95	<2.5	<2.5	<2.5	<5.0	9,100	7.0	6,200	3,900	360	—	1.9	<1.0	<2.0	—	0.4	770	<0.025	0.28	250	0.98	15	51	1,000	<0.020	300	—
ACW #09	30-Aug-95	<5	<10	<5	<15	7,150	6.5	4,500	2,500	370	—	1.5	<1.0	<2.0	—	0.4	640	<0.025	0.19	220	0.86	14	43	880	<0.040	240	—
ACW #09	07-Feb-96	1.8	<10	<2.0	<2.0	7,500	7.7	5,400	2,400	320	—	1.5	0.16	0.039	—	0.4	570	<0.006	0.48	180	0.71	14	47	810	<0.010	300	—
ACW #09	07-Feb-96	<2.5	<2.5	<2.5	<7.5	7,450	6.8	4,620	2,300	341	—	1.85	0.36	<1.25	—	0.4	600	<0.1	0.4	175	0.7	16	56	810	<0.1	281	—
ACW #09	08-May-96	<1.0	<1.0	<3.0	<3.0	7,530	6.8	4,210	2,210	322	—	3	0.35	<1.25	—	<0.5	508	0.01	0.4	183	0.49	17	80	687	<0.05	209	—
ACW #09	14-Aug-96	1.4	1.6	<1.0	<2.0	4,400	7.4	3,600	1,200	180	—	1.2	1.4	0.13	—	0.4	490	<0.006	0.66	160	0.65	13	53	730	0.027	220	—
ACW #09	07-Nov-96	2.3	2.2	<1.0	<2.0	4,200	7.3	3,100	1,200	—	—	—	1.1	0.055	—	0.3	360	<0.007	0.4	110	0.44	10	—	510	0.029	—	—
ACW #09	19-Feb-97	1.3	4.0	10	4.2	4,110	—	2,500	1,260	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #09	08-May-97	2.6	2.6	1.4	1.7	2,800	—	2,100	830	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #09	23-Oct-97	<0.5	<0.5	<0.5	<1.0	3,380	7.2	1,600	880	130	—	1.3	1.2	<0.05	—	0.2	270	<0.01	0.6	84	0.31	10	17	320	0.05	200	—
ACW #09	13-May-98	<0.50	<0.50	<1.0	<1.0	5,100	—	4,500	1,600	—	—	—	1.1	—	—	—	1,200	<0.0025	0.63	400	1.4	25	31	1,400	<0.05	340	340
ACW #09	21-Oct-98	6	<2	<2	<2	13,200	6.49	8,980	4,100	440	20.8	<5	0.40	<0.05	—	0.48	1,200	<0.0025	0.63	400	1.4	25	31	1,400	<0.05	340	340
ACW #10	18-Jun-93	—	—	—	—	1061	—	701	1027	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #10	14-Sep-93	—	—	—	—	1,349	—	1,190	421	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #10	08-Nov-93	—	—	—	—	1,800	—	1,238	420	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #10	22-Apr-94	—	—	—	—	2,440	—	1,638	700	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #10	28-Oct-94	—	—	—	—	2,592	—	1,694	600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #10	01-Feb-95	—	—	—	—	2,680	—	1,426	619	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #10	17-May-95	<5	<10	<5	0	3,900	6.9	2,300	1,500	300	—	1.1	<1.0	1.1	—	0.3	320	<0.025	0.12	110	0.037	8	43	170	<0.020	190	—
ACW #10	28-Jun-95	<2.5	<2.5	<2.5	<5.0	3,100	7.3	2,300	1,900	230	—	0.98	<1.0	<2.0	—	0.3	280	<0.025	0.28	94	0.029	7.5	46	160	<0.020	180	—
ACW #10	30-Aug-95	<5	<10	<5	<15	3,100	7.0	2,200	790	210	—	0.9	<1.0	<2.0	—	0.2	280	<0.025	<0.20	95	0.034	52	42	150	<0.040	180	—
ACW #10	07-Feb-96	3.9	<10	<1.0	<2.0	3,200	7.8	2,300	850	230	—	0.88	0.24	0.42	—	0.3	320	<0.006	0.24	110	0.032	8.4	36	190	0.011	200	—
ACW #10	07-Feb-96	4.3	<2.5	<2.5	<7.5	3,100	7.1	2,100	829	242	—	<1.25	0.44	<1.25	—	0.3	320	<0.1	0.4	107	<0.1	9.4	54	190	<0.1	184	—
ACW #10	08-May-96	1.22	<1.0	<1.0	<3.0	2,322	7.2	1,290	603	190	—	4.5	0.46	2.2	—	<0.5	206	<0.01	0.1	92	<0.05	8	62	127	<0.05	137	—
ACW #10	14-Aug-96	<1.0	<1.0	<1.0	<2.0	2,400	7.6	1,900	560	160	—	0.82	1.4	0.58	—	0.3	210	<0.006	0.14	71	0.019	7	47	140	0.037	170	—
ACW #10	07-Nov-96	1.2	1.5	<1.0	<2.0	2,560	7.5	1,800	610	170	—	0.83	1.1	0.48	—	0.2	200	<0.007	0.22	70	0.017	7.4	20	150	0.025	170	—
ACW #10	08-May-97	1.3	1	<0.5	<1.0	1,880	—	1,500	480	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #10	23-Oct-97	1.14	1.17	<0.5	0.58	2,870	7.2	1,500	670	210	—	1.2	1	0.36	—	0.2	220	<0.01	0.2	71	0.02	6	20	140	<0.02	200	—
ACW #10	14-May-98	—	—	—	—	2,400	—	1,200	540	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #10	22-Oct-98	<2	<2	<2	<2	2,900	7.08	1,960	800	210	20.8	<2	0.90	0.83	—	0.29	300	<0.0025	0.099	110	0.0068	9.0	27	180	<0.05	180	180
ACW #11	19-Jun-93	—	—	—	—	25,000	—	18,670	9,737	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #11	15-Sep-93	—	—	—	—	10,570	—	6,820	3,437	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #11	09-Nov-93	—	—	—	—	10,160	—	6,592	3,620	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #11	21-Apr-94	—	—	—	—	16,290	—	9,520	6,400	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #11	27-Oct-94	—	—	—	—	20,060	—	13,280	6,200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #11	27-Oct-94	—	—	—	—	20,550	—	12,900	6,600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #11	01-Feb-95	—	—	—	—	32,200	—	19,880	11,552	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ACW #11	17-May-95	<5	<10	<5	0	12,000	6.8	7,200	4,400	250	—	1.9	<1.0	<2.0	—	0.3	740	<0.025	0.38	260	0.23	16	42	1,200	<0.020	230	—
ACW #11	27-Jun-95	5.1	<2.5	<2.5	<5.0	11,000	7.2	7,000	6,500	210	—	1.6	<1.0	<2.0	—	0.4	720	<0.025	0.29	270	0.2	16	45	980	<0.020	210	—

TABLE 2: SUMMARY OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES,
JAL NO. 4 GAS PLANT, EL PASO NATURAL GAS COMPANY, LEA COUNTY, NEW MEXICO

Sample Description	Sample Date	Alkalinity - Carbonate, mg/l	Alkalinity - Hydroxide, mg/l	Hardness (as CaCO ₃), mg/l
ACW #09	31-Jan-95	—	—	—
ACW #09	17-May-95	—	—	4,500
ACW #09	28-Jun-95	—	—	2,700
ACW #09	30-Aug-95	—	—	2,000
ACW #09	07-Feb-96	—	—	2,200
ACW #09	07-Feb-96	—	—	2,220
ACW #09	08-May-96	—	—	2,020
ACW #09	14-Aug-96	—	—	1,900
ACW #09	07-Nov-96	—	—	—
ACW #09	19-Feb-97	—	—	—
ACW #09	08-May-97	—	—	—
ACW #09	23-Oct-97	—	—	—
ACW #09	13-May-98	—	—	—
ACW #09	21-Oct-98	<25	<25	4,600
ACW #10	18-Jun-93	—	—	—
ACW #10	14-Sep-93	—	—	—
ACW #10	09-Nov-93	—	—	—
ACW #10	22-Apr-94	—	—	—
ACW #10	28-Oct-94	—	—	—
ACW #10	01-Feb-95	—	—	—
ACW #10	17-May-95	—	—	1,300
ACW #10	28-Jun-95	—	—	1,200
ACW #10	30-Aug-95	—	—	1,100
ACW #10	07-Feb-96	—	—	1,200
ACW #10	07-Feb-96	—	—	1,240
ACW #10	08-May-96	—	—	893
ACW #10	14-Aug-96	—	—	810
ACW #10	07-Nov-96	—	—	800
ACW #10	08-May-97	—	—	—
ACW #10	23-Oct-97	—	—	—
ACW #10	14-May-98	—	—	—
ACW #10	22-Oct-98	<25	<25	1,200
ACW #11	19-Jun-93	—	—	—
ACW #11	15-Sep-93	—	—	—
ACW #11	09-Nov-93	—	—	—
ACW #11	21-Apr-94	—	—	—
ACW #11	27-Oct-94	—	—	—
ACW #11	01-Feb-95	—	—	—
ACW #11	17-May-95	—	—	3,300
ACW #11	27-Jun-95	—	—	2,800

TABLE 2: SUMMARY OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES,
JAL NO. 4 GAS PLANT, EL PASO NATURAL GAS COMPANY, LEA COUNTY, NEW MEXICO

Sample Description	Sample Date	Benzene, µg/l	Toluene, µg/l	Ethylbenzene, µg/l	Total Xylene, µg/l	Specific Conductance, umh/cm	pH, a.u.	Total Dissolved Solids, mg/l	Chloride, mg/l	Sulfate, mg/l	pH Temperature, °C	Bromide, mg/l	Fluoride, mg/l	Nitrate-N, mg/l	Nitrate as NO ₃ , mg/l	Boron, mg/l	Calcium, mg/l	Copper, mg/l	Iron, mg/l	Magnesium, mg/l	Manganese, mg/l	Potassium, mg/l	Silica, mg/l	Sodium, mg/l	Zinc, mg/l	Alkalinity (as CaCO ₃), mg/l	Alkalinity - Bicarbonate, mg/l
ACW #11	29-Aug-95	8	<10	<5	<15	10,000	6.8	6,000	3,400	220	—	2.2	6.2	<2.0	—	0.3	550	<0.025	0.17	210	0.088	16	44	880	<0.020	220	—
ACW #11	07-Feb-96	6.9	<1.0	<1.0	<2.0	11,000	7.8	7,400	3,400	230	—	1.5	0.15	0.087	—	0.3	660	<0.006	0.38	230	0.13	26	47	1,500	<0.010	210	—
ACW #11	07-Feb-96	7.6	<2.5	<2.5	<7.5	11,030	7.2	6,740	3,770	248	—	1.6	0.39	<1.25	—	0.4	688	<0.1	0.5	224	0.1	31	46	1,400	<0.1	200	—
ACW #11	08-May-96	6.76	<1.0	<1.0	<3.0	9,840	7.3	5,080	3,120	206	—	<1.25	0.37	<1.25	—	<0.5	484	0.02	0.3	220	0.09	29	50	1,160	<0.05	111	—
ACW #11	13-Aug-96	7.9	2.2	<1.0	<2.0	12,000	7.3	10,000	4,200	230	—	2	1.0	0.18	—	0.4	540	0.013	0.28	190	0.061	24	47	1,700	0.12	160	—
ACW #11	05-Nov-96	32	1.7	<1.0	1.2	29	7.3	25,000	13,000	560	—	2.9	0.4	0.31	—	0.3	1,200	<0.007	0.25	430	0.14	35	21	5,100	0.068	170	—
ACW #11	06-May-97	21	5.3	3.1	3.5	10,200	—	6,700	3,600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
ACW #11	21-Nov-97	28	3.1	<0.5	2.8	27,900	7.6	16,000	9,800	520	—	<4	<0.5	0.16	—	0.3	1,000	<0.01	0.4	330	0.22	27	18	2,700	0.21	170	—
ACW #11	12-May-98	70	8.2	1.3	4.3	36,000	—	22,000	13,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
ACW #11	20-Oct-98	51	<2	<2	<2	42,500	6.80	29,600	17,000	680	18.5	<10	0.43	0.11	—	0.32	1,500	<0.0025	0.68	520	0.35	41.0	22	5,100	<0.05	180	180
ACW #12	19-Feb-97	<0.5	<0.5	1.5	<1.0	1,610	—	950	380	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
ACW #12D	19-Feb-97	2.9	<0.5	<0.5	<1.0	1,530	—	960	390	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
ACW #12	08-May-97	3	0.89	<0.5	<1.0	1,240	—	900	290	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
ACW #12	20-Aug-97	1.2	<0.5	<0.5	<1.0	1,120	8.1	740	260	85	—	0.6	1.3	0.2	—	0.2	84	<0.01	0.5	31	0.05	23	18	100	<0.02	130	—
ACW #12D	20-Aug-97	1.4	<0.5	<0.5	<1.0	1,150	8.1	740	280	90	—	0.7	1.3	0.3	—	0.2	91	<0.01	0.4	34	0.05	22	19	100	<0.02	120	—
ACW #12	23-Oct-97	1.4	0.58	<0.5	<1.0	1,810	7.5	850	380	120	—	1	1	0.34	—	0.2	150	<0.01	0.2	54	0.03	13	20	120	<0.02	160	—
ACW #12	24-Feb-98	7.3	<0.50	<0.50	<1.0	2,050	7.9	1,200	470	150	—	0.8	2.2	0.4	—	—	170	—	—	60	—	10	21	120	—	160	—
ACW #12D	24-Feb-98	6.7	<0.50	<0.50	<1.0	2,090	7.9	1,220	490	160	—	0.9	2.1	0.5	—	—	170	—	—	60	—	10	21	120	—	150	—
ACW #12	01-Jun-98	<0.50	1.2	<0.50	<1.0	2,000	7.5	1,500	—	—	—	—	—	0.41	—	—	210	—	—	73	—	9	23	130	—	150	150
ACW #12D	01-Jun-98	4.4	2.5	6.1	2.5	2,300	7.4	1,700	540	150	—	0.74	1.3	0.54	—	—	200	—	—	71	—	9	22	130	—	150	150
ACW #12	11-Aug-98	2	<2	<2	<2	1,790	7.61	1,240	440	130	19.8	<2	1.3	1.4	—	—	180	—	—	62	—	9.8	21	130	—	140	140
ACW #12D	11-Aug-98	2	<2	<2	<2	2,020	7.51	1,300	520	140	19.3	<1	1.1	<2.5	—	—	180	—	—	61	—	9.7	24	130	—	160	160
ACW #12	22-Oct-98	6	<2	<2	<2	2,280	7.39	1,520	610	170	20.0	<2	0.99	0.44	—	0.27	210	<0.0025	0.17	80	0.032	10	23	140	<0.05	150	150
ACW #12D	22-Oct-98	6	<2	<2	<2	2,310	7.36	1,690	600	170	20.1	<2	0.90	0.51	—	0.26	200	<0.0025	0.17	72	0.029	10	24	130	<0.05	150	150
ACW #13	20-Feb-97	<0.5	<0.5	1.5	<1.0	681	—	440	53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
ACW #13	08-May-97	0.61	0.58	<0.5	<1.0	643	—	460	57	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
ACW #13D	08-May-97	0.65	0.62	<0.5	<1.0	630	—	460	52	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
ACW #13	20-Aug-97	<0.5	<0.5	<0.5	<1.0	654	8.3	440	55	96	—	0.4	1.3	0.99	—	0.2	39	<0.01	0.3	14	0.02	10	20	79	<0.02	160	—
ACW #13	23-Oct-97	0.59	0.76	<0.5	<1.0	728	8.3	400	50	95	—	0.4	1.3	1	—	0.2	34	<0.01	0.2	14	<0.01	15	21	84	<0.02	170	—
ACW #13	24-Feb-98	<0.50	<0.50	<0.50	<1.0	727	8.4	450	59	100	—	0.5	1.6	1.2	—	—	31	—	—	14	—	17	21	87	—	170	—
ACW #13	01-Jun-98	<0.50	<0.50	<0.50	<1.0	700	8.0	450	—	—	—	—	—	1.2	—	—	40	—	—	14	—	10	21	85	—	170	170
ACW #13	11-Aug-98	<2	<2	<2	<2	679	7.93	467	48	110	19.7	<5	1.6	3.3	—	—	43	—	—	14	—	9.4	15	85	—	170	170
ACW #13	22-Oct-98	<2	<2	<2	<2	686	7.94	439	47	92	19.9	<5	1.3	1.3	—	0.23	48	<0.0025	0.37	16	0.017	7.5	23	87	<0.05	170	170
ACW #14	20-Feb-97	<0.5	<0.5	<0.5	<1.0	830	—	570	86	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
ACW #14	07-May-97	0.88	1.1	0.52	<1.0	746	—	480	72	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
ACW #14	20-Aug-97	<0.5	<0.5	<0.5	<1.0	691	7.8	460	80	82	—	0.4	1.6	0.94	—	0.2	45	<0.01	0.5	15	0.03	5	20	81	0.03	150	—
ACW #14	22-Oct-97	<0.5	1.2	<0.5	1.5	747	8.1	440	71	95	—	0.5	1.5	0.9	—	0.2	46	<0.01	0.3	16	0.01	5	20	81	<0.02	180	—
ACW #14	24-Feb-98	<0.50	<0.50	<0.50	0.58J	755	8.2	470	40	130	—	0.5	2	1.8	—	—	46	—	—	16	—	5	22	87	—	180	—
ACW #14	13-May-98	0.75	<0.50	<0.50	<1.0	880	7.9	530	58	110	—	<2	1.7	1.7	—	—	47	—	—	18	—	6	24	97	—	170	170
ACW #14	11-Aug-98	<2	<2	<2	<2	730	7.76	496	160	110	19.2	<5	1.9	2.5	—	—	48	—	—	16	—	5.5	25	90	—	170	170
ACW #14	21-Oct-98	<2	<2	<2	<2	771	7.70	466	71	100	20.2	<2	1.9	1.7	—	0.25	52	0.0026	0.20	19	0.014	6.2	25	97	<0.05	170	170

TABLE 2: SUMMARY OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES,
JAL NO. 4 GAS PLANT, EL PASO NATURAL GAS COMPANY, LEA COUNTY, NEW MEXICO

Sample Description	Sample Date	Alkalinity - Carbonate, mg/l	Alkalinity - Hydroxide, mg/l	Hardness (as CaCO ₃), mg/l
ACW #11	28-Aug-95	—	—	2,700
ACW #11	07-Feb-96	—	—	2,800
ACW #11	07-Feb-96	—	—	2,580
ACW #11	08-May-96	—	—	2,110
ACW #11	13-Aug-96	—	—	2,100
ACW #11	05-Nov-96	—	—	4,700
ACW #11	08-May-97	—	—	—
ACW #11	21-Nov-97	—	—	—
ACW #11	12-May-98	—	—	—
ACW #11	20-Oct-98	<25	<25	5,900
ACW #12	19-Feb-97	—	—	—
ACW #12D	18-Feb-97	—	—	—
ACW #12	08-May-97	—	—	—
ACW #12	20-Aug-97	—	—	—
ACW #12D	20-Aug-97	—	—	—
ACW #12	23-Oct-97	—	—	—
ACW #12	24-Feb-98	—	—	—
ACW #12D	24-Feb-98	—	—	—
ACW #12	01-Jun-98	—	—	—
ACW #12D	01-Jun-98	—	—	—
ACW #12	11-Aug-98	<25	<25	710
ACW #12D	11-Aug-98	<25	<25	700
ACW #12	22-Oct-98	<25	<25	850
ACW #12D	22-Oct-98	<25	<25	810
ACW #13	20-Feb-97	—	—	—
ACW #13	08-May-97	—	—	—
ACW #13D	08-May-97	—	—	—
ACW #13	20-Aug-97	—	—	—
ACW #13	23-Oct-97	—	—	—
ACW #13	24-Feb-98	—	—	—
ACW #13	01-Jun-98	—	—	—
ACW #13	11-Aug-98	<25	<25	170
ACW #13	22-Oct-98	<25	<25	180
ACW #14	20-Feb-97	—	—	—
ACW #14	07-May-97	—	—	—
ACW #14	20-Aug-97	—	—	—
ACW #14	22-Oct-97	—	—	—
ACW #14	24-Feb-98	—	—	—
ACW #14	13-May-98	—	—	—
ACW #14	11-Aug-98	<25	<25	190
ACW #14	21-Oct-98	<25	<25	210

TABLE 2: SUMMARY OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES,
JAL NO. 4 GAS PLANT, EL PASO NATURAL GAS COMPANY, LEA COUNTY, NEW MEXICO

Sample Description	Sample Date	Benzene, µg/l	Toluene, µg/l	Ethylbenzene, µg/l	Total Xylene, µg/l	Specific Conductance, umho/cm	pH, a.u.	Total Dissolved Solids, mg/l	Chloride, mg/l	Sulfate, mg/l	pH Temperature °C	Bromide, mg/l	Fluoride, mg/l	Nitrate-N, mg/l	Nitrate as NO ₃ , mg/l	Boron, mg/l	Calcium, mg/l	Copper, mg/l	Iron, mg/l	Magnesium, mg/l	Manganese, mg/l	Potassium, mg/l	Silica, mg/l	Sodium, mg/l	Zinc, mg/l	Alkalinity (as CaCO ₃), mg/l	Alkalinity - Bicarbonate, mg/l
ENSR #1	07-May-97	7.3	3.7	2.4	2	8,620	—	5,200	3,200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	21-Oct-97	13	6.3	4.2	5.6	13,800	—	7,600	4,400	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	12-May-98	13	4.6	4.0	4.4	12,000	—	6,700	3,600	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	20-Oct-98	—	—	—	—	12,400	—	7,590	4,200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	06-May-97	250	230	110	190	50,000	—	27,000	17,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	20-Oct-97	130	160	77	120	57,900	—	30,000	17,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	12-May-98	—	—	—	—	38,000	—	21,000	13,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	19-Oct-98	—	—	—	—	44,800	—	30,000	18,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	07-May-97	7.6	3.3	2.9	3	2,050	—	1,500	650	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	ENSR #3D	07-May-97	6.8	3.1	2.8	2.9	1,990	—	1,400	480	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ENSR #3	21-Oct-97	5	2.5	3	4.1	2,230	—	1,300	580	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	12-May-98	9.5	3.4	1.9	2.7	2,400	—	1,400	610	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ENSR #3D	12-May-98	14	4.4	2.3	4.4	2,200	—	1,300	550	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	20-Oct-98	—	—	—	—	2,260	—	1,580	590	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ENSR #3D	20-Oct-98	—	—	—	—	2,240	—	1,290	540	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	24-Feb-98	<0.50	<0.50	<0.50	<1.0	802	8.1	480	120	68	—	0.7	1.3	0.9	—	—	60	—	—	18	—	—	4	24	60	—	160
Oxy Production Well	13-May-98	<0.50	<0.50	<0.50	<1.0	800	7.8	480	120	61	—	<2	1.1	0.93	—	—	66	—	—	20	—	—	5	27	65	—	150
Oxy Production Well	11-Aug-98	<2	<2	<2	<2	762	7.78	804	120	58	20.2	<1	<0.4	0.85<0.05	3.7	—	72	—	—	20	—	—	5.0	28	67	—	150
Oxy Production Well	20-Oct-98	<2	<2	<2	<2	734	7.79	488	100	55	17.3	<2	1.1	0.76	—	—	—	—	—	—	—	—	—	—	—	—	160
Production Well #1	08-May-97	0.66	0.65	<0.5	<1.0	718	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Production Well #1	23-Oct-97	<0.5	<0.5	<0.5	<1.0	890	—	470	91	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Production Well #1	14-May-98	—	—	—	—	850	—	500	67	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Production Well #1D	22-Oct-98	<0.50	<0.50	<0.50	<1.0	860	—	520	67	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Production Well #1	24-Feb-98	<2	<2	<2	<2	994	—	659	56	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Production Well Dooms	13-May-98	<0.50	<0.50	<0.50	<1.0	640	8.1	410	38	85	—	<2	1.1	1.2	—	—	46	—	—	16	—	—	4	25	64	—	200
Production Well Dooms	10-Aug-98	<2	<2	<2	<2	629	7.76	450	34	83	20.2	<1	<0.4	1.2<0.05	5.3	—	53	—	—	17	—	—	4.3	27	71	—	200
Production Well Dooms	20-Oct-98	<2	<2	<2	<2	636	7.71	464	35	80	18.0	<2	1.0	1.2	—	0.22	52	<0.0025	0.060	17	<0.0025	4.1	29	69	<0.05	190	
PTP #1	07-May-97	38	0.51	22	8.4	2,420	—	1,500	490	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PTP #1	21-Oct-97	7.9	<0.5	18	3.1	2,250	—	1,400	470	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PTP #1	12-May-98	62	1.6	21	13	2,300	—	1,400	480	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
PTP #1	20-Oct-98	—	—	—	—	2,090	—	1,410	380	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Notes:

- < : Denotes a sample value of less than the laboratory reporting limit.
- µm : Estimated value—possible matrix effect.
- * : Method blank had detectable levels of this compound.
3. 1.2/<0.05 : NEL Lab result/Montgomery Watson Lab result.

TABLE 2: SUMMARY OF LABORATORY ANALYSES OF GROUNDWATER SAMPLES,
JAL NO. 4 GAS PLANT, EL PASO NATURAL GAS COMPANY, LEA COUNTY, NEW MEXICO

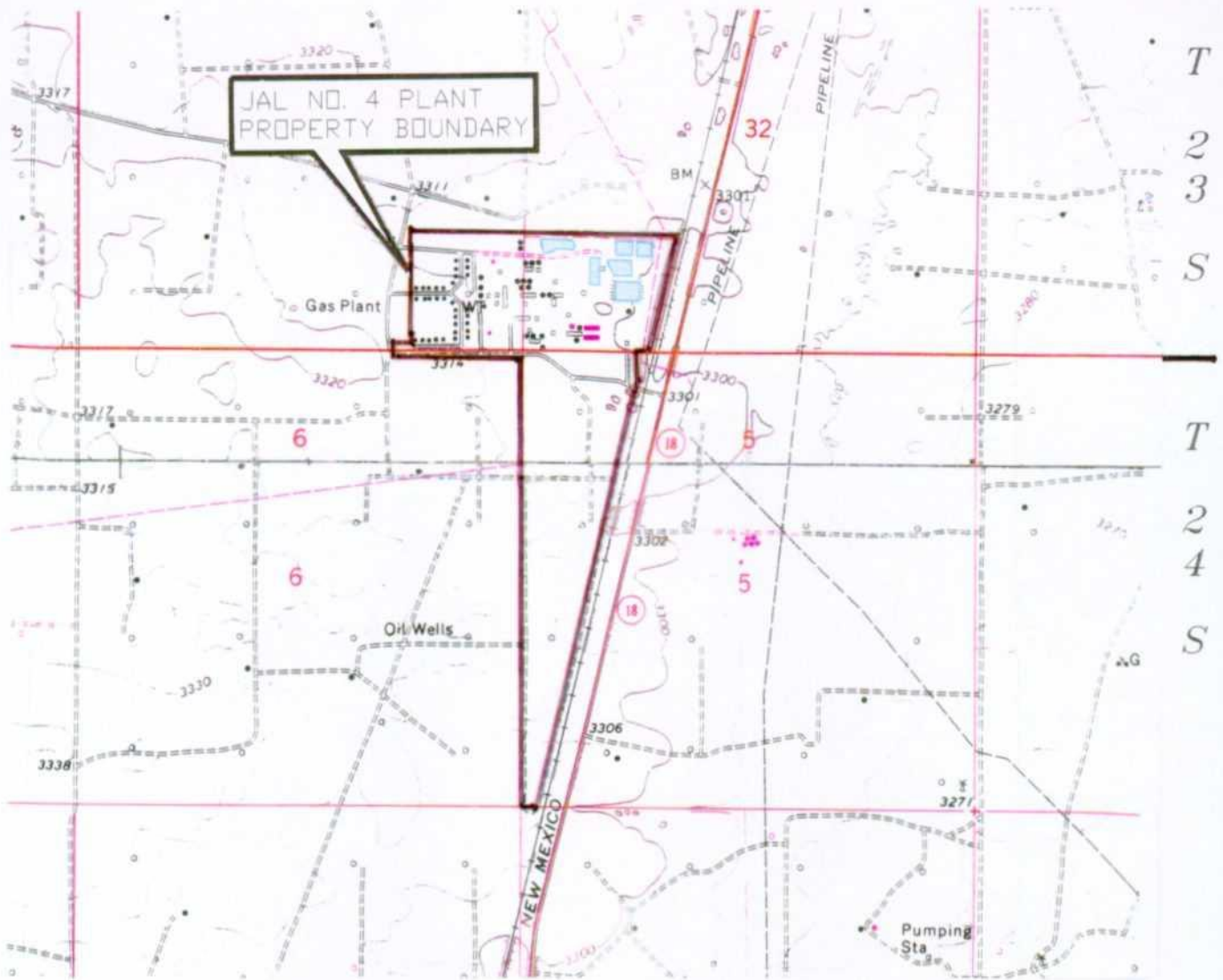
Sample Description	Sample Date	Alkalinity - Carbonate, mg/l	Alkalinity - Hydroxide, mg/l	Hardness (as CaCO ₃), mg/l
ENSR #1	07-May-97	—	—	—
ENSR #1	21-Oct-97	—	—	—
ENSR #1	12-May-98	—	—	—
ENSR #1	20-Oct-98	—	—	—
ENSR #2	06-May-97	—	—	—
ENSR #2	20-Oct-97	—	—	—
ENSR #2	12-May-98	—	—	—
ENSR #2	19-Oct-98	—	—	—
ENSR #3	07-May-97	—	—	—
ENSR #3D	07-May-97	—	—	—
ENSR #3	21-Oct-97	—	—	—
ENSR #3	12-May-98	—	—	—
ENSR #3D	12-May-98	—	—	—
ENSR #3	20-Oct-98	—	—	—
ENSR #3D	20-Oct-98	—	—	—
Oxy Production Well	24-Feb-98	—	—	—
Oxy Production Well	13-May-98	—	—	—
Oxy Production Well	11-Aug-98	<25	<25	260
Oxy Production Well	20-Oct-98	<25	<25	240
Production Well #1	08-May-97	—	—	—
Production Well #1	23-Oct-97	—	—	—
Production Well #1	14-May-98	—	—	—
Production Well #1D	14-May-98	—	—	—
Production Well #1	22-Oct-98	—	—	—
Production Well Dooms	24-Feb-98	—	—	—
Production Well Dooms	13-May-98	—	—	—
Production Well Dooms	10-Aug-98	<25	<25	200
Production Well Dooms	20-Oct-98	<25	<25	200
PTP #1	07-May-97	—	—	—
PTP #1	21-Oct-97	—	—	—
PTP #1	12-May-98	—	—	—
PTP #1	20-Oct-98	—	—	—

Notes:

1. < : Denotes a sample value of less than the laboratory report
2. Jm : Estimated value—possible matrix effect.
3. * : Method blank had detectable levels of this compound.
3. 1.2/<0.05 : NEL Lab result/Montgomery Watson Lab result.

FIGURES

R 37 E



AFTER U.S.G.S. 7.5 MIN. TOPO. QUAD., RATTLESNAKE CANYON, N.M., 1979, AND JAL NW, N.M., 1979



NEW MEXICO



Figure Title:
SITE LOCATION AND
TOPOGRAPHIC FEATURES

Client:
EL PASO ENERGY CORPORATION

Document Title:
1998 ANNUAL GROUNDWATER
REMEDATION REPORT

Location:
LEA COUNTY, NEW MEXICO
JAL NO. 4 PLANT

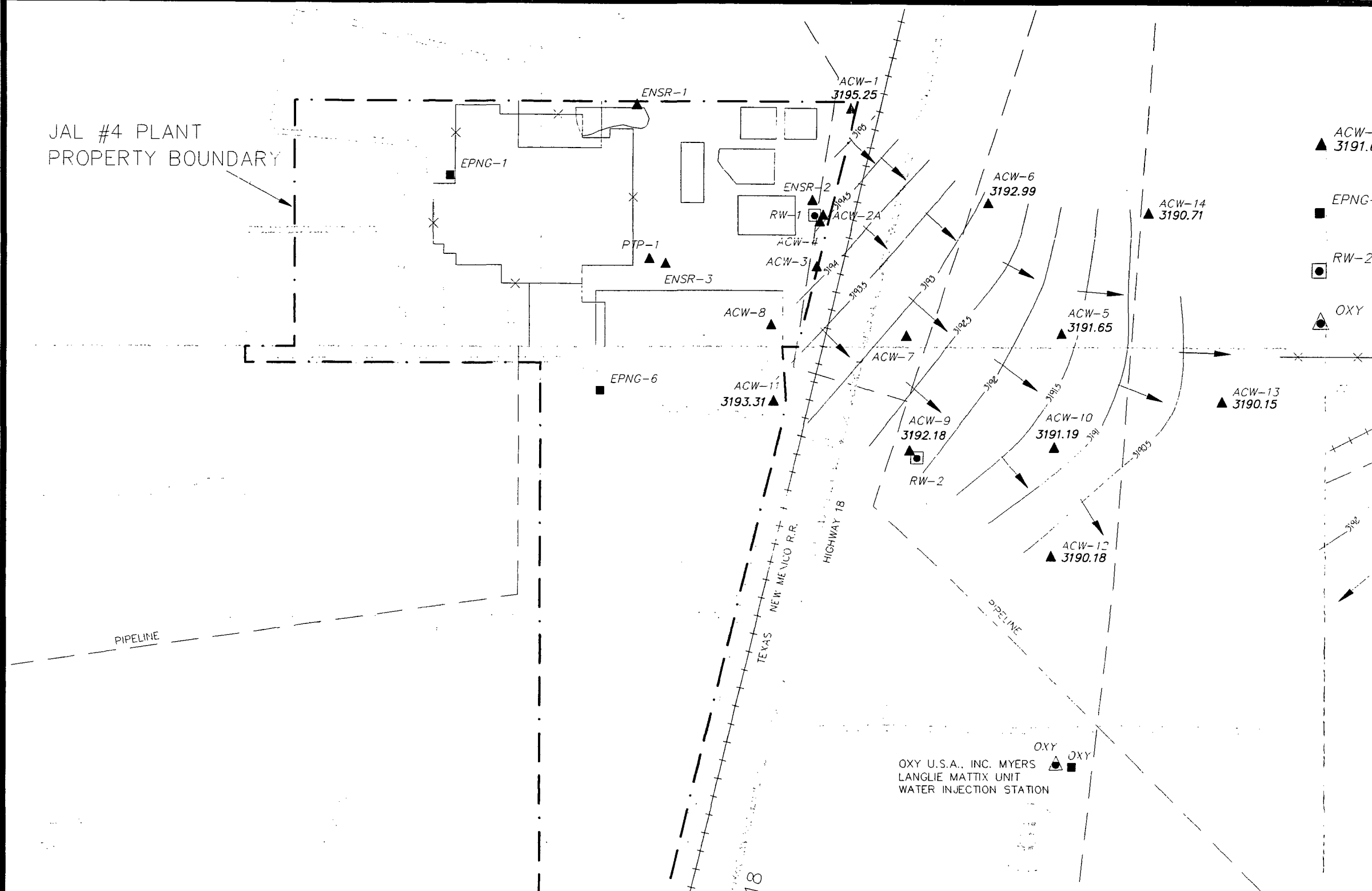
**ROBERTS/SCHORNICK
& ASSOCIATES, INC.**
Environmental Consultants
2488 East 81st Street/Suite 610
Tulsa, Oklahoma 74137
(918) 496-0059

DATE: 1/15/99	PREPARED BY: GHR
SCALE: AS SHOWN	CHECKED BY: GHR
PROJECT NO: 97171.01 F01	DRAFTED BY: MKA
	FIGURE NO.: 1

JAL #4 PLANT
PROPERTY BOUNDARY

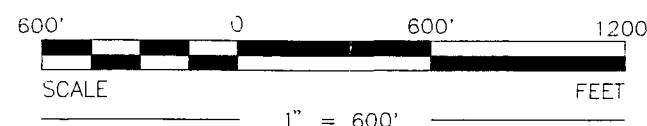
LEGEND

- ▲ ACW-5 3191.65 GROUNDWATER MONITOR WELL AND GROUNDWATER ELEVATION WITHIN UPPERMOST GROUNDWATER SYSTEM, ON FEBRUARY 24, 1998, FEET AMSL
- EPNG-1 WATER SUPPLY WELL
- RW-2 GROUNDWATER RECOVER WELL
- ▲ OXY INJECTION WELL
- FENCE
- - - SECONDARY ROAD
- - - RAILROAD TRACK
- - - PIPELINE
- CONTOUR OF GROUNDWATER ELEVATION WITHIN UPPERMOST GROUNDWATER SYSTEM, ON FEBRUARY 24, 1998, FEET AMSL
- DIRECTION OF GROUNDWATER FLOW



OXY U.S.A. INC. MYERS
LANGLIE MATIX UNIT
WATER INJECTION STATION

NOTE:
JAL #4 PLANT PROPERTY IS LOCATED WITHIN SECTIONS 31 AND 32 OF TOWNSHIP 23 SOUTH, RANGE 37 EAST, AND SECTIONS 5 AND 6 OF TOWNSHIP 24 SOUTH, RANGE 37 EAST, LEA COUNTY, NEW MEXICO

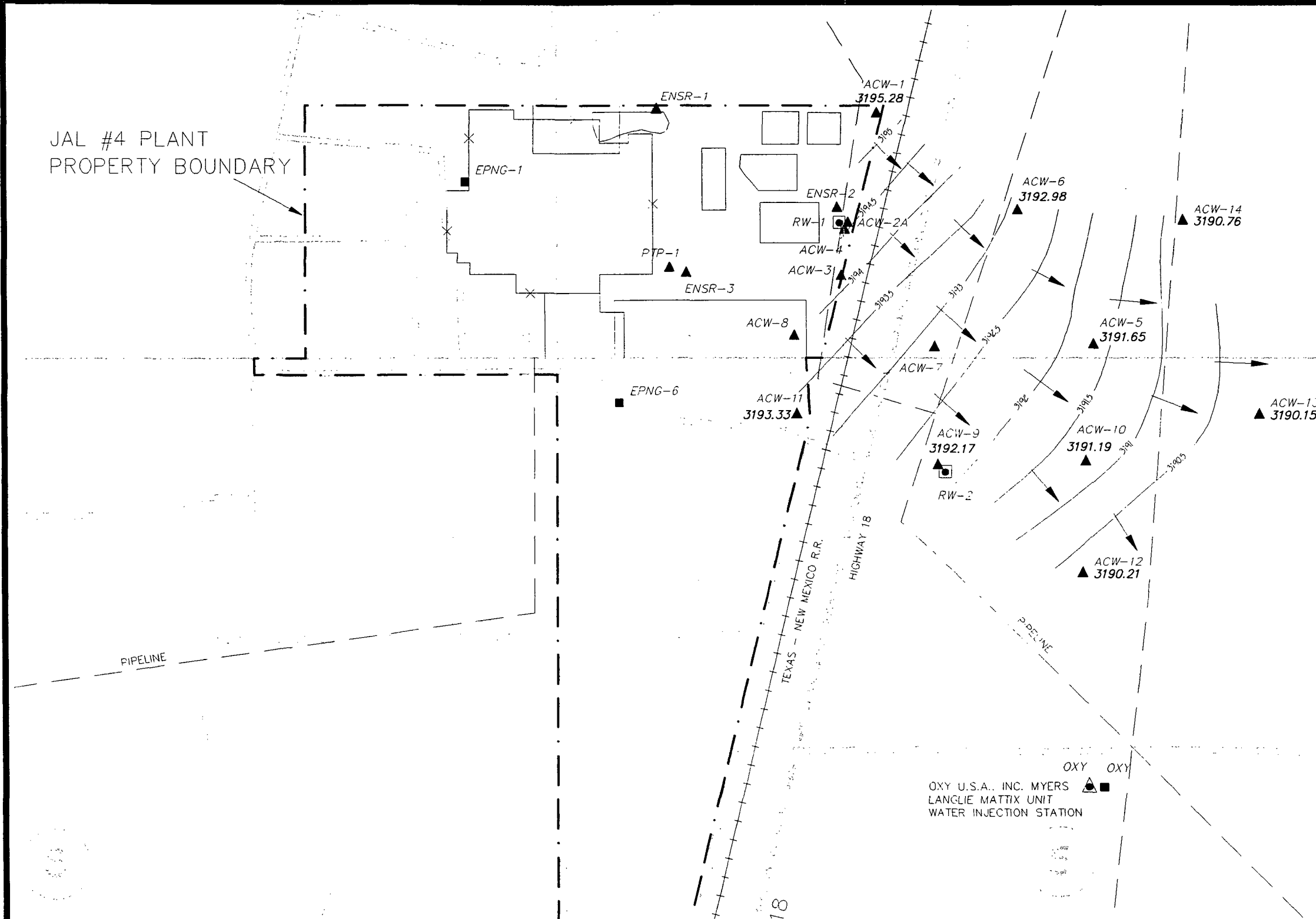


Client: EL PASO ENERGY CORP.		Figure Title: GROUNDWATER POTENTIOMETRIC SURFACE OF UPPERMOST GROUNDWATER SYSTEM ON FEBRUARY 24, 1998	
Location: JAL #4 PLANT LEA COUNTY, NEW MEXICO		Document Title: 1998 ANNUAL GROUNDWATER REMEDIATION REPORT	
ROBERTS/SCHORNICK & ASSOCIATES, INC. Environmental Consultants 2409 East 61st Street, Suite 610 Tulsa, Oklahoma 74137 (918) 496-0059		DATE: 12/29/98	PREPARED BY: BEM
		SCALE: 1"=600'	CHECKED BY: GHR
		PROJECT NO: 971710 M06	DRAFTED BY: MKA
		FIGURE NO.: 2	

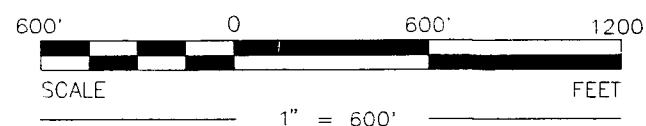
JAL #4 PLANT
PROPERTY BOUNDARY

LEGEND

- ▲ ACW-5 3191.65 GROUNDWATER MONITOR WELL AND GROUNDWATER ELEVATION WITHIN UPPERMOST GROUNDWATER SYSTEM, ON MAY 12-14, 1998, FEET AMSL
- EPNG-1 WATER SUPPLY WELL
- RW-2 GROUNDWATER RECOVERY WELL
- ▲ OXY INJECTION WELL
- FENCE
- - - SECONDARY ROAD
- +—+— RAILROAD TRACK
- - - PIPELINE
- CONTOUR OF GROUNDWATER ELEVATION, WITHIN UPPERMOST GROUNDWATER SYSTEM, ON MAY 12-14, 1998, FEET AMSL
- > DIRECTION OF GROUNDWATER FLOW



NOTE:
JAL #4 PLANT PROPERTY IS LOCATED WITHIN SECTIONS 31 AND 32 OF TOWNSHIP 23 SOUTH, RANGE 37 EAST, AND SECTIONS 5 AND 6 OF TOWNSHIP 24 SOUTH, RANGE 37 EAST, LEA COUNTY, NEW MEXICO



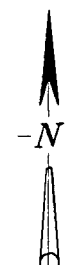
Client: EL PASO ENERGY CORP.		Figure Title: GROUNDWATER POTENTIOMETRIC SURFACE OF UPPERMOST GROUNDWATER SYSTEM ON MAY 12-14, 1998	
Location: JAL #4 PLANT LEA COUNTY, NEW MEXICO		Document Title: 1998 ANNUAL GROUNDWATER REMEDIATION REPORT	
ROBERTS/SCHORNICK & ASSOCIATES, INC. Environmental Consultants 2488 East 81st Street/Suite 910 Tulsa, Oklahoma 74117 (918) 496-0059		DATE: 12/29/98	PREPARED BY: BEN
		SCALE: 1"=600'	CHECKED BY: GHP
		PROJECT NO: 9717101 M07	DRAFTED BY: MKA
			FIGURE NO.: 3

JAL #4 PLANT
PROPERTY BOUNDARY

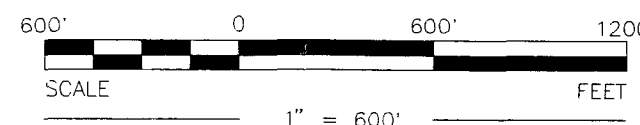
LEGEND

- ▲ ACW-5 3191.60 GROUNDWATER MONITOR WELL AND GROUNDWATER ELEVATION WITHIN UPPERMOST GROUNDWATER SYSTEM, ON AUGUST 11, 1998, FEET AMSL
- EPNG-1 WATER SUPPLY WELL
- RW-2 GROUNDWATER RECOVERY WELL
- ▲ OXY INJECTION WELL
- FENCE
- - - SECONDARY ROAD
- - - RAILROAD TRACK
- - - PIPELINE
- - - CONTOUR OF GROUNDWATER ELEVATION WITHIN UPPERMOST GROUNDWATER SYSTEM, ON AUGUST 11, 1998, FEET AMSL
- DIRECTION OF GROUNDWATER FLOW

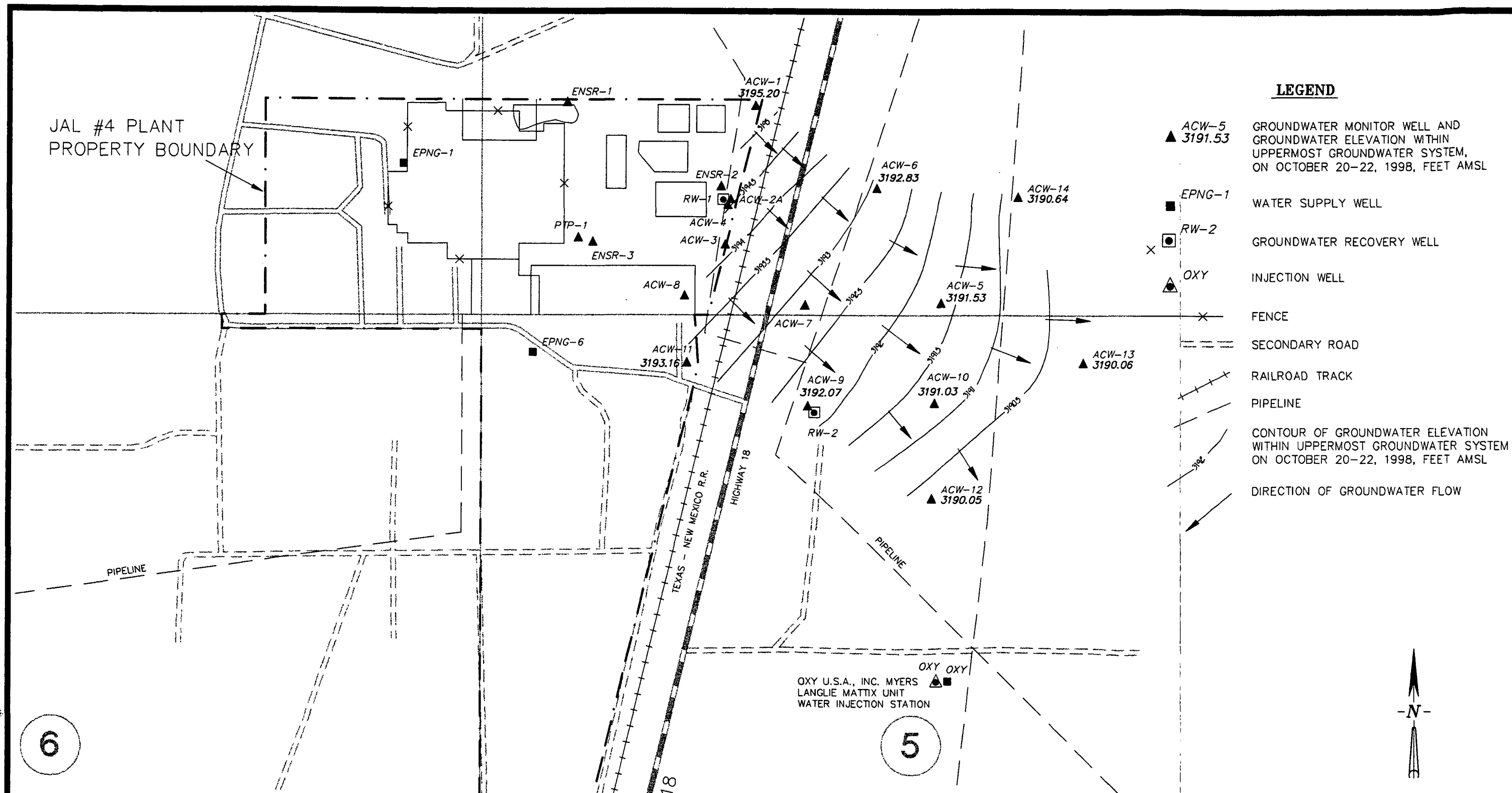
OXY U.S.A., INC. MYERS
LANGLE MATTIX UNIT
WATER INJECTION STATION

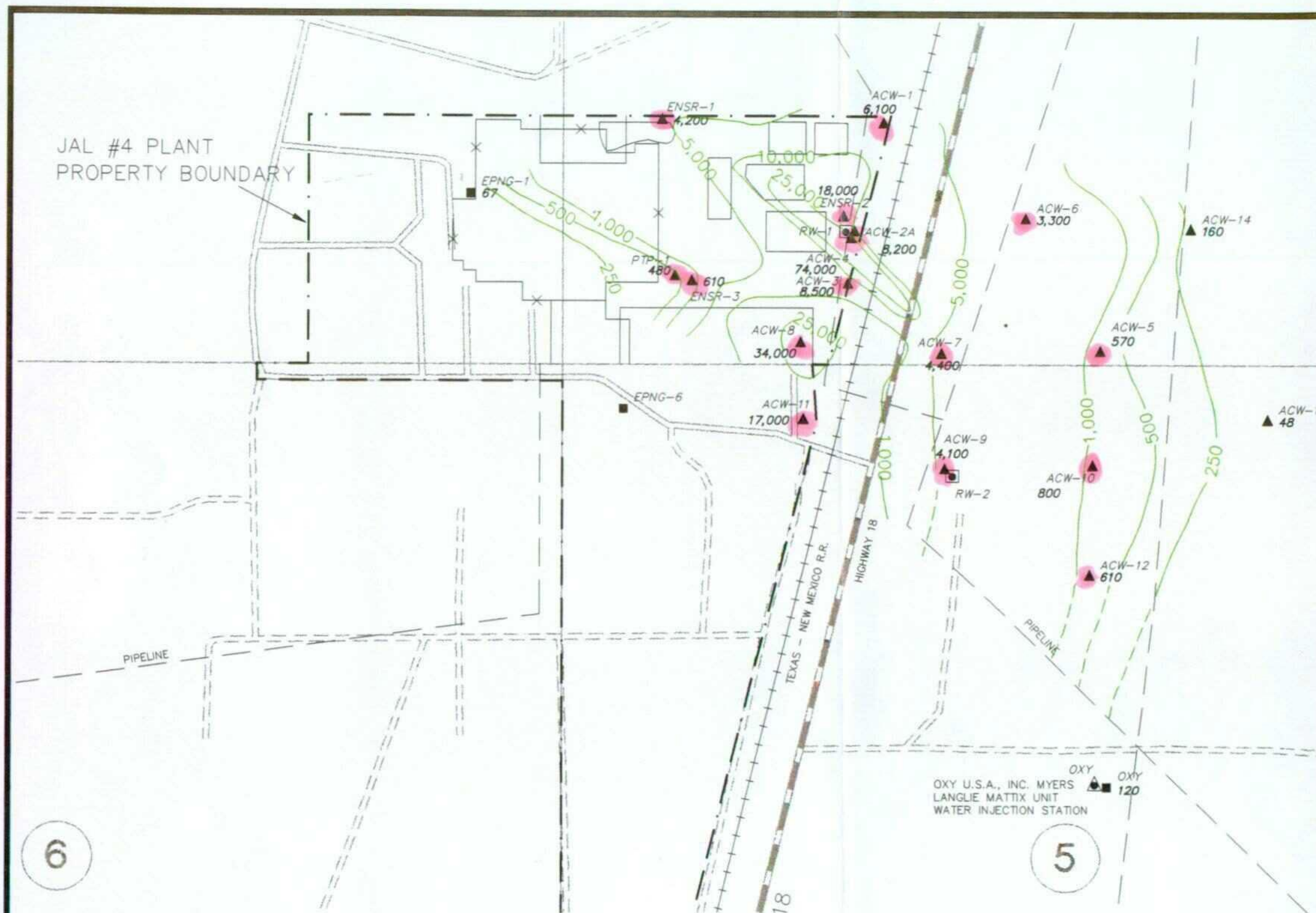


NOTE:
JAL #4 PLANT PROPERTY IS LOCATED WITHIN SECTIONS 31 AND 32 OF TOWNSHIP 23 SOUTH, RANGE 37 EAST, AND SECTIONS 5 AND 6 OF TOWNSHIP 24 SOUTH, RANGE 37 EAST, LEA COUNTY, NEW MEXICO



Client:	EL PASO ENERGY CORP.	Figure Title:	GROUNDWATER POTENTIOMETRIC SURFACE OF UPPERMOST GROUNDWATER SYSTEM ON AUGUST 11, 1998	
Location:	JAL #4 PLANT LEA COUNTY, NEW MEXICO	Document Title:	1998 ANNUAL GROUNDWATER REMEDIATION REPORT	
<u>ROBERTS/SCHORNICK</u> <u>& ASSOCIATES, INC.</u> Environmental Consultants 2488 East 81st Street, Suite 610 Tulsa, Oklahoma 74137 (918) 498-0059		DATE:	12/29/98	PREPARED BY: BEM
		SCALE:	1"=600'	CHECKED BY: GHR
				DRAFTED BY: MKA
		PROJECT NO.:	9717101 M08	FIGURE NO.:



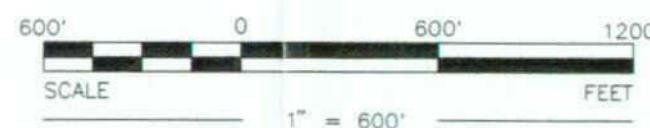


LEGEND

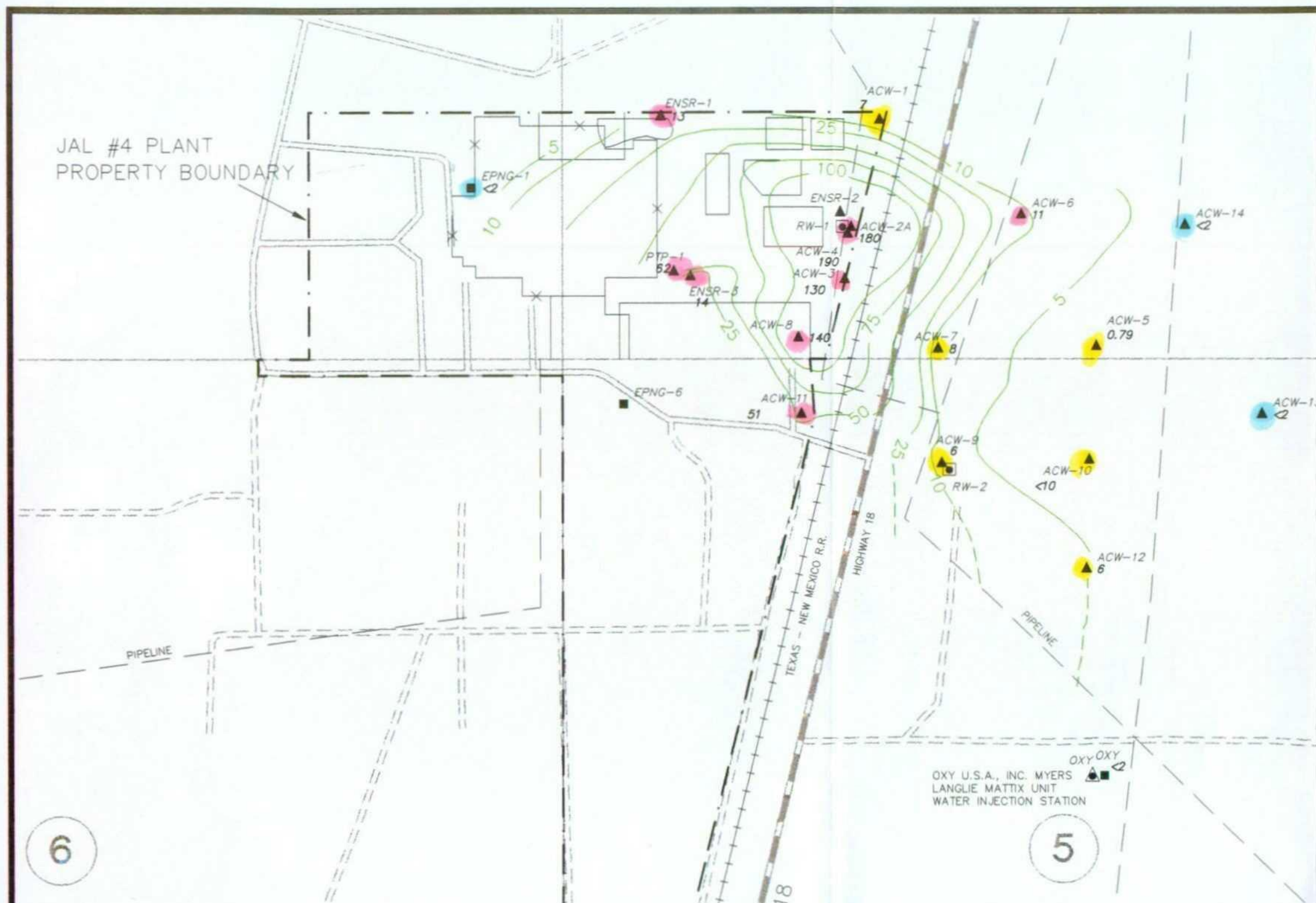
- ▲ ACW-5 570 GROUNDWATER MONITOR WELL AND CONCENTRATION OF CHLORIDE IN GROUNDWATER, mg/L
- EPNG-1 67 WATER SUPPLY WELL AND CONCENTRATION OF CHLORIDE IN GROUNDWATER, mg/L
- RW-2 GROUNDWATER RECOVERY WELL
- ▲ OXY INJECTION WELL
- FENCE
- SECONDARY ROAD
- RAILROAD TRACK
- PIPELINE
- 250 CONTOUR LINE SHOWING EQUAL CONCENTRATIONS OF CHLORIDE IN GROUNDWATER, mg/L (DASHED WHERE INFERRED)

- NOTES:
- 1) CHLORIDE CONCENTRATIONS SHOWN ARE THE HIGHEST LEVELS DETECTED IN GROUNDWATER IN EACH WELL DURING THE 1998 MONITORING PROGRAM
 - 2) EPA'S SECONDARY DRINKING WATER STANDARD SMCL FOR PUBLIC WATER SUPPLY SYSTEMS IS 250 mg/L

NOTE:
JAL #4 PLANT PROPERTY IS LOCATED WITHIN SECTIONS 31 AND 32 OF TOWNSHIP 23 SOUTH, RANGE 37 EAST, AND SECTIONS 5 AND 6 OF TOWNSHIP 24 SOUTH, RANGE 37 EAST, LEA COUNTY, NEW MEXICO



Client:	EL PASO ENERGY CORP.	Figure Title:	ISOPLETH OF CHLORIDE CONCENTRATIONS IN GROUNDWATER IN 1998
Location:	JAL #4 PLANT LEA COUNTY, NEW MEXICO	Document Title:	1998 ANNUAL GROUNDWATER REMEDIATION REPORT
ROBERTS/SCHORNICK & ASSOCIATES, INC. Environmental Consultants 2408 East 81st Street, Suite 510 Tulsa, Oklahoma 74137 (918) 496-0059		DATE:	1/18/99
		SCALE:	1"=600'
		PROJECT NO:	9717101 M11
		FIGURE NO.:	6
		PREPARED BY:	GHR
		CHECKED BY:	GHR
		DRAFTED BY:	MKA

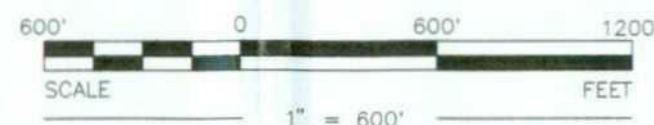


LEGEND

- ▲ ACW-5 0.79 GROUNDWATER MONITOR WELL AND CONCENTRATION OF BENZENE IN GROUNDWATER, ug/L
- EPNG-1 <2 WATER SUPPLY WELL AND CONCENTRATION OF BENZENE IN GROUNDWATER, ug/L
- RW-2 GROUNDWATER RECOVERY WELL
- ▲ OXY INJECTION WELL
- FENCE
- == SECONDARY ROAD
- RAILROAD TRACK
- PIPELINE
- CONTOUR LINE SHOWING EQUAL CONCENTRATIONS OF BENZENE IN GROUNDWATER, ug/L (DASHED WHERE INFERRED)

- NOTES:
- 1) BENZENE CONCENTRATIONS SHOWN ARE THE HIGHEST LEVELS DETECTED IN GROUNDWATER IN EACH WELL DURING THE 1998 MONITORING PROGRAM
 - 2) EPA'S PRIMARY DRINKING WATER STANDARD MCL FOR PUBLIC WATER SUPPLY SYSTEMS IS 5.0 ug/L

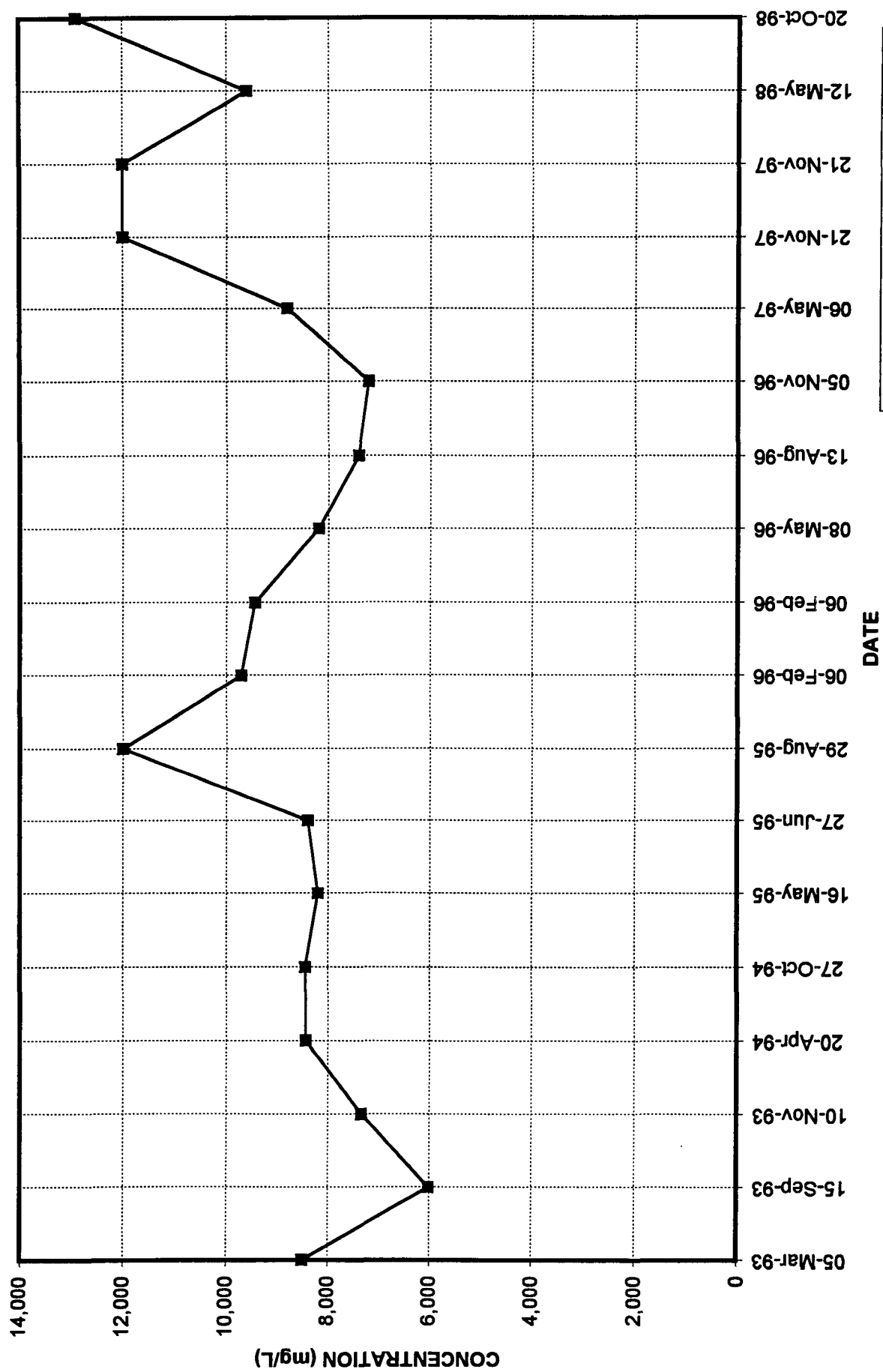
NOTE:
JAL #4 PLANT PROPERTY IS LOCATED WITHIN SECTIONS 31 AND 32 OF TOWNSHIP 23 SOUTH, RANGE 37 EAST, AND SECTIONS 5 AND 6 OF TOWNSHIP 24 SOUTH, RANGE 37 EAST, LEA COUNTY, NEW MEXICO



Client:	EL PASO ENERGY CORP.	Figure Title:	ISOPLETH OF BENZENE CONCENTRATIONS IN GROUNDWATER IN 1998
Location:	JAL #4 PLANT LEA COUNTY, NEW MEXICO	Document Title:	1998 ANNUAL GROUNDWATER REMEDIATION REPORT
ROBERTS/SCHORNICK & ASSOCIATES, INC. Environmental Consultants 2480 East 81st Street, Suite 810 Tulsa, Oklahoma 74137 (918) 496-0058		DATE:	1/18/99
		PREPARED BY:	GHR
		CHECKED BY:	GHR
		DRAFTED BY:	MKA
		PROJECT NO:	9717101 M10
		FIGURE NO.:	7

