GW - 07

REPORTS

YEAR(S):

1998

RECEIVED

FEB 1 5 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

Sect	ion	<u>F</u>	age
LIST	OF T	ABLES	. ii
LIST	OF F	IGURES	. iii
LIST	OF G	RAPHS	. iv
LIST	OF A	PPENDICES	vii
1.0	INT	RODUCTION	1-1
	1.1	Program Wells and Sampling Schedule	1-1
	1.2	Non-Program Wells and Sampling Schedule	1-3
	1.3	Depth to Groundwater Measurements	1-3
	1.4	Sampling Procedures	1-4
2.0	RES	SULTS OF MONITORING ACTIVITIES	2-1
	2.1	Field Measurements	2-1
	2.2	Inorganic Constituents	2-1
	2.3	Organic Constituents	2-3
3.0	GRO	DUNDWATER REMEDIATION SYSTEM	3-1
4.0	CON	NCLUSIONS	4-1
5.0	REC	OMMENDATIONS	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

1998 ANNUAL GROUNDWATER REMEDIATION REPORT

El Paso Energy Corporation

February 12, 1999

LIST OF APPENDICES

APPENDIX

A Laboratory Analytical Reports for Groundwater Samples Collected During 1998

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

1.0 <u>INTRODUCTION</u>

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

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		×
ACW-12	х	x
ACW-13	x	×
ACW-14	х	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 <u>Sampling Procedures</u>

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 <u>Field Measurements</u>

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 <u>Inorganic Constituents</u>

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.

		CONCENTRATION TRENDS	
MONITOR WELL	TDS	CHLORIDE	SODIUM
ACW-1	A	A	•
ACW-2A	•	▼	•
ACW-4	A	A	•
ACW-5	▼	▼	•
ACW-6	A	•	•
ACW-7	•	•	•
ACW-8	▼	•	•
ACW-9	•	•	▼
ACW-10	A	•	•
ACW-11	A	A	A
ACW-12	A	A	A
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	A
ACW-2A	•
ACW-4	A
ACW-5	▼
ACW-6	A
ACW-7	•
ACW-8	•
ACW-9	A
ACW-10	▼
ACW-11	A
ACW-12	A
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.

1998 ANNUAL GROUNDWATER REMEDIATION REPORT

El Paso Energy Corporation

February 12, 1999

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

		TOP OF	DEPTH TO		
	SCREENED	CASING	GROUNDWATER	DEPTH TO	GROUNDWATER
MONITOR WELL	INTERVAL (FEET-BGL)	(FEET-AMSL)	MEASUREMENT DATE	GROUNDWATER (FEET-TOC)	ELEVATION (FEET-AMSL)
ACW-01	110 to 130	3,300.87	02/19/97	106.65	3194.22
AC44-01	11010100	3,300.07	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 08/11/98	110.30 110.32	3192.17 3192.15
			10/21/98	110.32	3192.15
ACW-10	140 to 160	3,297.57	02/19/97	106.31	3191.26
ACW-10	140 10 100	3,297.57	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
	<u> </u>		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
		1	10/23/97	109.39	3190.17
			02/24/98	109.38	3190.18
		1	05/14/98	109.35	3190.21
Í		1	08/11/98	109.40	3190.16
		İ	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

AMSL : Above Mean Sea Level
 NM : No Measurement Taken
 BGL: Below Ground Level

age 1 of	9	
age	ő	
о.	Page	

	Sample Date	geuseue' hôy	Toluene, µgrì	Ethylbensene, lygd	Total Xylene, Ingil	Specific Conductance, umho/cm	pht, e.u. Total Dissolved	√gm,≉bilo≳	Chloride, mg/l	Sulfate, mgA pH Temperatura	O. Bromide, mg/l	Fluoride, mg/l	Ngm ,M-sastiM	Nitrate as MO3,	Ngm ,nono8	Calcium, mg/l	Copper, mg/l	Ngm , most	Magneslum, mgA	Manganese, Mgm	∖gm ,mulzesjo9	5tlks, mg/l	Sodium, mgA	Sinc; mg/i	CaCO ₁), mg/l	Bicarbonate, Apm
ACW 604	05-Mar-93	Ŀ		,		14.350	ľ	g	88	Ľ	Ľ	!		Ŀ	L	i	Ī	-	-	-		1		-	+	ı
	45 Can 03			ļ	t	25.05	"	╁	Ļ	<u>'</u>				ļ	1	ı	,	ı	1	-	1	ı	1			ı
	10 Now 03			1	╁	1, 780		╁	3.683	<u>`</u>		╁		ŀ	ı	ļ	,		1	,	ı	1	1	-	┧	1
200	200		T	T	$^{+}$	46.630	╀	╁	1		 - 	╀		ŀ	ŀ	Ī	,	1		,	ı	-	-	-	ı	ı
ACW #01	VO-MDI-94	-	•	;	+	0,25,01	+	+	+	+	\dagger	+		1	\int		1	1	+	Ì			-	-	-	ı
ACW #01	27-Oct-94	1	ı	,	1	4	4	4	┥	'	1	4	4	ı	1	i	,	1	+	1		+	t,	0000	٤	
ACW #01	16-May-95	\$	1 0	Ş	0	14,000	8.3 8,		_	240			4	1	0.9	8	40.025	86.	+	0,062	2	+	+	1	3 5	1
ACW #01	27~Jun-95	4.6	4.6	2.5	5	1,400	8.4 8,	┝	6,700 26	1 26	<u> </u>	6 22	_	1	1.0	74	<0.025	0.59	-	50.	2	+	+	4	2 2	ı
ACM #04	29-Aug-95	٥	5	â	45	21000	8.2 12	H	⊢	2	┪	L	L	1	8.0	29	<0.025	0.18	_	900	11	┪	-	4	828	ı
8CM 804	06-Feb-96	-	6	╁	╀	٠	↓_	╀	╁	280	2.1	۲	0.02	1	1.0	82	90.05	95.0	<u>\$</u>	690.0	16	36 4	\dashv		8	1
	Se Fob of	99	, ;	╁	╀	╁	╀	╁	╁	Ļ	t	╀	L		-	2	6.1	2	-	2	11	41	_	7	759	1
ACW BUT	08 May, 06	3 6	3 5	۱,	╀	╈	1	╁	4 130	L	Ť	4.	╀		9	g	100	9.0	╀	80.0	8	32	3,070	<0.05	310	ı
ACW #UT	42 Pro- 20	3	3	╄	+	╅	4-	+	+	1	†	1	╀		:	5	9	880	╁	8200	8.6	┝	┝	0.008	730	ł
ACW #01	13-Aug-90	3	7	+	+	+	4	2000	+	1	+	+	4	1	: :	1	2 6	3 8	╀	18	=	╁	3000	├	810	ļ١
ACW #01	05-Nov-96	5.6	5.5	4	+	╅	8.1 ',	7	4	; 	+	+	1	1	2	6	À	B	╁	*	+	+	┿	╄	1	ŀ
ACW #01	06-May-97	14	15	-	-	ᅥ	_	٦	-1	<u>'</u>	<u>'</u>	4	4	1	1	1	1	-	1	1	1 3	+	+	+	١	
ACW #01	21-Nov-97	6.1	4.8	<0.5	Н	Н	_	Н	_	2	Ý	_		i	1.0	æ	£0.04	9.0	ş	80	8	╅	006.	8	2 1	ı
ACW #01D	21-Nov-97	6.7	5.7	40.5	┝	20,700	82 12	-	┝	320	- 2	2.2	<0.5	ı	6.0	76	<0.01	0.5	80	0.07	R	5	4	4	979	١Į
ACW #04	12-Mav-98	88	=	┝	├	┪	╄	Н	⊢	L	┝	┞	L	1	1	1	1	ı	1	ı	-	\dashv	ı	4	+	П
ACW #01	20-Oct-98	^	+	┢	╁	1	8.18 12	۰	₽	260 17	17.7	5 2.3	Ľ	Ŀ		8	<0.0025	0.74	110	0.062	16	15 3	-	6 8 8	<i>8</i>	8
400 F	DE-May-97	Ę	t		L	1-	ட	t	╄	L	Ľ			ı	ı	Ī			-	-	ı	-	ı			1
WAY SOLA	20-0-197	Q	ξ	5	╀	24 400	97	╈	╀	5	+	7.6	Ľ	!	=	6	6001	0.2	٥	10.0	12	10	000'9	<0.02	200	1
WAY BOZH	11 Man. 08	5	3 5	۶	╁	╁╴	+-	十	╄	Ļ	F	╁	Ł	ļ	ı	ı	,	1	-	1	1	1	-	⊢	ı	1
ACW WIZA	10.04.00	3 5	2 5	3 8	3 8	25,000	╁	╈	4	Ļ	83	1	900		4	3.0	<0.0025	750	١,	<0.0025	12	┝	6,400	<0.05	2,400	1500
ACW #UZA	8		,	3	╁	+	4	t	4	╀	+	╀		1	1		t	1	╋	Ì		┢	╀	╄┈	-	١
ACW #03	06-May-97	န္တ	22	티	₽ 	18,500	+	┪	4	-	†	+		1	ı	1	1	1	ı	1	+	1	+	+	<u> </u>	1
ACW #03	20-Oct-97	喜	8.2	8	┥	23,000	- 3	7	4	<u>'</u>	<u>' </u>	1	1	1	1	,	,	1	1	†	+	+	+	+	+	
ACW #03	11-May-98	8	2	ē	£	24,000	5	15,000 8	8,500	1	1	4	-	1	1	1	1	1	+	1	+	+	+	+	1	יןי
ACW #03	19-Oct-98	1	ı	1	ı	20,800	- 12	-	_	1	<u>'</u>	<u> </u>		_			,	,	1	1		,	+		†	1
ACW #04	06-May-97	53	12	<5.0	<10	-	_	\neg	\vdash	1		\dashv	1	4		1	1	1	1	1	1	+	1	4	1	1
ACW #04	20-04-97	170	150	<5.0	110	172,000	7.3 94		-	2,100	ន	30.5		ı	2.0	280	£0.03	0.2	8	29	2 22	13	8	12	g	1
ACW #04	12-May-98	190	170	_	Н	-			_		-	-		ı	ı	ł	1	1	1	1	1	1	4	4	1	1
ACW 804	19-0-61-98	190	45	64	8	121,000	6.74 83	Н	-	71 008,	17.6 <20	0.51	<0.5	1	1.1	610	<0.0025	0.14	370	2	٤	7	37,000	60.05	3	₹
ACM #PS	10-Mar-93	_	1	,	_	10,400	9	-	L	1	-	1	1	1	1	i	ì	ı	ı	1	1	1	1	1	1	Ί
ACAV BOS	17-Jun-93	1	i	,	┝	4,480	├-	⊢	1,228	'	-	1	1	1	1	1	1	-	-		1	1	-	-	1	4
300 1800	16-Sep-93	,	ļ	1	┞	64.	Ē	Η.	H	\ \ !		ı		ı	ı	1	1	1	1	1	1	1	ı	1	ı	1
ACM BUS	09-Nov-93	1		١,		4,390	╀	-	022	'	<u> </u>	H		1	ı	ı	,	1	1	,		1	-			Ч
STATE OF THE PARTY	21. Amr. B4		t	ļ	-	4 131	╀	╀	╁		<u>'</u>	H			ı	,	,		۱,	1	1	-	1		1	1
ACW #05	2 2		†	1	1	2 2	╀	╀	t	L	F	ł		ļ		1	<u>,</u>	,		,		ı	ļ	-		١
ACW #05	F-137-07	ı	1	+	+	35.	+	+	+		+	+	-	1				ļ	╁	1					١,	1
ACW #05	31-Jan-93	1	1	,	,	+	4	+	+	\	\dagger	+	1	1	1		ן וּ	1	+	١	1		t		127	ŀ
ACW #05	16-Way-95	٧	ş	4	•	+	4	4	7	8	2	+	3.5	4	8	2,0	020.0	9	3 1	0,020	9	اۃ	3	200		1
ACW #05	27-Jun-95	<2.5	42.5	-	\$.0 0.5	7	4	2,800	1	اٰ		1	4	1	9	2,30	\$0.025	2	╅	20	2	8	+		3 3	1
ACW #05	30-Aug-95	٧	410	-	<15		_		┪	8	+	1	_	1	Ξ	7 79	€ 0.025	ê 5	+	0.015	2,7	4	7	\perp		1
300 1870	06-Feb-96	0.10	0.10	41.0	42.0	3,800	7.5 2.		110 92	920	6.0	.92 0.12	4.7	ı	4.	240	°0.006	1,5		970.0	6.5	2	\neg		260	1

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

Page 2 of 10

| Sample Description | Sample Date | Sample

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

9
3 of
Page 3

| OB-May-96 \$(1.5) \$(1. | 13-Aug-96 | 13-May-96 | Observation Control of the | Op-May-98 CAS 10 12 12 1 12 1 13 13 13 13 13 13 13 14 13 13 14 14 14 14 14 14 14 14 14 14 14 14 14 | Charles Char | Op-May-96 7.2.3 7.2.3 7.1.3 3,1550 7.1.2 2,17.3 5.0.0 500 7.10 7.10 3,1550 7.2 2,17.3 5.0.0 500 7.10 7.10 7.10 7.10 7.10 7.10 7.10 7.10 7.10 7.2 2,000 7.2 2,000 7.10 7.10 7.10 7.10 7.10 7.10 7.2 3,000 7.2 2,000 500 7.10 7.10 7.10 7.10 7.10 7.10 7.10 7.10 7.10 7.2 7.200 7.2 7.200 7.10 </th <th> Control of the cont</th> <th></th> <th>35.522</th> <th>Sample Description</th> <th>Sam.</th> <th></th> <th></th> <th>4000 (0.00000000000000000000000000000000</th> <th>yBri y</th> <th>yBri y</th> <th>in de la constante</th> <th></th> <th></th> <th>100000000000000000000000000000000000000</th> <th>anuteradinaT. Hai</th> <th></th> <th>and the second second second</th> <th></th> <th>Fluoride, mg/l</th> <th>Ngm ,abhouri</th> <th>Nem, Abhouri & Man Man Man Man Man Man Man Man Man Man</th> <th>Ngm, Material Comments of Manager Mana</th> <th>Fluoride, mg/l Mitrate as NOS, Mitrate as NOS, Mitrate as NOS, Societium, mg/l Societium, mg/l</th> <th>Hitrate-N, mg/l Mitrate as MOS. Mitrate as MOS. Botron, mg/l Colclium; mg/l</th> <th>Fluonde, mgn Minate na Mos. Minate na Mos. Mgn Mgn Mgn Mgn Mgn Mgn Mgn Mgn Mgn Mgn</th> <th>Pruonde, mgn Witnete-N, mgn Mitnete N, mgn Mitnete as MOS. Substitute, mgn Mostrum, mgn Mostrum</th> <th>Hitrate A, mg/l Mitrate as MOS. Mitrate as MOS. Botton, mg/l Costcium, mg/l Costcium, mg/l Magnesium, mg/l Magnesium, Magnesium, Magnesium, Magnesium, Magnesium, Magnesium, Magnesium, Magnesium, Magnesium,</th> <th>Fluoride, mg/l Mitrate as NOS, Mitrate as NOS, Sofori, mg/l Manganese, Ma</th> <th>Huonde, mg/l Mittate N, mg/l Mittate as NOS, mg/l Soton, mg/l Sotoper, mg/l Magnesium, mg/l Ma</th> <th>Huonde, mg/l Mittate M, mg/l Mittate as MOS, mg/l Soton, mg/l Magnesium, mg/l</th> | Control of the cont | | 35.522 | Sample Description | Sam. | | | 4000 (0.00000000000000000000000000000000 | yBri y | yBri y | in de la constante | | | 100000000000000000000000000000000000000 | anuteradinaT. Hai | | and the second second second | | Fluoride, mg/l | Ngm ,abhouri | Nem, Abhouri & Man | Ngm, Material Comments of Manager Mana | Fluoride, mg/l Mitrate as NOS, Mitrate as NOS, Mitrate as NOS, Societium, mg/l Societium, mg/l | Hitrate-N, mg/l Mitrate as MOS. Mitrate as MOS. Botron, mg/l Colclium; mg/l | Fluonde, mgn Minate na Mos. Minate na Mos. Mgn | Pruonde, mgn Witnete-N, mgn Mitnete N, mgn Mitnete as MOS. Substitute, mgn Mostrum, mgn Mostrum | Hitrate A, mg/l Mitrate as MOS. Mitrate as MOS. Botton, mg/l Costcium, mg/l Costcium, mg/l Magnesium, mg/l Magnesium, Magnesium, Magnesium, Magnesium, Magnesium, Magnesium, Magnesium, Magnesium, Magnesium, | Fluoride, mg/l Mitrate as NOS, Mitrate as NOS, Sofori, mg/l Manganese, Ma | Huonde, mg/l Mittate N, mg/l Mittate as NOS, mg/l Soton, mg/l Sotoper, mg/l Magnesium, mg/l Ma | Huonde, mg/l Mittate M, mg/l Mittate as MOS, mg/l Soton, mg/l Magnesium, mg/l |
|---|--
--
--|--

--
--|--|---------|-----------|--------------------|-----------------|--------|------------|--|--------|----------|--------------------|----|----------|---|-------------------|--|------------------------------|----------|----------------------|--------------|--|--|---|---|---
--|---|--|--|---|
| 19-May-96 410 | 19-May-96 <1,0 | OB-May-96 \$(10) \$(10) \$(3) \$(35) \$(35) \$(36)
 | 08-May-96 \$10 \$10 \$410 \$350 \$12 \$2,460 \$50 \$10 06-Nov-96 \$11 \$14 \$12 \$20 \$300 \$15 \$200 \$50 \$10 \$10 06-Nov-96 \$11 \$14 \$12 \$20 \$300 \$15 \$20 \$50 \$10 \$10 13-Aug-96 \$10 \$16 \$18 \$12 \$100 \$10 \$20 \$10 \$ | 1944ay-96 1,0 1,1 1,1 2,2 3,500 7,2 2,460 503 710
710 | 1944ap-86 1,0 1,1 1,1 1,2 1,2 2,2 3,400 1,3 2,400 1,0 | Contact

 | Continue | ACW #05 | 2 | | 8 | ┪ | -+ | 4 | -1 | 4 | 7 | 4 | + | + | 4 | | 7 | + | 0.29 | 0.29 4.9 | 0.29 4.9 | 0.29 4.9 1.4 | 0.29 4.9 1.4 | 0.29 4.9 - 1.4 240 | 0.29 4.9 - 1.4 240 <0.1 2 | 0.29 4.9 - 1.4 240 <0.1 2 | 0.29 4.9 - 1.4 240 <0.1 2 32 0.1 | 0.29 4.9 - 1.4 240 <0.1 2 32 0.1 0.1
 | 0.29 4.9 -1.4 240 <0.1 2 32 0.1 0.1 0.1 0.0 | 0.29 4.9 1.4 240 <0.1 2 32 0.1 0.1 0.1 |
| 13-Aug-96 | 13-Aug-96 11 Aug-96 11 11 12 13 13 14 15 15 15 15 10 10 11 11 | 13-Aug-96 11 12 110 220 3300 75 2300 500 710 00-4Aug-97 01 12 12 12 12 12 12 12 12 12 12 12 12 12
 | 13-Aug-96 11 12 110 22 3.400 73 2.500 500 710 00-404-97 01 11 1.4 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 | 13-Aug-96 11 1.4 1.0 2.0 2.0 3.400 71 2.500 500 710 100 74849-79 0.9 1.1 1.4 1.2 1.2 2.0 3.300 71 2.300 2470 220 11.0 1.1 1.4 1.2 1.2 2.0 3.300 71 2.300 470 220 11.0 1.1 1.4 1.4 1.2 1.2 2.0 3.000 71 2.300 1.0 1.1 1.4 1.4 1.2 1.2 2.0 3.000 1.0 1.2 2.0 1.2 2.0 2.0 2.0 2.0 1.1 1.2 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2
 | 13-Aug-96 10 12 11 2 12 2.20 3,300 773 2,500 500 770 10 6440-96 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 13-Aug-96

 | 13-Aug-96 11, 11 14 12 230 3300 713 2500 500 710 13-Aug-96 11, 11 14 12 233 715 2500 500 710 13-Aug-96 10.84 12 0.84 13 0.84 | ACW #05 | 2 | | 줲 | - | _ | 4 | - | _ | ┪ | 4 | 4 | + | 4 | T | 4, | 4.5 0.42 | 0.42 | 0.42 | 0.42 5 | 0.42 5 | 0.42 5 - 0.8 167 0.01 | 0.42 5 - 0.8 167 0.01 | 0.42 5 - 0.8 167 0.01 0.2 24 | 0.42 5 - 0.8 167 0.01 0.2 24 | 0.42 5 - 0.8 167 0.01 0.2 24 <0.05 | 0.42 5 - 0.8 167 0.01 0.2 24 <0.05 8
 | 0.42 5 - 0.8 167 0.01 0.2 24 <0.05 8 35 500 | 0.42 5 - 0.8 167 0.01 0.2 24 <0.05 8 35 500 |
| 19-Alon-96 1,1 1,4 1,2 2,20 3,300 1,5 2,300 350 710 1,5 12-Oct-57 0.84 1,2 0.25 1,10 1,7 2,000 470 320 1,5 13-Alon-96 0.79 1,5 0.77 1,2 3,100 1,2 2,000 470 320 1,5 13-Alon-96 0.79 1,5 0.77 1,2 3,100 1,5 1,5 0,7 1,100 1,5 0,7 1,100 1,5 0,7 1,100 1,5 0,7 1,100 1,5 0,7 1,100 1,5 0,7 1,100 1,5 0,7 1,100 1,5 0,7 1,100 1,5 0,7 1,100 1,5 0,7 1,100 1,5 0,7 1,100 1 | Continued at the cont | OB-Nov-96 1.1 1.4 1.2 <2.0 3,300 7.5 2,000 470 7.0 22-Oct-97 0.94 1.2 0.83 1.9 3,100 -1 2,000 470 2.0 13-Agr-98 0.79 1.5 0.77* 1.2 3,100 -1 2,000 470 -1 18-Sap-28 0.79 1.5 0.77* 1.2 3,100 -1 2,000 470 -1 18-Sap-28 - - - - 1.3 0.0 -1 1.0 -1 <
 | OG-Nov-96 1.1 1.4 1.2 <2.0 3,300 7.5 2,300 7.0 | Control
 | Control | 06-Nov-96 1.1 1.4 1.2 0.30 -1.5 2.30 500 -1.5 2.30 500 -1.5 2.30 -1.0 <td< td=""><td>06-Nov-96 1.1 1.2 0.83 <1.0</td> 3.300 1.5 3.00 7.0 7.2 2.00 7.0 7.2 7.0</td<>

 | 06-Nov-96 1.1 1.2 0.83 <1.0 | ACW #05 | 2 | | د | + | | + | + | + | ╅ | 4 | + | ╅ | <u> </u> | † | - ; | + | + | 0.7 5.4 | 0.7 5.4 | 0.7 5.4 - 2.0 | 0.7 5.4 - 2.0 200 <0.006 | 0.7 5.4 - 2.0 200 | 0.7 5.4 2.0 200 <0.006 0.024 28 | 2.0 200 <0.006 0.024 | 0.7 5.4 2.0 200 <0.006 0.024 28 | 0.7 5.4 - 2.0 200 <0.006 0.024 28 <0.007 | 0.7 5.4 - 2.0 200 <0.006 0.024 28 <0.007 6.3 36 320
 | 0.7 5.4 - 2.0 200 <0.006 0.024 28 <0.007 6.3 36 320 |
| 13-May-98 1/3 1/5 | 13-May-98 0.79 1.5 0.77 12° 3.100 7.7 2.000 440 1.800 1.91 440 1.800 1.91 440 1.910 1.910 440 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.910 1.91 | 13-May-98 0.79 1.5 0.77 1.2 3.100 1.2 0.00 4.00 1.2 0.00 0.00 1.2 0.00
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0 | 13-May-96 | 13-May-99 0.77 1.2 3.100 1.2 2.000 4.00 2.00 1.2 2.000 4.00 2.00 1.2 2.000 4.00 2.00 1.2 2.000 4.00 2.00
 2.00 2. | 13-May-98 12 12 13 13 13 13 13 13 | 13-Nety-95 12-04-97 13-14 13-1

 | 13-1469-68 1-2 | ACW #05 | 10 | | \$ 2 | | + | + | ┿ | + | + | 4 | + | + | | + | 1 1 | 2 1 | è l | è l | 97.0 | 6.1 5.00 | 000 6:1 00:00 | 7000 1001 601 100 1000 1000 1000 1000 10 | 27 CO 7000 001 E1 | 27 CO 7000 001 E1 | 200 CT | 2 CO /OTO 001 61
 | 1 | 1 |
| 13-May-98 0.78 1.5 0.77 12 3,100 2,800 570 2,800 1.8 do | 13-May-98 0.79 15 0.77 12 3.100 - 2.800 570 1.910 440 1.810 440 1.910 440 1.910 440 1.910 440 1.910 440 1.910 440 1.910 440 | 13-May-88 0.79 1.5 0.77 12 3.100 2.800 570 1.810 440 1.810 440 1.810 440 1.810 440 1.810 440 1.810 440 1.810 1.810 440 1.810 410 1.810 1.810 1.810 1.810 1.810 1.810 1.810 1.810 1.810 1.810 1.810 1.810 1.810 1.810 1.810 1.810 1.810 1.810 1.810 1.810 1.810 1.810 1.810 1.810 1.810 1.810 1.810 1.810
 | 13-May-98 0.79 15 0.77 12 3.100 1.910 440 1.910 440 1.910 440 1.910 440 1.910 440 1.910 440 1.910 440 1.910 440 1.910 440 1.910 440 1.910 440 1.910 440 1.910 440 1.910 440 1.910 440 1.910 440 1.910 440 1.910 440 1.910 440 1.910 44 | 13.May-98 0.79 15 0.77 12 3.100 2.800 570 14.Jun-93 0.79 15 0.77 17 3.100 1.910 440 15.Sep-93 2.820 1.910 440 15.Sep-93 11.130 6.956 2.737 15.Sep-93 11.130 6.956 2.737 21.Jun-93 11.130 6.910 2.165 21.Jun-95 11.130 6.910 2.167 21.Jun-95 11.130 6.910 2.167 21.Jun-95 11.130 6.910 2.167 22.Jun-95 11.130 6.910 2.167 23.Jun-95 11.130 6.910 2.167 24.Jun-95 11.130 6.910 2.167 25.Jun-95 11.130 8.1 6.00 2.800 110 25.Jun-95 11.130 8.1 6.00 2.800 110 25.Jun-95 11.130 8.1 6.00 2.800 110 25.Jun-95 11.130 8.1 6.00 2.800 110 25.Jun-95 4.2 1.5 4.1 4.2
4.2 4. | 13.48ey-98 0.77 1. | 13-May-98 0.79 15 0.77 12 3,100 - 2,800 570 - - - - - - - 1,810 - 1,810 440 - - - - - 1,810 - 1,810 440 - - - - - 1,810 - 1,810 440 - - - - - - 1,810 - 1,810 - - - - - - - - -

 | 13-May-98 0.79 15 0.77 12 3,100 2,800 570 1,130 1,910 440 1,130 1,910 440 1,130 1,910 440 1,910 1,910 440 1,910 1,910 440 1,910 1,910 1,910 1,910 1,910 1,910 1,910 1,910 1,91 | W #55 | | | 22- | 十 | ╬ | ╁ | ╁ | ╄ | ╁ | ╄ | t | ╁ | <u> </u> | = | | 9.0 | 9.6 | 9.6 | 0.6 6 | 0.6 6 1.3 | 0.6 6 - 1.3 | 0.6 6 - 1.3 170 | 0.6 6 - 1.3 170 <0.01 0.5 | 0.6 6 - 1.3 170 <0.01 0.5 | 0.6 6 - 1.3 170 <0.01 0.5 24 | 0.6 6 - 1.3 170 <0.01 0.5 24 <0.01 5
 | 0.6 6 - 1.3 170 <0.01 0.5 24 <0.01 5 26 480 | 0.6 6 1.3 170 <0.01 0.5 24 <0.01 5 26 |
| 18-Jun-93 | 18-Jun-93 | 21-Oct-68 — — — — — 1,910 440 —
 | 21-Oct-98 — — — — — 1910 440 — | 21-Cot-38
 | 18-Jun-93 | 18-Jun-83

 | 18-5ap-36 | ACW #55 | | |
 <u>E</u> | ╈ | ╀ | + | +- | ╀ | ┿ | ╀- | + | ╁ | ' | | | ╀ | ╀ | 1 | 1 | 1 | 1 | - | | | 1 1 |
 | | |
| 18-Sep-93 11,130 6,656 2,737 12,000 6,656 2,737 12,000 6,656 2,737 11,000 6,656 2,737 12,000 6,550 3,600 3,600 11,000 6,910 2,100 12,000 3,000 3,600 3 | 18-lan-93 | 18-Jun-93
 | 18-Jun-63 11,130 6,656 2,737 11,130 6,656 2,737 11,130 6,656 2,737 11,130 6,656 2,737 11,130 6,656 2,737 11,130 6,656 2,737 11,130 6,536 2,737 11,130 6,536 2,737 11,130 6,736 2,813 11,130 6,756 2,813 11,130 6,756 2,813 11,130 6,756 2,813 11,130 6,756 2,813 11,130 6,756 2,813 11,130 6,756 2,813 11,130 6,756 2,813 11,130 6,756 2,813 11,130 6,756 2,813 11,130 6,756 2,813 11,130 6,756 2,813 11,130 6,756 2,813 11,130 6,756 2,813 11,130 6,756 2,813 11,130 2,800 170 11,130 2,800 170 11,130 2,800 170 11,130 2,800 170 11,130 2,800 170 11,130 2,800 170 11,130 2,800 170 1,0,70 170 170 170 170 170 170 170 170 170 1 | 18-Jun-63 11,130 6,656 2,737 11,130 6,656 2,737 11,130 6,656 2,737 11,130 6,656 2,737 11,130 6,656 2,737 11,130 6,656 2,737 11,130 6,656 2,737 11,130 6,730 3,500 11,130 6,730 3,500 11,130 6,730 3,500 1,10 11,130 1,130 6,730 3,500 1,10 11,130 1,130 1,130 1,130 1,100
1,100 1,1 | 18-Jun-93 | 18-Jun-93

 | 18-Jun-93 | 18 | | | 21.2 | + | ╄ | ┿ | ╀ | H | ╀ | H | | | Ľ | Ľ | Г | Ľ | | | | | | | | | |
 | | |
| 16.5ap-93 | 16.5ap.93 | 16-Sep-g3
 | 16-Sep-63 | 18-Sep-93
 | 18-5ap-93 | 11-Sapp-89

 | 16.56p-63 | 9 | | | = | 1,m-93 | ╀┈ | ╀ | ╀ | ╀ | ╀ | ╀ | | 8 | | Ľ | t | ı | | | | | | | | | |
 | | |
| D8-Nov-93 | DB-Nov-93 | 08-Nov-93
 | 08-Nov-93 11,080 6,846 2,154 | 11
 | De-Nov-93 | De-Nov-93