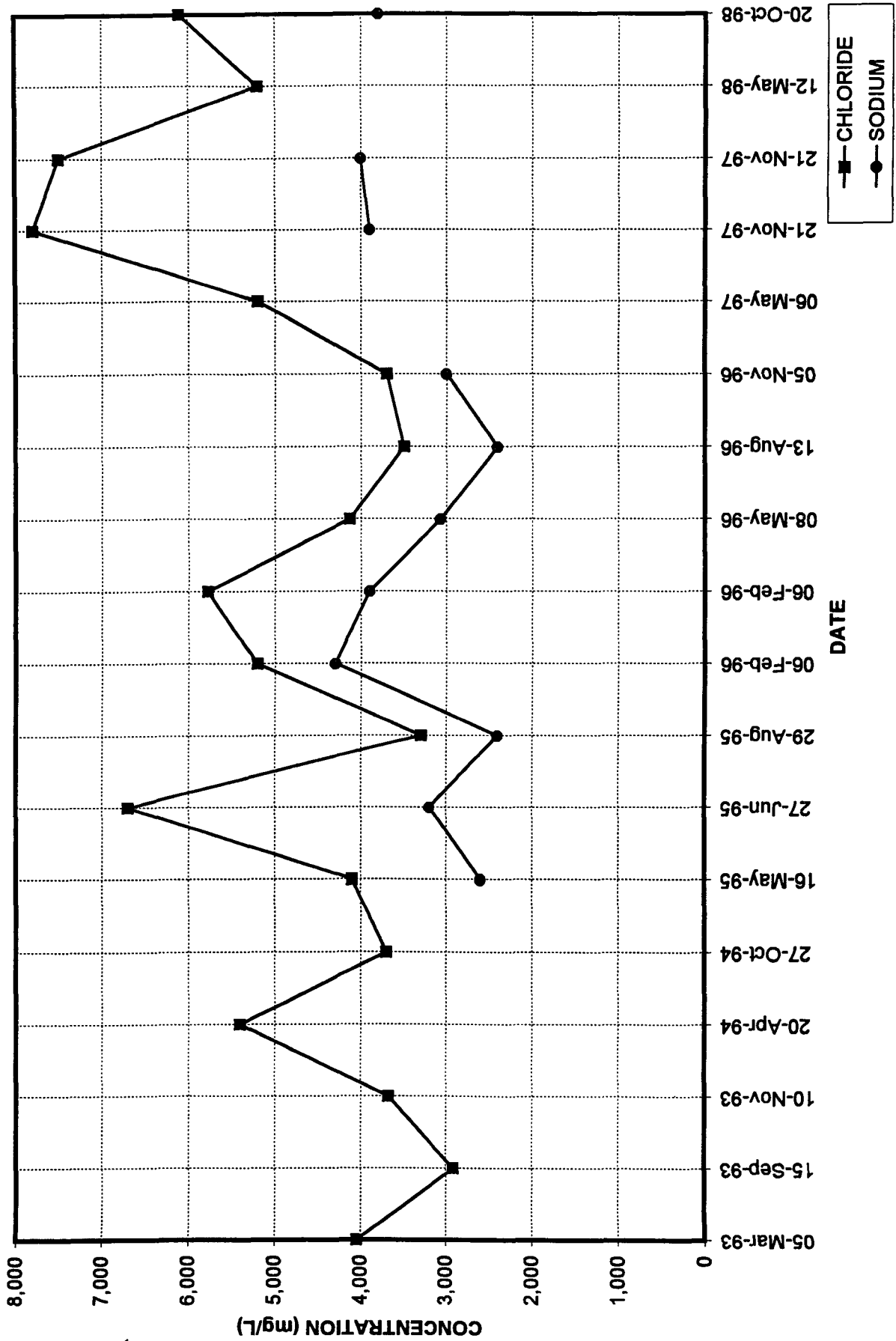
GRAPHS

MONITOR WELL ACW-01



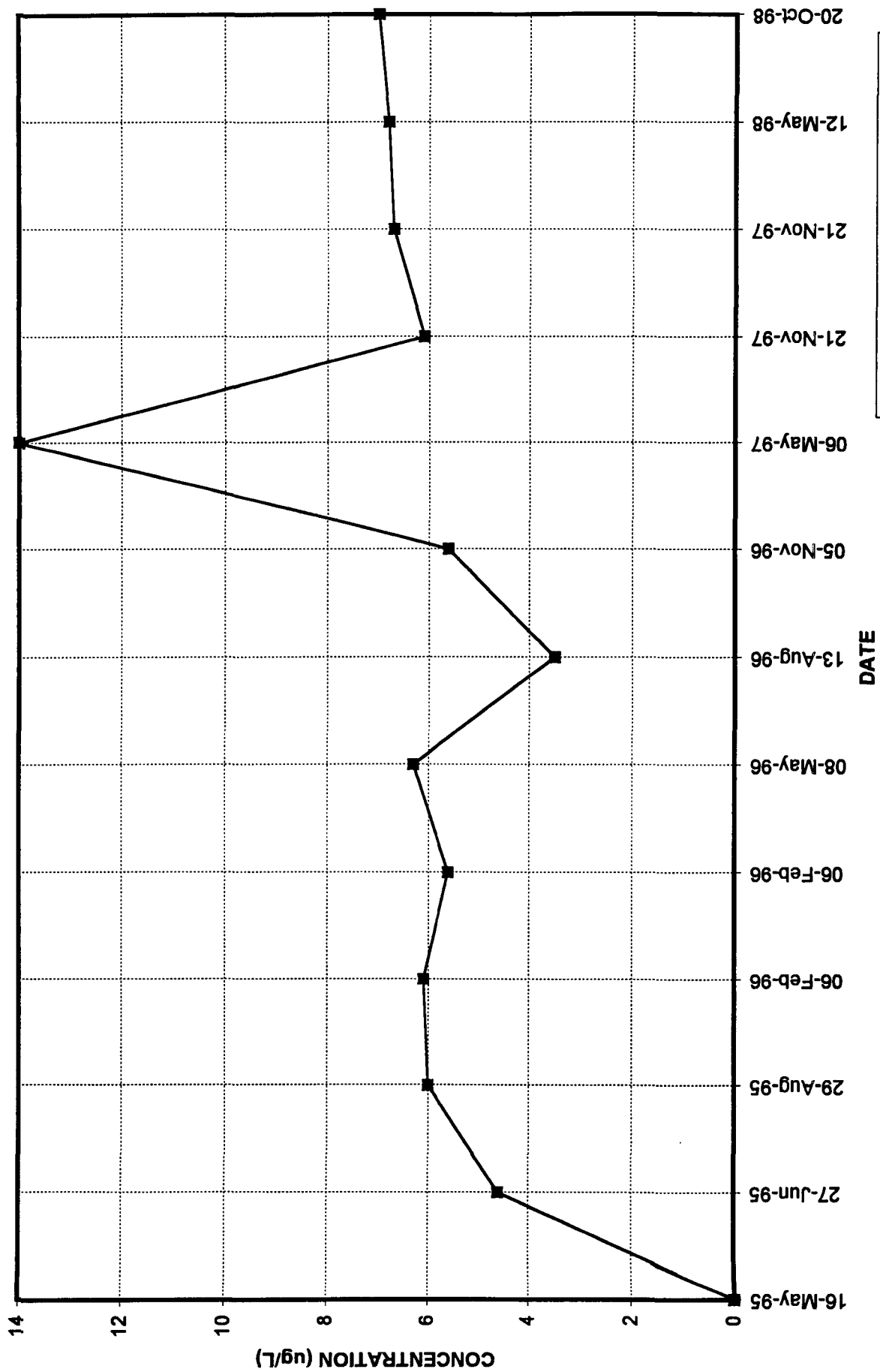
GRAPH 1

MONITOR WELL ACW-01



GRAPH 2

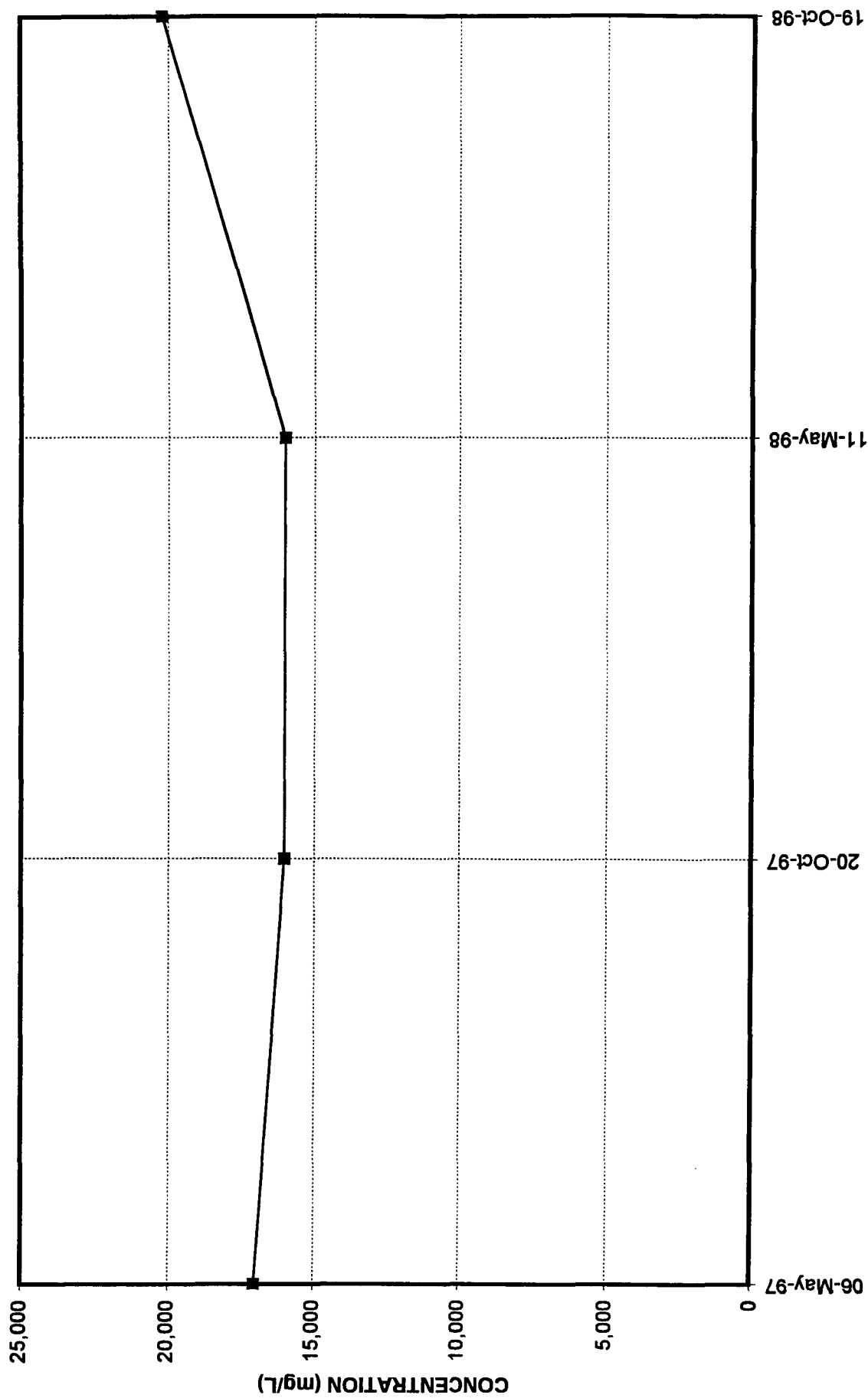
MONITOR WELL ACW-01



—■— Benzene

GRAPH 3

MONITOR WELL ACW-02A

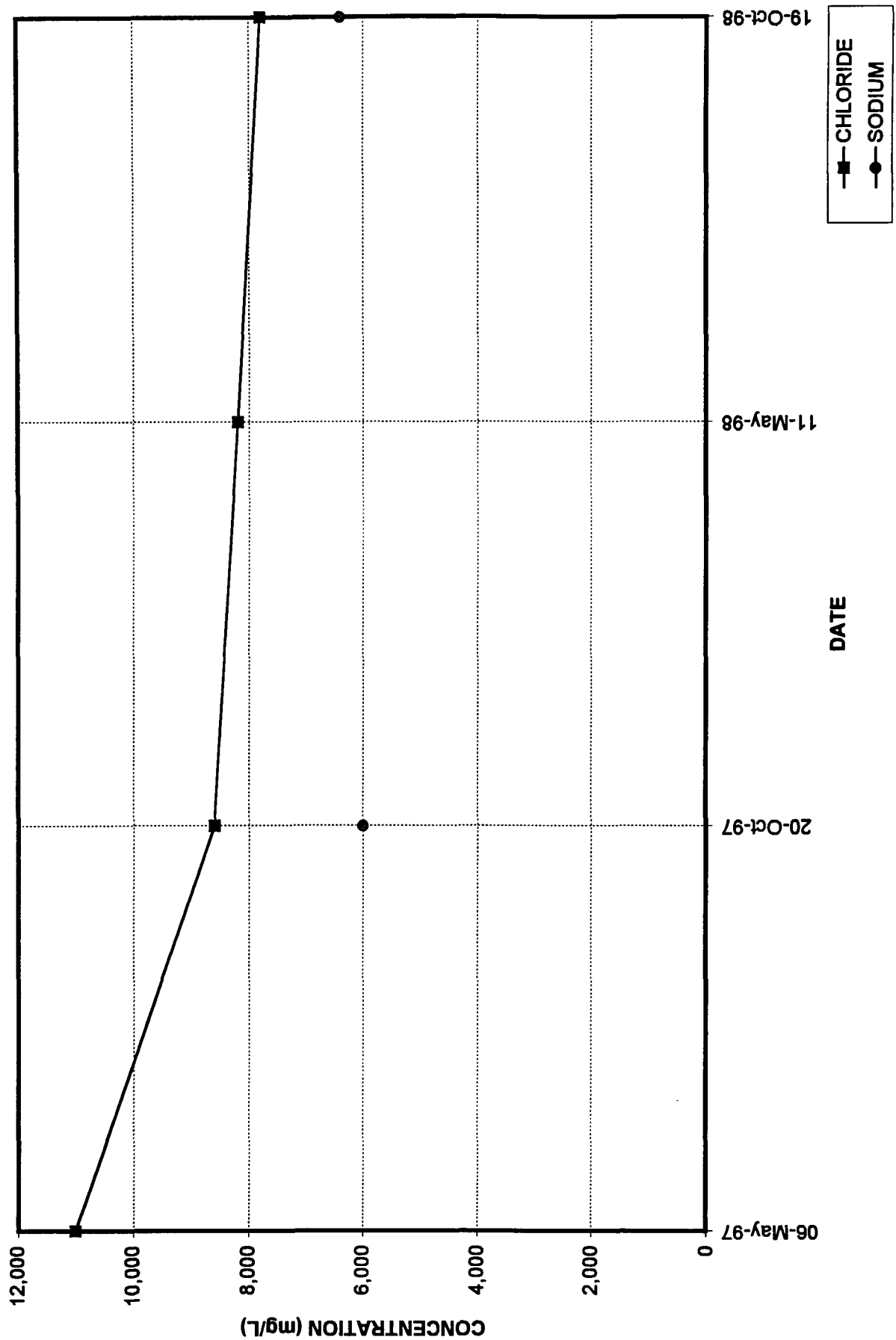


DATE

—■— TOTAL DISSOLVED SOLIDS

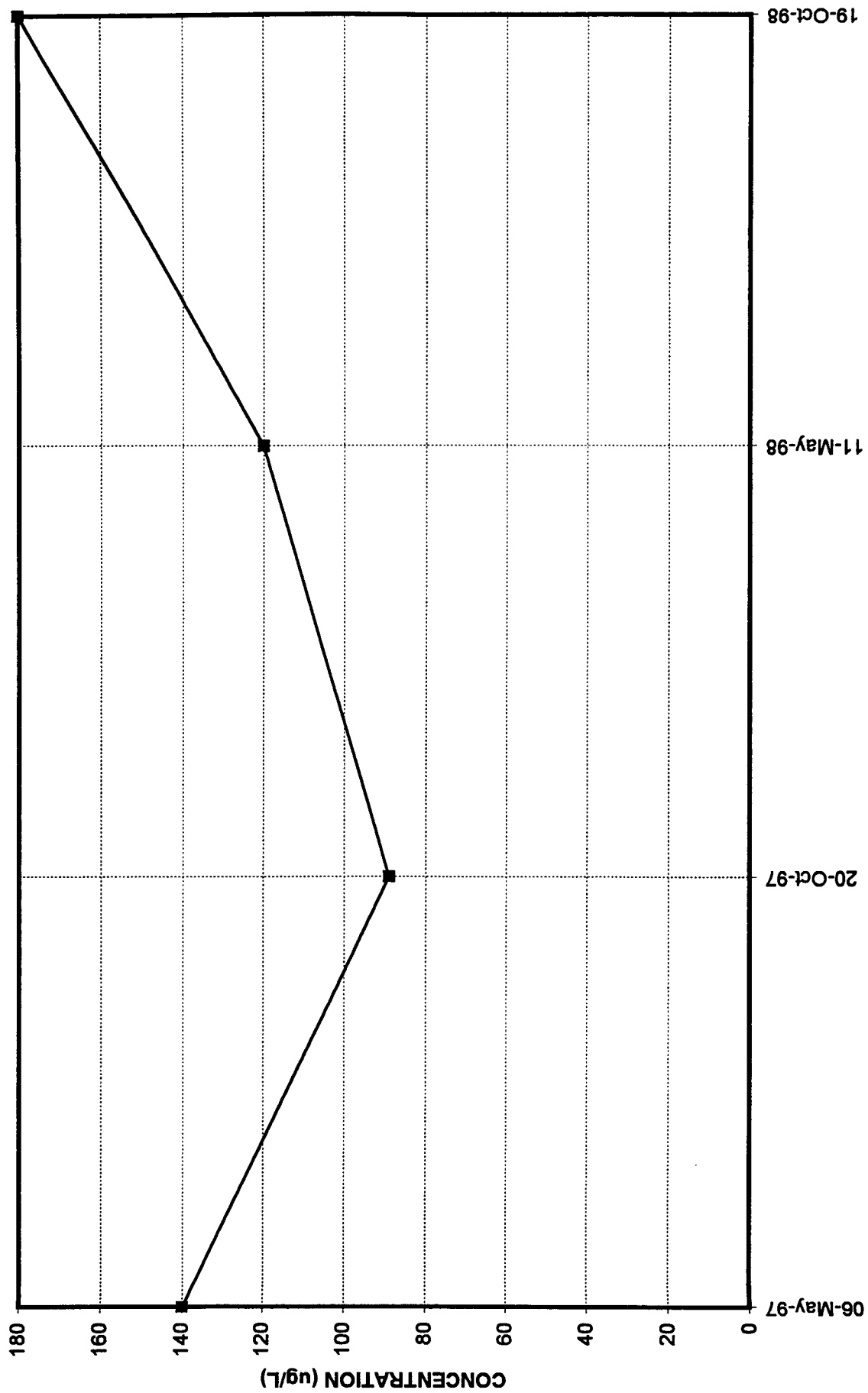
GRAPH 4

MONITOR WELL ACW-02A



GRAPH 5

MONITOR WELL ACW-02A

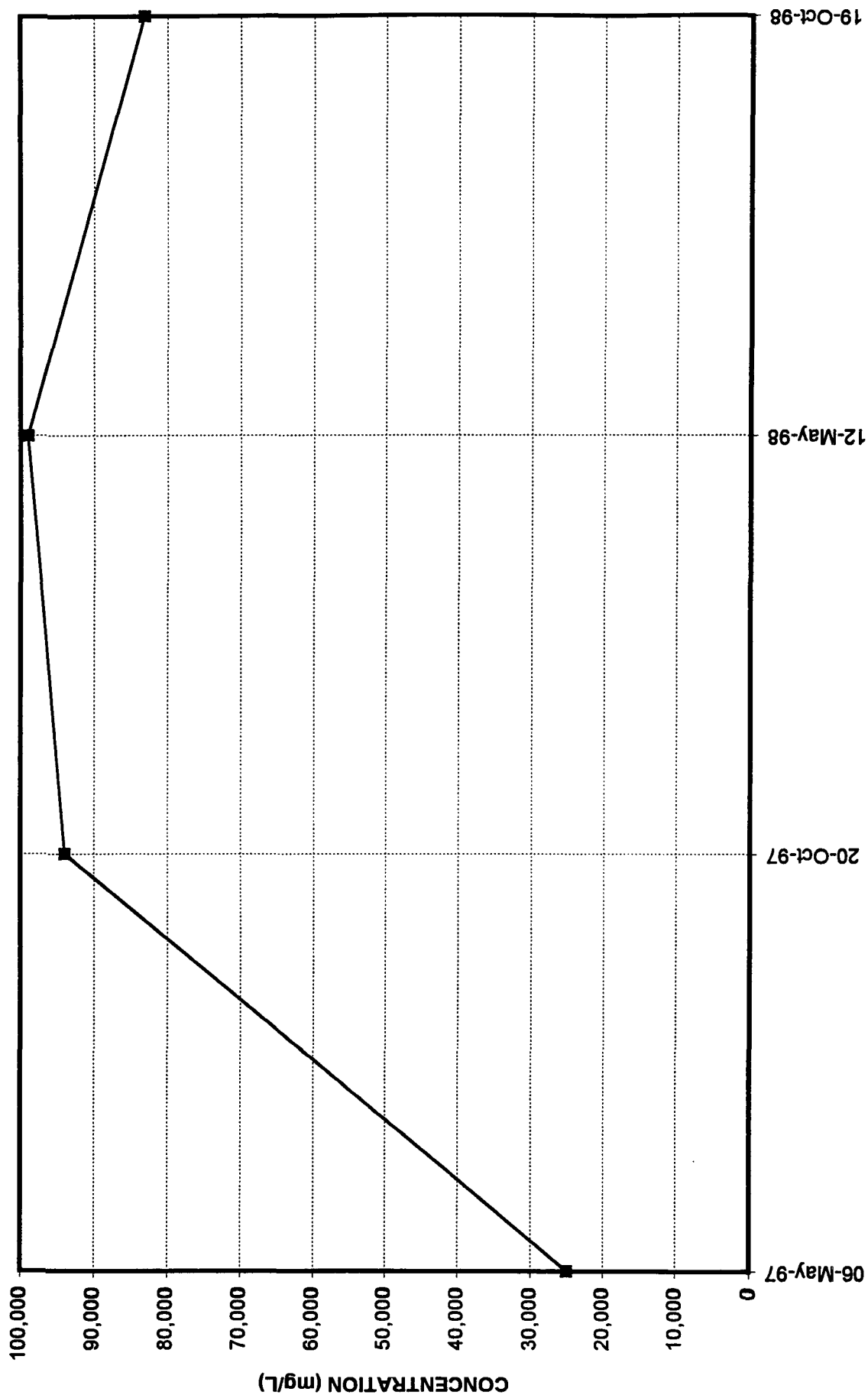


DATE

GRAPH 6

—■— BENZENE

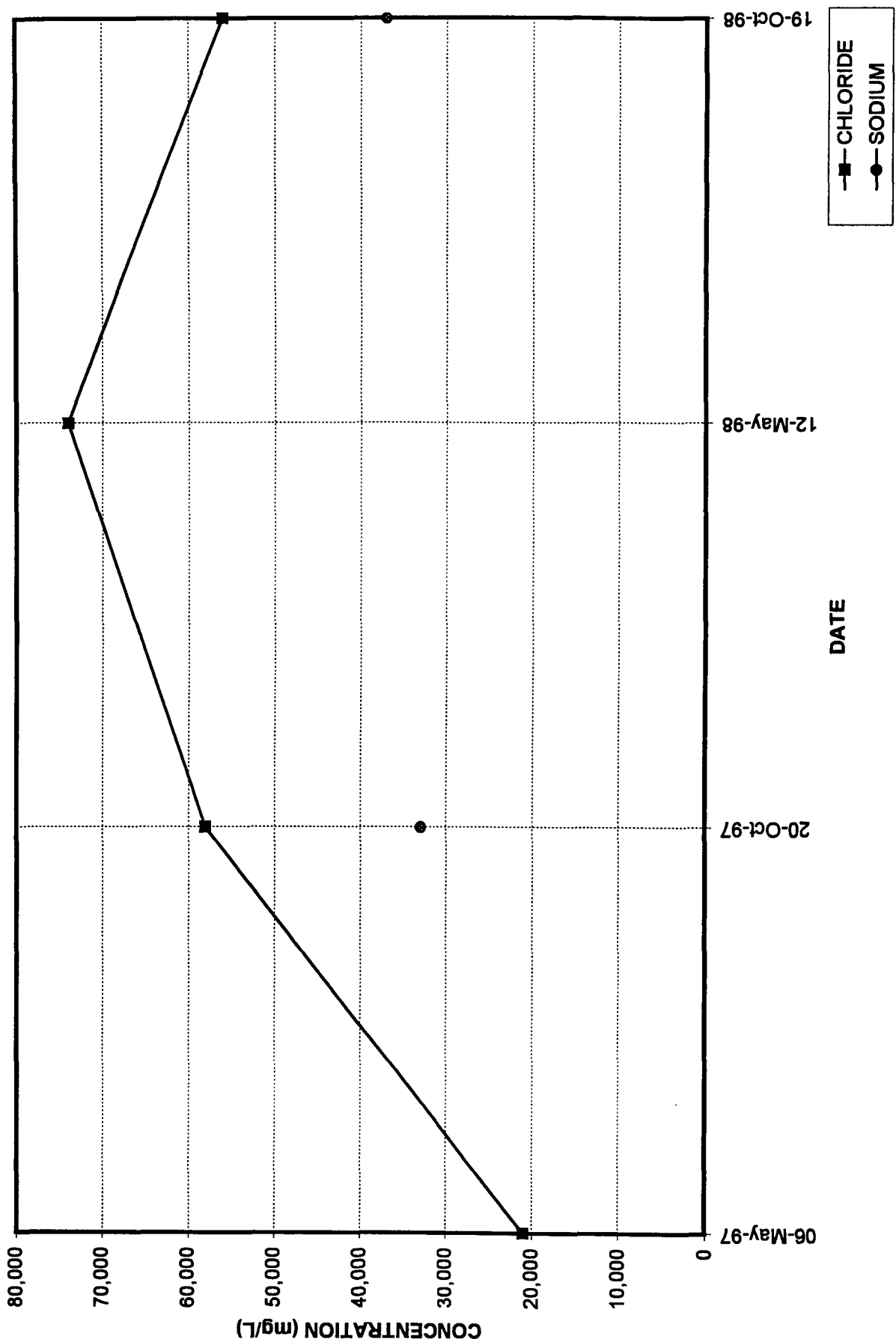
MONITOR WELL ACW-04



■ TOTAL DISSOLVED SOLIDS

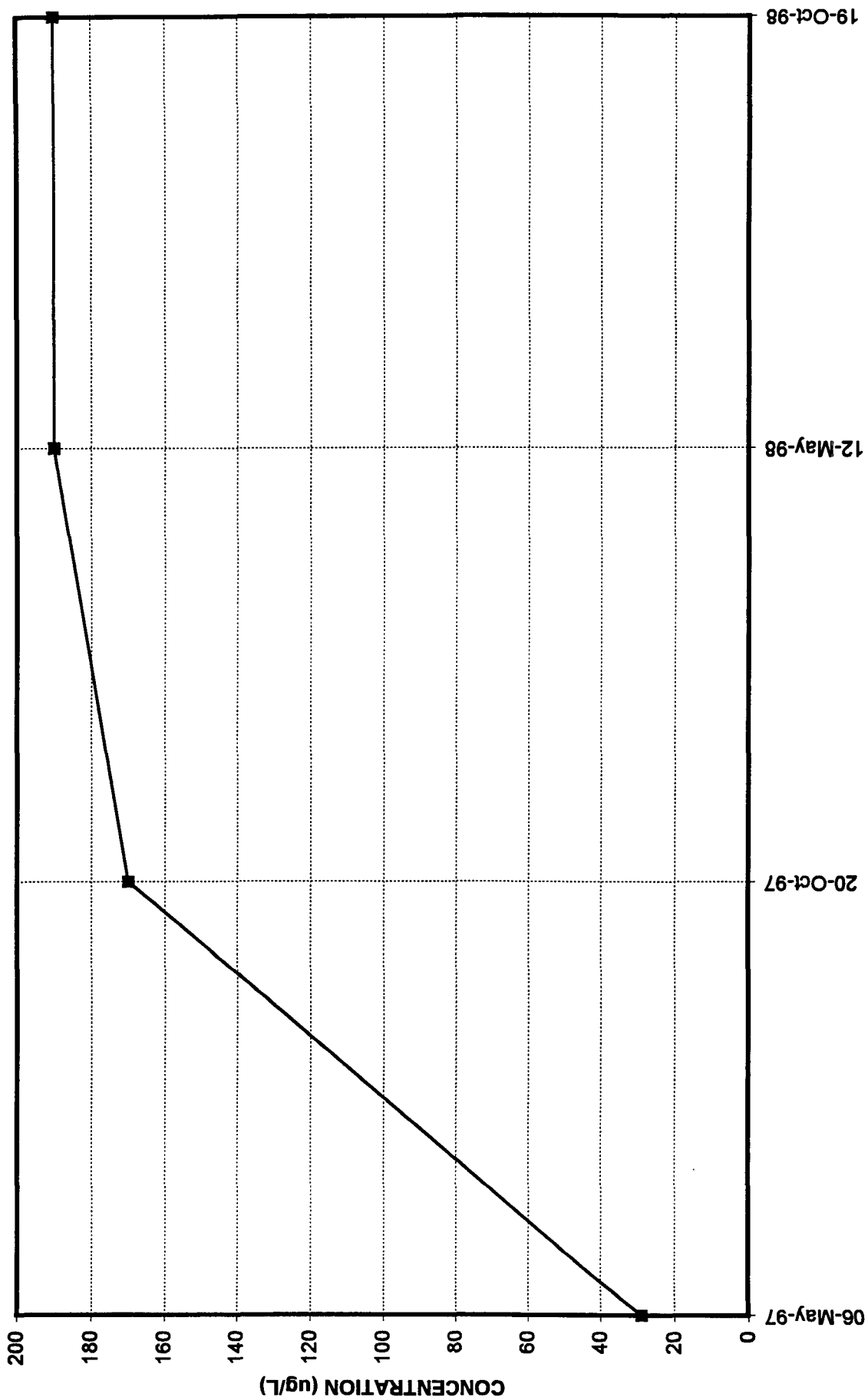
GRAPH 7

MONITOR WELL ACW-04



GRAPH 8

MONITOR WELL ACW-04

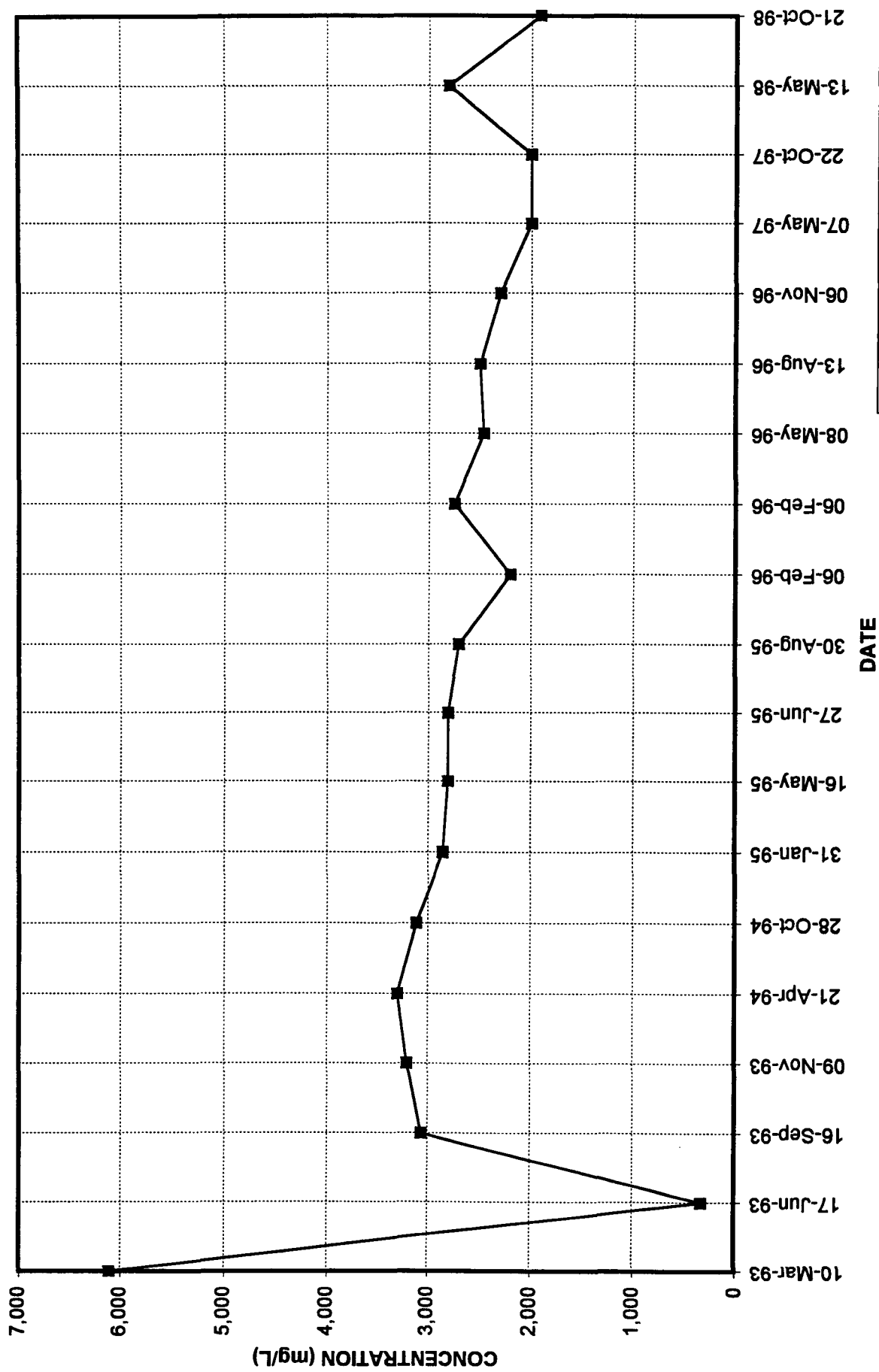


DATE

GRAPH 9

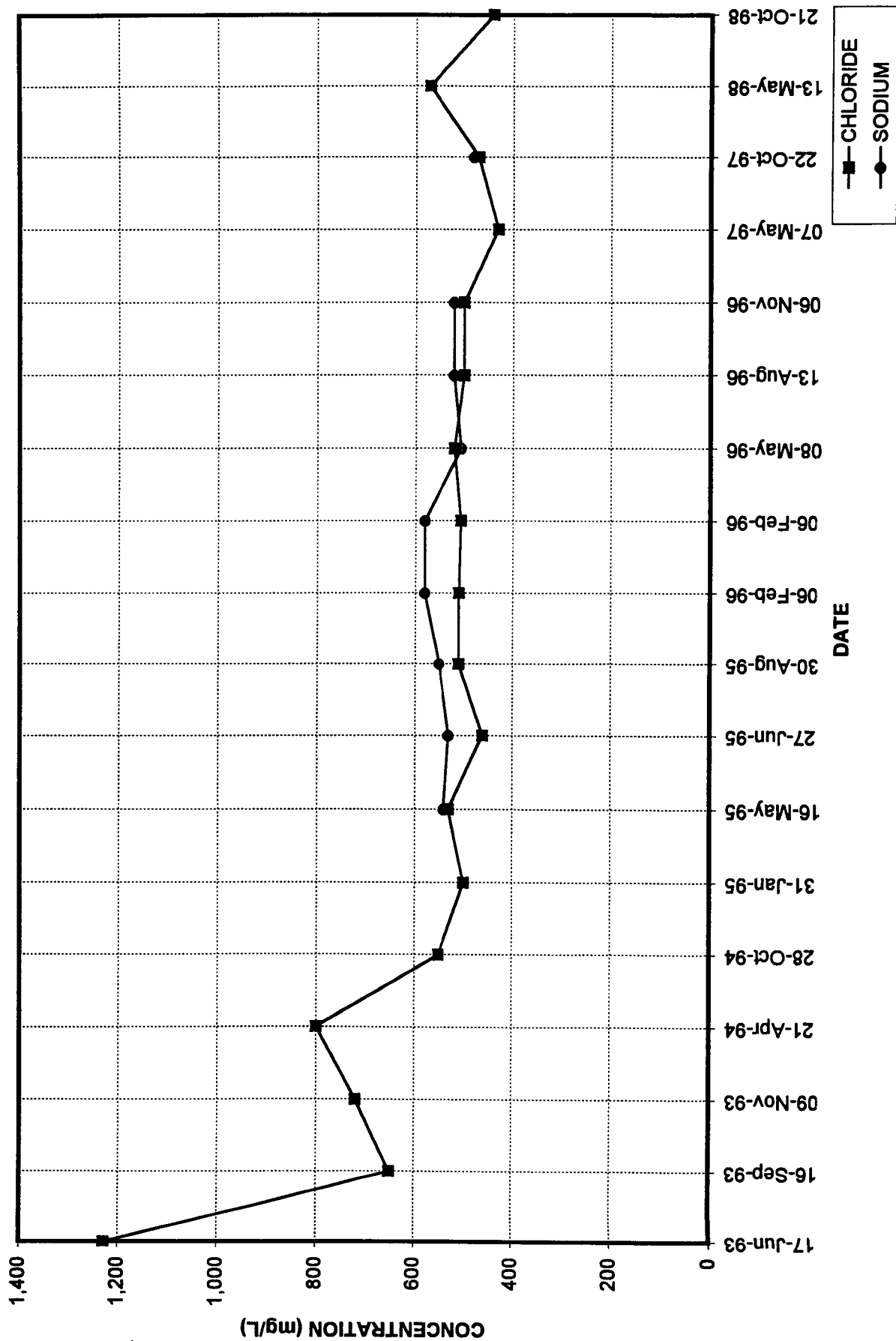
—■— BENZENE

MONITOR WELL ACW-05



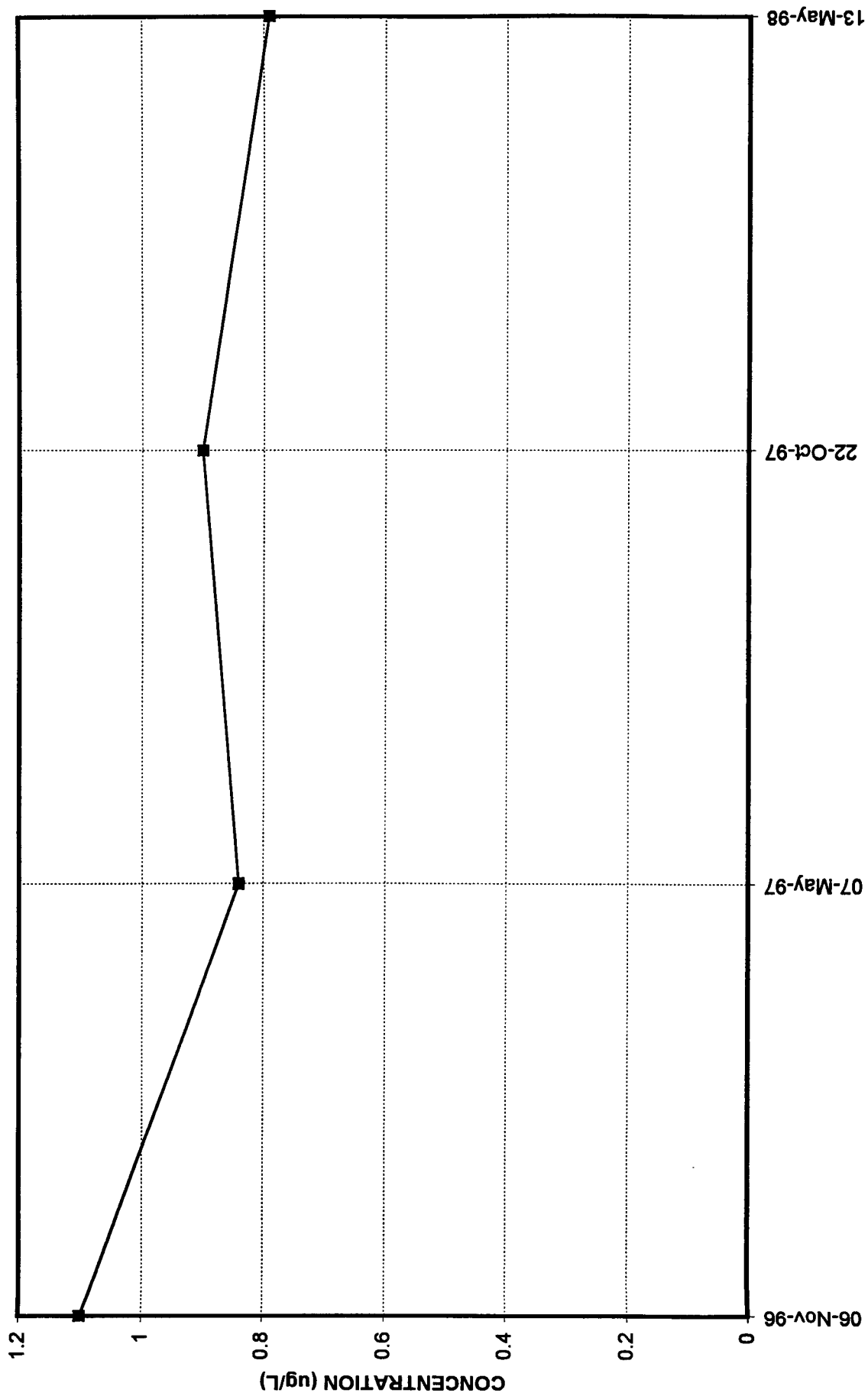
GRAPH 10

MONITOR WELL ACW-05



GRAPH 11

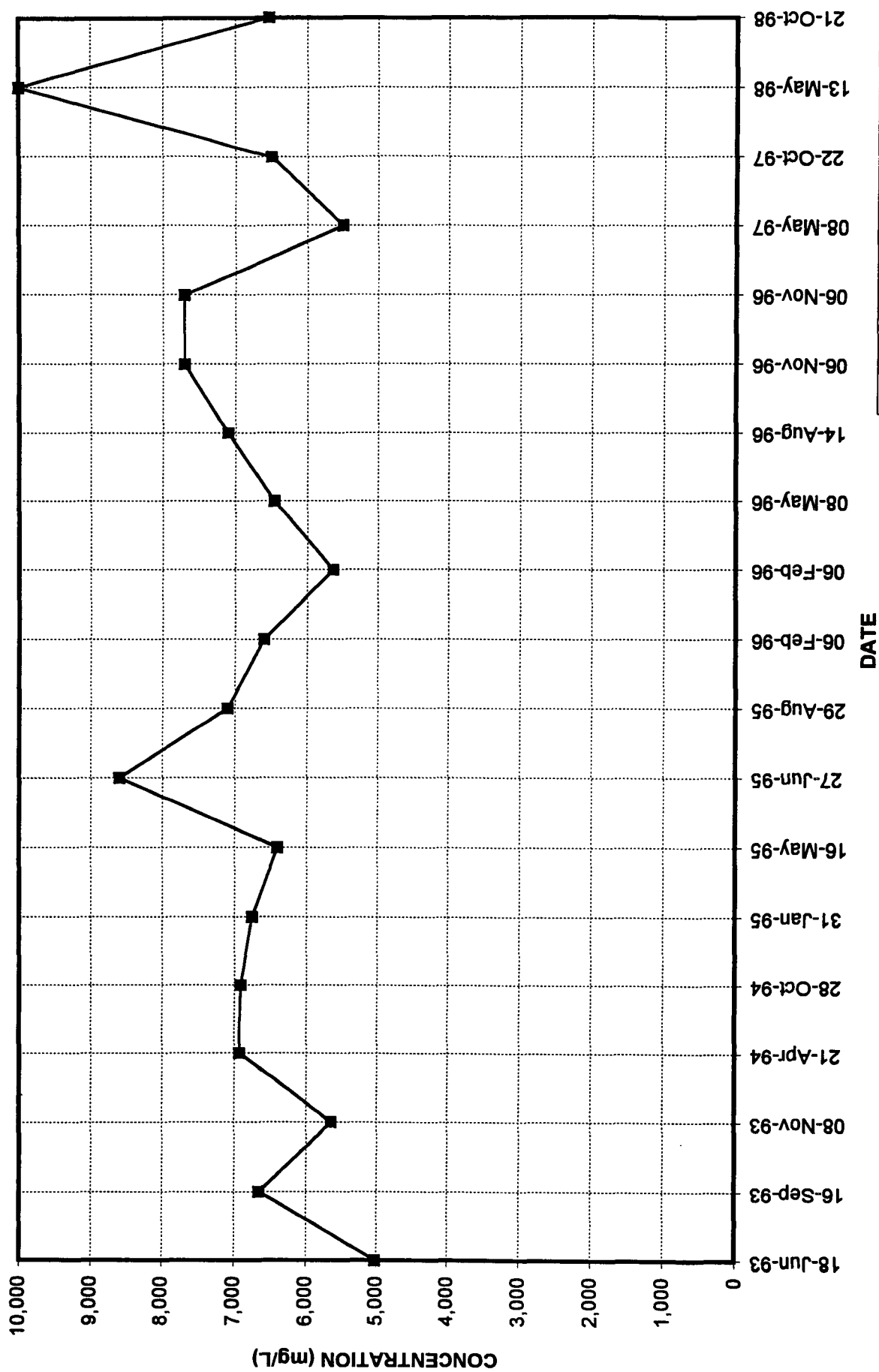
MONITOR WELL ACW-05



DATE

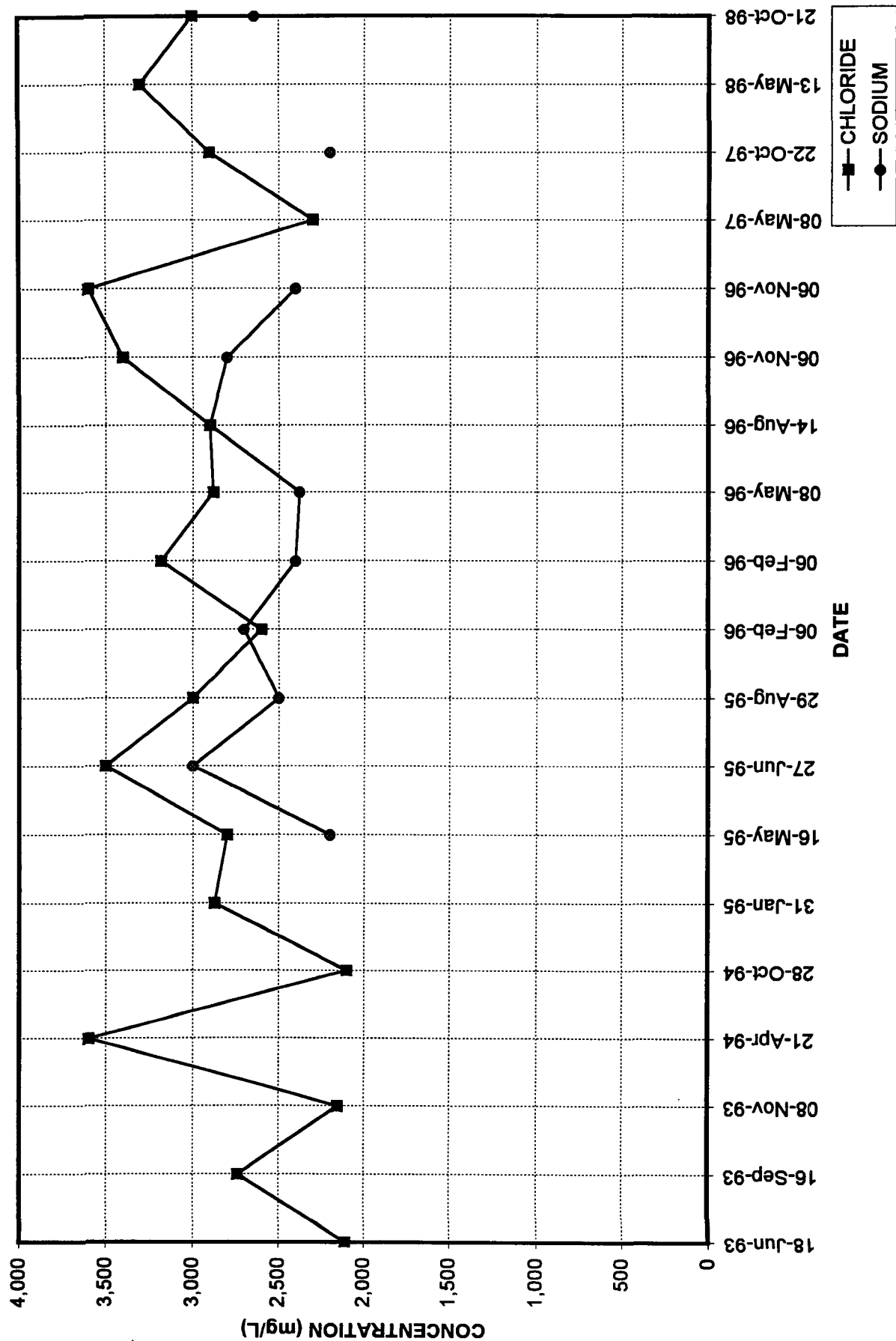
GRAPH 12

MONITOR WELL ACW-06



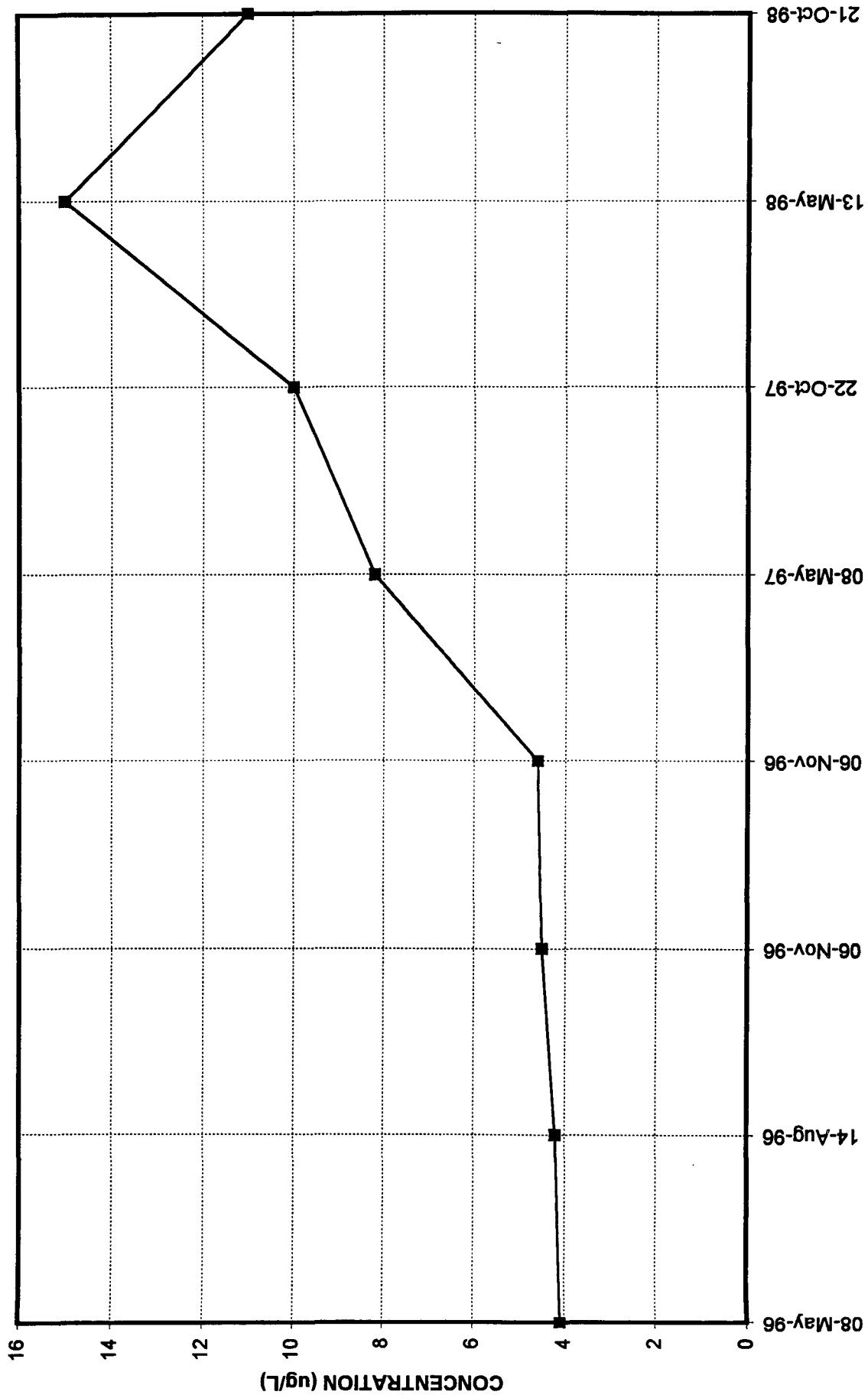
GRAPH 13

MONITOR WELL ACW-06



GRAPH 14

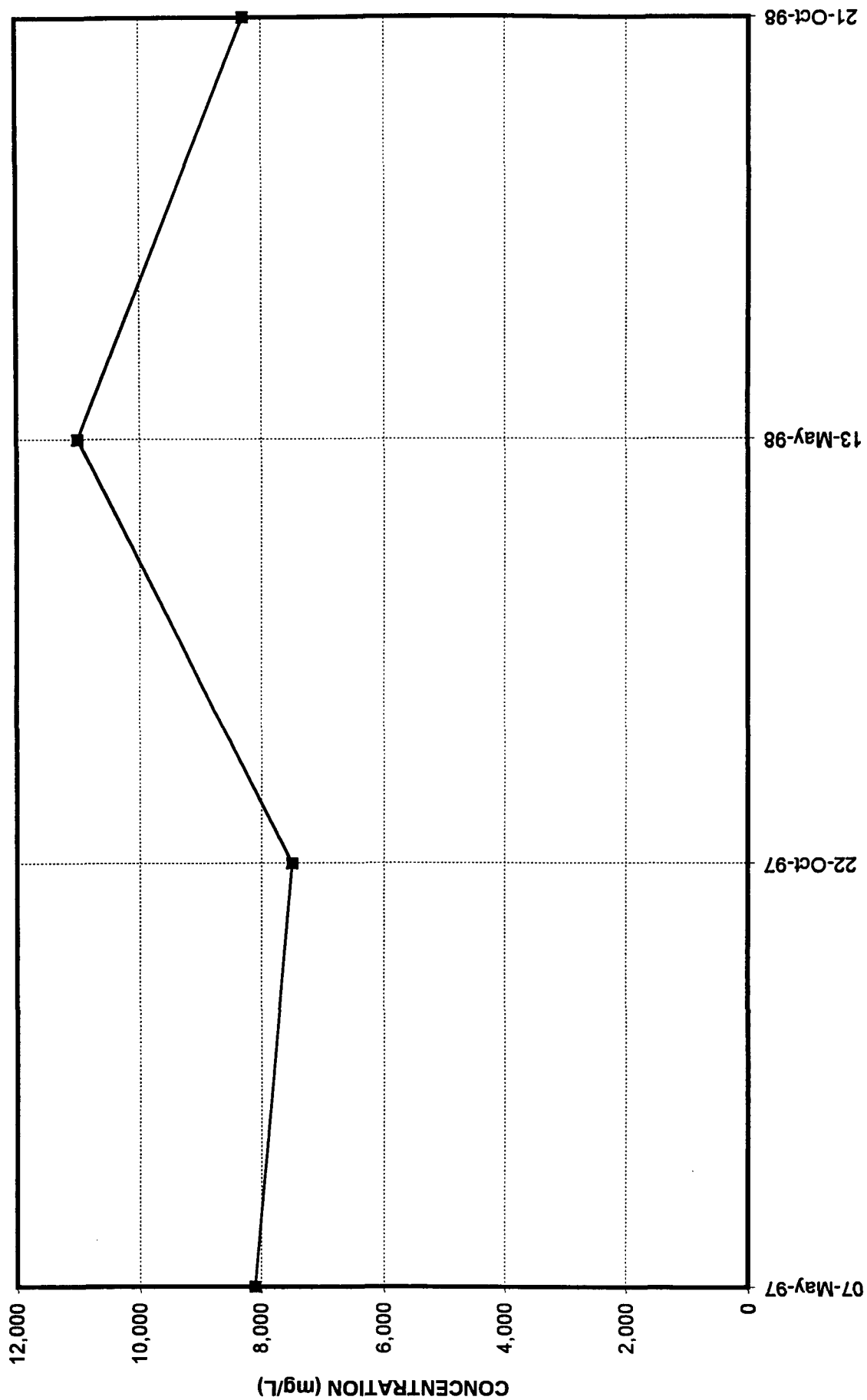
MONITOR WELL ACW-06



—■— BENZENE

GRAPH 15

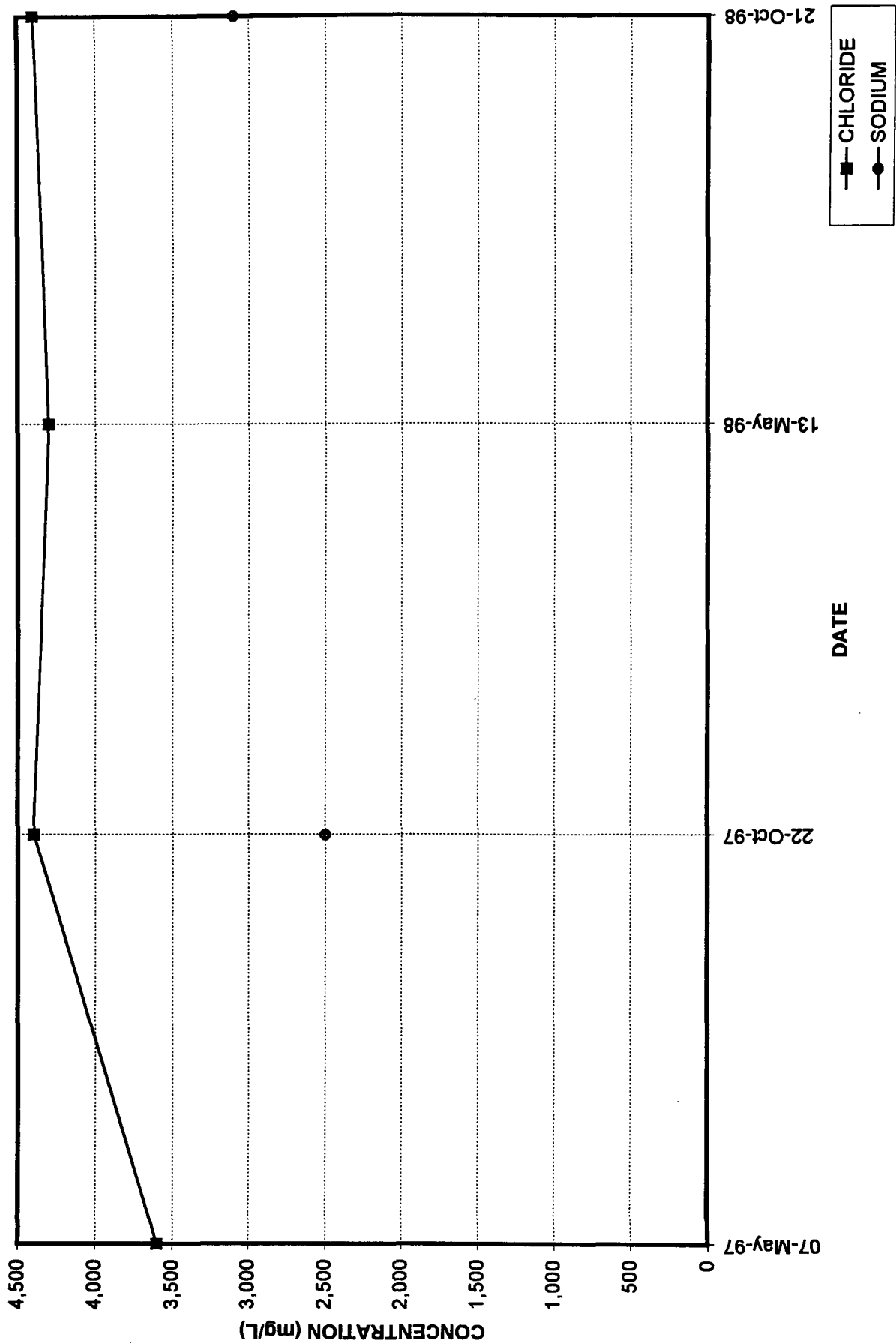
MONITOR WELL ACW-07



DATE

GRAPH 16

MONITOR WELL ACW-07



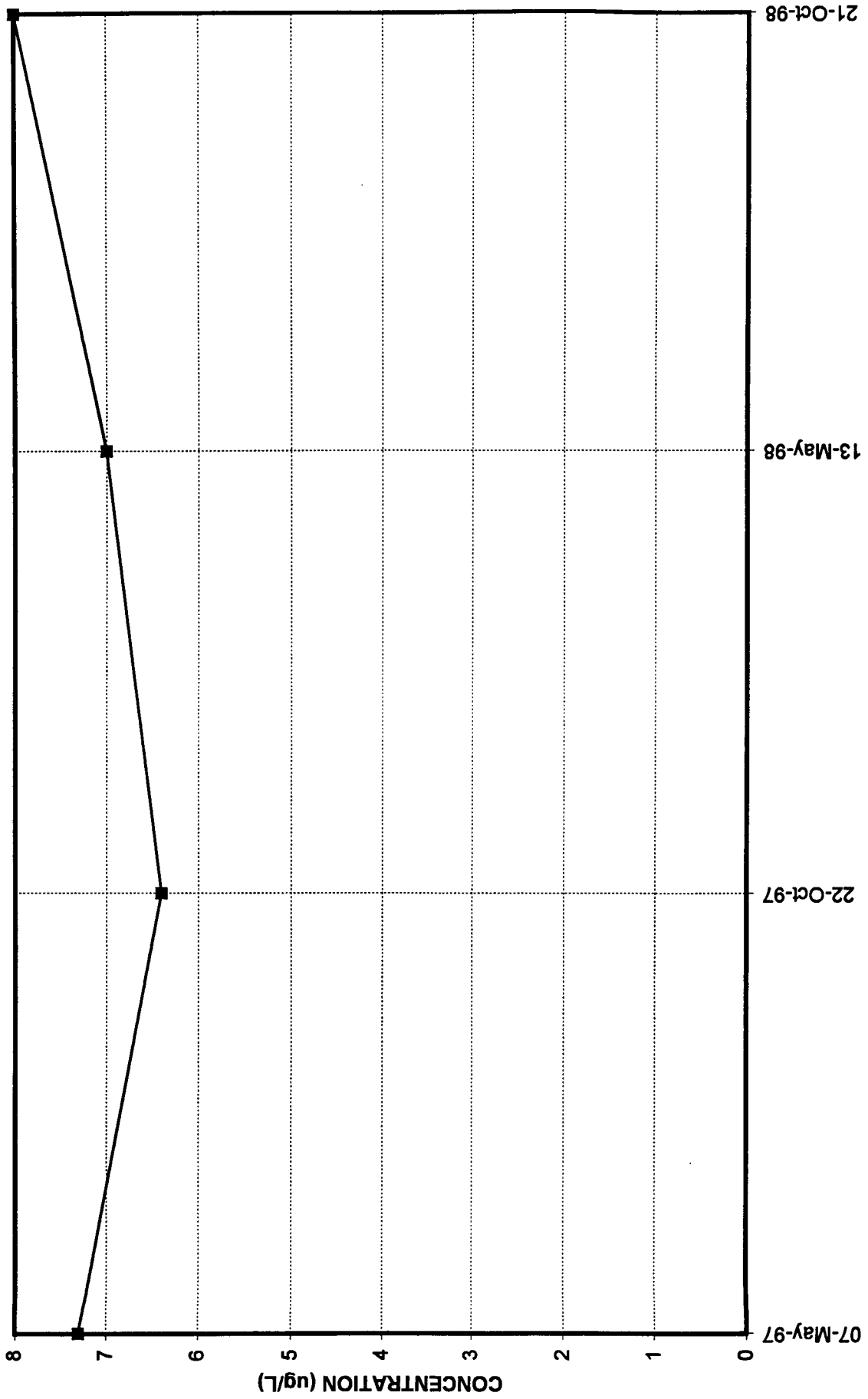
GRAPH 17

GRAPH 18

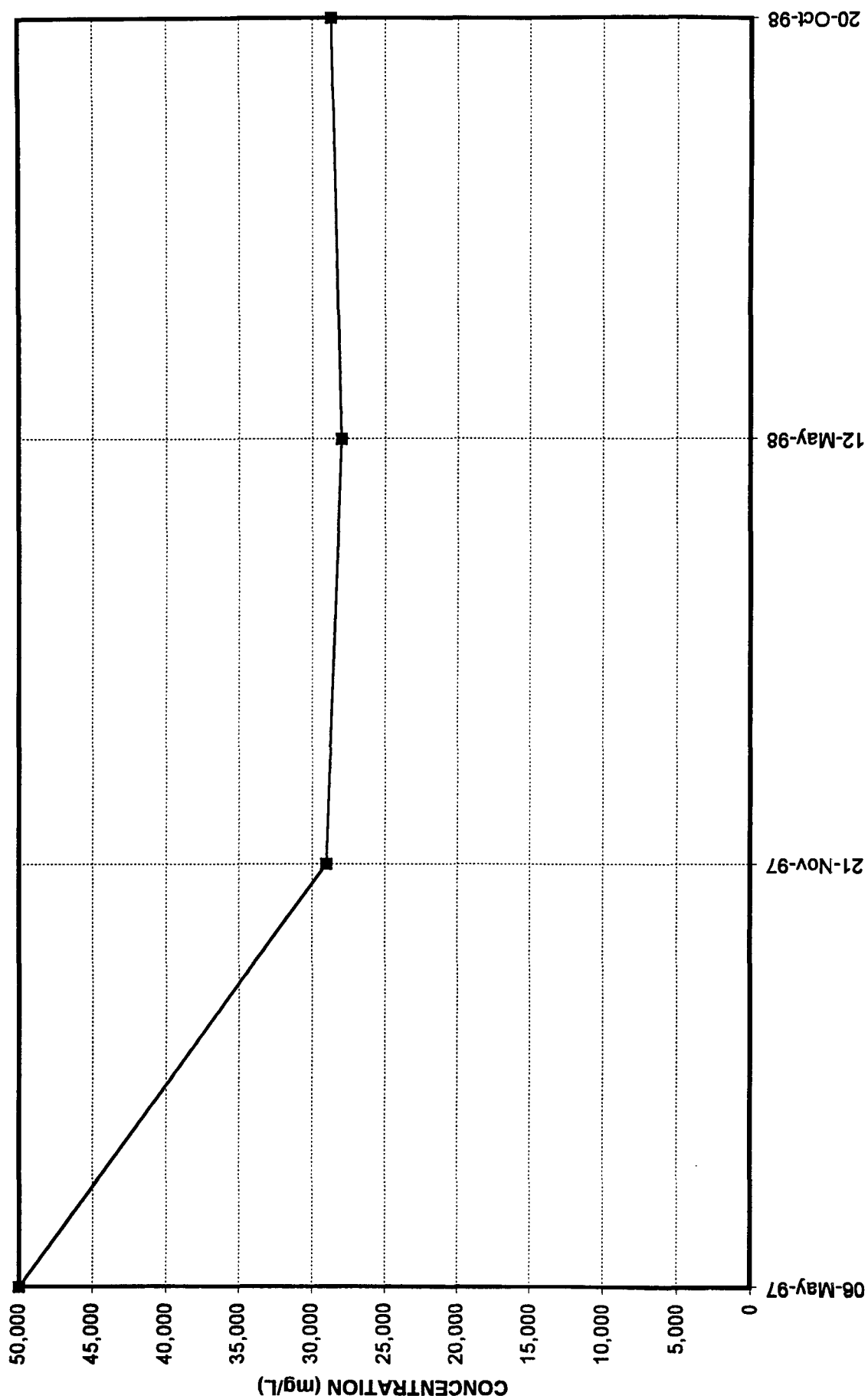
■ BENZENE

DATE

MONITOR WELL ACW-07



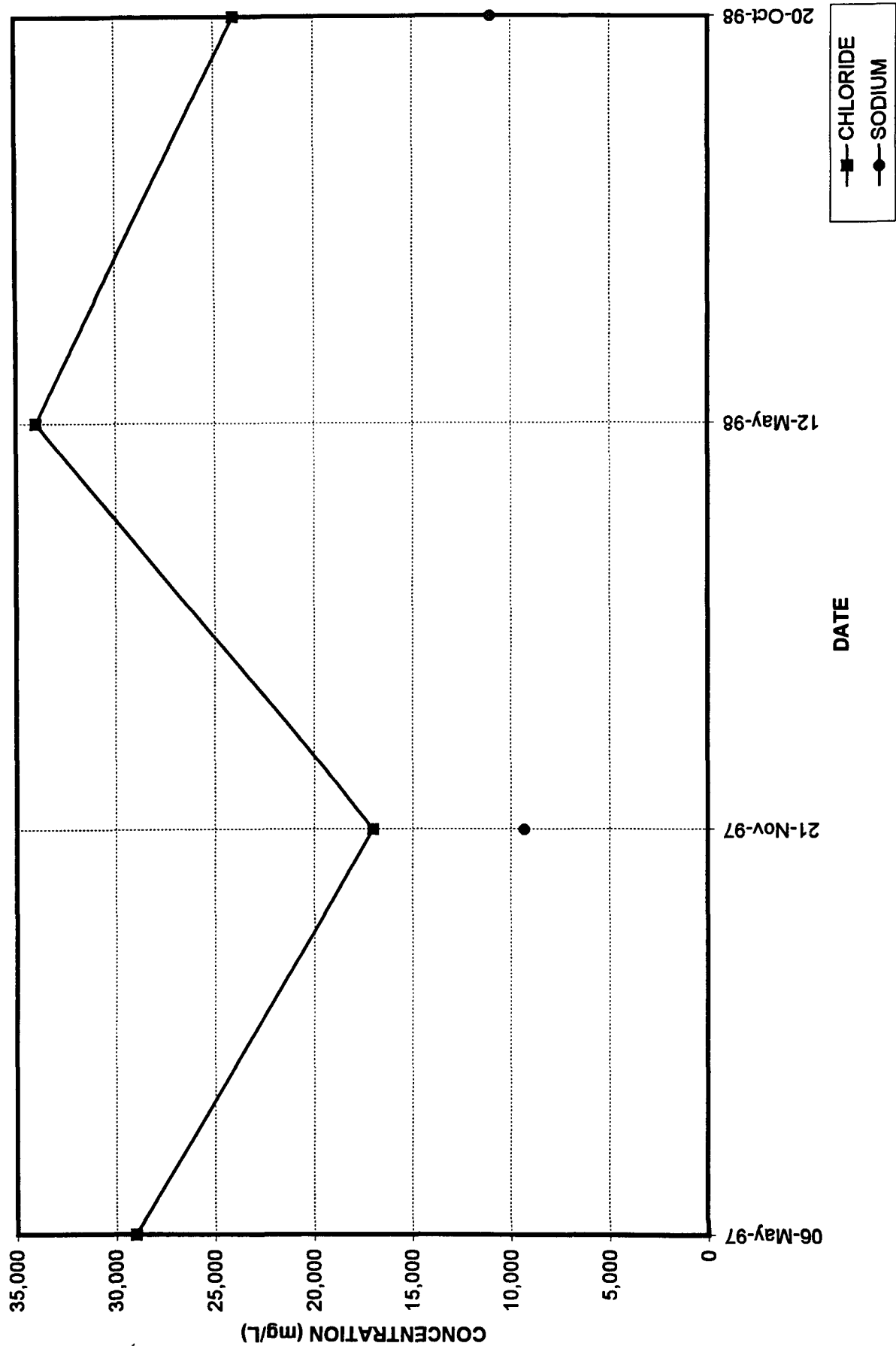
MONITOR WELL ACW-08



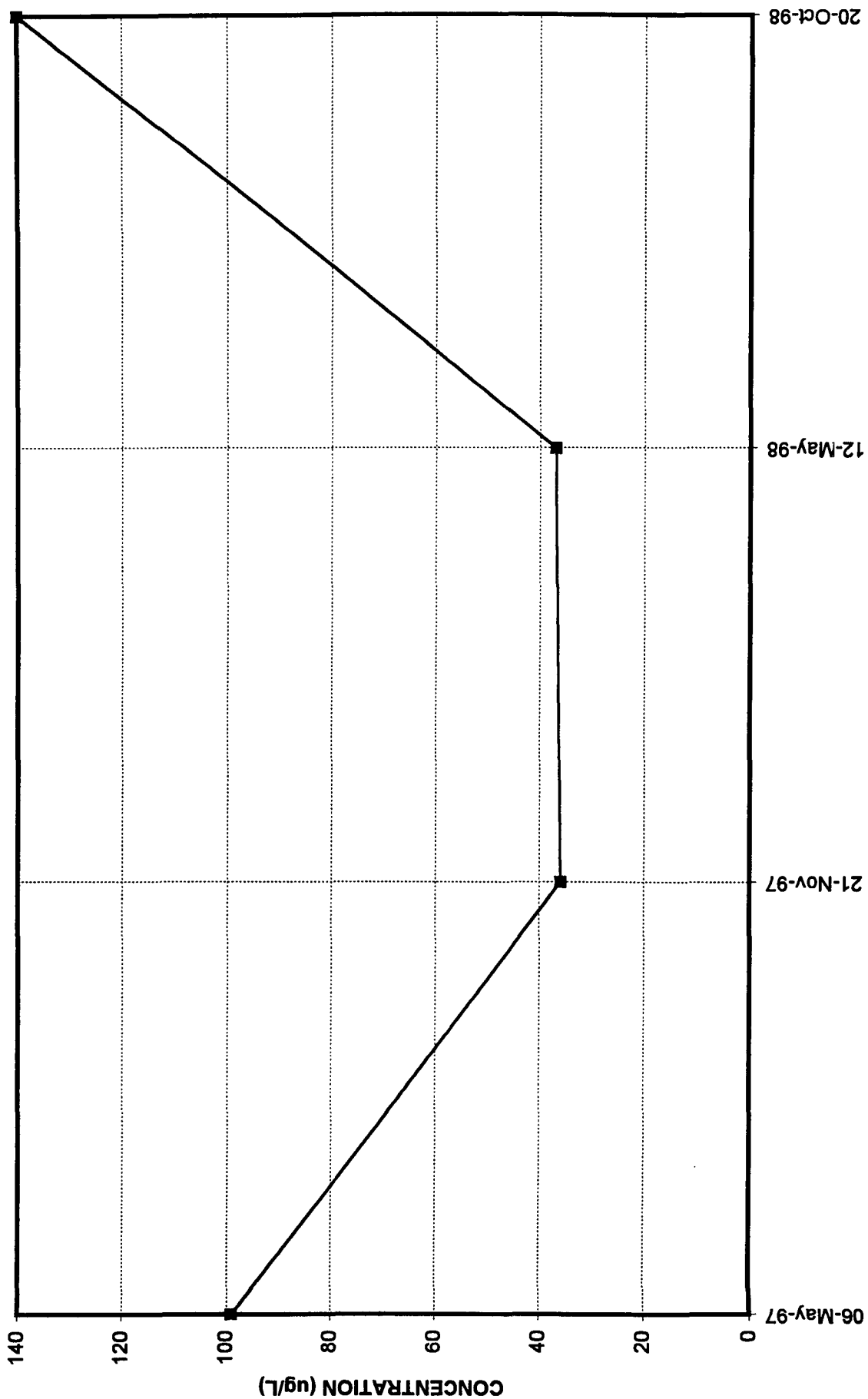
GRAPH 19

GRAPH 20

MONITOR WELL ACW-08



MONITOR WELL ACW-08

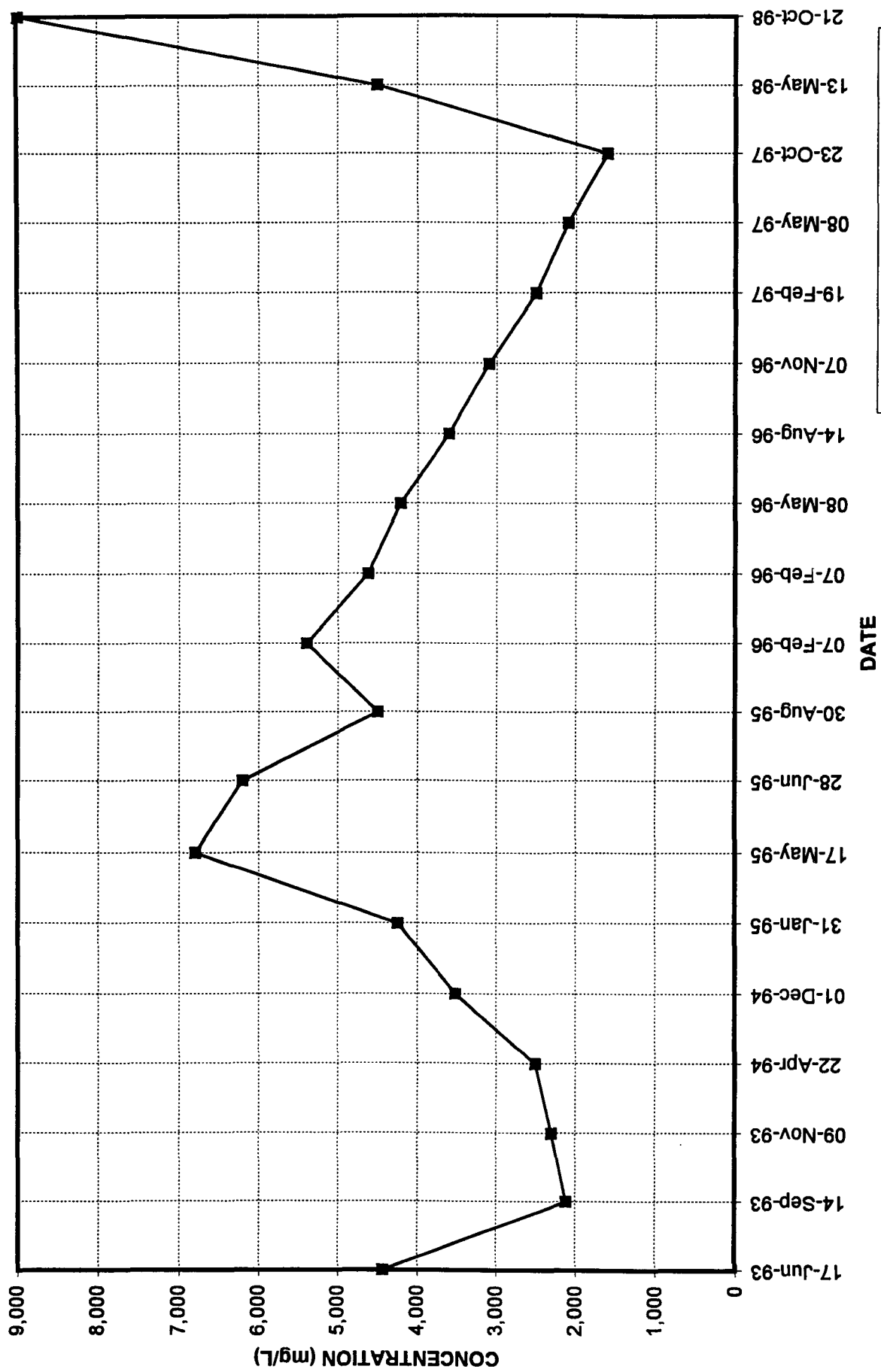


DATE

GRAPH 21

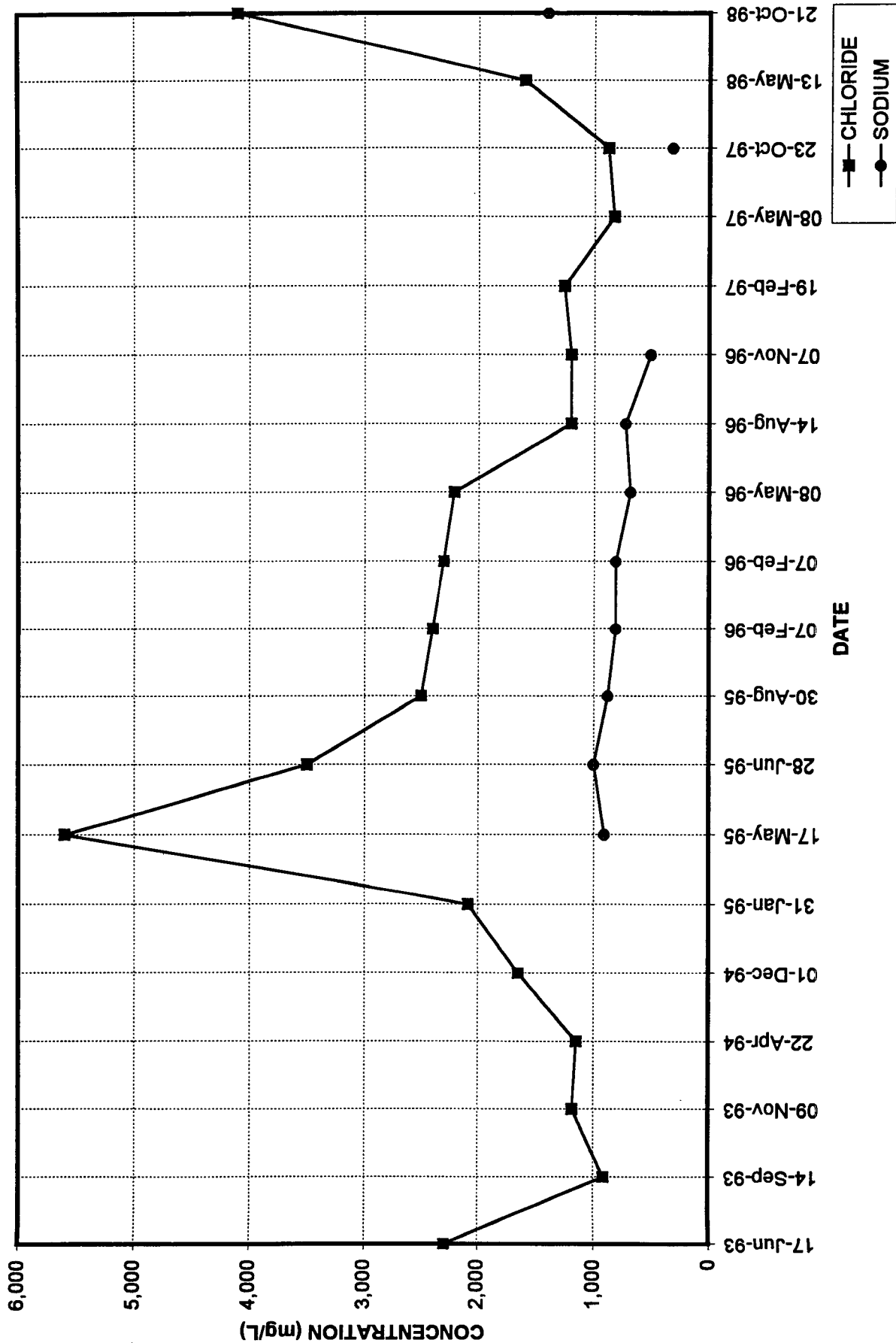
—■— BENZENE

MONITOR WELL ACW-09



GRAPH 22

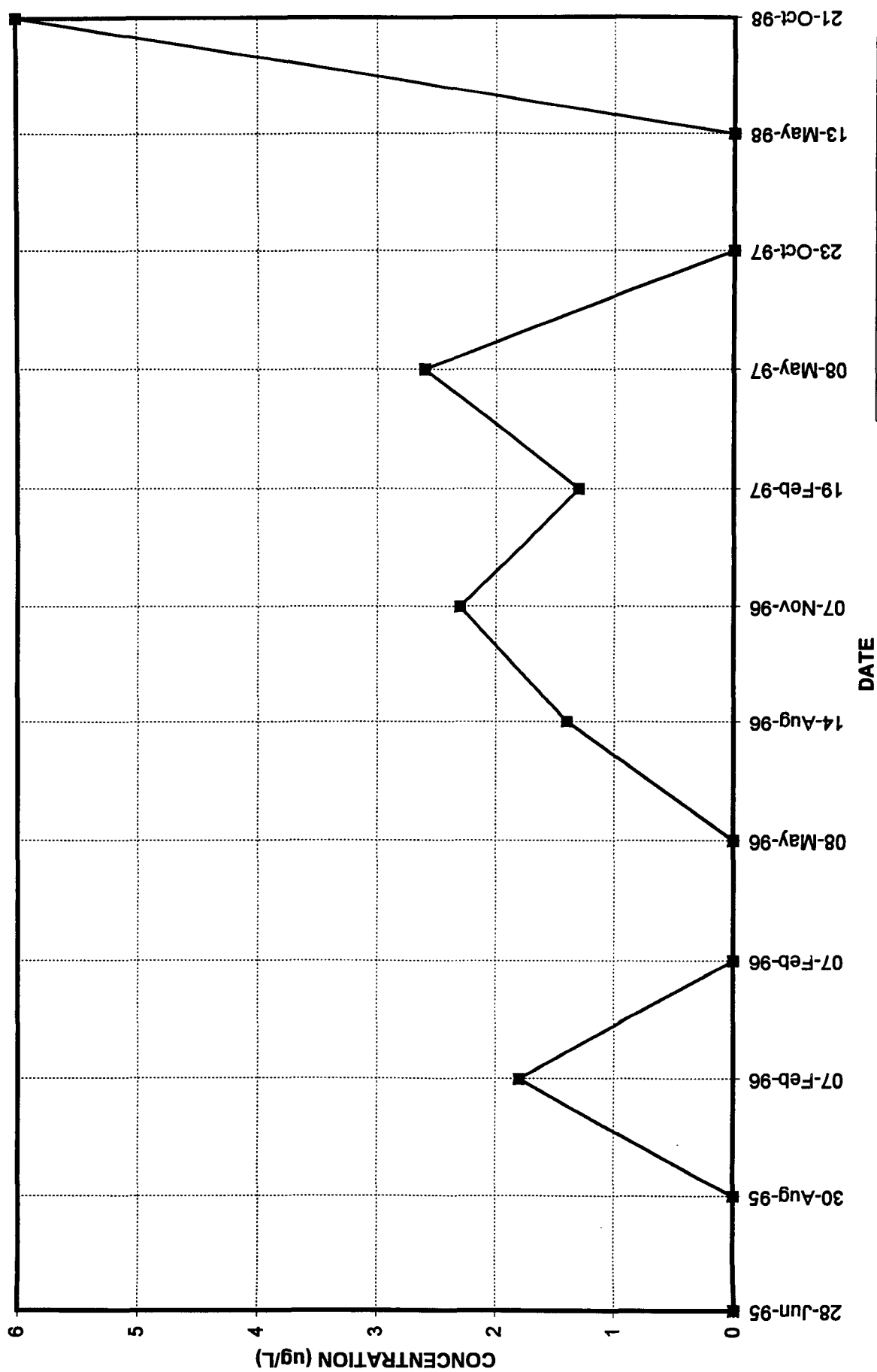
MONITOR WELL ACW-09



GRAPH 23

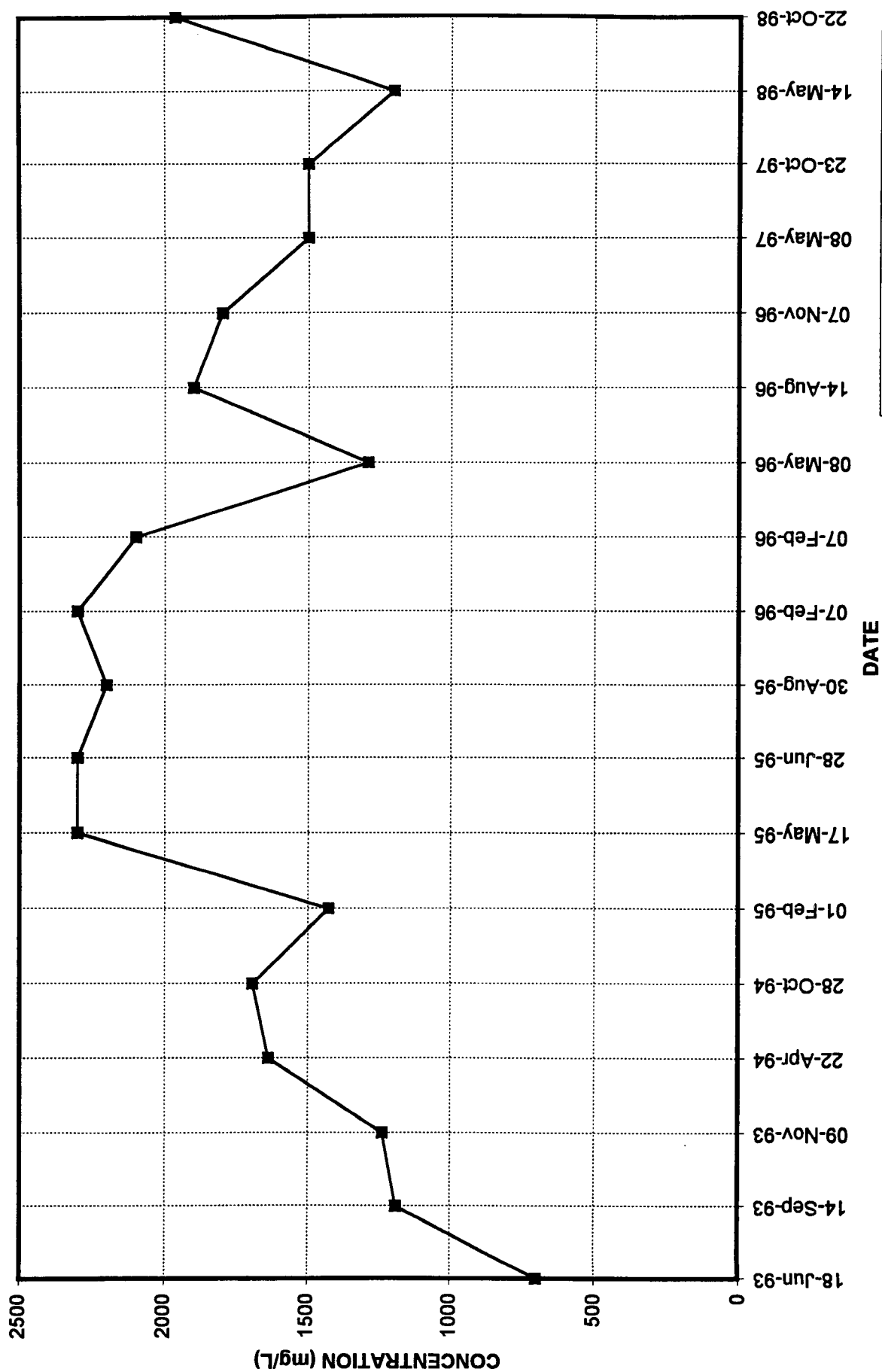
GRAPH 24

MONITOR WELL ACW-09

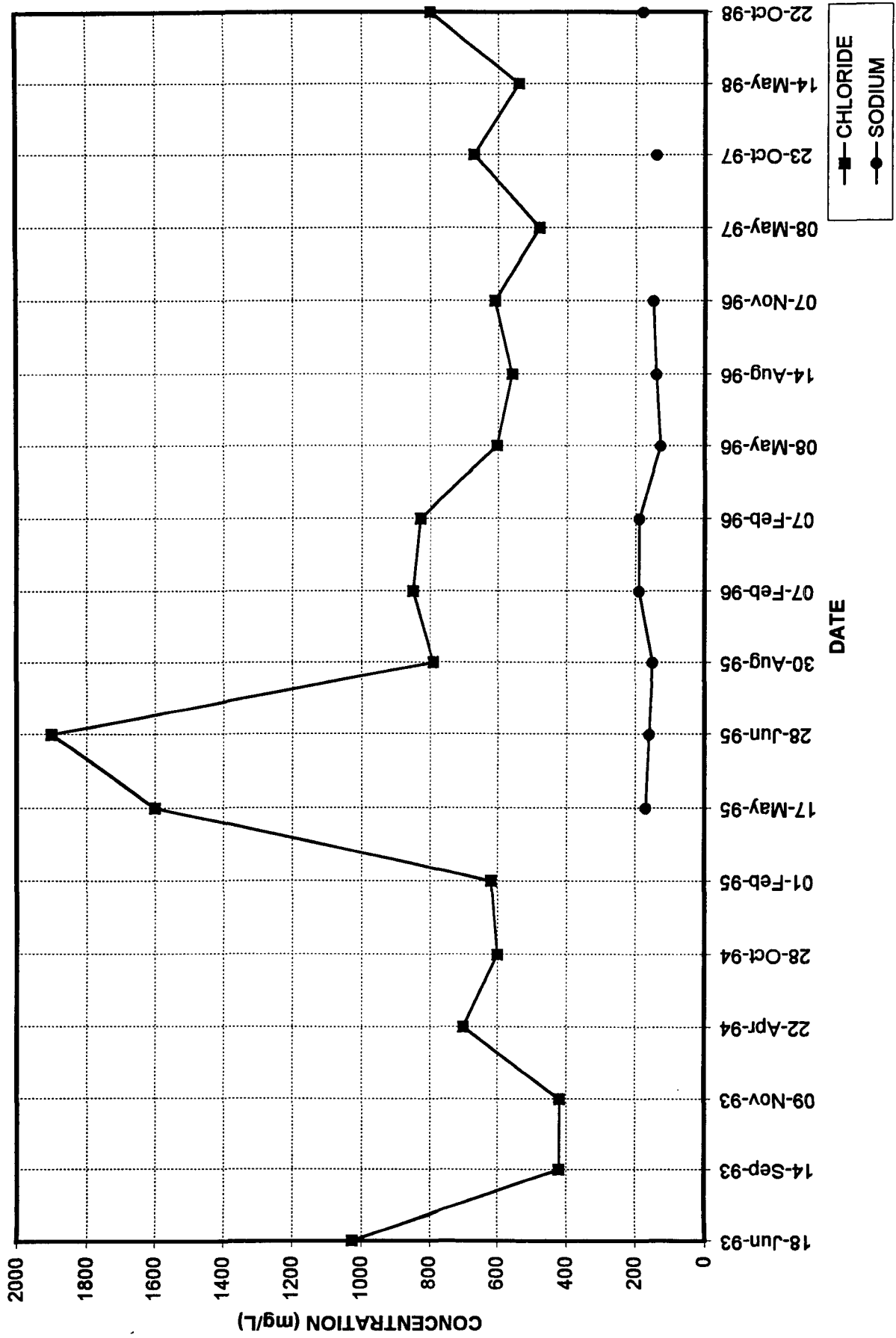


GRAPH 25

MONITOR WELL ACW-10

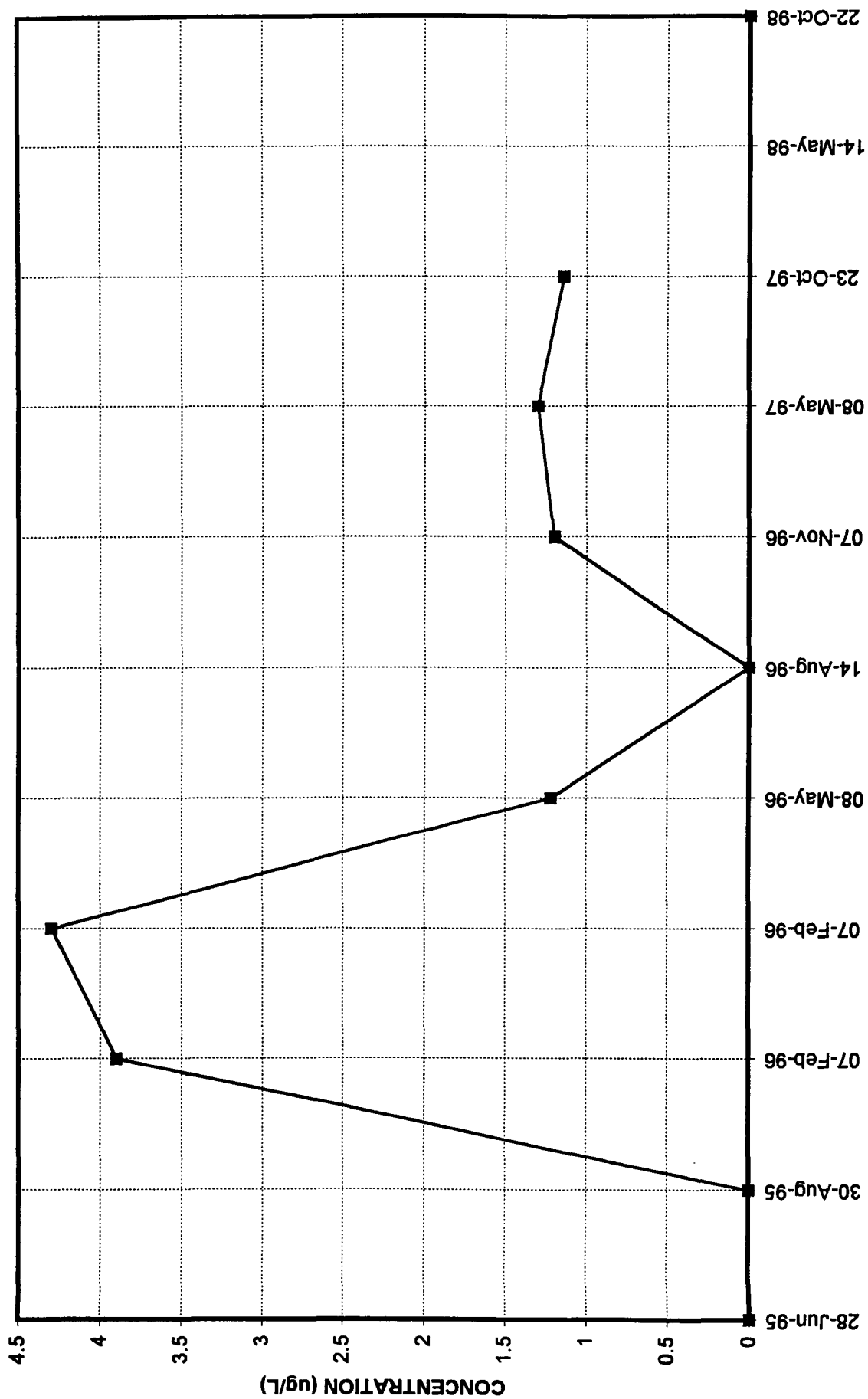


MONITOR WELL ACW-10



GRAPH 26

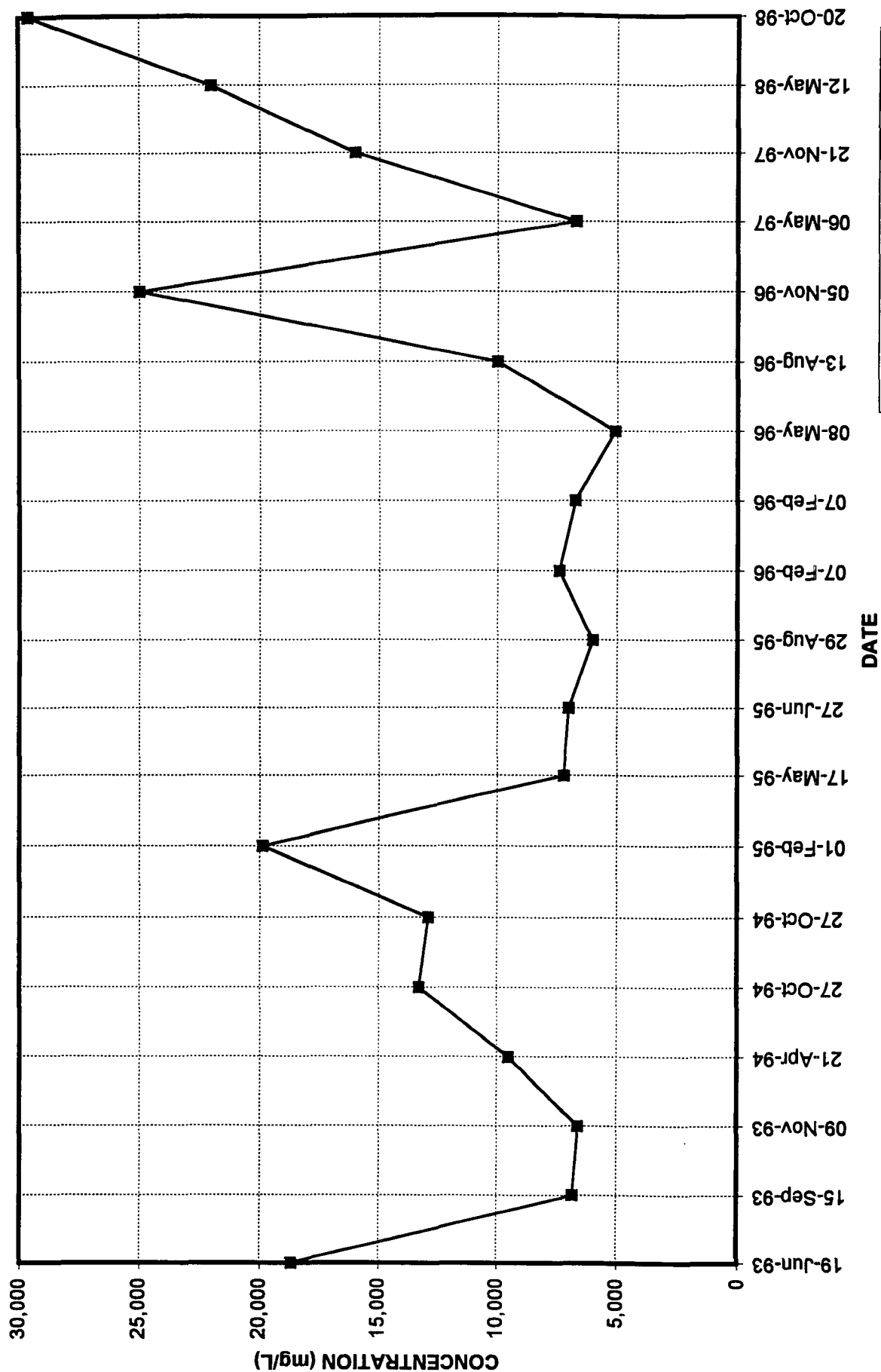
MONITOR WELL ACW-10



—■— BENZENE

GRAPH 27

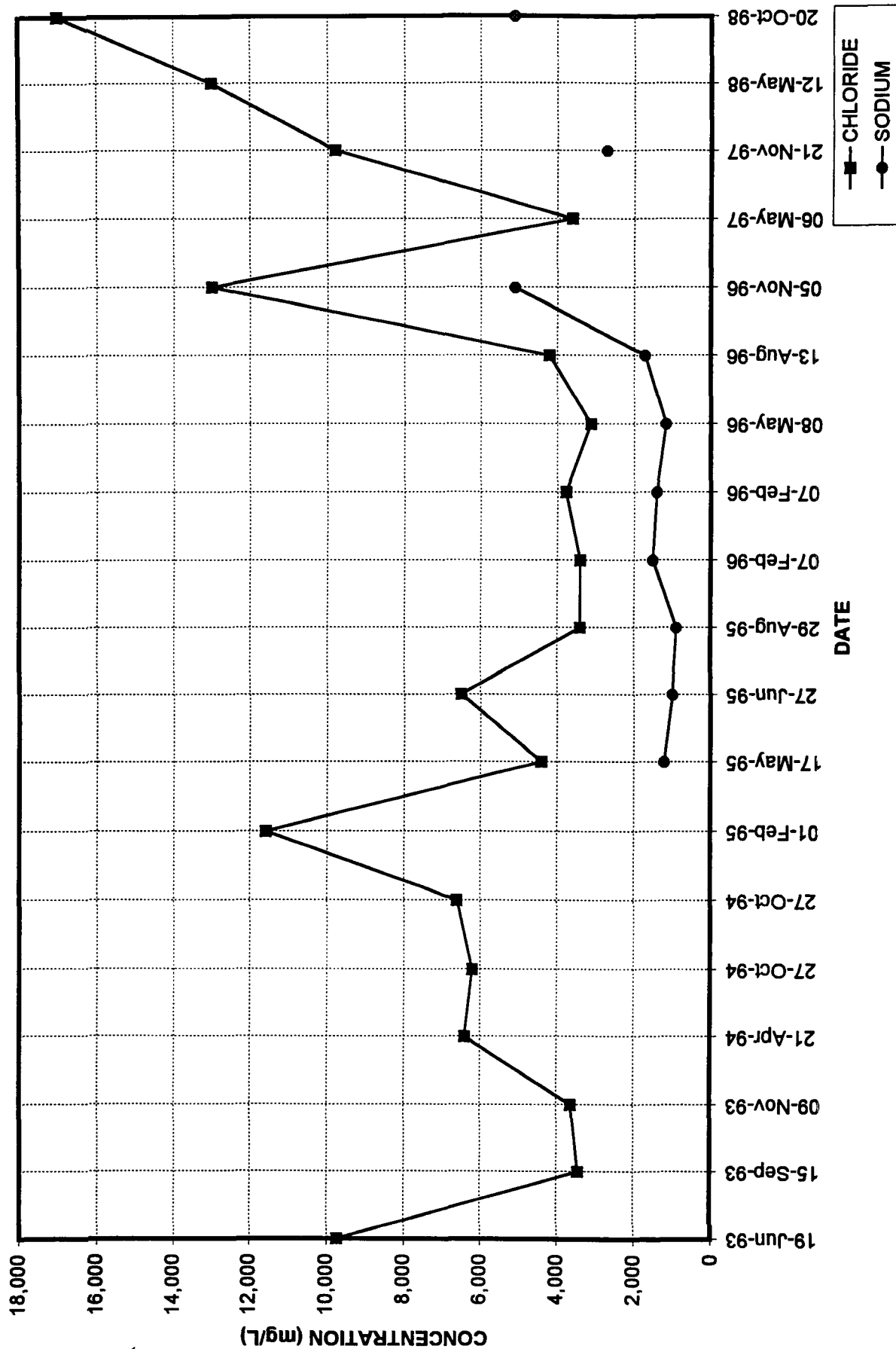
MONITOR WELL ACW-11



—■— TOTAL DISSOLVED SOLIDS

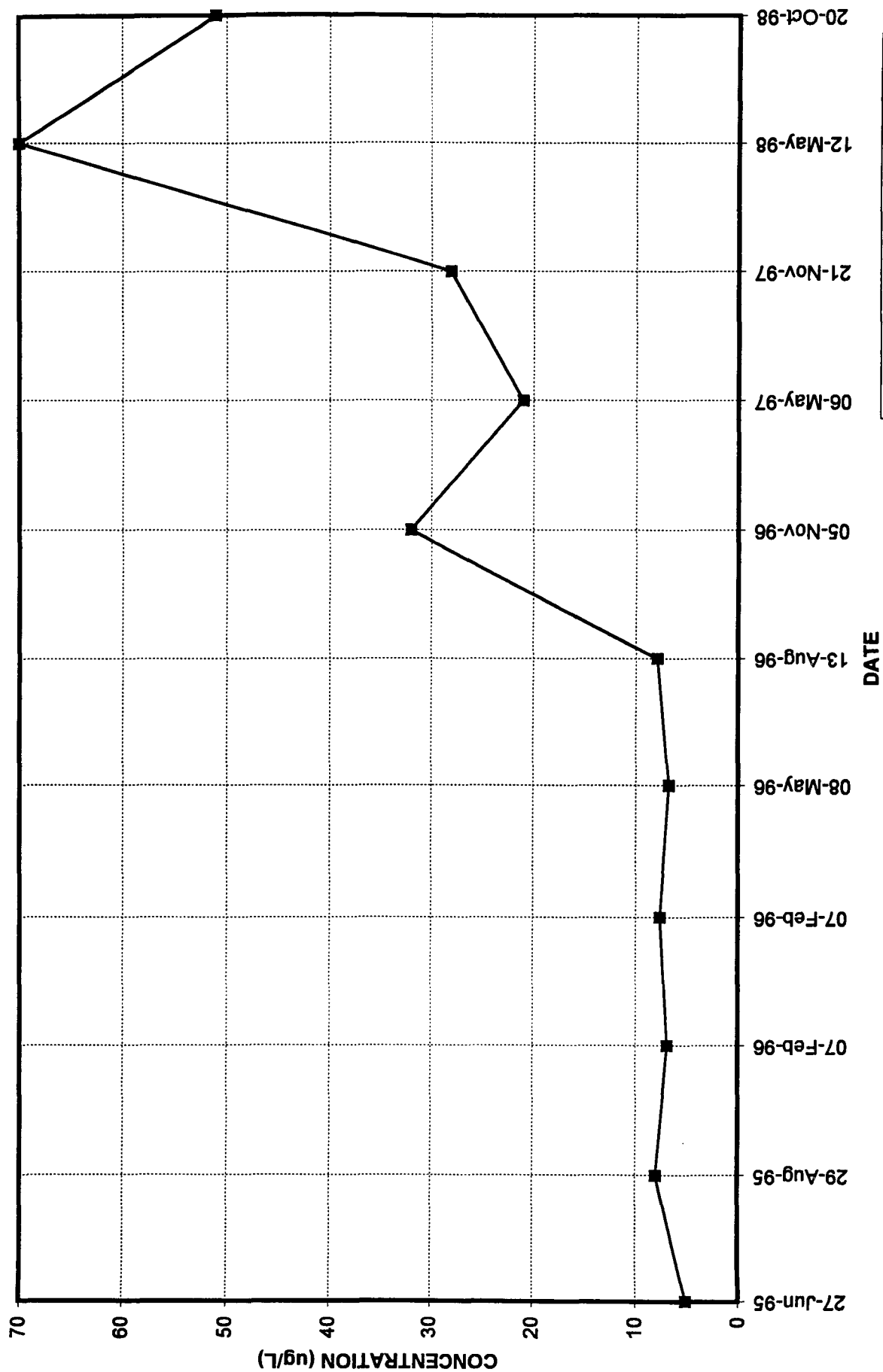
GRAPH 28

MONITOR WELL ACW-11



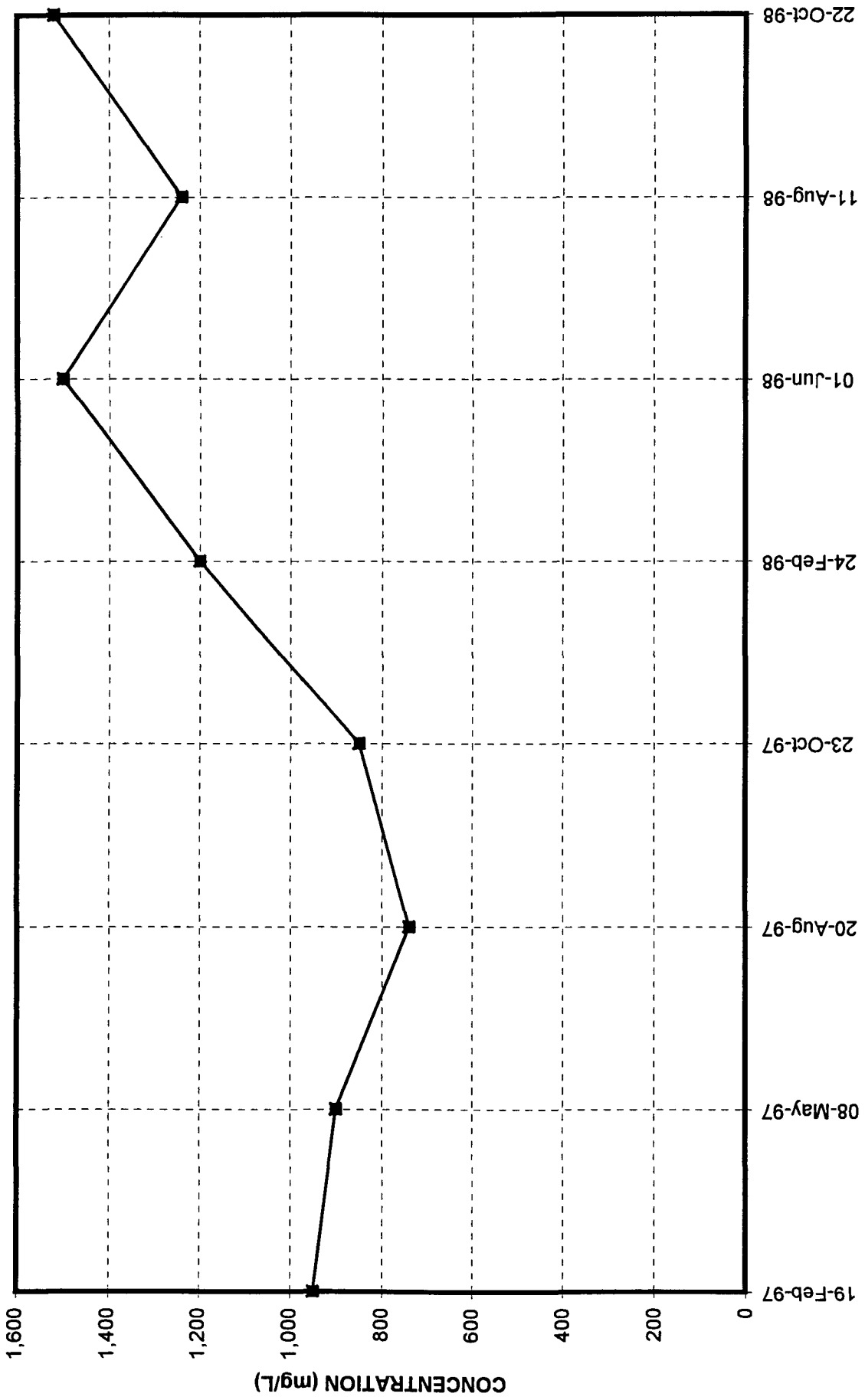
GRAPH 29

MONITOR WELL ACW-11



GRAPH 30

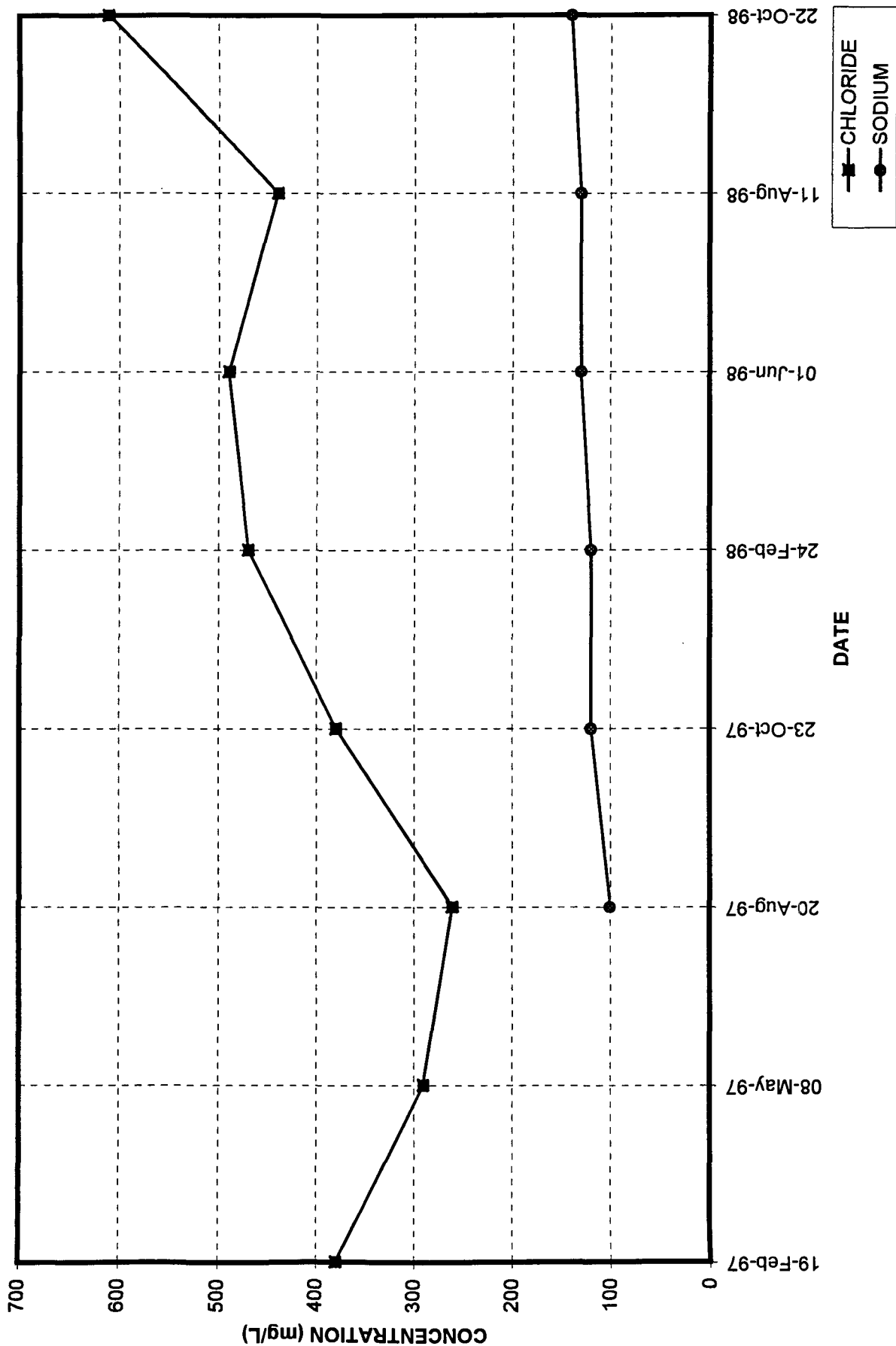
MONITOR WELL ACW-12



—■— TOTAL DISSOLVED SOLIDS

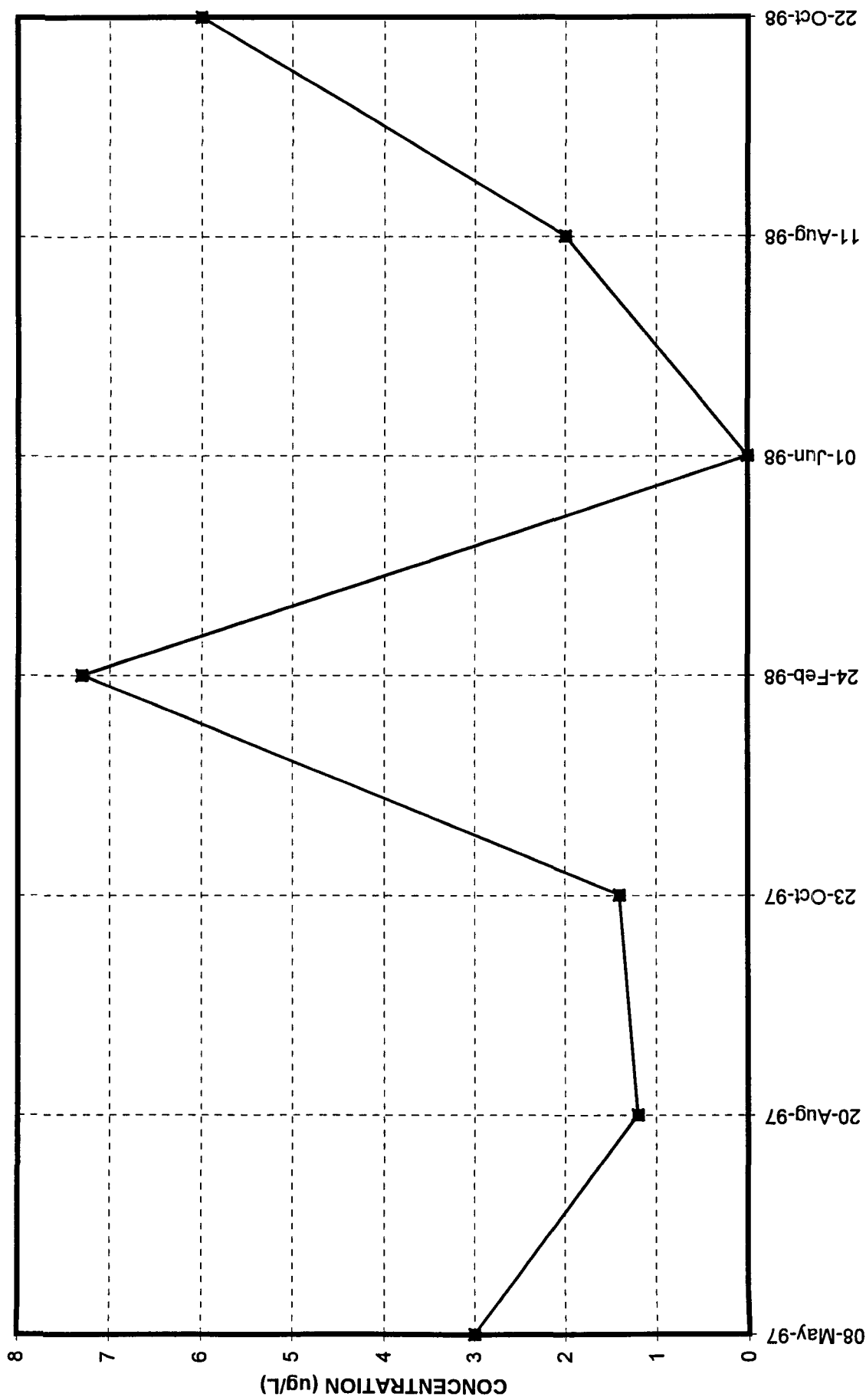
GRAPH 31

MONITOR WELL ACW-12



GRAPH 32

MONITOR WELL ACW-12

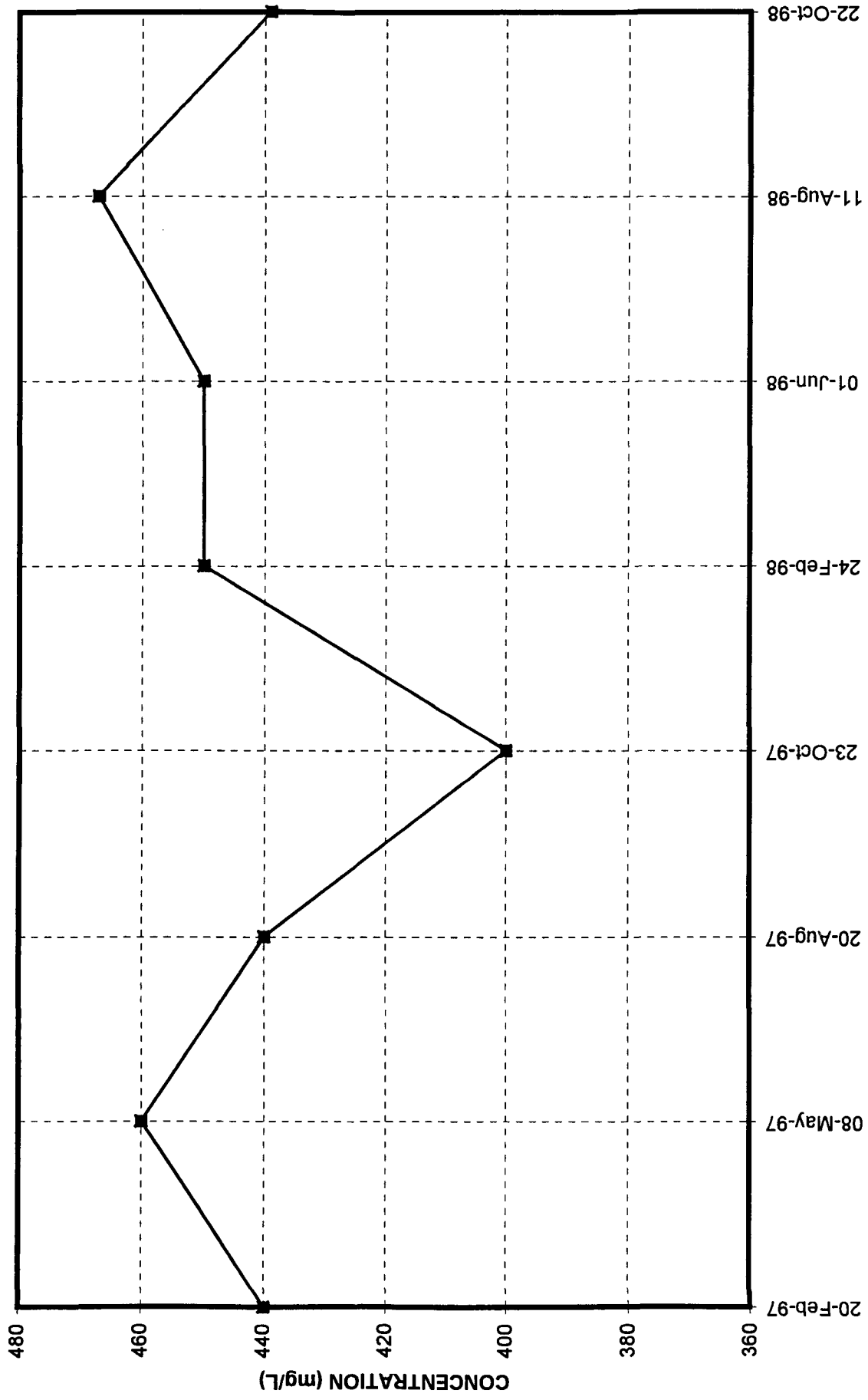


DATE

■ BENZENE

GRAPH 33

MONITOR WELL ACW-13

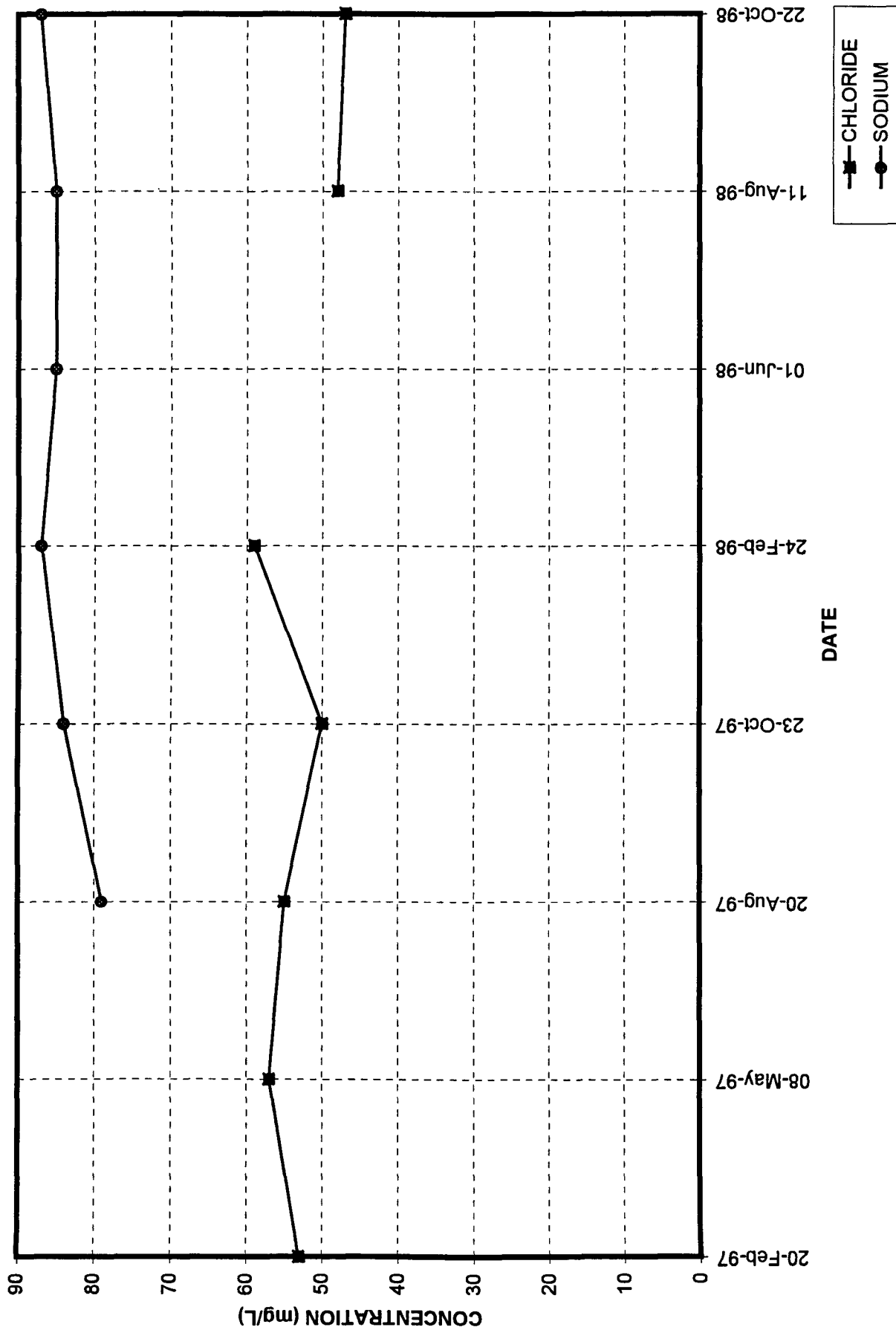


DATE

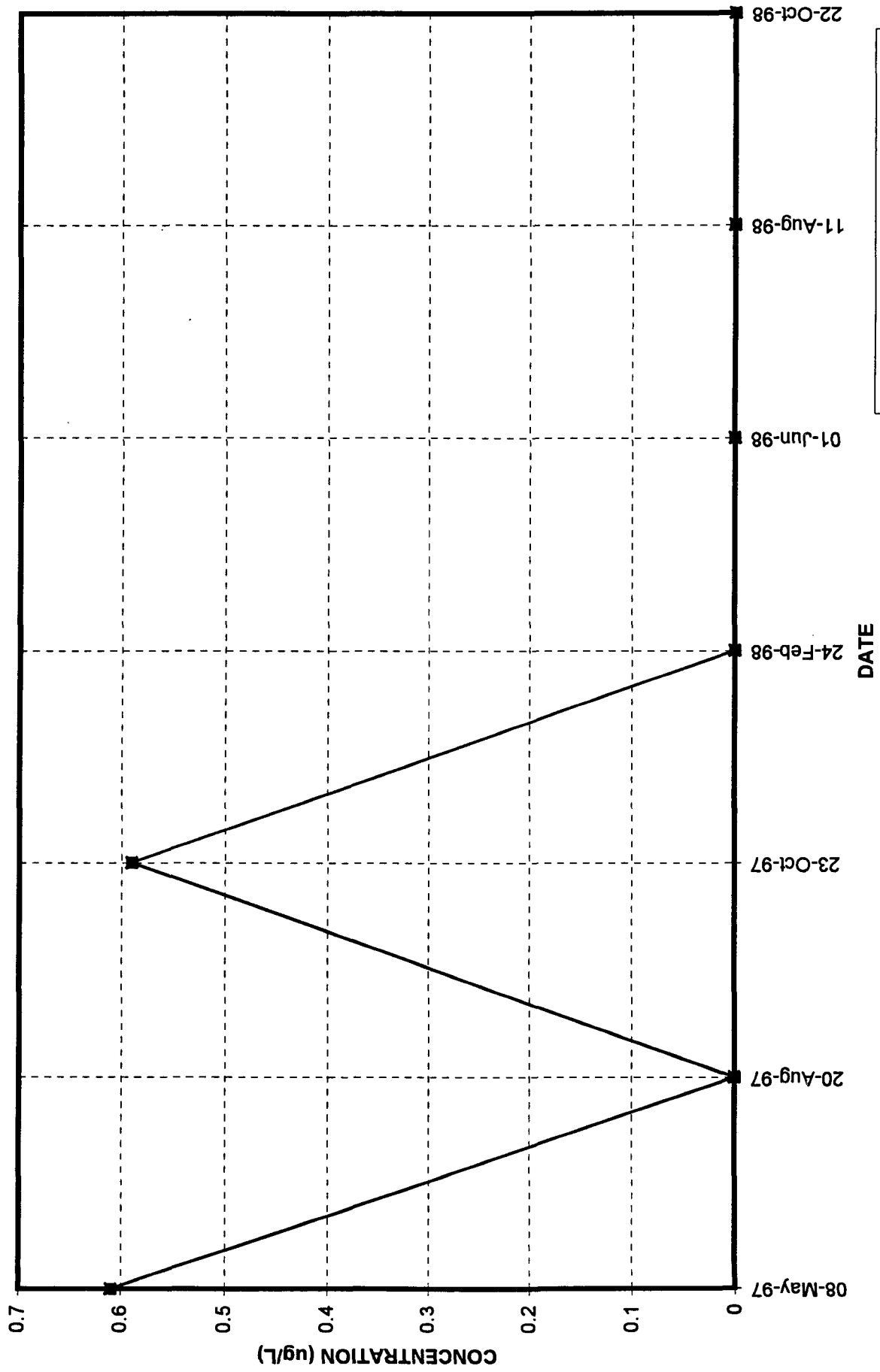
—■— TOTAL DISSOLVED SOLIDS

GRAPH 34

MONITOR WELL ACW-13



MONITOR WELL ACW-13



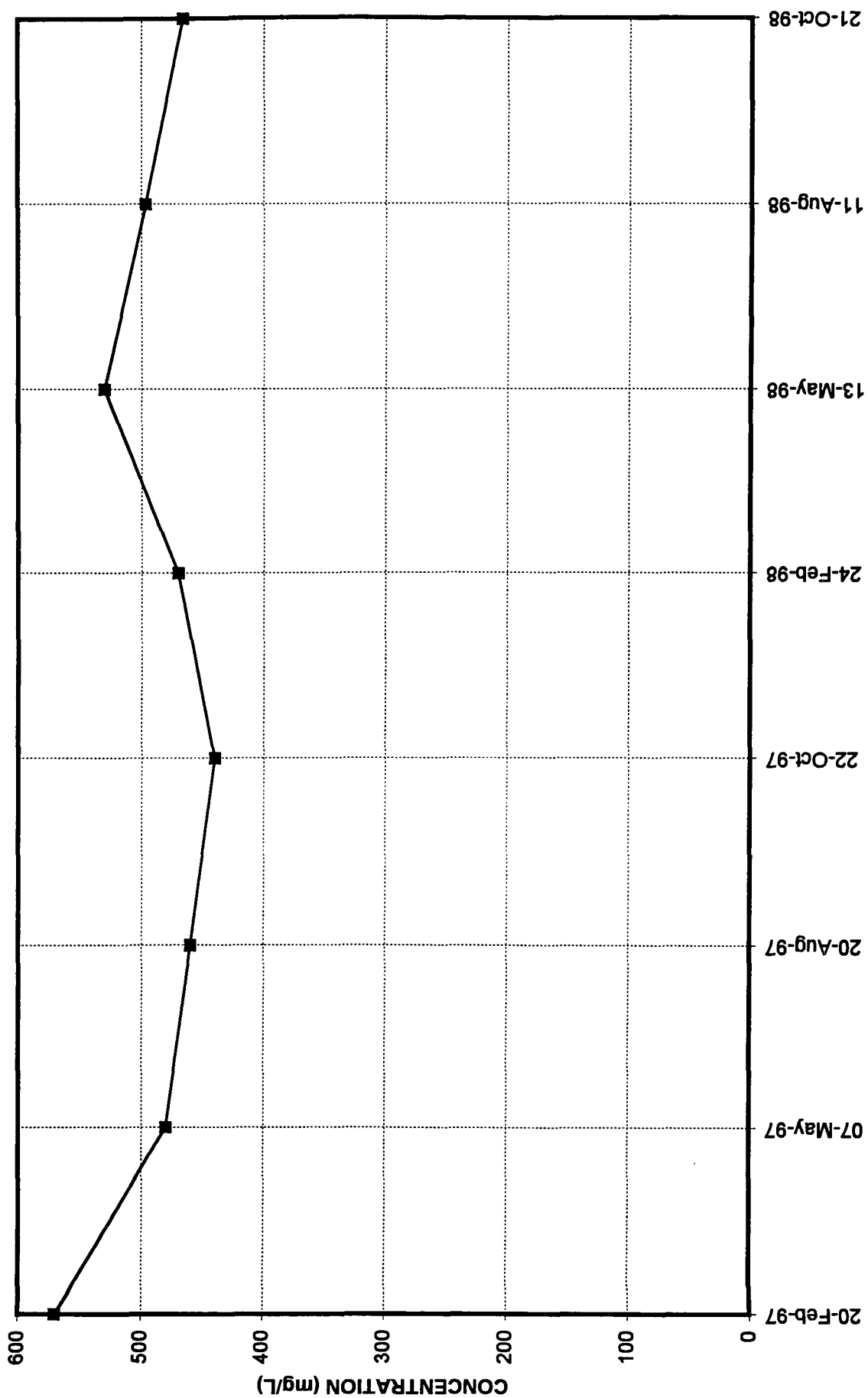
—■— BENZENE

GRAPH 36

GRAPH 37

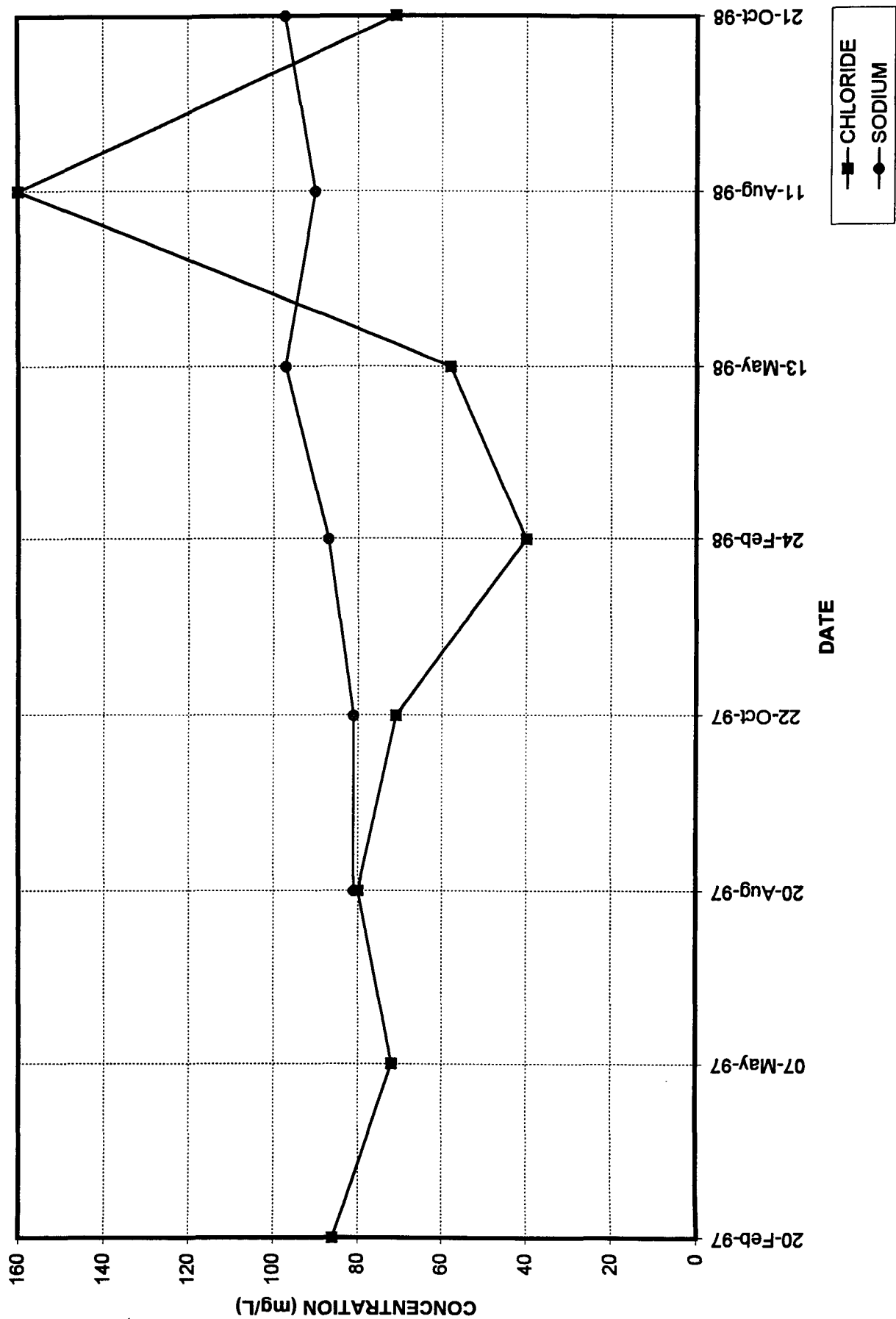
—■— TOTAL DISSOLVED SOLIDS

DATE



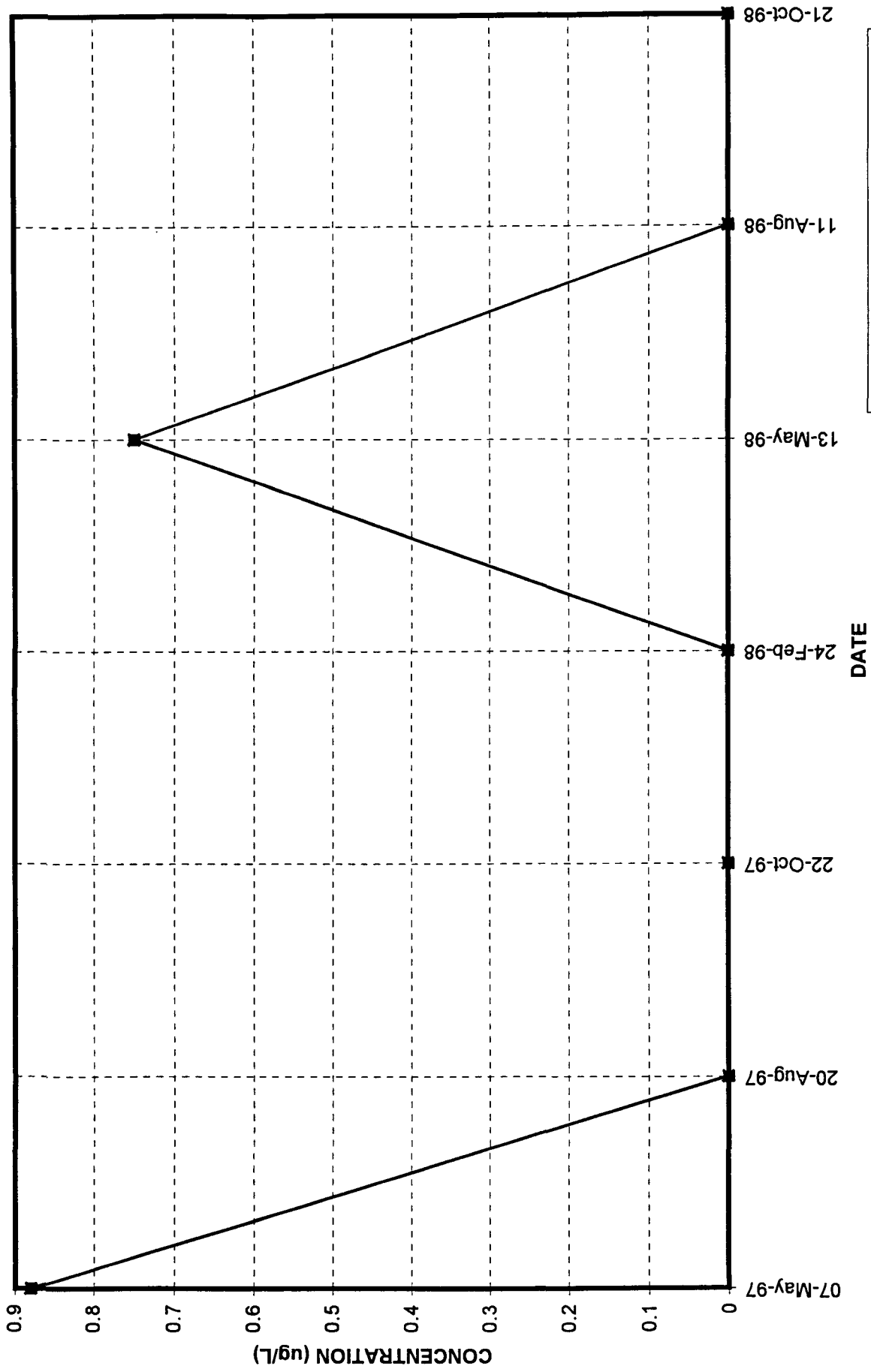
MONITOR WELL ACW-14

MONITOR WELL ACW-14



GRAPH 38

MONITOR WELL ACW-14



GRAPH 39

APPENDICES

APPENDIX A

**LABORATORY ANALYTICAL REPORTS
FOR GROUNDWATER SAMPLES
COLLECTED DURING 1998**

SAMPLE KEY

SAMPLE NUMBER: S98-0056 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ACW#15
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 09:30 SAMPLE DATE: 02/24/98

RECEIVED

APR 08 1998

REMEDIATION

SAMPLE KEY

SAMPLE NUMBER: S98-0057 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: DOOMS WATER WELL
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 10:50 SAMPLE DATE: 02/24/98

SAMPLE KEY

SAMPLE NUMBER: S98-0058 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL #12
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 12:35 SAMPLE DATE: 02/24/98

SAMPLE KEY

SAMPLE NUMBER: S98-0059 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL #12DUP.
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 12:35 SAMPLE DATE: 02/24/98

SAMPLE KEY

SAMPLE NUMBER: S98-0060 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL #13
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 14:50 SAMPLE DATE: 02/24/98

SAMPLE KEY

SAMPLE NUMBER: S98-0061 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: BAILER BLANK AFTER SAMPLING
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 15:25 SAMPLE DATE: 02/24/98

SAMPLE KEY

SAMPLE NUMBER: S98-0062 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: EMP #3 PUMP BLANK AFTER SAMPLING
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 15:40 SAMPLE DATE: 02/24/98

SAMPLE KEY

SAMPLE NUMBER: S98-0063 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: OXY PRODUCTION WELL
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 17:00 SAMPLE DATE: 02/24/98

SAMPLE KEY

SAMPLE NUMBER: S98-0064 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: FIELD BLANK
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 07:30 SAMPLE DATE: 02/24/98

SAMPLE KEY

SAMPLE NUMBER: S98-0065 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: EMP #3 PUMP BLANK BEFORE SAMPLING
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 07:35 SAMPLE DATE: 02/24/98

SAMPLE KEY

SAMPLE NUMBER: S98-0066 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: BAILER BLANK BEFORE SAMPLING
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 07:40 SAMPLE DATE: 02/24/98



PARAGON ANALYTICS, INC.

225 Commerce Drive ♦ Fort Collins, CO 80524 ♦ (800) 443-1511 ♦ (970) 490-1511 ♦ FAX (970) 490-1522

March 13, 1998

Mr. Darrell Campbell
El Paso Field Services
8645 Railroad Drive
El Paso, TX 79904

RE: Paragon Workorder: 98-02-179
Client Project Name: S98-0064
Client Project Number: Not Submitted

Dear Mr. Campbell:

Eleven water samples were received from El Paso Natural Gas Co. on February 25, 1998.
The samples were scheduled for the following analyses:

Total Recoverable Metals	pages 1-16
Aromatic Volatile Organics	pages 1-17
Specific Conductance	pages 1-5
pH	pages 1-5
Inorganics	pages 1-30

The results for these analyses are contained in the enclosed reports.

Thank you for your confidence in Paragon Analytics, Inc. Should you have any questions, please call.

Sincerely,

Paragon Analytics, Inc.
Adrienne Mackzum
Project Manager

AM/nmu
Enclosure: Report

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9802179

Client Name: El Paso Natural Gas Co.

Client Project Name: S98-0064

Client Project Number:

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0064	9802179-1		Water	2/24/98	7:30
S98-0065	9802179-2		Water	2/24/98	7:35
S98-0066	9802179-3		Water	2/24/98	7:40
S98-0056	9802179-4		Water	2/24/98	9:30
S98-0058	9802179-5		Water	2/24/98	12:35
S98-0059	9802179-6		Water	2/24/98	12:35
S98-0060	9802179-7		Water	2/24/98	14:50
S98-0061	9802179-8		Water	2/24/98	15:25
S98-0062	9802179-9		Water	2/24/98	15:40
S98-0057	9802179-10		Water	2/24/98	10:50
S98-0063	9802179-11		Water	2/24/98	17:00



CHAIN OF CUSTODY RECORD

[illegible]

Page 1 of 1

CHAIN OF CUSTODY RECORD

PROJECT NUMBER		PROJECT NAME		SAMPLERS: (Signature)		DATE: 01/04/98		SAMPLE NUMBER		LAB ID		DATE		TIME		MATRIX		TOTAL NUMBER OF CONTAINERS		COMPOSITE OR GRAB		REQUESTED ANALYSIS				REMARKS	

CONDITION OF SAMPLE UPON RECEIPT

CLIENT: E1 Desc Natural GasSHIPPING CONTAINER #: 200601WORKORDER NO. 9802179INITIALS: AMDATE: 2/25/98

1. Does this project require special handling according to NEESA, Level 3, or CLP protocols? If yes, complete a. and b. a. Cooler Temperature _____ b. Lot No's. _____ c. Airbill Number _____	Yes	No
2. Are custody seals on the cooler intact? If so, how many	<u>N/A</u>	<u>X</u>
3. Are custody seals on sample containers intact?	<u>N/A</u>	<u>X</u>
4. Is there a Chain of Custody (COC) or other representative documents, letters or shipping memos?	<u>Yes</u>	<u>No</u>
5. Is the COC complete? Relinquished: Yes <u>X</u> No _____ Requested Analysis: Yes _____ No <u>X</u>	<u>N/A</u>	<u>Yes</u>
6. Is the COC in agreement with the samples received? No. of Samples: Yes <u>X</u> No _____ Sample ID's: Yes <u>X</u> No _____ Matrix: Yes <u>X</u> No _____ No. of Containers: Yes <u>X</u> No _____	<u>Yes</u>	<u>No</u>
7. Are the samples requiring chemical preservation preserved correctly?	<u>N/A</u>	<u>Yes</u>
8. Is there enough sample? If so, are they in the proper containers?	<u>Yes</u>	<u>No</u>
9. Are all samples within holding times for the requested analyses?	<u>Yes</u>	<u>No</u>
10. Were the sample(s) shipped on ice?	<u>N/A</u>	<u>Yes</u>
11. Were all sample containers received intact? (not broken or leaking, etc.)	<u>Yes</u>	<u>No</u>
12. Are samples requiring no headspace, headspace free?	<u>N/A</u>	<u>Yes</u>
13. Do the samples require quarantine?	<u>Yes</u>	<u>No</u>
14. Do samples require Paragon disposal?	<u>Yes</u>	<u>No</u>
15. Did the client return any unused bottles?	<u>Yes</u>	<u>No</u>

Describe "NO" items (except No's 1, 13, & 14): #5: Client will fax complete list of analyses.#7: 1 L - also were split. 1/2 into 500ml polys, left unpreserved. Preserved remaining 500ml to pH < 2 with HNO₃.

Was the client contacted? Yes _____ No _____

If yes, Date: _____ Name of person contacted: _____

Describe actions taken or client instructions: _____

Group Leader's Signature: _____

Date: _____

Cooler Temperature: 6°C



Paragon Analytics, Inc.

TOTAL RECOVERABLE METALS CASE NARRATIVE

El Paso Natural Gas Co.

S98-0064

Order Number - 9802179

1. This report consists of 11 water samples.
2. The samples were received cool and intact on 02/25/98.
3. The samples had been correctly preserved for the requested analyses.
4. The samples were prepared for analysis based on SW-846, 3rd Edition procedures.
For analysis by conventional ICP, the samples were digested following method 3005A.
5. The samples were analyzed following SW-846 protocols by conventional ICP (Method 6010A).
6. All standards and solutions are NIST traceable and were used within their recommended shelf life.
7. The samples were prepared and analyzed within the established hold times.
8. Sample results which are below PAI's standard reporting limits are reported as "ND" on the enclosed report.

All in house quality control procedures were followed, as described below.

9. General quality control procedures.
 - A preparation (method) blank and laboratory control sample were digested and analyzed with the samples in this digestion batch. There were not more than 20 samples in the digestion batch.
 - The preparation (method) blank results associated with this batch were below the reporting limits for the requested analytes. This indicates that no contaminants were introduced to the samples during the digestion procedure.
 - The laboratory control sample associated with this batch was within acceptance limits. This indicates complete digestion according to the method.



- All initial and continuing calibration blanks associated with this batch were below the reporting limits for the requested analytes. This indicates a valid calibration and stable instrument conditions.
- All initial and continuing calibration verifications associated with this batch were within acceptance criteria for the requested analytes. This indicates a valid calibration and stable instrument conditions.
- The interference check samples, and high standard readbacks associated with Method 6010A analyses were within acceptance criteria.

10. A sample from this Order Number was used as the QC sample for this batch.

- A matrix spike and matrix spike duplicate were digested and analyzed with this batch. All acceptance criteria for accuracy were met.
- A sample duplicate and spike duplicate were digested and analyzed with this batch. All acceptance criteria for precision were met.
- A serial dilution was analyzed with this batch. All acceptance criteria were met.

The data contained in the following report have been reviewed and approved by the personnel listed below:

Darryl Patrick
Darryl Patrick
Senior Inorganic Chemist

3/6/98
Date

SW
Reviewer's Initials

3/6/98
Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9802179

Client Name: El Paso Natural Gas Co.

Client Project Name: S98-0064

Client Project Number:

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0064	9802179-1		Water	2/24/98	7:30
S98-0065	9802179-2		Water	2/24/98	7:35
S98-0066	9802179-3		Water	2/24/98	7:40
S98-0056	9802179-4		Water	2/24/98	9:30
S98-0058	9802179-5		Water	2/24/98	12:35
S98-0059	9802179-6		Water	2/24/98	12:35
S98-0060	9802179-7		Water	2/24/98	14:50
S98-0061	9802179-8		Water	2/24/98	15:25
S98-0062	9802179-9		Water	2/24/98	15:40
S98-0057	9802179-10		Water	2/24/98	10:50
S98-0063	9802179-11		Water	2/24/98	17:00

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064
Lab Sample ID: RB 9802179

Sample ID

Reagent Blank

Date Collected: N/A
Prep Date: 02/27/98
Date Analyzed: 03/05/98

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	ND	1
Magnesium	ND	1
Potassium	ND	1
Silicon	ND	0.05
Sodium	ND	1

ND = Not detected at or above the reporting limit.

25

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064
Lab Sample ID: 9802179-1

Sample ID

S98-0064

Sample Matrix: Water

Date Collected: 02/24/98

Prep Date: 02/27/98

Date Analyzed: 03/05/98

Hardness = <2.5 mg/L CaCO₃

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	ND	1
Magnesium	ND	1
Potassium	ND	1
Silicon	ND	0.05
Sodium	ND	1

ND = Not detected at or above the reporting limit.

DF

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064
Lab Sample ID: 9802179-2

Sample ID

S98-0065

Sample Matrix: Water

Date Collected: 02/24/98

Prep Date: 02/27/98

Date Analyzed: 03/05/98

Hardness = 190 mg/L CaCO₃

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	52	1
Magnesium	14	1
Potassium	4	1
Silicon	13	0.05
Sodium	75	1

ND = Not detected at or above the reporting limit.

DF

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064
Lab Sample ID: 9802179-3

Sample ID

S98-0066

Sample Matrix: Water

Date Collected: 02/24/98

Prep Date: 02/27/98

Date Analyzed: 03/05/98

Hardness = <2.5 mg/L CaCO₃

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	ND	1
Magnesium	ND	1
Potassium	ND	1
Silicon	ND	0.05
Sodium	ND	1

ND = Not detected at or above the reporting limit.

DS

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064
Lab Sample ID: 9802179-4

Sample ID

S98-0056

Sample Matrix: Water

Date Collected: 02/24/98

Prep Date: 02/27/98

Date Analyzed: 03/05/98

Hardness = 180 mg/L CaCO₃

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	46	1
Magnesium	16	1
Potassium	5	1
Silicon	22	0.05
Sodium	87	1

ND = Not detected at or above the reporting limit.

DF

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064
Lab Sample ID: 9802179-5

Sample ID

S98-0058

Sample Matrix: Water

Date Collected: 02/24/98

Prep Date: 02/27/98

Date Analyzed: 03/05/98

Hardness = 670 mg/L CaCO₃

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	170	1
Magnesium	60	1
Potassium	10	1
Silicon	21	0.05
Sodium	120	1

ND = Not detected at or above the reporting limit.

DP

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064
Lab Sample ID: 9802179-6

Sample ID

S98-0059

Sample Matrix: Water

Date Collected: 02/24/98

Prep Date: 02/27/98

Date Analyzed: 03/05/98

Hardness = 660 mg/L CaCO₃

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	170	1
Magnesium	60	1
Potassium	10	1
Silicon	21	0.05
Sodium	120	1

ND = Not detected at or above the reporting limit.

DP

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064
Lab Sample ID: 9802179-7

Sample ID

S98-0060

Sample Matrix: Water

Date Collected: 02/24/98

Prep Date: 02/27/98

Date Analyzed: 03/05/98

Hardness = 140 mg/L CaCO₃

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	31	1
Magnesium	14	1
Potassium	17	1
Silicon	21	0.05
Sodium	87	1

ND = Not detected at or above the reporting limit.

25

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064
Lab Sample ID: 9802179-8

Sample Matrix: Water

Sample ID

S98-0061

Date Collected: 02/24/98

Prep Date: 02/27/98

Date Analyzed: 03/05/98

Hardness = <2.5 mg/L CaCO₃

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	ND	1
Magnesium	ND	1
Potassium	ND	1
Silicon	ND	0.05
Sodium	ND	1

ND = Not detected at or above the reporting limit.

DF

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064
Lab Sample ID: 9802179-9

Sample ID

S98-0062

Sample Matrix: Water

Date Collected: 02/24/98

Prep Date: 02/27/98

Date Analyzed: 03/05/98

Hardness = 190 mg/L CaCO₃

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	51	1
Magnesium	14	1
Potassium	4	1
Silicon	14	0.05
Sodium	72	1

ND = Not detected at or above the reporting limit.

DP

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064
Lab Sample ID: 9802179-10

Sample ID

S98-0057

Sample Matrix: Water

Date Collected: 02/24/98

Prep Date: 02/27/98

Date Analyzed: 03/05/98

Hardness = 180 mg/L CaCO₃

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	46	1
Magnesium	16	1
Potassium	4	1
Silicon	25	0.05
Sodium	64	1

ND = Not detected at or above the reporting limit.

DF

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064
Lab Sample ID: 9802179-11

Sample Matrix: Water

Sample ID

S98-0063

Date Collected: 02/24/98

Prep Date: 02/27/98

Date Analyzed: 03/05/98

Hardness = 230 mg/L CaCO₃

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	60	1
Magnesium	18	1
Potassium	4	1
Silicon	24	0.05
Sodium	60	1

ND = Not detected at or above the reporting limit.

DP

TOTAL RECOVERABLE METALS MATRIX SPIKE

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Lab Sample ID: 9802179-1

Sample ID

S98-0064

Sample Matrix: Water

Prep Date: 02/27/98

Date Analyzed: 03/05/98

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	% Rec (limits 80-120%)	Flags
Calcium	40	< 1	39	98	
Magnesium	40	< 1	39	98	
Potassium	40	< 1	39	98	
Silicon	0.50	< 0.05	0.52	104	
Sodium	40	< 1	39	98	

Analyte	MSD Conc. mg/L	MSD % Rec (limits 80-120%)	Relative % Difference (limits 0-20%)	Flags
Calcium	39	98	0	
Magnesium	40	100	3	
Potassium	40	100	3	
Silicon	0.52	104	0	
Sodium	40	100	3	



Paragon Analytics, Inc.

Aromatic Volatile Organics Case Narrative

El Paso Natural Gas Co.

S98-0064

Order Number - 9802179

1. This report consists of 11 water samples received by Paragon on 02/25/98.
2. These samples were prepared and analyzed according to SW-846, 3rd Edition procedures. Specifically, the water samples were prepared by heating and purging 5 mls using purge and trap procedures based on Method 5030. The calibration curve was also prepared using the heated purge.
3. The samples were analyzed using a GC with a DB-VRX capillary column and a PID detector according to protocols based on SW-846 Method 8021. All positive results were quantitated using the responses from the initial calibration curve using the internal standard technique. Second column confirmation is performed on all samples with positive results on a DB-624 capillary column.
4. All samples were analyzed within the established holding times.
5. The method blank associated with this project was below the reporting limits for all analytes.
6. All matrix spike and matrix spike duplicate recoveries and RPDs were within acceptance criteria.
7. All blank spike and blank spike duplicate recoveries and RPDs were within the acceptance criteria.
8. All surrogate recoveries were within acceptance criteria.