 | Control | 9 | | | | 60-93 | ╀ | ╀ | ╀ | ╁ | ┞ | H | ļ_ | 7 | <u> </u> | Ľ | Η | ł | | - | | | | | | | \dashv | 1
 | 1 | 1 |
| 21-Apr-94 — — — — — — — — 6,930 3,600 — — — — — — 11,080 — 6,930 3,600 — — — — — — — — — — — — — — — — — — | 21-Apr-94 — | 21-Apr-94 — — — — — — — — — — — — — — — — — — —
 | 21-Apr-94 — 1 | 21-Apr-94 — — — — — — — — — — — — — — — — — — —
 | 21-Apr.84 — — — — — — — — — — — — — — — — — — — | 21-App-94 —

 | 21-Apr.94 — | 9 | | | 윰 | ov-93 | ╀ | ┞ | ╀ | ╁ | - | ┝ | ļ_ | 1 | | <u> </u> | Ľ | ا ، ا | | | | | | | | | |
 | | |
| 28-Oct-94 11,586 6,910 2,100 11,530 (2.100 2,100 1.0 11,530 (2.100 2,100 1.0 11,530 (2.100 2,100 1.0 | 28-Oct-94 11,386 6,910 2,100 11,530 (2.100 2,010 1.00 1.00 1.00 1.00 1.00 1.00 1.00 | 28-Oct-94 11,386 6,910 2,100 11,530 6,755 2,873 11,530 6,755 2,873
 | 28-Oct-94 — | 28-Oct-94
 | 28-Oct-94 11,386 6,910 2,100 11,530 6,785 2,813 11,530 6,785 2,813 11,530 6,785 2,813 11,530 6,785 2,813 | 28-Oct-94 11,886 6,910 2,100 11,886 6,910 2,100 11,886 6,910 2,100 11,886 6,910 2,873 2,873

 | 12-Oct-94 | 9 | | | 21, | 8.9 | ├ | ┞ | H | | Н | H | | - | | - | | | - | 1 | | | | | | | |
 | 1 1 | 1 1 1 |
| 11-Jann-96 | 11-Jann-96 | 11-Jan-96
 | 11-Jan-96 | 11-Jann-96
 | 11-Jan-96 | 11-Jann-96

 | 11-Jan-95 | 9 | | | ž | 20.00 | ┝ | - | ┝ | ┝ | - | - | | 9 | | <u> </u> | H | 1 | | - | | 1 | 1 | 1 | 1 | 1 | 1 | 1 1
 | 1 1 | 1 1 |
| 16-May-95 c5 c10 c5 0 10,000 8.1 6,400 2,800 110 — 1,4 27-Jun-95 14 c2.5 c2.5 c5.0 10,000 8.4 7,00 3500 110 — 1,8 27-Jun-95 14 c2.5 c2.5 c1.0 c1.0 2.0 1,000 8.4 7,10 300 110 — 1,8 06-Feb-96 c2.5 c2.0 11,000 c2.80 c2.80 c1.0 c2.0 11,000 c2.0 c2.00 c2.0 c2.0 </td <td>16-May-95 c5 c10 c5 0 10,000 8.1 6,400 2,800 110 — 1,4 27-Jun-95 14 c2.5 c2.5 c5.0 10,000 8.4 7,100 3,500 110 — 1,8 27-Jun-95 14 c2.5 c2.5 c1.0 c2.0 1,000 8.4 7,100 3,000 110 — 1,8 06-Feb-96 c.6.6 3.2 c2.5 c2.0 11,000 c2.0 c1.0 c2.0 c2.0<</td> <td>16-May-96 cs c10 c5 0 10,000 8.1 6,400 2,800 110 — 1.4 22-Jun-95 14 c2.5 c2.5 c50 10,000 8.4 6,400 3,500 110 — 1.8 22-Jun-95 14 c2.5 c2.5 c4.0 11,000 8.4 7,000 3,000 110 — 1.8 06-Feb-96 6.6 3.2 c1.0 c2.0 11,000 8.4 7,000 3,00 110 — 1.8 06-Feb-96 6.6 3.2 c1.0 c2.0 11,000 8.4 7,00 3,00 19 — 11.8 10-Alay-96 4.6 1.5 c1.0 c2.0 11,000 8.9 5,00 2.80 4.8 — 11.000 1.0 2.80 1.0 1.3 1.3 1.3 1.2 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0</td> <td>16-May-96 c5 c10 c5 0 10,000 8.1 6,400 2,800 110 — 1.4 22-Jun-95 14 c2.5 c2.5 c50 10,000 8.4 7,100 3,000 110 — 1.8 22-Jun-95 14 c2.5 c2.5 c1.0 c1.0 8.4 7,100 3,000 110 — 1.8 06-Feb-96 c2.5 c2.5 c2.5 c1.0 c2.0 170 8.600 2,800 110 — 1.8 08-May-96 c2.5 c2.5 c2.5 c2.5 c2.0 11,000 1.7 6,600 2,800 18 - 1.5 14-Aug-96 4.2 2.6 c1.0 c2.0 11,000 7.7 6,600 2,800 48 — 1.5 0-6-Nov-96 4.5 1.5 c1.0 c2.0 11,000 7.7 6,600 2,800 48 — 1.3 0-6-Nov-96</td> <td>16-May-95 c5 c10 c5 0 10,000 8.1 6,400 2,800 110 — 1.4 22-Jun-95 14 c2.5 c2.5 c50 10,000 8.4 7,00 3500 110 — 1.8 22-Jun-95 7 c10 c5 c15 11,000 8.4 7,00 2,00 110 — 1.8 06-Feb-96 c2.5 c2.5 c2.5 c1.0 c2.0 11,000 8.4 7,100 2,80 1.9 — 1.8 06-May-96 4.0 1.56 c1.0 c2.0 11,000 8.6 7,100 2,80 48 — 1.5 06-May-97 4.0 1.5 c1.0 c2.0 11,000 8.6 7,100 2,80 48 — 1.15 06-May-97 4.5 1.5 c1.0 c2.0 11,000 8.6 7,100 2,80 48 — 1.3 12-Cot-97 4.5<!--</td--><td>16-May-96 <2 <10 <5 0 10,000 8.1 6,400 2,800 110 — 1.4 22-Jun-95 14 <2.5</td> <2.5</td> <10 | 16-May-95 c5 c10 c5 0 10,000 8.1 6,400 2,800 110 — 1,4 27-Jun-95 14 c2.5 c2.5 c5.0 10,000 8.4 7,100 3,500 110 — 1,8 27-Jun-95 14 c2.5 c2.5 c1.0 c2.0 1,000 8.4 7,100 3,000 110 — 1,8 06-Feb-96 c.6.6 3.2 c2.5 c2.0 11,000 c2.0 c1.0 c2.0 c2.0< | 16-May-96 cs c10 c5 0 10,000 8.1 6,400 2,800 110 — 1.4 22-Jun-95 14 c2.5 c2.5 c50 10,000 8.4 6,400 3,500 110 — 1.8 22-Jun-95 14 c2.5 c2.5 c4.0 11,000 8.4 7,000 3,000 110 — 1.8 06-Feb-96 6.6 3.2 c1.0 c2.0 11,000 8.4 7,000 3,00 110 — 1.8 06-Feb-96 6.6 3.2 c1.0 c2.0 11,000 8.4 7,00 3,00 19 — 11.8 10-Alay-96 4.6 1.5 c1.0 c2.0 11,000 8.9 5,00 2.80 4.8 — 11.000 1.0 2.80 1.0 1.3 1.3 1.3 1.2 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0
 | 16-May-96 c5 c10 c5 0 10,000 8.1 6,400 2,800 110 — 1.4 22-Jun-95 14 c2.5 c2.5 c50 10,000 8.4 7,100 3,000 110 — 1.8 22-Jun-95 14 c2.5 c2.5 c1.0 c1.0 8.4 7,100 3,000 110 — 1.8 06-Feb-96 c2.5 c2.5 c2.5 c1.0 c2.0 170 8.600 2,800 110 — 1.8 08-May-96 c2.5 c2.5 c2.5 c2.5 c2.0 11,000 1.7 6,600 2,800 18 - 1.5 14-Aug-96 4.2 2.6 c1.0 c2.0 11,000 7.7 6,600 2,800 48 — 1.5 0-6-Nov-96 4.5 1.5 c1.0 c2.0 11,000 7.7 6,600 2,800 48 — 1.3 0-6-Nov-96 | 16-May-95 c5 c10 c5 0 10,000 8.1 6,400 2,800 110 — 1.4 22-Jun-95 14 c2.5 c2.5 c50 10,000 8.4 7,00 3500 110 — 1.8 22-Jun-95 7 c10 c5 c15 11,000 8.4 7,00 2,00 110 — 1.8 06-Feb-96 c2.5 c2.5 c2.5 c1.0 c2.0 11,000 8.4 7,100 2,80 1.9 — 1.8 06-May-96 4.0 1.56 c1.0 c2.0 11,000 8.6 7,100 2,80 48 — 1.5 06-May-97 4.0 1.5 c1.0 c2.0 11,000 8.6 7,100 2,80 48 — 1.15 06-May-97 4.5 1.5 c1.0 c2.0 11,000 8.6 7,100 2,80 48 — 1.3 12-Cot-97 4.5 </td <td>16-May-96 <2 <10 <5 0 10,000 8.1 6,400 2,800 110 — 1.4 22-Jun-95 14 <2.5</td> <2.5
 | 16-May-96 <2 <10 <5 0 10,000 8.1 6,400 2,800 110 — 1.4 22-Jun-95 14 <2.5 | 16-May-96 cs c10 c5 c10 c5 c10 c5 c10 c5 c10 c5 c10 c10,000 8.1 c,400 2,800 c10 c10 <th< td=""><td>16-May-96 cs c10 c5 c10 c5 c10 c5 c10 c10<!--</td--><td>S</td><td></td><td></td><td>ĮĘ</td><td>an-95</td><td>Ͱ</td><td>┞</td><td>F</td><td>┝</td><td>H</td><td>┝</td><td>-</td><td>3</td><td> </td><td>Ľ</td><td>Ľ</td><td>í</td><td>-</td><td>ŀ</td><td>ŀ</td><td>1</td><td>1</td><td>1</td><td></td><td></td><td></td><td>1 1 1 1</td><td>1 1 1 1 1 1</td><td>1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</td></td></th<>
 | 16-May-96 cs c10 c5 c10 c5 c10 c5 c10 c10 </td <td>S</td> <td></td> <td></td> <td>ĮĘ</td> <td>an-95</td> <td>Ͱ</td> <td>┞</td> <td>F</td> <td>┝</td> <td>H</td> <td>┝</td> <td>-</td> <td>3</td> <td> </td> <td>Ľ</td> <td>Ľ</td> <td>í</td> <td>-</td> <td>ŀ</td> <td>ŀ</td> <td>1</td> <td>1</td> <td>1</td> <td></td> <td></td> <td></td> <td>1 1 1 1</td> <td>1 1 1 1 1 1</td> <td>1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</td> | S | | | ĮĘ | an-95 | Ͱ | ┞
 | F | ┝ | H | ┝ | - | 3 | | Ľ | Ľ | í | - | ŀ | ŀ | 1 | 1 | 1 | | | | 1 1 1 1 | 1 1 1 1 1 1 | 1
 |
| 27-Jun-95 14 -2.5 -2.5 -6.0 10,000 9.0 8,600 110 — 1.8 28-Aug-96 7 -(10 -6.5 -15 12,000 8.4 7,100 100 10 -1.8 1.3 06-Feb-96 6.6 3.2 -2.5 -2.5 -2.5 -1.0 | 27-Jun-95 14 -2.5 -2.5 -6.0 10,000 9.0 8,600 110 — 1.8 28-Aug-96 7 -(10 -6.5 -15,000 8.4 7,100 10 1.0 -1.8 -1.8 -1.3 -1.8 | 27-Jun-95 14 -2.5 -2.5 -6.0 10,000 8.0 8.600 3.500 110 — 1.8 28-Aug-96 7 -10 -5 -15 12,000 8.4 7,100 3.00 110 — 1.8 06-Feb-96 -2.5 -2.5 -4.5 11,000 8.4 7,100 2.80 2.80 1.9 — 1.83 08-Neb-96 -2.5 -2.5 -4.5 10,320 7.7 6,600 2.80 4.9 — 1.52 14-Aug-96 4.0 1.58 -1.0 -2.0 11,000 7.7 6,600 2.80 4.9 — 1.52 0-Alva-96 4.2 1.5 -1.0 -2.0 11,000 7.7 7.00 2.80 4.9 — 1.15 0-Alva-96 4.5 1.5 -1.0 -2.0 12,000 8.6 7.70 3.60 7.7 1.3 0-Alva-96 4.6 1.5 -1.0
 | 27-Jun-95 14 -2.5 -2.5 -6.0 10,000 8,600 3,600 110 — 1.8 22-Aug-96 7 -10 -5 -15 12,000 8.4 7,100 100 10 — 1.8 06-Feb-96 -2.5 -2.5 -7.5 10,300 8.4 7,100 100 10 — 1.8 08-May-96 -2.5 -2.5 -7.5 10,300 7.7 6,480 2,800 1.9 — 1.8 08-May-96 -4.0 1.56 -7.0 10,000 8.6 7,100 2,800 4.9 — 1.8 06-Nov-96 -4.5 1.5 -1.0 -2.0 1,100 7.9 7,100 2,800 4.9 — 1.8 06-Nov-96 -4.5 1.5 -1.0 -2.0 1,100 7.9 7,00 3.0 1.0 — 1.1 0.6-Nov-96 -4.5 1.5 -1.0 -2.0 1,000 | 27-Jun-95 14 -2.5 -2.5 -6.0 10,000 9.0 8,600 110 — 1.8 28-Aug-96 7 -(10 -6.5 -15 12,000 8.4 7,100 100 10 — 1.8 06-Feb-96 6.6 3.2 -(2.5 -(2.5 -(1.5 10,000 8.0 2,600 17 — 1.8 08-Nay-96 4.08 1.58 -(1.0 -(2.0 11,000 7.9 1.40 1.9 — 1.8 08-Nay-96 4.08 1.58 -(1.0 -(2.0 11,000 7.9 1.40 1.8 — 1.8 08-Nay-96 4.5 1.5 -(1.0 -(2.0 11,000 8.8 7.70 3.60 1.9 — 1.8 08-Nay-96 4.5 1.5 -(1.0 -(2.0 11,000 8.8 7.70 3.60 1.9 — 1.13 08-Nay-97 4.5 1.5 -(1.0 -(2.0 <td>27-Jun-95 14 -2.5 -2.5 -6.0 10,000 9.0 8,600 110 — 1.8 28-Aug-96 7 -(10 -6.5 -15 12,000 8.4 7,100 100 10 -1.8 1.3 0.6-Feb-96 6.6 3.2 -2.5 -1.5
11,000 8.0 2,800 1.9 -1.5 1.5 0.8-Nay-96 4.08 1.58 -1.0 -2.0 11,000 8.0 1.800 1.8 -1.5 1.5 0.8-Nay-96 4.08 1.58 -1.0 -2.0 11,000 8.0 1.800 1.8 -1.5 1.8 -1.0 -1.0 -1.0 -1.5 -1.0 -2.0 1.0 1.0 -1.0 <t< td=""><td>27-Jun-95 14 -2.5 -2.5 -6.0 10,000 9.0 8,600 3,500 110 — 1.8 22A-Jun-96 7 -10 -5 -15 1,500 8.4 7,100 10 — 1.8 06-Feb-96 -2.5 -2.5 -2.5 -10 -10 8.0 120 12 — 1.8 08-May-96 -2.5 -2.5 -2.5 -10 -2.0 1.0 2.80 1.80 1.9 — 1.85 06-May-96 -1.5 -2.5 -2.5 -1.0 -2.0 1.0 2.80 1.80 -1.0 -1.5 1.2 -1.0 -2.0 1.0 2.0 1.2 -2.0 1.0 2.0 1.0 2.80 1.8 -1.0 -2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2</td><td>27-Jun-95 14 -2.5 -2.5 -6.0 10,000 9.0 8,600 3,500 110 — 1.8 22-Aug-96 7 -410 -5 -415 11,000 8.4 7,100 100 10 - 1.3 06-Feb-96 -6.6 3.2 -1.5 13.00 18.6 6,630 2,600 17.0 1.8 1.3 08-May-96 4.08 1.58 -1.0 -2.0 11,000 8.6 7,100 2,800 48 — 1.82 06-Mov-96 4.5 1.5 -1.0 -2.0 11,000 8.6 7,700 3.80 -1.0 -1.5 06-Mov-96 4.5 1.5 -1.0 -2.0 11,000 8.6 7,700 3.80 — -1.8 06-Mov-96 4.5 1.5 -1.0 -2.0 11,000 8.2 7.00 8.0 1.0 -1.0 06-May-97 8.2 1.5 -1.0 -2.0 11,0</td><td>9</td><td></td><td></td><td>Ę</td><td>┝</td><td>┝</td><td>ļ</td><td> -</td><td>\vdash</td><td>-</td><td>L</td><td></td><td>Н</td><td>L</td><td>1.4</td><td>Н</td><td></td><td><2.0</td><td><2.0</td><td>H</td><td>6.0</td><td>6.0</td><td>- 0.9 70 <0.025</td><td>- 0.9 70 <0.025 3.9 19</td><td>- 0.9 70 <0.025 3.9 19</td><td>- 0.9 70 <0.025 3.9 19 0.079</td><td>- 0.9 70 <0.025 3.9 19 0.079 <5.0 48</td><td>- 0.9 70 <0.025 3.9 19 0.079 <5.0 48 2,200</td><td>- 0.9 70 <0.025 3.9 19 0.079 <5.0 48 2,200</td></t<></td> | 27-Jun-95 14 -2.5 -2.5 -6.0 10,000 9.0 8,600 110 — 1.8 28-Aug-96 7 -(10 -6.5 -15 12,000 8.4 7,100 100 10 -1.8 1.3 0.6-Feb-96 6.6 3.2 -2.5 -1.5 11,000 8.0 2,800 1.9 -1.5 1.5 0.8-Nay-96 4.08 1.58 -1.0 -2.0 11,000 8.0 1.800 1.8 -1.5 1.5 0.8-Nay-96 4.08 1.58 -1.0 -2.0 11,000 8.0 1.800 1.8 -1.5 1.8 -1.0 -1.0 -1.0 -1.5 -1.0 -2.0 1.0 1.0 -1.0 <t< td=""><td>27-Jun-95 14 -2.5 -2.5 -6.0 10,000 9.0 8,600 3,500 110 — 1.8 22A-Jun-96 7 -10 -5 -15 1,500 8.4 7,100 10 — 1.8 06-Feb-96 -2.5 -2.5 -2.5 -10 -10 8.0 120 12 — 1.8 08-May-96 -2.5 -2.5 -2.5 -10 -2.0 1.0 2.80 1.80 1.9 — 1.85 06-May-96 -1.5 -2.5 -2.5 -1.0 -2.0 1.0 2.80 1.80 -1.0 -1.5 1.2 -1.0 -2.0 1.0 2.0 1.2 -2.0 1.0 2.0 1.0 2.80 1.8 -1.0 -2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2</td><td>27-Jun-95 14 -2.5 -2.5 -6.0 10,000 9.0 8,600 3,500 110 — 1.8 22-Aug-96 7 -410 -5 -415 11,000 8.4 7,100 100 10 - 1.3 06-Feb-96 -6.6 3.2 -1.5 13.00 18.6 6,630 2,600 17.0 1.8 1.3 08-May-96 4.08 1.58 -1.0 -2.0 11,000 8.6 7,100 2,800 48 — 1.82 06-Mov-96 4.5 1.5 -1.0 -2.0 11,000 8.6 7,700 3.80 -1.0 -1.5 06-Mov-96 4.5 1.5 -1.0 -2.0 11,000 8.6 7,700 3.80 — -1.8 06-Mov-96 4.5 1.5 -1.0 -2.0 11,000 8.2 7.00 8.0 1.0 -1.0 06-May-97 8.2 1.5 -1.0 -2.0 11,0</td><td>9</td><td></td><td></td><td>Ę</td><td>┝</td><td>┝</td><td>ļ</td><td> -</td><td>\vdash</td><td>-</td><td>L</td><td></td><td>Н</td><td>L</td><td>1.4</td><td>Н</td><td></td><td><2.0</td><td><2.0</td><td>H</td><td>6.0</td><td>6.0</td><td>- 0.9 70 <0.025</td><td>- 0.9 70 <0.025 3.9 19</td><td>- 0.9 70 <0.025 3.9 19</td><td>- 0.9 70 <0.025 3.9 19 0.079</td><td>- 0.9 70 <0.025 3.9 19 0.079 <5.0 48</td><td>- 0.9 70 <0.025 3.9 19 0.079 <5.0 48 2,200</td><td>- 0.9 70 <0.025 3.9 19 0.079 <5.0 48 2,200</td></t<> | 27-Jun-95 14 -2.5 -2.5 -6.0 10,000 9.0 8,600 3,500 110 — 1.8 22A-Jun-96 7 -10 -5 -15 1,500 8.4 7,100 10 — 1.8 06-Feb-96 -2.5 -2.5 -2.5 -10 -10 8.0 120 12 — 1.8 08-May-96 -2.5 -2.5 -2.5 -10 -2.0 1.0 2.80 1.80 1.9 — 1.85 06-May-96 -1.5 -2.5 -2.5 -1.0 -2.0 1.0 2.80 1.80 -1.0 -1.5 1.2 -1.0 -2.0 1.0 2.0 1.2 -2.0 1.0 2.0 1.0 2.80 1.8 -1.0 -2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2.0 1.0 2

 | 27-Jun-95 14 -2.5 -2.5 -6.0 10,000 9.0 8,600 3,500 110 — 1.8 22-Aug-96 7 -410 -5 -415 11,000 8.4 7,100 100 10 - 1.3 06-Feb-96 -6.6 3.2 -1.5 13.00 18.6 6,630 2,600 17.0 1.8 1.3 08-May-96 4.08 1.58 -1.0 -2.0 11,000 8.6 7,100 2,800 48 — 1.82 06-Mov-96 4.5 1.5 -1.0 -2.0 11,000 8.6 7,700 3.80 -1.0 -1.5 06-Mov-96 4.5 1.5 -1.0 -2.0 11,000 8.6 7,700 3.80 — -1.8 06-Mov-96 4.5 1.5 -1.0 -2.0 11,000 8.2 7.00 8.0 1.0 -1.0 06-May-97 8.2 1.5 -1.0 -2.0 11,0 | 9 | | | Ę | ┝ | ┝ | ļ | - | \vdash | - | L | | Н | L | 1.4 | Н | | <2.0 | <2.0 | H | 6.0 | 6.0 | - 0.9 70 <0.025 | - 0.9 70 <0.025 3.9 19 | - 0.9 70 <0.025 3.9 19 | - 0.9 70 <0.025 3.9 19 0.079 | - 0.9 70 <0.025 3.9 19 0.079 <5.0 48
 | - 0.9 70 <0.025 3.9 19 0.079 <5.0 48 2,200 | - 0.9 70 <0.025 3.9 19 0.079 <5.0 48 2,200 |
| 29-Aug-96 7 <10 <5 <15 12,000 84 7,100 3,000 110 18 06-Feb-96 6.6 3.2 <1,0 | 29-Aug-96 7 <10 <5 <15 12,000 84 7,100 3,000 110 1.8 06-Feb-96 6.6 3.2 <1,0 | 29-Aug-95 7 <10 <5 <15 12,000 84 7,100 3,000 110 18 06-Feb-96 6.6 3.2 <1,0
 | 29-Aug-96 7 <10 <5 <15 12,000 84 7,100 3000 110 18 06-Feb-96 6.6 3.2 <10 | 29-Aug-96 7 <10 <5 <15 12,000 84 7,100 3,000 110 18 06-Feb-96 6.6 3.2 <1,0
 | 29-Aug-96 7 <10 <5 <15 12,000 84 7,100 3,000 110 18 06-Feb-96 6.6 3.2 <1,0 | 29-Aug-96 7 <10 <5 <15 12,000 84 7,100 3000 110 18 06Feb-96 6.6 3.2 <10

 | 29-Aug-96 7 <10 | 18 | | | 27. | ┞ | ⊢ | ⊢ | ⊢ | H | Н | ш | | Н | - | 1.8 | Н | . 1 | Н | Н | -2.0 | <2.0 - 1.1 | <2.0 - 1.1 64 | <2.0 - 1.1 64 <0.025 | <2.0 - 1.1 64 <0.025 5.8 16 | <2.0 - 1.1 64 <0.025 5.8 | <2.0 — 1.1 64 <0.025 5.8 16 0.082 | <2.0 - 1.1 64 <0.025 5.8 16 0.082 <5.0 44
 | <2.0 — 1.1 64 <0.025 5.8 16 0.082 <5.0 44 3,000 | <2.0 — 1.1 64 <0.025 5.8 16 0.082 <5.0 44 3,000 |
| Ob-Feb-96 6.6 3.2 <1.0 <2.0 11,000 8.0 6.600 2,600 7.2 1.3 Ob-Feb-96 2.25 2.25 2.75 10,320 7.8 6,600 2,600 7.9 1.45 Ob-No-96 4.2 2.6 4.20 1,000 7.7 6,600 2,800 88 1.8 Ob-No-96 4.5 1.5 <1.0 | Ob-Feb-96 6.6 3.2 <1.0 <2.0 11,000 8.0 6.600 2,600 7.7 1.3 Ob-Feb-96 2.2.5 4.25 4.75 10,320 7.8 6,600 2,600 7.9 1.45 OB-Nov-96 4.2 2.6 4.20 1,000 7.7 6,600 2,800 88 1.8 OB-Nov-96 4.5 1.5 4.10 4.20 1,000 8.6 7,700 2,800 88 1.8 OB-Nov-96 4.6 1.5 4.10 4.20 1,000 8.6 7,700 3,600 82 1.3 DB-Nov-96 4.6 1.5 4.1 1,200 8.6 7,700 3,600 82 1.3 DB-Nov-96 4.6 1.5 4.1 1,000 8.6 7,700 3,600 82 1.3 DB-Nov-96 4.6 1.5 4.1 1,000 8.6 | O6-Feb-96 6.6 3.2 <1.0 <2.0 11,000 8.0 6.600 2.600 7.2 — 1.32 O6-Feb-96 2.5 2.5 2.5 7.7 10,320 7.8 5,630 3,180 7.9 - 1.52 OB-Nov-96 4.5 1.5 4.0 1,000 7.7 7,100 2.900 88 1.8 OB-Nov-96 4.6 1.5 4.10 4.20 1.0 4.0 1.0 3,00 88 7,700 3,00 88 1.8 OB-Nov-96 4.6 1.5 4.10 4.20 1.0 8.6 7,700 3,00 7.8 1.8 DB-Nov-96 4.6 1.5 4.10 4.20 1.2 0.0 8.6 7,700 3,00 7.8 1.3 DB-Nay-97 8.2 2.8 2.7 1,000 8.8 7,700 3,00 7.9 1.3 DB-Nay-97 1.2 1.2 1.2 1.0
 | O6-Feb-96 6.6 3.2 <1.0 <2.0 11,000 8.0 6.600 2.800 7.2 - 1.32 O6-Feb-96 2.5 <2.5 | Op-Feb-96 6.6 3.2 <10 <2.0 11,000 8.0 6.600 2.600 7.2 1.32 Ob-Feb-96 <2.5
 | OF-Feb-96 6.6 3.2 <10 <2.0 11,000 8.0 6.600 2.600 7.2 - 1.3 OF-Feb-96 <2.5 | OF-Feb-96 6.6 3.2 <10 <2.0 11,000 8.0 6.600 2.600 7.2 - 1.3 OB-Feb-96 2.5 -2.5 -2.5 -7.6 10,320 7.8 6,680 2.800 48 1.52 OB-Nov-96 4.2 1.5 -1.0 -2.0 11,000 7.9 7,100 2.900 88 1.8 OB-Nov-96 4.5 1.5 -1.0 -2.0 12,000 8.6 7,700 3,400 7.8 1.8 OB-Nov-96 4.6 1.5 -1.0 -2.0 12,000 8.6 7,700 3,400 7.8 1.8 OB-Nov-96 4.6 1.5 -1.0 -2.0 12,000 8.6 7,700 3,600 1.9 1.8 OB-Nov-98 1.5 2.1 1.2 10,700 8.2 5.00 2.900 8.0 1.3 OB-Nov-98 1.5 2.1