9. All internal standard recoveries were within acceptance criteria.
10. All initial and continuing calibration criteria were within acceptance criteria.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Mark R. Hayes
Mark R. Hayes
Fuels Chemist

3-4-98
Date

RRB
Reviewer's Initials

3-4-98
Date

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9802179

Client Name: El Paso Natural Gas Co.

Client Project Name: S98-0064

Client Project Number:

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0064	9802179-1		Water	2/24/98	7:30
S98-0065	9802179-2		Water	2/24/98	7:35
S98-0066	9802179-3		Water	2/24/98	7:40
S98-0056	9802179-4		Water	2/24/98	9:30
S98-0058	9802179-5		Water	2/24/98	12:35
S98-0059	9802179-6		Water	2/24/98	12:35
S98-0060	9802179-7		Water	2/24/98	14:50
S98-0061	9802179-8		Water	2/24/98	15:25
S98-0062	9802179-9		Water	2/24/98	15:40
S98-0057	9802179-10		Water	2/24/98	10:50
S98-0063	9802179-11		Water	2/24/98	17:00

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064

Reagent Blank

Lab Sample ID: WRB1 02/26/98

Date Collected: N/A
Date Extracted: 2/26/98
Date Analyzed: 2/26/98

Sample Matrix: Water

Sample Volume: 5 mL
Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	101	88 - 119

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

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064

S98-0064

Lab Sample ID: 9802179-1

Date Collected: 2/24/98

Date Extracted: 2/26/98

Date Analyzed: 2/26/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	0.93	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	1.3	1.0
O-Xylene	0.94	0.50
Total Xylenes	2.3	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	101	88 - 119

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

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064

S98-0065

Lab Sample ID: 9802179-2

Date Collected: 2/24/98

Date Extracted: 2/26/98

Date Analyzed: 2/26/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	1.1	0.50
Ethylbenzene	0.74	0.50
M,P-Xylene	1.1	1.0
O-Xylene	ND	0.50
Total Xylenes	1.1	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	100	88 - 119

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

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064

S98-0066

Lab Sample ID: 9802179-3

Date Collected: 2/24/98

Date Extracted: 2/26/98

Date Analyzed: 2/26/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	100	88 - 119

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

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064

S98-0056

Lab Sample ID: 9802179-4

Date Collected: 2/24/98

Date Extracted: 2/26/98

Date Analyzed: 2/26/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	0.58	0.50
Total Xylenes	0.58 J	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	100	88 - 119

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

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064

S98-0058

Lab Sample ID: 9802179-5

Date Collected: 2/24/98

Date Extracted: 2/26/98

Date Analyzed: 2/26/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	7.3	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	100	88 - 119

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

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064

S98-0059

Lab Sample ID: 9802179-6

Date Collected: 2/24/98

Date Extracted: 2/26/98

Date Analyzed: 2/26/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	6.7	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	100	88 - 119

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

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

S98-0060

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064

Lab Sample ID: 9802179-7

Date Collected: 2/24/98
Date Extracted: 2/26/98
Date Analyzed: 2/26/98

Sample Matrix: Water

Sample Volume: 5 mL
Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	98	88 - 119

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

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064

S98-0061

Lab Sample ID: 9802179-8

Date Collected: 2/24/98

Date Extracted: 2/26/98

Date Analyzed: 2/26/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	100	88 - 119

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

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064

S98-0062

Lab Sample ID: 9802179-9

Date Collected: 2/24/98

Date Extracted: 2/26/98

Date Analyzed: 2/27/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	101	88 - 119

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

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064

S98-0057

Lab Sample ID: 9802179-10

Date Collected: 2/24/98

Date Extracted: 2/26/98

Date Analyzed: 2/27/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	100	88 - 119

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

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064

S98-0063

Lab Sample ID: 9802179-11

Date Collected: 2/24/98

Date Extracted: 2/26/98

Date Analyzed: 2/27/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	100	88 - 119

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

AROMATIC VOLATILE ORGANICS BLANK SPIKE

Method 8021

Sample ID

Blank Spike

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064

Date Extracted: 2/26/98

Date Analyzed: 2/26/98

Lab Sample ID: WBS1 02/26/98

Sample Matrix: Water

Sample Volume: 5 mL

Analyte	Spike Added (ug/L)	BS Concentration (ug/L)	BS Percent Recovery	QC Limits % Rec
Benzene	100	96.7	97	85 - 115
Toluene	100	98.8	99	85 - 115
Ethylbenzene	100	101	101	85 - 115
M,P-Xylene	200	207	103	85 - 115
O-Xylene	100	99.6	100	85 - 115
Total Xylenes	300	306	102	85 - 115

Analyte	Spike Added (ug/L)	BSD Concentration (ug/L)	BSD Percent Recovery	RPD	QC Limits RPD
Benzene	100	94.7	95	2	20
Toluene	100	97.2	97	2	20
Ethylbenzene	100	98.6	99	3	20
M,P-Xylene	200	201	101	3	20
O-Xylene	100	97.1	97	3	20
Total Xylenes	300	298	99	3	20

SURROGATE RECOVERY BS/BSD

Analyte	% Recovery BS	% Recovery BSD	% Rec Limits
2,3,4-Trifluorotoluene	101	99	88 - 119

D = Detected

AROMATIC VOLATILE ORGANICS MATRIX SPIKE

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064

S98-0063

Lab Sample ID: 9802179-11MS

Date Collected: 2/24/98

Date Extracted: 2/26/98

Date Analyzed: 2/27/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Spike Added (ug/L)	Sample Concentration (ug/L)	MS Concentration (ug/L)	MS Percent Recovery	QC Limits % Rec
Benzene	100	ND	97.5	98	85 - 115
Toluene	100	ND	99.5	99	85 - 115
Ethylbenzene	100	ND	101	101	85 - 115
M,P-Xylene	200	ND	205	103	85 - 115
O-Xylene	100	ND	98.4	98	85 - 115
Total Xylenes	300	ND	304	101	85 - 115

Analyte	Spike Added (ug/L)	MSD Concentration (ug/L)	MSD Percent Recovery	RPD	QC Limits RPD
Benzene	100	100	100	3	20
Toluene	100	101	101	1	20
Ethylbenzene	100	103	103	2	20
M,P-Xylene	200	209	104	2	20
O-Xylene	100	101	101	2	20
Total Xylenes	300	309	103	2	20

SURROGATE RECOVERY MS/MSD

Analyte	% Recovery MS	% Recovery MSD	% Rec Limits
2,3,4-Trifluorotoluene	99	101	88 - 119

ND = Not Detected

Paragon Analytics, Inc.



SPECIFIC CONDUCTANCE CASE NARRATIVE

El Paso Natural Gas Co.

S98-0064

Order Number - 9802179

1. This report consists of eleven water samples.
2. The samples were received intact at a temperature of 6° C. on February 25, 1998.
3. The samples were prepared for analysis based on SW-846 Method 9050.
4. All standards and solutions are NIST traceable and were used within their recommended shelf life.

All in house quality control procedures were followed, as described below.

5. General quality control procedures.
 - All initial and continuing calibration verifications associated with this batch were within acceptance criteria for the requested analyte. This indicates a valid calibration and stable instrument conditions.
6. PAI sample ID 9802179-1 was used as the matrix QC sample for this batch.
 - A duplicate was prepared and analyzed with this batch, all acceptance criteria were met.

The data contained in the following report have been reviewed and approved by the personnel listed below:



Krista Mobley
Krista Mobley
Inorganic Technician

3-5-98
Date

SW
Reviewer's Initials

3/5/98
Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9802179

Client Name: El Paso Natural Gas Co.

Client Project Name: S98-0064

Client Project Number:

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0064	9802179-1		Water	2/24/98	7:30
S98-0065	9802179-2		Water	2/24/98	7:35
S98-0066	9802179-3		Water	2/24/98	7:40
S98-0056	9802179-4		Water	2/24/98	9:30
S98-0058	9802179-5		Water	2/24/98	12:35
S98-0059	9802179-6		Water	2/24/98	12:35
S98-0060	9802179-7		Water	2/24/98	14:50
S98-0061	9802179-8		Water	2/24/98	15:25
S98-0062	9802179-9		Water	2/24/98	15:40
S98-0057	9802179-10		Water	2/24/98	10:50
S98-0063	9802179-11		Water	2/24/98	17:00

Specific Conductance in Water

Method SW9050

Sample Results

Page 1 of 1

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064

Work Order Number: 9802179

Reporting Basis: As Received

Printed on: Friday, March 06, 1998

Final Volume: 50 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0064	9802179-1	2/24/98	3/2/98	3/2/98	N/A	1	2	umhos/cm			50 ML
S98-0065	9802179-2	2/24/98	3/2/98	3/2/98	N/A	1	746	umhos/cm			50 ML
S98-0066	9802179-3	2/24/98	3/2/98	3/2/98	N/A	1	3	umhos/cm			50 ML
S98-0056	9802179-4	2/24/98	3/2/98	3/2/98	N/A	1	755	umhos/cm			50 ML
S98-0058	9802179-5	2/24/98	3/2/98	3/2/98	N/A	1	2050	umhos/cm			50 ML
S98-0059	9802179-6	2/24/98	3/2/98	3/2/98	N/A	1	2090	umhos/cm			50 ML
S98-0060	9802179-7	2/24/98	3/2/98	3/2/98	N/A	1	727	umhos/cm			50 ML
S98-0061	9802179-8	2/24/98	3/2/98	3/2/98	N/A	1	1	umhos/cm			50 ML
S98-0062	9802179-9	2/24/98	3/2/98	3/2/98	N/A	1	738	umhos/cm			50 ML
S98-0057	9802179-10	2/24/98	3/2/98	3/2/98	N/A	1	634	umhos/cm			50 ML
S98-0063	9802179-11	2/24/98	3/2/98	3/2/98	N/A	1	802	umhos/cm			50 ML

Comments:

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

Specific Conductance in Water

Method SW9050

Duplicate Sample Results

Page 1 of 1

Lab Name: Paragon Analytics, Inc.

ClientName: El Paso Natural Gas Co.

Client Project ID: S98-0064

Work Order Number: 9802179

Reporting Basis: As Received

Sample Aliquot: 50 ML

Final Volume: 50ML

Matrix: Water

Reported on: Friday, March 06, 1998

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
S98-0064	9802179-1	3/2/98	3/2/98	1	2	umhos/cm	2			0	

Comments:

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

Paragon Analytics, Inc.



PH ANALYSIS CASE NARRATIVE

El Paso Natural Gas Co.

S98-0064

Order Number - 9802179

1. This report consists of eleven water samples.
 2. The samples were received intact at a temperature of 6° C. on February 25, 1998.
 3. The samples were prepared for analysis based on SW-846, 3rd Edition procedures. Specifically, the water samples were analyzed following Method 9040.
 4. All standards and solutions were used within their recommended shelf life.
- All in house quality control procedures were followed, as described below.
5. General quality control procedures.
 - All initial and continuing calibration verifications associated with this batch were within acceptance criteria for the requested analyte. This indicates a valid calibration and stable instrument conditions.
 6. PAI sample ID 9802211-1 was used as the matrix QC sample for this batch.
 - A duplicate was prepared and analyzed with this batch. All acceptance criteria were met.

The data contained in the following report have been reviewed and approved by the personnel listed below:



Krista Mobley
Krista Mobley
Inorganic Technician

3-4-98
Date

SW
Reviewer's Initials

3/10/98
Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9802179

Client Name: El Paso Natural Gas Co.

Client Project Name: S98-0064

Client Project Number:

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0064	9802179-1		Water	2/24/98	7:30
S98-0065	9802179-2		Water	2/24/98	7:35
S98-0066	9802179-3		Water	2/24/98	7:40
S98-0056	9802179-4		Water	2/24/98	9:30
S98-0058	9802179-5		Water	2/24/98	12:35
S98-0059	9802179-6		Water	2/24/98	12:35
S98-0060	9802179-7		Water	2/24/98	14:50
S98-0061	9802179-8		Water	2/24/98	15:25
S98-0062	9802179-9		Water	2/24/98	15:40
S98-0057	9802179-10		Water	2/24/98	10:50
S98-0063	9802179-11		Water	2/24/98	17:00

pH in Water

Method SW9040

Sample Results

Page 1 of 1

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064

Work Order Number: 9802179

Reporting Basis: As Received

Printed on: Wednesday, March 04, 1998

Final Volume: 20 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0064	9802179-1	2/24/98	3/2/98	3/2/98	N/A	1	5.8	PH			20 ML
S98-0065	9802179-2	2/24/98	3/2/98	3/2/98	N/A	1	8.2	PH			20 ML
S98-0066	9802179-3	2/24/98	3/2/98	3/2/98	N/A	1	5.7	PH			20 ML
S98-0056	9802179-4	2/24/98	3/2/98	3/2/98	N/A	1	8.2	PH			20 ML
S98-0058	9802179-5	2/24/98	3/2/98	3/2/98	N/A	1	7.9	PH			20 ML
S98-0059	9802179-6	2/24/98	3/2/98	3/2/98	N/A	1	7.9	PH			20 ML
S98-0060	9802179-7	2/24/98	3/2/98	3/2/98	N/A	1	8.4	PH			20 ML
S98-0061	9802179-8	2/24/98	3/2/98	3/2/98	N/A	1	6	PH			20 ML
S98-0062	9802179-9	2/24/98	3/2/98	3/2/98	N/A	1	8.2	PH			20 ML
S98-0057	9802179-10	2/24/98	3/2/98	3/2/98	N/A	1	8.1	PH			20 ML
S98-0063	9802179-11	2/24/98	3/2/98	3/2/98	N/A	1	8.1	PH			20 ML

Comments:

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

pH in Water
Method SW9040
Duplicate Sample Results

Page 1 of 1

Lab Name: Paragon Analytics, Inc.
ClientName: El Paso Natural Gas Co.
Client Project ID: S98-0064
Work Order Number: 9802179
Reporting Basis: As Received

Reported on: Wednesday, March 04, 1998

Sample Aliquot: 20 ML
Final Volume: 20ML
Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
SHARED QC	9802211-1	3/2/98	3/2/98	1	8.3	PH	8.3			0	

Comments:

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



Paragon Analytics, Inc.

INORGANICS CASE NARRATIVE

El Paso Natural Gas Co.

S98-0064

Order Number - 9802179

1. This report consists of data for 11 water samples analyzed for total alkalinity, bromide, chloride, fluoride, nitrate/nitrite, sulfate, and total dissolved solids (TDS).
2. The samples were received cool and intact on 02/25/98.
3. The samples had been correctly preserved for the requested analyses.
4. The samples were analyzed using procedures based on the following methods from the USEPA:

<u>Analyte</u>	<u>Method</u>
Total Alkalinity	310.1
Bromide	300.0
Chloride	300.0
Fluoride	300.0
Nitrate/Nitrite	300.0
Sulfate	300.0
Total Dissolved Solids	160.1

5. All standards and reagents were used within their recommended shelf life.
6. The samples were prepared and analyzed within the established hold times.
7. Sample results which are below the reporting limit are reported as "ND" on the enclosed report.



All in house quality control procedures were followed, as described below.

8. General quality control procedures.

- The method blank results were below the reporting limits for all analyses.
- The LCS results were within acceptance limits for all analyses.
- The MS and MSD results were within acceptance limits for all analyses
- The matrix duplicate results were within acceptance limits for total alkalinity and total dissolved solids.

The data contained in the following report have been reviewed and approved by the personnel listed below:

Jm
Reporter's Initials

3-12-98
Date

Bs
Reviewer's Initials

3-12-98
Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Alkalinity as Calcium Carbonate

Method EPA310.1

Method Blank

Page 1 of 1

Lab Name: Paragon Analytics, Inc.

ClientName: El Paso Natural Gas Co.

Client Project ID: S98-0064

Work Order Number: 9802179

Reporting Basis: N/A

Reported on: Tuesday, March 03, 1998

Sample Aliquot: 100 ML

Final Volume: 100 ML

Matrix: Water

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
AK980226-1MB	2/26/98	2/26/98	2/26/98	N/A	1	5	MG/L	5	ND

Comments:

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

Alkalinity as Calcium Carbonate

Method EPA310.1

Sample Results

Page 1 of 1

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064

Work Order Number: 9802179

Reporting Basis: As Received

Printed on: Tuesday, March 03, 1998

Final Volume: 100 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0064	9802179-1	2/24/98	2/26/98	2/26/98	N/A	1	5	MG/L	5	ND	100 ML
S98-0065	9802179-2	2/24/98	2/26/98	2/26/98	N/A	1	161.8	MG/L	5		100 ML
S98-0066	9802179-3	2/24/98	2/26/98	2/26/98	N/A	1	5	MG/L	5	ND	100 ML
S98-0056	9802179-4	2/24/98	2/26/98	2/26/98	N/A	1	180	MG/L	10		50 ML
S98-0058	9802179-5	2/24/98	2/26/98	2/26/98	N/A	1	160	MG/L	10		50 ML
S98-0059	9802179-6	2/24/98	2/26/98	2/26/98	N/A	1	150	MG/L	10		50 ML
S98-0060	9802179-7	2/24/98	2/26/98	2/26/98	N/A	1	170	MG/L	10		50 ML
S98-0061	9802179-8	2/24/98	2/26/98	2/26/98	N/A	1	5	MG/L	5	ND	100 ML
S98-0062	9802179-9	2/24/98	2/26/98	2/26/98	N/A	1	160	MG/L	10		50 ML
S98-0057	9802179-10	2/24/98	2/26/98	2/26/98	N/A	1	200	MG/L	10		50 ML
S98-0063	9802179-11	2/24/98	2/26/98	2/26/98	N/A	1	160	MG/L	10		50 ML

Comments:

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

Alkalinity as Calcium Carbonate

Method EPA310.1

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9802179

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0064

Page 1 of 1

Reported on: Tuesday, March 03, 1998

BS ID: AK980226-1LCS

Sample Matrix: Water

Date Collected: 26-Feb-98

Sample Aliquot: 100 ML

% Moisture: N/A

Date Extracted: 26-Feb-98

Final Volume: 100 ML

Report Basis: AS RECEIVED

Date Analyzed: 26-Feb-98

Dilution: 1

Prep Batch: AK980226-1-1

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
11-43-8	TOTAL ALKALINITY	100	99	MG/L	5		99	85 - 115

Alkalinity as Calcium Carbonate

Method EPA310.1

Duplicate Sample Results

Page 1 of 1

Lab Name: Paragon Analytics, Inc.

ClientName: El Paso Natural Gas Co.

Client Project ID: S98-0064

Work Order Number: 9802179

Reporting Basis: As Received

Reported on: Tuesday, March 03, 1998

Sample Aliquot: 50 ML

Final Volume: 50ML

Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
S98-0065	9802179-2	2/26/98	2/26/98	1	146.4	MG/L	161.8	10		10	15

Comments:

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

BROMIDE
Method EPA300.0
Method Blank

Page 1 of 1

Lab Name: Paragon Analytics, Inc.
ClientName: El Paso Natural Gas Co.
Client Project ID: S98-0064
Work Order Number: 9802179
Reporting Basis: N/A

Reported on: Thursday, March 12, 1998

Sample Aliquot: 5 ML
Final Volume: 5 ML
Matrix: Water

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
BR980225-6MB	2/25/98	2/25/98	2/25/98	N/A	1	0.2	MG/L	0.2	ND

Comments:

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

BROMIDE
Method EPA300.0
Sample Results

Page 1 of 1

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064
Work Order Number: 9802179
Reporting Basis: As Received

Printed on: Thursday, March 12, 1998

Final Volume: 5 ML
Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0064	9802179-1	2/24/98	2/25/98	2/25/98	N/A	1	0.2	MG/L	0.2	ND	5 ML
S98-0065	9802179-2	2/24/98	2/25/98	2/25/98	N/A	1	0.7	MG/L	0.2		5 ML
S98-0066	9802179-3	2/24/98	2/25/98	2/25/98	N/A	1	0.2	MG/L	0.2	ND	5 ML
S98-0056	9802179-4	2/24/98	2/25/98	2/25/98	N/A	1	0.5	MG/L	0.2		5 ML
S98-0058	9802179-5	2/24/98	2/25/98	2/25/98	N/A	1	0.8	MG/L	0.2		5 ML
S98-0059	9802179-6	2/24/98	2/25/98	2/25/98	N/A	1	0.9	MG/L	0.2		5 ML
S98-0060	9802179-7	2/24/98	2/25/98	2/25/98	N/A	1	0.5	MG/L	0.2		5 ML
S98-0061	9802179-8	2/24/98	2/25/98	2/25/98	N/A	1	0.2	MG/L	0.2	ND	5 ML
S98-0062	9802179-9	2/24/98	2/25/98	2/25/98	N/A	1	0.7	MG/L	0.2		5 ML
S98-0057	9802179-10	2/24/98	2/25/98	2/25/98	N/A	1	0.3	MG/L	0.2		5 ML
S98-0063	9802179-11	2/24/98	2/25/98	2/25/98	N/A	1	0.7	MG/L	0.2		5 ML

Comments:

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

BROMIDE

Method EPA300.0

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9802179

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0064

Page 1 of 1

Reported on: Thursday, March 12, 1998

BS ID: BR980225-6LCS

Sample Matrix: Water

Date Collected: 25-Feb-98

Sample Allquot: 5 ML

% Moisture: N/A

Date Extracted: 25-Feb-98

Final Volume: 5 ML

Report Basis: AS RECEIVED

Date Analyzed: 25-Feb-98

Dilution: 1

Prep Batch: BR980225-6-1

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
24959-67-9	BROMIDE	4	4.04	MG/L	0.2		101	85 - 115

BROMIDE

Method EPA300.0

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9802179

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0064

Page 1 of 1

Reported on: Thursday, March 12, 1998

MS Lab ID: 9802179-2MS

Field ID: S98-0065

Sample Matrix: Water

% Moisture:

Report Basis: As Received

Date Collected: 24-Feb-98

Date Extracted: 25-Feb-98

Date Analyzed: 25-Feb-98

Prep Batch: BR980225-6

Dilution:

1

Spike Added	Sample Result	Units	Reporting Limit	MS Result	MS % Rec.	MS Qualifier	Control Limits	Initial Vol/Wt	Final Vol/Wt
5	0.7	MG/L	0.2	5.5	96		85 - 115%	5	5

MSD Lab ID: 9802179-2MSD

Spike Added	MSD Result	Units	Reporting Limit	MSD % Rec.	Result Qualifier	RPD	RPD Limits	Initial Vol/Wt	Final Vol/Wt
5	5.6	MG/L	0.2	98		1.7	15	5	5

CHLORIDE
Method EPA300.0
Method Blank

Page 1 of 1

Lab Name: Paragon Analytics, Inc.
ClientName: El Paso Natural Gas Co.
Client Project ID: S98-0064
Work Order Number: 9802179
Reporting Basis: N/A

Reported on: Monday, March 09, 1998

Sample Aliquot: 5 ML
Final Volume: 5 ML
Matrix: Water

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
CL980226-1MB	2/26/98	2/26/98	2/26/98	N/A	1	0.2	MG/L	0.2	ND

Comments:

-
1. ND or U = Not Detected at or above the client requested detection limit.

CHLORIDE
Method EPA300.0
Sample Results

Page 1 of 1

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064
Work Order Number: 9802179
Reporting Basis: As Received

Printed on: Monday, March 09, 1998

Final Volume: 5 ML
Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0064	9802179-1	2/24/98	2/26/98	2/26/98	N/A	1	0.2	MG/L	0.2	ND	5 ML
S98-0065	9802179-2	2/24/98	2/26/98	2/26/98	N/A	20	99	MG/L	4		5 ML
S98-0066	9802179-3	2/24/98	2/26/98	2/26/98	N/A	1	0.2	MG/L	0.2	ND	5 ML
S98-0056	9802179-4	2/24/98	2/26/98	2/26/98	N/A	50	40	MG/L	10		5 ML
S98-0058	9802179-5	2/24/98	2/26/98	2/26/98	N/A	100	470	MG/L	20		5 ML
S98-0059	9802179-6	2/24/98	2/26/98	2/26/98	N/A	100	490	MG/L	20		5 ML
S98-0060	9802179-7	2/24/98	2/26/98	2/26/98	N/A	50	59	MG/L	10		5 ML
S98-0061	9802179-8	2/24/98	2/26/98	2/26/98	N/A	1	0.2	MG/L	0.2	ND	5 ML
S98-0062	9802179-9	2/24/98	2/26/98	2/26/98	N/A	50	98	MG/L	10		5 ML
S98-0057	9802179-10	2/24/98	2/26/98	2/26/98	N/A	50	38	MG/L	10		5 ML
S98-0063	9802179-11	2/24/98	2/26/98	2/26/98	N/A	50	120	MG/L	10		5 ML

Comments:

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

CHLORIDE
Method EPA300.0
Blank Spike

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9802179

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0064

Page 1 of 1

Reported on: Monday, March 09, 1998

BS ID: CL980226-1LCS

Sample Matrix: Water

Date Collected: 26-Feb-98

Sample Aliquot: 5 ML

% Moisture: N/A

Date Extracted: 26-Feb-98

Final Volume: 5 ML

Report Basis: AS RECEIVED

Date Analyzed: 26-Feb-98

Dilution: 1

Prep Batch: CL980226-1-1

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
16887-00-6	CHLORIDE	4	4.1	MG/L	0.2		102	75 - 115

CHLORIDE

Method EPA300.0

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9802179

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064

Page 1 of 1

Reported on: Monday, March 09, 1998

MS Lab ID: 9802185-1MS

Field ID: SHARED QC

Sample Matrix: Water

% Moisture:

Report Basis: As Received

Date Collected: 23-Feb-98

Date Extracted: 26-Feb-98

Date Analyzed: 26-Feb-98

Prep Batch: CL980226-1

Dilution: 1

Spike Added	Sample Result	Units	Reporting Limit	MS Result	MS % Rec.	MS Qualifier	Control Limits	Initial Vol/Wt	Final Vol/Wt
5	1.5	MG/L	0.2	6.2	94		75 - 115%	5	5

MSD Lab ID: 9802185-1MSD

Spike Added	MSD Result	Units	Reporting Limit	MSD % Rec.	Result Qualifier	RPD	RPD Limits	Initial Vol/Wt	Final Vol/Wt
5	6.3	MG/L	0.2	95		1.1	20	5	5

FLUORIDE
Method EPA300.0
Method Blank

Page 1 of 1

Lab Name: Paragon Analytics, Inc.
ClientName: El Paso Natural Gas Co.
Client Project ID: S98-0064
Work Order Number: 9802179
Reporting Basis: N/A

Reported on: Monday, March 09, 1998

Sample Aliquot: 5 ML
Final Volume: 5 ML
Matrix: Water

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
FL980225-2MB	2/25/98	2/25/98	2/25/98	N/A	1	0.1	MG/L	0.1	ND

Comments:

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

FLUORIDE
Method EPA300.0
Sample Results

Page 1 of 1

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0064
Work Order Number: 9802179
Reporting Basis: As Received

Printed on: Monday, March 09, 1998

Final Volume: 5 ML
Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0064	9802179-1	2/24/98	2/25/98	2/25/98	N/A	1	0.1	MG/L	0.1	ND	5 ML
S98-0065	9802179-2	2/24/98	2/25/98	2/25/98	N/A	1	1.9	MG/L	0.1		5 ML
S98-0066	9802179-3	2/24/98	2/25/98	2/25/98	N/A	1	0.1	MG/L	0.1	ND	5 ML
S98-0056	9802179-4	2/24/98	2/25/98	2/25/98	N/A	1	2	MG/L	0.1		5 ML
S98-0058	9802179-5	2/24/98	2/25/98	2/25/98	N/A	1	2.2	MG/L	0.1		5 ML
S98-0059	9802179-6	2/24/98	2/25/98	2/25/98	N/A	1	2.1	MG/L	0.1		5 ML
S98-0060	9802179-7	2/24/98	2/25/98	2/25/98	N/A	1	1.6	MG/L	0.1		5 ML
S98-0061	9802179-8	2/24/98	2/25/98	2/25/98	N/A	1	0.1	MG/L	0.1	ND	5 ML
S98-0062	9802179-9	2/24/98	2/25/98	2/25/98	N/A	1	2	MG/L	0.1		5 ML
S98-0057	9802179-10	2/24/98	2/25/98	2/25/98	N/A	1	1.1	MG/L	0.1		5 ML
S98-0063	9802179-11	2/24/98	2/25/98	2/25/98	N/A	1	1.3	MG/L	0.1		5 ML

Comments:

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

FLUORIDE
Method EPA300.0
Blank Spike

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9802179

Page 1 of 1

Client Name: El Paso Natural Gas Co.
ClientProject ID: S98-0064

Reported on: Thursday, March 12, 1998

BS ID: FL980225-2LCS

Sample Matrix: Water

Date Collected: 25-Feb-98

Sample Aliquot: 5 ML

% Moisture: N/A

Date Extracted: 25-Feb-98

Final Volume: 5 ML

Report Basis: AS RECEIVED

Date Analyzed: 25-Feb-98

Dilution: 1

Prep Batch: fl980225-2-1

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
16984-48-8	FLUORIDE	2	2.06	MGL	0.1		103	80 - 120

FLUORIDE

Method EPA300.0

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9802179

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0064

Page 1 of 1

Reported on: Thursday, March 12, 1998

MS Lab ID: 9802179-2MS

Field ID: S98-0065

Sample Matrix: Water

% Moisture:

Report Basis: As Received

Date Collected: 24-Feb-98

Date Extracted: 25-Feb-98

Date Analyzed: 25-Feb-98

Prep Batch: 11980225-2

Dilution:

1

Spike Added	Sample Result	Units	Reporting Limit	MS Result	MS % Rec.	MS Qualifier	Control Limits	Initial Vol/Wt	Final Vol/Wt
2	1.9	MG/L	0.1	3.93	100		80 - 120%	5	5

MSD Lab ID: 9802179-2MSD

Spike Added	MSD Result	Units	Reporting Limit	MSD % Rec.	Result Qualifier	RPD	RPD Limits	Initial Vol/Wt	Final Vol/Wt
2	3.86	MG/L	0.1	96		1.9	20	5	5

NITRATE/NITRITE

Method EPA300.0

Method Blank

Page 1 of 1

Lab Name: Paragon Analytics, Inc.

ClientName: El Paso Natural Gas Co.

Client Project ID: S98-0064

Work Order Number: 9802179

Reporting Basis: N/A

Reported on: Monday, March 09, 1998

Sample Aliquot: 5 ML

Final Volume: 5 ML

Matrix: Water

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
NN980225-1MB	2/25/98	2/25/98	2/25/98	N/A	1	0.2	MG/L	0.2	ND

Comments:

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

NITRATE/NITRITE

Method EPA300.0

Sample Results

Page 1 of 1

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064

Work Order Number: 9802179

Reporting Basis: As Received

Printed on: Monday, March 09, 1998

Final Volume: 5 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0064	9802179-1	2/24/98	2/25/98	2/25/98	N/A	1	0.2	MG/L	0.2	ND	5 ML
S98-0065	9802179-2	2/24/98	2/25/98	2/25/98	N/A	1	0.2	MG/L	0.2	ND	5 ML
S98-0066	9802179-3	2/24/98	2/25/98	2/25/98	N/A	1	0.2	MG/L	0.2	ND	5 ML
S98-0056	9802179-4	2/24/98	2/25/98	2/25/98	N/A	1	1.8	MG/L	0.2		5 ML
S98-0058	9802179-5	2/24/98	2/25/98	2/25/98	N/A	1	0.4	MG/L	0.2		5 ML
S98-0059	9802179-6	2/24/98	2/25/98	2/25/98	N/A	1	0.5	MG/L	0.2		5 ML
S98-0060	9802179-7	2/24/98	2/25/98	2/25/98	N/A	1	1.2	MG/L	0.2		5 ML
S98-0061	9802179-8	2/24/98	2/25/98	2/25/98	N/A	1	0.2	MG/L	0.2	ND	5 ML
S98-0062	9802179-9	2/24/98	2/25/98	2/25/98	N/A	1	0.2	MG/L	0.2	ND	5 ML
S98-0057	9802179-10	2/24/98	2/25/98	2/25/98	N/A	1	1.2	MG/L	0.2		5 ML
S98-0063	9802179-11	2/24/98	2/25/98	2/25/98	N/A	1	0.9	MG/L	0.2		5 ML

Comments:

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

NITRATE/NITRITE

Method EPA300.0

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9802179

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0064

Page 1 of 1

Reported on: Thursday, March 12, 1998

BS ID: NN980225-1LCS

Sample Matrix: Water

Date Collected: 25-Feb-98

Sample Aliquot: 5 ML

% Moisture: N/A

Date Extracted: 25-Feb-98

Final Volume: 5 ML

Report Basis: AS RECEIVED

Date Analyzed: 25-Feb-98

Dilution: 1

Prep Batch: NN980225-1-1

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
1-005	NITRATE/NITRITE	4	4.01	MG/L	0.2		100	85 - 115

NITRATE/NITRITE

Method EPA300.0

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9802179

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0064

Page 1 of 1

Reported on: Thursday, March 12, 1998

MS Lab ID: 9802179-2MS

Field ID: S98-0065

Sample Matrix: Water

% Moisture:

Report Basis: As Received

Date Collected: 24-Feb-98

Date Extracted: 25-Feb-98

Date Analyzed: 25-Feb-98

Prep Batch: NN980225-1

Dilution: 1

Spike Added	Sample Result	Units	Reporting Limit	MS Result	MS % Rec.	MS Qualifier	Control Limits	Initial Vol/Wt	Final Vol/Wt
5	0.2	MG/L	0.2	4.9	99		85 - 115%	5	5

MSD Lab ID: 9802179-2MSD

Spike Added	MSD Result	Units	Reporting Limit	MSD % Rec.	Result Qualifier	RPD	RPD Limits	Initial Vol/Wt	Final Vol/Wt
5	4.9	MG/L	0.2	99		0.1	15	5	5

SULFATE
Method EPA300.0
Method Blank

Page 1 of 1

Lab Name: Paragon Analytics, Inc.
ClientName: El Paso Natural Gas Co.
Client Project ID: S98-0064
Work Order Number: 9802179
Reporting Basis: N/A

Reported on: Monday, March 09, 1998

Sample Aliquot: 5 ML
Final Volume: 5 ML
Matrix: Water

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
SO980226-1MB	2/26/98	2/26/98	2/26/98	N/A	1	1	mg/l	1	ND

Comments:

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

SULFATE

Method EPA300.0

Sample Results

Page 1 of 1

Lab Name: Paragon Analytics, Inc.
 Client Name: El Paso Natural Gas Co.
 Client Project ID: S98-0064
 Work Order Number: 9802179
 Reporting Basis: As Received

Printed on: Monday, March 09, 1998

Final Volume: 5 ML
 Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0064	9802179-1	2/24/98	2/26/98	2/26/98	N/A	1	1	mg/l	1	ND	5 ML
S98-0065	9802179-2	2/24/98	2/26/98	2/26/98	N/A	20	62.2	mg/l	20		5 ML
S98-0066	9802179-3	2/24/98	2/26/98	2/26/98	N/A	1	1	mg/l	1	ND	5 ML
S98-0056	9802179-4	2/24/98	2/26/98	2/26/98	N/A	50	130	mg/l	50		5 ML
S98-0058	9802179-5	2/24/98	2/26/98	2/26/98	N/A	100	150	mg/l	100		5 ML
S98-0059	9802179-6	2/24/98	2/26/98	2/26/98	N/A	100	160	mg/l	100		5 ML
S98-0060	9802179-7	2/24/98	2/26/98	2/26/98	N/A	50	100	mg/l	50		5 ML
S98-0061	9802179-8	2/24/98	2/26/98	2/26/98	N/A	1	1	mg/l	1	ND	5 ML
S98-0062	9802179-9	2/24/98	2/26/98	2/26/98	N/A	50	60	mg/l	50		5 ML
S98-0057	9802179-10	2/24/98	2/26/98	2/26/98	N/A	50	85	mg/l	50		5 ML
S98-0063	9802179-11	2/24/98	2/26/98	2/26/98	N/A	50	68	mg/l	50		5 ML

Comments:

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

SULFATE

Method EPA300.0

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9802179

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064

Page 1 of 1

Reported on: Monday, March 09, 1998

BS ID: SO980226-1LCS

Sample Matrix: Water

Date Collected: 26-Feb-98

Sample Aliquot: 5 ML

% Moisture: N/A

Date Extracted: 26-Feb-98

Final Volume: 5 ML

Report Basis: AS RECEIVED

Date Analyzed: 26-Feb-98

Dilution: 1

Prep Batch: SO980226-1-1

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
14808-79-8	SULFATE	20	20.7	mg/l	1		104	85 - 115

SULFATE

Method EPA300.0

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9802179

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0064

Page 1 of 1

Reported on: Monday, March 09, 1998

MS Lab ID: 9802179-2MS

Field ID: S98-0065

Sample Matrix: Water

% Moisture:

Report Basis: As Received

Date Collected: 24-Feb-98

Date Extracted: 26-Feb-98

Date Analyzed: 26-Feb-98

Prep Batch: SO980226-1

Dilution: 20

Spike Added	Sample Result	Units	Reporting Limit	MS Result	MS % Rec.	MS Qualifier	Control Limits	Initial Vol/Wt	Final Vol/Wt
400	62.2	mg/l	20	477.4	104		85 - 115%	5	5

MSD Lab ID: 9802179-2MSD

Spike Added	MSD Result	Units	Reporting Limit	MSD % Rec.	Result Qualifier	RPD	RPD Limits	Initial Vol/Wt	Final Vol/Wt
400	504.1	mg/l	20	110		5.4	15	5	5

Total Dissolved Solids

Method EPA160.1

Method Blank

Page 1 of 1

Lab Name: Paragon Analytics, Inc.
ClientName: El Paso Natural Gas Co.
Client Project ID: S98-0064
Work Order Number: 9802179
Reporting Basis: N/A

Reported on: Monday, March 09, 1998

Sample Aliquot: 100 ML
Final Volume: 100 ML
Matrix: Water

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
TD980226-1MB	2/26/98	2/26/98	2/26/98	N/A	1	20	MG/L	20	ND

Comments:

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

Total Dissolved Solids

Method EPA160.1

Sample Results

Page 1 of 1

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064

Work Order Number: 9802179

Reporting Basis: As Received

Printed on: Monday, March 09, 1998

Final Volume: 100 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0064	9802179-1	2/24/98	2/26/98	2/26/98	N/A	1	20	MG/L	20	ND	100 ML
S98-0065	9802179-2	2/24/98	2/26/98	2/26/98	N/A	1	432	MG/L	20		100 ML
S98-0066	9802179-3	2/24/98	2/26/98	2/26/98	N/A	1	20	MG/L	20	ND	100 ML
S98-0056	9802179-4	2/24/98	2/26/98	2/26/98	N/A	1	470	MG/L	20		100 ML
S98-0058	9802179-5	2/24/98	2/26/98	2/26/98	N/A	1	1200	MG/L	20		100 ML
S98-0059	9802179-6	2/24/98	2/26/98	2/26/98	N/A	1	1220	MG/L	20		100 ML
S98-0060	9802179-7	2/24/98	2/26/98	2/26/98	N/A	1	450	MG/L	20		100 ML
S98-0061	9802179-8	2/24/98	2/26/98	2/26/98	N/A	1	20	MG/L	20	ND	100 ML
S98-0062	9802179-9	2/24/98	2/26/98	2/26/98	N/A	1	420	MG/L	20		100 ML
S98-0057	9802179-10	2/24/98	2/26/98	2/26/98	N/A	1	410	MG/L	20		100 ML
S98-0063	9802179-11	2/24/98	2/26/98	2/26/98	N/A	1	480	MG/L	20		100 ML

Comments:

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

Total Dissolved Solids

Method EPA160.1

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9802179

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0064

Page 1 of 1

Reported on: Monday, March 09, 1998

BS ID: TD980226-1LCS

Sample Matrix: Water

Date Collected: 26-Feb-98

Sample Aliquot: 100 ML

% Moisture: N/A

Date Extracted: 26-Feb-98

Final Volume: 100 ML

Report Basis: AS RECEIVED Date Analyzed: 26-Feb-98

Dilution: 1

Prep Batch: TD980226-1-1

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
10-33-3	TOTAL DISSOLVED SOLIDS	400	397	MG/L	20		99	85 - 115

Total Dissolved Solids

Method EPA160.1

Duplicate Sample Results

Page 1 of 1

Lab Name: Paragon Analytics, Inc.

ClientName: El Paso Natural Gas Co.

Client Project ID: S98-0064

Work Order Number: 9802179

Reporting Basis: As Received

Sample Aliquot: 100 ML

Final Volume: 100ML

Matrix: Water

Reported on: Monday, March 09, 1998

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
S98-0065	9802179-2	2/26/98	2/26/98	1	432	MG/L	432	20		0	15

Comments:

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

CONDITION OF SAMPLE UPON RECEIPT

CLIENT:

El Paso Natural Gas

SHIPPING CONTAINER #:

Coder

WORKORDER NO.

9806023

INITIALS:

H

DATE:

6/3/98

1.	Does this project require special handling according to NEESA, Level 3, or CLP protocols? If yes, complete a. and b. a. Cooler Temperature _____ b. Lot No's. _____ c. Airbill Number _____		Yes	<u>No</u>
2.	Are custody seals on the cooler intact? If so, how many	<u>N/A</u>	Yes	No
3.	Are custody seals on sample containers intact?	<u>N/A</u>	Yes	No
4.	Is there a Chain of Custody (COC) or other representative documents, letters or shipping memos?		<u>Yes</u>	No
5.	Is the COC complete? Relinquished: Yes <u>X</u> No Requested Analysis: Yes <u>X</u> No	N/A	<u>Yes</u>	No
6.	Is the COC in agreement with the samples received? No. of Samples: Yes <u>X</u> No Sample ID's: Yes <u>X</u> No Matrix: Yes <u>X</u> No No. of Containers: Yes <u>X</u> No		<u>Yes</u>	No
7.	Are the samples requiring chemical preservation preserved correctly?	N/A	<u>Yes</u>	No
8.	Is there enough sample? If so, are they in the proper containers?		<u>Yes</u>	No
9.	Are all samples within holding times for the requested analyses?		<u>Yes</u>	No
10.	Were the sample(s) shipped on ice?	N/A	<u>Yes</u>	No
11.	Were all sample containers received intact? (not broken or leaking, etc.)		<u>Yes</u>	No
12.	Are samples requiring no headspace, headspace free?	N/A	Yes	<u>No</u>
13.	Do the samples require quarantine?		<u>Yes</u>	No
14.	Do samples require Paragon disposal?		<u>Yes</u>	No
15.	Did the client return any unused bottles?		Yes	<u>No</u>

Describe "NO" items (except No's 1, 13, & 14):

X #12 Voids S98-0139, S98-0224
S98-0225 not hd free
6/5/98

Was the client contacted?

Yes _____ No _____

If yes, Date: _____

Name of person contacted: _____

Describe actions taken or client instructions: _____

Group Leader's Signature: _____

Date: _____

Cooler Temperature: 40



SAMPLE KEY

SAMPLE NUMBER: S98-0156 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: EMP #3 PUMP BLANK BEFORE SAMPLING
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 16:35 SAMPLE DATE: 05/11/98

SAMPLE KEY

*SAMPLE NUMBER: S98-0157 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL #ACW 3
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 18:25 SAMPLE DATE: 05/11/98

SAMPLE KEY

SAMPLE NUMBER: S98-0158 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: BAILER BLANK BEFORE SAMPLING
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 18:40 SAMPLE DATE: 05/11/98

SAMPLE KEY

SAMPLE NUMBER: S98-0167 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ACW#2A
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 20:40 SAMPLE DATE: 05/11/98

SAMPLE KEY

SAMPLE NUMBER: S98-0168 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ACW #4
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 07:50 SAMPLE DATE: 05/12/98

SAMPLE KEY

SAMPLE NUMBER: S98-0169 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ENSR #2
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 09:02 SAMPLE DATE: 05/12/98

SAMPLE KEY

SAMPLE NUMBER: S98-0170 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ACW #1
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 10:00 SAMPLE DATE: 05/12/98

SAMPLE KEY

SAMPLE NUMBER: S98-0171 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: FEILD BLANK
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 09:40 SAMPLE DATE: 05/12/98

SAMPLE KEY

SAMPLE NUMBER: S98-0172 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ENSR #1
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 11:30 SAMPLE DATE: 05/12/98

SAMPLE KEY

SAMPLE NUMBER: S98-0173 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ACW #8
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 12:57 SAMPLE DATE: 05/12/98

SAMPLE KEY

SAMPLE NUMBER: S98-0174 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ACW #11
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 14:20 SAMPLE DATE: 05/12/98

SAMPLE KEY

SAMPLE NUMBER: S98-0175 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ENSR #3
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 15:33 SAMPLE DATE: 05/12/98

SAMPLE KEY

SAMPLE NUMBER: S98-0176 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ENSR #3 DUP.
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 15:33 SAMPLE DATE: 05/12/98

SAMPLE KEY

SAMPLE NUMBER: S98-0177 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL PTP #1
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 17:17 SAMPLE DATE: 05/12/98

SAMPLE KEY

SAMPLE NUMBER: S98-0178 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: BAILER BLANK MIDDLE OF SAMPLING
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 17:40 SAMPLE DATE: 05/12/98

SAMPLE KEY

SAMPLE NUMBER: S98-0179 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: PUMP BLANK MIDDLE OF SAMPLING EMP #3
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 17:55 SAMPLE DATE: 05/12/98

SAMPLE KEY

SAMPLE NUMBER: S98-0180 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: PRODUCTION WELL # DOOMS WELL
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 00:00 SAMPLE DATE: 05/13/98

SAMPLE KEY

SAMPLE NUMBER: S98-0181 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ACW #6
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 08:20 SAMPLE DATE: 05/13/98

SAMPLE KEY

SAMPLE NUMBER: S98-0182 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ACW #7
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 09:35 SAMPLE DATE: 05/13/98

SAMPLE KEY

SAMPLE NUMBER: S98-0183 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ACW #5
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 11:17 SAMPLE DATE: 05/13/98

SAMPLE KEY

SAMPLE NUMBER: S98-0184 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ACW #15
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 13:25 SAMPLE DATE: 05/13/98

SAMPLE KEY

SAMPLE NUMBER: S98-0185 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ACW #9
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 15:15 SAMPLE DATE: 05/13/98

SAMPLE KEY

SAMPLE NUMBER: S98-0186 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: PRODUCTION WELL # OXY
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 16:00 SAMPLE DATE: 05/13/98

SAMPLE KEY

SAMPLE NUMBER: S98-0187 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ACW #10
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 08:00 SAMPLE DATE: 05/14/98

SAMPLE KEY

SAMPLE NUMBER: S98-0191 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: BAILER BLANK AFTER SAMPLING
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 13:02 SAMPLE DATE: 05/14/98

SAMPLE KEY

SAMPLE NUMBER: S98-0192 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: PUMP BLANK AFTER EMP #3
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 13:15 SAMPLE DATE: 05/14/98

SAMPLE KEY

SAMPLE NUMBER: S98-0193 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: PRODUCTION WELL #1
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 15:55 SAMPLE DATE: 05/14/98

SAMPLE KEY

SAMPLE NUMBER: S98-0194 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: PRODUCTION WELL #1 DUP.
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 15:55 SAMPLE DATE: 05/14/98

SAMPLE KEY

SAMPLE NUMBER: S98-0188 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ACW #12
S D CONTINUED: RESAMPLE
S D CONTINUED:
SAMPLE TIME: 16:15 SAMPLE DATE: 06/01/98

SAMPLE KEY

SAMPLE NUMBER: S98-0189 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ACW #12 DUP.
S D CONTINUED: RESAMPLE
S D CONTINUED:
SAMPLE TIME: 16:15 SAMPLE DATE: 06/01/98

SAMPLE KEY

SAMPLE NUMBER: S98-0190 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ACW #13
S D CONTINUED: RESAMPLE
S D CONTINUED:
SAMPLE TIME: 18:30 SAMPLE DATE: 06/01/98

SAMPLE KEY

SAMPLE NUMBER: S98-0223 LOCATION: JAL #4
MATRIX: Water
SAMPLE DESCRIPTION: Field Blank
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 15:45 SAMPLE DATE: 06/01/98

SAMPLE KEY

SAMPLE NUMBER: S98-0224 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: EMP #3 pump blank after sampling
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 18:50 SAMPLE DATE: 06/01/98

SAMPLE KEY

SAMPLE NUMBER: S98-0225 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: BAILER BLANK AFTER SAMPLING
S D CONTINUED: RESAMPLE
S D CONTINUED:
SAMPLE TIME: 18:50 SAMPLE DATE: 06/01/98



PARAGON ANALYTICS, INC.

225 Commerce Drive ♦ Fort Collins, CO 80524 ♦ (800) 443-1511 ♦ (970) 490-1511 ♦ FAX (970) 490-1522

June 26, 1998

Mr. Darrell Campbell
El Paso Natural Gas Co.
8645 Railroad Drive
El Paso, TX 79904

RE: Paragon Workorder: 98-05-135
Client Project Name: Not Submitted
Client Project Number: S98-0138

Dear Mr. Campbell:

Seventeen water samples were received from El Paso Natural Gas Co. on May 14, 1998. The samples were scheduled for the following analyses:

Inorganics	pages 1-26	Specific Conductance	Page 1-5
Aromatic Volatile			
Organics	pages 1-24		
Total Recoverable			
Metals	pages 1-13		
pH Analysis	pages 1-5		

Thank you for your confidence in Paragon Analytics, Inc. Should you have any questions, please call.

Sincerely,

Paragon Analytics, Inc.
Adrienne Mackzum
Project Manager

AM/ar
Enclosure: Report



Paragon Analytics, Inc.

INORGANICS CASE NARRATIVE

El Paso Natural Gas Co.

S98-0138

Order Number - 9805135

1. This report consists of data for 17 water samples analyzed for chloride and total dissolved solids (TDS). Also, 6 of the samples were analyzed for alkalinity, bicarbonate, bromide, fluoride, nitrate/nitrite and sulfate.
2. The samples were received intact at a temperature of 13° C on 05/16/98.
3. The samples had been correctly preserved for the requested analyses.
4. The samples were analyzed using procedures based on the following methods from the USEPA:

<u>Analyte</u>	<u>Method</u>
Alkalinity	310.1
Bicarbonate	310.1
Bromide	300.0
Chloride	300.0
Fluoride	300.0
Nitrate/Nitrite	353.3
Sulfate	300.0
Total Dissolved Solids	160.1

5. All standards and solutions were used within their recommended shelf life.
6. The samples were prepared and analyzed within the established hold times for all analyses.

All in house quality control procedures were followed, as described below.

7. General quality control procedures.



- A method blank, a laboratory control sample (LCS), a matrix spike, and matrix spike duplicate were prepared and analyzed for each analysis batch.
- The method blank results were within acceptance limits.
- The LCS results were within acceptance limits for all analyses.
- It was necessary to dilute the sample selected for the MS/MSD in order to bring the native chloride concentration into the analytical range of this analyte on the ion chromatograph. Therefore, accurate quantitation of MS/MSD recoveries for chloride was not possible. The MS/MSD results were within acceptance limits for all other associated analyses.

The data contained in the following report have been reviewed and approved by the personnel listed below:

B
Reporter's Initials

6-22-98
Date

DP
Reviewer's Initials

6/22/98
Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9805135

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0138

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0168	9805135-1		Water	5/12/98	7:50
S98-0169	9805135-2		Water	5/12/98	9:02
S98-0170	9805135-3		Water	5/12/98	10:00
S98-0172	9805135-4		Water	5/12/98	11:30
S98-0173	9805135-5		Water	5/12/98	12:57
S98-0174	9805135-6		Water	5/12/98	14:20
S98-0175	9805135-7		Water	5/12/98	15:33
S98-0176	9805135-8		Water	5/12/98	15:33
S98-0177	9805135-9		Water	5/12/98	17:17
S98-0180	9805135-10		Water	5/12/98	18:30
S98-0156	9805135-11		Water	5/11/98	16:35
S98-0158	9805135-12		Water	5/11/98	18:40
S98-0171	9805135-13		Water	5/12/98	9:40
S98-0178	9805135-14		Water	5/12/98	17:40
S98-0179	9805135-15		Water	5/12/98	17:55
S98-0157	9805135-16		Water	5/11/98	18:52
S98-0167	9805135-17		Water	5/11/98	20:40

TOTAL ALKALINITY As CaCO₃

Method EPA310.1

Sample Results

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0138

Work Order Number: 9805135

Reporting Basis: As Received

Final Volume: 100 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0180	9805135-10	5/12/98	5/19/98	5/19/98	N/A	2	190	MG/L	10		100 ML
S98-0156	9805135-11	5/11/98	5/19/98	5/19/98	N/A	2	110	MG/L	10		100 ML
S98-0158	9805135-12	5/11/98	5/19/98	5/19/98	N/A	1	5	MG/L	5	U	100 ML
S98-0171	9805135-13	5/12/98	5/19/98	5/19/98	N/A	1	5	MG/L	5	U	100 ML
S98-0178	9805135-14	5/12/98	5/19/98	5/19/98	N/A	1	5	MG/L	5	U	100 ML
S98-0179	9805135-15	5/12/98	5/19/98	5/19/98	N/A	2	150	MG/L	10		100 ML

Comments:

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

000004

TOTAL ALKALINITY As CaCO₃

Method EPA310.1

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805135

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0138

Lab ID: AK980519-1MB

Sample Matrix: Water

% Moisture: N/A

Date Collected: N/A

Date Extracted: 19-May-98

Date Analyzed: 19-May-98

Prep Batch: AK980519-1

QCBatchID: AK980519-1-1

Run ID: AK980519-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 ML

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
AK980519-1MB	5/19/98	5/19/98	5/19/98	N/A	1	5	MG/L	5	U

Comments:

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

000005

TOTAL ALKALINITY As CaCO₃

Method EPA310.1

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805135

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0138

Lab ID: AK980519-1LCS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 19-May-98

Date Extracted: 19-May-98

Date Analyzed: 19-May-98

Prep Batch: AK980519-1

QCBatchID: AK980519-1-1

Run ID: AK980519-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 ML

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
11-43-8	TOTAL ALKALINITY As CaCO ₃	100	95.7	MG/L	5		96	85 - 115

TOTAL ALKALINITY As CaCO₃

Method EPA310.1

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805135

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0138

Reporting Basis: As Received

Sample Aliquot: 100 ML

Final Volume: 100ML

Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
SHARED QC	9805110-1	5/19/98	5/19/98	4	776	MG/L	780	20		0	15

Comments:

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

000007

Bicarbonate as Calcium Carbonate

Method EPA310.1M

Sample Results

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0138

Work Order Number: 9805135

Reporting Basis: As Received

Final Volume: 100 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0180	9805135-10	5/12/98	5/19/98	5/19/98	N/A	2	190	MG/L	10		100 ML
S98-0156	9805135-11	5/11/98	5/19/98	5/19/98	N/A	2	110	MG/L	10		100 ML
S98-0158	9805135-12	5/11/98	5/19/98	5/19/98	N/A	1	5	MG/L	5	U	100 ML
S98-0171	9805135-13	5/12/98	5/19/98	5/19/98	N/A	1	5	MG/L	5	U	100 ML
S98-0178	9805135-14	5/12/98	5/19/98	5/19/98	N/A	1	5	MG/L	5	U	100 ML
S98-0179	9805135-15	5/12/98	5/19/98	5/19/98	N/A	2	150	MG/L	10		100 ML

Comments:

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

000008

Bicarbonate as Calcium Carbonate

Method EPA310.1M

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805135

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0138

Lab ID: AK980519-1MB

Sample Matrix: Water

% Moisture: N/A

Date Collected: N/A

Date Extracted: 19-May-98

Date Analyzed: 19-May-98

Prep Batch: AK980519-1

QCBatchID: AK980519-1-1

Run ID: AK980519-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 ML

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
AK980519-1MB	5/19/98	5/19/98	5/19/98	N/A	1	5	MG/L	5	U

Comments:

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

000009

Bicarbonate as Calcium Carbonate

Method EPA310.1M

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805135

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0138

Lab ID: AK980519-1LCS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 19-May-98

Date Extracted: 19-May-98

Date Analyzed: 19-May-98

Prep Batch: AK980519-1

QCBatchID: AK980519-1-1

Run ID: AK980519-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 ML

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
10-13-9	BICARBONATE AS CaCO3	100	95.7	MG/L	5		96	85 - 115

Bicarbonate as Calcium Carbonate

Method EPA310.1M

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805135

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0138

Reporting Basis: As Received

Sample Aliquot: 100 ML

Final Volume: 100ML

Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
SHARED QC	9805110-1	5/19/98	5/19/98	4	776	MG/L	780	20		0	15

Comments:

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

BROMIDE
Method EPA300.0
Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0138
Work Order Number: 9805135
Reporting Basis: As Received

Final Volume: 5 ML
Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0180	9805135-10	5/12/98	5/20/98	5/20/98	N/A	10	2	MG/L	2	U	5 ML
S98-0156	9805135-11	5/11/98	5/20/98	5/20/98	N/A	10	2	MG/L	2	U	5 ML
S98-0158	9805135-12	5/11/98	5/20/98	5/20/98	N/A	1	0.2	MG/L	0.2	U	5 ML
S98-0171	9805135-13	5/12/98	5/20/98	5/20/98	N/A	1	0.2	MG/L	0.2	U	5 ML
S98-0178	9805135-14	5/12/98	5/20/98	5/20/98	N/A	1	0.2	MG/L	0.2	U	5 ML
S98-0179	9805135-15	5/12/98	5/20/98	5/20/98	N/A	10	2	MG/L	2	U	5 ML

Comments:

1 ND or U = Not Detected at or above the client requested detection limit

CHLORIDE

Method EPA300.0

Sample Results

Lab Name: Paragon Analytics, Inc.
 Client Name: El Paso Natural Gas Co.
 Client Project ID: S98-0138
 Work Order Number: 9805135
 Reporting Basis: As Received

Final Volume: 5 ML
 Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0168	9805135-1	5/12/98	5/20/98	5/22/98	N/A	10000	74000	MG/L	2000		5 ML
S98-0169	9805135-2	5/12/98	5/20/98	5/22/98	N/A	3000	13000	MG/L	600		5 ML
S98-0170	9805135-3	5/12/98	5/20/98	5/22/98	N/A	1000	5200	MG/L	200		5 ML
S98-0172	9805135-4	5/12/98	5/20/98	5/22/98	N/A	1000	3600	MG/L	200		5 ML
S98-0173	9805135-5	5/12/98	5/20/98	5/22/98	N/A	10000	34000	MG/L	2000		5 ML
S98-0174	9805135-6	5/12/98	5/20/98	5/22/98	N/A	3000	13000	MG/L	600		5 ML
S98-0175	9805135-7	5/12/98	5/20/98	5/22/98	N/A	200	610	MG/L	40		5 ML
S98-0176	9805135-8	5/12/98	5/20/98	5/22/98	N/A	200	550	MG/L	40		5 ML
S98-0177	9805135-9	5/12/98	5/20/98	5/23/98	N/A	200	480	MG/L	40		5 ML
S98-0180	9805135-10	5/12/98	5/20/98	5/20/98	N/A	10	30	MG/L	2		5 ML
S98-0156	9805135-11	5/11/98	5/20/98	5/20/98	N/A	10	98	MG/L	2		5 ML
S98-0158	9805135-12	5/11/98	5/20/98	5/20/98	N/A	1	0.2	MG/L	0.2	U	5 ML
S98-0171	9805135-13	5/12/98	5/20/98	5/20/98	N/A	1	0.2	MG/L	0.2	U	5 ML
S98-0178	9805135-14	5/12/98	5/20/98	5/20/98	N/A	1	0.2	MG/L	0.2	U	5 ML
S98-0179	9805135-15	5/12/98	5/20/98	5/20/98	N/A	10	87	MG/L	2		5 ML
S98-0157	9805135-16	5/11/98	5/20/98	5/23/98	N/A	2000	8500	MG/L	400		5 ML
S98-0167	9805135-17	5/11/98	5/20/98	5/23/98	N/A	2000	8200	MG/L	400		5 ML

Comments:

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

FLUORIDE
Method EPA300.0
Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0138
Work Order Number: 9805135
Reporting Basis: As Received

Final Volume: 5 ML
Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0180	9805135-10	5/12/98	5/20/98	5/20/98	N/A	10	1.2	MG/L	1		5 ML
S98-0156	9805135-11	5/11/98	5/20/98	5/20/98	N/A	10	1.8	MG/L	1		5 ML
S98-0158	9805135-12	5/11/98	5/20/98	5/20/98	N/A	1	0.1	MG/L	0.1	U	5 ML
S98-0171	9805135-13	5/12/98	5/20/98	5/20/98	N/A	1	0.1	MG/L	0.1	U	5 ML
S98-0178	9805135-14	5/12/98	5/20/98	5/20/98	N/A	1	0.1	MG/L	0.1	U	5 ML
S98-0179	9805135-15	5/12/98	5/20/98	5/20/98	N/A	10	1.7	MG/L	1		5 ML

Comments:

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

SULFATE

Method EPA300.0

Sample Results

Lab Name: Paragon Analytics, Inc.
 Client Name: El Paso Natural Gas Co.
 Client Project ID: S98-0138
 Work Order Number: 9805135
 Reporting Basis: As Received

Final Volume: 5 ML
 Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0180	9805135-10	5/12/98	5/20/98	5/20/98	N/A	10	81	MG/L	10		5 ML
S98-0156	9805135-11	5/11/98	5/20/98	5/20/98	N/A	10	200	MG/L	10		5 ML
S98-0158	9805135-12	5/11/98	5/20/98	5/20/98	N/A	1	1	MG/L	1	U	5 ML
S98-0171	9805135-13	5/12/98	5/20/98	5/20/98	N/A	1	1	MG/L	1	U	5 ML
S98-0178	9805135-14	5/12/98	5/20/98	5/20/98	N/A	1	1	MG/L	1	U	5 ML
S98-0179	9805135-15	5/12/98	5/20/98	5/20/98	N/A	10	57	MG/L	10		5 ML

Comments:

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

Ion Chromatography

Method EPA300.0

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805135

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0138

Lab ID: IC980520-1MB

Sample Matrix: Water

% Moisture: N/A

Date Collected: N/A

Date Extracted: 20-May-98

Date Analyzed: 23-May-98

Prep Batch: IC980520-1

QCBatchID: IC980520-1-1

Run ID: IC980523-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 5 ML

Final Volume: 5 ML

CASNO	Target Analyte	DF	Result	Units	Reporting Limit	Result Qualifier	EPA Qualifier
16887-00-6	CHLORIDE	1	0.2	MG/L	0.2	U	
16887-00-6	CHLORIDE	1	0.2	MG/L	0.2	U	
24959-67-9	BROMIDE	1	0.2	MG/L	0.2	U	
14808-79-8	SULFATE	1	1	MG/L	1	U	
16984-48-8	FLUORIDE	1	0.1	MG/L	0.1	U	
16887-00-6	CHLORIDE	1	0.2	MG/L	0.2	U	

Ion Chromatography

Method EPA300.0

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805135

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0138

Lab ID: IC980520-1LCS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 20-May-98

Date Extracted: 20-May-98

Date Analyzed: 20-May-98

Prep Batch: IC980520-1

QCBatchID: IC980520-1-1

Run ID: IC980520-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 5 ML

Final Volume: 5 ML

CASNO	Target Analyte	Spike Added	LCS Result	Units	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
24959-67-9	BROMIDE	4	3.98	MG/L	0.2		100	85 - 115%
16887-00-6	CHLORIDE	4	4.06	MG/L	0.2		101	75 - 115%
16887-00-6	CHLORIDE	4	4.19	MG/L	0.2		103	75 - 115%
16887-00-6	CHLORIDE	4	4.1	MG/L	0.2		102	75 - 115%
16984-48-8	FLUORIDE	2	2.07	MG/L	0.1		103	80 - 120%
14808-79-8	SULFATE	20	20.3	MG/L	1		101	85 - 115%

Ion Chromatography

Method EPA300.0

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805135

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0138

Field ID: S98-0180

LabID: 9805135-10MS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 12-May-98

Date Extracted: 20-May-98

Date Analyzed: 20-May-98

Prep Batch: IC980520-1

QCBatchID: IC980520-1-1

Run ID: IC980520-1A

Cleanup: NONE

Basis: As Received

Sample Aliquot: 5 ML

Final Volume: 5 ML

Target Analyte	Sample Result	MS Result	Units	Reporting Limit	Result Qualifier	Spike Added	MS % Rec.	Control Limits
BROMIDE	2	95.4	MG/L	2		100	95	85 - 115%
FLUORIDE	1.2	38.9	MG/L	1		40	94	80 - 120%
SULFATE	81	450	MG/L	10		400	92	85 - 115%

MSD Lab ID: 9805135-10MSD

Target Analyte	Spike Added	MSD Result	Units	Reporting Limit	MSD % Rec.	RPD	RPD Limits
BROMIDE	100	97.6	MG/L	2	98	2.3	15
FLUORIDE	40	38.3	MG/L	1	93	1.4	20
SULFATE	400	462	MG/L	10	95	2.6	15

000018

Nitrate/Nitrite as N

Method EPA353.3

Sample Results

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0138

Work Order Number: 9805135

Reporting Basis: As Received

Final Volume: 3 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0180	9805135-10	5/12/98	5/19/98	5/19/98	N/A	2	1.2	MG/L	0.1		3 ML
S98-0156	9805135-11	5/11/98	5/19/98	5/19/98	N/A	1	0.05	MG/L	0.05	U	3 ML
S98-0158	9805135-12	5/11/98	5/19/98	5/19/98	N/A	1	0.05	MG/L	0.05	U	3 ML
S98-0171	9805135-13	5/12/98	5/19/98	5/19/98	N/A	1	0.05	MG/L	0.05	U	3 ML
S98-0178	9805135-14	5/12/98	5/19/98	5/19/98	N/A	1	0.05	MG/L	0.05	U	3 ML
S98-0179	9805135-15	5/12/98	5/19/98	5/19/98	N/A	1	0.05	MG/L	0.05	U	3 ML

Comments:

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

Nitrate/Nitrite as N

Method EPA353.3

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805135

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0138

Lab ID: NN980519-1MB

Sample Matrix: Water

% Moisture: N/A

Date Collected: N/A

Date Extracted: 19-May-98

Date Analyzed: 20-May-98

Prep Batch: NN980519-1

QCBatchID: NN980519-1-1

Run ID: NN980520-2A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 3 ML

Final Volume: 3 ML

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
NN980519-1MB	5/19/98	5/19/98	5/20/98	N/A	1	0.05	MG/L	0.05	U
NN980519-1MB	5/19/98	5/19/98	5/19/98	N/A	1	0.05	MG/L	0.05	U
NN980519-1MB	5/19/98	5/19/98	5/20/98	N/A	1	0.05	MG/L	0.05	U

Comments:

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

000020

Nitrate/Nitrite as N

Method EPA353.3

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805135

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0138

Lab ID: NN980519-1LCS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 19-May-98

Date Extracted: 19-May-98

Date Analyzed: 20-May-98

Prep Batch: NN980519-1

QCBatchID: NN980519-1-1

Run ID: NN980520-2A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 3 ML

Final Volume: 3 ML

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
1-005	NITRATE/NITRITE	0.5	0.47	MG/L	0.05		94	80 - 120
1-005	NITRATE/NITRITE	0.5	0.514	MG/L	0.05		103	80 - 120
1-005	NITRATE/NITRITE	0.5	0.51	MG/L	0.05		102	80 - 120

Nitrate/Nitrite as N

Method EPA353.3

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805135

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0138

Field ID: SHARED QC

LabID: 9805056-2MS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 05-May-98

Date Extracted: 19-May-98

Date Analyzed: 20-May-98

Prep Batch: NN980519-1

QCBatchID: NN980519-1-1

Run ID: NN980520-2A

Cleanup: NONE

Basis: As Received

Sample Aliquot: 3 ML

Final Volume: 3 ML

Spike Added	Sample Result	Units	Reporting Limit	MS Result	MS % Rec.	MS Qualifier	Control Limits
0.5	0.05	MG/L	0.05	0.493	99		80 - 120%

MSD Lab ID: 9805056-2MSD

Spike Added	MSD Result	Units	Reporting Limit	MSD % Rec.	Result Qualifier	RPD	RPD Limits
0.5	0.504	MG/L	0.05	101		2	20

Total Dissolved Solids

Method EPA160.1

Sample Results

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0138

Work Order Number: 9805135

Reporting Basis: As Received

Final Volume: 100 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0168	9805135-1	5/12/98	5/18/98	5/18/98	N/A	1	99000	MG/L	20		100 ML
S98-0169	9805135-2	5/12/98	5/18/98	5/18/98	N/A	1	21000	MG/L	20		100 ML
S98-0170	9805135-3	5/12/98	5/18/98	5/18/98	N/A	1	9600	MG/L	20		100 ML
S98-0172	9805135-4	5/12/98	5/18/98	5/18/98	N/A	1	6700	MG/L	20		100 ML
S98-0173	9805135-5	5/12/98	5/18/98	5/18/98	N/A	1	28000	MG/L	20		100 ML
S98-0174	9805135-6	5/12/98	5/18/98	5/18/98	N/A	1	22000	MG/L	20		100 ML
S98-0175	9805135-7	5/12/98	5/18/98	5/18/98	N/A	1	1400	MG/L	20		100 ML
S98-0176	9805135-8	5/12/98	5/18/98	5/18/98	N/A	1	1300	MG/L	20		100 ML
S98-0177	9805135-9	5/12/98	5/18/98	5/18/98	N/A	1	1400	MG/L	20		100 ML
S98-0180	9805135-10	5/12/98	5/18/98	5/18/98	N/A	1	410	MG/L	20		100 ML
S98-0156	9805135-11	5/11/98	5/18/98	5/18/98	N/A	1	630	MG/L	20		100 ML
S98-0158	9805135-12	5/11/98	5/18/98	5/18/98	N/A	1	20	MG/L	20	U	100 ML
S98-0171	9805135-13	5/12/98	5/18/98	5/18/98	N/A	1	20	MG/L	20	U	100 ML
S98-0178	9805135-14	5/12/98	5/18/98	5/18/98	N/A	1	20	MG/L	20	U	100 ML
S98-0179	9805135-15	5/12/98	5/18/98	5/18/98	N/A	1	390	MG/L	20		100 ML
S98-0157	9805135-16	5/11/98	5/18/98	5/18/98	N/A	1	15000	MG/L	20		100 ML
S98-0167	9805135-17	5/11/98	5/18/98	5/18/98	N/A	1	16000	MG/L	20		100 ML

Comments:

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

Total Dissolved Solids

Method EPA160.1

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805135

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0138

Lab ID: TD980518-2MB

Sample Matrix: Water

% Moisture: N/A

Date Collected: N/A

Date Extracted: 18-May-98

Date Analyzed: 18-May-98

Prep Batch: TD980518-2

QCBatchID: TD980518-2-1

Run ID: TD980518-2A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 MG/L

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
TD980518-2MB	5/18/98	5/18/98	5/18/98	N/A	1	20	MG/L	20	U

Comments:

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

Total Dissolved Solids

Method EPA160.1

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805135

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0138

Lab ID: TD980518-2LCS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 18-May-98

Date Extracted: 18-May-98

Date Analyzed: 18-May-98

Prep Batch: TD980518-2

QCBatchID: TD980518-2-1

Run ID: TD980518-2A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 MG/L

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
10-33-3	TOTAL DISSOLVED SOLIDS	40	393	MG/L	20		98	85 - 115

Total Dissolved Solids

Method EPA160.1

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805135

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0138

Reporting Basis: As Received

Sample Aliquot: 100 ML

Final Volume: 100MG/L

Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
S98-0168	9805135-1	5/18/98	5/18/98	1	97700	MG/L	99000	20		2	15

Comments:

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

000026



Paragon Analytics, Inc.