 | Op-Feb-96 6.6 3.2 <10 <2.0 11,000 8.0 6.600 2.600 7.2 - 1.3 Ob-Feb-96 -2.5 -2.5 -7.5 10,320 7.7 6,460 2,800 48 1.4 14-Aug-96 -4.5 -2.5 -7.0 11,000 7.7 7,100 2,800 48 1.8 06-Nov-96 -4.5 1.5 -4.0 -2.0 11,000 8.6 7,700 2,800 88 1.8 06-Nov-96 -4.5 1.5 -4.0 -2.0 11,000 8.6 7,700 3,400 7.4 -1.8 0 Chally-97 -4.0 -2.0 12,000 8.6 7,700 3,400 7.4 -1.3 1 Chally-96 -4.5 -4.5 -4.1 -2.0 12,000 8.6 7,700 3,400 7.4 -1.3 1 Chally-96 -4.5 -4.5 -4.1 -4.2 1.2 -4.0 -4.0 < | 18 | | | 8 | 76-6n | - | L | - | Н | Н | Ц | Н | Н | | 1.8 | Н | و ا | -20 | Н | <20 | <20 - 0.9 | <20 - 0.9 42 | <20 - 0.9 42 <0.025 | <20 — 0.9 42 <0.025 0.54 16 | <20 — 0.9 42 <0.025 0.54 16 | <20 - 0.9 42 <0.025 0.54 16 0.04 | <20 — 0.9 42 <0.025 0.54 16 0.04 <5.0 42
 | <20 - 0.9 42 <0.025 0.54 16 0.04 <5.0 42 2,500 | <20 — 0.9 42 <0.025 0.54 16 0.04 <5.0 42 2,500 <0.020 |
| Ob-Feb-96 2.5 2.5 2.7 10320 7.8 5,630 3,160 79 — 1,52 OB-May-96 4.0 1.56 4.0 4.0 1.0 4.0 1.0 1.0 1.0 1.0 1.2 1.0 | Ob-Feb-96 2.25 2.25 2.75 10.320 7.8 5.630 3.160 79 — 1.52 OB-May-96 4.03 1.58 <1.0 | Ob-Feb-Set C25 C25 C75 10320 78 5630 3180 79 — 152 OB-May-96 4.08 1.58 c10 c20 11,000 7.7 6,400 88 — 1.89 — 1.62 OB-Nov-96 4.5 1.5 c1.0 c2.0 11,000 8.6 7,700 3,400 74 — 1.8 OB-Nov-96 4.6 1.5 c1.0 c2.0 12,000 8.6 7,700 3,400 74 — 1.3 DB-Nov-96 4.6 1.5 c1.0 c2.0 12,000 8.6 7,700 3,400 74 — 1.3 DB-Nov-96 4.6 1.5 c1.0 c2.0 12,000 8.6 7,700 3,600 6.2 — 1.3 DB-Nov-96 4.6 1.5 c1.0 c2.0 12,000 8.6 1,700 3,600 6.2 — 1.3 DB-Nov-96 1.5 <td< td=""><td> De-Feb-96 C25 C25 C75 10,320 71 5,630 3,160 79 1,52 De-Feb-96 C25 C25 C45 10,320 77 5,480 2,880 48 (1.26 De-Feb-96 C25 C20 C20 C20 C20 C20 C20 C20 De-Feb-96 C25 C2 C20 C20 C20 C20 C20 C20 De-Feb-96 C25 C25 C20 C20 C20 C20 C20 C20 De-Feb-97 C25 C25 C20 C20 C20 C20 C20 C20 De-Feb-98 C25 C25 C25 C20 C20 C20 C20 C20 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99
C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25</td><td>Op-Feb-96 4.25 4.25 4.75 10,320 7.8 5,630 3,140 79 — 1,52 OBANday96 4.26 4.26 4.70 4.70 1,700 2,880 4.8 — 1,152 OBANday97 4.5 1.5 4.10 4.20 11,000 8.6 7,700 3,400 7.8 — 1,18 OBANday97 8.2 1.5 4.10 4.20 12,000 8.6 7,700 3,400 7.8 — 1,38 OBANday97 8.2 2.8 2.7 12,000 8.6 7,700 3,600 6.2 — 1,38 OBANday97 8.2 2.8 2.7 1,0700 8.3 6.500 2,900 8.0 — 1,3 OCA-67 9.5 3.1 1.2 1.2 10,700 8.3 6.500 2,900 8.0 - 0 - 1.3 1.3 1.2 1.2 1.0,700 8.3 6.00</td><td>OF-Feb-See C25 C25 C75 10320 78 5,630 3140 79 — 152 OB-May-96 4.26 4.26 4.05 7.7 6,630 2,880 48 — 1.52 OB-Moy-96 4.5 1.5 4.10 4.20 17,000 8.6 7,700 3,400 78 — 1.25 OB-Moy-96 4.5 1.5 4.10 4.20 17,000 8.6 7,700 3,400 78 — 1.3 OB-Moy-96 4.6 1.5 4.10 4.20 12,000 8.6 7,700 3,400 7.8 — 1.3 OB-Moy-96 4.6 1.5 4.1 4.20 12,000 8.6 7,700 3,600 8.7 — 1.3 OB-Moy-98 1.5 2.1 1.2 10,700 8.3 6,200 2,900 80 — 1.3 OB-Moy-98 1.1 6 3.1 1.2 1.0 8</td><td>O6-Feb-See C25 C25 C75 10320 78 5630 3140 79 — 152 OB-May-See 4.26 4.26 4.0520 7.7 6,630 2.80 48 — 1.52 OB-May-See 4.5 1.5 4.10 4.20 1,1000 7.7 6,800 88 — 1.3 OB-May-See 4.6 1.5 4.10 4.20 1,700 3,600 82 — 1.3 OB-May-See 4.6 1.5 4.10 4.20 17,000 8.6 7,700 3,600 82 — 1.3 OB-May-See 4.6 1.5 4.10 4.20 12,000 8.6 7,700 3,600 — 1.3 OB-May-See 1.5 4.1 4.2 10,200 8.6 5.700 2.900 1.0 — 1.3 OB-May-See 1.5 4.1 4.2 1.2 10,000 8.6 5.000 2.90 1.0</td><td>O6-Feb-See C25 C25 C75 10320 78 5,630 3140 79 — 1,52 OB-May-Ge 4.26 4.26 4.0520 7.7 6,630 2.80 48 — 1,12 OB-May-Ge 4.5 1.5 4.10 4.20 1,100 2,00 88 7,100 2,80 48 — 1,13 OB-May-Ge 4.6 1.5 4.10 4.20 12,000 8.6 7,70 3,400 74 — 1,13 OB-May-GF 4.6 1.5 4.10 4.20 12,000 8.6 7,700 3,400 74 — 1,13 OB-May-GF 8.2 1.2 1.2,000 8.6 1,700 3,600 — 1,13 1.2-Cot-H 1.2 1.2 1.2 1.2 0.20 1,000 3,300 — — — 1,3 1.2-Cot-H 1.2 1.2 1.2 1.2 1.2 0.20 1.</td><td>18</td><td></td><td></td><td>98</td><td>Н</td><td>щ</td><td>_</td><td>-</td><td>-</td><td>-†</td><td>4</td><td>1</td><td>-4</td><td></td><td>£.</td><td>4</td><td>í</td><td>4</td><td>4</td><td><0.0071</td><td><0.0071 - 1.1</td><td><0.0071 - 1.1 91</td><td><0.0071 - 1.1 91 <0.006</td><td><0.0071 - 1.1 91 <0.006 4.6</td><td><0.0071 - 1.1 91 <0.006 4.6 23</td><td><0.0071 - 1.1 91 <0.006 4.6 23</td><td><0.0071 - 1.1 91 <0.006 4.6 23 0.12 3.6 62</td><td><0.0071 - 1.1 91 <0.006 4.6 23 0.12 3.6 62 2,700</td><td><0.0071 1.1 91 <0.006 4.6 23 0.12 3.6 62 2,700</td></td<> | De-Feb-96 C25 C25 C75 10,320 71 5,630 3,160 79 1,52 De-Feb-96 C25 C25 C45 10,320 77 5,480 2,880 48 (1.26 De-Feb-96 C25 C20 C20 C20 C20 C20 C20 C20 De-Feb-96 C25 C2 C20 C20 C20 C20 C20 C20 De-Feb-96 C25 C25 C20 C20 C20 C20 C20 C20 De-Feb-97 C25 C25 C20 C20 C20 C20 C20 C20 De-Feb-98 C25 C25 C25 C20 C20 C20 C20 C20 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 C25 C25 C25 C25 C25 C25 C25 C25 De-Feb-99 C25 | Op-Feb-96 4.25 4.25 4.75 10,320 7.8 5,630 3,140 79 — 1,52 OBANday96 4.26 4.26 4.70 4.70 1,700 2,880 4.8 — 1,152 OBANday97 4.5 1.5 4.10 4.20 11,000 8.6 7,700 3,400 7.8 — 1,18 OBANday97 8.2 1.5 4.10 4.20 12,000 8.6 7,700 3,400 7.8 — 1,38 OBANday97 8.2 2.8 2.7 12,000 8.6 7,700 3,600 6.2 — 1,38 OBANday97 8.2 2.8 2.7 1,0700 8.3 6.500 2,900 8.0 — 1,3 OCA-67 9.5 3.1 1.2 1.2 10,700 8.3 6.500 2,900 8.0 - 0 - 1.3 1.3 1.2 1.2 1.0,700 8.3 6.00
 | OF-Feb-See C25 C25 C75 10320 78 5,630 3140 79 — 152 OB-May-96 4.26 4.26 4.05 7.7 6,630 2,880 48 — 1.52 OB-Moy-96 4.5 1.5 4.10 4.20 17,000 8.6 7,700 3,400 78 — 1.25 OB-Moy-96 4.5 1.5 4.10 4.20 17,000 8.6 7,700 3,400 78 — 1.3 OB-Moy-96 4.6 1.5 4.10 4.20 12,000 8.6 7,700 3,400 7.8 — 1.3 OB-Moy-96 4.6 1.5 4.1 4.20 12,000 8.6 7,700 3,600 8.7 — 1.3 OB-Moy-98 1.5 2.1 1.2 10,700 8.3 6,200 2,900 80 — 1.3 OB-Moy-98 1.1 6 3.1 1.2 1.0 8 | O6-Feb-See C25 C25 C75 10320 78 5630 3140 79 — 152 OB-May-See 4.26 4.26 4.0520 7.7 6,630 2.80 48 — 1.52 OB-May-See 4.5 1.5 4.10 4.20 1,1000 7.7 6,800 88 — 1.3 OB-May-See 4.6 1.5 4.10 4.20 1,700 3,600 82 — 1.3 OB-May-See 4.6 1.5 4.10 4.20 17,000 8.6 7,700 3,600 82 — 1.3 OB-May-See 4.6 1.5 4.10 4.20 12,000 8.6 7,700 3,600 — 1.3 OB-May-See 1.5 4.1 4.2 10,200 8.6 5.700 2.900 1.0 — 1.3 OB-May-See 1.5 4.1 4.2 1.2 10,000 8.6 5.000 2.90 1.0

 | O6-Feb-See C25 C25 C75 10320 78 5,630 3140 79 — 1,52 OB-May-Ge 4.26 4.26 4.0520 7.7 6,630 2.80 48 — 1,12 OB-May-Ge 4.5 1.5 4.10 4.20 1,100 2,00 88 7,100 2,80 48 — 1,13 OB-May-Ge 4.6 1.5 4.10 4.20 12,000 8.6 7,70 3,400 74 — 1,13 OB-May-GF 4.6 1.5 4.10 4.20 12,000 8.6 7,700 3,400 74 — 1,13 OB-May-GF 8.2 1.2 1.2,000 8.6 1,700 3,600 — 1,13 1.2-Cot-H 1.2 1.2 1.2 1.2 0.20 1,000 3,300 — — — 1,3 1.2-Cot-H 1.2 1.2 1.2 1.2 1.2 0.20 1. | 18 | | | 98 | Н | щ | _ | - | - | -† | 4 | 1 | -4 | | £. | 4 | í | 4 | 4 | <0.0071 | <0.0071 - 1.1 | <0.0071 - 1.1 91 | <0.0071 - 1.1 91 <0.006 | <0.0071 - 1.1 91 <0.006 4.6 | <0.0071 - 1.1 91 <0.006 4.6 23 | <0.0071 - 1.1 91 <0.006 4.6 23 | <0.0071 - 1.1 91 <0.006 4.6 23 0.12 3.6 62
 | <0.0071 - 1.1 91 <0.006 4.6 23 0.12 3.6 62 2,700 | <0.0071 1.1 91 <0.006 4.6 23 0.12 3.6 62 2,700 |
| 144Aug-96 4.08 1.58 <1.0 <2.0 10,620 7.7 6,480 2,880 48 <1.25 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1 | 144Aug-96 4.08 1.58 <1.0 <2.0 10,620 7.7 6,480 2,880 48 <1.25 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1 | 14-May-96 4.08 1.58 <1.0 <10,000 7.1 6.480 2.880 48 <12.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5
<1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 < | 14 15 15 15 15 17 15 15 17 15 18 18 18 15 18 18 18 | 14-Aug-96 4.08 1.58 <1.0 <2.0 10,620 7.7 6,460 2,890 48 <1.25 <1.5 <1.5 <1.0 <2.0 1,1000 2,900 340 <1.8 <1.3 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5
<1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1 | 144Aug-96 4.08 1.58 <1.0 <2.0 10,520 77 6,460 2,850 48 <125 <1.0 <2.0 1.0 <2.0 1.0 <2.0 1.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 <2.0 | 14-May-96 4.08 1.58 <1.0 <10,500 7.1 6,460 2,880 48 <125 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1

 | 14-May-96 4.08 1.58 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1 | 엹 | 2 | | 96 | Н | Н | | Н | _ | + | 4 | _ | - | _ | 1.5 | -+ | | <1.25 | <1.25 | 1 | 1 | 1.3 76 | 1.3 76 | 1.3 76 <0.1 5 21 | 1.3 76 <0.1 5 21 | 1.3 76 <0.1 5 21 0.1 | 1.3 76 <0.1 5 21 0.1 3.6 50
 | 1.3 76 <0.1 5 21 0.1 3.6 50 2,400 | 1.3 76 <0.1 5 21 0.1 3.6 50 2,400 |
| 14.Aug.96 4.2 2.6 <2.0 11,000 7.9 7,100 2,900 88 18 06.Aug.96 4.5 1.5 <1.0 <2.0 12,000 8.6 7,700 3,400 7.4 13 06.Aug.96 8.2 1.5 <1.0 <2.0 12,000 8.6 7,700 3,400 7.4 13 22.Oct.97 10 3.8 1.4 1.2 10,700 8.3 6,200 2,900 88 3 22.Oct.97 9.5 3.1 1.2 1.2 10,700 8.3 6,200 2,900 98 3 13.Aug.98 15 12 <0.50 3.8 12,000 8.3 6,200 2,900 98 3 22.Oct.97 7.3 2.5 3.1 1.7 13,000 8.0 6,300 7.4 20.1 < | 14.Aug.96 4.2 2.6 <2.0 11,000 7.9 7,100 2,900 88 18 06.Nov-96 4.5 1.5 <1.0 <2.0 12,000 8.6 7,700 3,400 7.4 13 06.Nov-96 4.5 1.5 <1.0 <2.0 12,000 8.6 7,700 3,600 62 13 22-Oct-97 8.2 2.6 2.6 2.7 8,450 5,500 2,900 98 3 22-Oct-97 9.5 3.1 1.2 1.2 10,700 8.3 6,200 2,900 98 3 21-Aksy-98 1.5 1.2 <0.50 3.8 1,500 10,000 3,300 22-Oct-97 7.3 2.5 3.1 1.7 13,200 10,000 3,300 22-Oct-97 7.3 2.5 3.1 1.7 13,200 10,000 3,300 22-Oct-97 8.4 3.4 3.4 13.2 11,500 8.0 6,500 2,900 98 3 22-Oct-97 8.5 3.1 1.7 13,200 10,000 3,300 22-Oct-97 8.5 3.1 1.7 13,200 10,000 3,300 22-Oct-97 8.4 3.4 3.7 13,200 10,000 13,000 22-Oct-97 8.4 3.4 3.7 13,200 11,000 4,300 | 14.4 May-96 4.2 2.6 <2.0 11,000 7.9 7,100 2,900 88 18 064 Nov-96 4.5 1.5 <1.0 <2.0 12,000 8.6 7,700 3,400 7.4 13 064 Nov-96 4.6 1.5 <1.0 <2.0 12,000 8.6 7,700 3,600 62 13 22-Oct-97 10 3.8 1.4 1.2 10,700 8.3 6,200 2,900 98 3 22-Oct-97 8.5 3.1 1.2 1.2 10,700 8.3 6,200 2,900 98 3 21-Oct-98 15 12 <0.50 3.8 12,000 10,000 3,300 21-Oct-98 11 6 3 3 11,800 10,000 3,300 13-May-98 7.0 3.2 2.1 1.7 13,200 11,000 3,300 13-May-98 7.0 3.2 2.1 1.7 14,000 11,000 4,300 13-May-98 7.0 3.2 2.1 1.7 14,000 11,000 4,300 13-May-98 7.0 3.2 2.1 1.7 14,000 11,000 3,300 13-May-98 7.0 3.2 2.1 1.7 14,000 11,000 4,300 13-May-98 7.0 3.2 2.1 1.7 14,000 7.05 8,290 4,400 130 20.3 < 13-May-98 7.0 3.2 2.1 1.7 14,000 7.05 8,290 4,400 130 20.3 < 13-May-98 7.0 3.2 2.1 1.7 1.7 14,000 7.05 8,290 29,000 13-May-98 7.0 3.2 2.1 1.7 1.7 14,000 7.05 8,290 29,000
 | 14Aug-86 42 2.6 420 420 11,000 73 7,100 2,900 88 18 064Nov-86 4.5 1.5 4.10 4.20 8.6 7,700 3,400 74 1.3 064Nov-86 4.5 1.5 4.10 4.20 8.6 7,700 3,400 74 1.3 064Nay-97 8.2 2.8 2.6 2.7 8,450 5,500 2,300 3 052-Oct-97 10 3.8 1.4 1.2 10,200 8.2 6,500 2,900 98 3 052-Oct-97 9.5 3.1 1.2 1.2 10,700 8.3 6,200 2,900 98 3 052-Oct-97 1.3 2.5 3.1 1.7 13,200 10,000 3,900 74 20.1 052-Oct-97 8.4 3.4 3.4 3.4 3.4 3.5 1,500 4,400 50 052-Oct-97 8.4 3.4 3.4 3.4 3.5 1,500 4,400 50 052-Oct-97 8.4 3.4 3.4 3.4 3.4 3.5 1,500 4,400 3,000 3,000 052-Oct-98 7.0 3.2 2.1 1.7 1,400 7.2 1,500 4,400 3,000 052-Oct-98 7.0 3.2 2.1 1.7 1,400 7.2 1,500 4,400 3,000 052-Oct-98 7.0 3.2 2.1 1.7 1,400 7.0 1,500 | 144Aug-86 4.2 2.6 <2.0 11,000 73 7,100 2,900 88 18 064Aug-86 4.5 1.5 <1.0 <2.0 12,000 8.6 7,700 3,400 74 1.3 084Aug-86 4.5 1.5 <1.0 <2.0 12,000 8.6 7,700 3,400 74 1.3 084Aug-97 8.2 2.8 2.6 2.7 8,450 5,500 2,900 82 3 084Aug-98 1.0 2.2 2.4 2.7 2.7 8,450 5,500 2,900 100 3 084Aug-98 1.0 2.8 2.6 2.7 8,450 5,500 2,900 100 3 084Aug-98 1.0 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 084Aug-98 1.0 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 084Aug-98 1.0 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 084Aug-98 1.0 2.1 2.1 2.1 2.1 2.1 2.1 2.1 084Aug-98 1.0 2.1 2.1 2.1 2.1 2.1 2.1 2.1 084Aug-98 1.0 2.1 2.1 2.1 2.1 2.1 2.1 084Aug-98 2.1 2.1 2.1 2.1 2.1 2.1 2.1 084Aug-98 2.1 2.1 2.1 2.1 2.1 2.1 084Aug-98 2.1 2.1 2.1 2.1 2.1 084Aug-98 2.1 2.1 2.1 2.1 2.1 084Aug-98 2.1
 | 144Aug-86 4.2 2.6 <2.0 11,000 73 7,100 2,900 88 18 18 18 18 18 19 19 19 | 144Aug-86 4.2 2.6 <2.0 11,000 79 7,100 2,900 88 18 064Nov-86 4.5 1.5 <1.0 <2.0 12,000 8.6 7,700 3,400 74 1.3 064Nov-96 4.5 1.5 <1.0 <2.0 12,000 8.6 7,700 3,400 74 1.3 084Nay-97 8.2 2.8 2.6 2.7 8,450 5,500 2,300 3 084Nay-97 8.2 2.8 2.6 2.7 8,450 5,500 2,300 3 084Nay-97 8.2 2.8 2.6 2.7 8,450 5,500 2,300 3 084Nay-98 1.5 1.2 1.2 1.2 10,700 8.3 6,200 2,900 98 3 084Nay-97 1.5 2.5 3.1 1.7 10,200 6,500 3,900 74 20.1 <5 084Nay-98 1.5 2.5 3.1 1.7 13,200 6,100 3,900 084Nay-98 1.5 2.5 3.1 1.7 13,200 1,000 3,900 084Nay-98 1.5 2.5 3.1 1.7 13,200 1,000 4,300 084Nay-98 1.5 2.5 3.1 1.7 13,200 1,000 4,400 130 20.3 084Nay-98 1.5 2.7 1.7

 | 144Aug-86 4.2 2.6 <2.0 <2.0 11,000 79 7,100 2,900 88 18 145Aug-86 4.5 1.5 <1.0 <2.0 12,000 8.6 7,700 3,400 74 1.3 15 15 12,000 8.6 7,700 3,400 6.2 1.3 15 15 15 12,000 8.6 7,700 3,400 6.2 1.3 15 15 15 12 12,000 8.2 6.500 2,300 6.2 1.3 15 15 15 1.2 1.2 1.2 10,700 8.3 6.200 2,300 6.2 3 15 15 1.2 1.2 1.2 10,700 8.3 6.200 2,300 74 20.1 15 15 1.3 1.2 1.2 1.2 10,700 8.3 6.200 3,500 74 20.1 15 15 1.3 1.3 1.3 1.3 1.3 1.3 1.3 15 1.3 1.3 1.3 1.3 1.3 1.3 1.3 15 1.3 1.3 1.3 1.3 1.3 1.3 15 1.3 1.3 1.3 1.3 1.3 15 1.3 1.3 1.3 1.3 1.3 15 1.3 1.3 1.3 1.3 1.3 15 1.3 1.3 1.3 1.3 15 1.3 1.3 1.3 1.3 15 1.3 1.3 1.3 1.3 15 1.3 1.3 1.3 1.3 15 1.3 1.3 1.3 1.3 15 1.3 1.3 1.3 15 1.3 1.3 1.3 15 1.3 1.3 1.3 15 1.3 1.3 1.3 15 1.3 1.3 1.3 15 1.3 1.3 1.3 15 1.3 1.3 1.3 15 1.3 1.3 | 열 | - | | | Н | Н | Н | Н | 4 | -1 | 4 | | - | | 77 | -1 | | <125 | <1.25 | 1 | - 13 | - 1,3 35 | - 1.3 35 0.02 | - 1.3 35 0.02 4.1 21 | - 1.3 35 0.02 4.1 21 | - 1.3 35 0.02 4.1 21 0.14 | - 1,3 35 0,02 4,1 21 0,14 4 40
 | - 1.3 35 0.02 4.1 21 0.14 4 40 2,380 | - 1.3 35 0.02 4.1 21 0.14 4 40 2,380 |
| Del-Nov-96 4.5 1.5 <1.0 <2.0 12,000 8.6 7,700 3,400 74 13 Del-Nov-96 4.6 1.5 <1.0 <2.0 12,000 8.6 7,700 3,500 6.2 13 Del-Nov-96 4.6 1.5 <1.0 <2.0 12,000 8.6 7,700 3,500 6.2 13 Del-Nov-97 8.2 2.8 2.6 2.6 2.0 2,500 2,900 100 3 Z2-Oct-97 10 3.8 1.4 1.2 10,700 8.3 6,200 2,900 100 3 Z2-Oct-97 8.5 3.1 1.2 1.2 10,700 8.3 6,200 2,900 98 3 Z1-Oct-98 1.5 1.2 <0.50 3.8 12,000 10,000 3,300 Z2-Oct-97 7.3 2.5 3.1 1.7 13,000 10,000 74 20.1 6.5 Z2-Oct-97 8.4 3.4 3.5 13,000 7.3 7,500 4,400 50 | Del-Nov-96 45 15 <10 <20 12,000 86 7,700 3400 74 13 | Del-Nov-96 4.5 1.5 <1.0 <2.0 12,000 8.6 7,700 3,400 74 1.3
 | Del-Nov-96 45 15 <10 <2.0 12,000 8.6 7,700 3,400 74 1.3 | Del-Nov-96 4.5 1.5 <1.0 <2.0 12,000 8.6 7,700 3400 74 1.3
 | Declaration | Declaration

 | Del-Nov-96 | 18 | | | 14- | Н | Н | Н | Н | | \dashv | Ц | | \dashv | | 1.6 | - | - 1 | \$0.0s | <0.05
1 | 1 | - 12 | - 12 85 | - 1.2 85 <0.006 | − 1.2 85 <0.006 4.5 23 | — 1.2 85 <0.006 4.5 | − 1.2 85 <0.006 4.5 23 | - 1.2 85 <0.006 4.5 23 0.13 3,4 60
 | - 12 85 <0.006 4.5 23 0.13 3,4 60 2,900 | - 12 85 <0.006 4.5 23 0.13 3.4 60 2,900 0.024 |
| Declaration | Declaration | De-Nov-96 4.6 1.5 c1.0 c2.0 12,000 8.6 7700 3,500 62 1.3
 | De-Nov-96 4.6 1.5 c1.0 c2.0 12,000 8.6 7700 3,600 62 1.3 | Control | Control
 | Octobroade 4.6 1.5 c.1.0 c.2.0 12,000 8.6 7.700 3,500 62 1.3
 | De-Nov-5e
 | 18 | | | 용 | Н | | Н | Н | 4 | - | _ | | -4 | | 1,3 | 4 | | 4 | 4 | -0.0 5 | <0.05 1.2 | <0.05 1.2 98 | <0.05 - 1.2 98 <0.007 | <0.05 - 1.2 98 <0.007 5.3 27 | <0.05 - 1.2 98 <0.007 5.3 27 | <0.05 - 1.2 98 <0.007 5.3 27 0.16 | <0.05 1.2 98 <0.007 5.3 27 0.16 3.8 32 | <0.05 1.2 98 <0.007 5.3 27 0.16 3.8 32 2,800 | <0.05 1.2 98 <0.007 5.3 27 0.16 3.8 32 2,800
 |
| Q8-May-97 8.2 2.6 2.7 8,450 — 5,500 2,300 —< | Q8-May-97 8.2 2.6 2.7 8,450 — 5.500 2.300 —< | Control Cont
 | Control Cont | 08-May-97 8.2 2.6 2.7 8.450 — 5.500 2.300 —< | 084Aay-97 8.2 2.8 2.6 2.7 8,450 — 5.500 2.300 — — — — — — — — — — — — — — — — — —
 | 0844ay-97 8.2 2.6 2.7 8.450 - 5.500 2.300
 | 12 12 13 14 12 10,700 12 15,500 12,300 12 13 14 14 15 10,700 15 15,500 12,500 100 10 13 14 14 15 10,700 12 15,500 12,500 100 10 13 14 14 15 10,700 12 15,500 12,500 10 12 15 12 13 13 13 13 13 13 13
 | 18 | | | 용 | ┞ | ⊢ | Н | ш | - | Н | Ц | | Н | Ц | 1.3 | _ | | ¢0.05 | 4 | 4 | 40.05 1.1 | 40.05 1.1 | <0.05 - 1.1 88 | <0.05 1.1 88 <0.007 4 | <0.05 1.1 88 <0.007 4 | <0.05 - 1.1 88 <0.007 4 22 0.13 | <0.05 1.1 88 <0.007 4 22 0.13 3.6 27 | <0.05 1.1 88 <0.007 4 22 0.13 3.6 27 2,400 | <0.05 1.1 88 <0.007 4 22 0.13 3.6 27 2,400 0.019
 |
| 22-Oct-97 10 3.8 1.4 12 10.200 8.2 6.500 100 — 3 3 1 2 Oct-97 9.5 3.1 1.2 12 10,700 8.3 6,200 100 — 3 3 1 2 Oct-97 9.5 3.1 1.2 10,700 8.3 6,200 2,900 98 — 3 3 1 2 Oct-98 11 6 1 2 0.50 100 8.3 6,500 10 10 10 10 10 10 10 10 10 10 10 10 1 | 22-Oct-97 10 3.8 1.4 12 10.200 8.2 6.500 100 — 3 3 1 12.Oct-97 9.5 3.1 1.2 10.700 8.3 6.200 100 — 3 3 1 12.Oct-98 115 12 10.700 8.3 6.200 13.00 74 20.1 13.00 10.1 13.00 10.1 13.00 10.1 13.00 10.1 13.00 10.1 13.00 10.1 13.00 10.1 13.00 10.1 13.00 10.1 13.00 10.1 13.00 10.1 13.00 10.1 13.00 10.1 13.00 10.1 13.00 10.1 13.00 10.1 13.0 10.1 13.00 10.1 13.0 10.1 13.0 10.1 13.0 10.1 13.00 10.1 13.0 13.0 | 22-Oct-97 10 3.8 1.4 12 10.200 8.2 6.500 100 — 3 3 1 12 Oct-97 10 3.8 1.4 12 10.700 8.3 6.200 100 — 3 3 1 12 Oct-97 10 3.8 12.Oct-97 10.700 8.3 6.200 2.900 88 — 3 3 1 12 Oct-98 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
 | 22-Oct-97 10 3.8 1.4 1.2 10.200 8.2 6.500 2.900 100 — 3 3 1 2-Oct-97 9.5 3.1 1.2 1.2 10.700 8.3 6.200 2.900 100 — 3 3 1 2 Oct-97 10 3.8 12.000 — 6.200 2.900 3.00 74 20.1 10 1 2 Oct-97 11 6 3 3 11,000 — 6.500 3.000 74 20.1 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 22-Oct-97 10 3.8 1.4 1.2 10.200 8.2 6.500 1500 — 3 22-Oct-97 9.5 3.1 1.2 1.2 10,700 8.3 6.200 150 — 3 21-Oct-98 16 12 < 0.50 3.8 11,500 2.900 9.8 — 3 21-Oct-98 16 12 < 0.50 3.8 11,500 0 0.300 74 20.1 22-Oct-97 6.4 3.4 3 11,7 13,200 — 8,100 3,800 — 6 22-Oct-97 6.4 3.4 3 11,7 13,200 — 8,100 3,800 — 6 22-Oct-97 6.4 3.4 3 13,800 73 7,500 4,400 50 — 6 21-Oct-98 8 3 2 2.1 1,7 14,000 — 11,000 43.00 — 6 21-Oct-98 8 3 2 2.1 1,7 14,000 — 11,000 130 20.3 65 21-Oct-98 8 3 2 2.1 4,49,200 7.0 29,000 130 20.3 65 21-Oct-98 8 3 2 2 14 49,200 70 29,000 — 6 12-Akay-98 37 4.5 2.9 1.6 49,200 17,000 800 — 65
 | 22-Oct-97 10 3.8 1.4 1.2 10,200 8.2 6,500 100 — 3 22-Oct-97 8.5 3.1 1.2 1.2 10,700 8.3 6,200 100 — 3 13-May-98 15 1.2 40,50 3.8 1,500 — 10,000 3,500 — — — 5 22-Oct-97 8.4 3.4 3 11,500 — 8,100 3,500 — — — 6 22-Oct-97 8.4 3.4 3 13,800 13 1,500 4,400 50 — — 6 13-May-98 7.0 3.2 2.1 1,7 13,200 — 11,000 4,300 — — 6 13-May-98 8 3 2 2.1 1,7 14,000 — 11,000 4,300 — — 6 21-Oct-98 8 3 2 2.1 1,7 14,000 — 11,000 4,300 — — 6 21-Oct-98 8 3 2 2.1 1,7 14,000 — 50,000 19,000 20,000 — — 6 21-Oct-98 8 3 2 2.1 4,4 49,200 10 10,000 800 — 6 12-May-98 37 4.5 2.9 1.6 48,000 — 28,000 24,000 800 — 6 22-Oct-98 140 13 6 6 44,200 6.79 28,700 24,000 740 17.9 110 | 22-Cct-97 10 3.8 1.4 1.2 10.200 8.2 6.500 12.900 100 — 3 3 1 2.2-Cct-97 9.5 3.1 1.2 10.700 8.3 6.200 12.900 100 — 3 3 1 2.2-Cct-97 9.5 3.1 1.2 1.2 1.2 10.700 10.2 10.000 12.900 10.2 10.2 10.2 10.2 10.2 10.2 10.2 10

 | 22-Oct-97 10 3.8 1.4 1.2 10.200 8.2 6.500 12.900 100 — 3 3 1.20 Cot-97 9.5 3.1 1.20 1.000 — 3 6.20 100 — 3 6.20 100 — 3 7.20 Cot-97 9.5 3.1 1.200 — 10.200 12.900 12.900 12.00 12.0000 12.000 12.000 12.000 12.000 12.000 12.000 12.000 12.000 12.0000 1 | 18 | 3 | | 용 | H | Н | Н | Н | Н | Н | Н | | \dashv | | ł | Н | | _ | _ | 1 | 1 | 1 | 1 | 1 1 | 1 1 1 | 1 1 1 |
 | 1 1 | 1 1 |
| 22-Oct-97 9.5 3.1 1.2 1.2 10,700 8.3 6,200 2,900 98 3 13-May-98 15 12 <0.56 3.8 12,000 10,000 3,300 21-Oct-98 11 6 3 3 1 1,500 8.00 6,300 74 20.1 <0.5 21-Oct-97 7.3 2.5 3.1 1.7 13,000 8,100 300 22-Oct-97 6.4 3.4 3 3 3 13,800 73 7,500 4,400 50 4 13-May-98 7.0 3.2 2.1° 1,7 14,000 11,000 4,300 | 22-Oct-97 9.5 3.1 1.2 1.2 10,700 8.3 6,200 2,900 98 3 13-May-98 15 12 <0.56 3.8 12,000 10,000 3,300 | D. 22-Oct-97 9.5 3.1 1.2 <t< td=""><td>22-Oct-97 9.5 3.1 1.2 1.2 10,700 8.3 6,200 2,900 98 3 14.May-98 15 12 0,50 38 12,000 1 10,000 3,300 1 1 17.Oct-98 11 1.2 2,5 3.1 1.7 13,200 8,100 3,600 1 1 17.May-97 7.3 2.5 3.1 1.7 13,200 8,100 3,600 1 1 17.May-98 7.0 3.2 2.1 1.7 14,000 1 11,000 4,300 1 1 17.Oct-98 8 1 3 2 1 1,7 14,000 1 11,000 4,300 1 1 17.Oct-98 8 1 3 2 1 1,7 14,000 1 11,000 1,000
1,000 1</td><td> 12-Oct-97 9.5 3.1 1.2 1.2 10,700 8.3 6,200 2,900 98 3</td><td> 12-Oct-97 9.5 3.1 1.2 1.2 10,700 8.3 6,200 2,900 88 3</td><td>22-Oct-97 9.5 3.1 1.2 1.2 10,700 8.3 6,200 2,900 98 3 13-May-98 15 12 <0.50 3.8 12,000 10,000 3,300</td><td> 12-Oct-97 9.5 3.1 1.2 1.2 10,700 8.3 6,200 2,900 98 3 13-May-98 15 12 0.50 3.8 12,000 10,000 3,300 13-May-98 15 12 0.50 3.8 12,000 10,000 3,300 74 20.1 13-May-97 7.3 2.5 3.1 1.7 13,200 8,100 3,600 13-May-98 7.0 3.2 2.1 1.7 14,000 7.0 1300 3,600 13-May-98 7.0 3.2 2.1 1.7 14,000 7.0 1300 3,200 13-May-98 3.7 4.5 2.9 1.4 49,200 7.0 29,000 17,000 800 0. 12-May-98 3.7 4.5 2.9 1.6 49,200 28,000 17,000 800 0. 12-May-98 3.7 4.5 2.9 1.6 49,200 0.7 28,000 17,000 800 0. 12-May-98 3.7 4.5 2.9 1.6 49,200 0.7 28,000 17,000 800 0. 13-May-98 3.7 4.5 2.9 1.6 49,200 0.7 28,000 17,000 800 0. 14-Sop-33 0 0. 3,100 0.7 21,19 315 0 0.</td><td>10</td><td>2</td><td></td><td>727</td><td>Н</td><td>H</td><td>Н</td><td>Н</td><td>-</td><td>Н</td><td>Н</td><td></td><td>4</td><td></td><td>3</td><td>-</td><td>ശി</td><td>5 <0.05</td><td></td><td><0.05</td><td><0.05</td><td><0.05 - 0.9 68</td><td><0.05 - 0.9 68 <0.01</td><td><0.05 - 0.9 68 <0.01</td><td><0.05 - 0.9 68 <0.01 2.6 19</td><td><0.05 - 0.9 68 <0.01 2.6 19</td><td><0.05 — 0.9 68 <0.01 2.6 19 0.11 3 21</td><td><0.05 — 0.9 68 <0.01 2.6 19 0.11 3 21 2,200</td><td><0.05 — 0.9 68 <0.01 2.6 19 0.11 3 21 2,200</td></t<> | 22-Oct-97 9.5 3.1 1.2 1.2 10,700 8.3 6,200 2,900 98 3 14.May-98 15 12 0,50 38 12,000 1 10,000 3,300 1 1 17.Oct-98 11 1.2 2,5 3.1 1.7 13,200 8,100 3,600 1 1 17.May-97 7.3 2.5 3.1 1.7 13,200 8,100 3,600 1 1 17.May-98 7.0 3.2 2.1 1.7 14,000 1 11,000 4,300 1 1 17.Oct-98 8 1 3 2 1 1,7 14,000 1 11,000 4,300 1 1 17.Oct-98 8 1 3 2 1 1,7 14,000 1 11,000 1 | 12-Oct-97 9.5 3.1 1.2 1.2 10,700 8.3 6,200 2,900 98 3
 | 12-Oct-97 9.5 3.1 1.2 1.2 10,700 8.3 6,200 2,900 88 3 | 22-Oct-97 9.5 3.1 1.2 1.2 10,700 8.3 6,200 2,900 98 3 13-May-98 15 12 <0.50 3.8 12,000 10,000 3,300

 | 12-Oct-97 9.5 3.1 1.2 1.2 10,700 8.3 6,200 2,900 98 3 13-May-98 15 12 0.50 3.8 12,000 10,000 3,300 13-May-98 15 12 0.50 3.8 12,000 10,000 3,300 74 20.1 13-May-97 7.3 2.5 3.1 1.7 13,200 8,100 3,600 13-May-98 7.0 3.2 2.1 1.7 14,000 7.0 1300 3,600 13-May-98 7.0 3.2 2.1 1.7 14,000 7.0 1300 3,200 13-May-98 3.7 4.5 2.9 1.4 49,200 7.0 29,000 17,000 800 0. 12-May-98 3.7 4.5 2.9 1.6 49,200 28,000 17,000 800 0. 12-May-98 3.7 4.5 2.9 1.6 49,200 0.7 28,000 17,000 800 0. 12-May-98 3.7 4.5 2.9 1.6 49,200 0.7 28,000 17,000 800 0. 13-May-98 3.7 4.5 2.9 1.6 49,200 0.7 28,000 17,000 800 0. 14-Sop-33 0 0. 3,100 0.7 21,19 315 0 0. | 10 | 2 | | 727 | Н | H | Н | Н | - | Н | Н | | 4 | | 3 | - | ശി | 5 <0.05 | | <0.05 | <0.05 | <0.05 - 0.9 68 | <0.05 - 0.9 68 <0.01 | <0.05 - 0.9 68 <0.01 | <0.05 - 0.9 68 <0.01 2.6 19 | <0.05 - 0.9 68 <0.01 2.6 19 | <0.05 — 0.9 68 <0.01 2.6 19 0.11 3 21
 | <0.05 — 0.9 68 <0.01 2.6 19 0.11 3 21 2,200 | <0.05 — 0.9 68 <0.01 2.6 19 0.11 3 21 2,200 |
| 13-May-98 15 12 <0.56 3.8 12,000 — 10,000 33.00 — — — — — — — — — — — — — — — — — — | 13-May-98 15 12 <0.56 3.8 12,000 10,000 3,300 | 13-May-98 15 12 <0.56 3.8 12,000 — 10,000 3,300 — — — — — — — — — — — — — — — — — —
 | 13-May-98 15 12 40,50 3.8 12,000 10,000 3,300 | 1344ay-99 15 12 40,50 3.8 12,000 10,000 3,300 21-Oxt-98 11 6 3 3 11,800 8.00 6.50 3,000 74 20.1 4.6 22-Oxt-97 7.3 2.5 3.1 1,7 13,200 1,000 4,400 50 4 22-Oxt-97 6.4 3.4 3 3 1,800 7.3 7,500 4,400 50 4 21-Oxt-98 8 3 2 2.1° 1,7 14,000 7.06 8.20 4,400 130 20.3 4.6 21-Oxt-98 8 3 2 2.1° 1,7 14,000 1,000 29,000 21-Oxt-98 8 3 2 4 4,200 50,000 29,000 4 21-Oxt-98 3 3 2 4 4,200 7.0 29,000 4 22-Oxt-98 3 3 2 4 4,200 28,000 34,000 22-Oxt-98 3 3 3 3 3 3 3 3 3 23-Oxt-98 34,000 28,000 34,000 23-Oxt-98 3 3 3 3 3 3 3 3 3
 | 134kay-98 15 12 40,50 3.8 12,000 10,000 3,300 21-Oct-98 11 6 3 3 11,800 8.00 6,500 3,000 74 20.1 45 10-14kay-91 7.3 2.5 3.1 1.7 13,200 11,000 4,300 13-14kay-98 7.0 3.2 2.1° 1,7° 14,000 11,000 4,300 13-14ay-98 8 3 2 2.1° 1,7° 14,000 11,000 4,300 13-14ay-98 8 3 2 2.1° 1,7° 14,000 11,000 20,300 13-14ay-98 9 10 4,1 3.9 89,200 80,000 29,000 12-14ay-98 37 4,5 2.9 14 49,200 7,0 29,000 14,000 12-14ay-98 140 13 6 6 44,200 6.79 24,000 740 17.9 400 12-14ay-98 140 13 6 6 44,200 6.79 24,000 740 17.9 410 12-14ay-98 140 13 6 6 6 79 23,700 24,000 740 770 740 7 | 13-May-98 15 12 <0.56 3.8 12,000 — 10,000 3,300 — — — — — — — — —

 | 13-May-98 15 12 <0.56 3.8 12,000 — 10,000 3,300 — — — — — — — — — — — — — — — — — — | 100 | B | | 22-4 | Н | Н | Н | Н | Н | -+ | Ц | | Н | | 9 | 1 | 21 | | | <0.05 | <0.05 — 0.9 | <0.05 — 0.9 | <0.05 0.9 68 | <0.05 0.9 68 <0.01 2.3 | <0.05 0.9 68 <0.01 2.3 | <0.05 — 0.9 68 <0.01 2.3 19 0.11 | <0.05 — 0.9 68 <0.01 2.3 19 0.11 3 21
 | <0.05 — 0.9 68 <0.01 2.3 19 0.11 3 21 2,200 | <0.05 — 0.9 68 <0.01 2.3 19 0.11 3 21 |
| 21-Oct-98 11 6 3 3 11,650 6.00 6,530 3,000 74 20.1 <\$ 07-Map-97 7.3 2.5 3.1 1,7 13,200 8,100 3,600 22-Oct-97 6.4 3.4 3 3 13,800 7.3 7,500 4,400 50 4 13-Map-98 7.0 3.2 2.1° 1,7 14,000 11,000 4,300 | 21-Oct-98 11 6 3 3 11,650 6.00 6,530 3,000 74 20.1 <\$ 077-May-97 7.3 2.5 3.1 1,7 13,200 8,100 3,600 22-Oct-97 6.4 3.4 3 3 13,800 7.3 7,500 4,400 50 4 13-May-98 7.0 3.2 2.7 1,7 14,000 11,000 4,300 4 21-Oct-98 8 3 2 2.7 14,000 7.05 8,290 4,400 130 20.3 <\$ | 21-Oct-88 11 6 3 3 11,600 6,530 3,000 74 20.1 <\$ 0.07-May-97 7.3 2.5 3.1 1.7 13,200 8,100 3,600 4 22-Oct-87 64, 34 34 3, 13,800 7.3 1,500 4,000 60 4 13-May-98 7.0 3.2 2.1 1.7 14,000 11,000 4,300 4 21-Oct-88 8 3 2 2 42 14,000 7.05 8,290 4,400 130 20.3 <\$ 0.68-May-97 89 10 4.1 3.9 89,200 50,000 29,000
 | 21-Oct-88 11 6 3 3 11,600 6,530 3,000 74 20.1 <5 07-May-97 7.3 2.5 3.1 1.7 13,200 8,100 3,600 12-Oct-87 6.4 3.4 3.4 3.1 3,500 8,100 3,600 12-Oct-88 7.0 3.2 2.1 1.7 14,000 1,000 4,300 12-Oct-88 8 3 2 2 2 2 14,000 7.5 8,290 2,9,000 06-May-97 99 10 4.1 3.9 89,200 50,000 29,000 21-Moy-97 36 3.9 2 14 49,200 7.0 29,000 17,000 800 <5 | 21-Oct-98 11 6 3 3 11,600 6.50 6,530 3,000 74 20.1 <5 17-May-97 7.3 2.5 3.1 1.7 13,200 8,100 3,600
 | 21-Cct-88 11 6 3 3 11,500 8.00 6,530 3,000 74 20.1 45 07-May-97 7.3 2.5 3.1 1.7 13,200 8,100 3,500 4 12-Cct-87 6.4 3.4 3.1 1.7 14,000 7.3 1,500 4,400 50 4 13-May-98 7.0 3.2 2.1 1.7 14,000 7.3 1,500 4,400 50 13-May-97 89 10 4.1 3.9 89,200 8,000 29,000 13-May-97 89 10 4.1 3.9 89,200 8,000 1,000 800 13-May-98 37 4.5 2.9 14,000 17,00 800 13-May-98 37 4.5 2.9 44,000 67,00 17,00 800 13-May-98 140 13 6 6 44,200 67,9 24,000 740 17,9 <10 | 21-Oct-88 11 6 3 3 11,500 8.00 6,530 3,000 74 20.1 45 07-May-97 7.3 2.5 3.1 1.7 13,200 8,100 3,500 13-May-88 7.0 3.2 2.1* 1.7 14,000 1,500 4,400 50 13-May-98 7.0 3.2 2.1* 1.7 14,000 1,500 4,400 50 13-May-97 89 10 4.1 3.9 89,200 50,000 29,000 13-May-98 37 4.5 2.9 16 43,000 7.0 29,000 7.0 0.0 12-May-98 37 4.5 2.9 16 43,000 7.0 29,000 17-Jun-93 31 4.1 3.9 43,000 7.0 29,000 17-Jun-93 31 4.5 2.9 1.6 43,000 34,000 7.0 7.0 17-Jun-93 4,435 2,288 17-Jun-93 4,435 2,288

 | 21-Oct-98 11 6 3 3 11,500 6,530 3,000 74 20.1 45 17-May-97 7.3 2.5 3.1 1.7 13,200 8,100 3,600 12-Oct-88 7.0 3.2 2.1* 1.7 13,200 1,500 4,400 50 12-May-98 7.0 3.2 2.1* 1.7 14,000 1,500 4,400 50 12-May-98 7.0 3.2 2.1* 1.7 14,000 50,000 29,000 12-May-98 3.7 3.5 2.4 4,200 7.0 29,000 17,000 800 12-May-98 3.7 4.5 2.9 1.6 4,200 29,000 3,000 12-May-98 3.7 4.5 2.9 1.6 4,200 3,000 3,000 12-May-98 3.7 4.5 2.9 1.6 4,200 3,000 3,000 12-May-98 3.7 4.5 2.9 1.6 4,200 2,000 3,000 3,000 3,000 12-May-98 3.7 4.5 2.9 1.6 4,200 2,000 3,000 3,000 3,000 12-May-98 3.7 4.5 2.8 4,200 2,000 3,000 3,000 3,000 3,000 3,000 12-May-98 3.7 | ıω | - | | Ę | Н | Н | - | Н | - | _ | Ц | | - | | - | 4 | ıl | 4 | 4 | 1 | 1 | 1 1 | 1 1 1 | 1 1 1 | 1 1 1 | 1 1 1 | 990
 | 990 | 1 950 1 |
| 07-May-97 7.3 2.5 3.1 1.7 13,200 8,100 3,600 2,2-O-4-97 6.4 3.4 3 3 13,800 7.3 7,500 4,400 50 4 4 13-May-98 7.0 3.2 2.1° 1,7° 14,000 11,000 4,300 | 07-May-97 7.3 2.5 3.1 1,7 13,200 8,100 3,600 | 17.4kay-97 7.3 2.5 3.1 1,7 13,200 8,100 3,600
 | 17.Akay-97 7.3 2.5 3.1 1,7 13,200 8,100 3,600 | 17. May-97 7.3 2.5 3.1 1,7 13,200 8,100 3,600 4 13. May-98 7.0 3.2 2.1° 1,7 14,000 7.3 7,500 4,400 50 4 12. LOct-98 8 3 2.2 14,000 7.05 8.290 4,400 130 20.3 45 12. Hou-97 36 3.9 2 14 49,200 7.0 29,000 12. Hou-97 36 3.9 2 14 49,200 7.0 29,000 17,000 800 12. Hou-97 3.6 3.9 1.6 43,200 28,000 <
 | 17.4May-97 7.3 2.5 3.1 1,7 13,200 8,100 3,600 4 13.4May-98 7.0 3.2 2.7 1,7 14,000 1,000 4,400 50 4 13.4May-98 7.0 3.2 2.7 14,000 7.05 8,290 4,400 130 20.3 4 21.4No.97 36 3.9 2 14 44,200 7.0 29,000 17,000 800 12.4May-98 37 4.5 2.9 1,6 49,000 7.0 29,000 17,000 800 | 17. Alay-97 7.3 2.5 3.1 1.7 13.200 8.100 3.600

 | 17. Alay-97 7.3 2.5 3.1 1.7 13.200 8.100 3.600 | 110 | | | 21- | Н | Н | Н | Н | Н | - | _ | 1 | Ц | Ŕ | Н | H | ß | 25 <0.0 5 | 4 | <0.05 | <0.05 1.2 | <0.05 1.2 | <0.05 1.2 64 | <0.05 1.2 64 <0.0025 2.4 23 | <0.05 1.2 64 <0.0025 2.4 | <0.05 1.2 64 <0.0025 2.4 23 0.099 | <0.05 1.2 64 <0.0025 2.4 23 0.099 2.7 22
 | <0.05 1.2 64 <0.0025 2.4 23 0.099 2.7 | <0.05 1.2 64 <0.0025 2.4 23 0.099 2.7 22 |
| 22-Oct-97 6.4 3.4 3 3 13,800 7.3 7,500 4,400 50 - 4 1 1.3 | 22-Oct-97 6.4 3.4 3 3 13,800 7.3 7,500 4,400 50 - 4 1 1.3 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 | 22-Oct-97 6.4 3.4 3 3 13,800 7.3 7,500 4,400 50 - 4 4 1 1,74 14,000 - 11,000 4,300
 | 12-Cot-87 6.4 3.4 3 3 13,800 7.3 7,500 4,400 50 — 4 13-May-98 7.0 3.2 2.1° 1,7° 1,600 4,300 1— 4 — | 22-Oct-97 6.4 3.4 3 3 13,800 7.3 7,500 4,400 50 4 13-May-98 7.0 3.2 2.1 1,7 14,000 11,000 4,300 21-Oct-98 8 3 2 2 2 14,000 7.05 8,200 4,400 130 20.3 6.5 21-Nov-97 36 39 10 4.1 34,200 0.000 17,000 800 12-May-98 37 4.5 2.9 1,6 49,000 28,000 34,000
 | 13-May-98 7.0 3.4 3.4 3.4 3.5 13,800 7.3 7,500 4,400 50 4 13-May-98 7.0 3.2 2.1 1,7 14,000 11,000 4,300 21-Oct-98 8 3 2 4,100 7.05 8,200 4,400 730 20.3 4,5 21-Alay-98 37 4,5 2,9 1,6 44,200 6,79 24,000 74,00 740 77,0 21-Alay-98 37 4,5 2,9 1,6 44,200 6,79 24,000 740 77,0 4,000 740 77,0 740 | 13-May-88 7.0 3.2 7.1 7.500 7.3 7.500 4,400 50 4 13-May-88 7.0 3.2 2.1 1.7 14,000 11,000 4,300 21-Oct-88 8 3 2 2 2 2 14,000 7.05 8,290 4,400 130 20.3 4.5 21-May-97 89 10 4.1 3.9 89,200 5,000 29,000 21-May-98 37 4.5 2.9 4,400 7.0 29,000 17,000 800 21-May-98 140 13 6 6 44,200 6.79 28,000 24,000 740 17.9 410 21-Oct-88 140 13 6 6 44,200 6.79 28,000 24,000 740 17.9 410 21-Oct-88 7.1 7.1 7.1 7.1 7.2

 | 12-Cc-4-97 6.4 3.4 3 3 13.800 73 75.500 4.400 50 4 13-May-98 7.0 3.2 2.1° 1.7° 14,000 11,000 4,300 12-May-98 7.0 3.2 2.1° 1.7° 14,000 10,000 20,000 12-May-97 89 10 4.1 3.9 89.200 50.000 29.000 1.0° 800 12-May-98 37 4.5 2.9 1.6 49.200 7.0 29.000 71,000 800 12-May-98 37 4.5 2.9 1.6 49.200 7.0 29.000 71,000 800 12-May-98 140 13 6 6 44.200 6.79 28.000 74.0 71.9 71.9 14-Sep-93 5.100 2.119 915 14-Sep-93 3.100 2.119 915 | 16 | | | ¥-20 | Н | Н | - | | \dashv | - | - | \dashv | | 1 | - | - | ٦l | 4 | 4 | 1 | | 1 | 1 | 1 | 1 1 | 1 1 |
 | | 1 1 1 1 1 |
| 13-May-98 7.0 3.2 2.1* 1,7* 14,000 11,000 4,300 | 13-May-98 7.0 3.2 2.1° 1,7° 14,000 — 11,000 4,300 — — — — — — — — — — — — — — — — — — | 13-May-88 7.0 3.2 2.1° 1,7° 14,000 — 11,000 4,300 — — — — — — — — — — — — — — — — — —
 | 13-May-98 7.0 3.2 2.1° 1,7° 14,000 — 11,000 4,300 — — — — — — — — — — — — — — — — — — | 13-May-98 7.0 3.2 2.1° 1,7° 14,000 — 11,000 4,300 — — — — — — — — — — — — — — — — — —
 | 13-May-88 7.0 3.2 2.1° 1,7° 14,000 11,000 4,300 21-Oct-88 8 3 2 2.2° 14,000 7.05 8,200 4,400 130 20.3 4,50 21-Oct-89 36 39 24 43,200 7.0 29,000 29,000 21-Oct-89 37 4.5 2.9 1.6 44,200 6.79 24,000 34,000 22-Oct-89 140 13 6 6 44,200 6.79 24,000 740 17.9 410 | 13-May-88 7.0 3.2 2.1° 1,7° 4,000 11,000 4,300 21-Oct-68 8 3 2 2,2 2,400 2,500 2,500 2,500 2,500 21-May-98 37 4.5 2.9 1,6 4,200 2,500 17,000 800 21-May-98 37 4.5 2.9 1,6 4,200 2,500 17,00 800 21-Oct-68 140 13 6 6 44,200 6,79 24,000 740 17.9 210 21-Oct-68 140 13 6 6 44,200 6,79 24,000 740 17.9 210 21-Oct-68 140 140 140 140 140 17.9 24,000

 | 134kay-88 7,0 3,2 2,1° 1,7° 4,000 1,000 4,300 21-04-193 89 10 4,1 3,100 7,05 8,200 4,000 130 20,3 4,5 21-14kay-87 36 39 2 14 49,200 7,0 29,000 17,000 800 12-14kay-88 37 4,5 2,9 1,6 49,200 28,000 24,000 12-14kay-88 140 13 6 6 44,200 6,79 28,000 740 17,9 4,10 12-14kay-88 140 13 6 6 44,200 24,000 24,000 740 17,9 4,10 14-14kay-88 140 13 6 6 44,200 24,300 24,000 740 17,9 4,10 14-14kay-88 140 14,100 | IB | 4 | | 72-1 | Н | Н | - | | + | + | - | + | + | 1 | * | + | - | <0.05 | 4 | 4 | <0.05 | <0.05 0.6 | <0.05 - 0.6 200 <0.01 1 | <0.05 - 0.6 200 <0.01 14.4 | <0.05 - 0.6 200 <0.01 14.4 80 | <0.05 - 0.6 200 <0.01 14.4 80 0.2 | <0.05 - 0.6 200 <0.01 14.4 80 0.2 3 18
 | <0.05 - 0.6 200 <0.01 14.4 80 0.2 3 | <0.05 - 0.6 200 <0.01 14.4 80 0.2 3 18 2,500 |
| | 21-0-4-98 8 3 2 <2 14,000 7.05 8.290 4,400 130 20.3 <5 | 21-Oct-88 8 3 2 2 <2 14,000 7.05 8,290 4,400 130 20.3 <5 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
 | 21-Oct-98 8 3 2 2 <2 14,000 7.05 8,290 4,400 130 20.3 <5
06-May-97 89 10 4.1 3.9 89,200 - 50,000 29,000
21-Nov-97 36 3.9 2 14 49,200 7.0 29,000 17,000 800 - <5 | 21-Oct-98 8 3 2 2 42 14,000 705 8,290 4,400 130 20.3 45 00 00-44497 89 10 41 3,9 8,200 - 50,000 29,000 - 61,400-97 36 3 2 4 49,200 70 29,000 14,000 800 - 61,400-97 36 37 4,5 2.9 1,6 49,000 - 28,000 34,000 - 65
 | 21-Oct-98 8 3 2 2 <2 14,000 705 8,290 4,400 130 20.3 <5 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 21-Oct-88 8 3 2 2 <2 14,000 7.05 8.290 4,400 130 20.3 <5 06-May-97 89 10 4.1 3.9 89,200 - 50,000 29,000 - 6 20,000 17,00 800 - 6 5 12 14 49,200 7.0 29,000 17,00 800 - 6 5 12 14 49,200 17,00 29,000 17,00 800 - 6 5 12 14 49,200 17,00 29,000 17,00 800 - 6 5 12 14 49,200 17,00 800 - 6 5 12 14 49,200 17,00 800 - 6 5 12 14 49,200 17,00 800 - 6 5 12 14 14 14 14 14 14 14 14 14 14 14 14 14

 | 21-Oct-88 8 3 2 2 <2 14,000 7.05 8.290 4,400 130 20.3 <5 06-May-97 89 10 4.1 3.9 89,200 - 50,000 29,000 - 6 1,2489,89 3.7 4.5 2.9 4,400 17.0 29,000 17,00 800 - 6 5 121-May-98 3.7 4.5 2.9 1.6 48,000 - 28,000 34,000 - 6 5 17-Jun-93 14 10 13 6 4,200 6.79 28,700 34,000 740 17.9 <10 - 6 1,1448,99 3 1 17-Jun-93 1 17-Jun | lb | | | 횬 | ┪ | + | ┪ | ! | ┥ | -+ | _ | _ | + | 4 | + | + | . I. | 1 | 4 | 4 | | | | | | |
 | | |
| 06-May-97 89 10 4.1 3.9 89,200 — 50,000 29,000 = — — — — — — — — — — — — — — — — — | 21-Nay-97 36 3.9 2 14 4200 17.0 29,000 17.00 800 52,000 12.Nay-98 37 4.5 2.9 1.6 49,000 28,000 34,000 28,000 17.9 4.00 17. | 12-May-98 37 4.5 2.9 1.6 48,000 — 28,000 34,000 — — — — — — — — — — — — — — — — — —
 | 20-Oct-86 140 13 6 6 44.200 6.78 28,700 24,000 740 17.9 <10 117-Jung3 6,500 4,135 2,138 3,100 2,119 915 6,500 2,119 915 6,500 2,119 915 | 17-Jun-93 — — — 5,900 — 4,435 2,288 — — — — — — — — — — — — — — — — — —
 | 14-Sep-93 — — — 3,100 — 2,119 915 — — — — — — — — — — — — — — — — — — — | 09-Nov-83 — — — — 3,870 — 2,300 1,184 — — — —

 | | SON WOR | | | 22, | \$6-19 |
 -
 | H | H | Н | Н | Н | - | - 0 | - | _ | 4 | ı | - | 4 | 4 | 1 | | | | | 1 1 1 | 1 1
 | 1 1 | 1 1 |
| OG-May-97 89 10 4.1 3.9 89,200 — | 21-Nov-97 36 3.9 2 14 42.00 17.0 28,000 17.0 800 1.0 8 | 12-May-98 37 4.5 2.9 1.6 48,000 — 28,000 34,000 — — — — — — — — — — — — — — — — — —
 | 20-Oct-88 140 13 6 6 44.200 6.78 28,700 24,000 740 17.9 <10 11-Jun-93 5,900 4,195 2.288 1,100 14-Sep-93 3,100 2,119 9 9 1.184 3,900 2,508 1,150 | 17-Jun-93 — — — — 5,900 — 4,435 2,288 — — — — — — — — — — — — — — — — — —
 | 14-Sep-93 — — — 3,100 — 2,119 915 — — — — — — — — — — — — — — — — — — — | 09-Nov-93 3,670 - 2,300 1,184 2,204 2,508 1,150

 | 22-Apr-94 3,900 - 2,508 1,150 | ď | • | | | | ł | ŀ | | | | | | | | | | ١ | | | | - | | | | | |
 | | |

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

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

Hardness (as CaCO ₅), mg/l	8	515	620	260	ı	ı	i	ı	ı	ı	١	ı	1	ı	200	130	200	320	275	175	310	8	310	ı	1	-	1	ន្ត	ı	4	1	920	١	i	-	1,700	ı	1	1	ı	1
Alkalinity - Hydroxide, mg/l	i	1	_	ı	1	ł	ı		-	1	_	i	ı	_	ł	ı	1	-		ı	١	i	1	1	i	1	1	4 5	1	i	i	<25	1	ł	-	<25	-	1	ł	i	
Alkalinity - Carbonate, mg/l	ı	1	ı	-		1	,	ı	-	ı	ŧ	1	1	1	1	1	ı		ı	ı	i	1		ı	ı	i	ı	4 52	1	ı	-	<25	1		ı	<25	-	1	i	1	
Sample Date	06-Feb-96	08-Way-96	13-Aug-96	06-Nov-96	07-May-97	22-Oct-97	13-May-98	21-Oct-98	18~Jun-93	16-Sep-93	08-Nov-93	21-Apr-94	28-Oct-94	31~Jan-95	16-May-95	27~Jun-95	29-Aug-95	06-Feb-96	06-Feb-96	08-May-96	14-Aug-96	06-Nov-96	06-Nov-96	08-May-97	22-Oct-97	22-Oct-97	13-May-98	21-Oct-98	07-May-97	22-Oct-97	13-May-98	21-Oct-98	06-May-97	21-Nov-97	12-May-98	20-Oct-98	17-Jun-93	14-Sep-93	09-Nov-93	22-Apr-94	01-Dec-94
Sample Description	ACW #05	ACW #06	ACW #06	ACW #08	ACW #06	ACW #06D	ACW #06	ACW #06	ACW #07	ACW #07	ACW #07	ACW #07	ACW #08	ACW #08	ACW #08	ACW #08	ACW #09	ACW #09	ACW #09	ACW #09	ACW #ne																				