Aromatic Volatile Organics Case Narrative

El Paso Natural Gas Company

S98-0138

Order Number - 9805135

1. This report consists of 17 water samples received by Paragon on 5/14/98.
2. These samples were prepared and analyzed according to SW-846, 3rd Edition procedures. Specifically, the water samples were prepared by heating and purging 5 mls using purge and trap procedures based on Method 5030. The calibration curve was also prepared using the heated purge.
3. The samples were analyzed using a GC with a DB-VRX capillary column and a PID detector according to protocols based on SW-846 Method 8021. All positive results were quantitated using the responses from the initial calibration curve using the internal standard technique. Second column confirmation was performed on all samples with positive results on a DB-624 capillary column.
4. All initial and continuing calibration criteria were within acceptance criteria.
5. The method blanks associated with this project were below the reporting limits for all analytes.
6. All laboratory control spike and laboratory control spike duplicate recoveries and RPDs were within the acceptance criteria.
7. A matrix spike and matrix spike duplicate were not specified by the client so none is reported.
8. All internal standard recoveries were within acceptance criteria.
9. All surrogate recoveries were within acceptable limits with the following exceptions:

Surrogate	Sample	Direction
2,3,4-Trifluorotoluene	2	low

The sample was re-analyzed to evaluate whether the original outlier was due to matrix effects or laboratory performance. The re-analysis also had surrogates outside the control limits, which suggest the outliers may have been due to matrix effects. The re-extract occurred outside of holding time requirements. Only the initial analysis was reported.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Wesley S. Mayfield 6/16/98
Wesley S. Mayfield Date
Fuels Analyst

mb
Reviewer's Initials

6/16/98
Date

000002

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9805135

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0138

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0168	9805135-1		Water	5/12/98	7:50
S98-0169	9805135-2		Water	5/12/98	9:02
S98-0170	9805135-3		Water	5/12/98	10:00
S98-0172	9805135-4		Water	5/12/98	11:30
S98-0173	9805135-5		Water	5/12/98	12:57
S98-0174	9805135-6		Water	5/12/98	14:20
S98-0175	9805135-7		Water	5/12/98	15:33
S98-0176	9805135-8		Water	5/12/98	15:33
S98-0177	9805135-9		Water	5/12/98	17:17
S98-0180	9805135-10		Water	5/12/98	18:30
S98-0156	9805135-11		Water	5/11/98	16:35
S98-0158	9805135-12		Water	5/11/98	18:40
S98-0171	9805135-13		Water	5/12/98	9:40
S98-0178	9805135-14		Water	5/12/98	17:40
S98-0179	9805135-15		Water	5/12/98	17:55
S98-0157	9805135-16		Water	5/11/98	18:52
S98-0167	9805135-17		Water	5/11/98	20:40

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Reagent Blank

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0138

Lab Sample ID: RB 2

Date Collected: N/A
Date Extracted: 5/25/98
Date Analyzed: 5/25/98

Sample Matrix: Water

Sample Volume: 5 mL
Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	102	88 - 119

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

000004

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

S98-0168

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0138

Lab Sample ID: 9805135-1

Date Collected: 5/12/98
Date Extracted: 5/25/98
Date Analyzed: 5/25/98

Sample Matrix: Water

Sample Volume: 5 mL
Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	190	0.50
Toluene	170	0.50
Ethylbenzene	60	0.50
M,P-Xylene	51	1.0
O-Xylene	50	0.50
Total Xylenes	100	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	93	88 - 119

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

000005

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

S98-0170

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0138

Lab Sample ID: 9805135-3

Date Collected: 5/12/98

Date Extracted: 5/25/98

Date Analyzed: 5/25/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	6.8	0.50
Toluene	11	0.50
Ethylbenzene	4.4	0.50
M,P-Xylene	ND	1.0
O-Xylene	3.4	0.50
Total Xylenes	3.4	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	90	88 - 119

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

000006

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0138

S98-0172

Lab Sample ID: 9805135-4

Date Collected: 5/12/98
Date Extracted: 5/25/98
Date Analyzed: 5/25/98

Sample Matrix: Water

Sample Volume: 5 mL
Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	13	0.50
Toluene	4.6	0.50
Ethylbenzene	4.0	0.50
M,P-Xylene	4.4	1.0
O-Xylene	ND	0.50
Total Xylenes	4.4	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	103	88 - 119

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

000007

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

S98-0173

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0138

Lab Sample ID: 9805135-5

Date Collected: 5/12/98

Date Extracted: 5/25/98

Date Analyzed: 5/25/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	37	0.50
Toluene	4.5	0.50
Ethylbenzene	2.9	0.50
M,P-Xylene	1.6	1.0
O-Xylene	ND	0.50
Total Xylenes	1.6	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	89	88 - 119

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

000008

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0138

S98-0174

Lab Sample ID: 9805135-6

Date Collected: 5/12/98

Date Extracted: 5/25/98

Date Analyzed: 5/25/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	70	0.50
Toluene	8.2	0.50
Ethylbenzene	1.3	0.50
M,P-Xylene	3.5	1.0
O-Xylene	0.83	0.50
Total Xylenes	4.3	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	104	88 - 119

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

000009

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

S98-0175

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0138

Lab Sample ID: 9805135-7

Date Collected: 5/12/98

Date Extracted: 5/25/98

Date Analyzed: 5/25/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	9.5	0.50
Toluene	3.4	0.50
Ethylbenzene	1.9	0.50
M,P-Xylene	2.7	1.0
O-Xylene	ND	0.50
Total Xylenes	2.7	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	104	88 - 119

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

000010

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

S98-0176

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0138

Lab Sample ID: 9805135-8

Date Collected: 5/12/98

Date Extracted: 5/25/98

Date Analyzed: 5/25/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	14	0.50
Toluene	4.4	0.50
Ethylbenzene	2.3	0.50
M,P-Xylene	4.4	1.0
O-Xylene	ND	0.50
Total Xylenes	4.4	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	103	88 - 119

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

000011

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0138

S98-0177

Lab Sample ID: 9805135-9

Date Collected: 5/12/98

Date Extracted: 5/25/98

Date Analyzed: 5/25/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	62	0.50
Toluene	1.6	0.50
Ethylbenzene	21	0.50
M,P-Xylene	13	1.0
O-Xylene	ND	0.50
Total Xylenes	13	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	105	88 - 119

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

000012

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0138

S98-0156

Lab Sample ID: 9805135-11

Date Collected: 5/11/98

Date Extracted: 5/25/98

Date Analyzed: 5/25/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	6.7	0.50
Toluene	1.7	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	6.0	0.50
Total Xylenes	6.0	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	96	88 - 119

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

000014

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0138

S98-0156

Lab Sample ID: 9805135-11

Date Collected: 5/11/98

Date Extracted: 5/25/98

Date Analyzed: 5/25/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	6.7	0.50
Toluene	1.7	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	6.0	0.50
Total Xylenes	6.0	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	96	88 - 119

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

000014

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

S98-0158

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0138

Lab Sample ID: 9805135-12

Date Collected: 5/11/98

Date Extracted: 5/25/98

Date Analyzed: 5/25/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	103	88 - 119

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

000015

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0138

S98-0171

Lab Sample ID: 9805135-13

Date Collected: 5/12/98

Date Extracted: 5/25/98

Date Analyzed: 5/25/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	105	88 - 119

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

000016

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0138

S98-0178

Lab Sample ID: 9805135-14

Date Collected: 5/12/98
Date Extracted: 5/25/98
Date Analyzed: 5/25/98

Sample Matrix: Water

Sample Volume: 5 mL
Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	102	88 - 119

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

00001

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0138

S98-0179

Lab Sample ID: 9805135-15

Date Collected: 5/12/98

Date Extracted: 5/25/98

Date Analyzed: 5/25/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	30	0.50
Toluene	20	0.50
Ethylbenzene	6.5	0.50
M,P-Xylene	ND	1.0
O-Xylene	1.1	0.50
Total Xylenes	1.1	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	101	88 - 119

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

000018

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0138

S98-0157

Lab Sample ID: 9805135-16

Date Collected: 5/11/98

Date Extracted: 5/25/98

Date Analyzed: 5/25/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	130	0.50
Toluene	21	0.50
Ethylbenzene	41	0.50
M,P-Xylene	18	1.0
O-Xylene	0.75	0.50
Total Xylenes	19	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	105	88 - 119

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

00001

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0138

Reagent Blank

Lab Sample ID: RB 2

Date Collected: N/A
Date Extracted: 5/26/98
Date Analyzed: 5/26/98

Sample Matrix: Water

Sample Volume: 5 mL
Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	102	88 - 119

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

000021

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Reagent Blank

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0138

Lab Sample ID: RB 2

Date Collected: N/A
Date Extracted: 5/26/98
Date Analyzed: 5/26/98

Sample Matrix: Water

Sample Volume: 5 mL
Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	102	88 - 119

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

000021

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0138

S98-0167

Lab Sample ID: 9805135-17

Date Collected: 5/11/98

Date Extracted: 5/26/98

Date Analyzed: 5/26/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	120	0.50
Toluene	210	0.50
Ethylbenzene	20	0.50
M,P-Xylene	20	1.0
O-Xylene	13	0.50
Total Xylenes	33	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	98	88 - 119

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

000023



Paragon Analytics, Inc.

TOTAL RECOVERABLE METALS CASE NARRATIVE

El Paso Natural Gas Company

S98-0138

Order Number - 9805135

1. This report consists of 6 water samples.
2. The samples were received intact on 05/14/98. Temperature of the samples upon receipt was 13° Celsius.
3. The samples had been correctly preserved for the requested analyses.
4. The samples were prepared for analysis based on SW-846, 3rd Edition procedures.
For analysis by conventional ICP the samples were digested following method 3005A.
5. The samples were analyzed following SW-846 protocols by conventional ICP (Method 6010B).
6. All standards and solutions are NIST traceable and were used within their recommended shelf life.
7. The samples were prepared and analyzed within the established hold times.
8. Sample results which are below PAI's standard reporting limits are reported as "ND" on the enclosed report.

All in house quality control procedures were followed, as described below.

9. General quality control procedures.
 - A preparation (method) blank and laboratory control sample were digested and analyzed with the samples in this digestion batch. There were not more than 20 samples in the digestion batch.
 - The preparation (method) blank results associated with this batch were below the reporting limits for the requested analytes. This indicates that no contaminants were introduced to the samples during the digestion procedure.



Paragon Analytics, Inc.

TOTAL RECOVERABLE METALS CASE NARRATIVE

El Paso Natural Gas Company

S98-0138

Order Number - 9805135

1. This report consists of 6 water samples.
2. The samples were received intact on 05/14/98. Temperature of the samples upon receipt was 13° Celsius.
3. The samples had been correctly preserved for the requested analyses.
4. The samples were prepared for analysis based on SW-846, 3rd Edition procedures.
For analysis by conventional ICP the samples were digested following method 3005A.
5. The samples were analyzed following SW-846 protocols by conventional ICP (Method 6010B).
6. All standards and solutions are NIST traceable and were used within their recommended shelf life.
7. The samples were prepared and analyzed within the established hold times.
8. Sample results which are below PAI's standard reporting limits are reported as "ND" on the enclosed report.

All in house quality control procedures were followed, as described below.

9. General quality control procedures.
 - A preparation (method) blank and laboratory control sample were digested and analyzed with the samples in this digestion batch. There were not more than 20 samples in the digestion batch.
 - The preparation (method) blank results associated with this batch were below the reporting limits for the requested analytes. This indicates that no contaminants were introduced to the samples during the digestion procedure.



The data contained in the following report have been reviewed and approved by the personnel listed below:

Kim Hamacher
Kim Hamacher
Senior Inorganic Chemist

5/26/98
Date

SW
Reviewer's Initials

5/26/98
Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.



The data contained in the following report have been reviewed and approved by the personnel listed below:

Kim Hamacher
Kim Hamacher
Senior Inorganic Chemist

5/26/98
Date

SW
Reviewer's Initials

5/26/98
Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Company
Client Project ID: S98-0138
Lab Sample ID: RB 9805135

Sample ID

Reagent Blank

Date Collected: N/A
Prep Date: 05/21/98
Date Analyzed: 05/21/98

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	ND	1
Magnesium	ND	1
Potassium	ND	1
Silicon	ND	0.05
Sodium	ND	1

ND = Not detected at or above the reporting limit.

4

00000

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Company
Client Project ID: S98-0138
Lab Sample ID: RB 9805135

Sample ID

Reagent Blank

Date Collected: N/A
Prep Date: 05/21/98
Date Analyzed: 05/21/98

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	ND	1
Magnesium	ND	1
Potassium	ND	1
Silicon	ND	0.05
Sodium	ND	1

ND = Not detected at or above the reporting limit.

4

00000

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Company
Client Project ID: S98-0138
Lab Sample ID: 9805135-11

Sample Matrix: Water

Sample ID

S98-0156

Date Collected: 05/11/98

Prep Date: 05/21/98

Date Analyzed: 05/21/98

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	91	1
Magnesium	23	1
Potassium	5	1
Silicon	13	0.05
Sodium	74	1

ND = Not detected at or above the reporting limit.

000007

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Company
Client Project ID: S98-0138
Lab Sample ID: 9805135-13

Sample Matrix: Water

Sample ID

S98-0171

Date Collected: 05/12/98

Prep Date: 05/21/98

Date Analyzed: 05/21/98

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	ND	1
Magnesium	ND	1
Potassium	ND	1
Silicon	ND	0.05
Sodium	ND	1

ND = Not detected at or above the reporting limit.

144
000009

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Company
Client Project ID: S98-0138
Lab Sample ID: 9805135-15

Sample Matrix: Water

Sample ID

S98-0179

Date Collected: 05/12/98

Prep Date: 05/21/98

Date Analyzed: 05/21/98

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	50	1
Magnesium	13	1
Potassium	4	1
Silicon	18	0.05
Sodium	75	1

ND = Not detected at or above the reporting limit.

11
000011

TOTAL RECOVERABLE METALS MATRIX SPIKE

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Company
Lab Sample ID: 9805082-21

Sample ID

In House

Sample Matrix: Water

Prep Date: 05/21/98

Date Analyzed: 05/21/98

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	% Rec. (limits 80-120%)	Flags
Calcium	40	23	65	105	See note
Magnesium	40	5	47	105	
Potassium	40	< 1	42	105	
Silicon	0.5	3.7	4.3	120	
Sodium	40	< 1	43	108	

Analyte	MSD Conc. mg/L	MSD % Rec. (limits 80-120%)	Relative % Difference (limits 0-20%)	Flags
Calcium	66	108	2	See note
Magnesium	48	108	2	
Potassium	42	105	0	
Silicon	4.3	120	0	
Sodium	44	110	2	

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

000012

**TOTAL RECOVERABLE METALS
LABORATORY CONTROL SAMPLE**

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Company
Client Project ID: S98-0138
Order Number: 9805135

Date Analyzed: 05/21/98

Control limits: 80 - 120%

Analyte	LCS Result mg/L	LCS True Value mg/L	LCS % Recovery
Silicon	0.56	0.50	112

V900013

Paragon Analytics, Inc.



PH ANALYSIS CASE NARRATIVE

El Paso Natural Gas Co.

S98-0138

Order Number - 9805135

1. This report consists of six water samples.
2. The samples were received intact at a temperature of 13⁰ C. on May 14, 1998.
3. The samples were prepared for analysis based on SW-846, 3rd Edition procedures. Specifically, the water samples were analyzed following Method 9040.
4. All standards and solutions were used within their recommended shelf life.
All in house quality control procedures were followed, as described below.
5. General quality control procedures.
 - All initial and continuing calibration verifications associated with this batch were within acceptance criteria for the requested analyte. This indicates a valid calibration and stable instrument conditions.
6. PAI sample ID 9805135-10 was used as the matrix QC sample for this batch.
 - A duplicate was prepared and analyzed with this batch. All acceptance criteria were met.

000001

The data contained in the following report have been reviewed and approved by the personnel listed below:



Susan Converse
Susan Converse
Inorganic Technician

5-26-98
Date

SW
Reviewer's Initials

5/28/98
Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9805135

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0138

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0168	9805135-1		Water	5/12/98	7:50
S98-0169	9805135-2		Water	5/12/98	9:02
S98-0170	9805135-3		Water	5/12/98	10:00
S98-0172	9805135-4		Water	5/12/98	11:30
S98-0173	9805135-5		Water	5/12/98	12:57
S98-0174	9805135-6		Water	5/12/98	14:20
S98-0175	9805135-7		Water	5/12/98	15:33
S98-0176	9805135-8		Water	5/12/98	15:33
S98-0177	9805135-9		Water	5/12/98	17:17
S98-0180	9805135-10		Water	5/12/98	18:30
S98-0156	9805135-11		Water	5/11/98	16:35
S98-0158	9805135-12		Water	5/11/98	18:40
S98-0171	9805135-13		Water	5/12/98	9:40
S98-0178	9805135-14		Water	5/12/98	17:40
S98-0179	9805135-15		Water	5/12/98	17:55
S98-0157	9805135-16		Water	5/11/98	18:52
S98-0167	9805135-17		Water	5/11/98	20:40

000003

pH in Water

Method SW9040

Sample Results

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0138

Work Order Number: 9805135

Reporting Basis: As Received

Final Volume: 20 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0180	9805135-10	5/12/98	5/20/98	5/20/98	N/A	1	7.8	PH	0.1		20 ML
S98-0156	9805135-11	5/11/98	5/20/98	5/20/98	N/A	1	7.7	PH	0.1		20 ML
S98-0158	9805135-12	5/11/98	5/20/98	5/20/98	N/A	1	5.8	PH	0.1		20 ML
S98-0171	9805135-13	5/12/98	5/20/98	5/20/98	N/A	1	5.7	PH	0.1		20 ML
S98-0178	9805135-14	5/12/98	5/20/98	5/20/98	N/A	1	5.6	PH	0.1		20 ML
S98-0179	9805135-15	5/12/98	5/20/98	5/20/98	N/A	1	7.9	PH	0.1		20 ML

Comments:

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

000000

pH in Water

Method SW9040

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805135

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0138

Reporting Basis: As Received

Sample Aliquot: 20 ML

Final Volume: 20ML

Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
S98-0180	9805135-10	5/20/98	5/20/98	1	7.8	PH	7.8	0.1		0	10

Comments:

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

000005

Paragon Analytics, Inc.



SPECIFIC CONDUCTANCE CASE NARRATIVE

El Paso Natural Gas Co.

S98-0138

Order Number - 9805135

1. This report consists of seventeen water samples.
2. The samples were received intact at a temperature of 13° C. on May 14, 1998.
3. The samples were prepared for analysis based on SW-846 Method 9050.
4. All standards and solutions are NIST traceable and were used within their recommended shelf life.

All in house quality control procedures were followed, as described below.

5. General quality control procedures.
 - All initial and continuing calibration verifications associated with this batch were within acceptance criteria for the requested analyte. This indicates a valid calibration and stable instrument conditions.
6. PAI sample ID 9805135-1 was used as the matrix QC sample for this batch.
 - A duplicate was prepared and analyzed with this batch, all acceptance criteria were met.

000001

The data contained in the following report have been reviewed and approved by the personnel listed below:



Susan Converse
Susan Converse
Inorganic Technician

5-27-98
Date

SW
Reviewer's Initials

5/28/98
Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9805135

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0138

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0168	9805135-1		Water	5/12/98	7:50
S98-0169	9805135-2		Water	5/12/98	9:02
S98-0170	9805135-3		Water	5/12/98	10:00
S98-0172	9805135-4		Water	5/12/98	11:30
S98-0173	9805135-5		Water	5/12/98	12:57
S98-0174	9805135-6		Water	5/12/98	14:20
S98-0175	9805135-7		Water	5/12/98	15:33
S98-0176	9805135-8		Water	5/12/98	15:33
S98-0177	9805135-9		Water	5/12/98	17:17
S98-0180	9805135-10		Water	5/12/98	18:30
S98-0156	9805135-11		Water	5/11/98	16:35
S98-0158	9805135-12		Water	5/11/98	18:40
S98-0171	9805135-13		Water	5/12/98	9:40
S98-0178	9805135-14		Water	5/12/98	17:40
S98-0179	9805135-15		Water	5/12/98	17:55
S98-0157	9805135-16		Water	5/11/98	18:52
S98-0167	9805135-17		Water	5/11/98	20:40

000003

Specific Conductance in Water

Method EPA120.1

Sample Results

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0138

Work Order Number: 9805135

Reporting Basis: As Received

Final Volume: 50 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0168	9805135-1	5/12/98	5/20/98	5/20/98	N/A	1	160000	umhos/cm			50 ML
S98-0169	9805135-2	5/12/98	5/20/98	5/20/98	N/A	1	38000	umhos/cm			50 ML
S98-0170	9805135-3	5/12/98	5/20/98	5/20/98	N/A	1	16000	umhos/cm			50 ML
S98-0172	9805135-4	5/12/98	5/20/98	5/20/98	N/A	1	12000	umhos/cm			50 ML
S98-0173	9805135-5	5/12/98	5/20/98	5/20/98	N/A	1	48000	umhos/cm			50 ML
S98-0174	9805135-6	5/12/98	5/20/98	5/20/98	N/A	1	36000	umhos/cm			50 ML
S98-0175	9805135-7	5/12/98	5/20/98	5/20/98	N/A	1	2400	umhos/cm			50 ML
S98-0176	9805135-8	5/12/98	5/20/98	5/20/98	N/A	1	2200	umhos/cm			50 ML
S98-0177	9805135-9	5/12/98	5/20/98	5/20/98	N/A	1	2300	umhos/cm			50 ML
S98-0180	9805135-10	5/12/98	5/20/98	5/20/98	N/A	1	640	umhos/cm			50 ML
S98-0156	9805135-11	5/11/98	5/20/98	5/20/98	N/A	1	970	umhos/cm			50 ML
S98-0158	9805135-12	5/11/98	5/20/98	5/20/98	N/A	1	9.6	umhos/cm			50 ML
S98-0171	9805135-13	5/12/98	5/20/98	5/20/98	N/A	1	54	umhos/cm			50 ML
S98-0178	9805135-14	5/12/98	5/20/98	5/20/98	N/A	1	24	umhos/cm			50 ML
S98-0179	9805135-15	5/12/98	5/20/98	5/20/98	N/A	1	720	umhos/cm			50 ML
S98-0157	9805135-16	5/11/98	5/20/98	5/20/98	N/A	1	24000	umhos/cm			50 ML
S98-0167	9805135-17	5/11/98	5/20/98	5/20/98	N/A	1	26000	umhos/cm			50 ML

Comments:

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

Specific Conductance in Water

Method EPA120.1

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805135

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0138

Reporting Basis: As Received

Sample Aliquot: 50 ML

Final Volume: 50ML

Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
S98-0168	9805135-1	5/20/98	5/20/98	1	160000	umhos/cm	160000			0	

Comments:

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

000005

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9805135

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0138

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0168	9805135-1		Water	5/12/98	7:50
S98-0169	9805135-2		Water	5/12/98	9:02
S98-0170	9805135-3		Water	5/12/98	10:00
S98-0172	9805135-4		Water	5/12/98	11:30
S98-0173	9805135-5		Water	5/12/98	12:57
S98-0174	9805135-6		Water	5/12/98	14:20
S98-0175	9805135-7		Water	5/12/98	15:33
S98-0176	9805135-8		Water	5/12/98	15:33
S98-0177	9805135-9		Water	5/12/98	17:17
S98-0180	9805135-10		Water	5/12/98	18:30
S98-0156	9805135-11		Water	5/11/98	16:35
S98-0158	9805135-12		Water	5/11/98	18:40
S98-0171	9805135-13		Water	5/12/98	9:40
S98-0178	9805135-14		Water	5/12/98	17:40
S98-0179	9805135-15		Water	5/12/98	17:55
S98-0157	9805135-16		Water	5/11/98	18:52
S98-0167	9805135-17		Water	5/11/98	20:40

F.M.08-0566 (Rev. 4-98)

F.M.-08-0566 (Rev. 4-96)

CONTRACT LABORATORY

FM-38-3506 (Rev 4-92)

CHAIN OF CUSTODY RECORD

01

Page _____ of _____

PROJECT NUMBER		PROJECT NAME		DATE		SAMPLERS: (Signature)	
LAB ID	DATE	TIME	MATRIX	SAMPLE NUMBER	TOTAL NUMBER OF CONTAINERS	COMPOSITE OR GRAB	REQUESTED ANALYSIS
-01	5/12/98	0330	H ₂ O	S98-01168	3		IC TOS specific BTEX SEE Attached
-02	5/12/98	0902	H ₂ O	S98-01169	3		
-03	5/12/98	1000	H ₂ O	S98-0170	3		
-04	5/12/98	1130	H ₂ O	S98-0178 ^{3.0}	3		
-05	5/12/98	1257	H ₂ O	S98-0173	3		
-06	5/12/98	1400	H ₂ O	S98-0174	3		
-07	5/12/98	1533	H ₂ O	S98-0175	3		
-08	5/12/98	1533	H ₂ O	S98-0176	3		
-09	5/12/98	1717	H ₂ O	S98-0177	3		
-10	5/12/98	1830	H ₂ O	S98-0180	5		
RELINQUISHED BY: (Signature)				DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)				DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
REQUESTED TURNAROUND TIME:				SAMPLE RECEIPT REMARKS			
ROUTINE <input type="checkbox"/> RUSH <input type="checkbox"/>				RESULTS & INVOICES TO:			
CARRIER CO.				CHARGE CODE			
BILL NO.:				LABORATORY SERVICES EL PASO NATURAL GAS COMPANY 8645 RAILROAD DRIVE EL PASO, TEXAS 79904 915-759-2229 FAX: 915-759-2335			

ANALYSIS FOR 1ST,2ND,3RD QUARTER SAMPLING

Anions & Cations	Preservative	Bottle & Sample Size
ph	none	1000ml Plastic
P Alkalinity	none	1000ml Plastic
T Alkalinity	none	1000ml Plastic
Chloride	none	1000ml Plastic
Sulfate	none	1000ml Plastic
T Hardness	HNO3	1000ml Plastic
Calcium	HNO3	1000ml Plastic
Magnesium	HNO3	1000ml Plastic
Sodium	HNO3	1000ml Plastic
Silica	HNO3	1000ml Plastic
Fluride	none	1000ml Plastic
Potassium	HNO3	1000ml Plastic
Bromide	none	1000ml Plastic
Nitrate	H2SO4	500ml Plastic
Total Dissolved Solids	none	1000ml Plastic
Specific Conductance	none	1000ml Plastic
BTEX	HCL	2X VOA

CONDITION OF SAMPLE UPON RECEIPT

CLIENT: EL PASO

SHIPPING CONTAINER #: _____

WORKORDER NO. 98-05-135

INITIALS: RJM

DATE: 5-4-98

1. Does this project require special handling according to NEESA, Level 3, or CLP protocols? If yes, complete a. and b. a. Cooler Temperature _____ b. Lot No's. _____ c. Airbill Number _____	Yes	<u>No</u>
2. Are custody seals on the cooler intact? If so, how many	N/A	<u>Yes</u> No
3. Are custody seals on sample containers intact?	N/A	Yes <u>No</u>
4. Is there a Chain of Custody (COC) or other representative documents, letters or shipping memos?		<u>Yes</u> No
5. Is the COC complete? Relinquished: Yes <u>No</u> Requested Analysis: Yes <u>No</u>	N/A	<u>Yes</u> No
6. Is the COC in agreement with the samples received? No. of Samples: Yes <u>No</u> Sample ID's: Yes <u>No</u> Matrix: Yes <u>No</u> No. of Containers: Yes <u>No</u>		<u>Yes</u> No
7. Are the samples requiring chemical preservation preserved correctly?	N/A	<u>Yes</u> No
8. Is there enough sample? If so, are they in the proper containers?		<u>Yes</u> No
9. Are all samples within holding times for the requested analyses?		<u>Yes</u> No
10. Were the sample(s) shipped on ice?	N/A	<u>Yes</u> No
11. Were all sample containers received intact? (not broken or leaking, etc.)		<u>Yes</u> No
12. Are samples requiring no headspace, headspace free?	N/A	Yes <u>No</u>
13. Do the samples require quarantine?		Yes <u>No</u>
14. Do samples require Paragon disposal?		<u>Yes</u> No
15. Did the client return any unused bottles?	Yes	<u>No</u>

Describe "NO" items (except No's 1, 13, & 14): _____

Was the client contacted? Yes _____ No _____
 If yes, Date: _____ Name of person contacted: _____
 Describe actions taken or client instructions: _____

Group Leader's Signature: _____ Date: _____

Cooler Temperature: 13°



PARAGON ANALYTICS, INC.

225 Commerce Drive ♦ Fort Collins, CO 80524 ♦ (800) 443-1511 ♦ (970) 490-1511 ♦ FAX (970) 490-1522

June 25, 1998

Mr. Darrell Campbell
El Paso Natural Gas Co.
8645 Railroad Drive
El Paso, TX 79904

RE: Paragon Workorder: 98-05-143
Client Project Name: Not Submitted
Client Project Number: S98-0181

Dear Mr. Campbell:

Six water samples were received from El Paso Natural Gas Co. on May 15, 1998. The sample was scheduled for the following analyses:

Inorganics	pages 1-28
Aromatic Volatile	
Organics	pages 1-15
Total Recoverable	
Metals	pages 1-9
pH Analysis	pages 1-5
Specific Conductance	pages 1-5

Thank you for your confidence in Paragon Analytics, Inc. Should you have any questions, please call.

Sincerely,

Paragon Analytics, Inc.
Adrienne Mackzum
Project Manager

AM/ar
Enclosure: Report



Paragon Analytics, Inc.

INORGANICS CASE NARRATIVE

El Paso Natural Gas Co.

S98-0181

Order Number - 9805143

1. This report consists of data for 6 water samples analyzed for chloride and total dissolved solids (TDS). Also, 2 of the samples were analyzed for alkalinity, bicarbonate, bromide, fluoride, nitrate/nitrite and sulfate.
2. The samples were received intact at a temperature of 7° C on 05/15/98.
3. The samples had been correctly preserved for the requested analyses.
4. The samples were analyzed using procedures based on the following methods from the USEPA:

<u>Analyte</u>	<u>Method</u>
Alkalinity	310.1
Bicarbonate	310.1
Bromide	300.0
Chloride	300.0
Fluoride	300.0
Nitrate/Nitrite	353.3
Sulfate	300.0
Total Dissolved Solids	160.1

5. All standards and solutions were used within their recommended shelf life.
6. The samples were prepared and analyzed within the established hold times for all analyses.

All in house quality control procedures were followed, as described below.

7. General quality control procedures.
 - A method blank, a laboratory control sample (LCS), a matrix spike, and matrix spike duplicate were prepared and analyzed for each analysis batch.



- The method blank results were within acceptance limits.
- The LCS results were within acceptance limits for all analyses.
- It was necessary to dilute the sample selected for the MS/MSD in order to bring the native chloride concentration into the analytical range of this analyte on the ion chromatograph. Therefore, accurate quantitation of MS/MSD recoveries for chloride was not possible. The MS/MSD results were within acceptance limits for all other associated analyses.

The data contained in the following report have been reviewed and approved by the personnel listed below:

B
Reporter's Initials

6-23-98
Date

DP
Reviewer's Initials

6/23/98
Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9805143

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0181

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0181	9805143-1		Water	5/13/98	8:20
S98-0182	9805143-2		Water	5/13/98	9:35
S98-0183	9805143-3		Water	5/13/98	11:17
S98-0185	9805143-4		Water	5/13/98	15:15
S98-0184	9805143-5		Water	5/13/98	13:25
S98-0186	9805143-6		Water	5/13/98	16:00

BROMIDE
Method EPA300.0
Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0181
Work Order Number: 9805143
Reporting Basis: As Received

Final Volume: 5 ML
Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0184	9805143-5	5/13/98	5/20/98	5/20/98	N/A	10	2	MG/L	2	U	5 ML
S98-0186	9805143-6	5/13/98	5/20/98	5/20/98	N/A	10	2	MG/L	2	U	5 ML

Comments:

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

000004

CHLORIDE
Method EPA300.0
Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0181
Work Order Number: 9805143
Reporting Basis: As Received

Final Volume: 5 ML
Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0181	9805143-1	5/13/98	5/20/98	5/23/98	N/A	1000	3300	MG/L	200		5 ML
S98-0182	9805143-2	5/13/98	5/20/98	5/23/98	N/A	1000	4300	MG/L	200		5 ML
S98-0183	9805143-3	5/13/98	5/20/98	5/23/98	N/A	500	570	MG/L	100		5 ML
S98-0185	9805143-4	5/13/98	5/20/98	5/23/98	N/A	500	1600	MG/L	100		5 ML
S98-0184	9805143-5	5/13/98	5/20/98	5/20/98	N/A	10	58	MG/L	2		5 ML
S98-0186	9805143-6	5/13/98	5/20/98	5/23/98	N/A	20	120	MG/L	4		5 ML

Comments:

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

000005

FLUORIDE
Method EPA300.0
Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0181
Work Order Number: 9805143
Reporting Basis: As Received

Final Volume: 5 ML
Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0184	9805143-5	5/13/98	5/20/98	5/20/98	N/A	10	1.7	MG/L	1		5 ML
S98-0186	9805143-6	5/13/98	5/20/98	5/20/98	N/A	10	1.1	MG/L	1		5 ML

Comments:

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

SULFATE
Method EPA300.0
Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0181
Work Order Number: 9805143
Reporting Basis: As Received

Final Volume: 5 ML
Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0184	9805143-5	5/13/98	5/20/98	5/20/98	N/A	10	110	MG/L	10		5 ML
S98-0186	9805143-6	5/13/98	5/20/98	5/20/98	N/A	10	61	MG/L	10		5 ML

Comments:

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

000007

Ion Chromatography

Method EPA300.0

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805143

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0181

Lab ID: IC980520-1MB

Sample Matrix: Water

% Moisture: N/A

Date Collected: N/A

Date Extracted: 20-May-98

Date Analyzed: 20-May-98

Prep Batch: IC980520-1

QCBatchID: IC980520-1-1

Run ID: IC980520-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 5 ML

Final Volume: 5 ML

CASNO	Target Analyte	DF	Result	Units	Reporting Limit	Result Qualifier	EPA Qualifier
24959-67-9	BROMIDE	1	0.2	MG/L	0.2	U	
14808-79-8	SULFATE	1	1	MG/L	1	U	
16984-48-8	FLUORIDE	1	0.1	MG/L	0.1	U	
16887-00-6	CHLORIDE	1	0.2	MG/L	0.2	U	

Ion Chromatography

Method EPA300.0

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805143

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0181

Lab ID: IC980520-1MB

Sample Matrix: Water

% Moisture: N/A

Date Collected: N/A

Date Extracted: 20-May-98

Date Analyzed: 23-May-98

Prep Batch: IC980520-1

QCBatchID: IC980520-1-1

Run ID: IC980523-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 5 ML

Final Volume: 5 ML

CASNO	Target Analyte	DF	Result	Units	Reporting Limit	Result Qualifier	EPA Qualifier
16887-00-6	CHLORIDE	1	0.2	MG/L	0.2	U	

Ion Chromatography

Method EPA300.0

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805143

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0181

Lab ID: IC980520-1LCS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 20-May-98

Date Extracted: 20-May-98

Date Analyzed: 20-May-98

Prep Batch: IC980520-1

QCBatchID: IC980520-1-1

Run ID: IC980520-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 5 ML

Final Volume: 5 ML

CASNO	Target Analyte	Spike Added	LCS Result	Units	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
24959-67-9	BROMIDE	4	3.98	MG/L	0.2		100	85 - 115%
16887-00-6	CHLORIDE	4	4.1	MG/L	0.2		102	75 - 115%
16984-48-8	FLUORIDE	2	2.07	MG/L	0.1		103	80 - 120%
14808-79-8	SULFATE	20	20.3	MG/L	1		101	85 - 115%

Ion Chromatography

Method EPA300.0

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805143

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0181

Lab ID: IC980520-1LCS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 20-May-98

Date Extracted: 20-May-98

Date Analyzed: 23-May-98

Prep Batch: IC980520-1

QCBatchID: IC980520-1-1

Run ID: IC980523-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 5 ML

Final Volume: 5 ML

CASNO	Target Analyte	Spike Added	LCS Result	Units	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
16887-00-6	CHLORIDE	4	4.06	MG/L	0.2		101	75 - 115%

Ion Chromatography

Method EPA300.0

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805143

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0181

Field ID: SHARED QC
LabID: 9805135-10MS

Sample Matrix: Water
% Moisture: N/A
Date Collected: 12-May-98
Date Extracted: 20-May-98
Date Analyzed: 20-May-98

Prep Batch: IC980520-1
QCBatchID: IC980520-1-1
Run ID: IC980520-1A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 5 ML
Final Volume: 5 ML

Target Analyte	Sample Result	MS Result	Units	Reporting Limit	Result Qualifier	Spike Added	MS % Rec.	Control Limits
BROMIDE	2	95.4	MG/L	2		100	95	85 - 115%
FLUORIDE	1.2	38.9	MG/L	1		40	94	80 - 120%
SULFATE	81	450	MG/L	10		400	92	85 - 115%

MSD Lab ID: 9805135-10MSD

Target Analyte	Spike Added	MSD Result	Units	Reporting Limit	MSD % Rec.	RPD	RPD Limits
BROMIDE	100	97.6	MG/L	2	98	2.3	15
FLUORIDE	40	38.3	MG/L	1	93	1.4	20
SULFATE	400	462	MG/L	10	95	2.6	15

000012

Bicarbonate as Calcium Carbonate

Method EPA310.1M

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805143

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0181

Reporting Basis: As Received

Sample Aliquot: 50 ML

Final Volume: 50ML

Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
S98-0184	9805143-5	5/19/98	5/19/98	2	171	MG/L	170	10		1	15

Comments:

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

TOTAL ALKALINITY As CaCO₃

Method EPA310.1

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805143

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0181

Reporting Basis: As Received

Sample Aliquot: 50 ML

Final Volume: 50ML

Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
S98-0184	9805143-5	5/19/98	5/19/98	2	171	MG/L	170	10		1	15

Comments:

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

Total Dissolved Solids

Method EPA160.1

Sample Results

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0181

Work Order Number: 9805143

Reporting Basis: As Received

Final Volume: 10 MG/L

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0181	9805143-1	5/13/98	5/20/98	5/20/98	N/A	1	10000	MG/L	200		10 ML
S98-0182	9805143-2	5/13/98	5/20/98	5/20/98	N/A	1	11000	MG/L	200		10 ML
S98-0183	9805143-3	5/13/98	5/20/98	5/20/98	N/A	1	2800	MG/L	200		10 ML
S98-0185	9805143-4	5/13/98	5/20/98	5/20/98	N/A	1	4500	MG/L	200		10 ML
S98-0184	9805143-5	5/13/98	5/20/98	5/20/98	N/A	1	530	MG/L	20		100 ML
S98-0186	9805143-6	5/13/98	5/20/98	5/20/98	N/A	1	480	MG/L	20		100 ML

Comments:

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

Total Dissolved Solids

Method EPA160.1

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805143

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0181

Lab ID: TD980520MB

Sample Matrix: Water

% Moisture: N/A

Date Collected: N/A

Date Extracted: 20-May-98

Date Analyzed: 20-May-98

Prep Batch: TD980520-1

QCBatchID: TD980520-1-1

Run ID: TD980520-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 MG/L

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
TD980520MB	5/20/98	5/20/98	5/20/98	N/A	1	20	MG/L	20	U

Comments:

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

Total Dissolved Solids

Method EPA160.1

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805143

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0181

Lab ID: TD980520LCS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 20-May-98

Date Extracted: 20-May-98

Date Analyzed: 20-May-98

Prep Batch: TD980520-1

QCBatchID: TD980520-1-1

Run ID: TD980520-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 MG/L

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
10-33-3	TOTAL DISSOLVED SOLIDS	400	372	MG/L	20		93	85 - 115

Total Dissolved Solids

Method EPA160.1

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805143

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0181

Field ID: S98-0181

Lab ID: 9805143-1

Sample Matrix: Water

% Moisture: N/A

Date Collected: 13-May-98

Date Extracted: 20-May-98

Date Analyzed: 20-May-98

Prep Batch: TD980520-1

QCBatchID: TD980520-1-1

Run ID: TD980520-1A

Cleanup: NONE

Basis: As Received

Sample Aliquot: 10 ML

Final Volume: 10 MG/L

CASNO	Target Analyte	Sample Result	Duplicate Result	Units	Reporting Limit	Result Qualifier	Dilution Factor	RPD	RPD Limit
10-33-3	TOTAL DISSOLVED S	10000	10100	MG/L	200		1	2	15

000008



Paragon Analytics, Inc.

Aromatic Volatile Organics Case Narrative

El Paso Natural Gas Company

S98-0181

Order Number - 9805143

1. This report consists of 6 water samples received by Paragon on 5/15/98.
2. These samples were prepared and analyzed according to SW-846, 3rd Edition procedures. Specifically, the water samples were prepared by heating and purging 5 mls using purge and trap procedures based on Method 5030. The calibration curve was also prepared using the heated purge.
3. Samples -2, -3, -4 and, -5 were analyzed using a GC with a DB-624 capillary column and a PID detector according to protocols based on SW-846 Method 8021. Second column confirmation was performed on the samples of this group with positive results on a DB-VRX capillary column. Samples -1 and -6 were analyzed using a GC with a DB-VRX capillary column and a PID detector according to protocols based on SW-846 Method 8021. Second column confirmation was performed on the samples of this group with positive results on a DB-624 capillary column. All positive results were quantitated using the responses from the initial calibration curve using the internal standard technique.
4. All initial and continuing calibration criteria were within acceptance criteria.

5. The method blank run on 5/19/98 on the DB-VRX contained ethyl benzene, m-xylene, p-xylene, and o-xylene at a level greater than the reporting limit. These compounds were not detected in the only sample (sample #-6) reported with this blank, so no further action was warranted. The concentrations in the method blank run on 5/19/98 on the confirmation column for samples -2 and -3 were at a level greater than the reporting limit so these 3 compounds were flagged with a * (Note: The method blank for the primary column for these two samples analyzed on 5/20/98 was below the reporting limits for all analytes). All the other method blanks associated with this project were below the reporting limits for all analytes.
6. All laboratory control spike and laboratory control spike duplicate recoveries and RPDs were within the acceptance criteria.
7. All matrix spike and matrix spike duplicate recoveries and RPDs were within acceptance criteria.
8. All samples were analyzed within the established holding times.
9. All surrogate recoveries were within acceptance criteria.
10. All internal standard recoveries were within acceptance criteria.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Wesley S. Mayfield 6/17/98
Wesley S. Mayfield Date
Fuels Analyst

MB
Reviewer's Initials

6-17-98
Date

000002

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: El Paso Natural Gas Company

Reagent Blank

Lab Sample ID: WRB1 5/19/98 DB-VRX Column

Date Collected: N/A
Date Extracted: 5/19/98
Date Analyzed: 5/19/98

Sample Matrix: Water

Sample Volume: 5 mL
Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	0.55	0.50
M,P-Xylene	1.3 #	1.0
O-Xylene	0.94 #	0.50
Total Xylenes	2.3 #	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	102	88 - 119

= See case narrative..

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

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: El Paso Natural Gas Company

S98-0186

Lab Sample ID: 9805143-6

Date Collected: 5/13/98

Date Extracted: 5/19/98

Date Analyzed: 5/19/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	102	88 - 119

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

000004

AROMATIC VOLATILE ORGANICS BLANK SPIKE

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
 Client Name: El Paso Natural Gas Co.
 Client Project ID: El Paso Natural Gas Company

Blank Spike

Date Extracted: 5/19/98

Lab Sample ID: WBS1&2 5/19/98 DB-VRX Column

Date Analyzed: 5/19/98

Sample Matrix: Water

Sample Volume: 5 mL

Analyte	Spike Added (ug/L)	BS Concentration (ug/L)	BS Percent Recovery	QC Limits % Rec
Benzene	100	99.8	100	85 - 115
Toluene	100	102	102	85 - 115
Ethylbenzene	100	103	103	85 - 115
M,P-Xylene	200	210	105	85 - 115
O-Xylene	100	101	101	85 - 115
Total Xylenes	300	311	104	85 - 115

Analyte	Spike Added (ug/L)	BSD Concentration (ug/L)	BSD Percent Recovery	RPD	QC Limits RPD
Benzene	100	103	103	3	20
Toluene	100	105	105	3	20
Ethylbenzene	100	105	105	2	20
M,P-Xylene	200	215	107	2	20
O-Xylene	100	104	104	3	20
Total Xylenes	300	319	106	3	20

SURROGATE RECOVERY BS/BS

Analyte	% Recovery BS	% Recovery BSD	% Rec Limits
2,3,4-Trifluorotoluene	100	101	88 - 119

ID = Detected

000005

AROMATIC VOLATILE ORGANICS MATRIX SPIKE

Method 8021

Sample ID

S98-0186

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: El Paso Natural Gas Company

Date Collected: 5/13/98
Date Extracted: 5/19/98
Date Analyzed: 5/19/98

Lab Sample ID: 9805143-6MS

Sample Matrix: Water

Sample Volume: 5 mL
Dilution Factor: 1

Analyte	Spike Added (ug/L)	Sample Concentration (ug/L)	MS Concentration (ug/L)	MS Percent Recovery	QC Limits % Rec
Benzene	100	ND	101	101	85 - 115
Toluene	100	ND	103	103	85 - 115
Ethylbenzene	100	ND	103	103	85 - 115
M,P-Xylene	200	ND	210	105	85 - 115
O-Xylene	100	ND	101	101	85 - 115
Total Xylenes	300	ND	311	104	85 - 115

Analyte	Spike Added (ug/L)	MSD Concentration (ug/L)	MSD Percent Recovery	RPD	QC Limits RPD
Benzene	100	100	100	1	20
Toluene	100	101	101	1	20
Ethylbenzene	100	102	102	1	20
M,P-Xylene	200	207	103	1	20
O-Xylene	100	100	100	1	20
Total Xylenes	300	307	102	1	20

SURROGATE RECOVERY MS/MSD

Analyte	% Recovery MS	% Recovery MSD	% Rec Limits
2,3,4-Trifluorotoluene	100	99	88 - 119

ND = Not Detected

000006

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Reagent Blank

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0181

Lab Sample ID: WRB1 5/20/98 DB-VRX Column

Date Collected: N/A
Date Extracted: 5/20/98
Date Analyzed: 5/20/98

Sample Matrix: Water

Sample Volume: 5 mL
Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	102	88 - 119

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

000007

TOTAL ALKALINITY As CaCO₃

Method EPA310.1

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805143

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0181

Lab ID: AK980519-1LCS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 19-May-98

Date Extracted: 19-May-98

Date Analyzed: 19-May-98

Prep Batch: AK980519-1

QCBatchID: AK980519-1-2

Run ID: AK980519-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 ML

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
11-43-8	TOTAL ALKALINITY As CaCO ₃	100	95.7	MG/L	5		96	85 - 115

Nitrate/Nitrite as N

Method EPA353.3

Sample Results

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0181

Work Order Number: 9805143

Reporting Basis: As Received

Final Volume: 3 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0184	9805143-5	5/13/98	5/19/98	5/20/98	N/A	2	1.7	MG/L	0.1		3 ML
S98-0186	9805143-6	5/13/98	5/19/98	5/19/98	N/A	1	0.93	MG/L	0.05		3 ML

Comments:

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

Nitrate/Nitrite as N

Method EPA353.3

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805143

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0181

Lab ID: NN980519-1MB

Sample Matrix: Water

% Moisture: N/A

Date Collected: N/A

Date Extracted: 19-May-98

Date Analyzed: 20-May-98

Prep Batch: NN980519-1

QCBatchID: NN980519-1-1

Run ID: NN980520-2A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 3 ML

Final Volume: 3 ML

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
NN980519-1MB	5/19/98	5/19/98	5/20/98	N/A	1	0.05	MG/L	0.05	U
NN980519-1MB	5/19/98	5/19/98	5/19/98	N/A	1	0.05	MG/L	0.05	U
NN980519-1MB	5/19/98	5/19/98	5/20/98	N/A	1	0.05	MG/L	0.05	U

Comments:

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

000014

Nitrate/Nitrite as N

Method EPA353.3

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805143

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0181

Lab ID: NN980519-1LCS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 19-May-98

Date Extracted: 19-May-98

Date Analyzed: 20-May-98

Prep Batch: NN980519-1

QCBatchID: NN980519-1-1

Run ID: NN980520-2A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 3 ML

Final Volume: 3 ML

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
1-005	NITRATE/NITRITE	0.5	0.47	MG/L	0.05		94	80 - 120
1-005	NITRATE/NITRITE	0.5	0.514	MG/L	0.05		103	80 - 120
1-005	NITRATE/NITRITE	0.5	0.51	MG/L	0.05		102	80 - 120

Nitrate/Nitrite as N

Method EPA353.3

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805143

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0181

Field ID: SHARED QC

LabID: 9805056-2MS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 05-May-98

Date Extracted: 19-May-98

Date Analyzed: 20-May-98

Prep Batch: NN980519-1

QCBatchID: NN980519-1-1

Run ID: NN980520-2A

Cleanup: NONE

Basis: As Received

Sample Aliquot: 3 ML

Final Volume: 3 ML

Target Analyte	Sample Result	MS Result	Units	Reporting Limit	Result Qualifier	Spike Added	MS % Rec.	Control Limits
NITRATE/NITRITE	0.05	0.493	MG/L	0.05		0.5	99	80 - 120%

MSD Lab ID: 9805056-2MSD

Target Analyte	Spike Added	MSD Result	Units	Reporting Limit	MSD % Rec.	RPD	RPD Limits
NITRATE/NITRITE	0.5	0.504	MG/L	0.05	101	2	20

Bicarbonate as Calcium Carbonate

Method EPA310.1M

Sample Results

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0181

Work Order Number: 9805143

Final Volume: 50 ML

Reporting Basis: As Received

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0184	9805143-5	5/13/98	5/19/98	5/19/98	N/A	2	170	MG/L	10		50 ML
S98-0186	9805143-6	5/13/98	5/19/98	5/19/98	N/A	2	150	MG/L	10		50 ML

Comments:

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

TOTAL ALKALINITY As CaCO₃

Method EPA310.1

Sample Results

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0181

Work Order Number: 9805143

Reporting Basis: As Received

Final Volume: 50 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0184	9805143-5	5/13/98	5/19/98	5/19/98	N/A	2	170	MG/L	10		50 ML
S98-0186	9805143-6	5/13/98	5/19/98	5/19/98	N/A	2	150	MG/L	10		50 ML

Comments:

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

Bicarbonate as Calcium Carbonate

Method EPA310.1M

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805143

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0181

Lab ID: AK980519-1MB

Sample Matrix: Water

% Moisture: N/A

Date Collected: N/A

Date Extracted: 19-May-98

Date Analyzed: 19-May-98

Prep Batch: AK980519-1

QCBatchID: AK980519-1-2

Run ID: AK980519-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 ML

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
AK980519-1MB	5/19/98	5/19/98	5/19/98	N/A	1	5	MG/L	5	U

Comments:

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

000019

TOTAL ALKALINITY As CaCO₃

Method EPA310.1

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805143

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0181

Lab ID: AK980519-1MB

Sample Matrix: Water

% Moisture: N/A

Date Collected: N/A

Date Extracted: 19-May-98

Date Analyzed: 19-May-98

Prep Batch: AK980519-1

QCBatchID: AK980519-1-2

Run ID: AK980519-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 ML

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
AK980519-1MB	5/19/98	5/19/98	5/19/98	N/A	1	5	MG/L	5	U

Comments:

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

Bicarbonate as Calcium Carbonate

Method EPA310.1M

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805143

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0181

Lab ID: AK980519-1LCS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 19-May-98

Date Extracted: 19-May-98

Date Analyzed: 19-May-98

Prep Batch: AK980519-1

QCBatchID: AK980519-1-2

Run ID: AK980519-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 ML

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
10-13-9	BICARBONATE AS CaCO3	100	95.7	MG/L	5		96	85 - 115

00002

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

S98-0181

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0181

Lab Sample ID: 9805143-1

Date Collected: 5/13/98

Date Extracted: 5/20/98

Date Analyzed: 5/20/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	15	0.50
Toluene	12	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	2.9	1.0
O-Xylene	0.95	0.50
Total Xylenes	3.8	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	93	88 - 119

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

AROMATIC VOLATILE ORGANICS BLANK SPIKE

Method 8021

Sample ID

Blank Spike

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0181

Date Extracted: 5/20/98

Lab Sample ID: WBS1&2 5/20/98 DB-VRX Column

Date Analyzed: 5/20/98

Sample Matrix: Water

Sample Volume: 5 mL

Analyte	Spike Added (ug/L)	BS Concentration (ug/L)	BS Percent Recovery	QC Limits % Rec
Benzene	100	98.7	99	85 - 115
Toluene	100	101	101	85 - 115
Ethylbenzene	100	102	102	85 - 115
M,P-Xylene	200	208	104	85 - 115
O-Xylene	100	101	101	85 - 115
Total Xylenes	300	309	103	85 - 115

Analyte	Spike Added (ug/L)	BSD Concentration (ug/L)	BSD Percent Recovery	RPD	QC Limits RPD
Benzene	100	102	102	3	20
Toluene	100	104	104	3	20
Ethylbenzene	100	105	105	3	20
M,P-Xylene	200	215	107	3	20
O-Xylene	100	105	105	4	20
Total Xylenes	300	320	107	3	20

SURROGATE RECOVERY BS/BSD

Analyte	% Recovery BS	% Recovery BSD	% Rec Limits	
2,3,4-Trifluorotoluene	99	101	88 - 119	

D = Detected

000000

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Reagent Blank

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0181

Lab Sample ID: WRB1 5/20/98 DB-624 Column

Date Collected: N/A
Date Extracted: 5/20/98
Date Analyzed: 5/20/98

Sample Matrix: Water

Sample Volume: 5 mL
Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	97	88 - 119

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

000010

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0181

S98-0182

Lab Sample ID: 9805143-2

Date Collected: 5/13/98

Date Extracted: 5/20/98

Date Analyzed: 5/20/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	7.0	0.50
Toluene	3.2	0.50
Ethylbenzene	2.1 *	0.50
M,P-Xylene	1.7 *	1.0
O-Xylene	ND	0.50
Total Xylenes	1.7 *	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	95	88 - 119

* = See case narrative..

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

000011

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

S98-0183

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0181

Lab Sample ID: 9805143-3

Date Collected: 5/13/98

Date Extracted: 5/20/98

Date Analyzed: 5/20/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	0.79	0.50
Toluene	1.5	0.50
Ethylbenzene	0.77 *	0.50
M,P-Xylene	ND	1.0
O-Xylene	12 *	0.50
Total Xylenes	12 *	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	98	88 - 119

* = See case narrative..

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

000012

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0181

S98-0184

Lab Sample ID: 9805143-4

Date Collected: 5/13/98

Date Extracted: 5/20/98

Date Analyzed: 5/20/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	0.75	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	97	88 - 119

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

000013

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

S98-0185

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0181

Lab Sample ID: 9805143-5

Date Collected: 5/13/98

Date Extracted: 5/20/98

Date Analyzed: 5/20/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	98	88 - 119

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

000014

AROMATIC VOLATILE ORGANICS BLANK SPIKE

Method 8021

Sample ID

Blank Spike

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0181

Date Extracted: 5/20/98

Lab Sample ID: WBS1&2 5/20/98 DB-624 Column

Date Analyzed: 5/20/98

Sample Matrix: Water

Sample Volume: 5 mL

Analyte	Spike Added (ug/L)	BS Concentration (ug/L)	BS Percent Recovery	QC Limits % Rec
Benzene	50.0	49.6	99	85 - 115
Toluene	50.0	50.5	101	85 - 115
Ethylbenzene	50.0	51.3	103	85 - 115
M,P-Xylene	100	104	104	85 - 115
O-Xylene	50.0	50.7	101	85 - 115
Total Xylenes	150	154	103	85 - 115

Analyte	Spike Added (ug/L)	BSD Concentration (ug/L)	BSD Percent Recovery	RPD	QC Limits RPD
Benzene	50.0	51.5	103	4	20
Toluene	50.0	51.8	104	2	20
Ethylbenzene	50.0	52.6	105	3	20
M,P-Xylene	100	106	106	3	20
O-Xylene	50.0	52.9	106	4	20
Total Xylenes	150	159	106	3	20

SURROGATE RECOVERY BS/BSD

Analyte	% Recovery BS	% Recovery BSD	% Rec Limits
2,3,4-Trifluorotoluene	97	100	88 - 119

D = Detected

000015



Paragon Analytics, Inc.

TOTAL RECOVERABLE METALS CASE NARRATIVE

El Paso Natural Gas Company

S98-0181

Order Number - 9805143

1. This report consists of 2 water samples.
2. The samples were received intact on 05/15/98. Temperature of the samples upon receipt was 7° Celsius.
3. The samples had been correctly preserved for the requested analyses.
4. The samples were prepared for analysis based on SW-846, 3rd Edition procedures.
For analysis by conventional ICP the samples were digested following method 3005A.
5. The samples were analyzed following SW-846 protocols by conventional ICP (Method 6010B).
6. All standards and solutions are NIST traceable and were used within their recommended shelf life.
7. The samples were prepared and analyzed within the established hold times.
8. Sample results which are below PAI's standard reporting limits are reported as "ND" on the enclosed report.

All in house quality control procedures were followed, as described below.

9. General quality control procedures.
 - A preparation (method) blank and laboratory control sample were digested and analyzed with the samples in this digestion batch. There were not more than 20 samples in the digestion batch.
 - The preparation (method) blank results associated with this batch were below the reporting limits for the requested analytes. This indicates that no contaminants were introduced to the samples during the digestion procedure.



- The laboratory control sample associated with this batch was within acceptance limits. This indicates complete digestion according to the method.
 - All initial and continuing calibration blanks associated with this batch were below the reporting limits for the requested analytes. This indicates a valid calibration and stable instrument conditions.
 - All initial and continuing calibration verifications associated with this batch were within acceptance criteria for the requested analytes. This indicates a valid calibration and stable instrument conditions.
 - The interference check samples, and high standard readbacks associated with Method 6010B analyses were within acceptance criteria.
10. A sample from another Order Number was used as the QC sample for this batch.
- A matrix spike and matrix spike duplicate were digested and analyzed with this batch. All acceptance criteria for accuracy were met with the following exception.

Analyte
Silicon

Sample ID
9805082-21MS & MSD

The concentration of silicon in the native sample was greater than 4 times the concentration of matrix spike added during the digestion. When sample concentration is that much greater than the spike added, spike recoveries may not be accurate. The laboratory control sample is included to show that the digestion and analysis were in control.

- A sample duplicate and spike duplicate were digested and analyzed with this batch. All acceptance criteria for precision were met.
 - A serial dilution was analyzed with this batch. All acceptance criteria were met.
11. Hardness was determined by calculation based on method 2340B from Standard Methods for the Examination of Waters and Wastewaters, 17th Edition, 1989. Calcium and magnesium concentrations were determined by conventional ICP, SW-846 Method 6010B.

$\text{mg CaCO}_3/\text{L} = (2.497 * \text{Ca conc. (mg/L)}) + (4.118 * \text{Mg conc. (mg/L)})$

S98-0184 (PAI ID 9805143-5) - 193 mg CaCO₃/L

S98-0186 (PAI ID 9805143-6) - 247 mg CaCO₃/L



The data contained in the following report have been reviewed and approved by the personnel listed below:

Kim Hamacher
Kim Hamacher
Senior Inorganic Chemist

5/26/98
Date

SW
Reviewer's Initials

5/26/98
Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9805143

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0181

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0181	9805143-1		Water	5/13/98	8:20
S98-0182	9805143-2		Water	5/13/98	9:35
S98-0183	9805143-3		Water	5/13/98	11:17
S98-0185	9805143-4		Water	5/13/98	15:15
S98-0184	9805143-5		Water	5/13/98	13:25
S98-0186	9805143-6		Water	5/13/98	16:00

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Company
Client Project ID: S98-0181
Lab Sample ID: RB 9805143

Sample ID

Reagent Blank

Date Collected: N/A
Prep Date: 05/21/98
Date Analyzed: 05/21/98

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	ND	1
Magnesium	ND	1
Potassium	ND	1
Silicon	ND	0.05
Sodium	ND	1

ND = Not detected at or above the reporting limit.

000005

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Company
Client Project ID: S98-0181
Lab Sample ID: 9805143-5
Sample Matrix: Water

Sample ID

S98-0184

Date Collected: 05/13/98
Prep Date: 05/21/98
Date Analyzed: 05/21/98

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	47	1
Magnesium	18	1
Potassium	6	1
Silicon	24	0.05
Sodium	97	1

ND = Not detected at or above the reporting limit.

UX
000006

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Company
Client Project ID: S98-0181
Lab Sample ID: 9805143-6

Sample ID

S98-0186

Sample Matrix: Water

Date Collected: 05/13/98
Prep Date: 05/21/98
Date Analyzed: 05/21/98

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	66	1
Magnesium	20	1
Potassium	5	1
Silicon	27	0.05
Sodium	65	1

ND = Not detected at or above the reporting limit.

Vx

00000'

TOTAL RECOVERABLE METALS MATRIX SPIKE

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Company
Lab Sample ID: 9805082-21

Sample ID

In House

Sample Matrix: Water

Prep Date: 05/21/98
Date Analyzed: 05/21/98

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	% Rec. (limits 80-120%)	Flags
Calcium	40	23	65	105	See note
Magnesium	40	5	47	105	
Potassium	40	< 1	42	105	
Silicon	0.5	3.7	4.3	120	
Sodium	40	< 1	43	108	

Analyte	MSD Conc. mg/L	MSD % Rec. (limits 80-120%)	Relative % Difference (limits 0-20%)	Flags
Calcium	66	108	2	See note
Magnesium	48	108	2	
Potassium	42	105	0	
Silicon	4.3	120	0	
Sodium	44	110	2	

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

000008

**TOTAL RECOVERABLE METALS
LABORATORY CONTROL SAMPLE**

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Company

Client Project ID: S98-0181

Order Number: 9805135

Date Analyzed: 05/21/98

Control limits: 80 - 120%

Analyte	LCS Result mg/L	LCS True Value mg/L	LCS % Recovery
Silicon	0.56	0.50	112

14

000000

Paragon Analytics, Inc.



PH ANALYSIS CASE NARRATIVE

El Paso Natural Gas Co.

S98-0181

Order Number - 9805143

1. This report consists of six water samples.
2. The samples were received intact at a temperature of 7⁰ C. on May 15, 1998.
3. The samples were prepared for analysis based on SW-846, 3rd Edition procedures. Specifically, the water samples were analyzed following Method 9040.
4. All standards and solutions were used within their recommended shelf life.
All in house quality control procedures were followed, as described below.
5. General quality control procedures.
 - All initial and continuing calibration verifications associated with this batch were within acceptance criteria for the requested analyte. This indicates a valid calibration and stable instrument conditions.
6. PAI sample ID 9805143-1 was used as the matrix QC sample for this batch.
 - A duplicate was prepared and analyzed with this batch. All acceptance criteria were met.

The data contained in the following report have been reviewed and approved by the personnel listed below:



Susan Converse
Susan Converse
Inorganic Technician

5-27-98
Date

SW
Reviewer's Initials

5/28/98
Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9805143

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0181

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0181	9805143-1		Water	5/13/98	8:20
S98-0182	9805143-2		Water	5/13/98	9:35
S98-0183	9805143-3		Water	5/13/98	11:17
S98-0185	9805143-4		Water	5/13/98	15:15
S98-0184	9805143-5		Water	5/13/98	13:25
S98-0186	9805143-6		Water	5/13/98	16:00

pH in Water

Method SW9040

Sample Results

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0181

Work Order Number: 9805143

Reporting Basis: As Received

Final Volume: 20 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0184	9805143-5	5/13/98	5/20/98	5/20/98	N/A	1	7.9	PH	0.1		20 ML
S98-0186	9805143-6	5/13/98	5/20/98	5/20/98	N/A	1	7.8	PH	0.1		20 ML

Comments:

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

0000001

pH in Water

Method SW9040

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805143

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0181

Reporting Basis: As Received

Sample Aliquot: 20 ML

Final Volume: 20ML

Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
SHARED QC	9805135-10	5/20/98	5/20/98	1	7.8	PH	7.8	0.1		0	10

Comments:

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

000005

Paragon Analytics, Inc.



SPECIFIC CONDUCTANCE CASE NARRATIVE

El Paso Natural Gas Co.

S98-0181

Order Number - 9805143

1. This report consists of six water samples.
2. The samples were received intact at a temperature of 7⁰ C. on May 15, 1998.
3. The samples were prepared for analysis based on SW-846 Method 9050.
4. All standards and solutions are NIST traceable and were used within their recommended shelf life.

All in house quality control procedures were followed, as described below.

5. General quality control procedures.
 - All initial and continuing calibration verifications associated with this batch were within acceptance criteria for the requested analyte. This indicates a valid calibration and stable instrument conditions.
6. PAI sample ID 9805143-1 was used as the matrix QC sample for this batch.
 - A duplicate was prepared and analyzed with this batch, all acceptance criteria were met.

The data contained in the following report have been reviewed and approved by the personnel listed below:



Susan Converse
Susan Converse
Inorganic Technician

5-27-98
Date

SW
Reviewer's Initials

5/28/98
Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9805143

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0181

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0181	9805143-1		Water	5/13/98	8:20
S98-0182	9805143-2		Water	5/13/98	9:35
S98-0183	9805143-3		Water	5/13/98	11:17
S98-0185	9805143-4		Water	5/13/98	15:15
S98-0184	9805143-5		Water	5/13/98	13:25
S98-0186	9805143-6		Water	5/13/98	16:00

Specific Conductance in Water

Method EPA120.1

Sample Results

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0181

Work Order Number: 9805143

Reporting Basis: As Received

Final Volume: 50 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0181	9805143-1	5/13/98	5/20/98	5/20/98	N/A	1	12000	umhos/cm			50 ML
S98-0182	9805143-2	5/13/98	5/20/98	5/20/98	N/A	1	14000	umhos/cm			50 ML
S98-0183	9805143-3	5/13/98	5/20/98	5/20/98	N/A	1	3100	umhos/cm			50 ML
S98-0185	9805143-4	5/13/98	5/20/98	5/20/98	N/A	1	5100	umhos/cm			50 ML
S98-0184	9805143-5	5/13/98	5/20/98	5/20/98	N/A	1	880	umhos/cm			50 ML
S98-0186	9805143-6	5/13/98	5/20/98	5/20/98	N/A	1	800	umhos/cm			50 ML

Comments:

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

000004

Specific Conductance in Water

Method EPA120.1

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805143

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0181

Reporting Basis: As Received

Sample Aliquot: 50 ML

Final Volume: 50ML

Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
S98-0181	9805143-1	5/20/98	5/20/98	1	12000	umhos/cm	12000			0	

Comments:

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

000005

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9805143

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0181

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0181	9805143-1		Water	5/13/98	8:20
S98-0182	9805143-2		Water	5/13/98	9:35
S98-0183	9805143-3		Water	5/13/98	11:17
S98-0185	9805143-4		Water	5/13/98	15:15
S98-0184	9805143-5		Water	5/13/98	13:25
S98-0186	9805143-6		Water	5/13/98	16:00



CHAIN OF CUSTODY RECORD

9805143

Page 1 of 2

PROJECT NUMBER		PROJECT NAME		CONTRACT LABORATORY	
SAMPLERS: (Signature)		DATE: 5/13/98			
LAB ID	DATE	TIME	MATRIX	SAMPLE NUMBER	REMARKS
01	5/13/98	0820	H ₂ O	598-0181	
02	5/13/98	0935	H ₂ O	598-0182	
03	5/13/98	1117	H ₂ O	598-0183	
04	5/13/98	1515	H ₂ O	598-0185	
[REMAINDER OF TABLE IS DIAGONAL LINE]					
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)	
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)	
REQUESTED TURNAROUND TIME:		DATE/TIME		RECEIVED OF LABORATORY BY: (Signature)	
<input type="checkbox"/> ROUTINE <input type="checkbox"/> RUSH		5/13/98 0500		5/15/98 0140	
CARRIER CO.		SAMPLE RECEIPT REMARKS		RESULTS & INVOICES TO:	
BILL NO.:		CHARGE CODE		LABORATORY SERVICES EL PASO NATURAL GAS COMPANY 8645 RAILROAD DRIVE EL PASO, TEXAS 79904 915-759-2229 FAX: 915-759-2335	



CHAIN OF CUSTODY RECORD

98051413

Page 2 of 2

PROJECT NUMBER		PROJECT NAME		TOTAL NUMBERS OF CONTAINERS		COMPOSITE OR GRAB		REQUESTED ANALYSIS		CONTRACT LABORATORY	
SAMPLERS: (Signature)		DATE		SAMPLE NUMBER							
LAB ID	DATE	TIME	MATRIX					SEE ANALYSIS	SEE ANALYSIS	REMARKS	
05	5/13/98	1345	H ₂ O	598-0184	5			X	X		
06	5/13/98	1600	H ₂ O	598-0186	5			X	X		
[Diagonal line across the table]											
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)		DATE/TIME		RELINQUISHED BY: (Signature)		RECEIVED BY: (Signature)	
[Signature]		5/14/98 0500		[Signature]		5/15/98 0140		[Signature]		[Signature]	
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)		DATE/TIME		RELINQUISHED BY: (Signature)		RECEIVED BY: (Signature)	
[Signature]		5/14/98 0500		[Signature]		5/15/98 0140		[Signature]		[Signature]	
REQUESTED TURNAROUND TIME:				RESULTS & INVOICES TO:							
<input type="checkbox"/> ROUTINE <input type="checkbox"/> RUSH				LABORATORY SERVICES EL PASO NATURAL GAS COMPANY 8645 RAILROAD DRIVE EL PASO, TEXAS 79904							
CARRIER CO.				915-759-2229 FAX: 915-759-2335							
BILL NO.:											

ANALYSIS FOR 1ST,2ND,3RD QUARTER SAMPLING

Anions & Cations	Preservative	Bottle & Sample Size
ph	none	1000ml Plastic
P Alkalinity	none	1000ml Plastic
T Alkalinity	none	1000ml Plastic
Chloride	none	1000ml Plastic
Sulfate	none	1000ml Plastic
T Hardness	HNO3	1000ml Plastic
Calcium	HNO3	1000ml Plastic
Magnesium	HNO3	1000ml Plastic
Sodium	HNO3	1000ml Plastic
Silica	HNO3	1000ml Plastic
Fluoride	none	1000ml Plastic
Potassium	HNO3	1000ml Plastic
Bromide	none	1000ml Plastic
Nitrate	H2SO4	500ml Plastic
Total Dissolved Solids	none	1000ml Plastic
Specific Conductance	none	1000ml Plastic
BTEX	HCL	2X VOA

CONDITION OF SAMPLE UPON RECEIPT

CLIENT: EPNG

SHIPPING CONTAINER #: _____

WORKORDER NO. 9805143

INITIALS: [Signature]

DATE: 5/15/98

1.	Does this project require special handling according to NEESA, Level 3, or CLP protocols? If yes, complete a. and b. a. Cooler Temperature _____ b. Lot No's. _____ c. Airbill Number _____		Yes	<u>No</u>
2.	Are custody seals on the cooler intact? If so, how many <u>2</u>	N/A	Yes	<u>No</u>
3.	Are custody seals on sample containers intact?	N/A	Yes	No
4.	Is there a Chain of Custody (COC) or other representative documents, letters or shipping memos?		<u>Yes</u>	No
5.	Is the COC complete? Relinquished: Yes <u> </u> No <u> </u> Requested Analysis: Yes <u> </u> No <u> </u>	N/A	<u>Yes</u>	No
6.	Is the COC in agreement with the samples received? No. of Samples: Yes <u> </u> No <u> </u> Sample ID's: Yes <u> </u> No <u> </u> Matrix: Yes <u> </u> No <u> </u> No. of Containers: Yes <u> </u> No <u> </u>		<u>Yes</u>	No
7.	Are the samples requiring chemical preservation preserved correctly?	N/A	<u>Yes</u>	No
8.	Is there enough sample? If so, are they in the proper containers?		<u>Yes</u>	No
9.	Are all samples within holding times for the requested analyses?		<u>Yes</u>	No
10.	Were the sample(s) shipped on ice?	N/A	<u>Yes</u>	No
11.	Were all sample containers received intact? (not broken or leaking, etc.)		<u>Yes</u>	No
12.	Are samples requiring no headspace, headspace free?	<u>N/A</u>	Yes	No
13.	Do the samples require quarantine?		Yes	<u>No</u>
14.	Do samples require Paragon disposal?		<u>Yes</u>	<u>No</u>
15.	Did the client return any unused bottles?		Yes	<u>No</u>

Describe "NO" items (except No's 1, 13, & 14): _____

Was the client contacted? Yes No
If yes, Date: _____ Name of person contacted: _____

Describe actions taken or client instructions: _____

Group Leader's Signature: _____ Date: _____

Cooler Temperature: 7°C



PARAGON ANALYTICS, INC.

225 Commerce Drive ♦ Fort Collins, CO 80524 ♦ (800) 443-1511 ♦ (970) 490-1511 ♦ FAX (970) 490-1522

June 25, 1998

Mr. Darrell Campbell
El Paso Natural Gas Co.
8645 Railroad Drive
El Paso, TX 79904

RE: Paragon Workorder: 98-05-151
Client Project Name: Not Submitted
Client Project Number: S98-0188

Dear Mr. Campbell:

Eight water samples were received from El Paso Natural Gas Co. on May 16, 1998. The samples were scheduled for the following analyses:

Aromatic Volatile Organics	pages 1-11
Inorganics	pages 1-26
pH	pages 1-5
Specific Conductance	pages 1-5
Total Recoverable Metals	pages 1-11

The results for these analyses are contained in the enclosed reports.

Thank you for your confidence in Paragon Analytics, Inc. Should you have any questions, please call.

Sincerely,

Paragon Analytics, Inc.
Adrienne Mackzum
Project Manager

AM/cjf
Enclosure: Report



Paragon Analytics, Inc.

Aromatic Volatile Organics Case Narrative

El Paso Natural Gas Co.

S98-0188

Order Number - 9805151

1. This report consists of 5 water samples received by Paragon on 5/16/98.
2. These samples were prepared and analyzed according to SW-846, 3rd Edition procedures. Specifically, the water samples were prepared by heating and purging 5mls using purge and trap procedures based on Method 5030. The calibration curve was also prepared using the heated purge.
3. The samples were analyzed using a GC with a DB-VRX capillary column and a PID detector according to protocols based on SW-846 Method 8021. All positive results were quantitated using the responses from the initial calibration curve using the internal standard technique. Second column confirmation was performed on all samples with positive results on a DB-624 capillary column.
4. All initial and continuing calibration criteria were within acceptance criteria.
5. The method blank associated with this project was below the reporting limits for all analytes.
6. All laboratory control spike and laboratory control spike duplicate recoveries and RPDs were within the acceptance criteria.
7. All matrix spike and matrix spike duplicate recoveries and RPDs were within acceptance criteria.
8. Due to laboratory error, all samples for this analysis were analyzed beyond the holding time requirements. Analyses proceeded according to clients request.

000001

9. All surrogate recoveries were within acceptance criteria.
10. All internal standard recoveries were within acceptance criteria.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Wesley S. Mayfield
Fuels Analyst

6-12-98
Date

Wm.
Reviewer's Initials

6/12/98
Date

000002

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9805151

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0188

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0188	9805151-1		Water	5/14/98	10:14
S98-0189	9805151-2		Water	5/14/98	10:14
S98-0190	9805151-3		Water	5/14/98	12:35
S98-0191	9805151-4		Water	5/14/98	13:02
S98-0192	9805151-5		Water	5/14/98	13:15
S98-0187	9805151-6		Water	5/14/98	8:00
S98-0193	9805151-7		Water	5/14/98	15:55
S98-0194	9805151-8		Water	5/14/98	15:55

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188

Reagent Blank

Lab Sample ID: WRB1

Date Collected: N/A
Date Extracted: 6/01/98
Date Analyzed: 6/01/98

Sample Matrix: Water

Sample Volume: 5 mL
Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	101	88 - 119

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

000004

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

S98-0191

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188

Lab Sample ID: 9805151-4

Date Collected: 5/14/98

Date Extracted: 6/01/98

Date Analyzed: 6/01/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	0.66	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	103	88 - 119

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

000005

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188

S98-0192

Lab Sample ID: 9805151-5

Date Collected: 5/14/98
Date Extracted: 6/01/98
Date Analyzed: 6/01/98

Sample Matrix: Water

Sample Volume: 5 mL
Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	3.0	0.50
Toluene	3.4	0.50
Ethylbenzene	1.4	0.50
M,P-Xylene	2.0	1.0
O-Xylene	0.78	0.50
Total Xylenes	2.8	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	103	88 - 119

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

000006

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188

S98-0194

Lab Sample ID: 9805151-8

Date Collected: 5/14/98

Date Extracted: 6/01/98

Date Analyzed: 6/01/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	104	88 - 119

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

000009

AROMATIC VOLATILE ORGANICS BLANK SPIKE

Method 8021

Sample ID

Blank Spike

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188

Lab Sample ID: WBS1

Date Extracted: 6/01/98

Date Analyzed: 6/01/98

Sample Matrix: Water

Sample Volume: 5 mL

Analyte	Spike Added (ug/L)	BS Concentration (ug/L)	BS Percent Recovery	QC Limits % Rec
Benzene	100	98.3	98	85 - 115
Toluene	100	100	100	85 - 115
Ethylbenzene	100	103	103	85 - 115
M,P-Xylene	200	215	107	85 - 115
O-Xylene	100	101	101	85 - 115
Total Xylenes	300	316	105	85 - 115

Analyte	Spike Added (ug/L)	BSD Concentration (ug/L)	BSD Percent Recovery	RPD	QC Limits RPD
Benzene	100	101	101	3	20
Toluene	100	104	104	3	20
Ethylbenzene	100	105	105	2	20
M,P-Xylene	200	219	110	2	20
O-Xylene	100	102	102	1	20
Total Xylenes	300	322	107	2	20

SURROGATE RECOVERY BS/BSD

Analyte	% Recovery BS	% Recovery BSD	% Rec Limits
2,3,4-Trifluorotoluene	100	101	88 - 119

D = Detected

000010



Paragon Analytics, Inc.

INORGANICS CASE NARRATIVE

El Paso Natural Gas Co.

S98-0138

Order Number - 9805151

1. This report consists of data for 8 water samples analyzed for chloride and total dissolved solids (TDS). Also, 5 of the samples were analyzed for alkalinity, bicarbonate, bromide, fluoride, nitrate/nitrite and sulfate.
2. The samples were received cool and intact on 05/16/98.
3. The samples had been correctly preserved for the requested analyses.
4. The samples were analyzed using procedures based on the following methods from the USEPA:

<u>Analyte</u>	<u>Method</u>
Alkalinity	310.1
Bicarbonate	310.1
Bromide	300.0
Chloride	300.0
Fluoride	300.0
Nitrate/Nitrite	353.3
Sulfate	300.0
Total Dissolved Solids	160.1

5. All standards and solutions were used within their recommended shelf life.
6. The samples were prepared and analyzed within the established hold times for all analyses.

All in house quality control procedures were followed, as described below.