Bicarbonat Alkalinity -CaCO₃), mg/l 18 Alkalinity (as <0.02 Mgm, and 59 28 58 880 吾 1 8 1 18 8 8 8 2 4 8 Sodium, mgA 8 Silica, mg/l √Bur 'wnisswo 0.0068 wsudsueze' 1 2 2 ւնա 1 2 188 8 2 8 1 2 Magnesium, 1 60.0 *uon Calcium, mgA Boron, mgA NICATE AS NOS 2.0 0.45 181 0.82 83 Bromide, mg/l Sulfate, mgA 420 700 619 1,600 1,900 John spilos otal Dissolved .u.e ,Hq oughciance, oniosq2 ,anal Xylene, Ngu 85 <5 <2.5 **6**0.5 <2.5 Ethylbenzene, 10 2.6 **60.50** 17-May-95 28-Jun-95 30-Fabg-95 07-Fab-96 07-Fab-96 14-Aug-96 07-Nov-96 19-Fab-97 08-May-97 23-Oct-97 13-May-98 21-Oct-98 23-Oct-87 14-May-88 22-Oct-88 15-Sub-93 15-Sub-93 21-Apr-84 27-Oct-84 01-Feb-95 17-May-85 27-Un-95 16-Jun-93 14-Sep-93 09-Nov-93 28-Qu-94 01-Feb-95 28-Jun-95 28-Jun-95 28-Jun-95 07-Feb-96 07-Feb-96 07-Nov-96 08-May-97 CW #11 CV #1

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

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

Hardness (as CaCO ₅), mg/l	1	4,500	2,700	2,000	2,200	2,220	2,020	1,900	1	1	1	1	-	4,600	1	i	i	1	1	1	1,300	1,200	1,100	1,200	1,240	893	810	8	i	1	i	1.28 1.28	'	1	1	i	1	ł	1	3,300
Alkaiinity - Hydroxide, mg/l	i		1	i	i		ı	ı	ı		_	-	ı	<25	1		ı	ı	ı	1	-	-	1	1	1	ı	1	+	1	1	i	\$		1	1	ı	1	ł	1	1
Alkalinity - Carbonate, mgi	-			ı		-	1	1	-	1		ı	***	<25	-	1	ı	1	ı	-	1	-	_	1	ı	-	ı	1	1	1	ı	\$	1	1	1	ı	-	-	ı	ı
Sample Date	31~Jan-95	17-May-95	28-Jun-95	30-Aug-95	07-Feb-96	07-Feb-96	08-May-96	14-Aug-96	07-Nov-96	19-Feb-97	08-May-97	23-Oct-97	13-May-98	21-Oct-98	18-Jun-93	14-Sep-93	09-Nov-93	22-Apr-94	28-Oct-94	01-Feb-95	17-May-95	28~Jun-95	30-Aug-95	07-Feb-96	07-Feb-96	08-May-96	14-Aug-96	07-Nov-96	08-May-97	23-Oct-97	14-May-98	22-Oct-98	19-Jun-93	15-Sep-93	09-Nov-93	21-Apr-94	27-Oct-94	27-Oct-94	01-Feb-95	17-May-95
Sampie Description																																								
	ACW #09	ACW #10	ACW #11																																					

Bicarbonate, Alkalinity • CaCO₃), mg/l Alkallnity (as ZJuc' way 2,700 1882228888 8 6 your unipos Silica, mgA уßщ 0.088 0.09 0.09 0.061 1 8 8 8 0.22 Manganese, l/Bm 8 1 2 2 2 2 3 1 2 2 2 8 8 2 2 용 unusaudaw 2 0.25 'EON SE SEUIN 0.43 06.0 0.99 Fluoride, mg/l .3 2.2 1.5 1.6 1.5 2.9 2.9 2.9 0.6 - 8 6 1 2 2 7 Bromide, mg/l 2020 V 5 6 Sulfate, mgA బ 8 5 5 5 1 5 5 5 8 8 8 8 8 8 8 culouge! way 740 740 850 850 1,200 1,500 1,500 1,300 1,300 1,520 John spilos 8 otal Dissolved n's 'Hd шэюшшп Conductance Specific hđy Total Xylene, Ethylbenzene, pg/l 40.5 40.5 40.5 40.5 6.1 6.1 00 <0.5 60.5 60.5 Lotuene, pgA 29-Aug-95
07-Feb-96
07-Feb-96
08-May-97
13-Aug-96
06-May-97
21-Aug-97
21-Aug-97
22-Cet-98
20-Aug-97
22-Cet-97
23-Cet-97
23-Cet-97
23-Cet-97
24-Feb-98
24-Feb-98
11-Aug-98
11-Aug-98 111-Aug-98
22-Oct-98
22-Oct-98
20-Oct-98
20-Oct-97
20-Oct-97
24-Feb-98
01-Juin-98
11-Aug-97
20-Aug-97

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

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

Hardness (as CaCO ₅), mg/l	2,700	2,600	2,590	2,110	2,100	4,700	-	ı	-	5,900	ı		1	ł	i	i	1	١	1	'	730	902	850	810	1	ı	ı	1	i	1	i	170	190		1	-	1	1	-	190
Alkalinity – Hydroxide, mg/	1	1	1	ı	1	ı	1	-	1	<25	1	1	1	1	ı	1	ı	1	1	1	4 25	<25	<25	<25	1	1	ı	1	١	1	ı	<25	<25	1	1				1	\$ \$2
Alkalinity - Carbonate, mg/	1	1	١	1		1	,	١	,	<25	1	1	1	1	1	-	1	į	1	1	4 72	<25	<25	<25	,	1	١	,	1	١	i	<25	<25	1		١	,	,	,	\$\$
Sample Date	28-Aug-95	07-Feb-96	07-Feb-96	08-May-96	13-Aug-96	05-Nov-96	06-May-97	21-Nov-97	12-May-98	20-Oct-98	19-Feb-97	19-Feb-97	08-May-97	20-Aug-97	20-Aug-97	23-Oct-97	24-Feb-98	24-Feb-98	01~Jun-98	01~Jun-98	11-Aug-98	11-Aug-98	22-Oct-98	22-Oct-98	20-Feb-97	08-May-97	08-May-97	20-Aug-97	23-Oct-97	24Feb-98	01-Jun-98	11-Aug-98	22-Oct-98	20-Feb-97	07-May-97	20-Aug-97	22-04-97	24-Feb-98	13-May-98	11-Aug-98
6																																								
Sample Description																																								
	ACW #11	ACW #12	ACW #12D	ACW #12	ACW #12	ACW #12D	ACW #12	ACW #12	ACW #12D	ACW #12	ACW #12D	ACW #12	ACW #120	ACW #12	ACW #12D	ACW #13	ACW #13	ACW #130	ACW #13	ACW #13	ACW #13	ACW #13	ACW #13	ACW #13	ACW #14	ACW #14	ACW #14	ACW #14	ACW #14	ACW #14	ACW #14									

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

Bicarbonate, figm	,		,			,		,	1		,		,		,]		8	S.	<u>8</u>		,	,	1			8	<u>۾</u>	8	٦				
CaCO ₅), mg/l	-	4	-	-	-	<u> </u>	1				-	-		-			\exists	2	\perp	-				-	4	4	4	4	-	-		-	
Alkalinity (as	<u>'</u>	<u>'</u>	4	<u> </u>	1	<u>'</u>	-	_	<u> </u>	<u>'</u>	<u> </u>	<u>'</u>	<u>'</u>	-		\exists	\dashv	13		-	1	<u>'</u>	<u> </u>	+		اع ا	200	4	-	-	<u>'</u>		
Zinc, mgA	-	<u> </u>	1	<u> </u>	<u>'</u>	<u> </u>	-	<u> </u>	-	1	<u> </u>	1	<u>'</u>	1	1	-	-	<u> </u>	4		<u>'</u>	<u>'</u>	4	4	<u>'</u>	<u> </u>	1	<0.05	-	-	i	-	
figm ,mulbo 2	1	1	i	'	1	<u> </u>	4	_	<u> </u>	1	<u> </u>	-	_	1	1	9	Н	67	-	1	<u> </u>	<u>'</u>	<u>'</u>	4	2	1	Н	8	1	1	1	<u>'</u>	
Ngm , asilie	1	_	1	4	-	1	-	1	-	1	1	<u> </u>	1	-	!	Н	27	Н	 -	_	<u> </u>	1	1	1	22	_	3 27	_	_	-	1	<u>'</u>	
Ngm Ngm ,mulssato4	-	1	_	-	-	<u> </u>	ı	_	_	_		-	-	-	1	4	5	5.0	1	4		-	-	4	7	_	4.3	.0025 4.1	_	_	4	_	
Manganese,	1	-		1		1	ł	_	-		_	<u>'</u>	-	_	-	_	=		1	_	'	1	<u> </u>	_	<u> </u>	1	-	<0.00	1	_	1	_	
,magneslum, Ngm	-	-	١	1			1	1	1	_	1		1		1	18	20	20	-	_	1	1	1	1	9	1	Н	17	_	1	1	4	
Ngm ,noti	_	1	-	-	-	1	1	1		ł	-	1	ı	ı	-	1	1	1	1	-	1	1	ı	1	1	1	_	5 0.060	-	1	+	1	
Copper, mg/l	-	_		-	1	1	_	١	-	-	-	1	-	-	ı	-	ı	ł	1	1	ı	1	1	. 1	1	1	_	<0.0025	-	-	I	1	
Calcium, mg/l	-	ì	1	1		1	-	-	ı	-	-	-	-	1	Ŀ	8	8	22	Ŀ	-		ı		_	9	1	53	52	-	-	1	1	
Ngm ,noto8	1	i	1	1	-	-	_	-	1	1	-	1	1			ı	Ľ	L	ı	-			1	1	ı	١		0.22	-	-	ı	1	
, SON as shallN figm		!	ı	-	1		1	1	l		1	1		l		Ľ	ı	5 3.7	ŀ	_	ı	1	1	1	1	i	5.3	ı	-	ı	ı	i	
Nitrate-N, mg/l	ı	1	ı	1	ł	-	ı	ı	1	1	1	1	1	ı	ı	60	0.93	0.85/<0.05	0.76		1	ı	ı	ı	1.2	1.2	1.2/<0.05	1.2	ı	i	i	ı	
Fhuodde, mg/l	1	ı	ı	1	-			_	i	-	ı	1	ı	Ŀ	ı	1.3	-	4.0 ₄	1.1	-	ł	ı	ı	1	1.1	1.2	<0.4	1.0	-			I	
Sromide, mgil	ŀ	ı	ı	ı	-	-	١	ı	1	ŀ	1		ı	Ŀ	ı	2.0	8	٧	42		-	ł	-	ı	0.3	4	<1	<2	_	1		1	
entrianedmet Hq Or	ŀ	ı	i	ı	ı	i	ı	ı	1	ı	1	***	,	ı	ı	۱	ŀ	20.2	17.3	i	1	ı	ŧ	ı	ı	ı	20.2	18.0	1	ł	1	ŧ	
Sulfate, mgA	ī	ı	ī	ı	ı	i	1	;	-	ī	ī	i	Ī	ī	ı	8	19	8	55	ı	-	-	1	1	82	81	8	80	1	ı	1	ı	
Chloride, mg/l	3,200	4,400	3,600	4,200	17,000	17,000	13,000	18,000	059	480	280	610	220	290	55	120	120	120	100	-	91	29	29	95	38	8	æ	35	490	470	88	380	
Total Dissolved Solids, mg/L	5,200	7,600	6,700	7,590	27,000	30,000	21,000	30,000	1,500	1,400	1,300	1,400	1,300	1,580	1,290	84	480	8	488	1	470	200	520	629	410	410	450	464	1,500	1,400	1,400	1,410	
pH, a.u.	ī	Ī	i	ı	ı	ı	Ī	ī	Ī	1	ľ	1	i	ī	ī	8.1	7.8	7.78	7.79	1	1	ı	1	١	8.1	7.8	7.76	7.71	-	1	ı	-	
Specific Conductance, minorim	8,620	13,800	12,000	12,400	20,000	57,900	38,000	44,800	2,050	1,990	2,230	2,400	2,200	2,260	2,240	802	8	762	Ę	718	890	820	980	994	634	640	679	929	2,420	2,250	2,300	2,090	
,ansky listoT Ngų	7	5.6	4.4	ŀ	9 <u>6</u>	120	ı	ı	6	2.9	1.4	2.7	4.4	ı	ı	۸. 10	۸. 1.0	8	7	41.0	<1.0	1	0.1>	8	<1.0	0.1>	7	\$	8.4	3.1	13		
Ethylbenzene, lugu	2.4	4.2	0.4	ı	÷	11	1	ı	2.9	2.8	9	1.9	2.3	1	ı	<0.50	<0.50	8	₹5	<0.5	<0.5	ı	<0.50	42	<0.50	<0.50	42	\$	22	18	21	_	
Toluene, pg/l	3.7	⊢	4.6	ı	230	160	1	i	3.3	3.1	2.5	3.4	4.4	ı	1	<0.50	<0.50	۶	\$	0.55	<0.5	١	<0.50	<2	<0.50	<0.50	8	8	0.51	<0.5	1.6		
genzene, hg/l	7.3	13	H	┝	550	8	1	1	7.6	-	25	9.5	4	1	1	40.50	1	8	H	0.56	€0.5	1	<0.50	۶	<0.50	0 .50	۵	⊢	88	7.9	⊢	-	
Sample Date	07-May-97	21-0ct-97	12-May-98	20-Oct-98	06-May-97	20-Oct-97	12-May-98	19-Oct-98	07-Way-97	07-May-97	21-0ct-97	12-May-98	12-May-98	20-Oct-98	20-Oct-98	24-Feb-98	13-May-98	11-Aug-98	20-Oct-98	08-May-97	23-Oct-97	14-May-98	14-May-98	22-Oct-98	24-Feb-98	13-May-98	10-Aug-98	20-Oct-98	07-May-97	21-Oct-97	12-May-98	20-Oct-98	
Sample Description		-	-	##	12	23	24	23	23	CE	23	2	CE	2	CE	Oxy Production Well	Oxy Production Well	Oxy Production Well	Oxy Production Well	Production Well #1	Production Well #1	Poduction Well #1	Production Well #1D	Production Well #1	Production Well Dooms	Production Well Dooms	Production Well Dooms	Production Well Dooms					
	ENSR #1	ENSR #1	ENSR #1	ENSR #1	ENSR	ENSR #2	ENSR #2	ENSR #2	ENSR #3	ENSR #30	ENSR #3	ENSR #3	ENSR #30	ENSR #3	ENSR #3D	4	Q V	á	8 8	Produc	Produc	Produc	Produc	Produc	Produc	Produc	Produc	Produc	e dito	Ê	410	18 d.Lo	Notes:

1. < : Denotes a sample value of less than the laboratory reporting limit.
2. Jm : Estimated value-possible matrix effect.
3. *: Method blank had detectable levels of this compound.
3. 12/40.05 : NEL Lab result/Monlgomery 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

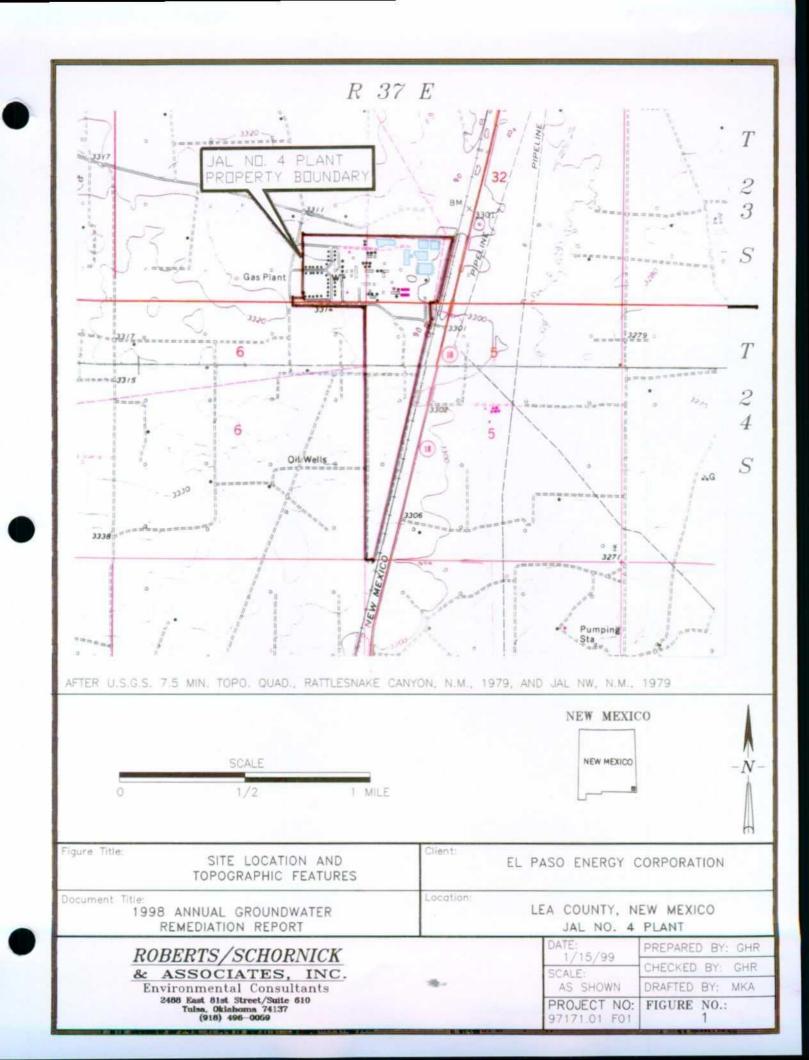
.

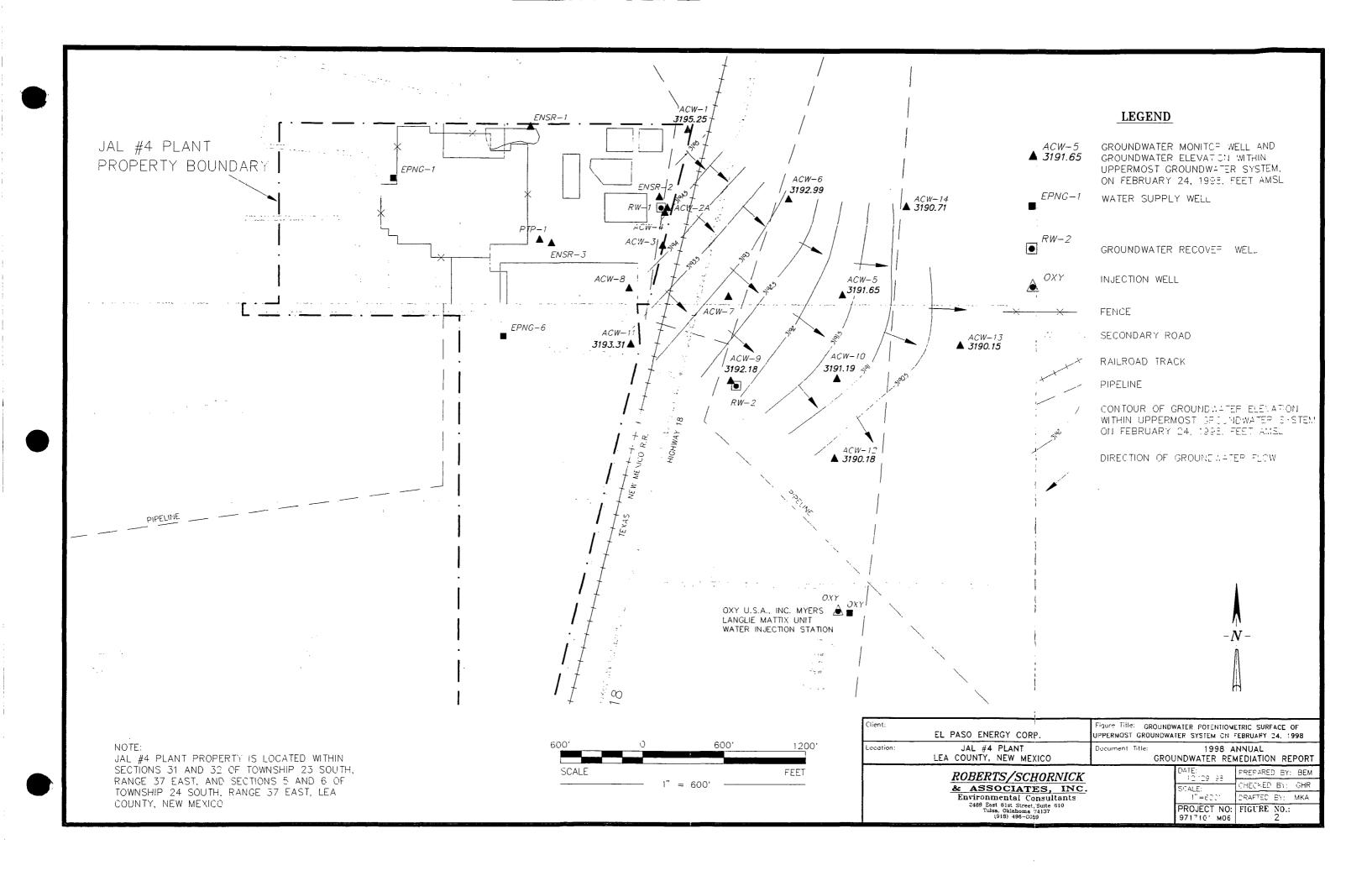
Sample Description.	Sample Date	Alkailnity Garbonate, n	- Alkalinity - Hydroxide, m	Hardness (a CaCOs), mg
ENSR #1	07-May-97	1	_	ľ
INSR #1	21-0ct-97		ŀ	1
ENSR #1	12-May-98	,		ı
ENSR#1	20-Oct-98	,		ŀ
ENSR #2	06-May-97	,		Ŀ
ENSR #2	20-Oct-97	ı	,	1
ENSR #2	12-May-98	,	'	1
ENSR#2	19-0-1-98	ı	ı	ŀ
ENSR #3	07-May-97	ı	ļ	1
NSR #3D	07-May-97	1	ŀ	1
NSR #3	21-Oct-97	ı	ŀ	ı
ENSR #3	12-May-98	١	1	ı
ENSR #3D	12-May-98	1	ŀ	1
ENSR #3	20-Oct-98			١
ENSR #3D	20-Oct-98	ı	ı	ı
Oxy Production Well	24-Feb-98	-	-	!
Day Production Well	13-May-98	ı	ŀ	i
Dxy Production Well	11-Aug-98	425	4 25	260
Oxy Production Well	20-Oct-98	<25	4 79	240
Production Well #1	08-May-97		ı	١
Production Well #1	23-04-97		1	ı
Production Well #1	14-May-98		-	١
Production Well #1D	14-May-98		ı	1
Production Well #1	22-Oct-98	1	ı	ı
Production Well Dooms	24-Feb-98	ı	1	Ŀ
Production Well Dooms	13-May-98		ı	=
Production Well Dooms	10-Aug-98	55	425	200
Production Well Dooms	20-Oct-98	425	\$2	8
PTP#1	07-May-97	-	-	ŀ
PTP#1	21-Oct-97			ı
PTP#1	12-May-98	ı		ı
DTD #4				

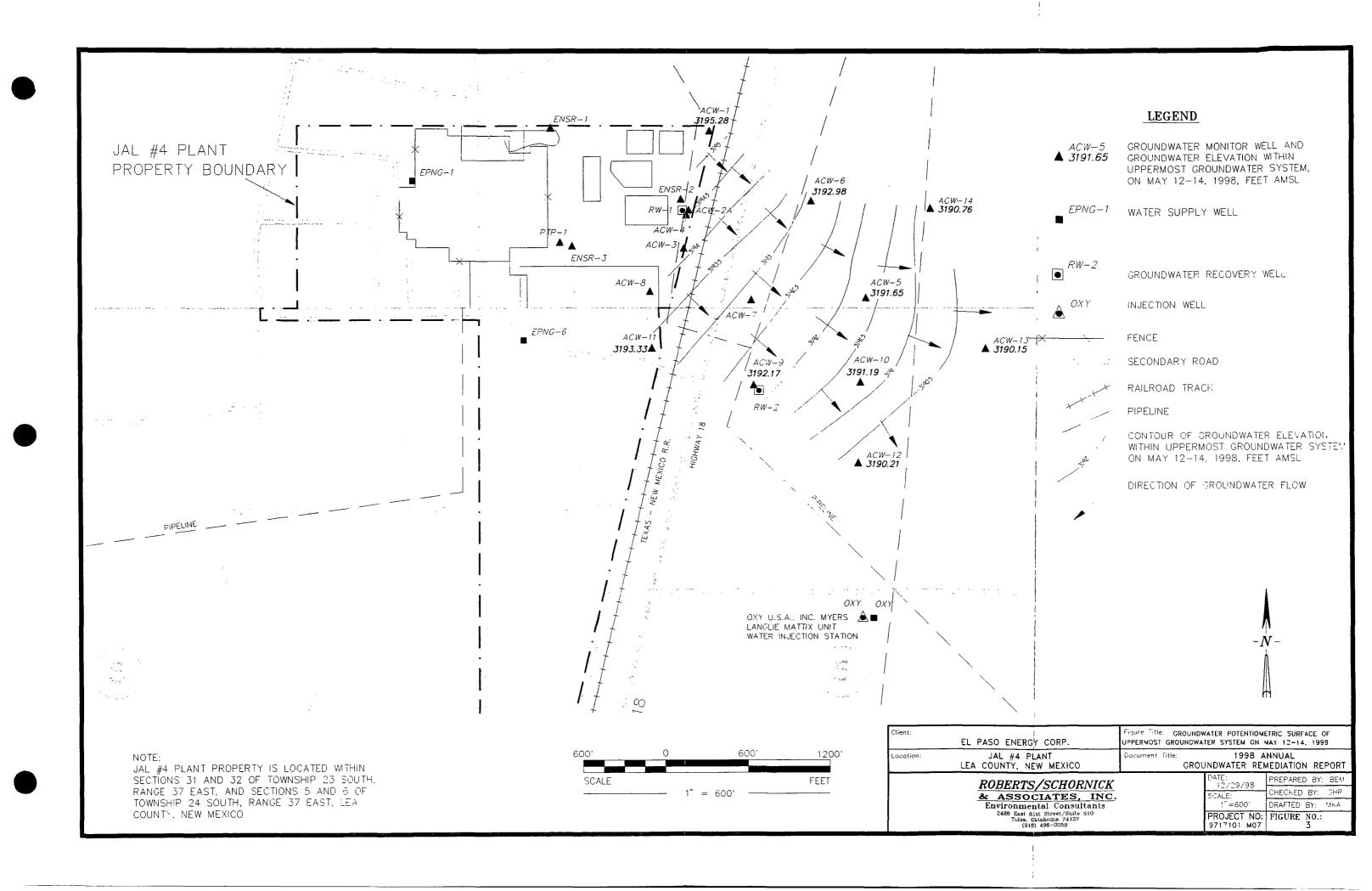
1. < .: Denotes a sample value of less than the laboratory report
2. Jm : Estimated value—possible matrix effect
3. * : Method blank had detectable levets of this compound.
3. 1.2/-0.05 : NEI Lab result/Mortgomery Watson Lab result.

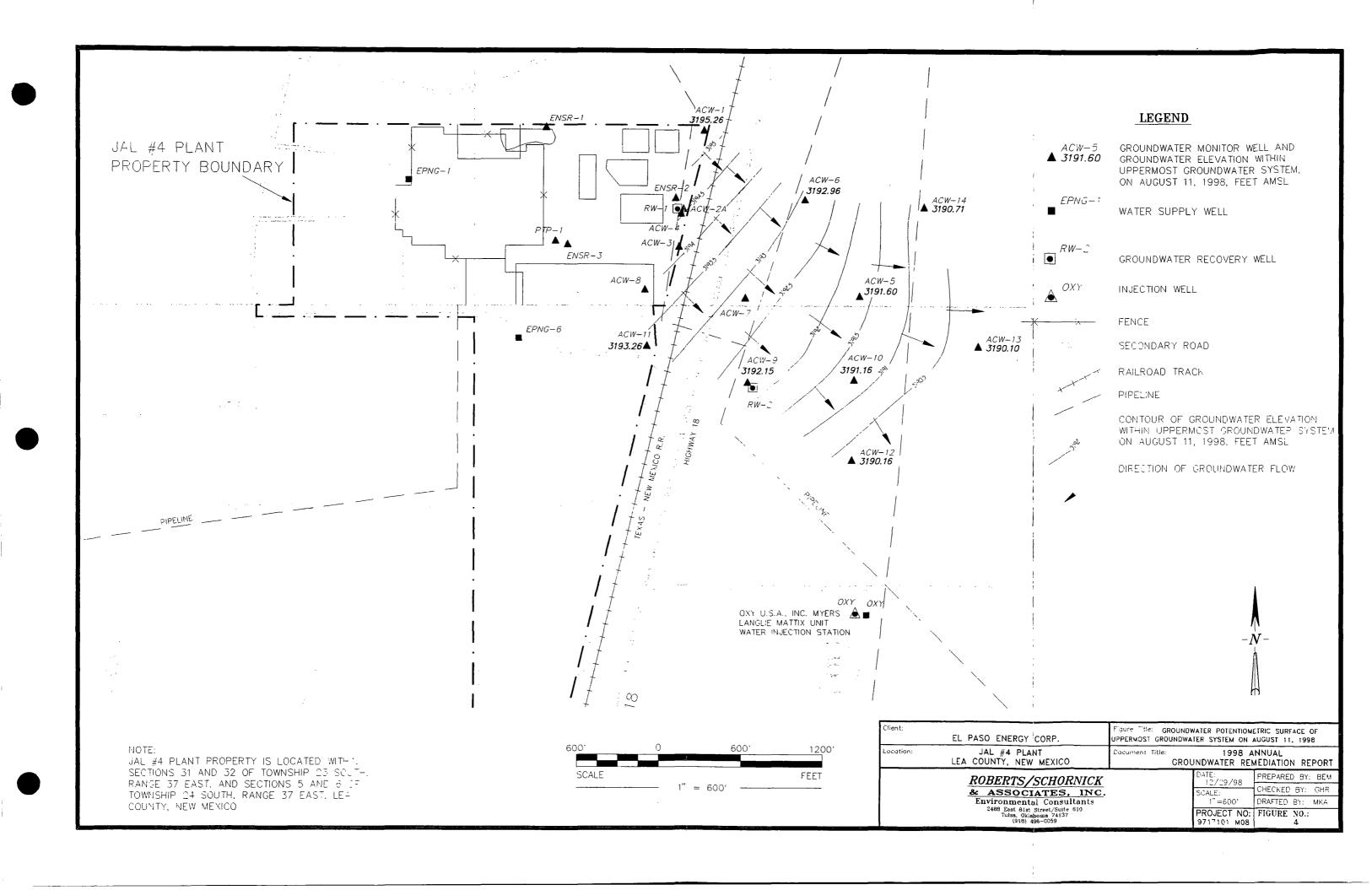
Page 10 of 10

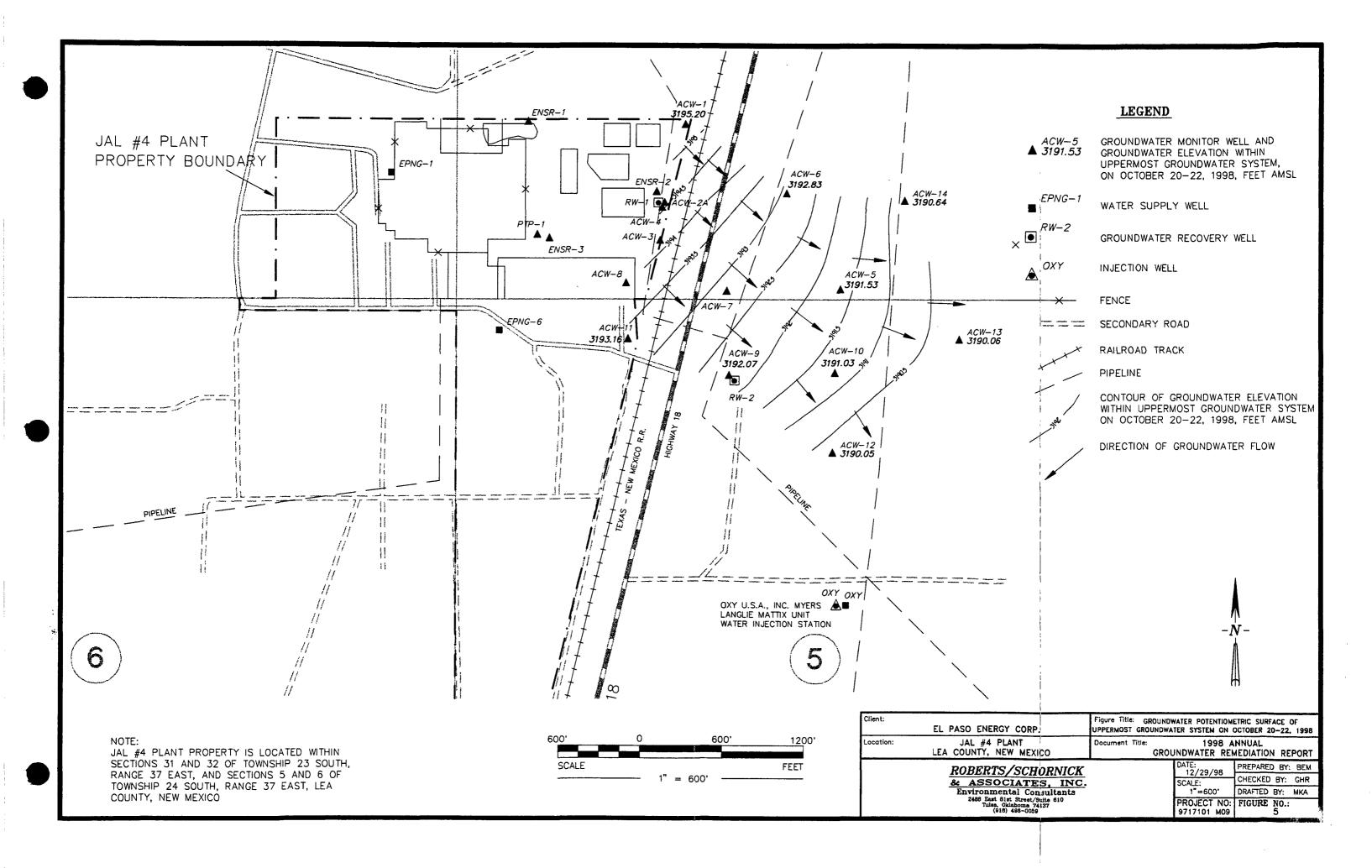
FIGURES

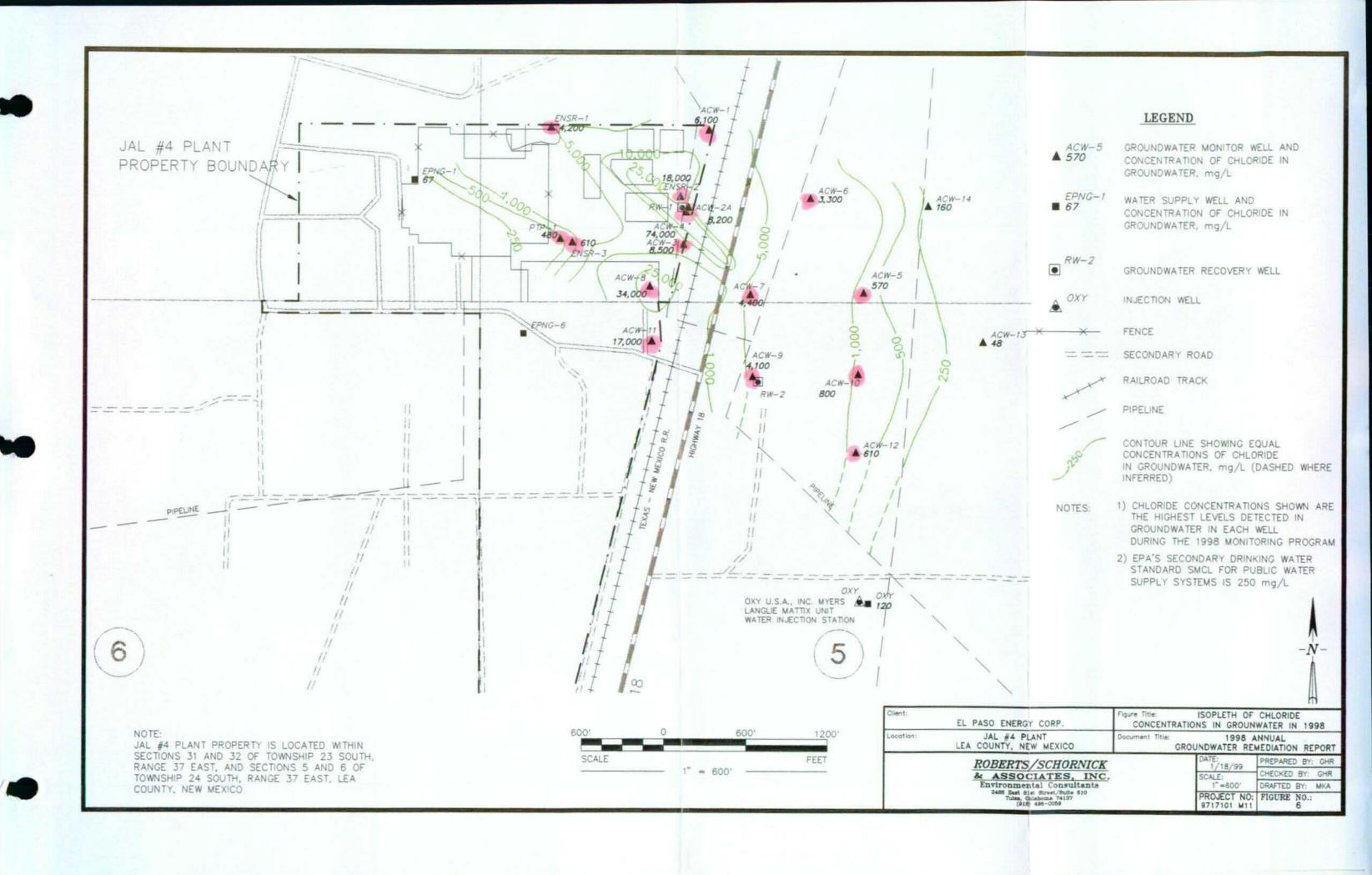


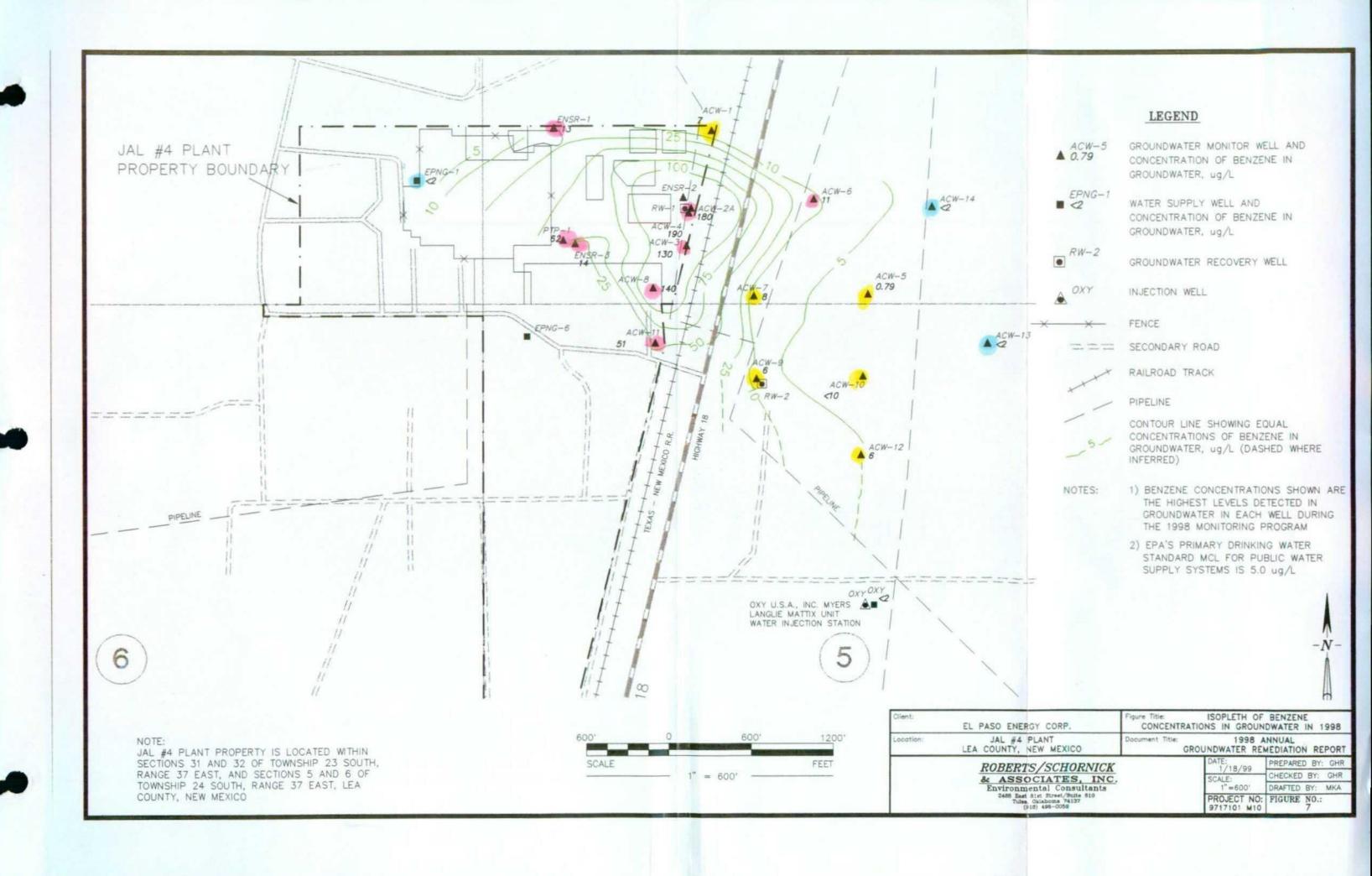




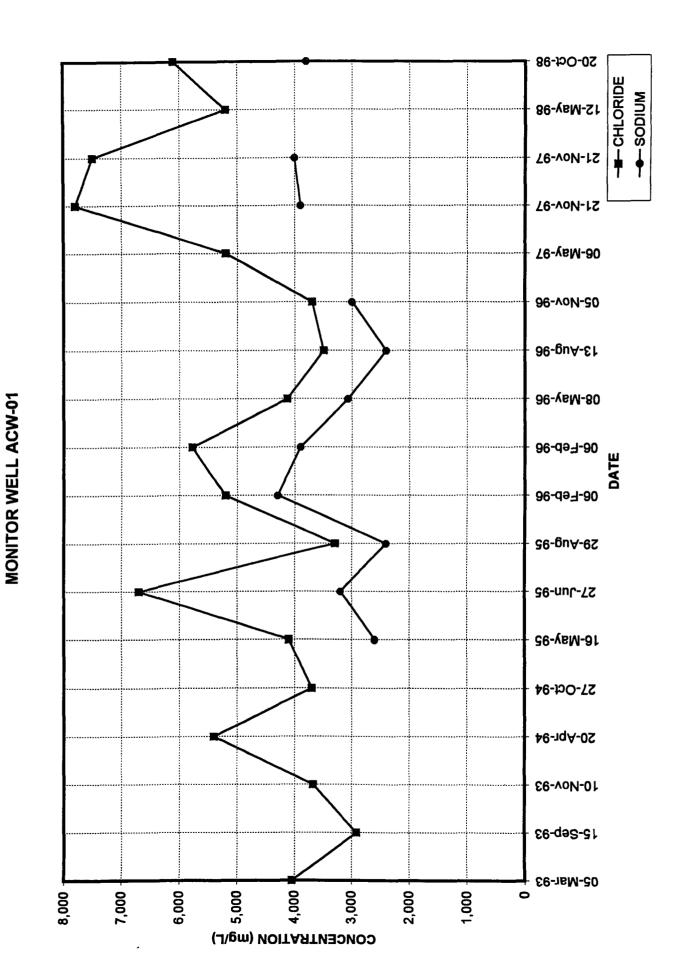


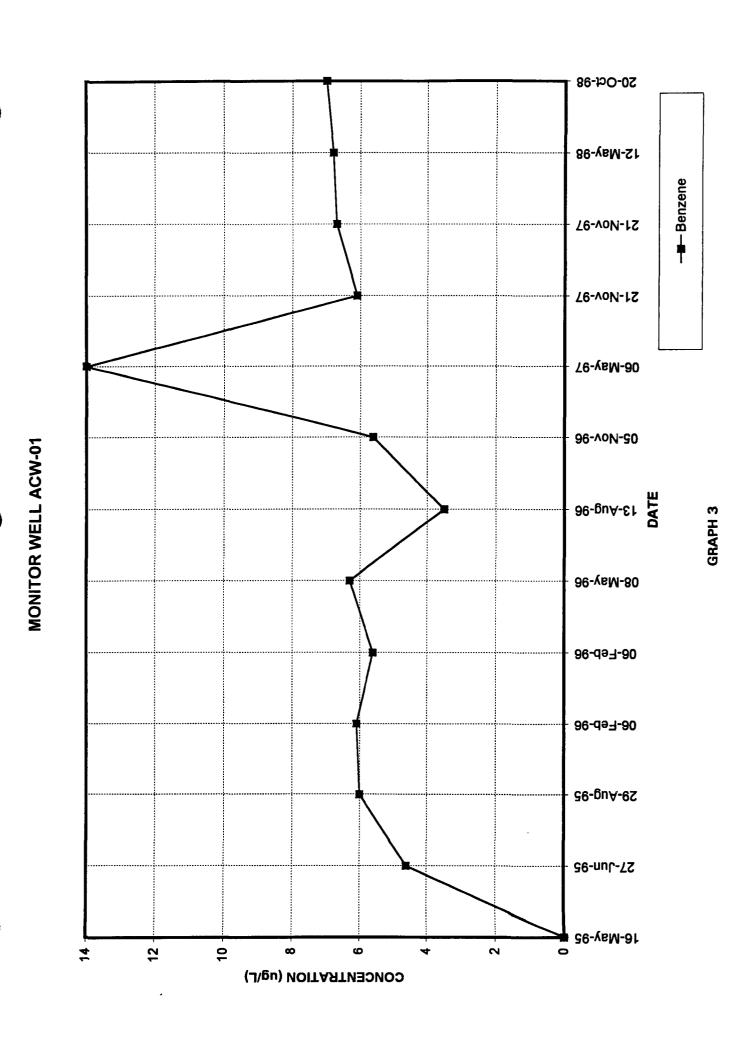




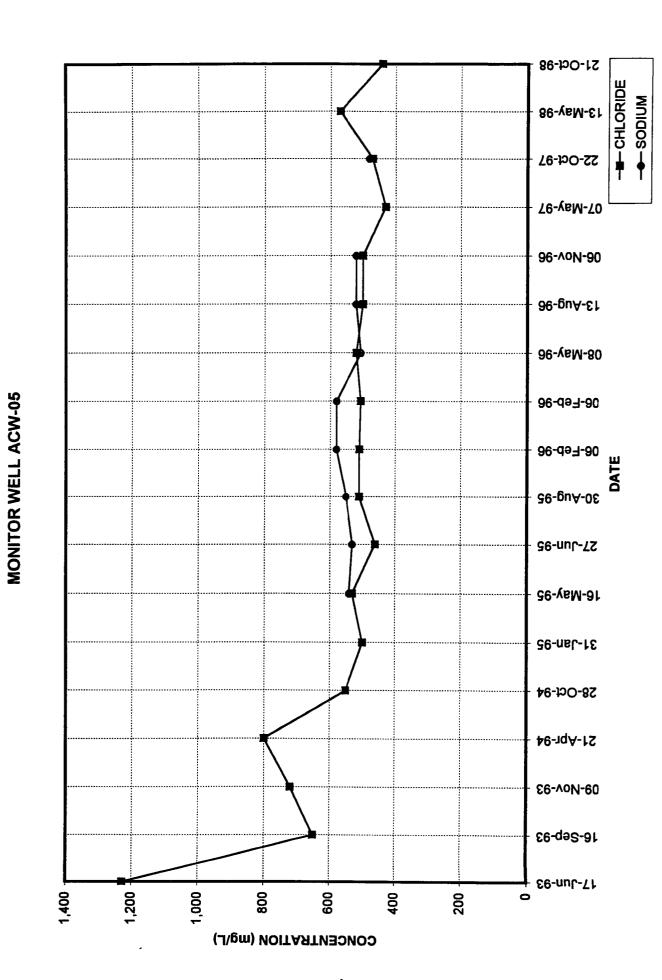


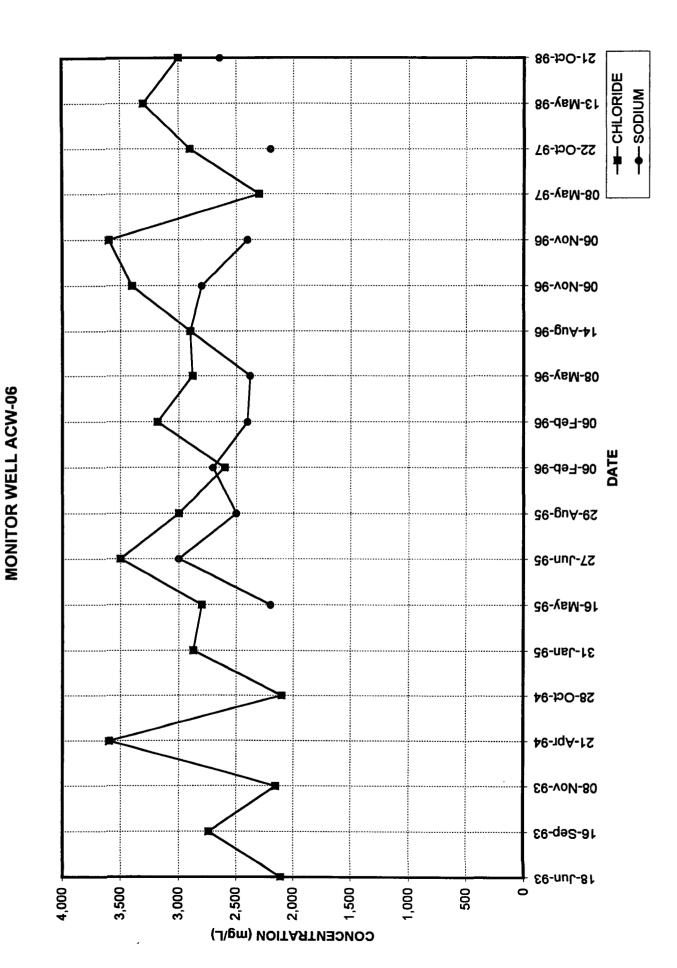
GRAPHS





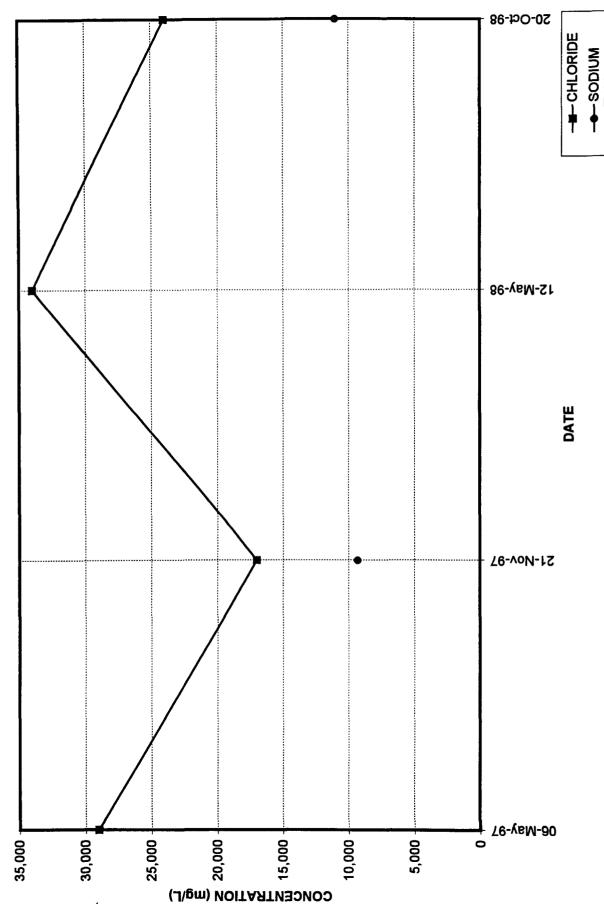
GRAPH 5

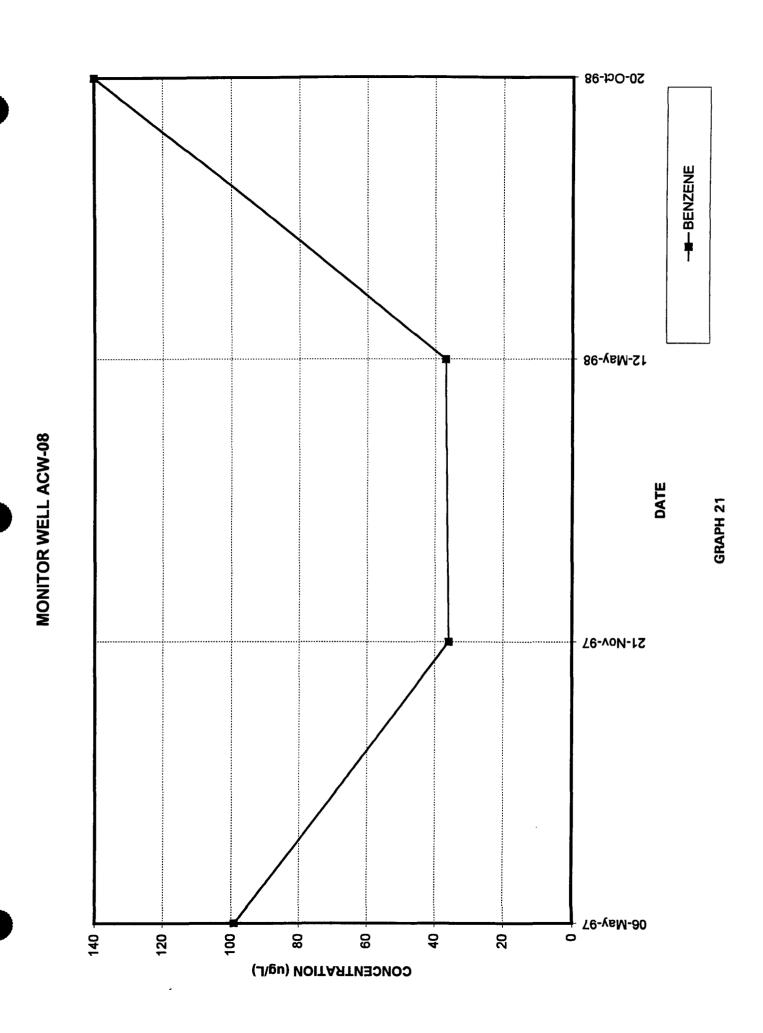


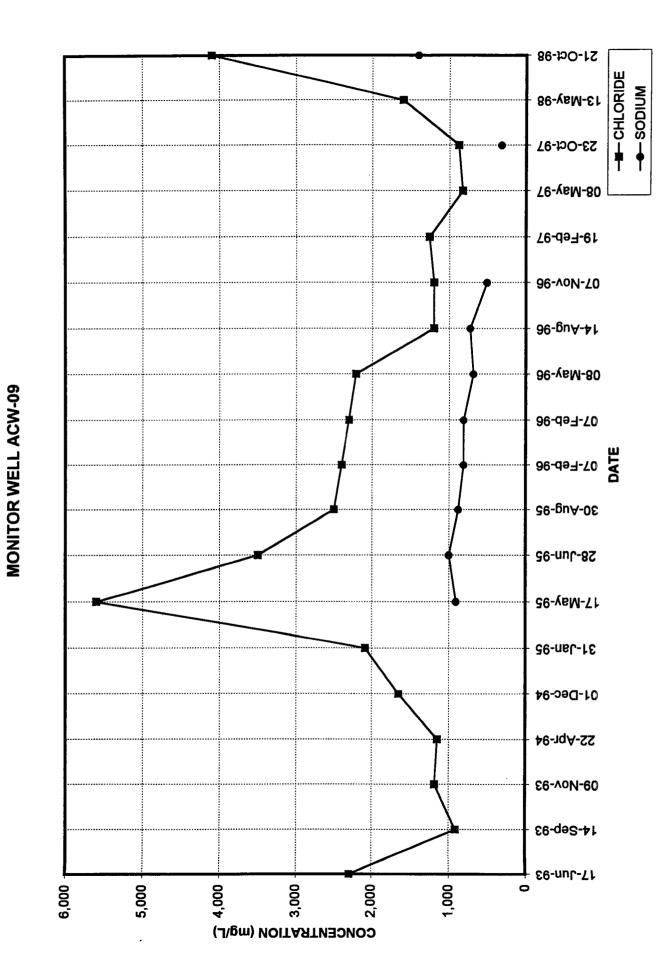


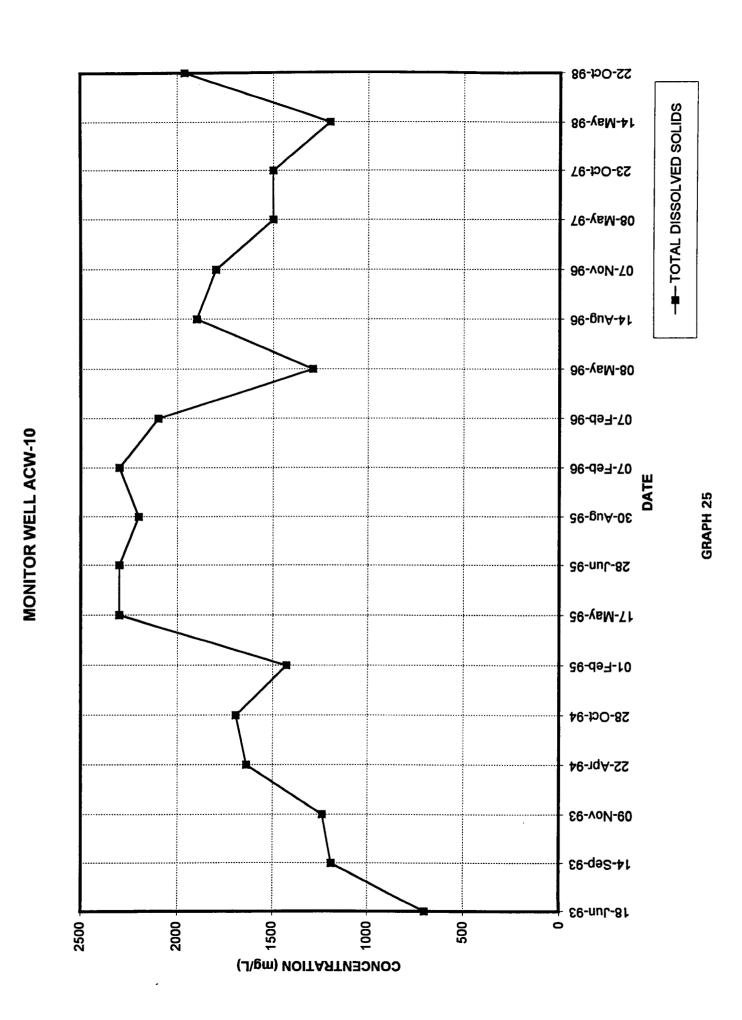
GRAPH 17

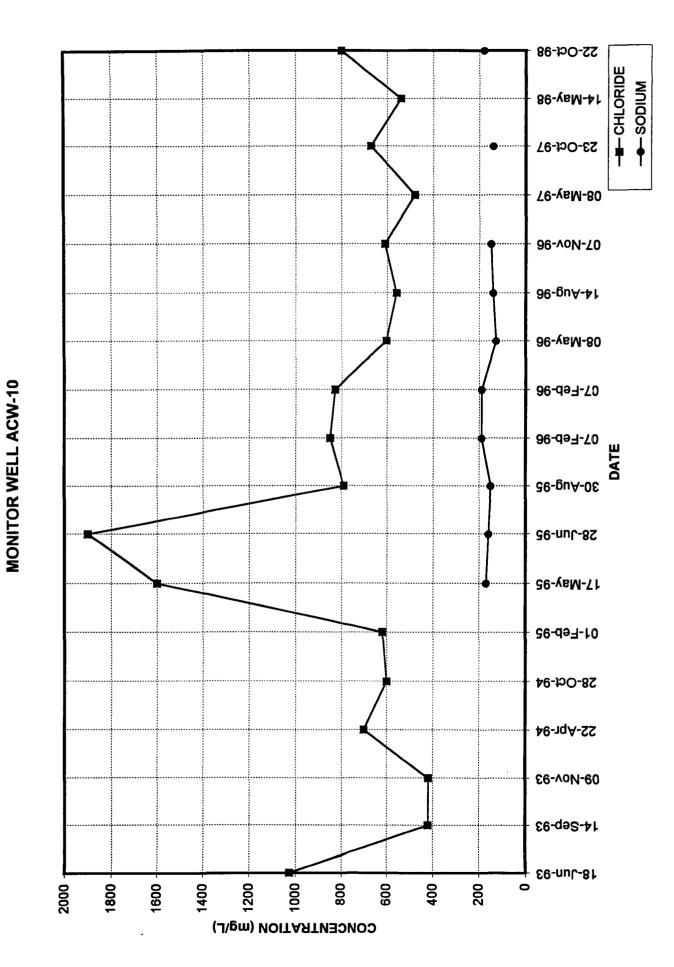
GRAPH 20

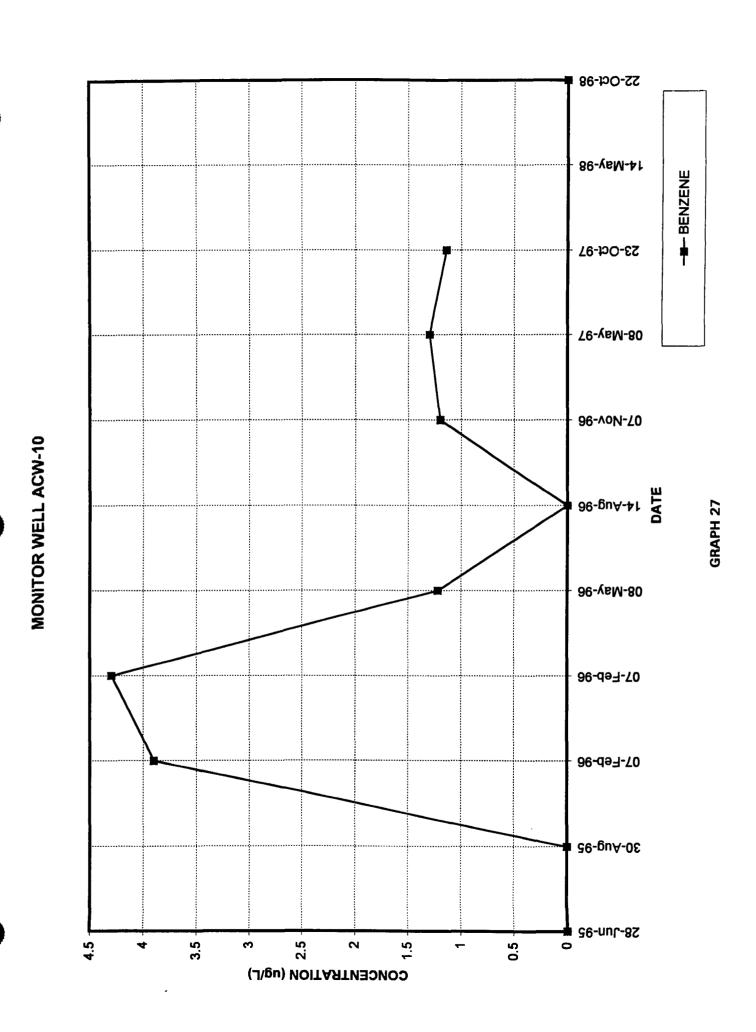


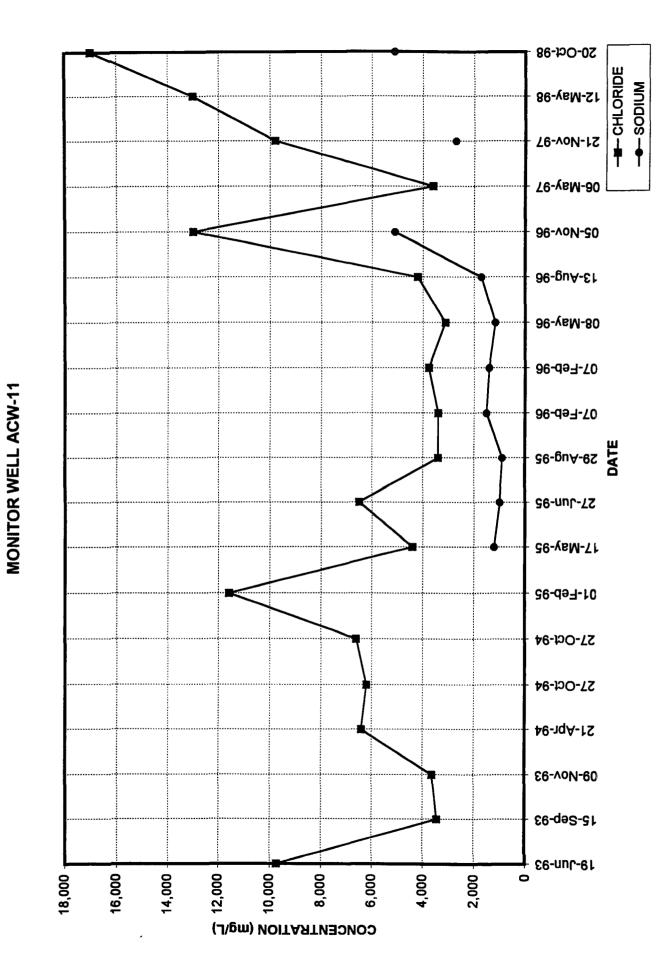




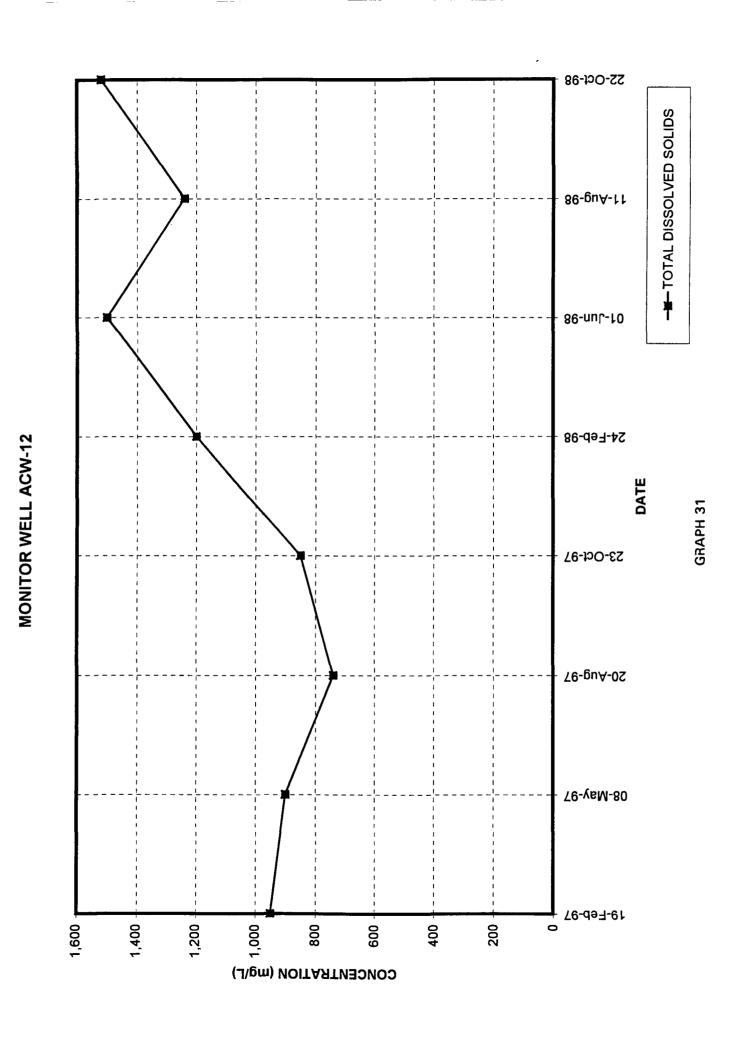


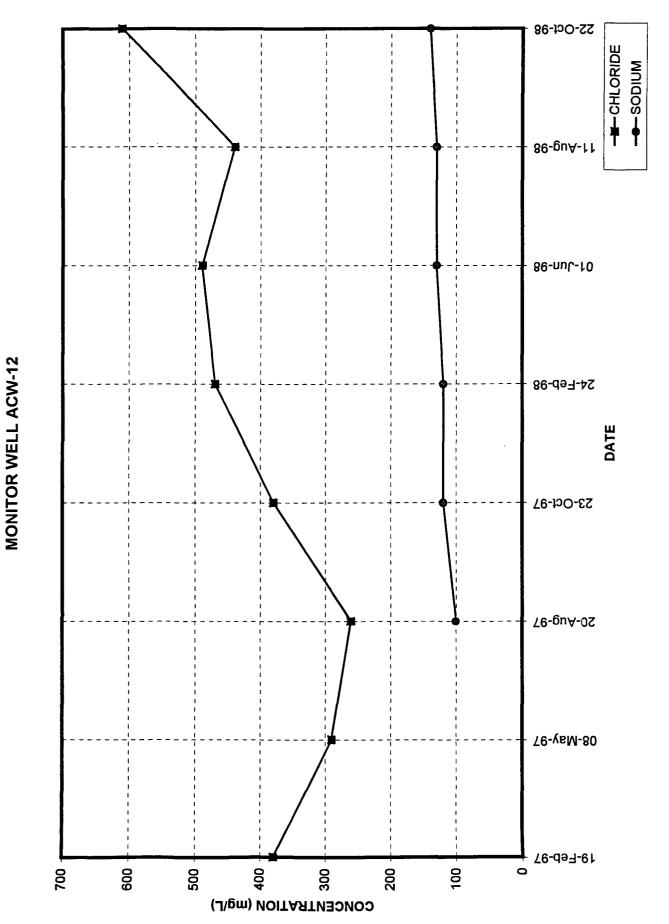


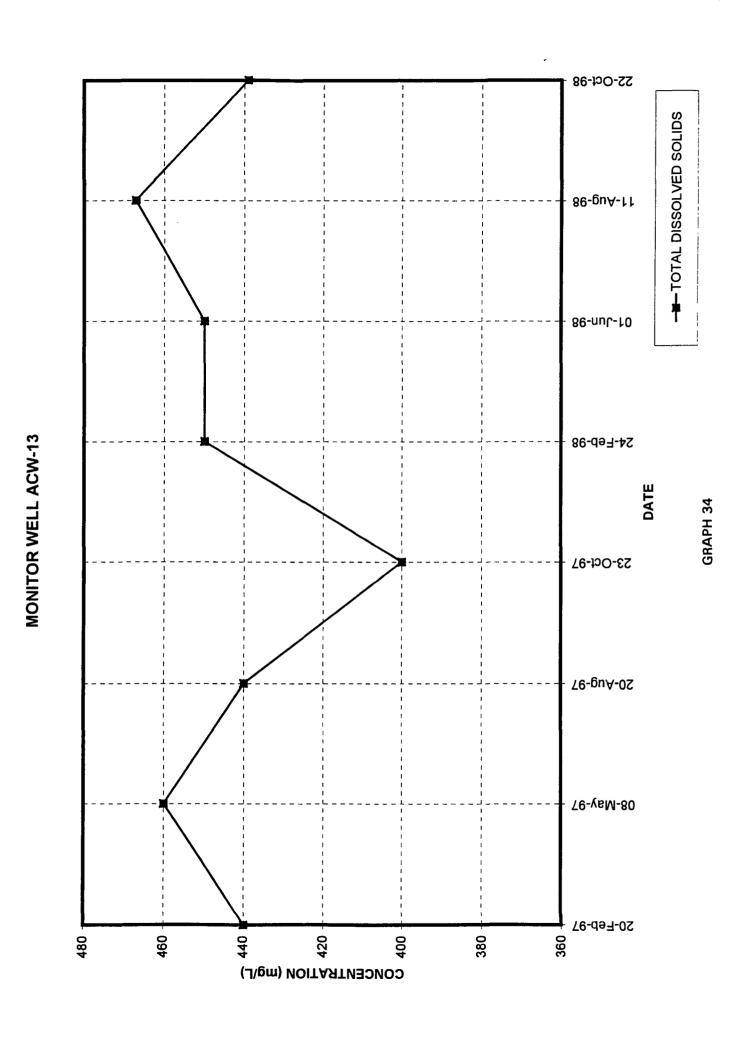




MONITOR WELL ACW-11

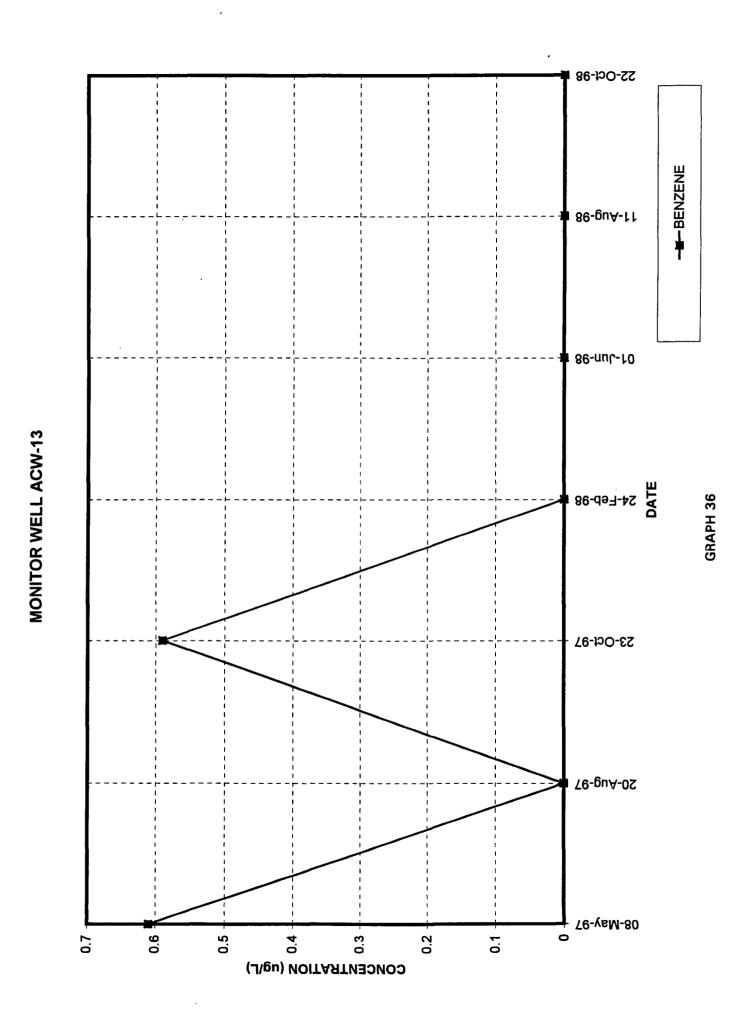






GRAPH 35

MONITOR WELL ACW-13



MONITOR WELL ACW-14

GRAPH 38

MONITOR WELL ACW-14

APPENDICES

APPENDIX A

LABORATORY ANALYTICAL REPORTS FOR GROUNDWATER SAMPLES COLLECTED DURING 1998

SAMPLE KEY

SAMPLE NUMBER: S98-0056 LOCATION: JAL #4 PLANT

MATRIX: WATER

Ť

SAMPLE DESCRIPTION: MONITOR WELL ACW#15

S D CONTINUED: S D CONTINUED:

SAMPLE TIME: 09:30 SAMPLE DATE: 02/24/98

RECEIVED

APR 0 8 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

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 pΗ 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.

Adrenne Mackyum

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

EL PASO NATURAL CAS

98 02179

Page

CHAIN OF CUSTODY RECORD

					-							7.0	
PHOMES NOW	Francis in the second of the s	_ YAME		_		ru:	ك <i>نة</i> چ	EQUESTE	REQUESTED ANALYSIS				
SAMPLERS: (SIG	W		DATE:	श्वयमिष्ठ	AL NUME	A STATE	#7+1 3/40	メ					
Na Dian	DATE TIME	MATRIX	SAMPLE NU	BER		<i>935</i>	win t:U	378					REMARKS
बह 10	०१६० अभूषह	०यभ (598-001		7	X	<u>لا</u> ن	X					
02 ab	abukel0735	0.H			7		У	Y					
03 ala	ठमा ०५-० भि	०भ (-3		. X Y	У					
04 ab	abarbacA30 HZO	OzHC	i	2	7		X X	٧					
OS-186	OS-18/18/1835 HO	40			J		X Y	У					
A 20	04 SE21 HED	OPH .			7	×	, X , X	یک					
07 AN	OZH OZHBINGD 420	HzO.			J	_	<u>بر</u> بر	2					
80	र हरा प्रवीस्वर	1 HCO			ታ		X X	. X					
60	OH SI BUNGO	1 Hro		C	7	-	<u>ب</u> بر	8					
//													
	1								 	7			
RELINDUITHED E	HED BY: (Sighanue)		DATE/TIME RE(RECEIVED BY: (Signature)	ive)		RELINC		(Signature)		DATE/TIME		RECEIVED BY: (Signature)
4	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	3	DSF1946	Fed Ex	×			Fed	Ex		2/25/98 9:30		(1 Mackyum
RELINOUISHED BY: (Signatura)	BY: (Signature)			RECEIVED BY: (Signalura)	(cre)		REUNC	RELINGÜISHED BY: (Signatura)	: (Signature)		DATE/TIME		RECEIVED OF LABOPATORY BY: (Synamin)
REQUESTED TUI	REQUESTED TURNAROUND TIME:		YS	SAMPLE RECEIPT REMARKS	MARKS		-		F	RESULTS & INVOICES TO:	1		
CARRIER CO.	D RUSH										TECHNICA EL PASO I 8645 RAIL	AL SERVICE: NATURAL G. ROAD DRIVI	TECHNICAL SERVICES DIVISION LABORATORY EL PASO NATURAL GAS COMPANY 8845 RAILROAD DRIVE
BILL NO:			<u> </u> 8	CHARGE CODE							915-759-2229	1EAAS 1884. 229 FAX	5904 FAX: 915-759-2335

Canary - EPNG Lab Pink - Field Sampler

White - Testing Labor

1 necession of the

EL PASO NATURAL CAS

CHAIN OF CUSTODY RECORD

98 oz 179

PROJECT NUMBER PROJECT NAME		-		REQUE	REQUESTED ANALYSIS	ALYSIS	CONTRACT LABORATORY	SORATORY		
SAMPLERS: (Signatura) TAL DATE:	alayka	ONTAINE CONTAINE MPOSITE GRAB		***	מעב					
LABID DATE TIME MATRIX SAMPLE NUMBER	UMBER		SEE	An.	4.U	21.0			REMARKS	
0 AMAR 1050 120 SAB 0057	157	h	X	^ У	\ \ \	义 义				-
2000 -898 024 Oct 1848	263	J	X	X	\ \ \	X				1
·										
/	/									
	/									
		/	_/							
			_	Z			_			
				/	/					
						_	1			
RELINDUISHED BY: (Schaure)	RECENTED BY: (Signatura) Fed Ex	ÎS >		RELINOUISHED BY: LSGARAND) Fed Ex	ED BY: (Signary \mathcal{L}_{x}	nature) X	2/25/98	DATESTINE 98 9:30	RECEIVED BY: (Signatura)	
(Signatura) DATE	RECEIVED BY: (Signalura)	(0,0		RELINOUISHED BY: (Signatura)	ED BY: (Sq	(veture)	ă	DATE/TIME	RECEIVED OF LABORATORY BY: (Sommun)	T
REQUESTED TURNAROUND TIME. C) ROUTINE C) RUSH	SAMPLE RECEIPT REMARKS	AARKS				RESULTS	RESULTS & INVOICES TO:	HNICAL SERVIC	FR DIVISION I ABORATORY	1
CAPRIER CO.							៤ និ ៤	PASO NATURAL IS RAILROAD DR PASO, TEXAS 79	EL PASO NATURAL GAS COMPANY 8645 RAILROAD DRIVE EL PASO, TEXAS 79904	
BILL NO.	CHARGE CODE			! - -			916	915-759-2229 F.	FAX: 915-759-2335	
Canary EPNG Lab Pink - Field Sample:	96									1

Canary - EPNG Lab Pink - Field Sampler

78-0556 (Ray 12-95)

White - Testing Lab

CONDITION OF SAMPLE UPON RECEIPT

CLIENT: El Paso Natural Gas SHIPPING CONTAINER	#: <u> </u>	ler	
WORKORDER NO. 98 02 179 INITIALS: AM	DAT	TE: 2/25	5/98
1. Does this project require special handling according to NEESA, Level 3,		Yes	No
or CLP protocols?			
If yes, complete a. and b.			1.
a. Cooler Temperature			X
b. Lot No's.			
c. Airbill Number			
2. Are custody seals on the cooler intact? If so, how many	N/A	Yes	No
3. Are custody seals on sample containers intact?	(N/A)	Yes	No
4. Is there a Chain of Custody (COC) or other representative documents,		(Yes)	No
letters or shipping memos?			_
5. Is the COC complete?	N/A	Yes	No
Relinquished: Yes X! No Requested Analysis: Yes No 10			
6. Is the COC in agreement with the samples received?		(Yes)	No
No. of Samples: Yes / No Sample ID's: Yes / No No			
Matrix: Yes V No No. of Containers: Yes D No			
7. Are the samples requiring chemical preservation preserved correctly?	N/A	Yes_	No
8. Is there enough sample? If so, are they in the proper containers?		Yes	No
9. Are all samples within holding times for the requested analyses?		(Yes)	No
10. Were the sample(s) shipped on ice?	N/A	Yes	No
11. Were all sample containers received intact? (not broken or leaking, etc.)		Yes	No
12. Are samples requiring no headspace, headspace free?	N/A	Yes	No
13. Do the samples require quarantine?		Yes	(No)
14. Do samples require Paragon disposal?		(Yes)	No
15. Did the client return any unused bottles?		Yes	No
Describe "NO" items (except No's 1, 13, &14): #5: Cleart will fax & analyses. High 16 - ola: were split. 12 into 500ml polas, left Preserved remaining 500ml to pH < 2 with HNO 3 Was the client contacted?) Yes No If yes, Date: Name of person contacted: Describe actions taken or client instructions:	unpr	oserund.	in
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

Date

Senior Inorganic Chemist

SW

3/6/98 Date

Reviewer's Initials

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	<u> </u>	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
\$98-0059	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

Page 1 of 1

Paragon Analytics Inc.

Date Printed: Friday, March 06, 1998

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	11

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064 Lab Sample ID: 9802179-1

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	i
Potassium	ND	1
Silicon	ND	0.05
Sodium	ND	1

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064 Lab Sample ID: 9802179-2

Sample Matrix: Water

Sample ID

S98-0065

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	11

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064 Lab Sample ID: 9802179-3

Sample Matrix: Water

Sample ID

S98-0066

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

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064 Lab Sample ID: 9802179-4

Sample Matrix: Water

Sample ID

S98-0056

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

Sample ID

S98-0058

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

Client Project ID: S98-0064 Lab Sample ID: 9802179-5

Date Collected: 02/24/98

Prep Date: 02/27/98

Date Analyzed: 03/05/98

Sample Matrix: Water

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

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

Client Project ID: S98-0064 Lab Sample ID: 9802179-6

Sample Matrix: Water

Sample ID

S98-0059

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	•
		,
Magnesium	60	
Potassium	10	1
Silicon	21	0.05
Sodium	120	1

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064 Lab Sample ID: 9802179-7

Sample Matrix: Water

Sample ID

S98-0060

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	

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	,
Magnesium	ND ND	1
Potassium	ND ND	1
Silicon	ND	0.05
Sodium	ND	1



Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064 Lab Sample ID: 9802179-9

Sample Matrix: Water

Sample ID

S98-0062

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

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

Client Project ID: S98-0064

Lab Sample ID: 9802179-10

Sample Matrix: Water

Sample ID

S98-0057

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	

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

TOTAL RECOVERABLE METALS MATRIX SPIKE

Sample ID

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Lab Sample ID: 9802179-1

S98-0064

Prep Date: 02/27/98

Date Analyzed: 03/05/98

Sample Matrix: Water

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

es /

Date

Fuels Chemist

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: \$98-0064

Client Project Number: Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0064	9802179-1	<u> </u>	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