7. General quality control procedures.
 - A method blank, a laboratory control sample (LCS), a matrix spike, and matrix spike duplicate were prepared and analyzed for each analysis batch.
 - The method blank results were within acceptance limits.

000001



- The LCS results were within acceptance limits for all analyses.
- Initially, electrical conductivity was measured for the purpose of identifying samples with high dissolved solids. The samples were first diluted and analyzed for sulfate and chloride on the ion chromatograph. Later, the samples were analyzed for bromide, chloride and fluoride. MS/MSD results were quantified for sulfate only. The MS/MSD results were within acceptance limits for sulfate.

The data contained in the following report have been reviewed and approved by the personnel listed below:

B
Reporter's Initials

6-22-98
Date

DP
Reviewer's Initials

6/22/98
Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9805151

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0188

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0188	9805151-1		Water	5/14/98	10:14
S98-0189	9805151-2		Water	5/14/98	10:14
S98-0190	9805151-3		Water	5/14/98	12:35
S98-0191	9805151-4		Water	5/14/98	13:02
S98-0192	9805151-5		Water	5/14/98	13:15
S98-0187	9805151-6		Water	5/14/98	8:00
S98-0193	9805151-7		Water	5/14/98	15:55
S98-0194	9805151-8		Water	5/14/98	15:55

TOTAL ALKALINITY As CaCO3

Method EPA310.1

Sample Results

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188

Work Order Number: 9805151

Reporting Basis: As Received

Final Volume: 100 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0188	9805151-1	5/14/98	5/19/98	5/19/98	N/A	1	150	MG/L	5		100 ML
S98-0189	9805151-2	5/14/98	5/19/98	5/19/98	N/A	1	150	MG/L	5		100 ML
S98-0190	9805151-3	5/14/98	5/19/98	5/19/98	N/A	1	160	MG/L	5		100 ML
S98-0191	9805151-4	5/14/98	5/19/98	5/19/98	N/A	1	5	MG/L	5	U	100 ML
S98-0192	9805151-5	5/14/98	5/19/98	5/19/98	N/A	1	140	MG/L	5		100 ML

Comments:

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

TOTAL ALKALINITY As CaCO3

Method EPA310.1

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805151

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Lab ID: AK980519-1MB

Sample Matrix: Water

% Moisture: N/A

Date Collected: N/A

Date Extracted: 19-May-98

Date Analyzed: 19-May-98

Prep Batch: AK980519-1

QCBatchID: AK980519-1-2

Run ID: AK980519-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 ML

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
AK980519-1MB	5/19/98	5/19/98	5/19/98	N/A	1	5	MG/L	5	U

Comments:

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

TOTAL ALKALINITY As CaCO₃

Method EPA310.1

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805151

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Lab ID: AK980519-1LCS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 19-May-98

Date Extracted: 19-May-98

Date Analyzed: 19-May-98

Prep Batch: AK980519-1

QCBatchID: AK980519-1-2

Run ID: AK980519-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 ML

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
11-43-8	TOTAL ALKALINITY As CaCO ₃	100	95.7	MG/L	5		96	85 - 115

000000

TOTAL ALKALINITY As CaCO₃

Method EPA310.1

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805151

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Reporting Basis: As Received

Sample Aliquot: 100 ML

Final Volume: 100ML

Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
SHARED QC	9805143-5	5/19/98	5/19/98	2	171	MG/L	170	10		1	15

Comments:

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

000007

Bicarbonate as Calcium Carbonate

Method EPA310.1M

Sample Results

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188

Work Order Number: 9805151

Reporting Basis: As Received

Final Volume: 100 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0188	9805151-1	5/14/98	5/19/98	5/19/98	N/A	1	150	MG/L	5		100 ML
S98-0189	9805151-2	5/14/98	5/19/98	5/19/98	N/A	1	150	MG/L	5		100 ML
S98-0190	9805151-3	5/14/98	5/19/98	5/19/98	N/A	1	160	MG/L	5		100 ML
S98-0191	9805151-4	5/14/98	5/19/98	5/19/98	N/A	1	5	MG/L	5	U	100 ML
S98-0192	9805151-5	5/14/98	5/19/98	5/19/98	N/A	1	140	MG/L	5		100 ML

Comments:

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

Bicarbonate as Calcium Carbonate

Method EPA310.1M

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805151

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Lab ID: AK980519-1MB

Sample Matrix: Water

% Moisture: N/A

Date Collected: N/A

Date Extracted: 19-May-98

Date Analyzed: 19-May-98

Prep Batch: AK980519-1

QCBatchID: AK980519-1-2

Run ID: AK980519-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 ML

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
AK980519-1MB	5/19/98	5/19/98	5/19/98	N/A	1	5	MG/L	5	U

Comments:

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

Bicarbonate as Calcium Carbonate

Method EPA310.1M

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805151

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Lab ID: AK980519-1LCS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 19-May-98

Date Extracted: 19-May-98

Date Analyzed: 19-May-98

Prep Batch: AK980519-1

QCBatchID: AK980519-1-2

Run ID: AK980519-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 ML

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
10-13-9	BICARBONATE AS CaCO3	100	95.7	MG/L	5		96	85 - 115

000010

Bicarbonate as Calcium Carbonate

Method EPA310.1M

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805151

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Reporting Basis: As Received

Sample Aliquot: 100 ML

Final Volume: 100ML

Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
SHARED QC	9805143-5	5/19/98	5/19/98	2	171	MG/L	170	10		1	15

Comments:

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

BROMIDE
Method EPA300.0
Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188
Work Order Number: 9805151
Reporting Basis: As Received

Final Volume: 5 ML
Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0188	9805151-1	5/14/98	5/26/98	5/29/98	N/A	1	0.71	MG/L	0.2		5 ML
S98-0189	9805151-2	5/14/98	5/26/98	5/29/98	N/A	1	0.71	MG/L	0.2		5 ML
S98-0190	9805151-3	5/14/98	5/26/98	5/29/98	N/A	1	0.4	MG/L	0.2		5 ML
S98-0191	9805151-4	5/14/98	5/26/98	5/26/98	N/A	1	0.2	MG/L	0.2	U	5 ML
S98-0192	9805151-5	5/14/98	5/26/98	5/29/98	N/A	1	0.63	MG/L	0.2		5 ML

Comments:

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

CHLORIDE
Method EPA300.0
Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188
Work Order Number: 9805151
Reporting Basis: As Received

Final Volume: 5 ML
Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0188	9805151-1	5/14/98	5/26/98	5/29/98	N/A	50	410	MG/L	10		5 ML
S98-0189	9805151-2	5/14/98	5/26/98	5/29/98	N/A	50	430	MG/L	10		5 ML
S98-0190	9805151-3	5/14/98	5/26/98	5/26/98	N/A	10	50	MG/L	2		5 ML
S98-0191	9805151-4	5/14/98	5/26/98	5/26/98	N/A	1	0.2	MG/L	0.2	U	5 ML
S98-0192	9805151-5	5/14/98	5/26/98	5/26/98	N/A	10	88	MG/L	2		5 ML
S98-0187	9805151-6	5/14/98	5/26/98	6/6/98	N/A	100	540	MG/L	20		5 ML
S98-0193	9805151-7	5/14/98	5/26/98	5/26/98	N/A	10	67	MG/L	2		5 ML
S98-0194	9805151-8	5/14/98	5/26/98	5/26/98	N/A	10	67	MG/L	2		5 ML

Comments:

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

FLUORIDE
Method EPA300.0
Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188
Work Order Number: 9805151
Reporting Basis: As Received

Final Volume: 5 ML
Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0188	9805151-1	5/14/98	5/26/98	5/29/98	N/A	1	1.5	MG/L	0.1		5 ML
S98-0189	9805151-2	5/14/98	5/26/98	5/29/98	N/A	1	1.5	MG/L	0.1		5 ML
S98-0190	9805151-3	5/14/98	5/26/98	5/29/98	N/A	1	1.5	MG/L	0.1		5 ML
S98-0191	9805151-4	5/14/98	5/26/98	5/26/98	N/A	1	0.1	MG/L	0.1	U	5 ML
S98-0192	9805151-5	5/14/98	5/26/98	5/29/98	N/A	1	1.8	MG/L	0.1		5 ML

Comments:

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

SULFATE
Method EPA300.0
Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188
Work Order Number: 9805151
Reporting Basis: As Received

Final Volume: 5 ML
Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0188	9805151-1	5/14/98	5/26/98	5/26/98	N/A	20	130	MG/L	20		5 ML
S98-0189	9805151-2	5/14/98	5/26/98	5/26/98	N/A	20	140	MG/L	20		5 ML
S98-0190	9805151-3	5/14/98	5/26/98	5/26/98	N/A	10	99	MG/L	10		5 ML
S98-0191	9805151-4	5/14/98	5/26/98	5/26/98	N/A	1	1	MG/L	1	U	5 ML
S98-0192	9805151-5	5/14/98	5/26/98	5/26/98	N/A	10	57	MG/L	10		5 ML

Comments:

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

Ion Chromatography

Method EPA300.0

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805151

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Lab ID: IC980526-1MB

Sample Matrix: Water

% Moisture: N/A

Date Collected: N/A

Date Extracted: 26-May-98

Date Analyzed: 26-May-98

Prep Batch: IC980526-1

QCBatchID: IC980526-1-1

Run ID: IC980526-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 5 ML

Final Volume: 5 ML

CASNO	Target Analyte	DF	Result	Units	Reporting Limit	Result Qualifier	EPA Qualifier
14808-79-8	SULFATE	1	1	MG/L	1	U	
16887-00-6	CHLORIDE	1	0.2	MG/L	0.2	U	
24959-67-9	BROMIDE	1	0.2	MG/L	0.2	U	
16887-00-6	CHLORIDE	1	0.2	MG/L	0.2	U	
14808-79-8	SULFATE	1	1	MG/L	1	U	
24959-67-9	BROMIDE	1	0.2	MG/L	0.2	U	
16984-48-8	FLUORIDE	1	0.1	MG/L	0.1	U	
16887-00-6	CHLORIDE	1	0.2	MG/L	0.2	U	

000016

Ion Chromatography

Method EPA300.0

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805151

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Lab ID: IC980526-1LCS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 26-May-98

Date Extracted: 26-May-98

Date Analyzed: 26-May-98

Prep Batch: IC980526-1

QCBatchID: IC980526-1-1

Run ID: IC980526-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 5 ML

Final Volume: 5 ML

CASNO	Target Analyte	Spike Added	LCS Result	Units	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
24959-67-9	BROMIDE	4	3.93	MG/L	0.2		98	85 - 115%
24959-67-9	BROMIDE	4	3.87	MG/L	0.2		97	85 - 115%
16887-00-6	CHLORIDE	4	4.16	MG/L	0.2		104	75 - 115%
16887-00-6	CHLORIDE	4	4.03	MG/L	0.2		101	75 - 115%
16887-00-6	CHLORIDE	4	3.94	MG/L	0.2		98	75 - 115%
16984-48-8	FLUORIDE	2	1.95	MG/L	0.1		97	80 - 120%
14808-79-8	SULFATE	20	20.5	MG/L	1		102	85 - 115%
14808-79-8	SULFATE	20	20.5	MG/L	1		102	85 - 115%

000017

Ion Chromatography

Method EPA300.0

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805151

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Field ID: S98-0188

LabID: 9805151-1MS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 14-May-98

Date Extracted: 26-May-98

Date Analyzed: 26-May-98

Prep Batch: IC980526-1

QCBatchID: IC980526-1-1

Run ID: IC980526-1A

Cleanup: NONE

Basis: As Received

Sample Aliquot: 5 ML

Final Volume: 5 ML

Target Analyte	Sample Result	MS Result	Units	Reporting Limit	Result Qualifier	Spike Added	MS % Rec.	Control Limits
SULFATE	131	518	MG/L	20		400	97	85 - 115%

MSD Lab ID: 9805151-1MSD

Target Analyte	Spike Added	MSD Result	Units	Reporting Limit	MSD % Rec.	RPD	RPD Limits
SULFATE	400	521	MG/L	20	98	0.6	15

9805151

Nitrate/Nitrite as N

Method EPA353.3

Sample Results

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188

Work Order Number: 9805151

Reporting Basis: As Received

Final Volume: 3 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0188	9805151-1	5/14/98	5/19/98	5/19/98	N/A	1	0.47	MG/L	0.05		3 ML
S98-0189	9805151-2	5/14/98	5/19/98	5/19/98	N/A	1	0.41	MG/L	0.05		3 ML
S98-0190	9805151-3	5/14/98	5/19/98	5/19/98	N/A	2	1.6	MG/L	0.1		3 ML
S98-0191	9805151-4	5/14/98	5/19/98	5/19/98	N/A	1	0.05	MG/L	0.05	U	3 ML
S98-0192	9805151-5	5/14/98	5/19/98	5/19/98	N/A	1	0.05	MG/L	0.05		3 ML

Comments:

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

Nitrate/Nitrite as N

Method EPA353.3

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805151

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Lab ID: NN980519-1MB

Sample Matrix: Water

% Moisture: N/A

Date Collected: N/A

Date Extracted: 19-May-98

Date Analyzed: 19-May-98

Prep Batch: NN980519-1

QCBatchID: NN980519-1-1

Run ID: NN980519-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 3 ML

Final Volume: 3 ML

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
NN980519-1MB	5/19/98	5/19/98	5/19/98	N/A	1	0.05	MG/L	0.05	U

Comments:

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

Nitrate/Nitrite as N

Method EPA353.3

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805151

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Lab ID: NN980519-1LCS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 19-May-98

Date Extracted: 19-May-98

Date Analyzed: 19-May-98

Prep Batch: NN980519-1

QCBatchID: NN980519-1-1

Run ID: NN980519-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 3 ML

Final Volume: 3 ML

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
1-005	NITRATE/NITRITE	0.5	0.514	MG/L	0.05		103	80 - 120

000021

Nitrate/Nitrite as N

Method EPA353.3

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805151

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Field ID: SHARED QC

LabID: 9805056-2MS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 05-May-98

Date Extracted: 19-May-98

Date Analyzed: 20-May-98

Prep Batch: NN980519-1

QCBatchID: NN980519-1-1

Run ID: NN980520-2A

Cleanup: NONE

Basis: As Received

Sample Aliquot: 3 ML

Final Volume: 3 ML

Spike Added	Sample Result	Units	Reporting Limit	MS Result	MS % Rec.	MS Qualifier	Control Limits
0.5	0.05	MG/L	0.05	0.493	99		80 - 120%

MSD Lab ID: 9805056-2MSD

Spike Added	MSD Result	Units	Reporting Limit	MSD % Rec.	Result Qualifier	RPD	RPD Limits
0.5	0.504	MG/L	0.05	101		2	20

000022

Total Dissolved Solids

Method EPA160.1

Sample Results

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188

Work Order Number: 9805151

Reporting Basis: As Received

Final Volume: 10 MG/L

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0188	9805151-1	5/14/98	5/20/98	5/20/98	N/A	1	1100	MG/L	200		10 ML
S98-0189	9805151-2	5/14/98	5/20/98	5/20/98	N/A	1	840	MG/L	200		10 ML
S98-0190	9805151-3	5/14/98	5/20/98	5/20/98	N/A	1	420	MG/L	20		100 ML
S98-0191	9805151-4	5/14/98	5/20/98	5/20/98	N/A	1	20	MG/L	20	U	100 ML
S98-0192	9805151-5	5/14/98	5/20/98	5/20/98	N/A	1	400	MG/L	20		100 ML
S98-0187	9805151-6	5/14/98	5/20/98	5/20/98	N/A	1	1200	MG/L	200		10 ML
S98-0193	9805151-7	5/14/98	5/20/98	5/20/98	N/A	1	500	MG/L	20		100 ML
S98-0194	9805151-8	5/14/98	5/20/98	5/20/98	N/A	1	520	MG/L	20		100 ML

Comments:

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

Total Dissolved Solids

Method EPA160.1

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805151

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Lab ID: TD980520MB

Sample Matrix: Water

% Moisture: N/A

Date Collected: N/A

Date Extracted: 20-May-98

Date Analyzed: 20-May-98

Prep Batch: TD980520-1

QCBatchID: TD980520-1-1

Run ID: TD980520-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 MG/L

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
TD980520MB	5/20/98	5/20/98	5/20/98	N/A	1	20	MG/L	20	U

Comments:

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

Total Dissolved Solids

Method EPA160.1

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805151

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Lab ID: TD980520LCS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 20-May-98

Date Extracted: 20-May-98

Date Analyzed: 20-May-98

Prep Batch: TD980520-1

QCBatchID: TD980520-1-1

Run ID: TD980520-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 MG/L

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
10-33-3	TOTAL DISSOLVED SOLIDS	400	372	MG/L	20		93	85 - 115

000025

Total Dissolved Solids

Method EPA160.1

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805151

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Reporting Basis: As Received

Sample Aliquot: 10 ML

Final Volume: 10MG/L

Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
SHARED QC	9805143-1	5/20/98	5/20/98	1	10300	MG/L	10000	200		2	15

Comments:

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

000026

Paragon Analytics, Inc.



PH ANALYSIS CASE NARRATIVE

El Paso Natural Gas Co.

S98-0188

Order Number - 9805151

1. This report consists of five water samples.
2. The samples were received cool and intact on May 16, 1998.
3. The samples were prepared for analysis based on SW-846, 3rd Edition procedures. Specifically, the water samples were analyzed following Method 9040.
4. All standards and solutions were used within their recommended shelf life.
All in house quality control procedures were followed, as described below.
5. General quality control procedures.
 - All initial and continuing calibration verifications associated with this batch were within acceptance criteria for the requested analyte. This indicates a valid calibration and stable instrument conditions.
6. PAI sample ID 9805151-1 was used as the matrix QC sample for this batch.
 - A duplicate was prepared and analyzed with this batch. All acceptance criteria were met.

000001

The data contained in the following report have been reviewed and approved by the personnel listed below:



Susan Converse

Susan Converse
Inorganic Technician

5-29-98

Date

SW

Reviewer's Initials

5/29/98

Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9805151

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0188

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0188	9805151-1		Water	5/14/98	10:14
S98-0189	9805151-2		Water	5/14/98	10:14
S98-0190	9805151-3		Water	5/14/98	12:35
S98-0191	9805151-4		Water	5/14/98	13:02
S98-0192	9805151-5		Water	5/14/98	13:15
S98-0187	9805151-6		Water	5/14/98	8:00
S98-0193	9805151-7		Water	5/14/98	15:55
S98-0194	9805151-8		Water	5/14/98	15:55

pH in Water

Method SW9040

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188
Work Order Number: 9805151
Reporting Basis: As Received

Final Volume: 20 ML
Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0188	9805151-1	5/14/98	5/29/98	5/29/98	N/A	1	7.5	PH	0.1		20 ML
S98-0189	9805151-2	5/14/98	5/29/98	5/29/98	N/A	1	7.5	PH	0.1		20 ML
S98-0190	9805151-3	5/14/98	5/29/98	5/29/98	N/A	1	8.1	PH	0.1		20 ML
S98-0191	9805151-4	5/14/98	5/29/98	5/29/98	N/A	1	5.6	PH	0.1		20 ML
S98-0192	9805151-5	5/14/98	5/29/98	5/29/98	N/A	1	8.1	PH	0.1		20 ML

Comments:

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

000004

pH in Water

Method SW9040

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805151

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Reporting Basis: As Received

Sample Aliquot: 20 ML

Final Volume: 20ML

Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
S98-0188	9805151-1	5/29/98	5/29/98	1	7.5	PH	7.5	0.1		0	10

Comments:

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



Paragon Analytics, Inc.

SPECIFIC CONDUCTANCE CASE NARRATIVE

El Paso Natural Gas Co.

S98-0188

Order Number - 9805151

1. This report consists of eight water samples.
2. The samples were received cool and intact on May 16, 1998.
3. The samples were prepared for analysis based on SW-846 Method 9050.
4. All standards and solutions are NIST traceable and were used within their recommended shelf life.

All in house quality control procedures were followed, as described below.

5. General quality control procedures.
 - All initial and continuing calibration verifications associated with this batch were within acceptance criteria for the requested analyte. This indicates a valid calibration and stable instrument conditions.
6. PAI sample ID 9805151-1 was used as the matrix QC sample for this batch.
 - A duplicate was prepared and analyzed with this batch, all acceptance criteria were met.

000001

The data contained in the following report have been reviewed and approved by the personnel listed below:



Susan Converse
Susan Converse
Inorganic Technician

5-29-98
Date

SW
Reviewer's Initials

5/29/98
Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

000002

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9805151

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0188

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0188	9805151-1		Water	5/14/98	10:14
S98-0189	9805151-2		Water	5/14/98	10:14
S98-0190	9805151-3		Water	5/14/98	12:35
S98-0191	9805151-4		Water	5/14/98	13:02
S98-0192	9805151-5		Water	5/14/98	13:15
S98-0187	9805151-6		Water	5/14/98	8:00
S98-0193	9805151-7		Water	5/14/98	15:55
S98-0194	9805151-8		Water	5/14/98	15:55

Specific Conductance in Water

Method EPA120.1

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188
Work Order Number: 9805151
Reporting Basis: As Received

Final Volume: 50 ML
Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquo
S98-0188	9805151-1	5/14/98	5/29/98	5/29/98	N/A	1	1800	umhos/cm			50 ML
S98-0189	9805151-2	5/14/98	5/29/98	5/29/98	N/A	1	1900	umhos/cm			50 ML
S98-0190	9805151-3	5/14/98	5/29/98	5/29/98	N/A	1	690	umhos/cm			50 ML
S98-0191	9805151-4	5/14/98	5/29/98	5/29/98	N/A	1	15	umhos/cm			50 ML
S98-0192	9805151-5	5/14/98	5/29/98	5/29/98	N/A	1	670	umhos/cm			50 ML
S98-0187	9805151-6	5/14/98	5/29/98	5/29/98	N/A	1	2400	umhos/cm			50 ML
S98-0193	9805151-7	5/14/98	5/29/98	5/29/98	N/A	1	850	umhos/cm			50 ML
S98-0194	9805151-8	5/14/98	5/29/98	5/29/98	N/A	1	860	umhos/cm			50 ML

Comments:

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

Specific Conductance in Water

Method EPA120.1

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805151

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Reporting Basis: As Received

Sample Aliquot: 50 ML

Final Volume: 50ML

Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
S98-0188	9805151-1	5/29/98	5/29/98	1	1800	umhos/cm	1800			0	

Comments:

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



Paragon Analytics, Inc.

TOTAL RECOVERABLE METALS CASE NARRATIVE

El Paso Natural Gas Co.

S98-0188

Order Number - 9805151

1. This report consists of 5 water samples.
2. The samples were received cool and intact on 05/16/98.
3. The samples had been correctly preserved for the requested analyses.
4. The samples were prepared for analysis based on SW-846, 3rd Edition procedures.
For analysis by conventional ICP, the samples were digested following method 3005A.
5. The samples were analyzed following SW-846 protocols by conventional ICP (Method 6010B).
6. All standards and solutions are NIST traceable and were used within their recommended shelf life.
7. The samples were prepared and analyzed within the established hold times.
8. Sample results which are below PAI's standard reporting limits are reported as "ND" on the enclosed report.

All in house quality control procedures were followed, as described below.

9. General quality control procedures.
 - A preparation (method) blank and laboratory control sample were digested and analyzed with the samples in this digestion batch. There were not more than 20 samples in the digestion batch.
 - The preparation (method) blank results associated with this batch were below the reporting limits for the requested analytes. This indicates that no contaminants were introduced to the samples during the digestion procedure.
 - The laboratory control sample associated with this batch was within acceptance limits. This indicates complete digestion according to the method.

000001

PARAGON ANALYTICS, INC.



- All initial and continuing calibration blanks associated with this batch were below the reporting limits for the requested analytes. This indicates a valid calibration and stable instrument conditions.
- All initial and continuing calibration verifications associated with this batch were within acceptance criteria for the requested analytes. This indicates a valid calibration and stable instrument conditions.
- The interference check samples, and high standard readbacks associated with Method 6010B analyses were within acceptance criteria.

10. A sample from this Order Number was used as the QC sample for this batch.

- A matrix spike and matrix spike duplicate were digested and analyzed with this batch. All acceptance criteria for accuracy were met with the following exception.

Analyte
Silicon

Sample ID
9805151-1MS & MSD

The concentration of silicon in the native sample was greater than 4 times the concentration of matrix spike added during the digestion. When sample concentration is that much greater than the spike added, spike recoveries may not be accurate. The laboratory control sample is included to show that the digestion and analysis were in control.

- A sample duplicate and spike duplicate were digested and analyzed with this batch. All acceptance criteria for precision were met.
- A serial dilution was analyzed with this batch. All acceptance criteria were met.

11. Hardness was determined by calculation based on method 2340B from Standard Methods for the Examination of Waters and Wastewaters, 17th Edition, 1989. Calcium and magnesium concentrations were determined by ICPSW-846 Method 6010B.

$\text{mg CaCO}_3/\text{L} = (2.497 * \text{Ca conc. (mg/L)}) + (4.118 * \text{Mg conc. (mg/L)})$

<u>Sample ID</u>	<u>mg CaCO₃/L</u>
S98-0188 (Lab ID 9805151-1)	577
S98-0189 (Lab ID 9805151-2)	562
S98-0190 (Lab ID 9805151-3)	141
S98-0191 (Lab ID 9805151-4)	< 2.5
S98-0192 (Lab ID 9805151-5)	170



The data contained in the following report have been reviewed and approved by the personnel listed below:

Darryl Patrick

Darryl Patrick
Senior Inorganic Chemist

6/2/98

Date

SW

Reviewer's Initials

6/2/98

Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9805151

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0188

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0188	9805151-1		Water	5/14/98	10:14
S98-0189	9805151-2		Water	5/14/98	10:14
S98-0190	9805151-3		Water	5/14/98	12:35
S98-0191	9805151-4		Water	5/14/98	13:02
S98-0192	9805151-5		Water	5/14/98	13:15
S98-0187	9805151-6		Water	5/14/98	8:00
S98-0193	9805151-7		Water	5/14/98	15:55
S98-0194	9805151-8		Water	5/14/98	15:55

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188
Lab Sample ID: RB 9805151

Sample ID

Reagent Blank

Date Collected: N/A
Prep Date: 06/01/98
Date Analyzed: 06/01/98

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	ND	1
Magnesium	ND	1
Potassium	ND	1
Silicon	ND	0.05
Sodium	ND	1

ND = Not detected at or above the reporting limit.

000005

BP

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188
Lab Sample ID: 9805151-1

Sample Matrix: Water

Sample ID

S98-0188

Date Collected: 05/14/98

Prep Date: 06/01/98

Date Analyzed: 06/01/98

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	150	1
Magnesium	52	1
Potassium	10	1
Silicon	21	0.05
Sodium	120	1

ND = Not detected at or above the reporting limit.

000006DP

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188
Lab Sample ID: 9805151-2

Sample Matrix: Water

Sample ID

S98-0189

Date Collected: 05/14/98

Prep Date: 06/01/98

Date Analyzed: 06/01/98

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	140	1
Magnesium	51	1
Potassium	10	1
Silicon	21	0.05
Sodium	110	1

ND = Not detected at or above the reporting limit.

000007

DP

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188
Lab Sample ID: 9805151-3

Sample Matrix: Water

Sample ID

S98-0190

Date Collected: 05/14/98
Prep Date: 06/01/98
Date Analyzed: 06/01/98

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	33	1
Magnesium	14	1
Potassium	13	1
Silicon	21	0.05
Sodium	86	1

ND = Not detected at or above the reporting limit.

000008

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188
Lab Sample ID: 9805151-4

Sample Matrix: Water

Sample ID

S98-0191

Date Collected: 05/14/98

Prep Date: 06/01/98

Date Analyzed: 06/01/98

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	ND	1
Magnesium	ND	1
Potassium	ND	1
Silicon	ND	0.05
Sodium	ND	1

ND = Not detected at or above the reporting limit.

000009

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188
Lab Sample ID: 9805151-5

Sample Matrix: Water

Sample ID

S98-0192

Date Collected: 05/14/98

Prep Date: 06/01/98

Date Analyzed: 06/01/98

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	48	1
Magnesium	12	1
Potassium	4	1
Silicon	17	0.05
Sodium	72	1

ND = Not detected at or above the reporting limit.

000010

BP

TOTAL RECOVERABLE METALS MATRIX SPIKE

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Lab Sample ID: 9805151-1

Sample ID

S98-0188

Sample Matrix: Water

Prep Date: 06/01/98

Date Analyzed: 06/01/98

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	% Rec. (limits 80-120%)	Flags
Calcium	40	145	187	105	See note
Magnesium	40	52	93	103	
Potassium	40	10	51	103	
Silicon	0.50	21.0	21.6	120	
Sodium	40	115	156	103	

Analyte	MSD Conc. mg/L	MSD % Rec. (limits 80-120%)	Relative % Difference (limits 0-20%)	Flags
Calcium	186	103	1	See note
Magnesium	92	100	1	
Potassium	50	100	2	
Silicon	21.6	120	0	
Sodium	156	103	0	

Sample results shown on spike page(s) may differ slightly from results on sample page(s).

Where sample concentration is sufficiently high, three significant figures are used to determine spike recoveries and relative percent difference.

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

**TOTAL RECOVERABLE METALS
LABORATORY CONTROL SAMPLE**

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188
Order Number: 9805151

Date Analyzed: 06/01/98

Control limits: 80 - 120%

Analyte	LCS Result mg/L	LCS True Value mg/L	LCS % Recovery
Silicon	0.56	0.50	112

000011

2
E

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9805151

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0188

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0188	9805151-1		Water	5/14/98	10:14
S98-0189	9805151-2		Water	5/14/98	10:14
S98-0190	9805151-3		Water	5/14/98	12:35
S98-0191	9805151-4		Water	5/14/98	13:02
S98-0192	9805151-5		Water	5/14/98	13:15
S98-0187	9805151-6		Water	5/14/98	8:00
S98-0193	9805151-7		Water	5/14/98	15:55
S98-0194	9805151-8		Water	5/14/98	15:55



CHAIN OF CUSTODY RECORD

9805151

Page _____ of _____

[illegible]



CHAIN OF CUSTODY RECORD

Page _____ of _____

[illegible]

ANALYSIS FOR 1ST, 2ND, 3RD QUARTER SAMPLING

Anions & Cations	Preservative	Bottle & Sample Size
ph	none	1000ml Plastic
P Alkalinity	none	1000ml Plastic
T Alkalinity	none	1000ml Plastic
Chloride	none	1000ml Plastic
Sulfate	none	1000ml Plastic
T Hardness	HNO3	1000ml Plastic
Calcium	HNO3	1000ml Plastic
Magnesium	HNO3	1000ml Plastic
Sodium	HNO3	1000ml Plastic
Silica	HNO3	1000ml Plastic
Fluoride	none	1000ml Plastic
Potassium	HNO3	1000ml Plastic
Bromide	none	1000ml Plastic
Nitrate	H2SO4	500ml Plastic
Total Dissolved Solids	none	1000ml Plastic
Specific Conductance	none	1000ml Plastic
BTEX	HCL	2X VOA

CONDITION OF SAMPLE UPON RECEIPT

CLIENT: CLP National Gas

SHIPPING CONTAINER #: EPNG codes, none #

WORKORDER NO. 9805151

INITIALS: AM

DATE: 5/16/98

1. Does this project require special handling according to NEESA, Level 3, or CLP protocols? If yes, complete a. and b. a. Cooler Temperature _____ b. Lot No's. _____ c. Airbill Number _____	Yes	No
2. Are custody seals on the cooler intact? If so, how many	<u>N/A</u>	No
3. Are custody seals on sample containers intact?	<u>N/A</u>	No
4. Is there a Chain of Custody (COC) or other representative documents, letters or shipping memos?	<u>Yes</u>	No
5. Is the COC complete? Relinquished: Yes <u>✓</u> No Requested Analysis: Yes <u>✓</u> No	<u>Yes</u>	No
6. Is the COC in agreement with the samples received? No. of Samples: Yes <u>✓</u> No Sample ID's: Yes <u>✓</u> No Matrix: Yes <u>✓</u> No No. of Containers: Yes <u>✓</u> No	<u>Yes</u>	No
7. Are the samples requiring chemical preservation preserved correctly?	<u>N/A</u>	No
8. Is there enough sample? If so, are they in the proper containers?	<u>Yes</u>	No
9. Are all samples within holding times for the requested analyses?	<u>Yes</u>	No
10. Were the sample(s) shipped on ice?	<u>N/A</u>	No
11. Were all sample containers received intact? (not broken or leaking, etc.)	<u>Yes</u>	No
12. Are samples requiring no headspace, headspace free?	<u>N/A</u>	No
13. Do the samples require quarantine?	<u>Yes</u>	No
14. Do samples require Paragon disposal?	<u>Yes</u>	No
15. Did the client return any unused bottles?	<u>Yes</u>	No

Describe "NO" items (except No's 1, 13, & 14): #12: Bubble in 1 vial of 598-0191(-04).

Was the client contacted? Yes _____ No _____
If yes, Date: _____ Name of person contacted: _____
Describe actions taken or client instructions: _____

Group Leader's Signature: _____ Date: _____

Cooler Temperature: 2°C



PARAGON ANALYTICS, INC.

225 Commerce Drive ♦ Fort Collins, CO 80524 ♦ (800) 443-1511 ♦ (970) 490-1511 ♦ FAX (970) 490-1522

July 7, 1998

Mr. Darrell Campbell
El Paso Natural Gas Co.
8645 Railroad Drive
El Paso, TX 79904

RE: Paragon Workorder: 98-06-023
Client Project Name: None Submitted
Client Project Number: S98-0188

Dear Mr. Campbell:

Six water samples were received from El Paso Natural Gas Co. on June 3, 1998. The samples were scheduled for the following analyses.

Inorganics	pages 1-28	Aromatic Volatile Organics	pages 1-12
Total Recoverable Metals	pages 1-11		
pH Analysis	pages 1-5		
Specific Conductance	pages 1-6		

The results for these analyses are contained in the enclosed reports.

Thank you for your confidence in Paragon Analytics, Inc. Should you have any questions, please call.

Sincerely,

Paragon Analytics, Inc.
Adrienne Mackzum
Project Manager

AAM/ar
Enclosure: Report

An Employee Owned Small Business



Paragon Analytics, Inc.

INORGANICS CASE NARRATIVE

El Paso Natural Gas Co.

S98-0188

Order Number - 9806023

1. This report consists of data for 6 water samples analyzed for alkalinity, bicarbonate, bromide, chloride, fluoride, sulfate, nitrate/nitrite and total dissolved solids (TDS).
2. The samples were received cool and intact on 06/03/98.
3. The samples had been correctly preserved for the requested analyses.
4. The samples were analyzed using procedures based on the following methods from the USEPA:

<u>Analyte</u>	<u>Method</u>
Total Alkalinity	310.1
Bicarbonate	310.1
Bromide	300.0
Chloride	300.0
Fluoride	300.0
Nitrate/Nitrite	353.3
Sulfate	300.0
Total Dissolved Solids	160.1

5. All standards and reagents were used within their recommended shelf life.
6. The samples were prepared and analyzed within the established hold times.
7. Sample results which are below the reporting limit are reported as "U" on the enclosed report.

000001



All in house quality control procedures were followed, as described below.

8. General quality control procedures.

- The method blank results were below the reporting limits for all analyses.
- The LCS results were within acceptance limits for all analyses.
- It was necessary to dilute the sample selected for the MS/MSD in order to bring the chloride and sulfate concentrations into the analytical range of these analytes on the ion chromatograph. Therefore, accurate quantitation of MS/MSD recoveries for chloride and sulfate was not possible. The MS/MSD results were within acceptance limits for all other associated analyses.
- The matrix duplicate results were within acceptance limits for total alkalinity, and TDS.

The data contained in the following report have been reviewed and approved by the personnel listed below:

B
Reporter's Initials

6-30-98
Date

DP
Reviewer's Initials

6/30/98
Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

000002

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9806023

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0188

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0188	9806023-1		Water	6/1/98	16:15
S98-0189	9806023-2		Water	6/1/98	16:15
S98-0223	9806023-3		Water	6/1/98	15:45
S98-0190	9806023-4		Water	6/1/98	18:30
S98-0224	9806023-5		Water	6/1/98	18:50
S98-0225	9806023-6		Water	6/1/98	18:55

000003

TOTAL ALKALINITY As CaCO3

Method EPA310.1

Sample Results

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188

Work Order Number: 9806023

Reporting Basis: As Received

Final Volume: 100 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0188	9806023-1	6/1/98	6/8/98	6/8/98	N/A	1	150	MG/L	5		100 ML
S98-0189	9806023-2	6/1/98	6/8/98	6/8/98	N/A	1	150	MG/L	5		100 ML
S98-0223	9806023-3	6/1/98	6/8/98	6/8/98	N/A	1	5	MG/L	5	U	100 ML
S98-0190	9806023-4	6/1/98	6/8/98	6/8/98	N/A	1	170	MG/L	5		100 ML
S98-0224	9806023-5	6/1/98	6/8/98	6/8/98	N/A	1	150	MG/L	5		100 ML
S98-0225	9806023-6	6/1/98	6/8/98	6/8/98	N/A	1	5	MG/L	5	U	100 ML

Comments:

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

BICARBONATE AS CaCO₃

Method EPA310.1

Sample Results

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188

Work Order Number: 9806023

Reporting Basis: As Received

Final Volume: 100 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0188	9806023-1	6/1/98	6/8/98	6/8/98	N/A	1	150	MG/L	5		100 ML
S98-0189	9806023-2	6/1/98	6/8/98	6/8/98	N/A	1	150	MG/L	5		100 ML
S98-0223	9806023-3	6/1/98	6/8/98	6/8/98	N/A	1	5	MG/L	5	U	100 ML
S98-0190	9806023-4	6/1/98	6/8/98	6/8/98	N/A	1	170	MG/L	5		100 ML
S98-0224	9806023-5	6/1/98	6/8/98	6/8/98	N/A	1	150	MG/L	5		100 ML
S98-0225	9806023-6	6/1/98	6/8/98	6/8/98	N/A	1	5	MG/L	5	U	100 ML

Comments:

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

TOTAL ALKALINITY As CaCO3

Method EPA310.1

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Lab ID: AK980608-1MB

Sample Matrix: Water

% Moisture: N/A

Date Collected: N/A

Date Extracted: 08-Jun-98

Date Analyzed: 08-Jun-98

Prep Batch: AK980608-1

QCBatchID: AK980608-1-2

Run ID: AK980608-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 ML

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
AK980608-1MB	6/8/98	6/8/98	6/8/98	N/A	1	5	MG/L	5	U

Comments:

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

000006

TOTAL ALKALINITY As CaCO₃

Method EPA310.1

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Lab ID: AK980608-1LCS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 08-Jun-98

Date Extracted: 08-Jun-98

Date Analyzed: 08-Jun-98

Prep Batch: AK980608-1

QCBatchID: AK980608-1-2

Run ID: AK980608-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 ML

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
11-43-8	TOTAL ALKALINITY As CaCO ₃	100	98.2	MG/L	5		98	85 - 115

TOTAL ALKALINITY As CaCO₃

Method EPA310.1

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Reporting Basis: As Received

Sample Aliquot: 100 ML

Final Volume: 100ML

Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
S98-0188	9806023-1	6/8/98	6/8/98	1	153	MG/L	150	5		0	15

Comments:

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

000008

BICARBONATE AS CaCO₃

Method EPA310.1

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Lab ID: AK980608-1MB

Sample Matrix: Water

% Moisture: N/A

Date Collected: N/A

Date Extracted: 08-Jun-98

Date Analyzed: 08-Jun-98

Prep Batch: AK980608-1

QCBatchID: AK980608-1-2

Run ID: AK980608-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 ML

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
AK980608-1MB	6/8/98	6/8/98	6/8/98	N/A	1	5	MG/L	5	U

Comments:

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

000009

BICARBONATE AS CaCO₃

Method EPA310.1

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Lab ID: AK980608-1LCS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 08-Jun-98

Date Extracted: 08-Jun-98

Date Analyzed: 08-Jun-98

Prep Batch: AK980608-1

QCBatchID: AK980608-1-2

Run ID: AK980608-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 ML

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
10-13-9	BICARBONATE AS CaCO ₃	100	98.2	MG/L	5		98	85 - 115

000010

BICARBONATE AS CaCO3

Method EPA310.1

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Reporting Basis: As Received

Sample Aliquot: 100 ML

Final Volume: 100ML

Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
S98-0188	9806023-1	6/8/98	6/8/98	1	153	MG/L	150	5		0	15

Comments:

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

000011

Ion Chromatography

Method EPA300.0

Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Field ID: S98-0189

Lab ID: 9806023-2

Sample Matrix: Water

% Moisture: N/A

Date Collected: 01-Jun-98

Date Extracted: 03-Jun-98

Date Analyzed: 03-Jun-98

Prep Batch: IC980603-1

QCBatchID: IC980603-1-2

Run ID: IC980603-2A

Cleanup: NONE

Basis: As Received

Sample Aliquot: 5 ML

Final Volume: 5 ML

CASNO	Target Analyte	DF	Result	Units	Reporting Limit	Result Qualifier	EPA Qualifier
24959-67-9	BROMIDE	1	0.74	MG/L	0.2		
16887-00-6	CHLORIDE	100	540	MG/L	20		
16984-48-8	FLUORIDE	1	1.3	MG/L	0.1		
14808-79-8	SULFATE	50	150	MG/L	50		

000013

Ion Chromatography

Method EPA300.0

Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Field ID: S98-0223

Lab ID: 9806023-3

Sample Matrix: Water

% Moisture: N/A

Date Collected: 01-Jun-98

Date Extracted: 03-Jun-98

Date Analyzed: 03-Jun-98

Prep Batch: IC980603-1

QCBatchID: IC980603-1-2

Run ID: IC980603-2A

Cleanup: NONE

Basis: As Received

Sample Aliquot: 5 ML

Final Volume: 5 ML

CASNO	Target Analyte	DF	Result	Units	Reporting Limit	Result Qualifier	EPA Qualifier
24959-67-9	BROMIDE	1	0.2	MG/L	0.2	U	
16887-00-6	CHLORIDE	1	0.33	MG/L	0.2		
16984-48-8	FLUORIDE	1	0.1	MG/L	0.1	U	
14808-79-8	SULFATE	1	1	MG/L	1	U	

000014

Ion Chromatography

Method EPA300.0

Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Field ID: S98-0224

Lab ID: 9806023-5

Sample Matrix: Water

% Moisture: N/A

Date Collected: 01-Jun-98

Date Extracted: 03-Jun-98

Date Analyzed: 03-Jun-98

Prep Batch: IC980603-1

QCBatchID: IC980603-1-2

Run ID: IC980603-2A

Cleanup: NONE

Basis: As Received

Sample Aliquot: 5 ML

Final Volume: 5 ML

CASNO	Target Analyte	DF	Result	Units	Reporting Limit	Result Qualifier	EPA Qualifier
24959-67-9	BROMIDE	1	0.64	MG/L	0.2		
16887-00-6	CHLORIDE	20	91	MG/L	4		
16984-48-8	FLUORIDE	1	1.7	MG/L	0.1		
14808-79-8	SULFATE	20	53	MG/L	20		

000016

Ion Chromatography

Method EPA300.0

Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Field ID: S98-0225

Lab ID: 9806023-6

Sample Matrix: Water

% Moisture: N/A

Date Collected: 01-Jun-98

Date Extracted: 03-Jun-98

Date Analyzed: 03-Jun-98

Prep Batch: IC980603-1

QCBatchID: IC980603-1-2

Run ID: IC980603-2A

Cleanup: NONE

Basis: As Received

Sample Aliquot: 5 ML

Final Volume: 5 ML

CASNO	Target Analyte	DF	Result	Units	Reporting Limit	Result Qualifier	EPA Qualifier
24959-67-9	BROMIDE	1	0.2	MG/L	0.2	U	
16887-00-6	CHLORIDE	1	0.2	MG/L	0.2	U	
16984-48-8	FLUORIDE	1	0.1	MG/L	0.1	U	
14808-79-8	SULFATE	1	1	MG/L	1	U	

000017

Ion Chromatography

Method EPA300.0

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Lab ID: IC980603-1MB

Sample Matrix: Water

% Moisture: N/A

Date Collected: N/A

Date Extracted: 03-Jun-98

Date Analyzed: 03-Jun-98

Prep Batch: IC980603-1

QCBatchID: IC980603-1-2

Run ID: IC980603-2A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 5 ML

Final Volume: 5 ML

CASNO	Target Analyte	DF	Result	Units	Reporting Limit	Result Qualifier	EPA Qualifier
24959-67-9	BROMIDE	1	0.2	MG/L	0.2	U	
14808-79-8	SULFATE	1	1	MG/L	1	U	
16984-48-8	FLUORIDE	1	0.1	MG/L	0.1	U	
16887-00-6	CHLORIDE	1	0.2	MG/L	0.2	U	

000018

Ion Chromatography

Method EPA300.0

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Lab ID: IC980603-1LCS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 03-Jun-98

Date Extracted: 03-Jun-98

Date Analyzed: 03-Jun-98

Prep Batch: IC980603-1

QCBatchID: IC980603-1-2

Run ID: IC980603-2A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 5 ML

Final Volume: 5 ML

CASNO	Target Analyte	Spike Added	LCS Result	Units	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
24959-67-9	BROMIDE	4	4.1	MG/L	0.2		102	85 - 115%
16887-00-6	CHLORIDE	4	4.19	MG/L	0.2		105	75 - 115%
16984-48-8	FLUORIDE	2	2.09	MG/L	0.1		104	80 - 120%
14808-79-8	SULFATE	20	20.7	MG/L	1		104	85 - 115%

000019

Ion Chromatography

Method EPA300.0

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Field ID: S98-0188

LabID: 9806023-1MS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 01-Jun-98

Date Extracted: 03-Jun-98

Date Analyzed: 03-Jun-98

Prep Batch: IC980603-1

QCBatchID: IC980603-1-2

Run ID: IC980603-2A

Cleanup: NONE

Basis: As Received

Sample Aliquot: 5 ML

Final Volume: 5 ML

Target Analyte	Sample Result	MS Result	Units	Reporting Limit	Result Qualifier	Spike Added	MS % Rec.	Control Limits
BROMIDE	0.71	5.61	MG/L	0.2		5	98	85 - 115%
FLUORIDE	1.4	3.3	MG/L	0.1		2	95	80 - 120%

MSD Lab ID: 9806023-1MSD

Target Analyte	Spike Added	MSD Result	Units	Reporting Limit	MSD % Rec.	RPD	RPD Limits
BROMIDE	5	5.58	MG/L	0.2	97	1	15
FLUORIDE	2	3.34	MG/L	0.1	97	1	20

000020

Nitrate/Nitrite as N

Method EPA353.3

Sample Results

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188

Work Order Number: 9806023

Reporting Basis: As Received

Final Volume: 3 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0188	9806023-1	6/1/98	6/25/98	6/25/98	N/A	1	0.41	MG/L	0.05		3 ML
S98-0189	9806023-2	6/1/98	6/25/98	6/25/98	N/A	1	0.54	MG/L	0.05		3 ML
S98-0223	9806023-3	6/1/98	6/25/98	6/25/98	N/A	1	0.05	MG/L	0.05	U	3 ML
S98-0190	9806023-4	6/1/98	6/25/98	6/25/98	N/A	2	1.2	MG/L	0.1		3 ML
S98-0224	9806023-5	6/1/98	6/25/98	6/25/98	N/A	1	0.05	MG/L	0.05	U	3 ML
S98-0225	9806023-6	6/1/98	6/25/98	6/25/98	N/A	1	0.09	MG/L	0.05		3 ML

Comments:

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

Nitrate/Nitrite as N

Method EPA353.3

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Lab ID: nn980625-1MB

Sample Matrix: Water

% Moisture: N/A

Date Collected: N/A

Date Extracted: 25-Jun-98

Date Analyzed: 25-Jun-98

Prep Batch: nn980625-1

QCBatchID: nn980625-1-1

Run ID: nn980625-1a

Cleanup: NONE

Basis: N/A

Sample Aliquot: 3 ML

Final Volume: 3 ML

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
nn980625-1MB	6/25/98	6/25/98	6/25/98	N/A	1	0.05	MG/L	0.05	U

Comments:

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

Nitrate/Nitrite as N

Method EPA353.3

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Lab ID: nn980625-1LCS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 25-Jun-98

Date Extracted: 25-Jun-98

Date Analyzed: 25-Jun-98

Prep Batch: nn980625-1

QCBatchID: nn980625-1-1

Run ID: nn980625-1a

Cleanup: NONE

Basis: N/A

Sample Aliquot: 3 ML

Final Volume: 3 ML

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
1-005	NITRATE/NITRITE	0.5	0.499	MG/L	0.05		100	80 - 120

000023

Nitrate/Nitrite as N

Method EPA353.3

Matrix Spike And Matrix Spike Duplicate

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Field ID: S98-0188
LabID: 9806023-1MS

Sample Matrix: Water

% Moisture: N/A

Date Collected: 01-Jun-98

Date Extracted: 25-Jun-98

Date Analyzed: 25-Jun-98

Prep Batch: nn980625-1

QCBatchID: nn980625-1-1

Run ID: nn980625-1a

Cleanup: NONE

Basis: As Received

Sample Aliquot: 3 ML

Final Volume: 3 ML

Spike Added	Sample Result	Units	Reporting Limit	MS Result	MS % Rec.	MS Qualifier	Control Limits
0.5	0.41	MG/L	0.05	0.929	104		80 - 120%

MSD Lab ID: 9806023-1MSD

Spike Added	MSD Result	Units	Reporting Limit	MSD % Rec.	Result Qualifier	RPD	RPD Limits
0.5	0.897	MG/L	0.05	98		3	20

000024

Total Dissolved Solids

Method EPA160.1

Sample Results

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188

Work Order Number: 9806023

Reporting Basis: As Received

Final Volume: 100 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0188	9806023-1	6/1/98	6/8/98	6/8/98	N/A	1	1500	MG/L	20		100 ML
S98-0189	9806023-2	6/1/98	6/8/98	6/8/98	N/A	1	1700	MG/L	20		100 ML
S98-0223	9806023-3	6/1/98	6/8/98	6/8/98	N/A	1	20	MG/L	20	U	100 ML
S98-0190	9806023-4	6/1/98	6/8/98	6/8/98	N/A	1	450	MG/L	20		100 ML
S98-0224	9806023-5	6/1/98	6/8/98	6/8/98	N/A	1	420	MG/L	20		100 ML
S98-0225	9806023-6	6/1/98	6/8/98	6/8/98	N/A	1	20	MG/L	20	U	100 ML

Comments:

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

Total Dissolved Solids

Method EPA160.1

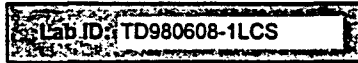
Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188



Sample Matrix: Water

% Moisture: N/A

Date Collected: 08-Jun-98

Date Extracted: 08-Jun-98

Date Analyzed: 08-Jun-98

Prep Batch: TD980608-1

QCBatchID: TD980608-1-1

Run ID: TD980608-1A

Cleanup: NONE

Basis: N/A

Sample Allquot: 100 ML

Final Volume: 100 ML

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
10-33-3	TOTAL DISSOLVED SOLIDS	400	394	MG/L	20		99	85 - 115

000026

Total Dissolved Solids

Method EPA160.1

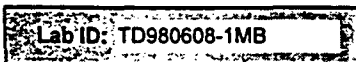
Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188



Sample Matrix: Water

% Moisture: N/A

Date Collected: N/A

Date Extracted: 08-Jun-98

Date Analyzed: 08-Jun-98

Prep Batch: TD980608-1

QCBatchID: TD980608-1-1

Run ID: TD980608-1A

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ML

Final Volume: 100 ML

Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag
TD980608-1MB	6/8/98	6/8/98	6/8/98	N/A	1	20	MG/L	20	U

Comments:

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

Total Dissolved Solids

Method EPA160.1

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Reporting Basis: As Received

Sample Aliquot: 100 ML

Final Volume: 100ML

Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
S98-0188	9806023-1	6/8/98	6/8/98	1	1530	MG/L	1500	20		1	15

Comments:

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



Paragon Analytics, Inc.

TOTAL RECOVERABLE METALS CASE NARRATIVE

El Paso Natural Gas Co.

S98-0188

Order Number - 9806023

1. This report consists of 6 water samples.
2. The samples were received cool and intact on 06/03/98.
3. The samples had been correctly preserved for the requested analyses.
4. The samples were prepared for analysis based on SW-846, 3rd Edition procedures.
For analysis by conventional ICP, the samples were digested following method 3005A.
5. The samples were analyzed following SW-846 protocols by conventional ICP (Method 6010B).
6. All standards and solutions are NIST traceable and were used within their recommended shelf life.
7. The samples were prepared and analyzed within the established hold times.
8. Sample results which are below PAI's standard reporting limits are reported as "ND" on the enclosed report.

All in house quality control procedures were followed, as described below.

9. General quality control procedures.
 - A preparation (method) blank and laboratory control sample were digested and analyzed with the samples in this digestion batch. There were not more than 20 samples in this digestion batch.
 - The preparation (method) blank results associated with this batch were below the reporting limits for the requested analytes. This indicates that no contaminants were introduced to the samples during the digestion procedure.
 - The laboratory control sample associated with this batch was within acceptance limits. This indicates complete digestion according to the method.

000001

PARAGON ANALYTICS, INC.



- All initial and continuing calibration blanks associated with this batch were below the reporting limits for the requested analytes. This indicates a valid calibration and stable instrument conditions.
 - All initial and continuing calibration verifications associated with this batch were within acceptance criteria for the requested analytes. This indicates a valid calibration and stable instrument conditions.
 - The interference check samples, and high standard readbacks associated with Method 6010B analyses were within acceptance criteria.
10. A sample from another Order Number was used as the QC sample for this batch.
- A matrix spike and matrix spike duplicate were digested and analyzed with this batch. All acceptance criteria for accuracy were met.
 - A sample duplicate and spike duplicate were digested and analyzed with this batch. All acceptance criteria for precision were met.
 - A serial dilution was analyzed with this batch. All acceptance criteria were met.
11. Hardness was determined by calculation based on method 2340B from Standard Methods for the Examination of Waters and Wastewaters, 17th Edition, 1989. Calcium and magnesium concentrations were determined by ICP, SW-846 Method 6010B. The results can be found on each report page.

$$\text{mg CaCO}_3/\text{L} = (2.497 * \text{Ca conc. (mg/L)}) + (4.118 * \text{Mg conc. (mg/L)})$$

The data contained in the following report have been reviewed and approved by the personnel listed below:

Darryl Patrick
Darryl Patrick
Senior Inorganic Chemist

6/16/98
Date

SW
Reviewer's Initials

6/16/98
Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

000002

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9806023

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0188

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0188	9806023-1		Water	6/1/98	16:15
S98-0189	9806023-2		Water	6/1/98	16:15
S98-0223	9806023-3		Water	6/1/98	15:45
S98-0190	9806023-4		Water	6/1/98	18:30
S98-0224	9806023-5		Water	6/1/98	18:50
S98-0225	9806023-6		Water	6/1/98	18:55

000003

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188
Lab Sample ID: RB 9806023

Sample ID

Reagent Blank

Date Collected: N/A
Prep Date: 06/08/98
Date Analyzed: 06/10/98

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	ND	1
Magnesium	ND	1
Potassium	ND	1
Silicon	ND	0.05
Sodium	ND	1

ND = Not detected at or above the reporting limit.

000004

DP

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188
Lab Sample ID: 9806023-1

Sample ID

S98-0188

Sample Matrix: Water

Date Collected: 06/01/98

Prep Date: 06/08/98

Date Analyzed: 06/10/98

Hardness = 820 mg/L CaCO₃

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	210	1
Magnesium	73	1
Potassium	9	1
Silicon	23	0.05
Sodium	130	1

ND = Not detected at or above the reporting limit.

000005

N

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188
Lab Sample ID: 9806023-2

Sample ID

S98-0189

Sample Matrix: Water

Date Collected: 06/01/98

Prep Date: 06/08/98

Date Analyzed: 06/10/98

Hardness = 800 mg/L CaCO₃

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	200	1
Magnesium	71	1
Potassium	9	1
Silicon	22	0.05
Sodium	130	1

ND = Not detected at or above the reporting limit.

000006

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188
Lab Sample ID: 9806023-3

Sample Matrix: Water

Sample ID

S98-0223

Date Collected: 06/01/98

Prep Date: 06/08/98

Date Analyzed: 06/10/98

Hardness = < 2.5 mg/L CaCO₃

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	ND	1
Magnesium	ND	1
Potassium	ND	1
Silicon	0.16	0.05
Sodium	ND	1

ND = Not detected at or above the reporting limit.

000007

DP

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188
Lab Sample ID: 9806023-4

Sample Matrix: Water

Sample ID

S98-0190

Date Collected: 06/01/98

Prep Date: 06/08/98

Date Analyzed: 06/10/98

Hardness = 160 mg/L CaCO₃

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	40	1
Magnesium	14	1
Potassium	10	1
Silicon	21	0.05
Sodium	85	1

ND = Not detected at or above the reporting limit.

000008

DP

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188
Lab Sample ID: 9806023-5

Sample ID

S98-0224

Sample Matrix: Water

Date Collected: 06/01/98

Prep Date: 06/08/98

Date Analyzed: 06/10/98

Hardness = 180 mg/L CaCO₃

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	50	1
Magnesium	13	1
Potassium	4	1
Silicon	16	0.05
Sodium	76	1

ND = Not detected at or above the reporting limit.

000000

DP

TOTAL RECOVERABLE METALS

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188
Lab Sample ID: 9806023-6

Sample ID

S98-0225

Sample Matrix: Water

Date Collected: 06/01/98

Prep Date: 06/08/98

Date Analyzed: 06/10/98

Hardness = < 2.5 mg/L CaCO₃

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium	ND	1
Magnesium	ND	1
Potassium	ND	1
Silicon	0.16	0.05
Sodium	ND	1

ND = Not detected at or above the reporting limit.

000010

BP

TOTAL RECOVERABLE METALS MATRIX SPIKE

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Lab Sample ID: 9806050-1

Sample ID

In House

Sample Matrix: Water

Prep Date: 06/08/98
Date Analyzed: 06/10/98

Analyte	Spike Added mg/L	Sample Conc. mg/L	MS Conc. mg/L	% Rec. (limits 80-120%)	Flags
Calcium	40	< 1	40	100	
Magnesium	40	< 1	40	100	
Potassium	40	< 1	40	100	
Silicon	0.50	< 0.05	0.55	110	
Sodium	40	< 1	40	100	

Analyte	MSD Conc. mg/L	MSD % Rec. (limits 80-120%)	Relative % Difference (limits 0-20%)	Flags
Calcium	40	100	0	
Magnesium	40	100	0	
Potassium	40	100	0	
Silicon	0.56	112	2	
Sodium	40	100	0	

000011

DF

Paragon Analytics, Inc.



PH ANALYSIS CASE NARRATIVE

El Paso Natural Gas Co.

S98-0188

Order Number - 9806023

1. This report consists of six water samples.
2. The samples were received cool and intact on June 3, 1998.
3. The samples were prepared for analysis based on SW-846, 3rd Edition procedures. Specifically, the water samples were analyzed following Method 9040.
4. All standards and solutions were used within their recommended shelf life.
All in house quality control procedures were followed, as described below.
5. General quality control procedures.
 - All initial and continuing calibration verifications associated with this batch were within acceptance criteria for the requested analyte. This indicates a valid calibration and stable instrument conditions.
6. PAI sample ID 9806023-1 was used as the matrix QC sample for this batch.
 - A duplicate was prepared and analyzed with this batch. All acceptance criteria were met.

000001

The data contained in the following report have been reviewed and approved by the personnel listed below:



Susan Converse
Susan Converse
Inorganic Technician

6-12-98
Date

Sw
Reviewer's Initials

6/12/98
Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

000002

PARAGON ANALYTICS, INC.

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9806023

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0188

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0188	9806023-1		Water	6/1/98	16:15
S98-0189	9806023-2		Water	6/1/98	16:15
S98-0223	9806023-3		Water	6/1/98	15:45
S98-0190	9806023-4		Water	6/1/98	18:30
S98-0224	9806023-5		Water	6/1/98	18:50
S98-0225	9806023-6		Water	6/1/98	18:55

000003

pH in Water

Method SW9040

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188
Work Order Number: 9806023
Reporting Basis: As Received

Final Volume: 20 ML
Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquo
S98-0188	9806023-1	6/1/98	6/8/98	6/8/98	N/A	1	7.5	PH	0.1		20 M
S98-0189	9806023-2	6/1/98	6/8/98	6/8/98	N/A	1	7.4	PH	0.1		20 M
S98-0223	9806023-3	6/1/98	6/8/98	6/8/98	N/A	1	6	PH	0.1		20 M
S98-0190	9806023-4	6/1/98	6/8/98	6/8/98	N/A	1	8	PH	0.1		20 M
S98-0224	9806023-5	6/1/98	6/8/98	6/8/98	N/A	1	8	PH	0.1		20 M
S98-0225	9806023-6	6/1/98	6/8/98	6/8/98	N/A	1	5.5	PH	0.1		20 M

Comments:

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

pH in Water

Method SW9040

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Reporting Basis: As Received

Sample Aliquot: 20 ML

Final Volume: 20ML

Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
S98-0188	9806023-1	6/8/98	6/8/98	1	7.5	PH	7.5	0.1		0	10

Comments:

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

Paragon Analytics, Inc.



SPECIFIC CONDUCTANCE CASE NARRATIVE

El Paso Natural Gas Co.

S98-0188

Order Number - 9806023

1. This report consists of six water samples.
2. The samples were received cool and intact on June 3, 1998.
3. The samples were prepared for analysis based on SW-846 Method 9050.
4. All standards and solutions are NIST traceable and were used within their recommended shelf life.

All in house quality control procedures were followed, as described below.

5. General quality control procedures.
 - All initial and continuing calibration verifications associated with this batch were within acceptance criteria for the requested analyte. This indicates a valid calibration and stable instrument conditions.
6. PAI sample ID 9806023-1 was used as the matrix QC sample for this batch.
 - A duplicate was prepared and analyzed with this batch, all acceptance criteria were met.

000001

PARAGON ANALYTICS, INC.

The data contained in the following report have been reviewed and approved by the personnel listed below:



Susan Converse

Susan Converse
Inorganic Technician

6-12-98

Date

SW

Reviewer's Initials

6/12/98

Date

CERTIFICATION

Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

000002

PARAGON ANALYTICS, INC.

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9806023

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0188

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0188	9806023-1		Water	6/1/98	16:15
S98-0189	9806023-2		Water	6/1/98	16:15
S98-0223	9806023-3		Water	6/1/98	15:45
S98-0190	9806023-4		Water	6/1/98	18:30
S98-0224	9806023-5		Water	6/1/98	18:50
S98-0225	9806023-6		Water	6/1/98	18:55

000003

Specific Conductance in Water

Method EPA120.1

Sample Results

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188

Work Order Number: 9806023

Reporting Basis: As Received

Final Volume: 50 ML

Matrix: Water

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Flag	Sample Aliquot
S98-0188	9806023-1	6/1/98	6/8/98	6/8/98	N/A	1	2000	umhos/cm			50 ML
S98-0189	9806023-2	6/1/98	6/8/98	6/8/98	N/A	1	2300	umhos/cm			50 ML
S98-0223	9806023-3	6/1/98	6/12/98	6/12/98	N/A	1	3.2	umhos/cm			50 ML
S98-0190	9806023-4	6/1/98	6/8/98	6/8/98	N/A	1	700	umhos/cm			50 ML
S98-0224	9806023-5	6/1/98	6/8/98	6/8/98	N/A	1	690	umhos/cm			50 ML
S98-0225	9806023-6	6/1/98	6/8/98	6/8/98	N/A	1	12	umhos/cm			50 ML

Comments:

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

Specific Conductance in Water

Method EPA120.1

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Reporting Basis: As Received

Sample Aliquot: 50 ML

Final Volume: 50ML

Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
S98-0188	9806023-1	6/8/98	6/8/98	1	2000	umhos/cm	2000			0	

Comments:

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

Specific Conductance in Water

Method EPA120.1

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0188

Reporting Basis: As Received

Sample Aliquot: 50 ML

Final Volume: 50ML

Matrix: Water

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Units	Sample Result	Detection Limit	Flag	RPD	RPD Limit
S98-0223	9806023-3	6/12/98	6/12/98	1	3.2	umhos/cm	3.2			0	

Comments:

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



Paragon Analytics, Inc.

Aromatic Volatile Organics Case Narrative

El Paso Natural Gas Co.

S98-0188

Order Number - 9806023

1. This report consists of 6 water samples received by Paragon on 06/03/98.
2. These samples were prepared and analyzed according to SW-846, 3rd Edition procedures. Specifically, the water samples were prepared by heating and purging 5 mls using purge and trap procedures based on Method 5030. The calibration curve was also prepared using the heated purge.
3. The samples were analyzed using a GC with a DB-VRX capillary column and a PID detector according to protocols based on SW-846 Method 8021. All positive results were quantitated using the responses from the initial calibration curve using the internal standard technique. Second column confirmation was performed on all samples with positive results on a DB-624 capillary column.
4. All initial and continuing calibration criteria were within acceptance criteria.
5. The method blank associated with this project was below the reporting limits for all analytes.
6. Laboratory control spike and laboratory control spike duplicate recovery and RPD were within the acceptance criteria.
7. Matrix spike and matrix spike duplicate recovery and RPD were within acceptance criteria.

000001

PARAGON ANALYTICS, INC.

8. All samples were analyzed within the established holding times.
9. All surrogate recoveries were within acceptance criteria.
10. All internal standard recoveries were within acceptance criteria.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, Paragon Analytics, Inc. certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Wesley S. Mayfield 6/26/98
Wesley S. Mayfield Date
Fuels Analyst

mb 6-28-98
Reviewer's Initials Date

000002

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9806023

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0188

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0188	9806023-1		Water	6/1/98	16:15
S98-0189	9806023-2		Water	6/1/98	16:15
S98-0223	9806023-3		Water	6/1/98	15:45
S98-0190	9806023-4		Water	6/1/98	18:30
S98-0224	9806023-5		Water	6/1/98	18:50
S98-0225	9806023-6		Water	6/1/98	18:55

000003

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188

Reagent Blank

Lab Sample ID: WRB1

Date Collected: N/A
Date Extracted: 6/09/98
Date Analyzed: 6/09/98

Sample Matrix: Water

Sample Volume: 5 mL
Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	102	88 - 119

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

000004

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188

S98-0188

Lab Sample ID: 9806023-1

Date Collected: 6/01/98
Date Extracted: 6/09/98
Date Analyzed: 6/09/98

Sample Matrix: Water

Sample Volume: 5 mL
Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	1.2	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	102	88 - 119

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

000005

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188

S98-0189

Lab Sample ID: 9806023-2

Date Collected: 6/01/98
Date Extracted: 6/09/98
Date Analyzed: 6/09/98

Sample Matrix: Water

Sample Volume: 5 mL
Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	4.4	0.50
Toluene	2.5	0.50
Ethylbenzene	0.61	0.50
M,P-Xylene	1.7	1.0
O-Xylene	0.83	0.50
Total Xylenes	2.5	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	104	88 - 119

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

000006

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

S98-0223

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188

Lab Sample ID: 9806023-3

Date Collected: 6/01/98

Date Extracted: 6/09/98

Date Analyzed: 6/09/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	17	0.50
Toluene	100	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	120	1.0
O-Xylene	ND	0.50
Total Xylenes	120	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	102	88 - 119

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

000007

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

S98-0190

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188

Lab Sample ID: 9806023-4

Date Collected: 6/01/98
Date Extracted: 6/09/98
Date Analyzed: 6/09/98

Sample Matrix: Water

Sample Volume: 5 mL
Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	102	88 - 119

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

000008

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

S98-0224

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188

Lab Sample ID: 9806023-5

Date Collected: 6/01/98

Date Extracted: 6/09/98

Date Analyzed: 6/09/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	ND	0.50
Toluene	0.83	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	103	88 - 119

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

000009

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188

S98-0225

Lab Sample ID: 9806023-6

Date Collected: 6/01/98

Date Extracted: 6/09/98

Date Analyzed: 6/09/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
Benzene	12	0.50
Toluene	ND	0.50
Ethylbenzene	ND	0.50
M,P-Xylene	ND	1.0
O-Xylene	ND	0.50
Total Xylenes	ND	1.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2,3,4-Trifluorotoluene	102	88 - 119

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

000010

AROMATIC VOLATILE ORGANICS BLANK SPIKE

Method 8021

Sample ID

Blank Spike

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188

Lab Sample ID: WBS1

Date Extracted: 6/09/98

Date Analyzed: 6/09/98

Sample Matrix: Water

Sample Volume: 5 mL

Analyte	Spike Added (ug/L)	BS Concentration (ug/L)	BS Percent Recovery	QC Limits % Rec
Benzene	100	99.2	99	85 - 115
Toluene	100	101	101	85 - 115
Ethylbenzene	100	103	103	85 - 115
M,P-Xylene	200	216	108	85 - 115
O-Xylene	100	102	102	85 - 115
Total Xylenes	300	318	106	85 - 115

Analyte	Spike Added (ug/L)	BSD Concentration (ug/L)	BSD Percent Recovery	RPD	QC Limits RPD
Benzene	100	101	101	1	20
Toluene	100	103	103	2	20
Ethylbenzene	100	105	105	2	20
M,P-Xylene	200	220	110	2	20
O-Xylene	100	103	103	2	20
Total Xylenes	300	323	108	2	20

SURROGATE RECOVERY BS/BS

Analyte	% Recovery BS	% Recovery BSD	% Rec Limits
2,3,4-Trifluorotoluene	100	102	88 - 119

D = Detected

000011

AROMATIC VOLATILE ORGANICS MATRIX SPIKE

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.
Client Name: El Paso Natural Gas Co.
Client Project ID: S98-0188

S98-0188

Date Collected: 6/01/98
Date Extracted: 6/09/98
Date Analyzed: 6/09/98

Lab Sample ID: 9806023-1MS

Sample Matrix: Water

Sample Volume: 5 mL
Dilution Factor: 1

Analyte	Spike Added (ug/L)	Sample Concentration (ug/L)	MS Concentration (ug/L)	MS Percent Recovery	QC Limits % Rec
Benzene	100	ND	104	104	85 - 115
Toluene	100	1.20	102	101	85 - 115
Ethylbenzene	100	ND	103	103	85 - 115
M,P-Xylene	200	ND	213	107	85 - 115
O-Xylene	100	ND	101	101	85 - 115
Total Xylenes	300	ND	314	105	85 - 115

Analyte	Spike Added (ug/L)	MSD Concentration (ug/L)	MSD Percent Recovery	RPD	QC Limits RPD
Benzene	100	103	103	0	20
Toluene	100	102	101	0	20
Ethylbenzene	100	102	102	1	20
M,P-Xylene	200	210	105	1	20
O-Xylene	100	101	101	0	20
Total Xylenes	300	311	104	1	20

SURROGATE RECOVERY MS/MSD

Analyte	% Recovery MS	% Recovery MSD	% Rec Limits
2,3,4-Trifluorotoluene	102	100	88 - 119

ND = Not Detected

000012

Paragon Analytics, Incorporated

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 9806023

Client Name: El Paso Natural Gas Co.

Client Project Name:

Client Project Number: S98-0188

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0188	9806023-1		Water	6/1/98	16:15
S98-0189	9806023-2		Water	6/1/98	16:15
S98-0223	9806023-3		Water	6/1/98	15:45
S98-0190	9806023-4		Water	6/1/98	18:30
S98-0224	9806023-5		Water	6/1/98	18:50
S98-0225	9806023-6		Water	6/1/98	18:55

815-759-2229 FAX: 815-759-2335

ANALYSIS FOR 1ST,2ND,3RD QUARTER SAMPLING

Anions & Cations	Preservative	Bottle & Sample Size
ph	none	1000ml Plastic
P Alkalinity	none	1000ml Plastic
T Alkalinity	none	1000ml Plastic
Chloride	none	1000ml Plastic
Sulfate	none	1000ml Plastic
T Hardness	HNO3	1000ml Plastic
Calcium	HNO3	1000ml Plastic
Magnesium	HNO3	1000ml Plastic
Sodium	HNO3	1000ml Plastic
Silica	HNO3	1000ml Plastic
Fluoride	none	1000ml Plastic
Potassium	HNO3	1000ml Plastic
Bromide	none	1000ml Plastic
Nitrate	H2SO4	500ml Plastic
Total Dissolved Solids	none	1000ml Plastic
Specific Conductance	none	1000ml Plastic
BTEX	HCL	2X VOA





SAMPLE KEY

SAMPLE NUMBER: S98-0289 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: PUMP BLANK BEFORE SAMPLING EMP#3
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 16:20 SAMPLE DATE: 08/10/98

SAMPLE KEY

SAMPLE NUMBER: S98-0290 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: BAILER BEFORE SAMPLING
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 16:40 SAMPLE DATE: 08/10/98

SAMPLE KEY

SAMPLE NUMBER: S98-0291 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: FIELD BLANK
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 16:50 SAMPLE DATE: 08/10/98

SAMPLE KEY

SAMPLE NUMBER: S98-0292 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: PRODUCTION WELL DOOMS
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 18:45 SAMPLE DATE: 08/10/98

SAMPLE KEY

SAMPLE NUMBER: S98-0293 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ACW#15
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 06:00 SAMPLE DATE: 08/11/98

SAMPLE KEY

SAMPLE NUMBER: S98-0294 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ACW#12
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 12:25 SAMPLE DATE: 08/11/98

SAMPLE KEY

SAMPLE NUMBER: S98-0295 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ACW#12 DUP.
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 12:25 SAMPLE DATE: 08/11/98

SAMPLE KEY

SAMPLE NUMBER: S98-0296 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: MONITOR WELL ACW#13
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 13:00 SAMPLE DATE: 08/11/98

SAMPLE KEY

SAMPLE NUMBER: S98-0297 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: BAILER AFTER SAMPLING
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 15:00 SAMPLE DATE: 08/11/98

SAMPLE KEY

SAMPLE NUMBER: S98-0298 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: PUMP BLANK AFTER SAMPLING EMP#3
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 15:05 SAMPLE DATE: 08/11/98

SAMPLE KEY

SAMPLE NUMBER: S98-0299 LOCATION: JAL #4 PLANT
MATRIX: WATER
SAMPLE DESCRIPTION: PRODUCTION WELL OXY
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 17:00 SAMPLE DATE: 08/11/98



MONTGOMERY WATSON LABORATORIES

555 East Walnut Street
Pasadena, California 91101
818 568 6400; Fax: 818 568 6324;
1 800 566 LABS (1 800 566 5227)

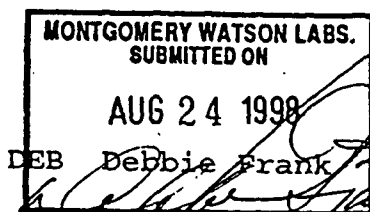
Laboratory Report

for

Nevada Environmental Laboratory
1030 Matley Lane

Reno , NV 89502

Attention: Evelyn Snell
Fax: (702) 348-2546



Report#: 46193
SUBCONTRACT

**MONTGOMERY WATSON LABORATORIES**

555 East Walnut Street
Pasadena, California 91101
818 568 6400; Fax: 818 568 6324;
1 800 568 LABS (1 800 566 5227)

Laboratory
Report
#46193

Nevada Environmental Laboratory
Evelyn Snell
1030 Matley Lane
Reno , NV 89502

Samples Received
14-aug-1998 16:31:43

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Diluti
S98-0289	P9808043-01	(980814180)		Sampled on 08/10/98				
	08/16/98	82462	(ML/SM 4500F)	Fluoride	1.9	mg/l	0.10	1
	08/19/98	82671	(ML/EPA 300.0)	Sulfate	57	mg/l	2.0	1
S98-0290	P9808043-02	(980814181)		Sampled on 08/08/98				
	08/16/98	82462	(ML/SM 4500F)	Fluoride	ND	mg/l	0.10	1
	08/19/98	82671	(ML/EPA 300.0)	Sulfate	ND	mg/l	2.0	1
S98-0291	P9808043-03	(980814182)		Sampled on 08/10/98				
	08/16/98	82462	(ML/SM 4500F)	Fluoride	ND	mg/l	0.10	1
	08/19/98	82671	(ML/EPA 300.0)	Sulfate	ND	mg/l	2.0	1
S98-0293	P9808043-04	(980814183)		Sampled on 08/11/98				
	08/16/98	82462	(ML/SM 4500F)	Fluoride	1.9	mg/l	0.10	1
	08/19/98	82671	(ML/EPA 300.0)	Sulfate	110	mg/l	2.0	1
S98-0294	P9808043-05	(980814184)		Sampled on 08/11/98				
	08/16/98	82462	(ML/SM 4500F)	Fluoride	1.3	mg/l	0.10	1
	08/19/98	82671	(ML/EPA 300.0)	Sulfate	130	mg/l	6.0	3
S98-0295	P9808043-06	(980814185)		Sampled on 08/11/98				
	08/16/98	82462	(ML/SM 4500F)	Fluoride	1.1	mg/l	0.10	1
	08/19/98	82671	(ML/EPA 300.0)	Sulfate	140	mg/l	8.0	4
S98-0296	P9808043-07	(980814186)		Sampled on 08/11/98				
	08/16/98	82462	(ML/SM 4500F)	Fluoride	1.6	mg/l	0.10	1
	08/19/98	82671	(ML/EPA 300.0)	Sulfate	110	mg/l	2.0	1

**MONTGOMERY WATSON LABORATORIES**

555 East Walnut Street
Pasadena, California 91101
818 568 6400; Fax: 818 568 6324;
1 800 568 LABS (1 800 566 5227)

**Laboratory
Report
#46193**

Nevada Environmental Laboratory
(continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Dilutio
S98-0297 P9808043-08 (980814187) Sampled on 08/11/98								
	08/16/98	82462	(ML/SM 4500F)	Fluoride	ND	mg/l	0.10	1
	08/19/98	82671	(ML/EPA 300.0)	Sulfate	ND	mg/l	2.0	1
S98-0298 P9808043-09 (980814188) Sampled on 08/11/98								
	08/16/98	82462	(ML/SM 4500F)	Fluoride	1.8	mg/l	0.10	1
	08/19/98	82671	(ML/EPA 300.0)	Sulfate	54	mg/l	2.0	1

**MONTGOMERY WATSON LABORATORIES**

555 East Walnut Street
Pasadena, California 91101
818 568 6400; Fax: 818 568 6324;
1 800 566 LABS (1 800 566 5227)

Laboratory
QC Report
#46193

Nevada Environmental Laboratory**QC Batch #82462****Fluoride**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	0814181		(0.00 - 0.00)	
LCS1	Fluoride	0.87	0.88	101.1	(90.00 - 110.00)	
LCS2	Fluoride	0.87	0.90	103.4	(90.00 - 110.00)	2.2
MBLK	Fluoride	ND				
MS	Fluoride	0.909	1.06	116.6	(80.00 - 120.00)	
MSD	Fluoride	0.909	1.08	118.8	(80.00 - 120.00)	1.9

QC Batch #82671**Sulfate**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	0818034		(0.00 - 0.00)	
LCS1	Sulfate	50	50	100.0	(90.00 - 110.00)	
LCS2	Sulfate	50	50	100.0	(90.00 - 110.00)	0.00
MBLK	Sulfate	ND				
MS	Sulfate	50	56	112.0	(80.00 - 120.00)	
MSD	Sulfate	50	56	112.0	(80.00 - 120.00)	0.00

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and DUP are not applicable for ICR monitoring.



MONTGOMERY WATSON LABORATORIES

555 East Walnut Street
Pasadena, California 91101
818 568 6400; Fax: 818 568 6324;
1 800 566 LABS (1 800 566 5227)

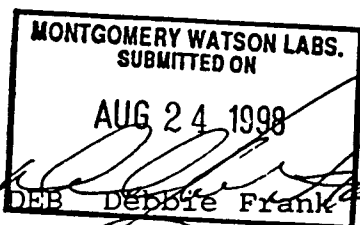
Laboratory Report

for

Nevada Environmental Laboratory
1030 Matley Lane

Reno , NV 89502

Attention: Evelyn Snell
Fax: (702) 348-2546



Report#: 46192
SUBCONTRACT

**MONTGOMERY WATSON LABORATORIES**

555 East Walnut Street
Pasadena, California 91101
818 568 6400; Fax: 818 568 6324;
1 800 566 LABS (1 800 566 5227)

**Laboratory
Report
#46192**

Nevada Environmental Laboratory
Evelyn Snell
1030 Matley Lane
Reno, NV 89502

Samples Received
14-aug-1998 16:30:10

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MDL	Diluti
S98-0292 P9808044-01 (980814178) Sampled on 08/13/98								
	08/15/98	82594	(ML/EPA 300.0)	Sulfate	83	mg/l	4.0	2
Nitrate by IC as NO3 & N								
	08/14/98	82645	(ML/EPA 300.0)	Nitrate-N by IC	1.2	mg/l	0.20	2
	08/14/98	82645	(ML/EPA 300.0)	Nitrate as NO3 by IC	5.3	mg/l	0.88	2
S98-0299 P9808044-02 (980814179) Sampled on 08/13/98								
	08/15/98	82594	(ML/EPA 300.0)	Sulfate	58	mg/l	4.0	2
Nitrate by IC as NO3 & N								
	08/14/98	82645	(ML/EPA 300.0)	Nitrate-N by IC	0.85	mg/l	0.20	2
	08/14/98	82645	(ML/EPA 300.0)	Nitrate as NO3 by IC	3.7	mg/l	0.88	2

**MONTGOMERY WATSON LABORATORIES**

555 East Walnut Street
Pasadena, California 91101
818 568 6400; Fax: 818 568 6324;
1 800 566 LABS (1 800 566 5227)

Laboratory
QC Report
#46192

Nevada Environmental Laboratory**QC Batch #82594****Sulfate**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	0813097		(0.00 - 0.00)	
LCS1	Sulfate	50	49.6	99.2	(90.00 - 110.00)	
LCS2	Sulfate	50	49.7	99.4	(90.00 - 110.00)	0.20
MBLK	Sulfate	ND				
MS	Sulfate	50	52.4	104.8	(80.00 - 120.00)	
MSD	Sulfate	50	52.4	104.8	(80.00 - 120.00)	0.00

QC Batch #82645**Nitrate by IC as NO3 & N**

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 98	0813002		(0.00 - 0.00)	
LCS1	Nitrate-N	2.5	2.5	100.0	(90.00 - 110.00)	
LCS2	Nitrate-N	2.5	2.5	100.0	(90.00 - 110.00)	0.00
MS	Nitrate-N	2.5	2.6	104.0	(75.00 - 125.00)	
MSD	Nitrate-N	2.5	2.5	100.0	(75.00 - 125.00)	3.9
MBLK	Nitrate as NO3 by IC	ND				

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and DUP are not applicable for ICR monitoring.

NEL LABORATORIES

Reno • Las Vegas
Phoenix • Irvine

Las Vegas Division
4208 Arcata Way, Suite A • Las Vegas, NV 89030
(702) 657-1010 • Fax: (702) 657-1577
1-888-368-3282

CLIENT: El Paso Natural Gas Company
8645 Railroad Drive
El Paso, TX 79904
ATTN: Darrell Campbell

PROJECT NAME: NA
PROJECT NUMBER: NA

NEL ORDER ID: P9808043

Attached are the analytical results for samples in support of the above referenced project.

Samples submitted for this project were not sampled by NEL Laboratories. Samples were received by NEL in good condition, under chain of custody on 8/14/98.

Samples were analyzed as received.

Where applicable we have included the following quality control data:

Method blank - used to demonstrate absence of contamination or interferences in the analytical process.

Laboratory Control Spike (LCS) - used to demonstrate laboratory ability to perform the method within specifications by spiking representative analytes into a clean matrix.

Surrogates - compounds added to each sample to ensure that the method requirements are met for each individual sample.

Should you have any questions or comments, please feel free to contact our Client Services department at (602) 437-0099.

Some results have been flagged as follows:

Jm - This concentration should be considered an estimate due to probable matrix effects.


Stan Van Wagenen
Laboratory Manager

8/24/98
Date

CERTIFICATIONS:

	Reno	Las Vegas	S. California		Reno	Las Vegas	S. California
Arizona	AZ0520	AZ0518	AZ0583	Idaho	Certified	Certified	
California	1707	2002	2264	Montana	Certified	Certified	
US Army Corps of Engineers	Certified	Certified	Certified	Nevada	NV033	NV052	CA084
				Washington			Certified

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

PROJECT NAME: NA

PROJECT NUMBER: NA

CLIENT ID: S98-0289

DATE SAMPLED: 8/10/98

NEL SAMPLE ID: P9808043-01

TEST: Cations by EPA 6010B, December 1996

MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Calcium	47Jm	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Magnesium	12	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Potassium	4.2	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Silica	19	10.mg/L	5	SM 3111 D	8/18/98	8/18/98
Sodium	79	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: S98-0290

PROJECT NAME: NA

DATE SAMPLED: 8/10/98

PROJECT NUMBER: NA

NEL SAMPLE ID: P9808043-02

TEST: Cations by EPA 6010B, December 1996

MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Calcium	ND	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Magnesium	ND	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Potassium	ND	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Silica	ND	10.mg/L	5	SM 3111 D	8/18/98	8/18/98
Sodium	0.68	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

PROJECT NAME: NA

PROJECT NUMBER: NA

CLIENT ID: S98-0291

DATE SAMPLED: 8/10/98

NEL SAMPLE ID: P9808043-03

TEST: Cations by EPA 6010B, December 1996

MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Calcium	3.6	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Magnesium	ND	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Potassium	ND	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Silica	ND	10. mg/L	5	SM 3111 D	8/18/98	8/18/98
Sodium	ND	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: S98-0293

PROJECT NAME: NA

DATE SAMPLED: 8/11/98

ACW-15

PROJECT NUMBER: NA

NEL SAMPLE ID: P9808043-04

TEST: Cations by EPA 6010B, December 1996

MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Calcium	48	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Magnesium	16	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Potassium	5.5	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Silica	25	10.mg/L	5	SM 3111 D	8/18/98	8/18/98
Sodium	90	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: S98-0294

PROJECT NAME: NA

DATE SAMPLED: 8/11/98

ACW-12

PROJECT NUMBER: NA

NEL SAMPLE ID: P9808043-05

TEST: Cations by EPA 6010B, December 1996

MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Calcium	180	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Magnesium	62	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Potassium	9.8	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Silica	21	10.mg/L	5	SM 3111 D	8/18/98	8/18/98
Sodium	130	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: S98-0295

PROJECT NAME: NA

DATE SAMPLED: 8/11/98

PROJECT NUMBER: NA

NEL SAMPLE ID: P9808043-06

ACW-120

TEST: Cations by EPA 6010B, December 1996

MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Calcium	180	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Magnesium	61	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Potassium	9.7	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Silica	24	10. mg/L	5	SM 3111 D	8/18/98	8/18/98
Sodium	130	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: S98-0296

PROJECT NAME: NA

DATE SAMPLED: 8/11/98

PROJECT NUMBER: NA

NEL SAMPLE ID: P9808043-07

ACW-13

TEST: Cations by EPA 6010B, December 1996

MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> mg/L	<u>REPORTING</u> LIMIT	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Calcium	43	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Magnesium	14	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Potassium	9.4	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Silica	15	10.mg/L	5	SM 3111 D	8/18/98	8/18/98
Sodium	85	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: S98-0297

PROJECT NAME: NA

DATE SAMPLED: 8/11/98

PROJECT NUMBER: NA

NEL SAMPLE ID: P9808043-08

TEST: Cations by EPA 6010B, December 1996

MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Calcium	ND	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Magnesium	ND	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Potassium	ND	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Silica	ND	10.mg/L	5	SM 3111 D	8/18/98	8/18/98
Sodium	ND	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: S98-0298

PROJECT NAME: NA

DATE SAMPLED: 8/11/98

PROJECT NUMBER: NA

NEL SAMPLE ID: P9808043-09

TEST: Cations by EPA 6010B, December 1996

MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> mg/L	<u>REPORTING</u> LIMIT	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Calcium	47	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Magnesium	12	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Potassium	4.1	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Silica	17	10.mg/L	5	SM 3111 D	8/18/98	8/18/98
Sodium	78	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: Method Blank

PROJECT NAME: NA

DATE SAMPLED: NA

PROJECT NUMBER: NA

NEL SAMPLE ID: P080431-BLK

TEST: Cations by EPA 6010B, December 1996

<u>PARAMETER</u>	<u>RESULT</u> mg/L	<u>REPORTING</u> LIMIT	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Calcium	ND	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Magnesium	ND	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Potassium	ND	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Sodium	ND	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: Method Blank

PROJECT NAME: NA

DATE SAMPLED: NA

PROJECT NUMBER: NA

NEL SAMPLE ID: P08043M-BLK

TEST: Silicon Oxide by Standard Method 3111D

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Silica	ND	10.mg/L	5	SM 3111 D	8/18/98	8/18/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: S98-0289

PROJECT NAME: NA

DATE SAMPLED: 8/10/98

PROJECT NUMBER: NA

NEL SAMPLE ID: P9808043-01

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 8/16/98

DILUTION: 1

ANALYZED: 8/16/98

ANALYST: DJH

PARAMETER	Result	Reporting Limit
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

ND - Not Detected

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	101	86 - 115
Toluene-d8	100	86 - 110

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: S98-0290

PROJECT NAME: NA

DATE SAMPLED: 8/10/98

PROJECT NUMBER: NA

NEL SAMPLE ID: P9808043-02

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 8/16/98

DILUTION: 1

ANALYZED: 8/16/98

ANALYST: DJH

PARAMETER	Result	Reporting Limit
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

ND - Not Detected

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	100	86 - 115
Toluene-d8	101	86 - 110

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: S98-0291

PROJECT NAME: NA

DATE SAMPLED: 8/10/98

PROJECT NUMBER: NA

NEL SAMPLE ID: P9808043-03

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 8/16/98

DILUTION: 1

ANALYZED: 8/16/98

ANALYST: DJH

PARAMETER	Result	Reporting Limit
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

ND - Not Detected

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	101	86 - 115
Toluene-d8	100	86 - 110

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: S98-0293

PROJECT NAME: NA

DATE SAMPLED: 8/11/98

PROJECT NUMBER: NA

NEL SAMPLE ID: P9808043-04

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 8/16/98

DILUTION: 1

ANALYZED: 8/16/98

ANALYST: DJH

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

ND - Not Detected

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	101	86 - 115
Toluene-d8	99	86 - 110

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: S98-0294

PROJECT NAME: NA

DATE SAMPLED: 8/11/98

PROJECT NUMBER: NA

NEL SAMPLE ID: P9808043-05

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 8/16/98

DILUTION: 1

ANALYZED: 8/16/98

ANALYST: JDG

PARAMETER	Result	Reporting Limit
Benzene	2 µg/L	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

ND - Not Detected

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	101	86 - 115
Toluene-d8	101	86 - 110

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: S98-0295

PROJECT NAME: NA

DATE SAMPLED: 8/11/98

PROJECT NUMBER: NA

NEL SAMPLE ID: P9808043-06

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 8/16/98

DILUTION: 1

ANALYZED: 8/16/98

ANALYST: JDG

PARAMETER	Result	Reporting Limit
Benzene	2 µg/L	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

ND - Not Detected

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	100	86 - 115
Toluene-d8	98	86 - 110

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: S98-0296

PROJECT NAME: NA

DATE SAMPLED: 8/11/98

PROJECT NUMBER: NA

NEL SAMPLE ID: P9808043-07

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 8/16/98

DILUTION: 1

ANALYZED: 8/16/98

ANALYST: DJH

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

ND - Not Detected

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	100	86 - 115
Toluene-d8	100	86 - 110

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: S98-0297

PROJECT NAME: NA

DATE SAMPLED: 8/11/98

PROJECT NUMBER: NA

NEL SAMPLE ID: P9808043-08

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 8/16/98

DILUTION: 1

ANALYZED: 8/16/98

ANALYST: DJH

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

ND - Not Detected

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	100	86 - 115
Toluene-d8	100	86 - 110

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: S98-0298

PROJECT NAME: NA

DATE SAMPLED: 8/11/98

PROJECT NUMBER: NA

NEL SAMPLE ID: P9808043-09

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 8/16/98

DILUTION: 1

ANALYZED: 8/16/98

ANALYST: DJH

PARAMETER	Result	Reporting Limit
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

ND - Not Detected

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	99	86 - 115
Toluene-d8	100	86 - 110

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: Method Blank

PROJECT NAME: NA

DATE SAMPLED: NA

PROJECT NUMBER: NA

NEL SAMPLE ID: 081698-V1-BTEX-BK

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 8/16/98

ANALYZED: 8/16/98

ANALYST: DJH

PARAMETER	Result	Reporting Limit
Benzene	ND	2 µg/L
Toluene	ND	2 µg/L
Ethylbenzene	ND	2 µg/L
Total Xylenes	ND	2 µg/L

ND - Not Detected

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	100	86 - 115
Toluene-d8	100	86 - 110



MONTGOMERY WATSON LABORATORIES

935 East Walnut Street
Pasadena, California 91101
818 568 6400; Fax: 818 568 6324;
1 800 568 LABS (1 800 568 5227)

Laboratory Report

for

**Nevada Environmental Laboratory
1030 Matley Lane**

Reno , NV 89502

**Attention: Evelyn Snell
Fax: (702) 348-2546**

**MONTGOMERY WATSON LABS.
SUBMITTED ON**

AUG 20 1998

Jamie C. Hui
for

DEB Debbie Frank

**Report#: 46193
SUBCONTRACT**

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0289
DATE SAMPLED: 8/10/98
NEL SAMPLE ID: P9808043-01

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	UNITS	REPORTING		METHOD	ANALYZED
			LIMIT	D. F.		
pH	7.84	°C	2.	1	EPA 150.1	8/14/98
Hardness, Total (as CaCO ₃)	170	mg/L	1.	1	EPA 6010A	8/18/98
pH Temperature	19.9	°C	1.	1	EPA 150.1	8/14/98
Specific Conductance	676	µS/cm	1.	1	SM 2510 B	8/19/98
Total Dissolved Solids	458	mg/L	25.	1	SM 2540 C	8/17/98
Alkalinity, Total	140	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Hydroxide	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Carbonate	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Bicarbonate	140	mg/L	25.	1	SM 2320 B	8/20/98
Chloride	96	mg/L	2.5	25	EPA 300.0	8/20/98
Bromide	ND	mg/L	2.5	25	EPA 300.0	8/20/98
Nitrate/Nitrite as N, Total	ND	mg/L-N	1.25	25	EPA 300.0	8/14/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0290
DATE SAMPLED: 8/10/98
NEL SAMPLE ID: P9808043-02

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	UNITS	REPORTING		METHOD	ANALYZED
			LIMIT	D. F.		
Hardness, Total (as CaCO ₃)	ND	mg/L	1.	1	EPA 6010A	8/18/98
pH	5.08	°C	2.	1	EPA 150.1	8/14/98
pH Temperature	18.8	°C	1.	1	EPA 150.1	8/14/98
Specific Conductance	4.45	µS/cm	1.	1	SM 2510 B	8/19/98
Total Dissolved Solids	30	mg/L	25.	1	SM 2540 C	8/17/98
Alkalinity, Total	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Hydroxide	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Carbonate	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Bicarbonate	ND	mg/L	25.	1	SM 2320 B	8/20/98
Chloride	ND	mg/L	0.1	1	EPA 300.0	8/20/98
Bromide	ND	mg/L	0.1	1	EPA 300.0	8/20/98
Nitrate/Nitrite as N, Total	ND	mg/L-N	1.25	25	EPA 300.0	8/14/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0291
DATE SAMPLED: 8/10/98
NEL SAMPLE ID: P9808043-03

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	UNITS	REPORTING		METHOD	ANALYZED
			LIMIT	D. F.		
pH	9.56	pH Units	2.	1	EPA 150.1	8/14/98
Hardness, Total (as CaCO ₃)	9.0	mg/L	1.	1	EPA 6010A	8/18/98
pH Temperature	19.3	°C	1.	1	EPA 150.1	8/14/98
Specific Conductance	20.7	µS/cm	1.	1	SM 2510 B	8/19/98
Total Dissolved Solids	31	mg/L	25.	1	SM 2540 C	8/17/98
Alkalinity, Total	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Hydroxide	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Carbonate	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Bicarbonate	ND	mg/L	25.	1	SM 2320 B	8/20/98
Chloride	ND	mg/L	0.1	1	EPA 300.0	8/20/98
Bromide	ND	mg/L	0.1	1	EPA 300	8/20/98
Nitrate/Nitrite as N, Total	ND	mg/L-N	1.25	25	EPA 300.0	8/14/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0293
DATE SAMPLED: 8/11/98
NEL SAMPLE ID: P9808043-04

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	UNITS	REPORTING		METHOD	ANALYZED
			LIMIT	D. F.		
Hardness, Total (as CaCO ₃)	190	mg/L	1.	1	EPA 6010A	8/18/98
pH	7.76	pH Units	2.	1	EPA 150.1	8/14/98
pH Temperature	19.2	°C	1.	1	EPA 150.1	8/14/98
Specific Conductance	730	µS/cm	1.	1	SM 2510 B	8/19/98
Total Dissolved Solids	496	mg/L	25.	1	SM 2540 C	8/17/98
Alkalinity, Total	170	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Hydroxide	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Carbonate	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Bicarbonate	170	mg/L	25.	1	SM 2320 B	8/20/98
Chloride	160	mg/L	5.	50	EPA 300.0	8/20/98
Bromide	ND	mg/L	5.	50	EPA 300	8/20/98
Nitrate/Nitrite as N, Total	2.5	mg/L-N	1.25	25	EPA 300.0	8/14/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0294
DATE SAMPLED: 8/11/98
NEL SAMPLE ID: P9808043-05

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	UNITS	REPORTING		METHOD	ANALYZED
			LIMIT	D. F.		
Hardness, Total (as CaCO ₃)	710	mg/L	1.	1	EPA 6010A	8/18/98
pH	7.61	pH Units	2.	1	EPA 150.1	8/14/98
pH Temperature	19.8	°C	1.	1	EPA 150.1	8/14/98
Specific Conductance	1790	µS/cm	1.	1	SM 2510 B	8/19/98
Total Dissolved Solids	1240	mg/L	25.	1	SM 2540 C	8/17/98
Alkalinity, Total	140	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Hydroxide	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Carbonate	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Bicarbonate	140	mg/L	25.	1	SM 2320 B	8/20/98
Chloride	440	mg/L	10.	100	EPA 300.0	8/20/98
Bromide	ND	mg/L	2.	20	EPA 300	8/20/98
Nitrate/Nitrite as N, Total	1.4	mg/L-N	1.25	25	EPA 300.0	8/14/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0295
DATE SAMPLED: 8/11/98
NEL SAMPLE ID: P9808043-06

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	UNITS	REPORTING		METHOD	ANALYZED
			LIMIT	D. F.		
pH	7.51	pH Units	2.	1	EPA 150.1	8/14/98
Hardness, Total (as CaCO ₃)	700	mg/L	1.	1	EPA 6010A	8/18/98
pH Temperature	19.3	°C	1.	1	EPA 150.1	8/14/98
Specific Conductance	2020	µS/cm	1.	1	SM 2510 B	8/19/98
Total Dissolved Solids	1300	mg/L	25.	1	SM 2540 C	8/17/98
Alkalinity, Total	160	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Hydroxide	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Carbonate	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Bicarbonate	160	mg/L	25.	1	SM 2320 B	8/20/98
Chloride	520	mg/L	25.	250	EPA 300.0	8/21/98
Bromide	ND	mg/L	1.	10	EPA 300	8/20/98
Nitrate/Nitrite as N, Total	ND	mg/L-N	2.5	50	EPA 300.0	8/19/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0296
DATE SAMPLED: 8/11/98
NEL SAMPLE ID: P9808043-07

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	UNITS	REPORTING		METHOD	ANALYZED
			LIMIT	D. F.		
Hardness, Total (as CaCO ₃)	170	mg/L	1.	1	EPA 6010A	8/18/98
pH	7.93	pH Units	2.	1	EPA 150.1	8/14/98
pH Temperature	19.7	°C	1.	1	EPA 150.1	8/14/98
Specific Conductance	679	µS/cm	1.	1	SM 2510 B	8/19/98
Total Dissolved Solids	467	mg/L	25.	1	SM 2540 C	8/17/98
Alkalinity, Total	170	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Hydroxide	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Carbonate	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Bicarbonate	170	mg/L	25.	1	SM 2320 B	8/20/98
Chloride	48	mg/L	5.	50	EPA 300.0	8/20/98
Bromide	ND	mg/L	5.	50	EPA 300	8/20/98
Nitrate/Nitrite as N, Total	3.3	mg/L-N	2.5	50	EPA 300.0	8/19/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0297
DATE SAMPLED: 8/11/98
NEL SAMPLE ID: P9808043-08

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	UNITS	REPORTING		METHOD	ANALYZED
			LIMIT	D. F.		
pH	5.16	pH Units	2.	1	EPA 150.1	8/14/98
Hardness, Total (as CaCO ₃)	ND	mg/L	1.	1	EPA 6010A	8/18/98
pH Temperature	19.9	°C	1.	1	EPA 150.1	8/14/98
Specific Conductance	3.83	µS/cm	1.	1	SM 2510 B	8/19/98
Total Dissolved Solids	31	mg/L	25.	1	SM 2540 C	8/17/98
Alkalinity, Total	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Hydroxide	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Carbonate	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Bicarbonate	ND	mg/L	25.	1	SM 2320 B	8/20/98
Chloride	ND	mg/L	0.1	1	EPA 300.0	8/20/98
Bromide	ND	mg/L	0.1	1	EPA 300	8/20/98
Nitrate/Nitrite as N, Total	ND	mg/L-N	2.5	50	EPA 300.0	8/19/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0298
DATE SAMPLED: 8/11/98
NEL SAMPLE ID: P9808043-09

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	UNITS	REPORTING		METHOD	ANALYZED
			LIMIT	D. F.		
pH	8.13	pH Units	2.	1	EPA 150.1	8/14/98
Hardness, Total (as CaCO ₃)	170	mg/L	1.	1	EPA 6010A	8/18/98
pH Temperature	19.8	°C	1.	1	EPA 150.1	8/14/98
Specific Conductance	641	µS/cm	1.	1	SM 2510 B	8/19/98
Total Dissolved Solids	392	mg/L	25.	1	SM 2540 C	8/17/98
Alkalinity, Total	130	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Hydroxide	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Carbonate	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Bicarbonate	130	mg/L	25.	1	SM 2320 B	8/20/98
Chloride	95	mg/L	5.	50	EPA 300.0	8/20/98
Bromide	ND	mg/L	5.	50	EPA 300	8/20/98
Nitrate/Nitrite as N, Total	ND	mg/L-N	2.5	50	EPA 300.0	8/19/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.



CHAIN OF CUSTODY RECORD

due 8/20/98
-W Lead-

Page _____ of _____

PROJECT NUMBER		PROJECT NAME		DATE:						CONTRACT LABORATORY			
SAMPLERS: (Signature)													
LAB ID	DATE	TIME	MATRIX	SAMPLE NUMBER	TOTAL NUMBERS OF CONTAINERS	COMPOSITE OR GRAB	REQUESTED ANALYSIS				REMARKS		
							Anals	Catlys	TDS	sp. cond.	BTEX	SEE Attached	
81068	11/20		H ₂ O	598-0889	6		X	X	X	X	X	X	P9808043-01
81068	11/20		H ₂ O	598-0890	5		X	X	X	X	X	X	P9808043-02
81068	11/20		H ₂ O	598-0891	5		X	X	X	X	X	X	P9808043-03
81068	11/20		H ₂ O	598-0893	5		X	X	X	X	X	X	P9808043-04
81068	11/20		H ₂ O	598-0894	5		X	X	X	X	X	X	P9808043-05
81068	11/20		H ₂ O	598-0895	5		X	X	X	X	X	X	P9808043-06
81068	11/20		H ₂ O	598-0896	5		X	X	X	X	X	X	P9808043-07
81068	11/20		H ₂ O	598-0897	5		X	X	X	X	X	X	P9808043-08
81068	11/20		H ₂ O	598-0898	5		X	X	X	X	X	X	P9808043-09
Custody Seal intact? Y N None Temp. 11°C Condition when received good													
Received by: (Signature) RECEIVED BY: (Signature) Renee Valdez													
Requested Turnaround Time: ROUTINE RUSH													
Carrier Co. EL PASO NATURAL GAS COMPANY 8645 RAILROAD DRIVE EL PASO, TEXAS 79904													
Bill No.: 915-759-2229 FAX: 915-759-2335													

NEL LABORATORIES

Reno • Las Vegas
Phoenix • Irvine

Las Vegas Division
4208 Arcata Way, Suite A • Las Vegas, NV 89030
(702) 657-1010 • Fax: (702) 657-1577
1-888-368-3282

CLIENT: El Paso Natural Gas Company
8645 Railroad Drive
El Paso, TX 79904
ATTN: Darrell Campbell

PROJECT NAME: NA
PROJECT NUMBER: NA

NEL ORDER ID: P9808044

Attached are the analytical results for samples in support of the above referenced project.

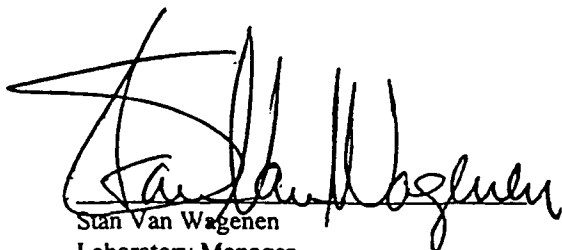
Samples submitted for this project were not sampled by NEL Laboratories. Samples were received by NEL in good condition, under chain of custody on 8/14/98.

Samples were analyzed as received.

Where applicable we have included the following quality control data:

Method blank - used to demonstrate absence of contamination or interferences in the analytical process.
Laboratory Control Spike (LCS) - used to demonstrate laboratory ability to perform the method within specifications by spiking representative analytes into a clean matrix.
Surrogates - compounds added to each sample to ensure that the method requirements are met for each individual sample.

Should you have any questions or comments, please feel free to contact our Client Services department at (602) 437-0099.


Stan Van Wagenen
Laboratory Manager

8/24/98
Date

CERTIFICATIONS:

	<u>Reno</u>	<u>Las Vegas</u>	<u>S. California</u>		<u>Reno</u>	<u>Las Vegas</u>	<u>S. California</u>
Arizona	AZ0520	AZ0518	AZ0583	Idaho	Certified	Certified	
California	1707	2002	2264	Montana	Certified	Certified	
US Army Corps of Engineers	Certified	Certified	Certified	Nevada	NV033	NV052	CA084
				Washington			Certified

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: S98-0292

PROJECT NAME: NA

DATE SAMPLED: 8/10/98

PROJECT NUMBER: NA

NEL SAMPLE ID: P9808044-01

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 8/14/98

DILUTION: 1

ANALYZED: 8/14/98

ANALYST: JDG

PARAMETER	Result	Reporting Limit
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

ND - Not Detected

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	100	86 - 115
Toluene-d8	100	86 - 110

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: S98-0299

PROJECT NAME: NA

DATE SAMPLED: 8/11/98

PROJECT NUMBER: NA

NEL SAMPLE ID: P9808044-02

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 8/14/98

DILUTION: 1

ANALYZED: 8/14/98

ANALYST: JDG

PARAMETER	Result	Reporting Limit
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

ND - Not Detected

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	100	86 - 115
Toluene-d8	101	86 - 110

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

PROJECT NAME: NA

PROJECT NUMBER: NA

CLIENT ID: Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 081498-V1-BTEX-BK

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 8/14/98

ANALYZED: 8/14/98

ANALYST: DJH

PARAMETER	Result	Reporting Limit
Benzene	ND	2 µg/L
Toluene	ND	2 µg/L
Ethylbenzene	ND	2 µg/L
Total Xylenes	ND	2 µg/L

ND - Not Detected

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	100	86 - 115
Toluene-d8	98	86 - 110

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

PROJECT NAME: NA

PROJECT NUMBER: NA

CLIENT ID: S98-0292

DATE SAMPLED: 8/10/98

NEL SAMPLE ID: P9808044-01

TEST: Cations by EPA 6010B, December 1996

MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Calcium	53	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Magnesium	17	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Potassium	4.3	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Silica	27	10.mg/L	5	SM 3111 D	8/18/98	8/18/98
Sodium	71	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: S98-0299

PROJECT NAME: NA

DATE SAMPLED: 8/11/98

PROJECT NUMBER: NA

NEL SAMPLE ID: P9808044-02

TEST: Cations by EPA 6010B, December 1996

MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> mg/L	<u>REPORTING</u> LIMIT	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Calcium	72	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Magnesium	20	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Potassium	5.0	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Silica	28	10.mg/L	5	SM 3111 D	8/18/98	8/18/98
Sodium	67	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

PROJECT NAME: NA

PROJECT NUMBER: NA

CLIENT ID: Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: P080431-BLK

TEST: Cations by EPA 6010B, December 1996

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Calcium	ND	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Magnesium	ND	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Potassium	ND	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Sodium	ND	0.25mg/L	0.5	EPA 200.7	8/18/98	8/18/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: P08043M-BLK

TEST: Silicon Oxide by Standard Method 3111D

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Silica	ND	10.mg/L	5	SM 3111 D	8/18/98	8/18/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0292
DATE SAMPLED: 8/10/98
NEL SAMPLE ID: P9808044-01

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	UNITS	REPORTING		METHOD	ANALYZED
			LIMIT	D. F.		
Hardness, Total (as CaCO ₃)	200	mg/L	1.	1	EPA 6010A	8/18/98
pH	7.76	pH Units	2.	1	EPA 150.1	8/14/98
pH Temperature	20.2	°C	1.	1	EPA 150.1	8/14/98
Specific Conductance	629	µS/cm	1.	1	SM 2510 B	8/19/98
Total Dissolved Solids	450	mg/L	25.	1	SM 2540 C	8/17/98
Alkalinity, Total	200	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Hydroxide	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Carbonate	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Bicarbonate	200	mg/L	25.	1	SM 2320 B	8/20/98
Fluoride	ND	mg/L	0.4	1	SM 4500-F C	8/24/98
Chloride	34	mg/L	5.	50	EPA 300.0	8/19/98
Bromide	ND	mg/L	1.	10	EPA 300.0	8/20/98
Nitrate/Nitrite as N, Total	ND	mg/L-N	0.05	1	EPA 300.0	8/19/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0299
DATE SAMPLED: 8/11/98
NEL SAMPLE ID: P9808044-02

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	UNITS	REPORTING		METHOD	ANALYZED
			LIMIT	D. F.		
Hardness, Total (as CaCO ₃)	260	mg/L	1.	1	EPA 6010A	8/18/98
pH	7.78	pH Units	2.	1	EPA 150.1	8/14/98
pH Temperature	20.2	°C	1.	1	EPA 150.1	8/14/98
Specific Conductance	762	µS/cm	1.	1	SM 2510 B	8/19/98
Total Dissolved Solids	604	mg/L	25.	1	SM 2540 C	8/17/98
Alkalinity, Total	150	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Hydroxide	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Carbonate	ND	mg/L	25.	1	SM 2320 B	8/20/98
Alkalinity - Bicarbonate	150	mg/L	25.	1	SM 2320 B	8/20/98
Fluoride	ND	mg/L	0.4	1	SM 4500-F C	8/24/98
Chloride	120	mg/L	5.	50	EPA 300.0	8/19/98
Bromide	ND	mg/L	1.	10	EPA 300.0	8/20/98
Nitrate/Nitrite as N, Total	ND	mg/L-N	0.05	1	EPA 300.0	8/19/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.



CHAIN OF CUSTODY RECORD

Page _____ of _____

PROJECT NUMBER		PROJECT NAME		DATE		SAMPLE NUMBER		TOTAL NUMBER OF CONTAINERS		COMPOSITE OR GRAB		REQUESTED ANALYSIS				CONTRACT LABORATORY	
SAMPLERS: (Signature)		DATE		DATE		DATE		DATE		DATE		DATE				DATE	
LAB ID	DATE	TIME	MATRIX	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME
	8/10/88	1845	H ₂ O	598-0292				5									
	8/11/88	1700	H ₂ O	598-0299				5									
[Diagonal line across the table]																	
Custody Seal Intact? Y (N) None Temp. 11°																	
Condition when received																	
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)		DATE/TIME		RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)	
[Signature]		8/10/88 1845		[Signature]		8/10/88 1845		[Signature]		8/10/88 1845		[Signature]		8/10/88 1845		[Signature]	
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)		DATE/TIME		RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)	
[Signature]		8/11/88 1700		[Signature]		8/11/88 1700		[Signature]		8/11/88 1700		[Signature]		8/11/88 1700		[Signature]	
Rec'd from ENG via UPS 8-13-98 11:08am																	
SAMPLE RECEIPT REMARKS																	
RESULTS & INVOICES TO:																	
TECHNICAL SERVICES DIVISION LABORATORY EL PASO NATURAL GAS COMPANY 8645 RAILROAD DRIVE EL PASO, TEXAS 79904																	
915-759-2229 FAX: 915-759-2335																	

SAMPLE KEY

SAMPLE NUMBER: S98-0451 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Bailer Blank
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 14:00 SAMPLE DATE: 10/19/98

SAMPLE KEY

SAMPLE NUMBER: S98-0452 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: EMP #3 before purging
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 14:10 SAMPLE DATE: 10/19/98

SAMPLE KEY

SAMPLE NUMBER: S98-0453 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Monitor Well ENSR#2
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 15:15 SAMPLE DATE: 10/19/98

SAMPLE KEY

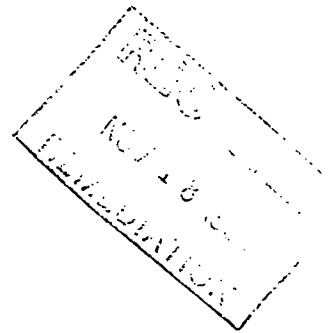
SAMPLE NUMBER: S98-0454 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Monitor Well ACW #4
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 17:00 SAMPLE DATE: 10/19/98

SAMPLE KEY

SAMPLE NUMBER: S98-0455 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Monitor Well ACW #2A
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 18:50 SAMPLE DATE: 10/19/98

SAMPLE KEY

SAMPLE NUMBER: S98-0456 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Monitor Well ACW #3
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 19:55 SAMPLE DATE: 10/19/98



SAMPLE KEY

SAMPLE NUMBER: S98-0457 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Monitor Well ENSR#1
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 08:50 SAMPLE DATE: 10/20/98

SAMPLE KEY

SAMPLE NUMBER: S98-0458 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Monitor Well ACW #1
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 10:00 SAMPLE DATE: 10/20/98

SAMPLE KEY

SAMPLE NUMBER: S98-0459 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Monitor Well ACW #8
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 11:40 SAMPLE DATE: 10/20/98

SAMPLE KEY

SAMPLE NUMBER: S98-0460 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Monitor Well ACW #11
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 13:32 SAMPLE DATE: 10/20/98

SAMPLE KEY

SAMPLE NUMBER: S98-0461 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Monitor Well ENSR#3
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 14:47 SAMPLE DATE: 10/20/98

SAMPLE KEY

SAMPLE NUMBER: S98-0462 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Monitor Well ENSR#3 Dup.
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 14:47 SAMPLE DATE: 10/20/98



SAMPLE KEY

SAMPLE NUMBER: S98-0463 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Monitor Well PTP#1
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 16:01 SAMPLE DATE: 10/20/98

SAMPLE KEY

SAMPLE NUMBER: S98-0464 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Production Well Doms
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 17:10 SAMPLE DATE: 10/20/98

SAMPLE KEY

SAMPLE NUMBER: S98-0465 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Production Well OXY
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 17:30 SAMPLE DATE: 10/20/98

SAMPLE KEY

SAMPLE NUMBER: S98-0466 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Bailer Blank Middle of sampling
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 07:55 SAMPLE DATE: 10/21/98

SAMPLE KEY

SAMPLE NUMBER: S98-0467 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Monitor Well ACW #7
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 08:34 SAMPLE DATE: 10/21/98

SAMPLE KEY

SAMPLE NUMBER: S98-0468 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Pump Blank Middle of purging
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 09:10 SAMPLE DATE: 10/21/98

SAMPLE KEY

SAMPLE NUMBER: S98-0469 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Monitor Well ACW #6
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 10:26 SAMPLE DATE: 10/21/98

SAMPLE KEY

SAMPLE NUMBER: S98-0470 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Monitor Well ACW #5
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 12:00 SAMPLE DATE: 10/21/98

SAMPLE KEY

SAMPLE NUMBER: S98-0471 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Monitor Well ACW #15
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 13:51 SAMPLE DATE: 10/21/98

SAMPLE KEY

SAMPLE NUMBER: S98-0472 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Monitor Well ACW #9
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 15:37 SAMPLE DATE: 10/21/98

SAMPLE KEY

SAMPLE NUMBER: S98-0473 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Monitor Well ACW #10
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 08:20 SAMPLE DATE: 10/22/98

SAMPLE KEY

SAMPLE NUMBER: S98-0474 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Monitor Well ACW #12
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 11:25 SAMPLE DATE: 10/22/98

SAMPLE KEY

SAMPLE NUMBER: S98-0475 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Monitor Well ACW #12 Dup.
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 11:25 SAMPLE DATE: 10/22/98

SAMPLE KEY

SAMPLE NUMBER: S98-0476 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Monitor Well ACW #13
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 13:20 SAMPLE DATE: 10/22/98

SAMPLE KEY

SAMPLE NUMBER: S98-0477 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: EMP #3 after purging wells
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 13:35 SAMPLE DATE: 10/22/98

SAMPLE KEY

SAMPLE NUMBER: S98-0478 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Bailer blank after sampling wells
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 14:55 SAMPLE DATE: 10/22/98

SAMPLE KEY

SAMPLE NUMBER: S98-0479 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Production Well #1
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 15:40 SAMPLE DATE: 10/22/98

SAMPLE KEY

SAMPLE NUMBER: S98-0480 LOCATION: Jal #4 Plant
MATRIX: Water
SAMPLE DESCRIPTION: Field Blank
S D CONTINUED:
S D CONTINUED:
SAMPLE TIME: 16:00 SAMPLE DATE: 10/22/98

NEL LABORATORIES

Reno • Las Vegas
Phoenix • Burbank

Las Vegas Division
4208 Arcata Way, Suite A • Las Vegas, NV 89030
(702) 657-1010 • Fax: (702) 657-1577
1-888-368-3282

CLIENT: El Paso Natural Gas Company
8645 Railroad Drive
El Paso, TX 79904
ATTN: Darrell Campbell

PROJECT NAME: NA
PROJECT NUMBER: NA

NEL ORDER ID: P9810071

Attached are the analytical results for samples in support of the above referenced project.

Samples were received by NEL in good condition, under chain of custody on 10/22/98.

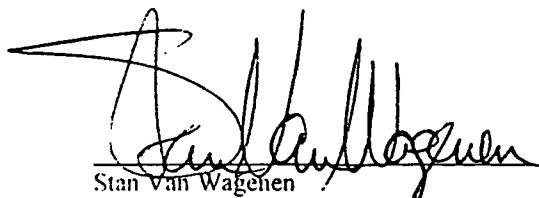
Samples were analyzed as received.

Should you have any questions or comments, please feel free to contact our Client Services department at (602) 437-0099.

Bromide: High levels of chloride interfere with bromide analysis. As a result, samples containing high levels of chloride must be diluted prior to bromide analysis. Detection limits have been adjusted to reflect these dilutions.

Some results have been flagged as follows:

- Jl - The batch MS and/or MSD were outside acceptance limits. The batch LCS was acceptable.
- Jm - This concentration should be considered an estimate due to probable matrix effects.
- RL - Reporting limit raised due to sample matrix interference.


Stan Van Wageningen
Laboratory Manager

11/5/98
Date

CERTIFICATIONS:

	<u>Reno</u>	<u>Las Vegas</u>	<u>S. California</u>		<u>Reno</u>	<u>Las Vegas</u>	<u>S. California</u>
Arizona	AZ0520	AZ0518	AZ0583	Idaho	Certified	Certified	
California	1707	2002	2264	Montana	Certified	Certified	
US Army Corps of Engineers	Certified	Certified	Certified	Nevada	NV033	NV052	CA084
				Washington			Certified

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0451
DATE SAMPLED: 10/19/98
NEL SAMPLE ID: P9810071-01

TEST: AZ METALS PKG
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	ND	.01 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Calcium	0.49	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Copper	ND	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Iron	ND	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Magnesium	ND	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Manganese	ND	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Potassium	ND	1 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Silica	ND	.25 mg/L	5	EPA 200.8	10/26/98	10/28/98
Sodium	1.1	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Zinc	ND	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0452
DATE SAMPLED: 10/19/98
NEL SAMPLE ID: P9810071-02

TEST: AZ METALS PKG
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	ND	.01 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Calcium	ND	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Copper	ND	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Iron	ND	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Magnesium	ND	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Manganese	ND	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Potassium	ND	1 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Silica	13	.25 mg/L	5	EPA 200.8	10/26/98	10/28/98
Sodium	ND	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Zinc	ND	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0454
DATE SAMPLED: 10/19/98
NEL SAMPLE ID: P9810071-03

TEST: AZ METALS PKG
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	1.1	.01 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Calcium	610	2.5 mg/L	5	EPA 200.7	10/29/98	10/30/98
Copper	ND	.0025 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Iron	0.14	.05 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Magnesium	370	.25 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Manganese	7.0	.0025 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Potassium	170	10 mg/L	5	EPA 200.7	10/29/98	10/30/98
Silica	10	.25 mg/L	5	EPA 200.8	10/30/98	10/30/98
Sodium	37000	25 mg/L	50	EPA 200.7	10/29/98	11/2/98
Zinc	ND	.05 mg/L	0.5	EPA 200.7	10/29/98	10/29/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0455
DATE SAMPLED: 10/19/98
NEL SAMPLE ID: P9810071-04

TEST: AZ METALS PKG
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	1.4	.01 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Calcium	3.0	.25 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Copper	ND	.0025 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Iron	0.37	.05 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Magnesium	0.96	.25 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Manganese	ND	.0025 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Potassium	12	1 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Silica	12	.25 mg/L	5	EPA 200.8	10/30/98	10/30/98
Sodium	6400	2.5 mg/L	5	EPA 200.7	10/29/98	10/30/98
Zinc	ND	.05 mg/L	0.5	EPA 200.7	10/29/98	10/29/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0458
DATE SAMPLED: 10/20/98
NEL SAMPLE ID: P9810071-05

TEST: AZ METALS PKG
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	1.1	.01 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Calcium	100	.25 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Copper	ND	.0025 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Iron	0.74	.05 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Magnesium	110	.25 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Manganese	0.062	.0025 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Potassium	16	1 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Silica	15	.25 mg/L	5	EPA 200.8	10/30/98	10/30/98
Sodium	3800	2.5 mg/L	5	EPA 200.7	10/29/98	10/30/98
Zinc	ND	.05 mg/L	0.5	EPA 200.7	10/29/98	10/29/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0459
DATE SAMPLED: 10/20/98
NEL SAMPLE ID: P9810071-06

TEST: AZ METALS PKG
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> mg/L	<u>REPORTING</u> LIMIT	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	0.62	.01 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Calcium	370	2.5 mg/L	5	EPA 200.7	10/29/98	10/30/98
Copper	ND	.0025 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Iron	1.5	.05 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Magnesium	200	.25 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Manganese	1.7	.0025 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Potassium	46	1 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Silica	19	.25 mg/L	5	EPA 200.8	10/30/98	10/30/98
Sodium	11000	25 mg/L	50	EPA 200.7	10/29/98	11/2/98
Zinc	ND	.05 mg/L	0.5	EPA 200.7	10/29/98	10/29/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0460
DATE SAMPLED: 10/20/98
NEL SAMPLE ID: P9810071-07

TEST: AZ METALS PKG
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	0.32	.01 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Calcium	1500	2.5 mg/L	5	EPA 200.7	10/29/98	10/30/98
Copper	ND	.0025 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Iron	0.68	.05 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Magnesium	520	2.5 mg/L	5	EPA 200.7	10/29/98	10/29/98
Manganese	0.35	.0025 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Potassium	41.0	1 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Silica	22	.25 mg/L	5	EPA 200.8	10/30/98	10/30/98
Sodium	5100	2.5 mg/L	5	EPA 200.7	10/29/98	10/30/98
Zinc	ND	.05 mg/L	0.5	EPA 200.7	10/29/98	10/29/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: P100701-BLK

TEST: AZ METALS PKG

<u>PARAMETER</u>	<u>RESULT</u> mg/L	<u>REPORTING</u> LIMIT	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	ND	0.01 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Calcium	ND	0.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Copper	ND	0.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Iron	ND	0.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Magnesium	ND	0.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Manganese	ND	0.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Potassium	ND	1. mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Sodium	ND	0.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Zinc	ND	0.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: P10071Si-BLK

TEST: AZ METALS PKG

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Silica	ND	0.25mg/L	5	EPA 200.8	10/30/98	10/30/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: P10079SI-BLK

TEST: AZ METALS PKG

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Silica	ND	0.05mg/L	1	EPA 200.8	10/26/98	10/28/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: P9810112i-BLK

TEST: AZ METALS PKG

<u>PARAMETER</u>	<u>RESULT</u> mg/L	<u>REPORTING</u> LIMIT	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	ND	0.01 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Calcium	ND	0.25 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Copper	ND	0.0025 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Iron	ND	0.05 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Magnesium	ND	0.25 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Manganese	ND	0.0025 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Potassium	ND	1. mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Sodium	ND	0.25 mg/L	0.5	EPA 200.7	10/29/98	10/29/98
Zinc	ND	0.05 mg/L	0.5	EPA 200.7	10/29/98	10/29/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
 PROJECT ID: NA
 PROJECT #: NA

CLIENT ID: S98-0451
 DATE SAMPLED: 10/19/98
 NEL SAMPLE ID: P9810071-01

TEST: Inorganic Non-Metals
 MATRIX: Aqueous

PARAMETER	RESULT	REPORTING		D. F.	METHOD	UNITS	ANALYZED
		LIMIT					
Alkalinity - Bicarbonate	ND	25.	1		SM 2320 B	mg/L	10/28/98
Alkalinity - Carbonate	ND	25.	1		SM 2320 B	mg/L	10/28/98
Alkalinity - Hydroxide	ND	25.	1		SM 2320 B	mg/L	10/28/98
Alkalinity, Total	ND	25.	1		SM 2320 B	mg/L	10/28/98
Bromide	ND	0.2	1		EPA 300.0	mg/L	10/28/98
Chloride	ND	0.1	1		EPA 300.0	mg/L	10/28/98
Fluoride	ND	0.4	1		SM 4500-F C	mg/L	10/27/98
Hardness, Total (as CaCO ₃)	1.2	1.	1		EPA 6010	mg/L	10/27/98
Nitrate/Nitrite as N, Total	ND	0.05	1		SM 4500-NO ₃ F	mg/L-N	10/27/98
pH	5.95	2.	1		EPA 150.1	pH Units	10/22/98
pH Temperature	17.8	1.	1		EPA 150.1	°C	10/22/98
Specific Conductance	1.13	1.	1		SM 2510 B	µS/cm	10/27/98
Sulfate	ND	0.1	1		EPA 300.0	mg/L	10/28/98
Total Dissolved Solids	ND	25.	1		SM 2540 C	mg/L	10/26/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0452
DATE SAMPLED: 10/19/98
NEL SAMPLE ID: P9810071-02

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	REPORTING		D. F.	METHOD	UNITS	ANALYZED
		LIMIT					
Alkalinity - Bicarbonate	110	25.	1		SM 2320 B	mg/L	10/28/98
Alkalinity - Carbonate	ND	25.	1		SM 2320 B	mg/L	10/28/98
Alkalinity - Hydroxide	ND	25.	1		SM 2320 B	mg/L	10/28/98
Alkalinity, Total	110	25.	1		SM 2320 B	mg/L	10/28/98
Bromide	ND	2.	10		EPA 300.0	mg/L	10/28/98
Chloride	100	5.	50		EPA 300.0	mg/L	10/29/98
Fluoride	1.6	0.4	1		SM 4500-F C	mg/L	10/27/98
Hardness, Total (as CaCO ₃)	ND	1.	1		EPA 6010	mg/L	10/27/98
Nitrate/Nitrite as N, Total	ND	0.05	1		SM 4500-NO ₃ F	mg/L-N	10/27/98
pH	8.26	2.	1		EPA 150.1	pH Units	10/22/98
pH Temperature	17.1	1.	1		EPA 150.1	°C	10/22/98
Specific Conductance	631	1.	1		SM 2510 B	µS/cm	10/27/98
Sulfate	50	1.	10		EPA 300.0	mg/L	10/28/98
Total Dissolved Solids	369	25.	1		SM 2540 C	mg/L	10/26/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
 PROJECT ID: NA
 PROJECT #: NA

CLIENT ID: S98-0454
 DATE SAMPLED: 10/19/98
 NEL SAMPLE ID: P9810071-03

TEST: Inorganic Non-Metals
 MATRIX: Aqueous

PARAMETER	REPORTING			METHOD	UNITS	ANALYZED
	RESULT	LIMIT	D. F.			
Alkalinity - Bicarbonate	480	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity - Carbonate	ND	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity - Hydroxide	ND	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity, Total	480	25.	1	SM 2320 B	mg/L	10/28/98
Bromide	ND RL	20.	100	EPA 300.0	mg/L	10/29/98
Chloride	56000	5000.	50000	EPA 300.0	mg/L	10/29/98
Fluoride	0.51 JI	0.4	1	SM 4500-F C	mg/L	10/27/98
Hardness, Total (as CaCO ₃)	3100	5.	5	EPA 200.7	mg/L	10/29/98
Nitrate/Nitrite as N, Total	ND RL	0.5	10	SM 4500-NO ₃ F	mg/L-N	10/28/98
pH	6.74	2.	1	EPA 150.1	pH Units	10/22/98
pH Temperature	17.6	1.	1	EPA 150.1	°C	10/22/98
Specific Conductance	121000	1.	1	SM 2510 B	µS/cm	10/27/98
Sulfate	1800	50.	500	EPA 300.0	mg/L	10/29/98
Total Dissolved Solids	83100	25.	1	SM 2540 C	mg/L	10/26/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0455
DATE SAMPLED: 10/19/98
NEL SAMPLE ID: P9810071-04

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	REPORTING			METHOD	UNITS	ANALYZED
	RESULT	LIMIT	D. F.			
Alkalinity - Bicarbonate	1500	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity - Carbonate	860	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity - Hydroxide	ND	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity, Total	2400	25.	1	SM 2320 B	mg/L	10/28/98
Bromide	ND RL	5.	25	EPA 300.0	mg/L	10/28/98
Chloride	7800	200.	2000	EPA 300.0	mg/L	10/29/98
Fluoride	12	4.	10	SM 4500-F C	mg/L	10/27/98
Hardness, Total (as CaCO ₃)	11	0.5	0.5	EPA 200.7	mg/L	10/29/98
Nitrate/Nitrite as N, Total	ND	0.05	1	SM 4500-NO ₃ F	mg/L-N	10/27/98
pH	9.40	2.	1	EPA 150.1	pH Units	10/22/98
pH Temperature	18.3	1.	1	EPA 150.1	°C	10/22/98
Specific Conductance	25200	1.	1	SM 2510 B	µS/cm	10/27/98
Sulfate	17	2.5	25	EPA 300.0	mg/L	10/28/98
Total Dissolved Solids	20200	25.	1	SM 2540 C	mg/L	10/23/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0458
DATE SAMPLED: 10/20/98
NEL SAMPLE ID: P9810071-05

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	REPORTING		D. F.	METHOD	UNITS	ANALYZED
		LIMIT					
Alkalinity - Bicarbonate	840	25.		1	SM 2320 B	mg/L	10/28/98
Alkalinity - Carbonate	ND	25.		1	SM 2320 B	mg/L	10/28/98
Alkalinity - Hydroxide	ND	25.		1	SM 2320 B	mg/L	10/28/98
Alkalinity, Total	840	25.		1	SM 2320 B	mg/L	10/28/98
Bromide	ND	5.	RL	25	EPA 300.0	mg/L	10/28/98
Chloride	6100	250.		2500	EPA 300.0	mg/L	10/29/98
Fluoride	2.3	0.8		2	SM 4500-F C	mg/L	10/27/98
Hardness, Total (as CaCO ₃)	700	0.5		0.5	EPA 200.7	mg/L	10/29/98
Nitrate/Nitrite as N, Total	ND	0.05		1	SM 4500-NO ₃ F	mg/L-N	10/27/98
pH	8.18	2.		1	EPA 150.1	pH Units	10/22/98
pH Temperature	17.7	1.		1	EPA 150.1	°C	10/22/98
Specific Conductance	20300	1.		1	SM 2510 B	µS/cm	10/27/98
Sulfate	260	5.		50	EPA 300.0	mg/L	10/29/98
Total Dissolved Solids	12900	25.		1	SM 2540 C	mg/L	10/23/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0459
DATE SAMPLED: 10/20/98
NEL SAMPLE ID: P9810071-06

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	REPORTING			METHOD	UNITS	ANALYZED
	RESULT	LIMIT	D. F.			
Alkalinity - Bicarbonate	430	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity - Carbonate	ND	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity - Hydroxide	ND	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity, Total	430	25.	1	SM 2320 B	mg/L	10/28/98
Bromide	ND	RL 10.	50	EPA 300.0	mg/L	10/29/98
Chloride	24000	500.	5000	EPA 300.0	mg/L	10/29/98
Fluoride	0.82	0.4	1	SM 4500-F C	mg/L	10/27/98
Hardness, Total (as CaCO ₃)	1700	5.	5	EPA 200.7	mg/L	10/29/98
Nitrate/Nitrite as N, Total	ND	0.05	1	SM 4500-NO ₃ F	mg/L-N	10/27/98
pH	6.79	2.	1	EPA 150.1	pH Units	10/22/98
pH Temperature	17.9	1.	1	EPA 150.1	°C	10/22/98
Specific Conductance	44200	1.	1	SM 2510 B	µS/cm	10/27/98
Sulfate	740	20.	200	EPA 300.0	mg/L	10/29/98
Total Dissolved Solids	28700	25.	1	SM 2540 C	mg/L	10/23/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0460
DATE SAMPLED: 10/20/98
NEL SAMPLE ID: P9810071-07

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	REPORTING		D. F.	METHOD	UNITS	ANALYZED
		LIMIT					
Alkalinity - Bicarbonate	180	25.	1	SM 2320 B	mg/L	10/28/98	
Alkalinity - Carbonate	ND	25.	1	SM 2320 B	mg/L	10/28/98	
Alkalinity - Hydroxide	ND	25.	1	SM 2320 B	mg/L	10/28/98	
Alkalinity, Total	180	25.	1	SM 2320 B	mg/L	10/28/98	
Bromide	ND	RL 10.	50	EPA 300.0	mg/L	10/29/98	
Chloride	17000	500.	5000	EPA 300.0	mg/L	10/29/98	
Fluoride	0.43	0.4	1	SM 4500-F C	mg/L	10/27/98	
Hardness, Total (as CaCO3)	5900	5.	5	EPA 200.7	mg/L	10/29/98	
Nitrate/Nitrite as N, Total	0.11	0.05	1	SM 4500-NO3 F	mg/L-N	10/27/98	
pH	6.60	2.	1	EPA 150.1	pH Units	10/22/98	
pH Temperature	18.5	1.	1	EPA 150.1	°C	10/22/98	
Specific Conductance	42500	1.	1	SM 2510 B	µS/cm	10/27/98	
Sulfate	680	25.	250	EPA 300.0	mg/L	10/29/98	
Total Dissolved Solids	29600	25.	1	SM 2540 C	mg/L	10/23/98	

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: Method Blank

PROJECT ID: NA

DATE SAMPLED: NA

PROJECT #: NA

NEL SAMPLE ID: 981023TDS-BLK

TEST: Non-Metals

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>UNITS</u>	<u>ANALYZED</u>
Total Dissolved Solids	ND	25	1	SM 2540 C	mg/L	10/23/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: Method Blank

PROJECT ID: NA

DATE SAMPLED: NA

PROJECT #: NA

NEL SAMPLE ID: 981026TDS-BLK

TEST: Non-Metals

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>UNITS</u>	<u>ANALYZED</u>
Total Dissolved Solids	ND	25	1	SM 2540 C	mg/L	10/26/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA
TEST: Non-Metals

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: 981027NO2NO3-BLK

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>UNITS</u>	<u>ANALYZED</u>
Nitrate/Nitrite as N, Total	ND	0.05	1	SM 4500-NO3 F	mg/L-N	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: Method Blank

PROJECT ID: NA

DATE SAMPLED: NA

PROJECT #: NA

NEL SAMPLE ID: 981028ALK-BLK

TEST: Non-Metals

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>UNITS</u>	<u>ANALYZED</u>
Alkalinity - Bicarbonate	ND	25	1	SM 2320 B	mg/L	10/28/98
Alkalinity - Carbonate	ND	25	1	SM 2320 B	mg/L	10/28/98
Alkalinity - Hydroxide	ND	25	1	SM 2320 B	mg/L	10/28/98
Alkalinity, Total	ND	25	1	SM 2320 B	mg/L	10/28/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: Method Blank

PROJECT ID: NA

DATE SAMPLED: NA

PROJECT #: NA

NEL SAMPLE ID: 981028NO2NO3-BLK

TEST: Non-Metals

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>UNITS</u>	<u>ANALYZED</u>
Nitrate/Nitrite as N, Total	ND	0.05	1	SM 4500-NO3 F	mg/L-N	10/28/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: Method Blank

PROJECT ID: NA

DATE SAMPLED: NA

PROJECT #: NA

NEL SAMPLE ID: 981029ICAQ-BLK

TEST: Non-Metals

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>UNITS</u>	<u>ANALYZED</u>
Bromide	ND	0.2	1	EPA 300.0	mg/L	10/29/98
Chloride	ND	0.1	1	EPA 300.0	mg/L	10/29/98
Fluoride	ND	0.1	1	EPA 300.0	mg/L	10/29/98
Nitrate, as N	ND	0.1	1	EPA 300.0	mg/L-N	10/29/98
Nitrite, as N	ND	0.1	1	EPA 300.0	mg/L-N	10/29/98
Sulfate	ND	0.1	1	EPA 300.0	mg/L	10/29/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0451
DATE SAMPLED: 10/19/98
NEL SAMPLE ID: P9810071-01

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 10/23/98

DILUTION: 1

ANALYZED: 10/23/98

ANALYST: SRP

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	98	86 - 115
Toluene-d8	98	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0452
DATE SAMPLED: 10/19/98
NEL SAMPLE ID: P9810071-02

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 10/23/98

DILUTION: 1

ANALYZED: 10/23/98

ANALYST: SRP

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	100	86 - 115
Toluene-d8	99	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0454
DATE SAMPLED: 10/19/98
NEL SAMPLE ID: P9810071-03

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 10/23/98

DILUTION: 1

ANALYZED: 10/23/98

ANALYST: SRP

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	190 µg/L	2. µg/L
Toluene	140 µg/L	2. µg/L
Ethylbenzene	49 µg/L	2. µg/L
Total Xylenes	90 µg/L	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	95	86 - 115
Toluene-d8	102	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0455
DATE SAMPLED: 10/19/98
NEL SAMPLE ID: P9810071-04

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 10/23/98

DILUTION: 1

ANALYZED: 10/23/98

ANALYST: SRP

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	180 µg/L	2. µg/L
Toluene	340 Jm µg/L	2. µg/L
Ethylbenzene	38 Jm µg/L	2. µg/L
Total Xylenes	72 Jm µg/L	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	512	86 - 115
Toluene-d8	100	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0458
DATE SAMPLED: 10/20/98
NEL SAMPLE ID: P9810071-05

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 10/23/98

DILUTION: 1

ANALYZED: 10/23/98

ANALYST: SRP

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	7 µg/L	2. µg/L
Toluene	4 Jm µg/L	2. µg/L
Ethylbenzene	ND Jm	2. µg/L
Total Xylenes	ND Jm	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	116	86 - 115
Toluene-d8	100	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0459
DATE SAMPLED: 10/20/98
NEL SAMPLE ID: P9810071-06

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 10/23/98

DILUTION: 1

ANALYZED: 10/23/98

ANALYST: SRP

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	140 µg/L	2. µg/L
Toluene	13 µg/L	2. µg/L
Ethylbenzene	6 µg/L	2. µg/L
Total Xylenes	6 µg/L	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	101	86 - 115
Toluene-d8	100	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0460
DATE SAMPLED: 10/20/98
NEL SAMPLE ID: P9810071-07

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 10/23/98

DILUTION: 1

ANALYZED: 10/23/98

ANALYST: SRP

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	51 µg/L	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	107	86 - 115
Toluene-d8	101	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: 9810231WBTEX-BK

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 10/23/98

ANALYZED: 10/23/98

ANALYST: SRP

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	ND	2 µg/L
Toluene	ND	2 µg/L
Ethylbenzene	ND	2 µg/L
Total Xylenes	ND	2 µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	97	86 - 115
Toluene-d8	96	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
 PROJECT ID: NA
 PROJECT #: NA
 TEST: Metals
 MATRIX: Aqueous

<u>PARAMETER</u>	<u>NEL Sample ID</u>	<u>Spike Amount</u>	<u>Spike Result</u>	<u>Percent Recovery</u>	<u>Acceptable Range</u>	<u>RPD</u>
Barium	P10070I-LCS	1	0.99	99	85 - 115	
Barium	P9810112i-LCS	1	0.992	99	85 - 115	
Barium	P9810112-01-MS	1	1.69	99	75 - 125	
Barium	P9810070-01-MS	1	1.04	100	75 - 125	
Barium	P9810070-01-MSD	1	1.04	100	75 - 125	0.
Barium	P9810112-01-MSD	1	1.67	97	75 - 125	2.
Beryllium	P9810112i-LCS	0.1	0.105	105	85 - 115	
Beryllium	P9810112-01-MS	0.1	0.103	103	70 - 130	
Beryllium	P9810112-01-MSD	0.1	0.102	102	70 - 130	1.
Boron	P9810112i-LCS	1	1.07	107	85 - 115	
Boron	P10070I-LCS	1	1.01	101	85 - 115	
Boron	P9810070-01-MS	1	1.22	100	75 - 125	
Boron	P9810112-01-MS	1	1.07	107	70 - 130	
Boron	P9810112-01-MSD	1	1.05	105	70 - 130	1.9
Boron	P9810070-01-MSD	1	1.21	99	75 - 125	
Cadmium	P9810112i-LCS	0.2	0.223	112	85 - 115	
Cadmium	P9810112-01-MS	0.2	0.218	109	75 - 125	
Cadmium	P9810112-01-MSD	0.2	0.216	108	75 - 125	0.9
Cadmium	P10070I-LCS	0.2	0.2	100	85 - 115	
Cadmium	P9810070-01-MS	0.2	0.197	99	75 - 125	
Cadmium	P9810070-01-MSD	0.2	0.198	99	75 - 125	0.5
Calcium	P9810112i-LCS	20	22.2	111	85 - 115	
Calcium	P9810112-01-MS	20	46.7	104	70 - 130	
Calcium	P9810112-01-MSD	20	45.8	99	70 - 130	4.4
Calcium	P10070I-LCS	20	20.4	102	85 - 115	
Calcium	P9810070-01-MS	20	71.6	98	75 - 125	
Calcium	P9810070-01-MSD	20	72	100	75 - 125	2.
Chromium	P9810112i-LCS	0.5	0.543	109	85 - 115	
Chromium	P9810112-01-MS	0.5	0.529	106	75 - 125	
Chromium	P9810112-01-MSD	0.5	0.524	105	75 - 125	0.9
Chromium	P10070I-LCS	0.5	0.51	102	85 - 115	
Chromium	P9810070-01-MS	0.5	0.5	100	75 - 125	
Chromium	P9810070-01-MSD	0.5	0.499	100	75 - 125	0.2
Copper	P9810112i-LCS	0.5	0.508	102	85 - 115	
Copper	P9810112-01-MS	0.5	0.505	100	70 - 130	
Copper	P9810112-01-MSD	0.5	0.501	100	70 - 130	0.8
Copper	P10070I-LCS	0.5	0.501	100	85 - 115	
Copper	P9810070-01-MS	0.5	0.501	100	75 - 125	

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
 PROJECT ID: NA
 PROJECT #: NA
 TEST: Metals
 MATRIX: Aqueous

<u>PARAMETER</u>	<u>NEL Sample ID</u>	<u>Spike Amount</u>	<u>Spike Result</u>	<u>Percent Recovery</u>	<u>Acceptable Range</u>	<u>RPD</u>
Copper	P9810070-01-MSD	0.5	0.503	101	75 - 125	0.4
Iron	P9810112i-LCS	1	1.09	109	70 - 130	
Iron	P9810112-01-MS	1	1.07	107	70 - 130	
Iron	P9810112-01-MSD	1	1.05	105	70 - 130	1.9
Iron	P10070i-LCS	1	1.04	104	85 - 115	
Iron	P9810070-01-MS	1	1.06	100	75 - 125	
Iron	P9810070-01-MSD	1	1.06	100	75 - 125	0.
Magnesium	P9810112i-LCS	20	21.4	107	85 - 115	
Magnesium	P9810112-01-MS	20	34.5	108	70 - 130	
Magnesium	P9810112-01-MSD	20	33.9	105	70 - 130	2.8
Magnesium	P10070i-LCS	20	20.3	102	85 - 115	
Magnesium	P9810070-01-MS	20	38	105	75 - 125	
Magnesium	P9810070-01-MSD	20	38.2	106	75 - 125	0.9
Manganese	P9810112i-LCS	0.5	0.533	107	85 - 115	
Manganese	P9810112-01-MS	0.5	0.519	104	70 - 130	
Manganese	P9810112-01-MSD	0.5	0.513	103	70 - 130	1.2
Manganese	P10070i-LCS	0.5	0.491	98	85 - 115	
Manganese	P9810070-01-MS	0.5	0.487	97	75 - 125	
Manganese	P9810070-01-MSD	0.5	0.485	97	75 - 125	0.4
Nickel	P9810112i-LCS	1	1.12	112	85 - 115	
Nickel	P9810112-01-MS	1	1.08	108	70 - 130	
Nickel	P9810112-01-MSD	1	1.07	107	70 - 130	0.9
Potassium	P9810112i-LCS	20	20	100	85 - 115	
Potassium	P9810112-01-MS	20	21.4	98	70 - 130	
Potassium	P9810112-01-MSD	20	21.1	97	70 - 130	1.5
Potassium	P10070i-LCS	20	20	100	85 - 115	
Potassium	P9810070-01-MS	20	24.2	101	75 - 125	
Potassium	P9810070-01-MSD	20	24.3	101	75 - 125	0.5
Silver	P9810112i-LCS	0.5	0.517	103	85 - 115	
Silver	P9810112-01-MS	0.5	0.52	104	75 - 125	
Silver	P9810112-01-MSD	0.5	0.508	102	75 - 125	2.3
Silver	P10070i-LCS	0.5	0.48	96	85 - 115	
Silver	P9810070-01-MS	0.5	0.479	96	75 - 125	
Silver	P9810070-01-MSD	0.5	0.479	96	75 - 125	0.
Sodium	P9810112i-LCS	20	21.1	106	70 - 130	
Sodium	P9810112-01-MS	20	26.8	106	70 - 130	
Sodium	P9810112-01-MSD	20	26.4	104	70 - 130	1.9
Sodium	P10070i-LCS	20	20	100	85 - 115	

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
 PROJECT ID: NA
 PROJECT #: NA
 TEST: Metals
 MATRIX: Aqueous

<u>PARAMETER</u>	<u>NEL Sample ID</u>	<u>Spike Amount</u>	<u>Spike Result</u>	<u>Percent Recovery</u>	<u>Acceptable Range</u>	<u>RPD</u>
Sodium	P9810070-01-MS	20	90.8	109	75 - 125	
Sodium	P9810070-01-MSD	20	91.6	113	75 - 125	3.6
Zinc	P9810112i-LCS	0.5	0.551	110	85 - 115	
Zinc	P9810112-01-MS	0.5	0.542	108	70 - 130	
Zinc	P9810112-01-MSD	0.5	0.535	107	70 - 130	1.3
Zinc	P10070I-LCS	0.5	0.51	102	85 - 115	
Zinc	P9810070-01-MS	0.5	0.543	109	75 - 125	
Zinc	P9810070-01-MSD	0.5	0.542	108	75 - 125	0.2

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA
TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996
MATRIX: Aqueous

<u>PARAMETER</u>	<u>NEL Sample ID</u>	<u>Spike</u> <u>Amount</u>	<u>Spike</u> <u>Result</u>	<u>Percent</u> <u>Recovery</u>	<u>Acceptable</u> <u>Range</u>	<u>RPD</u>
Benzene	9810231WBTEX-LCS	50	49.81	100	80 - 120	
Toluene	9810231WBTEX-LCS	50	45.28	91	80 - 120	
Ethylbenzene	9810231WBTEX-LCS	50	51.55	103	80 - 120	
Total Xylenes	9810231WBTEX-LCS	150	157.03	105	80 - 120	

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA
TEST: Metals
MATRIX: Drinking Water

<u>PARAMETER</u>	<u>NEL Sample ID</u>	<u>Spike Amount</u>	<u>Spike Result</u>	<u>Percent Recovery</u>	<u>Acceptable Range</u>	<u>RPD</u>
Barium	P9810112i-LCS	1	0.992	99	85- 115	
Barium	P10070i-LCS	1	0.99	99	85- 115	
Barium	P9810112-01-MS	1	1.69	99	75- 125	
Barium	P9810070-01-MS	1	1.04	100	75- 125	
Barium	P9810112-01-MSD	1	1.67	97	75- 125	2.
Barium	P9810070-01-MSD	1	1.04	100	75- 125	0.
Beryllium	P9810112i-LCS	0.1	0.105	105	85- 115	
Beryllium	P9810112-01-MS	0.1	0.103	103	70- 130	
Beryllium	P9810112-01-MSD	0.1	0.102	102	70- 130	1.
Boron	P9810112i-LCS	1	1.07	107	85- 115	
Boron	P10070i-LCS	1	1.01	101	85- 115	
Boron	P9810070-01-MS	1	1.22	100	75- 125	
Boron	P9810112-01-MS	1	1.07	107	70- 130	
Boron	P9810070-01-MSD	1	1.21	99	75- 125	
Boron	P9810112-01-MSD	1	1.05	105	70- 130	1.9
Cadmium	P9810112i-LCS	0.2	0.223	112	85- 115	
Cadmium	P9810112-01-MS	0.2	0.218	109	75- 125	
Cadmium	P9810112-01-MSD	0.2	0.216	108	75- 125	0.9
Cadmium	P10070i-LCS	0.2	0.2	100	85- 115	
Cadmium	P9810070-01-MS	0.2	0.197	99	75- 125	
Cadmium	P9810070-01-MSD	0.2	0.198	99	75- 125	0.5
Calcium	P9810112i-LCS	20	22.2	111	85- 115	
Calcium	P9810112-01-MS	20	46.7	104	70- 130	
Calcium	P9810112-01-MSD	20	45.8	99	70- 130	4.4
Calcium	P10070i-LCS	20	20.4	102	85- 115	
Calcium	P9810070-01-MS	20	71.6	98	75- 125	
Calcium	P9810070-01-MSD	20	72	100	75- 125	2.
Chromium	P9810112i-LCS	0.5	0.543	109	85- 115	
Chromium	P9810112-01-MS	0.5	0.529	106	75- 125	
Chromium	P9810112-01-MSD	0.5	0.524	105	75- 125	0.9
Chromium	P10070i-LCS	0.5	0.51	102	85- 115	
Chromium	P9810070-01-MS	0.5	0.5	100	75- 125	
Chromium	P9810070-01-MSD	0.5	0.499	100	75- 125	0.2
Copper	P9810112i-LCS	0.5	0.508	102	85- 115	
Copper	P9810112-01-MS	0.5	0.505	100	70- 130	
Copper	P9810112-01-MSD	0.5	0.501	100	70- 130	0.8
Copper	P10070i-LCS	0.5	0.501	100	85- 115	
Copper	P9810070-01-MS	0.5	0.501	100	75- 125	

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
 PROJECT ID: NA
 PROJECT #: NA
 TEST: Metals
 MATRIX: Aqueous

<u>PARAMETER</u>	<u>NEL Sample ID</u>	<u>Spike Amount</u>	<u>Spike Result</u>	<u>Percent Recovery</u>	<u>Acceptable Range</u>	<u>RPD</u>
Copper	P9810070-01-MSD	0.5	0.503	101	75- 125	0.4
Iron	P9810112i-LCS	1	1.09	109	70- 130	
Iron	P9810112-01-MS	1	1.07	107	70- 130	
Iron	P9810112-01-MSD	1	1.05	105	70- 130	1.9
Iron	P10070I-LCS	1	1.04	104	85- 115	
Iron	P9810070-01-MS	1	1.06	100	75- 125	
Iron	P9810070-01-MSD	1	1.06	100	75- 125	0.
Magnesium	P9810112i-LCS	20	21.4	107	85- 115	
Magnesium	P9810112-01-MS	20	34.5	108	70- 130	
Magnesium	P9810112-01-MSD	20	33.9	105	70- 130	2.8
Magnesium	P10070I-LCS	20	20.3	102	85- 115	
Magnesium	P9810070-01-MS	20	38	105	75- 125	
Magnesium	P9810070-01-MSD	20	38.2	106	75- 125	0.9
Manganese	P9810112i-LCS	0.5	0.533	107	85- 115	
Manganese	P9810112-01-MS	0.5	0.519	104	70- 130	
Manganese	P9810112-01-MSD	0.5	0.513	103	70- 130	1.2
Manganese	P10070I-LCS	0.5	0.491	98	85- 115	
Manganese	P9810070-01-MS	0.5	0.487	97	75- 125	
Manganese	P9810070-01-MSD	0.5	0.485	97	75- 125	0.4
Nickel	P9810112i-LCS	1	1.12	112	85- 115	
Nickel	P9810112-01-MS	1	1.08	108	70- 130	
Nickel	P9810112-01-MSD	1	1.07	107	70- 130	0.9
Potassium	P9810112i-LCS	20	20	100	85- 115	
Potassium	P9810112-01-MS	20	21.4	98	70- 130	
Potassium	P9810112-01-MSD	20	21.1	97	70- 130	1.5
Potassium	P10070I-LCS	20	20	100	85- 115	
Potassium	P9810070-01-MS	20	24.2	101	75- 125	
Potassium	P9810070-01-MSD	20	24.3	101	75- 125	0.5
Silver	P9810112i-LCS	0.5	0.517	103	85- 115	
Silver	P9810112-01-MS	0.5	0.52	104	75- 125	
Silver	P9810112-01-MSD	0.5	0.508	102	75- 125	2.3
Silver	P10070I-LCS	0.5	0.48	96	85- 115	
Silver	P9810070-01-MS	0.5	0.479	96	75- 125	
Silver	P9810070-01-MSD	0.5	0.479	96	75- 125	0.
Sodium	P9810112i-LCS	20	21.1	106	70- 130	
Sodium	P9810112-01-MS	20	26.8	106	70- 130	
Sodium	P9810112-01-MSD	20	26.4	104	70- 130	1.9
Sodium	P10070I-LCS	20	20	100	85- 115	

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
 PROJECT ID: NA
 PROJECT #: NA
 TEST: Metals
 MATRIX: Aqueous

<u>PARAMETER</u>	<u>NEL Sample ID</u>	<u>Spike Amount</u>	<u>Spike Result</u>	<u>Percent Recovery</u>	<u>Acceptable Range</u>	<u>RPD</u>
Sodium	P9810070-01-MS	20	90.8	109	75- 125	
Sodium	P9810070-01-MSD	20	91.6	113	75- 125	3.6
Zinc	P9810112i-LCS	0.5	0.551	110	85- 115	
Zinc	P9810112-01-MS	0.5	0.542	108	70- 130	
Zinc	P9810112-01-MSD	0.5	0.535	107	70- 130	1.3
Zinc	P10070I-LCS	0.5	0.51	102	85- 115	
Zinc	P9810070-01-MS	0.5	0.543	109	75- 125	
Zinc	P9810070-01-MSD	0.5	0.542	108	75- 125	0.2

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
 PROJECT ID: NA
 PROJECT #: NA
 TEST: Inorganic Non-Metals
 MATRIX: Aqueous

<u>PARAMETER</u>	<u>NEL Sample ID</u>	<u>Spike Amount</u>	<u>Spike Result</u>	<u>Percent Recovery</u>	<u>Acceptable Range</u>	<u>RPD</u>
7.00 Buffer	981022PH-LCS	7	7.012	100	99 - 101	
Total Dissolved Solids	981026TDS-LCS	2000	1912	96	90 - 110	
Alkalinity, Total	981028ALK-LCS	125	122.8	98	85 - 115	
Fluoride	981027F-LCS	1	1.04	104	85 - 115	
Fluoride	P9810071-03-MS	1	1.27	76	80 - 120	
Fluoride	P9810071-03-MSD	1	1.24	73	80 - 120	4.
Chloride	981028ICAQ-LCS	100	94	94	90 - 110	
Chloride	P9810070-01-MS	100	139.8	105	69 - 119	
Bromide	981028ICAQ-LCS	100	95	95	90 - 110	
Sulfate	981028ICAQ-LCS	100	102	102	90 - 110	
Sulfate	P9810070-01-MS	100	174.5	95	43 - 140	
Nitrite, as N	981028ICAQ-LCS	100	94	94	90 - 110	
Nitrite, as N	P9810070-01-MS	100	98	98	67 - 116	
Nitrate, as N	981028ICAQ-LCS	100	98	98	90 - 110	
Nitrate, as N	P9810070-01-MS	100	107	107	80 - 120	
Nitrate/Nitrite as N, Total	981027NO2NO3-LCS	200	202	101	90 - 110	
Nitrate/Nitrite as N, Total	981028NO2NO3-LCS	200	206	103	90 - 110	
Nitrate/Nitrite as N, Total	P9810080-03-MS	200	192	96	80 - 120	
Nitrate/Nitrite as N, Total	L9810168-34-MS	200	204	102	80 - 120	

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
 PROJECT ID: NA
 PROJECT #: NA
 TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996
 MATRIX: Aqueous

<u>PARAMETER</u>	<u>NEL Sample ID</u>	<u>Spike Amount</u>	<u>Spike Result</u>	<u>Percent Recovery</u>	<u>Acceptable Range</u>	<u>RPD</u>
Benzene	9810231WBTEX-LCS	50	49.81	100	80- 120	
Benzene	P9810070-01-MS	50	54	108	76- 127	
Benzene	P9810070-01-MSD	50	55	110	76- 127	1.8
Toluene	9810231WBTEX-LCS	50	45.28	91	80- 120	
Toluene	P9810070-01-MS	50	48	96	76- 125	
Toluene	P9810070-01-MSD	50	49	98	76- 125	2.1
Ethylbenzene	9810231WBTEX-LCS	50	51.55	103	80- 120	
Ethylbenzene	P9810070-01-MS	50	53	106	70- 130	
Ethylbenzene	P9810070-01-MSD	50	56	112	70- 130	5.5
Total Xylenes	9810231WBTEX-LCS	150	157.03	105	80- 120	
Total Xylenes	P9810070-01-MS	150	162	108	70- 130	
Total Xylenes	P9810070-01-MSD	150	167	111	70- 130	2.8

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.