\$98-0057	9802179-10		Water	2/24/98	10:50
S98-0063	9802179-11		Water	2/24/98	17:00

Method 8021

Sample ID

Reagent Blank

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064

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	

Method 8021

Sample ID

S98-0064

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064

Lab Sample ID: 9802179-1

Sample Matrix: Water

Date Collected: 2/24/98

Date Extracted: 2/26/98

Date Analyzed: 2/26/98

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

Method 8021

Sample ID

S98-0065

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064

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	

Method 8021

Sample ID

S98-0066

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064

Lab Sample ID: 9802179-3

Sample Matrix: Water

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

Date Collected: 2/24/98

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

Method 8021

Sample ID

S98-0056

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064

. Lab Sample ID: 9802179-4

Date Collected: 2/24/98

Date Extracted: 2/26/98

Date Analyzed: 2/26/98

Sample Volume: 5 mL Sample Matrix: Water

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

Method 8021

Sample ID

S98-0058

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064

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	98 110
2,3,4-Trifluorotoluene	100	88 - 119

Method 8021

Sample ID

S98-0059

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064

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

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

Method 8021

Sample ID

S98-0061

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

Date Collected: 2/24/98

Date Extracted: 2/26/98

Date Analyzed: 2/26/98

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

Method 8021

Sample ID

S98-0062

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064

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

% Recovery	% Rec Limits
101	88 - 119

Method 8021

Sample ID

S98-0057

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0064

Lab Sample ID: 9802179-10

Date Collected: 2/24/98

Date Extracted: 2/26/98

Date Analyzed: 2/27/98

Sample Volume: 5 mL Sample Matrix: Water

Dilution Factor: 1

Reporting Analyte Conc (ug/L) Limit (ug/L) Benzene ND 0.50 Toluene ND 0.50 Ethylbenzene 0.50 ND 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
2,3,4-11111dolololuelle	100	00-119

Method 8021

Sample ID

S98-0063

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

Date Collected: 2/24/98

Date Extracted: 2/26/98

Date Analyzed: 2/27/98

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
2,3,4-11111d010t01delle	100	00 - 119

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

Lab Sample ID: WBS1 02/26/98

Sample Matrix: Water

2/26/98

Date Extracted: Date Analyzed:

2/26/98

Sample Volume: 5 mL

Analyte	Spike Added	BS Concentration	BS Percent Recovery	QC Limits % Rec
Analyte	(ug/L)	(ug/L)	Recovery	76 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

	Spike	BSD	BSD		QC
	Added	Concentration	Percent		Limits
Analyte	(ug/L)	(ug/L)	(L) Recovery RP		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

Chem Englett ID. 270 0004

Lab Sample ID: 9802179-11MS

Sample Matrix: Water

S98-0063

Date Collected:

2/24/98

Date Extracted:

2/26/98

Date Analyzed:

2/27/98

Sample Volume: 5 mL

Dilution Factor: 1

	Spike	Sample	MS	MS	QC
	Added	Concentration	Concentration	Percent	Limits
Analyte	(ug/L)	(ug/L)	(ug/L)	Recovery	% 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

	Spike	MSD	MSD		QC
	Added	Concentration	Percent	1	Limits
Analyte	(ug/L)	(ug/L)	Recovery	RPD	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





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:

2

Krista Mobley

Date

Inorganic Technician

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	<u></u>	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

Date Printed: Monday, March 02, 1998

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

79 ceived 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
\$98-0064	9802179-1	2/24/98	3/2/98	3/2/98	N/A	1	2	umhos/cm			50 ML
\$98-0065	9802179-2	2/24/98	3/2/98	3/2/98	N/A	1	746	umhos/cm			50 ML
\$98-0066	9802179-3	2/24/98	3/2/98	3/2/98	N/A	1	3	umhos/cm			50 ML
\$98-0056	9802179-4	2/24/98	3/2/98	3/2/98	N/A	1	755	umhos/cm			50 ML
\$98-0058	9802179-5	2/24/98	3/2/98	3/2/98	N/A	1	2050	umhos/cm			50 ML
\$98-0059	9802179-6	2/24/98	3/2/98	3/2/98	N/A	1	2090	umhos/cm			50 ML
\$98-0060	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
\$98-0062	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
\$98-0063	9802179-11	2/24/98	3/2/98	3/2/98	N/A	1	802	umhos/cm			50 ML

Comments:

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

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	

Reported on: Friday, March 06, 1998

Comments:





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:

2

Krista Mobles
Inorganic Technician

<u> J- 4- 98</u> 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: \$98-0064

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: \$98-0064 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	NA	1	8.2	РН			20 ML
S98-0066	9802179-3	2/24/98	3/2/98	3/2/98	N/A	1	5.7	РН			20 ML
\$98-0056	9802179-4	2/24/98	3/2/98	3/2/98	N/A	1	8.2	РН			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	РН			20 ML
S98-0060	9802179-7	2/24/98	3/2/98	3/2/98	N/A	1	8.4	РН			20 ML
S98-0061	9802179-8	2/24/98	3/2/98	3/2/98	N/A	1	6	РН			20 ML
S98-0062	9802179-9	2/24/98	3/2/98	3/2/98	N/A	1	8.2	РН			20 ML
S98-0057	9802179-10	2/24/98	3/2/98	3/2/98	N/A	1	8.1	РН			20 ML
598-0063	9802179-11	2/24/98	3/2/98	3/2/98	N/A	1	8.1	РН			20 ML

Comments:

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: \$98-0064 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:



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:

Reporter's Initials

3-12-98 Date

Reviewer's Initials

 $\frac{3-12-98}{\text{Date}}$

CERTIFICATION

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

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

179

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

Reported on: Tuesday, March 03, 1998

Comments:

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

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

:I Paso Naturai Gas Ci Sor_nnea

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
\$98-0056	9802179-4	2/24/98	2/26/98	2/26/98	N/A	1	180	MG/L	10		50 ML
\$98-0058	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
\$98-0060	9802179-7	2/24/98	2/26/98	2/26/98	N/A	1	170	MG/L	10		50 ML
\$98-0061	9802179-8	2/24/98	2/26/98	2/26/98	N/A	1	5	MG/L	5	ND	100 ML
\$98-0062	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
\$98-0063	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.

Method EPA310.1

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9802179

Client Name: El Paso Natural Gas Co.

ClientProject ID: \$98-0064

Page 1 of 1

Reported on: Tuesday, March 03, 1998

BS ID: AK980226-1LCS

Sample Matrix: Water % Moisture: N/A

Date Collected: Date Extracted: 26-Feb-98 26-Feb-98 Sample Aliquot: 100 ML

26-Feb-98

Final Volume: 100 ML

Dilution:

Report Basis: AS RECEIVED Date Analyzed:

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

Method EPA310.1

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

ClientName: El Paso Natural Gas Co.

Client Project ID: \$98-0064 Work Order Number: 9802179

Reporting Basis: As Received

Sample Aliquot: 50 ML

Final Volume: 50ML

Matrix: Water

Page 1 of 1

Reported on: Tuesday, March 03, 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	146.4	MG/L	161.8	10		10	15

Comments:

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

Method EPA300.0

Method Blank

Page 1 of 1

Lab Name: Paragon Analytics, Inc.

Client Project ID: \$98-0064

Work Order Number: 9802179 Reporting Basis: N/A

ClientName: El Paso Natural Gas Co.

Reported on: Thursday, March 12, 1998

Sample Aliquot: 5 ML

Final Volume: 5 ML

Matrix: Water

Lab ID	Date Collected	Date Prepared	Date Analyzed		Dilution Factor	Resuit	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.

Method EPA300.0

Sample Results

Page 1 of 1

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

Client Project ID: \$98-0064
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.

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 Aliquot:

5 ML

% Moisture: N/A

Date Extracted:

25-Feb-98

Final Volume:

5 ML

25-Feb-98

Dilution:

Report Basis: AS RECEIVED Date Analyzed:

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

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

Date Collected: 24-Feb-98

Dilution:

% Moisture: Report Basis: As Received Date Extracted: 25-Feb-98

Date Analyzed: 25-Feb-98

Prep Batch: BR980225-6

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

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		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:

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
\$98-0058	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
\$98-0063	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.