CHAIN OF CUSTODY RECORD

Page _____ of _____

[illegible]

915-759-2229 FAX: 915-759-2335

SILL NO.:

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0453
DATE SAMPLED: 10/19/98
NEL SAMPLE ID: P9810069-01

TEST: Inorganic Non-Metals
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>UNITS</u>	<u>ANALYZED</u>
Chloride	18000	1000.	10000	EPA 300.0	mg/L	10/27/98
Specific Conductance	44800	1.	1	SM 2510 B	μS/cm	10/27/98
Total Dissolved Solids	30000	25.	1	SM 2540 C	mg/L	10/23/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0456
DATE SAMPLED: 10/19/98
NEL SAMPLE ID: P9810069-02

TEST: Inorganic Non-Metals
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>UNITS</u>	<u>ANALYZED</u>
Chloride	7700	500.	5000	EPA 300.0	mg/L	10/27/98
Specific Conductance	20800	1.	1	SM 2510 B	µS/cm	10/27/98
Total Dissolved Solids	12400	25.	1	SM 2540 C	mg/L	10/23/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0457
DATE SAMPLED: 10/20/98
NEL SAMPLE ID: P9810069-03

TEST: Inorganic Non-Metals
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>UNITS</u>	<u>ANALYZED</u>
Chloride	4200	200.	2000	EPA 300.0	mg/L	10/27/98
Specific Conductance	12400	1.	1	SM 2510 B	μS/cm	10/27/98
Total Dissolved Solids	7590	25.	1	SM 2540 C	mg/L	10/23/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0461
DATE SAMPLED: 10/20/98
NEL SAMPLE ID: P9810069-04

TEST: Inorganic Non-Metals
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>UNITS</u>	<u>ANALYZED</u>
Chloride	590	50.	500	EPA 300.0	mg/L	10/27/98
Specific Conductance	2260	1.	1	SM 2510 B	µS/cm	10/27/98
Total Dissolved Solids	1580	25.	1	SM 2540 C	mg/L	10/23/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0462
DATE SAMPLED: 10/20/98
NEL SAMPLE ID: P9810069-05

TEST: Inorganic Non-Metals
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>UNITS</u>	<u>ANALYZED</u>
Chloride	540	50.	500	EPA 300.0	mg/L	10/27/98
Specific Conductance	2240	1.	1	SM 2510 B	μS/cm	10/27/98
Total Dissolved Solids	1290	25.	1	SM 2540 C	mg/L	10/23/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0463
DATE SAMPLED: 10/20/98
NEL SAMPLE ID: P9810069-06

TEST: Inorganic Non-Metals
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>UNITS</u>	<u>ANALYZED</u>
Chloride	380	50.	500	EPA 300.0	mg/L	10/27/98
Specific Conductance	2090	1.	1	SM 2510 B	μS/cm	10/27/98
Total Dissolved Solids	1410	25.	1	SM 2540 C	mg/L	10/23/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: Method Blank

PROJECT ID: NA

DATE SAMPLED: NA

PROJECT #: NA

NEL SAMPLE ID: 981023TDS-BLK

TEST: Non-Metals

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>mg/L</u>	<u>ANALYZED</u>
Total Dissolved Solids	ND	25	1	SM 2540 C	mg/L	10/23/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: Method Blank

PROJECT ID: NA

DATE SAMPLED: NA

PROJECT #: NA

NEL SAMPLE ID: 981027ICAQ-BLK

TEST: Non-Metals

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>mg/L</u>	<u>ANALYZED</u>
Bromide	ND	0.2	1	EPA 300.0	mg/L	10/27/98
Chloride	ND	0.1	1	EPA 300.0	mg/L	10/27/98
Fluoride	ND	0.1	1	EPA 300.0	mg/L	10/27/98
Nitrate, as N	ND	0.1	1	EPA 300.0	mg/L-N	10/27/98
Nitrite, as N	ND	0.1	1	EPA 300.0	mg/L-N	10/27/98
Sulfate	ND	0.1	1	EPA 300.0	mg/L	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.



CHAIN OF CUSTODY RECORD

Page _____ of _____

10/29

[illegible]

NEL LABORATORIES

Reno • Las Vegas
Phoenix • Irvine

Las Vegas Division
4208 Arcata Way, Suite A • Las Vegas, NV 89030
(702) 657-1010 • Fax: (702) 657-1577
1-888-368-3282

CLIENT: El Paso Natural Gas Company
8645 Railroad Drive
El Paso, TX 79904
ATTN: Darrell Campbell

PROJECT NAME: NA
PROJECT NUMBER: NA

NEL ORDER ID: P9810070

Attached are the analytical results for samples in support of the above referenced project.

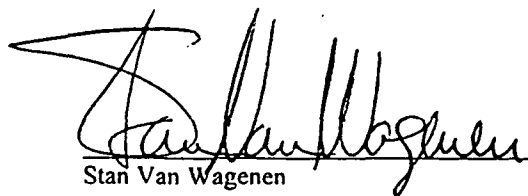
Samples were received by NEL in good condition, under chain of custody on 10/22/98.

Samples were analyzed as received.

Should you have any questions or comments, please feel free to contact our Client Services department at (602) 437-0099.

Some results have been flagged as follows:

Hr - Sample was received beyond holding time for this parameter.


Stan Van Wagenen
Laboratory Manager

10/30/98
Date

CERTIFICATIONS:

	<u>Reno</u>	<u>Las Vegas</u>	<u>S. California</u>		<u>Reno</u>	<u>Las Vegas</u>	<u>S. California</u>
Arizona	AZ0520	AZ0518	AZ0583	Idaho	Certified	Certified	
California	1707	2002	2264	Montana	Certified	Certified	
US Army Corps of Engineers	Certified	Certified	Certified	Nevada	NV033	NV052	CA084
				Washington			Certified

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0464
DATE SAMPLED: 10/20/98
NEL SAMPLE ID: P9810070-01

TEST: AZ METALS PKG
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	0.22	.01 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Calcium	52	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Copper	ND	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Iron	0.060	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Magnesium	17	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Manganese	ND	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Potassium	4.1	1 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Silica	29	.25 mg/L	5	EPA 200.8	10/26/98	10/28/98
Sodium	69	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Zinc	ND	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: P100701-BLK

TEST: AZ METALS PKG

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	ND	0.01 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Calcium	ND	0.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Copper	ND	0.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Iron	ND	0.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Magnesium	ND	0.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Manganese	ND	0.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Potassium	ND	1. mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Sodium	ND	0.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Zinc	ND	0.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: P10079SI-BLK

TEST: AZ METALS PKG

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Silica	ND	0.05mg/L	1	EPA 200.8	10/26/98	10/28/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0464
DATE SAMPLED: 10/20/98
NEL SAMPLE ID: P9810070-01

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	REPORTING		D. F.	METHOD	UNITS	ANALYZED
			LIMIT				
Alkalinity - Bicarbonate	190		25.	1	SM 2320 B	mg/L	10/26/98
Alkalinity - Carbonate	ND		25.	1	SM 2320 B	mg/L	10/26/98
Alkalinity - Hydroxide	ND		25.	1	SM 2320 B	mg/L	10/26/98
Alkalinity, Total	190		25.	1	SM 2320 B	mg/L	10/26/98
Bromide	ND		2.	10	EPA 300.0	mg/L	10/28/98
Chloride	35		5.	50	EPA 300.0	mg/L	10/28/98
Fluoride	1.0		0.4	1	SM 4500-F C	mg/L	10/27/98
Hardness, Total (as CaCO3)	200		0.5	0.5	EPA 200.7	mg/L	10/27/98
Nitrate/Nitrite as N, Total	1.2		0.05	1	SM 4500-NO3 F	mg/L-N	10/27/98
pH	7.71	Hr	2.	1	EPA 150.1	pH Units	10/22/98
pH Temperature	18.0	Hr	1.	1	EPA 150.1	°C	10/22/98
Specific Conductance	636		1.	1	SM 2510 B	µS/cm	10/27/98
Sulfate	80		5.	50	EPA 300.0	mg/L	10/28/98
Total Dissolved Solids	464		25.	1	SM 2540 C	mg/L	10/23/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
 PROJECT ID: NA
 PROJECT #: NA

CLIENT ID: S98-0465
 DATE SAMPLED: 10/20/98
 NEL SAMPLE ID: P9810070-02

TEST: Inorganic Non-Metals
 MATRIX: Aqueous

PARAMETER	REPORTING			METHOD	UNITS	ANALYZED
	RESULT	LIMIT	D. F.			
Alkalinity - Bicarbonate	160	25.	1	SM 2320 B	mg/L	10/26/98
Alkalinity - Carbonate	ND	25.	1	SM 2320 B	mg/L	10/26/98
Alkalinity - Hydroxide	ND	25.	1	SM 2320 B	mg/L	10/26/98
Alkalinity, Total	160	25.	1	SM 2320 B	mg/L	10/26/98
Bromide	ND	2.	10	EPA 300.0	mg/L	10/28/98
Chloride	100	5.	50	EPA 300.0	mg/L	10/28/98
Fluoride	1.1	0.4	1	SM 4500-F C	mg/L	10/27/98
Hardness, Total (as CaCO ₃)	240	0.5	0.5	EPA 200.7	mg/L	10/27/98
Nitrate/Nitrite as N, Total	0.76	0.05	1	SM 4500-NO ₃ F	mg/L-N	10/27/98
pH	7.79 Hr	2.	1	EPA 150.1	pH Units	10/22/98
pH Temperature	17.3 Hr	1.	1	EPA 150.1	°C	10/22/98
Specific Conductance	734	1.	1	SM 2510 B	µS/cm	10/27/98
Sulfate	55	5.	50	EPA 300.0	mg/L	10/28/98
Total Dissolved Solids	488	25.	1	SM 2540 C	mg/L	10/23/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: Method Blank

PROJECT ID: NA

DATE SAMPLED: NA

PROJECT #: NA

NEL SAMPLE ID: 981023TDS-BLK

TEST: Non-Metals

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>mg/L</u>	<u>ANALYZED</u>
Total Dissolved Solids	ND	25	1	SM 2540 C	mg/L	10/23/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: 981026ALK-BLK

TEST: Non-Metals

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>mg/L</u>	<u>ANALYZED</u>
Alkalinity - Bicarbonate	ND	25	1	SM 2320 B	mg/L	10/26/98
Alkalinity - Carbonate	ND	25	1	SM 2320 B	mg/L	10/26/98
Alkalinity - Hydroxide	ND	25	1	SM 2320 B	mg/L	10/26/98
Alkalinity, Total	ND	25	1	SM 2320 B	mg/L	10/26/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: Method Blank

PROJECT ID: NA

DATE SAMPLED: NA

PROJECT #: NA

NEL SAMPLE ID: 981027NO2NO3-BLK

TEST: Non-Metals

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>mg/L-N</u>	<u>ANALYZED</u>
Nitrate/Nitrite as N, Total	ND	0.05	1	SM 4500-NO3 F	mg/L-N	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: Method Blank

PROJECT ID: NA

DATE SAMPLED: NA

PROJECT #: NA

NEL SAMPLE ID: 9810281CAQ-BLK

TEST: Non-Metals

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>mg/L</u>	<u>ANALYZED</u>
Bromide	ND	0.2	1	EPA 300.0	mg/L	10/28/98
Chloride	ND	0.1	1	EPA 300.0	mg/L	10/28/98
Fluoride	ND	0.1	1	EPA 300.0	mg/L	10/28/98
Nitrate, as N	ND	0.1	1	EPA 300.0	mg/L-N	10/28/98
Nitrite, as N	ND	0.1	1	EPA 300.0	mg/L-N	10/28/98
Sulfate	ND	0.1	1	EPA 300.0	mg/L	10/28/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT:	El Paso Natural Gas Company	CLIENT ID:	S98-0464
PROJECT ID:	NA	DATE SAMPLED:	10/20/98
PROJECT #:	NA	NEL SAMPLE ID:	P9810070-01
TEST:	Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996		
METHOD:	EPA 8260A	ANALYST:	SRP
MATRIX:	Aqueous	EXTRACTED:	10/23/98
DILUTION:	1	ANALYZED:	10/23/98

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	100	86 - 115
Toluene-d8	98	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0465
DATE SAMPLED: 10/20/98
NEL SAMPLE ID: P9810070-02

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

METHOD: EPA 8260A

ANALYST: SRP

MATRIX: Aqueous

EXTRACTED: 10/23/98

DILUTION: 1

ANALYZED: 10/23/98

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	101	86 - 115
Toluene-d8	99	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: 9810231WBTEX-BLK

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

METHOD: EPA 8260A

MATRIX: Aqueous

ANALYST: SRP

EXTRACTED: 10/23/98

ANALYZED: 10/23/98

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	97	86 - 115
Toluene-d8	96	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

FM-08-0566 (Rev. 4-30)

NEL LABORATORIES

Reno • Las Vegas
Phoenix • Irvine

Las Vegas Division
4208 Arcata Way, Suite A • Las Vegas, NV 89030
(702) 657-1010 • Fax: (702) 657-1577
1-888-368-3282

CLIENT: El Paso Natural Gas Company
8645 Railroad Drive
El Paso, TX 79904
ATTN: Darrell Campbell

PROJECT NAME: NA
PROJECT NUMBER: NA

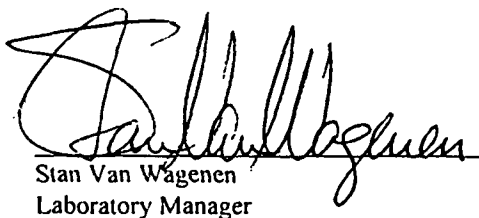
NEL ORDER ID: P9810079

Attached are the analytical results for samples in support of the above referenced project.

Samples were received by NEL in good condition, under chain of custody on 10/23/98.

Samples were analyzed as received.

Should you have any questions or comments, please feel free to contact our Client Services department at (602) 437-0099.


Stan Van Wagenen
Laboratory Manager

10/30/98
Date

CERTIFICATIONS:

	<u>Reno</u>	<u>Las Vegas</u>	<u>S. California</u>		<u>Reno</u>	<u>Las Vegas</u>	<u>S. California</u>
Arizona	AZ0520	AZ0518	AZ0583	Idaho	Certified	Certified	
California	1707	2002	2264	Montana	Certified	Certified	
US Army Corps of Engineers	Certified	Certified	Certified	Nevada	NV033	NV052	CA084
				Washington			Certified

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0466
DATE SAMPLED: 10/21/98
NEL SAMPLE ID: P9810079-01

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	REPORTING			METHOD	UNITS	ANALYZED
	RESULT	LIMIT	D. F.			
Alkalinity - Bicarbonate	ND	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity - Carbonate	ND	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity - Hydroxide	ND	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity, Total	ND	25.	1	SM 2320 B	mg/L	10/28/98
Bromide	ND	0.2	1	EPA 300.0	mg/L	10/29/98
Chloride	ND	0.1	1	EPA 300.0	mg/L	10/29/98
Fluoride	ND	0.4	1	SM 4500-F C	mg/L	10/27/98
Hardness, Total (as CaCO ₃)	7.9	0.5	0.5	EPA 200.7	mg/L	10/27/98
Nitrate/Nitrite as N, Total	ND	0.05	1	SM 4500-NO ₃ F	mg/L-N	10/27/98
pH	7.34	2.	1	EPA 150.1	pH Units	10/23/98
pH Temperature	21.0	1.	1	EPA 150.1	°C	10/23/98
Specific Conductance	16.9	1.	1	SM 2510 B	µS/cm	10/27/98
Sulfate	ND	0.1	1	EPA 300.0	mg/L	10/29/98
Total Dissolved Solids	ND	25.	1	SM 2540 C	mg/L	10/28/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0467
DATE SAMPLED: 10/21/98
NEL SAMPLE ID: P9810079-02

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	REPORTING		D. F.	METHOD	UNITS	ANALYZED
		LIMIT					
Alkalinity - Bicarbonate	830	25.	1		SM 2320 B	mg/L	10/28/98
Alkalinity - Carbonate	ND	25.	1		SM 2320 B	mg/L	10/28/98
Alkalinity - Hydroxide	ND	25.	1		SM 2320 B	mg/L	10/28/98
Alkalinity, Total	830	25.	1		SM 2320 B	mg/L	10/28/98
Bromide	ND	5.	25		EPA 300.0	mg/L	10/29/98
Chloride	4400	250.	2500		EPA 300.0	mg/L	10/30/98
Fluoride	3.8	0.8	2		SM 4500-F C	mg/L	10/27/98
Hardness, Total (as CaCO ₃)	920	0.5	0.5		EPA 200.7	mg/L	10/27/98
Nitrate/Nitrite as N, Total	ND	0.05	1		SM 4500-NO ₃ F	mg/L-N	10/28/98
pH	7.05	2.	1		EPA 150.1	pH Units	10/23/98
pH Temperature	20.3	1.	1		EPA 150.1	°C	10/23/98
Specific Conductance	14000	1.	1		SM 2510 B	µS/cm	10/27/98
Sulfate	130	2.5	25		EPA 300.0	mg/L	10/29/98
Total Dissolved Solids	8290	25.	1		SM 2540 C	mg/L	10/28/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0468
DATE SAMPLED: 10/21/98
NEL SAMPLE ID: P9810079-03

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	REPORTING LIMIT	D. F.	METHOD	UNITS	ANALYZED
Alkalinity - Bicarbonate	130	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity - Carbonate	ND	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity - Hydroxide	ND	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity, Total	130	25.	1	SM 2320 B	mg/L	10/28/98
Bromide	2.0	2.	10	EPA 300.0	mg/L	10/29/98
Chloride	110	10.	100	EPA 300.0	mg/L	10/30/98
Fluoride	1.5	0.4	1	SM 4500-F C	mg/L	10/27/98
Hardness, Total (as CaCO3)	150	0.5	0.5	EPA 200.7	mg/L	10/27/98
Nitrate/Nitrite as N, Total	ND	0.05	1	SM 4500-NO3 F	mg/L-N	10/27/98
pH	8.23	2.	1	EPA 150.1	pH Units	10/23/98
pH Temperature	19.8	1.	1	EPA 150.1	°C	10/23/98
Specific Conductance	649	1.	1	SM 2510 B	µS/cm	10/27/98
Sulfate	48	1.	10	EPA 300.0	mg/L	10/29/98
Total Dissolved Solids	373	25.	1	SM 2540 C	mg/L	10/28/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0469
DATE SAMPLED: 10/21/98
NEL SAMPLE ID: P9810079-04

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	REPORTING		METHOD	UNITS	ANALYZED
		LIMIT	D. F.			
Alkalinity - Bicarbonate	1600	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity - Carbonate	ND	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity - Hydroxide	ND	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity, Total	1600	25.	1	SM 2320 B	mg/L	10/28/98
Bromide	ND	5.	25	EPA 300.0	mg/L	10/29/98
Chloride	3000	250.	2500	EPA 300.0	mg/L	10/30/98
Fluoride	25	8.	20	SM 4500-F C	mg/L	10/27/98
Hardness, Total (as CaCO ₃)	250	0.5	0.5	EPA 200.7	mg/L	10/27/98
Nitrate/Nitrite as N, Total	ND	0.05	1	SM 4500-NO ₃ F	mg/L-N	10/28/98
pH	8.00	2.	1	EPA 150.1	pH Units	10/23/98
pH Temperature	20.1	1.	1	EPA 150.1	°C	10/23/98
Specific Conductance	11600	1.	1	SM 2510 B	µS/cm	10/27/98
Sulfate	74	2.5	25	EPA 300.0	mg/L	10/29/98
Total Dissolved Solids	6530	25.	1	SM 2540 C	mg/L	10/28/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0471
DATE SAMPLED: 10/21/98
NEL SAMPLE ID: P9810079-05

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	REPORTING			METHOD	UNITS	ANALYZED
	RESULT	LIMIT	D. F.			
Alkalinity - Bicarbonate	170	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity - Carbonate	ND	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity - Hydroxide	ND	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity, Total	170	25.	1	SM 2320 B	mg/L	10/28/98
Bromide	ND	2.	10	EPA 300.0	mg/L	10/29/98
Chloride	71	5.	50	EPA 300.0	mg/L	10/30/98
Fluoride	1.9	0.4	1	SM 4500-F C	mg/L	10/27/98
Hardness, Total (as CaCO ₃)	210	0.5	0.5	EPA 200.7	mg/L	10/27/98
Nitrate/Nitrite as N, Total	1.7	0.05	1	SM 4500-NO ₃ F	mg/L-N	10/28/98
pH	7.70	2.	1	EPA 150.1	pH Units	10/23/98
pH Temperature	20.2	1.	1	EPA 150.1	°C	10/23/98
Specific Conductance	771	1.	1	SM 2510 B	µS/cm	10/27/98
Sulfate	100	5.	50	EPA 300.0	mg/L	10/30/98
Total Dissolved Solids	466	25.	1	SM 2540 C	mg/L	10/28/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0472
DATE SAMPLED: 10/21/98
NEL SAMPLE ID: P9810079-06

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	REPORTING			METHOD	UNITS	ANALYZED
		LIMIT	D. F.				
Alkalinity - Bicarbonate	340	25.	1		SM 2320 B	mg/L	10/28/98
Alkalinity - Carbonate	ND	25.	1		SM 2320 B	mg/L	10/28/98
Alkalinity - Hydroxide	ND	25.	1		SM 2320 B	mg/L	10/28/98
Alkalinity, Total	340	25.	1		SM 2320 B	mg/L	10/28/98
Bromide	ND	RL 5.	25		EPA 300.0	mg/L	10/30/98
Chloride	4100	500.	5000		EPA 300.0	mg/L	10/30/98
Fluoride	0.40	0.4	1		SM 4500-F C	mg/L	10/27/98
Hardness, Total (as CaCO ₃)	4600	0.5	0.5		EPA 200.7	mg/L	10/27/98
Nitrate/Nitrite as N, Total	ND	0.05	1		SM 4500-NO ₃ F	mg/L-N	10/28/98
pH	6.49	2.	1		EPA 150.1	pH Units	10/23/98
pH Temperature	20.8	1.	1		EPA 150.1	°C	10/23/98
Specific Conductance	13200	1.	1		SM 2510 B	µS/cm	10/27/98
Sulfate	440	10.	100		EPA 300.0	mg/L	10/30/98
Total Dissolved Solids	8980	25.	1		SM 2540 C	mg/L	10/28/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA
TEST: Non-Metals

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: 981027NO2NO3-BLK

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>mg/L-N</u>	<u>ANALYZED</u>
Nitrate/Nitrite as N, Total	ND	0.05	1	SM 4500-NO3 F	mg/L-N	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA
TEST: Non-Metals

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: 981028ALK-BLK

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>mg/L</u>	<u>ANALYZED</u>
Alkalinity - Bicarbonate	ND	25	1	SM 2320 B	mg/L	10/28/98
Alkalinity - Carbonate	ND	25	1	SM 2320 B	mg/L	10/28/98
Alkalinity - Hydroxide	ND	25	1	SM 2320 B	mg/L	10/28/98
Alkalinity, Total	ND	25	1	SM 2320 B	mg/L	10/28/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA
TEST: Non-Metals

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: 981028NO2NO3-BLK

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>mg/L-N</u>	<u>ANALYZED</u>
Nitrate/Nitrite as N, Total	ND	0.05	1	SM 4500-NO3 F	mg/L-N	10/28/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: 981028tds-BLK

TEST: Non-Metals

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>mg/L</u>	<u>ANALYZED</u>
Total Dissolved Solids	ND	25	1	SM 2540 C	mg/L	10/28/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA
TEST: Non-Metals

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: 981029ICAQ-BLK

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>mg/L</u>	<u>ANALYZED</u>
Bromide	ND	0.2	1	EPA 300.0	mg/L	10/29/98
Chloride	ND	0.1	1	EPA 300.0	mg/L	10/29/98
Fluoride	ND	0.1	1	EPA 300.0	mg/L	10/29/98
Nitrate, as N	ND	0.1	1	EPA 300.0	mg/L-N	10/29/98
Nitrite, as N	ND	0.1	1	EPA 300.0	mg/L-N	10/29/98
Sulfate	ND	0.1	1	EPA 300.0	mg/L	10/29/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA
TEST: Non-Metals

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: 9810301CAQ-BLK

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>mg/L</u>	<u>ANALYZED</u>
Bromide	ND	0.2	1	EPA 300.0	mg/L	10/30/98
Chloride	ND	0.1	1	EPA 300.0	mg/L	10/30/98
Fluoride	ND	0.1	1	EPA 300.0	mg/L	10/30/98
Nitrate, as N	ND	0.1	1	EPA 300.0	mg/L-N	10/30/98
Nitrite, as N	ND	0.1	1	EPA 300.0	mg/L-N	10/30/98
Sulfate	ND	0.1	1	EPA 300.0	mg/L	10/30/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0466
DATE SAMPLED: 10/21/98
NEL SAMPLE ID: P9810079-01

TEST: AZ METALS PKG
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	ND	.01mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Calcium	3.2	.25mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Copper	ND	.0025mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Iron	ND	.05mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Magnesium	ND	.25mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Manganese	ND	.0025mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Potassium	ND	1mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Silica	ND	.25mg/L	5	EPA 200.8	10/26/98	10/28/98
Sodium	0.30	.25mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Zinc	ND	.05mg/L	0.5	EPA 200.7	10/26/98	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0467
DATE SAMPLED: 10/21/98
NEL SAMPLE ID: P9810079-02

TEST: AZ METALS PKG
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	0.77	.01 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Calcium	220	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Copper	ND	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Iron	15	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Magnesium	91	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Manganese	0.15	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Potassium	4.3	1 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Silica	23	.25 mg/L	5	EPA 200.8	10/26/98	10/28/98
Sodium	3100	2.5 mg/L	5	EPA 200.7	10/26/98	10/27/98
Zinc	ND	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0468
DATE SAMPLED: 10/21/98
NEL SAMPLE ID: P9810079-03

TEST: AZ METALS PKG
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	0.19	.01 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Calcium	40	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Copper	ND	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Iron	0.77	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Magnesium	12	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Manganese	0.047	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Potassium	4.0	1 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Silica	14	.25 mg/L	5	EPA 200.8	10/26/98	10/28/98
Sodium	95	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Zinc	ND	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0469
DATE SAMPLED: 10/21/98
NEL SAMPLE ID: P9810079-04

TEST: AZ METALS PKG
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	1.2	.01 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Calcium	64	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Copper	ND	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Iron	2.4	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Magnesium	23	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Manganese	0.099	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Potassium	2.7	1 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Silica	22	.25 mg/L	5	EPA 200.8	10/26/98	10/28/98
Sodium	2640	2.5 mg/L	5	EPA 200.7	10/26/98	10/27/98
Zinc	ND	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0471
DATE SAMPLED: 10/21/98
NEL SAMPLE ID: P9810079-05

TEST: AZ METALS PKG
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	0.25	.01 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Calcium	52	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Copper	0.0026	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Iron	0.20	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Magnesium	19	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Manganese	0.014	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Potassium	6.2	1 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Silica	25	.25 mg/L	5	EPA 200.8	10/26/98	10/28/98
Sodium	97	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Zinc	ND	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0472
DATE SAMPLED: 10/21/98
NEL SAMPLE ID: P9810079-06

TEST: AZ METALS PKG
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	0.49	.01 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Calcium	1200	2.5 mg/L	5	EPA 200.7	10/26/98	10/27/98
Copper	ND	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Iron	0.63	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Magnesium	400	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Manganese	1.4	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Potassium	25	1 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Silica	31	.25 mg/L	5	EPA 200.8	10/26/98	10/28/98
Sodium	1400	2.5 mg/L	5	EPA 200.7	10/26/98	10/27/98
Zinc	ND	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: P100701-BLK

TEST: AZ METALS PKG

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	ND	0.01 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Calcium	ND	0.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Copper	ND	0.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Iron	ND	0.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Magnesium	ND	0.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Manganese	ND	0.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Potassium	ND	1. mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Sodium	ND	0.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Zinc	ND	0.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: P10079SI-BLK

TEST: AZ METALS PKG

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Silica	ND	0.05mg/L	1	EPA 200.8	10/26/98	10/28/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0466
DATE SAMPLED: 10/21/98
NEL SAMPLE ID: P9810079-01

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996
METHOD: EPA 8260A
MATRIX: Aqueous
DILUTION: 1

ANALYST: SRP
EXTRACTED: 10/26/98
ANALYZED: 10/26/98

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	100	86 - 115
Toluene-d8	98	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0467
DATE SAMPLED: 10/21/98
NEL SAMPLE ID: P9810079-02

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996
METHOD: EPA 8260A
MATRIX: Aqueous
DILUTION: 1

ANALYST: SRP
EXTRACTED: 10/27/98
ANALYZED: 10/27/98

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	8 µg/L	2. µg/L
Toluene	3 µg/L	2. µg/L
Ethylbenzene	2 µg/L	2. µg/L
Total Xylenes	ND	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	100	86 - 115
Toluene-d8	99	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0468
DATE SAMPLED: 10/21/98
NEL SAMPLE ID: P9810079-03

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996
METHOD: EPA 8260A
MATRIX: Aqueous
DILUTION: 1

ANALYST: SRP
EXTRACTED: 10/26/98
ANALYZED: 10/26/98

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	2 µg/L	2. µg/L
Toluene	3 µg/L	2. µg/L
Ethylbenzene	2 µg/L	2. µg/L
Total Xylenes	2 µg/L	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	99	86 - 115
Toluene-d8	99	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0469
DATE SAMPLED: 10/21/98
NEL SAMPLE ID: P9810079-04

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996
METHOD: EPA 8260A
MATRIX: Aqueous
DILUTION: 1

ANALYST: SRP
EXTRACTED: 10/27/98
ANALYZED: 10/27/98

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	11 µg/L	2. µg/L
Toluene	6 µg/L	2. µg/L
Ethylbenzene	3 µg/L	2. µg/L
Total Xylenes	3 µg/L	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	104	86 - 115
Toluene-d8	99	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0471
DATE SAMPLED: 10/21/98
NEL SAMPLE ID: P9810079-05

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996
METHOD: EPA 8260A
MATRIX: Aqueous
DILUTION: 1

ANALYST: SRP
EXTRACTED: 10/26/98
ANALYZED: 10/26/98

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	102	86 - 115
Toluene-d8	100	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0472
DATE SAMPLED: 10/21/98
NEL SAMPLE ID: P9810079-06

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996
METHOD: EPA 8260A
MATRIX: Aqueous
DILUTION: 1

ANALYST: SRP
EXTRACTED: 10/26/98
ANALYZED: 10/26/98

PARAMETER	Result	Reporting Limit
Benzene	6 µg/L	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	103	86 - 115
Toluene-d8	100	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: 9810261BTEXM-BLK

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996
METHOD: EPA 8260A
MATRIX: Aqueous

ANALYST: SRP
EXTRACTED: 10/26/98
ANALYZED: 10/26/98

PARAMETER	Result	Reporting Limit
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	102	86 - 115
Toluene-d8	100	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: 9810271BTEX1-BLK

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996
METHOD: EPA 8260A
MATRIX: Aqueous

ANALYST: SRP
EXTRACTED: 10/27/98
ANALYZED: 10/27/98

PARAMETER	Result	Reporting Limit
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	101	86 - 115
Toluene-d8	99	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

19810074

CHAIN OF CUSTODY RECORD

PROJECT NUMBER		PROJECT NAME		DATE		SAMPLERS: (Signature)	
LAB ID	DATE	TIME	MATRIX	SAMPLE NUMBER	TOTAL NUMBER OF CONTAINERS	COMPOSITE OR GRAB	REQUESTED ANALYSIS
101a1k	0735	11:20	H ₂ O	598-04166	5		ANIONS CATIONS SEE ATTACHED BTEX METALS TDS SP. CONDUCTANCE
101a1k	0834	11:20	H ₂ O	598-04167	5		
101a1k	0910	11:20	H ₂ O	598-04168	5		
101a1k	1016	11:20	H ₂ O	598-04169	5		
101a1k	1351	11:20	H ₂ O	598-04171	5		
101a1k	1537	11:20	H ₂ O	598-04172	5		
<p><i>Chain of Custody</i></p> <p><i>Signature</i></p> <p><i>Date</i></p>							
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)		DATE/TIME	
RELINQUISHED BY: (Signature)		DATE/TIME		RECEIVED BY: (Signature)		DATE/TIME	
REQUESTED TURNAROUND TIME:				SAMPLE RECEIPT REMARKS			
<input type="checkbox"/> ROUTINE <input type="checkbox"/> RUSH				RESULTS & INVOICES TO:			
CARRIER CO.				CHARGE CODE			
BILL NO.:				LABORATORY SERVICES EL PASO NATURAL GAS COMPANY 8645 RAILROAD DRIVE EL PASO, TEXAS 79904 915-759-2229 FAX: 915-759-2335			

NEL LABORATORIES

Reno • Las Vegas
Phoenix • Irvine

Las Vegas Division
4208 Arcata Way, Suite A • Las Vegas, NV 89030
(702) 657-1010 • Fax: (702) 657-1577
1-888-368-3282

CLIENT: El Paso Natural Gas Company
8645 Railroad Drive
El Paso, TX 79904
ATTN: Darrell Campbell

PROJECT NAME: NA
PROJECT NUMBER: NA

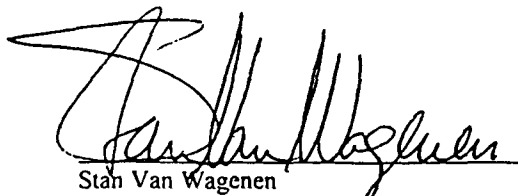
NEL ORDER ID: P9810082

Attached are the analytical results for samples in support of the above referenced project.

Samples were received by NEL in good condition, under chain of custody on 10/23/98.

Samples were analyzed as received.

Should you have any questions or comments, please feel free to contact our Client Services department at (602) 437-0099.


Stan Van Wageningen
Laboratory Manager

10/30/98
Date

CERTIFICATIONS:

	<u>Reno</u>	<u>Las Vegas</u>	<u>S. California</u>		<u>Reno</u>	<u>Las Vegas</u>	<u>S. California</u>
Arizona	AZ0520	AZ0518	AZ0583	Idaho	Certified	Certified	
California	1707	2002	2264	Montana	Certified	Certified	
US Army Corps of Engineers	Certified	Certified	Certified	Nevada	NV033	NV052	CA084
				Washington			Certified

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0470
DATE SAMPLED: 10/21/98
NEL SAMPLE ID: P9810082-01

TEST: Inorganic Non-Metals
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>UNITS</u>	<u>ANALYZED</u>
Chloride	440	20.	200	EPA 300.0	mg/L	10/29/98
Specific Conductance	2930	1.	1	SM 2510 B	μS/cm	10/27/98
Total Dissolved Solids	1910	25.	1	SM 2540 C	mg/L	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: Method Blank

PROJECT ID: NA

DATE SAMPLED: NA

PROJECT #: NA

NEL SAMPLE ID: 981027TDS-BLK

TEST: Non-Metals

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>mg/L</u>	<u>ANALYZED</u>
Total Dissolved Solids	ND	25	1	SM 2540 C	mg/L	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: Method Blank

PROJECT ID: NA

DATE SAMPLED: NA

PROJECT #: NA

NEL SAMPLE ID: 9810291CAQ-BLK

TEST: Non-Metals

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>mg/L</u>	<u>ANALYZED</u>
Bromide	ND	0.2	1	EPA 300.0	mg/L	10/29/98
Chloride	ND	0.1	1	EPA 300.0	mg/L	10/29/98
Fluoride	ND	0.1	1	EPA 300.0	mg/L	10/29/98
Nitrate, as N	ND	0.1	1	EPA 300.0	mg/L-N	10/29/98
Nitrite, as N	ND	0.1	1	EPA 300.0	mg/L-N	10/29/98
Sulfate	ND	0.1	1	EPA 300.0	mg/L	10/29/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.



CHAIN OF CUSTODY RECORD

Page _____ of _____

2/01

11 pages (partly) Daily

PROJECT NUMBER		PROJECT NAME		SAMPLERS: (Signature)		DATE: 10/16/99		TOTAL NUMBER OF CONTAINERS		COMPOSITE OR GRAB		REQUESTED ANALYSIS				REMARKS	
LAB ID	DATE	TIME	MATRIX	SAMPLE NUMBER													
10124	1200	1200	H ₂ O	598-0470				1								P9810082-01	
<div style="display: flex; justify-content: space-between;"> <div> <p>REQUESTED TURNAROUND TIME:</p> <p><input type="checkbox"/> ROUTINE <input type="checkbox"/> RUSH</p> </div> <div> <p>CARRIER CO.</p> </div> <div> <p>BILL NO.:</p> </div> </div>																	
<div style="display: flex; justify-content: space-between;"> <div> <p>RECEIVED BY: (Signature)</p> <p>DATE/TIME</p> </div> <div> <p>RECEIVED BY: (Signature)</p> <p>DATE/TIME</p> </div> <div> <p>RECEIVED BY: (Signature)</p> <p>DATE/TIME</p> </div> </div>																	
<div style="display: flex; justify-content: space-between;"> <div> <p>RECEIVED BY: (Signature)</p> <p>DATE/TIME</p> </div> <div> <p>RECEIVED BY: (Signature)</p> <p>DATE/TIME</p> </div> <div> <p>RECEIVED BY: (Signature)</p> <p>DATE/TIME</p> </div> </div>																	

NEL LABORATORIES

Reno • Las Vegas
Phoenix • Irvine

Las Vegas Division
4208 Arcata Way, Suite A • Las Vegas, NV 89030
(702) 657-1010 • Fax: (702) 657-1577
1-888-368-3282

CLIENT: El Paso Natural Gas Company
8645 Railroad Drive
El Paso, TX 79904
ATTN: Darrell Campbell

PROJECT NAME: NA
PROJECT NUMBER: NA

NEL ORDER ID: P9810080

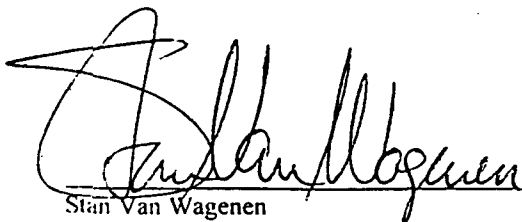
Attached are the analytical results for samples in support of the above referenced project.

Samples were received by NEL in good condition, under chain of custody on 10/23/98.

Samples were analyzed as received.

Should you have any questions or comments, please feel free to contact our Client Services department at (602) 437-0099.

Bromide: High levels of chloride interfere with bromide analysis. As a result, samples containing high levels of chloride must be diluted prior to bromide analysis. Detection limits have been adjusted to reflect these dilutions.


Stan Van Wagenen
Laboratory Manager

11/2/98
Date

CERTIFICATIONS:

	<u>Reno</u>	<u>Las Vegas</u>	<u>S. California</u>		<u>Reno</u>	<u>Las Vegas</u>	<u>S. California</u>
Arizona	AZ0520	AZ0518	AZ0583	Idaho	Certified	Certified	
California	1707	2002	2264	Montana	Certified	Certified	
US Army Corps of Engineers	Certified	Certified	Certified	Nevada	NV033	NV052	CA084
				Washington			Certified

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0473
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810080-01

TEST: AZ METALS PKG
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> mg/L	<u>REPORTING</u> LIMIT	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	0.29	.01 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Calcium	300	2.5 mg/L	5	EPA 200.7	10/26/98	10/27/98
Copper	ND	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Iron	0.099	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Magnesium	110	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Manganese	0.0068	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Potassium	9.0	1 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Silica	27	.25 mg/L	5	EPA 200.8	10/26/98	10/28/98
Sodium	180	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Zinc	ND	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0474
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810080-02

TEST: AZ METALS PKG
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	0.27	.01 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Calcium	210	2.5 mg/L	5	EPA 200.7	10/26/98	10/27/98
Copper	ND	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Iron	0.17	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Magnesium	80	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Manganese	0.032	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Potassium	10	1 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Silica	23	.25 mg/L	5	EPA 200.8	10/26/98	10/28/98
Sodium	140	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Zinc	ND	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0475
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810080-03

TEST: AZ METALS PKG
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	0.26	.01 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Calcium	200	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Copper	ND	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Iron	0.17	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Magnesium	72	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Manganese	0.029	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Potassium	10	1 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Silica	24	.25 mg/L	5	EPA 200.8	10/26/98	10/28/98
Sodium	130	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Zinc	ND	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0476
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810080-04

TEST: AZ METALS PKG
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	0.23	.01 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Calcium	48	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Copper	ND	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Iron	0.37	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Magnesium	16	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Manganese	0.017	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Potassium	7.5	1 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Silica	23	.25 mg/L	5	EPA 200.8	10/26/98	10/28/98
Sodium	87	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Zinc	ND	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0477
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810080-05

TEST: AZ METALS PKG
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> mg/L	<u>REPORTING</u> LIMIT	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	0.19	.01 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Calcium	45	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Copper	ND	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Iron	0.77	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Magnesium	13	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Manganese	0.050	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Potassium	4.0	1 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Silica	15	.25 mg/L	5	EPA 200.8	10/26/98	10/28/98
Sodium	75	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Zinc	ND	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0478
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810080-06

TEST: AZ METALS PKG
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	0.010	.01 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Calcium	ND	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Copper	ND	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Iron	ND	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Magnesium	ND	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Manganese	ND	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Potassium	ND	1 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Silica	ND	.25 mg/L	5	EPA 200.8	10/26/98	10/28/98
Sodium	ND	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Zinc	ND	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0480
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810080-07

TEST: AZ METALS PKG
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	0.016	.01 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Calcium	ND	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Copper	ND	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Iron	ND	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Magnesium	ND	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Manganese	ND	.0025 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Potassium	ND	1 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Silica	ND	.25 mg/L	5	EPA 200.8	10/26/98	10/28/98
Sodium	ND	.25 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Zinc	ND	.05 mg/L	0.5	EPA 200.7	10/26/98	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: P100701-BLK

TEST: AZ METALS PKG

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Boron	ND	0.01mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Calcium	ND	0.25mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Copper	ND	0.0025mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Iron	ND	0.05mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Magnesium	ND	0.25mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Manganese	ND	0.0025mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Potassium	ND	1.mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Sodium	ND	0.25mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Zinc	ND	0.05mg/L	0.5	EPA 200.7	10/26/98	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: P10080SI-BLK

TEST: AZ METALS PKG

<u>PARAMETER</u>	<u>RESULT</u> <u>mg/L</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>DIGESTED</u>	<u>ANALYZED</u>
Silica	ND	0.05mg/L	1	EPA 200.8	10/26/98	10/28/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0473
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810080-01

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	REPORTING			METHOD	UNITS	ANALYZED
		LIMIT	D. F.				
Alkalinity - Bicarbonate	180	25.	1		SM 2320 B	mg/L	10/30/98
Alkalinity - Carbonate	ND	25.	1		SM 2320 B	mg/L	10/30/98
Alkalinity - Hydroxide	ND	25.	1		SM 2320 B	mg/L	10/30/98
Alkalinity, Total	180	25.	1		SM 2320 B	mg/L	10/30/98
Bromide	ND	2.	10		EPA 300.0	mg/L	10/30/98
Chloride	800	20.	200		EPA 300.0	mg/L	10/30/98
Fluoride	0.90	0.4	1		SM 4500-F C	mg/L	10/29/98
Hardness, Total (as CaCO ₃)	1200	5.	5		EPA 200.7	mg/L	10/27/98
Nitrate/Nitrite as N, Total	0.83	0.05	1		SM 4500-NO ₃ F	mg/L-N	10/28/98
pH	7.06	2.	1		EPA 150.1	pH Units	10/23/98
pH Temperature	20.8	1.	1		EPA 150.1	°C	10/23/98
Specific Conductance	2900	1.	1		SM 2510 B	µS/cm	10/29/98
Sulfate	210	20.	200		EPA 300.0	mg/L	10/30/98
Total Dissolved Solids	1960	25.	1		SM 2540 C	mg/L	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0474
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810080-02

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	REPORTING			METHOD	UNITS	ANALYZED
	RESULT	LIMIT	D. F.			
Alkalinity - Bicarbonate	150	25.	1	SM 2320 B	mg/L	10/30/98
Alkalinity - Carbonate	ND	25.	1	SM 2320 B	mg/L	10/30/98
Alkalinity - Hydroxide	ND	25.	1	SM 2320 B	mg/L	10/30/98
Alkalinity, Total	150	25.	1	SM 2320 B	mg/L	10/30/98
Bromide	ND	2.	10	EPA 300.0	mg/L	10/30/98
Chloride	610	20.	200	EPA 300.0	mg/L	10/30/98
Fluoride	0.99	0.4	1	SM 4500-F C	mg/L	10/29/98
Hardness, Total (as CaCO ₃)	850	5.	5	EPA 200.7	mg/L	10/27/98
Nitrate/Nitrite as N, Total	0.44	0.05	1	SM 4500-NO ₃ F	mg/L-N	10/28/98
pH	7.39	2.	1	EPA 150.1	pH Units	10/23/98
pH Temperature	20.0	1.	1	EPA 150.1	°C	10/23/98
Specific Conductance	2280	1.	1	SM 2510 B	µS/cm	10/29/98
Sulfate	170	20.	200	EPA 300.0	mg/L	10/30/98
Total Dissolved Solids	1520	25.	1	SM 2540 C	mg/L	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0475
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810080-03

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	REPORTING		METHOD	UNITS	ANALYZED
		LIMIT	D. F.			
Alkalinity - Bicarbonate	150	25.	1	SM 2320 B	mg/L	10/30/98
Alkalinity - Carbonate	ND	25.	1	SM 2320 B	mg/L	10/30/98
Alkalinity - Hydroxide	ND	25.	1	SM 2320 B	mg/L	10/30/98
Alkalinity, Total	150	25.	1	SM 2320 B	mg/L	10/30/98
Bromide	ND	2.	10	EPA 300.0	mg/L	10/30/98
Chloride	600	20.	200	EPA 300.0	mg/L	10/30/98
Fluoride	0.90	0.4	1	SM 4500-F C	mg/L	10/29/98
Hardness, Total (as CaCO ₃)	810	0.5	0.5	EPA 200.7	mg/L	10/27/98
Nitrate/Nitrite as N, Total	0.51	0.05	1	SM 4500-NO ₃ F	mg/L-N	10/28/98
pH	7.36	2.	1	EPA 150.1	pH Units	10/23/98
pH Temperature	20.1	1.	1	EPA 150.1	°C	10/23/98
Specific Conductance	2310	1.	1	SM 2510 B	µS/cm	10/29/98
Sulfate	170	20.	200	EPA 300.0	mg/L	10/30/98
Total Dissolved Solids	1690	25.	1	SM 2540 C	mg/L	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0476
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810080-04

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	REPORTING		D. F.	METHOD	UNITS	ANALYZED
		LIMIT					
Alkalinity - Bicarbonate	170	25.	1		SM 2320 B	mg/L	10/30/98
Alkalinity - Carbonate	ND	25.	1		SM 2320 B	mg/L	10/30/98
Alkalinity - Hydroxide	ND	25.	1		SM 2320 B	mg/L	10/30/98
Alkalinity, Total	170	25.	1		SM 2320 B	mg/L	10/30/98
Bromide	ND	5.	25		EPA 300.0	mg/L	10/30/98
Chloride	47	2.5	25		EPA 300.0	mg/L	10/30/98
Fluoride	1.3	0.4	1		SM 4500-F C	mg/L	10/29/98
Hardness, Total (as CaCO ₃)	190	0.5	0.5		EPA 200.7	mg/L	10/27/98
Nitrate/Nitrite as N, Total	1.3	0.05	1		SM 4500-NO ₃ F	mg/L-N	10/28/98
pH	7.94	2.	1		EPA 150.1	pH Units	10/23/98
pH Temperature	19.9	1.	1		EPA 150.1	°C	10/23/98
Specific Conductance	686	1.	1		SM 2510 B	µS/cm	10/29/98
Sulfate	92	2.5	25		EPA 300.0	mg/L	10/30/98
Total Dissolved Solids	439	25.	1		SM 2540 C	mg/L	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0477
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810080-05

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	REPORTING LIMIT	D. F.	METHOD	UNITS	ANALYZED
Alkalinity - Bicarbonate	130	25.	1	SM 2320 B	mg/L	10/30/98
Alkalinity - Carbonate	ND	25.	1	SM 2320 B	mg/L	10/30/98
Alkalinity - Hydroxide	ND	25.	1	SM 2320 B	mg/L	10/30/98
Alkalinity, Total	130	25.	1	SM 2320 B	mg/L	10/30/98
Bromide	ND	5.	25	EPA 300.0	mg/L	10/30/98
Chloride	100	2.5	25	EPA 300.0	mg/L	10/30/98
Fluoride	1.6	0.4	1	SM 4500-F C	mg/L	10/29/98
Hardness, Total (as CaCO ₃)	160	0.5	0.5	EPA 200.7	mg/L	10/27/98
Nitrate/Nitrite as N, Total	ND	0.05	1	SM 4500-NO ₃ F	mg/L-N	10/28/98
pH	8.26	2.	1	EPA 150.1	pH Units	10/23/98
pH Temperature	20.1	1.	1	EPA 150.1	°C	10/23/98
Specific Conductance	662	1.	1	SM 2510 B	µS/cm	10/29/98
Sulfate	50	2.5	25	EPA 300.0	mg/L	10/30/98
Total Dissolved Solids	424	25.	1	SM 2540 C	mg/L	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0478
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810080-06

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	REPORTING			METHOD	UNITS	ANALYZED
	RESULT	LIMIT	D. F.			
Alkalinity - Bicarbonate	ND	25.	1	SM 2320 B	mg/L	10/30/98
Alkalinity - Carbonate	ND	25.	1	SM 2320 B	mg/L	10/30/98
Alkalinity - Hydroxide	ND	25.	1	SM 2320 B	mg/L	10/30/98
Alkalinity, Total	ND	25.	1	SM 2320 B	mg/L	10/30/98
Bromide	ND	0.2	1	EPA 300.0	mg/L	10/30/98
Chloride	ND	0.1	1	EPA 300.0	mg/L	10/30/98
Fluoride	ND	0.4	1	SM 4500-F C	mg/L	10/29/98
Hardness, Total (as CaCO ₃)	ND	0.5	0.5	EPA 200.7	mg/L	10/27/98
Nitrate/Nitrite as N, Total	ND	0.05	1	SM 4500-NO ₃ F	mg/L-N	10/28/98
pH	5.77	2.	1	EPA 150.1	pH Units	10/23/98
pH Temperature	21.2	1.	1	EPA 150.1	°C	10/23/98
Specific Conductance	1.22	1.	1	SM 2510 B	µS/cm	10/29/98
Sulfate	ND	0.1	1	EPA 300.0	mg/L	10/30/98
Total Dissolved Solids	ND	25.	1	SM 2540 C	mg/L	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0480
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810080-07

TEST: Inorganic Non-Metals
MATRIX: Aqueous

PARAMETER	RESULT	REPORTING		METHOD	UNITS	ANALYZED
		LIMIT	D. F.			
Alkalinity - Bicarbonate	ND	25.	1	SM 2320 B	mg/L	10/30/98
Alkalinity - Carbonate	ND	25.	1	SM 2320 B	mg/L	10/30/98
Alkalinity - Hydroxide	ND	25.	1	SM 2320 B	mg/L	10/30/98
Alkalinity, Total	ND	25.	1	SM 2320 B	mg/L	10/30/98
Bromide	ND	0.2	1	EPA 300.0	mg/L	10/30/98
Chloride	ND	0.1	1	EPA 300.0	mg/L	10/30/98
Fluoride	ND	0.4	1	SM 4500-F C	mg/L	10/29/98
Hardness, Total (as CaCO ₃)	ND	0.5	0.5	EPA 200.7	mg/L	10/27/98
Nitrate/Nitrite as N, Total	ND	0.05	1	SM 4500-NO ₃ F	mg/L-N	10/28/98
pH	5.67	2.	1	EPA 150.1	pH Units	10/23/98
pH Temperature	21.8	1.	1	EPA 150.1	°C	10/23/98
Specific Conductance	1.23	1.	1	SM 2510 B	µS/cm	10/29/98
Sulfate	ND	0.1	1	EPA 300.0	mg/L	10/30/98
Total Dissolved Solids	59	25.	1	SM 2540 C	mg/L	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA
TEST: Non-Metals

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: 981027TDS-BLK

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>mg/L</u>	<u>ANALYZED</u>
Total Dissolved Solids	ND	25	1	SM 2540 C	mg/L	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA
TEST: Non-Metals

CLIENT ID: ~~Method Blank~~
DATE SAMPLED: NA
NEL SAMPLE ID: 981028NO2NO3-BLK

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>mg/L-N</u>	<u>ANALYZED</u>
Nitrate/Nitrite as N, Total	ND	0.05	1	SM 4500-NO3 F	mg/L-N	10/28/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: 981030ALK-BLK

TEST: Non-Metals

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>mg/L</u>	<u>ANALYZED</u>
Alkalinity - Bicarbonate	ND	25	1	SM 2320 B	mg/L	10/30/98
Alkalinity - Carbonate	ND	25	1	SM 2320 B	mg/L	10/30/98
Alkalinity - Hydroxide	ND	25	1	SM 2320 B	mg/L	10/30/98
Alkalinity, Total	ND	25	1	SM 2320 B	mg/L	10/30/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: ~~Method Blank~~
DATE SAMPLED: NA
NEL SAMPLE ID: 981030ICAQ-BLK

TEST: Non-Metals

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>mg/L</u>	<u>ANALYZED</u>
Bromide	ND	0.2	1	EPA 300.0	mg/L	10/30/98
Chloride	ND	0.1	1	EPA 300.0	mg/L	10/30/98
Fluoride	ND	0.1	1	EPA 300.0	mg/L	10/30/98
Nitrate, as N	ND	0.1	1	EPA 300.0	mg/L-N	10/30/98
Nitrite, as N	ND	0.1	1	EPA 300.0	mg/L-N	10/30/98
Sulfate	ND	0.1	1	EPA 300.0	mg/L	10/30/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0473
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810080-01

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 10/26/98

DILUTION: 1

ANALYZED: 10/26/98

ANALYST: SRP

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	102	86 - 115
Toluene-d8	100	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0474
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810080-02

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 10/26/98

DILUTION: 1

ANALYZED: 10/26/98

ANALYST: SRP

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	6 µg/L	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	103	86 - 115
Toluene-d8	100	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0475
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810080-03

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 10/27/98

DILUTION: 1

ANALYZED: 10/27/98

ANALYST: SRP

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	6 µg/L	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	102	86 - 115
Toluene-d8	99	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0476
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810080-04

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 10/27/98

DILUTION: 1

ANALYZED: 10/27/98

ANALYST: SRP

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	99	86 - 115
Toluene-d8	99	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0477
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810080-05

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 10/27/98

DILUTION: 1

ANALYZED: 10/27/98

ANALYST: SRP

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	100	86 - 115
Toluene-d8	99	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0478
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810080-06

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 10/27/98

DILUTION: 1

ANALYZED: 10/27/98

ANALYST: SRP

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	101	86 - 115
Toluene-d8	98	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: S98-0480
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810080-07

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 10/27/98

DILUTION: 1

ANALYZED: 10/27/98

ANALYST: SRP

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	102	86 - 115
Toluene-d8	99	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: 9810261BTEXM-BK

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 10/26/98

ANALYZED: 10/26/98

ANALYST: SRP

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	ND	2 µg/L
Toluene	ND	2 µg/L
Ethylbenzene	ND	2 µg/L
Total Xylenes	ND	2 µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	102	86 - 115
Toluene-d8	100	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

CLIENT: El Paso Natural Gas Company
PROJECT NAME: NA
PROJECT NUMBER: NA

CLIENT ID: Method Blank
DATE SAMPLED: NA
NEL SAMPLE ID: 9810271BTEX1-BK

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous

EXTRACTED: 10/27/98

ANALYZED: 10/27/98

ANALYST: SRP

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	ND	2 µg/L
Toluene	ND	2 µg/L
Ethylbenzene	ND	2 µg/L
Total Xylenes	ND	2 µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	101	86 - 115
Toluene-d8	99	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
 PROJECT ID: NA
 PROJECT #: NA
 TEST: Metals
 MATRIX: Aqueous

<u>PARAMETER</u>	<u>NEL Sample ID</u>	<u>Spike Amount</u>	<u>Spike Result</u>	<u>Percent Recovery</u>	<u>Acceptable Range</u>	<u>RPD</u>
Barium	P10070I-LCS	1	0.99	99	85 - 115	
Barium	P9810070-01-MS	1	1.04	100	75 - 125	
Barium	P9810070-01-MSD	1	1.04	100	75 - 125	0.
Boron	P10070I-LCS	1	1.01	101	85 - 115	
Boron	P9810070-01-MS	1	1.22	100	75 - 125	
Boron	P9810070-01-MSD	1	1.21	99	75 - 125	
Cadmium	P10070I-LCS	0.2	0.2	100	85 - 115	
Cadmium	P9810070-01-MS	0.2	0.197	99	75 - 125	
Cadmium	P9810070-01-MSD	0.2	0.198	99	75 - 125	0.5
Calcium	P10070I-LCS	20	20.4	102	85 - 115	
Calcium	P9810070-01-MS	20	71.6	98	75 - 125	
Calcium	P9810070-01-MSD	20	72	100	75 - 125	2.
Chromium	P10070I-LCS	0.5	0.51	102	85 - 115	
Chromium	P9810070-01-MS	0.5	0.5	100	75 - 125	
Chromium	P9810070-01-MSD	0.5	0.499	100	75 - 125	0.2
Copper	P10070I-LCS	0.5	0.501	100	85 - 115	
Copper	P9810070-01-MS	0.5	0.501	100	75 - 125	
Copper	P9810070-01-MSD	0.5	0.503	101	75 - 125	0.4
Iron	P10070I-LCS	1	1.04	104	85 - 115	
Iron	P9810070-01-MS	1	1.06	100	75 - 125	
Iron	P9810070-01-MSD	1	1.06	100	75 - 125	0.
Magnesium	P10070I-LCS	20	20.3	102	85 - 115	
Magnesium	P9810070-01-MS	20	38	105	75 - 125	
Magnesium	P9810070-01-MSD	20	38.2	106	75 - 125	0.9
Manganese	P10070I-LCS	0.5	0.491	98	85 - 115	
Manganese	P9810070-01-MS	0.5	0.487	97	75 - 125	
Manganese	P9810070-01-MSD	0.5	0.485	97	75 - 125	0.4
Potassium	P10070I-LCS	20	20	100	85 - 115	
Potassium	P9810070-01-MS	20	24.2	101	75 - 125	
Potassium	P9810070-01-MSD	20	24.3	101	75 - 125	0.5
Silver	P10070I-LCS	0.5	0.48	96	85 - 115	
Silver	P9810070-01-MS	0.5	0.479	96	75 - 125	
Silver	P9810070-01-MSD	0.5	0.479	96	75 - 125	0.
Sodium	P10070I-LCS	20	20	100	85 - 115	
Sodium	P9810070-01-MS	20	90.8	109	75 - 125	
Sodium	P9810070-01-MSD	20	91.6	113	75 - 125	3.6
Zinc	P10070I-LCS	0.5	0.51	102	85 - 115	

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA
TEST: Metals
MATRIX: Aqueous

<u>PARAMETER</u>	<u>NEL Sample ID</u>	<u>Spike Amount</u>	<u>Spike Result</u>	<u>Percent Recovery</u>	<u>Acceptable Range</u>	<u>RPD</u>
Zinc	P9810070-01-MS	0.5	0.543	109	75 - 125	
Zinc	P9810070-01-MSD	0.5	0.542	108	75 - 125	0.2

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
 PROJECT ID: NA
 PROJECT #: NA
 TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996
 MATRIX: Aqueous

<u>PARAMETER</u>	<u>NEL Sample ID</u>	<u>Spike Amount</u>	<u>Spike Result</u>	<u>Percent Recovery</u>	<u>Acceptable Range</u>	<u>RPD</u>
Benzene	9810271BTEX1-LCS	50	45.75	92	80 - 120	
Benzene	P9810080-01-MS	50	49	98	76 - 127	
Benzene	P9810080-01-MSD	50	52	104	76 - 127	5.9
Toluene	9810271BTEX1-LCS	50	40.71	81	80 - 120	
Toluene	P9810080-01-MS	50	43	86	76 - 125	
Toluene	P9810080-01-MSD	50	46	92	76 - 125	6.7
Ethylbenzene	9810271BTEX1-LCS	50	46.5	93	80 - 120	
Ethylbenzene	P9810080-01-MS	50	49	98	70 - 130	
Ethylbenzene	P9810080-01-MSD	50	53	106	70 - 130	7.8
Total Xylenes	9810271BTEX1-LCS	150	138.78	93	80 - 120	
Total Xylenes	P9810080-01-MS	150	145	97	70 - 130	
Total Xylenes	P9810080-01-MSD	150	155	103	70 - 130	6.7

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.



**EL PASO
NATURAL GAS**

CHAIN OF CUSTODY RECORD

080080

10/30

Charges 6249

Page _____ of _____

[illegible][illegible]

NEL LABORATORIES

Reno • Las Vegas
Phoenix • Irvine

Las Vegas Division
4208 Arcata Way, Suite A • Las Vegas, NV 89030
(702) 657-1010 • Fax: (702) 657-1577
1-888-368-3282

CLIENT: El Paso Natural Gas Company
8645 Railroad Drive
El Paso, TX 79904
ATTN: Darrell Campbell

PROJECT NAME: NA
PROJECT NUMBER: NA

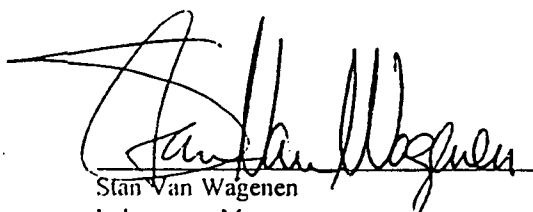
NEL ORDER ID: P9810081

Attached are the analytical results for samples in support of the above referenced project.

Samples were received by NEL in good condition, under chain of custody on 10/23/98.

Samples were analyzed as received.

Should you have any questions or comments, please feel free to contact our Client Services department at (602) 437-0099.


Stan Van Wagenen
Laboratory Manager

10/30/98
Date

CERTIFICATIONS:

	<u>Reno</u>	<u>Las Vegas</u>	<u>S. California</u>		<u>Reno</u>	<u>Las Vegas</u>	<u>S. California</u>
Arizona	AZ0520	AZ0518	AZ0583	Idaho	Certified	Certified	
California	1707	2002	2264	Montana	Certified	Certified	
US Army Corps of Engineers	Certified	Certified	Certified	Nevada	NV033	NV052	CA084
				Washington			Certified

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA

CLIENT ID: S98-0479
DATE SAMPLED: 10/22/98
NEL SAMPLE ID: P9810081-01

TEST: Inorganic Non-Metals
MATRIX: Aqueous

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>UNITS</u>	<u>ANALYZED</u>
Chloride	56	5.	50	EPA 300.0	mg/L	10/29/98
Specific Conductance	994	1.	1	SM 2510 B	µS/cm	10/27/98
Total Dissolved Solids	659	25.	1	SM 2540 C	mg/L	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: Method Blank

PROJECT ID: NA

DATE SAMPLED: NA

PROJECT #: NA

NEL SAMPLE ID: 981027TDS-BLK

TEST: Non-Metals

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>mg/L</u>	<u>ANALYZED</u>
Total Dissolved Solids	ND	25	1	SM 2540 C	mg/L	10/27/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: Method Blank

PROJECT ID: NA

DATE SAMPLED: NA

PROJECT #: NA

NEL SAMPLE ID: 981029ICAQ-BLK

TEST: Non-Metals

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>D. F.</u>	<u>METHOD</u>	<u>mg/L</u>	<u>ANALYZED</u>
Bromide	ND	0.2	1	EPA 300.0	mg/L	10/29/98
Chloride	ND	0.1	1	EPA 300.0	mg/L	10/29/98
Fluoride	ND	0.1	1	EPA 300.0	mg/L	10/29/98
Nitrate, as N	ND	0.1	1	EPA 300.0	mg/L-N	10/29/98
Nitrite, as N	ND	0.1	1	EPA 300.0	mg/L-N	10/29/98
Sulfate	ND	0.1	1	EPA 300.0	mg/L	10/29/98

D.F. - Dilution Factor

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: S98-0479

PROJECT ID: NA

DATE SAMPLED: 10/22/98

PROJECT #: NA

NEL SAMPLE ID: P9810081-01

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

METHOD: EPA 8260A

ANALYST: SRP

MATRIX: Aqueous

EXTRACTED: 10/27/98

DILUTION: 1

ANALYZED: 10/27/98

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	101	86 - 115
Toluene-d8	100	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

CLIENT ID: Method Blank

PROJECT ID: NA

DATE SAMPLED: NA

PROJECT #: NA

NEL SAMPLE ID: 9810271BTX1-BLK

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

METHOD: EPA 8260A

ANALYST: SRP

MATRIX: Aqueous

EXTRACTED: 10/27/98

ANALYZED: 10/27/98

<u>PARAMETER</u>	<u>Result</u>	<u>Reporting Limit</u>
Benzene	ND	2. µg/L
Toluene	ND	2. µg/L
Ethylbenzene	ND	2. µg/L
Total Xylenes	ND	2. µg/L

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>% Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	101	86 - 115
Toluene-d8	99	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
 PROJECT ID: NA
 PROJECT #: NA
 TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996
 MATRIX: Aqueous

<u>PARAMETER</u>	<u>NEL Sample ID</u>	<u>Spike Amount</u>	<u>Spike Result</u>	<u>Percent Recovery</u>	<u>Acceptable Range</u>	<u>RPD</u>
Benzene	9810271BTEX1-LCS	50	45.75	92	80 - 120	
Toluene	9810271BTEX1-LCS	50	40.71	81	80 - 120	
Ethylbenzene	9810271BTEX1-LCS	50	46.5	93	80 - 120	
Total Xylenes	9810271BTEX1-LCS	150	138.78	93	80 - 120	

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	99	86 - 115
Toluene-d8	98	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA
TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996
MATRIX: Aqueous

<u>PARAMETER</u>	<u>NEL Sample ID</u>	<u>Spike Amount</u>	<u>Spike Result</u>	<u>Percent Recovery</u>	<u>Acceptable Range</u>	<u>RPD</u>
Benzene	P9810080-01-MS	50	49	98	76 - 127	
Toluene	P9810080-01-MS	50	43	86	76 - 125	
Ethylbenzene	P9810080-01-MS	50	49	98	70 - 130	
Total Xylenes	P9810080-01-MS	150	145	97	70 - 130	

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	101	86 - 115
Toluene-d8	98	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company
PROJECT ID: NA
PROJECT #: NA
TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996
MATRIX: Aqueous

<u>PARAMETER</u>	<u>NEL Sample ID</u>	<u>Spike Amount</u>	<u>Spike Result</u>	<u>Percent Recovery</u>	<u>Acceptable Range</u>	<u>RPD</u>
Benzene	P9810080-01-MSD	50	52	104	76 - 127	5.9
Toluene	P9810080-01-MSD	50	46	92	76 - 125	6.7
Ethylbenzene	P9810080-01-MSD	50	53	106	70 - 130	7.8
Total Xylenes	P9810080-01-MSD	150	155	103	70 - 130	6.7

QUALITY CONTROL DATA:

<u>Surrogate</u>	<u>Percent Recovery</u>	<u>Acceptable Range</u>
4-Bromofluorobenzene	105	86 - 115
Toluene-d8	97	88 - 110

ND - Not Detected

This report shall not be reproduced except in full, without the written approval of the laboratory.