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 Report Basis: AS RECEIVED Date Analyzed:

Date Extracted:

26-Feb-98 26-Feb-98 Final Volume:

5 ML 1

Dilution:

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

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: 9802185-1MS

Field ID: SHARED QC

Sample Matrix: Water

Date Collected: 23-Feb-98

Dilution:

% Moisture:

Report Basis: As Received

Date Extracted: 26-Feb-98 Date Analyzed: 26-Feb-98

Prep Batch: CL980226-1

Spike Added	Sample Result	Units	Reporting Limit	MS Result	MS % Rec.	MS Qualifier		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

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

Sample Aliquot: 5 ML

Final Volume: 5 ML

Reported on: Monday, March 09, 1998

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:

Method EPA300.0

Sample Results

Page 1 of 1

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

Client Project ID: \$98-0064 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	İ	5 ML
S98-0058	9802179-5	2/24/98	2/25/98	2/25/98	N/A	1	2.2	MG/L	0.1	i	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.

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: FL980225-2LCS

Sample Matrix: Water

25-Feb-98 Date Collected:

Sample Aliquot:

% Moisture: N/A

Final Volume:

5 ML 5 ML

Date Extracted:

25-Feb-98

Report Basis: AS RECEIVED Date Analyzed:

25-Feb-98

Dilution:

f1980225-2-1 Prep Batch:

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

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: \$98-0064

Page 1 of 1

Dilution:

Reported on: Thursday, March 12, 1998

MS Lab ID: 9802179-2MS

Field ID: S98-0065

Sample Matrix: Water

TE MIGUIA. YVG

% Moisture:

Report Basis: As Received

Date Collected: 24-Feb-98

Date Extracted: 25-Feb-98

Date Analyzed: 25-Feb-98

Prep Batch: fl980225-2

Spike	Sample	Units	Reporting	MS	MS %	MS	Control	Initial	Final
Added	Result		Limit	Result	Rec.	Qualifier	Limits	Vol/Wt	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

Method EPA300.0

Method Blank

Lab Name: Paragon Analytics, Inc.

ClientName: El Paso Natural Gas Co.

Client Project ID: S98-0064 Work Order Number: 9802179

Reporting Basis: N/A

Sample Aliquot: 5 ML

Final Volume: 5 ML

Matrix: Water

Page 1 of 1

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

Reported on: Monday, March 09, 1998

Comments:

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

302179

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 Aliquo
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	ļ —	5 MI
S98-0063	9802179-11	2/24/98	2/25/98	2/25/98	N/A	1	0.9	MG/L	0.2		5 M

Comments:

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

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

25-Feb-98

Report Basis: AS RECEIVED Date Analyzed:

Dilution:

1

Prep Batch: NN980225-	1	j		
-----------------------	---	---	--	--

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

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

Dilution:

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

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
Ì	5	4.9	MG/L	0.2	99		0.1	15	5	5

Method EPA300.0

Method Blank

Lab Name: Paragon Analytics, Inc. ClientName: El Paso Natural Gas Co.

Client Project ID: S98-0064

Work Order Number: 9802179 Reporting Basis: N/A

Sample Aliquot: 5 ML Final Volume: 5 ML

Matrix: Water

Page 1 of 1

Reported on: Monday, March 09, 1998

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:

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 Aliquo
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 MI
S98-0066	9802179-3	2/24/98	2/26/98	2/26/98	N/A	1	1	mg/l	1	ND	5 MI
S98-0056	9802179-4	2/24/98	2/26/98	2/26/98	N/A	50	130	mg/l	50		5 MI
S98-0058	9802179-5	2/24/98	2/26/98	2/26/98	N/A	100	150	mg/l	100		5 MI
S98-0059	9802179-6	2/24/98	2/26/98	2/26/98	N/A	100	160	mg/l	100		5 M
S98-0060	9802179-7	2/24/98	2/26/98	2/26/98	N/A	50	100	mg/t	50		5 M
S98-0061	9802179-8	2/24/98	2/26/98	2/26/98	N/A	1	1	mg/l	1	ND	5 M
S98-0062	9802179-9	2/24/98	2/26/98	2/26/98	N/A	50	60	mg/l	50		5 M
S98-0057	9802179-10	2/24/98	2/26/98	2/26/98	N/A	50	85	mg/l	50	İ	5 M
S98-0063	9802179-11	2/24/98	2/26/98	2/26/98	N/A	50	68	mg/l	50		5 M

Comments:

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

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: 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

26-Feb-98

Dilution:

1

Report Basis: AS RECEIVED Date Analyzed:

Prep Batch:

SO980226-1-1

BS % Reporting Result Control

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

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

Sample Matrix: Water

Date Collected: 24-Feb-98

Dilution:

Field ID: S98-0065

% Moisture:

Date Extracted: 26-Feb-98

20

Report Basis: As Received

Date Analyzed: 26-Feb-98

Prep Batch: SO980226-1

Spike Added	Sample Result	Units	Reporting Limit	MS Result	MS % Rec.	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

Method EPA160.1

Method Blank

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

Page 1 of 1

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:

Method EPA160.1

Sample Results

Page 1 of 1

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

Client Project ID: \$98-0064 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
\$98-0064	9802179-1	2/24/98	2/26/98	2/26/98	N/A	1	20	MG/L	20	ND	100 ML
\$98-0065	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
\$98-0059	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.

Method EPA160.1

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9802179

Client Name: El Paso Natural Gas Co.

ClientProject ID: \$98-0064

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:

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

Method EPA160.1

Duplicate Sample Results

Page 1 of 1

Lab Name: Paragon Analytics, Inc.

Client Project ID: S98-0064

Work Order Number: 9802179

Reporting Basis: As Received

ClientName: El Paso Natural Gas Co.

Reported on: Monday, March 09, 1998

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
S98-0065	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: Utano Northall dos Shipping Container #: U	der	
	61-	Tar
workorder no. 970003 initials: H da	re: 13	148
1. Does this project require special handling according to NEESA, Level 3,	Yes	No
or CLP protocols?		
If yes, complete a. and b.]	
a. Cooler Temperature		1
b. Lot No's		
c. Airbill Number		
2. Are custody seals on the cooler intact? If so, how many NA	Yes	No
3. Are custody seals on sample containers intact?	Yes	No
4. Is there a Chain of Custody (COC) or other representative documents,	X es	No
letters or shipping memos?		
5. Is the COC complete? / N/A	Yes	No
Relinquished: Yes No Requested Analysis: Yes No		
6. Is the COC in agreement with the samples received?	Yes	No
No. of Samples: Yes No Sample ID's: Yes No		
Matrix: Yes No No. of Containers: Yes No		
7. Are the samples requiring chemical preservation preserved correctly? N/A	Yes	No
8. Is there enough sample? If so, are they in the proper containers?	(Yes)	No
9. Are all samples within holding times for the requested analyses?	(Yes)	No
10. Were the sample(s) shipped on ice? N/A	(Yes)	No
11. Were all sample containers received intact? (not broken or leaking, etc.)	(Yes)	No.
12. Are samples requiring no headspace, headspace free? N/A	Yes	VO X
13. Do the samples require quarantine?	Yes	10
14. Do samples require Paragon disposal?	Yes	No
15. Did the client return any unused bottles?	Yes	No)
VHD Van: 000 A	23	8 . 27/
Describe "NQ" items (except No's 1, 13, &14): X + O VOA'D S98-0+	84,59	[-0004]
Describe "NO" items (except No's 1, 13, &14): XFF 10 VOFD S 98-07	199	. 1
	110	
		.
Was the client contacted? Yes No		
If yes, Date: Name of person contacted:		
Describe actions taken or client instructions:		-
		-
		
Group Leader's Signature:		
Group Leader's Signature: Date:		/
<u></u>		
		4
Cooler Temp	erature:	

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 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 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 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 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 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:

Reporter's Initials

6-22-98 Date

Reviewer's Initials

W/Jd/9

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
\$98-0158	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

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	υ	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:

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

Prep Batch: AK980519-1

Sample Aliquot:

100 ML

Date Collected: N/A

QCBatchID: AK980519-1-1 Run ID: AK980519-1A

Final Volume: 100 ML

Date Extracted: 19-May-98

Date Analyzed: 19-May-98

Cleanup: NONE Basis: N/A

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

Comments:

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 CaCO3	100	95.7	MG/L	5		96	85 - 115

Method EPA310.1

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805135

Client Name: El Paso Natural Gas Co.

ClientProject ID: \$98-0138

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:

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

Final Volume: 100 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
S98-0180	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:

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

Sample Aliquot: Final Volume:

100 ML 100 ML

Basis: N/A

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:

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

Sample Aliquot: 100 ML Final Volume: 100 ML

Basis: N/A

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

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:

BROMIDE

Method EPA300.0

Sample Results

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

Client Project ID: \$98-0138 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:

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
\$98-0176	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
\$98-0180	9805135-10	5/12/98	5/20/98	5/20/98	N/A	10	30	MG/L	2		5 ML
\$98-0156	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.

Date Printed: Thursday, June 18, 1998

Paragon Analytics Inc.

Page 2 of 4

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

Final Volume: 5 ML Matrix: Water

Reporting Basis: As Received

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Units	Detection Limit	Fiag	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:

SULFATE

Method EPA300.0

Sample Results

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

Client Project ID: \$98-0138 Work Order Number: 9805135

Final Volume: 5 ML Matrix: Water

Reporting Basis: As Received

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:

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: \$98-0138

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

Sample Aliquot:

Final Volume:

5 ML

5 ML

Cleanup: NONE

Basis: N/A

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

Sample Aliquot:

Final Volume:

5 ML

5 ML

Cleanup: NONE

Basis: N/A

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	İ	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%

Paragon Analytics Inc.

Date Printed: Thursday, June 18, 1998

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

Sample Matrix: Water

Prep Batch: IC980520-1

Sample Aliquot:

5 ML

% Moisture: N/A

QCBatchID: IC980520-1-1

Run ID: IC980520-1A

Final Volume:

5 ML

LabID: 9805135-10MS

Date Collected: 12-May-98 Date Extracted: 20-May-98

Cleanup: NONE

Date Analyzed: 20-May-98

Basis: As Received

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

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
\$98-0180	9805135-10	5/12/98	5/19/98	5/19/98	N/A	2	1.2	MG/L	0.1		3 ML
\$98-0156	9805135-11	5/11/98	5/19/98	5/19/98	N/A	1	0.05	MG/L	0.05	U	3 ML
\$98-0158	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
\$98-0179	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.

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

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:

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

Sample Aliquot:

Final Volume:

3 ML

3 ML

Cleanup: NONE

Basis: N/A

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

Method EPA353.3

Matrix Spike And Matrix Spike Duplicate

Reporting

Limit

0.05

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805135

Client Name: El Paso Natural Gas Co.

ClientProject ID: S98-0138

Spike

Added

0.5

Date Printed: Wednesday, June 24, 1998

Sample

Result

0.05

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

Units

MG/L

Prep Batch: NN980519-1

QCBatchID: NN980519-1-1

Run ID: NN980520-2A

Cleanup: NONE

Basis: As Received

MS Result	MS % Rec.	MS Qualifier	Control Limits
0.493	99		80 - 120%

Sample Aliquot:

Final Volume:

3 ML

3 ML

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

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	1	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	<u> </u>	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:

Method EPA160.1

Method Blank

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805135

Client Name: El Paso Natural Gas Co.

ClientProject ID: \$98-0138

Lab ID: TD980518-2MB

Sample Matrix: Water

Prep Batch: TD980518-2

Sample Aliquot:

100 ML

% Moisture: N/A Date Collected: N/A QCBatchID: TD980518-2-1 Run ID: TD980518-2A

Final Volume:

100 MG/L

Date Extracted: 18-May-98

Cleanup: NONE Basis: N/A

Date Analyzed: 18-May-98

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:

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

Prep Batch: TD980518-2

Sample Aliquot:

100 ML

% Moisture: N/A

QCBatchID: TD980518-2-1

Date Collected: 18-May-98

Run ID: TD980518-2A

Final Volume:

100 MG/L

Date Extracted: 18-May-98

Cleanup: NONE

Date Analyzed: 18-May-98

Basis: N/A

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

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:



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 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 6. Mayfield Date Date

Fuels Analyst

Reviewer's Initials

6/16/99

Date

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

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

Sample Matrix: Water

Date Collected: N/A

Date Extracted: 5/25/98

Date Analyzed: 5/25/98

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

Method 8021

Sample ID

S98-0168

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0138

Date Collected: 5/12/98

Lab Sample ID: 9805135-1 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
2.2.4 T-iff	02	00 110
2,3,4-Trifluorotoluene	93	88 - 119

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

Date Collected: 5/12/98

Sample Volume: 5 mL Sample Matrix: Water

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

Method 8021

Sample ID

S98-0172

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0138

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

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 Volume: 5 mL Sample Matrix: Water

Dilution Factor: 1

Analyte	Conc (ug/L)	Reporting Limit (ug/L)
D	27	0.50
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
2,3,4-1111uolototuene	07	00 - 119

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc. Client Name: El Paso Natural Gas Co. S98-0174

Client Project ID: S98-0138

Date Collected: 5/12/98

Lab Sample ID: 9805135-6

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

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 Volume: 5 mL Sample Matrix: Water

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
2247.0	104	00 110
2,3,4-Trifluorotoluene	104	88 - 119

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

Method 8021

Sample ID

S98-0177

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0138

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

Method 8021

Sample ID

S98-0156

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0138

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

		Reporting
Analyte	Conc (ug/L)	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

Method 8021

Sample ID

S98-0156

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0138

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

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

Method 8021

Sample ID

S98-0171

Date Collected: 5/12/98

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0138

Lab Sample ID: 9805135-13

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

% Rec Limits	% Recovery	Analyte
88 - 119	105	2.2.4.T.:9
	105	2,3,4-Trifluorotoluene

Method 8021

Sample ID

S98-0178

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0138

Date Collected: 5/12/98

Lab Sample ID: 9805135-14 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

% Recovery	% Rec Limits
102	88 - 119
	% Recovery

Method 8021

Sample ID

S98-0179

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0138

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	

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc. Client Name: El Paso Natural Gas Co. S98-0157

Client Project ID: S98-0138

Date Collected: 5/11/98

Lab Sample ID: 9805135-16

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	

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

Method 8021

Sample ID

Reagent Blank

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0138

Date Collected: N/A

Lab Sample ID: RB 2

Date Extracted: 5/26/98

Date Analyzed: 5/26/98

Sample Matrix: Water

Sample Volume: 5 mL

Dilution Factor: 1

		Reporting
Analyte	Conc (ug/L)	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	99 110
2,3,4-1 rilluorotoluene	102	88 - 119

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.

S98-0167

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0138

Date Collected: 5/11/98

Lab Sample ID: 9805135-17

Date Extracted: 5/26/98 Date Analyzed: 5/26/98

Date 1 mary 200. 2. 20. 30

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



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:

Im Hamacher

5/26/98

Kim Hamacher

Senior Inorganic Chemist

Date

SW Pariama'a Vaidala 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

Senior Inorganic Chemist

CERTIFICATION

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

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

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

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

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

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	NID	•
	ND	1
Magnesium	ND	1
Potassium	ND	1
Silicon	ND	0.05
Sodium	ND	1

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

\$98-0179

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

TOTAL RECOVERABLE METALS MATRIX SPIKE

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Company

Lab Sample ID: 9805082-21

In House

Sample ID

Prep Date: 05/21/98

Date Analyzed: 05/21/98 Sample Matrix: Water

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

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

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





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 13^o 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.
- 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.

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



Susan Converse

Inorganic Technician

SW Reviewer's Initials

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	<u> </u>	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

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
\$98-0179	9805135-15	5/12/98	5/20/98	5/20/98	N/A	1	7.9	РН	0.1		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

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.





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 13⁰ 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.

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



Susan Converse Date
Inorganic Technician

SW 5-27.48

5-27.48

5-27.48

5-27.48

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

Specific Conductance in Water

Method EPA120.1

Sample Results

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

Client Project ID: \$98-0138 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
\$98-0169	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		1	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	i		50 ML

Comments:

Date Printed: Wednesday, May 27, 1998

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

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	<u> </u>	Water	5/11/98	20:40

Page ______ of _____

										-				
FAX: 915-759-2335	915-759-2229 FAX	915-75							CHARGE CODE	СН				BILL NO:
LABORATORY SERVICES EL PASO NATURAL GAS COMPANY 8645 RAILROAD DRIVE EL PASO, TEXAS 79904	RATORY SERVIC SO NATURAL G BAILROAD DRIV SO, TEXAS 7990	LABOI EL PA: 8645 F										3	1	CARRIER CO.
		ICES TO:	RESULTS & INVOICES TO:	RES				NAKS	SAMPLE RECEIPT REMARKS	SAN		UND TIME:	REQUESTED TURNAROUND TIME:	REQUESTED
The Control of Laborators		\$, district of				3						
DECEMED OF TOODS ALCOHOLD BY COMPANY OF THE CONTROL OF TOODS AND THE CONTROL OF T		2475		gracuse	BELINDHIGHED BY (Green)	Pro Contract of the Contract o			EVED BY: (Constitution)	8	5			
DECEMPED BY 10					SHED BY: 15	R		-	BECEIVED BY: (Signature)	DATECTIME		7	TELED BY	BE THE PARTY OF TH
								<u> </u>						
					X	×	X	()) 		598-0167	40		sluke	南
					1	×	~	ν .		4510-818	H20	shike usis	sluke	6
REMARKS				BTE	Spec cond	T	Cl			SAMPLE NUMBER	MATRIX	TIME	DATE	D 84
				×	1	S	GRAB	AL NUME ONTAINI 	S/11/9P1 ZZ	DATE:			SAMPLERS: (Signeture)	SAMPLERS
	ANTORY	CONTRACT LABORATORY		NALYSIS	REQUESTED ANALYSIS	REO			JEA) 🕯	PROJECT NAME	IUMBER	PROJECT NUMBER
								i l						

White · Testing Laboratury Canary · EPNG Lab Pink · Field Sampler

FM-08-0566 (Rev 4-98)

77	EL PASO

CHAIN OF CUSTODY RECORD 9805135

hile · Tesling Laboratury Canary · EPNG Lab Pink · Field Sampler

FM-08-0566 (Rev 4-96)

LABID DATE TIME MATRIX SAMPLE NUMBER	APOSITE GRAB	BERRIERS	PROJECT NUMBER PROJECT NAME		EL PASO
876		REGOESTED ANALYSIS	OLECTED ANALYSIS	Y RECORD	,00
REMARKS			CONTRACT LABORATORY	O1 Page ofof	1001101

BIL NO:		REQUESTED TURNAROUND TIME:		DATECTIME)	-				PSIDE IBYID HID SAB-0128	1510 -865 ON SEAL BRIDE AV	LABID DATE TIME MATRIX SAMPLE NUMBER
CHARGE CODE		SAMPLE RECEIPT REMARKS	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)						æ	اد	MBER
		EMARKS	ature)	ature)						 7	5	OF CO
												Anio-
			AEC	REU					 		X	cation SEE
			RELINQUISHED BY: (Signature)	RELINOUISHED BY: (Signature)						 	×	cation SEE Allach BTE
			BY: (Signa	BY: (Signa								
	L	AESU	itur o)	iture)								
		RESULTS & INVOICES TO:										
915-759-2229	LABOHATORY SERVICE EL PASO NATURAL GAS B645 RAILROAD DRIVE EL PASO, TEXAS 79904		DATE/TIME	DATETIME								
FAX: 915-759-2335	LABORATORY SERVICES EL PASO NATURAL GAS COMPANY 8645 RAILROAD DRIVE EL PASO, TEXAS 79904		HECEIVED OF LABOHATURY SY: (Sypanice)	RECEIVED BY: (Signalure)								REMARKS

vhile - Testing Laboratory Canary - EPNG Lab Pink - Field Sampler

FM-08-0566 (Rev 4-98)

CHAIN OF CUSTODY RECORD

CHARGE CODE	D TIME: SAMPLE RECEIPT REMARKS RESULTS & INVOICES TO:		SIRTY, OSOO PATETIME RECEIVED BY: (Socialize) RELINDUISHED BY: (Socialize) DATETIME	RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature) RELINQUISHED BY: (Signature) DATE/TIME RE		+	10 sln/16:30 HO S96-0180 S x x x x	jos slin版は1711111111111111111111111111111111111	505 shirke 1533 HZG S98-0176 3 x x x x x	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	04 211216-1010 120 120 120-0174 3 x x x x x	3 Shifts 1357 NOO S98-0173 3 x x x x	5/1/20 1/30 1/10 SAB-0178,3,3, 3 x x x x	-03 shake 1000 140 598-0170 3 x x x	2) Shakarahio 598-01169 3 X X X	on shake pascillad S98. ONGS 3 x x x x	SPECE SEE AHA	MPGI Silvery
LABORAT EL PASOI 8645 RAIL EL PASO.	1		DATE/III	DATE/TIN														
ORY SERVICES NATURAL GAS COMPANY ROAD DRIVE TEXAS 79904																	REMARKS	
	CHARGE CODE	TURNAROUND TIME: RESULTS & INVOICES TO: CHARGE FORE	TURNAROUND TIME: SAMPLE RECEIPT REMARKS PESULTS & INVOICES TO: LABORATORY SERVING EL PASO NATURAL G 8645 RAILROAD DRIV. EL PASO, TEXAS 7990	DATECTIME RECEIVED BY: (Signature) PARCE CODE CHARGE CODE RECEIVED BY: (Signature) RELINQUISHED BY: (Signature) RESULTS & INVOICES TO:	DATE/TIME RECEIVED BY: (Signature) DATE/TIME RECEIVED BY: (Signature) DATE/TIME RECEIVED BY: (Signature) DATE/TIME DATE/TIME TURNAROUND TIME: SAMPLE RECEIPT REMARKS SAMPLE RECEIPT REMARKS PELINQUISHED BY: (Signature) DATE/TIME LABORATORY SERVITE LABORATORY SERVITE EL PASO, NATURAL G 8645 RAILROAD DRIV. EL PASO, TEXAS 7990 EL PASO, TEXAS 7990	DATE/TIME RECEIVED BY: (Signature) DATE/TIME RECEIVED BY: (Signat	DATE/TIME RECEIVED BY: (Signature) DATE/TIME RECEIVED BY: (Signature) DATE/TIME RECEIVED BY: (Signature) DATE/TIME RECEIVED BY: (Signature) DATE/TIME SAMPLE RECEIPT REMARKS PESULTS & INVOICES TO: EL PASO NATURAL G 864S RAILROAD DRIV EL PASO, TEXAS 7990 EL PASO, TEXAS 7990	DATE/TIME DATE/TIME DATE/TIME DATE/TIME DATE/TIME DATE/TIME DATE/TIME DATE/TIME DATE/TIME DATE/TIME DATE/TIME SAMPLE RECEIPT REMARKS DATE/TIME CHARGE FORE CHARG	TURNAROUND TIME: TURNAROUND TIME: TO A 157 March 1717 1/20 S98-0177 SAMPLE RECEIPT REMARKS THE IR 30 H20 S98-0177 Secure BY: (Synalus) DATETIME RECEIVED BY: (Synalus) PRECEIVED BY: (Synalus)	TURNAROUND TIME: SAMPLE RECEIVED BY: (Signalura) SAMPLE RECEIVED BY: (Signalura) DATE/TIME PECEIVED BY: (Signalura) DATE/TIME PESULTS A INVOICES TO: DATE/TIME PESULTS A INVOICES TO: DATE/TIME PESULTS A INVOICES TO: DATE/TIME PESULTS A INVOICES TO: DATE/TIME PESULTS A INVOICES TO: DATE/TIME PESULTS A INVOICES TO: DATE/TIME PESULTS A INVOICES TO: DATE/TIME PESULTS A INVOICES TO: DATE/TIME PESULTS A INVOICES TO: DATE/TIME PESULTS A INVOICES TO: PESULTS A I	TURNADOUND TIME: SAMPLE RECEIPT REMARKS STIFFER 1533 Na. O 598-0175 3 X X X X X X X X X X X X X X X X X X	10 10 10 10 10 10 10 10	108/18/20 13/2 12/2 13/2 12/2 13/2 12/2 13	1/2 1/3		1/2 1/2	1	DATE TIME MATRIX SAMPLE NUMBER 25 8 C C \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$

White · Testing Laboratory Canary · EPNG Lab Pink · Field Sampler

FM-08-0566 (Rev 4-98)

ANALYISIS 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

CLIE	NT: 21 16:50 SHIPPING CONTAINER	.#:		
WOF	KORDER NO. $98.05.135$ INITIALS: QMI	DA:	TE: 5 %	498
1.	Does this project require special handling according to NEESA, Level 3,		Yes	(No)
	or CLP protocols?			
	If yes, complete a. and b.			
	a. Cooler Temperature			
	b. Lot No's		İ	
	c. Airbill Number			
2.	Are custody seals on the cooler intact? If so, how many	N/A	Yes	No
3.	Are custody seals on sample containers intact?	N/A	Yes	(No)
4.	Is there a Chain of Custody (COC) or other representative documents,		(Yes)	No
	letters or shipping memos?			·
5.	Is the COC complete?	N/A	(Yes)	No
	Relinquished: Yes / No Requested Analysis: Yes / No			
6.	Is the COC in agreement with the samples received?		Yes)	No
	No. of Samples: Yes Y No Sample ID's: Yes X No			
	Matrix: Yes No No. of Containers: Yes No			<u> </u>
7.	Are the samples requiring chemical preservation preserved correctly?	N/A	(Yes)	No
8.	Is there enough sample? If so, are they in the proper containers?		(Yes)	No
9.	Are all samples within holding times for the requested analyses?		Yes	No
10.	Were the sample(s) shipped on ice?	N/A	(Yes)	No
11.	Were all sample containers received intact? (not broken or leaking, etc.)		(Yes)	No
12.	Are samples requiring no headspace, headspace free?	N/A	Yes	(No)
13.	Do the samples require quarantine?		Yes	(PQ)
14.	Do samples require Paragon disposal?		Yes	No
15.	Did the client return any unused bottles?		Yes	(Nd)
Desc	rribe "NO" items (except No's 1, 13, &14):			
I I	the client contacted? YesNo Yes, Date: Name of person contacted: cribe actions taken or client instructions:			-
Gro	up Leader's Signature: Date:			_

Cooler Temperature: 130



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

advenne Mackeyer

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:

Reporter's Initials

6-23-98 Date

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	<u> </u>	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

Final Volume: 5 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	5/20/98	5/20/98	N/A	10	2	MG/L	2	υ	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:

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:

FLUORIDE

Method EPA300.0

Sample Results

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

Client Project ID: \$98-0181

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:

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:

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

vvater

Prep Batch: IC980520-1

Sample Aliquot:

5 ML

% Moisture: N/A

QCBatchID: IC980520-1-1

Final Volume:

5 ML

Date Collected: N/A

Run ID: IC980520-1A

Cleanup: NONE

Date Extracted: 20-May-98 Date Analyzed: 20-May-98

Basis: N/A

CASNO	Target Analyte	DF	Resuit	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	

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

Date Printed: Tuesday, June 23, 1998

Sample Matrix: Water

Prep Batch: IC980520-1

Sample Aliquot:

5 ML

% Moisture: N/A

QCBatchID: IC980520-1-1

Final Volume:

5 ML

Date Collected: N/A

Run ID: IC980523-1A

١.

Date Extracted: 20-May-98

Cleanup: NONE

20-Way-30

Basis: N/A

Date Analyzed: 23-May-98

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

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

Prep Batch: IC980520-1

Sample Aliquot:

5 ML

% Moisture: N/A

QCBatchID: IC980520-1-1

Final Volume:

5 ML

Date Collected: 20-May-98 Date Extracted: 20-May-98

Run ID: IC980520-1A Cleanup: NONE

Date Analyzed: 20-May-98

Basis: N/A

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%

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: 1C980520-1LCS

Sample Matrix: Water

Prep Batch: IC980520-1

Sample Aliquot:

5 ML

% Moisture: N/A

QCBatchID: IC980520-1-1

Final Volume:

5 ML

Date Collected: 20-May-98 Date Extracted: 20-May-98 Run ID: IC980523-1A

Cleanup: NONE

Date Analyzed: 23-May-98

Basis: N/A

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

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:

Final Volume:

5 ML

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

Date Printed: Thursday, June 18, 1998

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

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
Ī	S98-0184	9805143-5	5/19/98	5/19/98	2	171	MG/L	170	10		1	15

Comments:

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:

Method EPA160.1

Sample Results

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

Client Project ID: \$98-0181
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
\$98-0182	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
\$98-0185	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:

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

Prep Batch: TD980520-1

Sample Aliquot:

100 ML

% Moisture: N/A

QCBatchiD: TD980520-1-1 Run ID: TD980520-1A Final Volume:

lume: 100 MG/L

Date Collected: N/A

Date Extracted: 20-May-98 Date Analyzed: 20-May-98 Cleanup: NONE

Basis: N/A

Lab ID	Date Collected	Date Prepared	Date Analyzed		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:

Method EPA160.1

Blank Spike

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805143

Client Name: El Paso Natural Gas Co.

ClientProject ID: \$98-0181

Lab ID: TD980520LCS

Sample Matrix: Water

% Moisture: N/A

Prep Batch: TD980520-1

Sample Aliquot: Final Volume: 100 ML

QCBatchiD: TD980520-1-1

Run ID: TD980520-1A

100 MG/L

Date Collected: 20-May-98 Date Extracted: 20-May-98

Date Analyzed: 20-May-98

Cleanup: NONE

Basis: N/A

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

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:

Final Volume:

10 ML

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



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 & Mayfield Date

Date

Fuels Analyst

Reviewer's Initials

4.17-48

Date

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Reagent Blank

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: El Paso Natural Gas Company

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 Volume: 5 mL Sample Matrix: Water

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

S98-0186

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: El Paso Natural Gas Company

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.

AROMATIC VOLATILE ORGANICS BLANK SPIKE

Method 8021

Sample ID

Blank Spike

Lab Name: Paragon Analytics, Inc.

Sample Matrix: Water

Client Name: El Paso Natural Gas Co.

Client Project ID: El Paso Natural Gas Company

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

Date Extracted: 5

5/19/98

Date Analyzed: 5/1

5/19/98

Sample Volume: 5 mL

	Spike	BS	BS	QC
	Added	Concentration	Percent	Limits
Analyte	(ug/L)	(ug/L)	Recovery	% 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
		(-8-)			<u> </u>
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/BSD

Analyte	% Recovery BS	% Recovery BSD	% Rec Limits	
2.3,4-Trifluorotoluene	100	101	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: El Paso Natural Gas Company

Lab Sample ID: 9805143-6MS

2... 5 cm 5 cm

Sample Matrix: Water

S98-0186

Date Collected:

5/13/98

Date Extracted:

5/19/98

Date Analyzed:

5/19/98

Sample Volume: 5 mL

Dilution Factor: 1

	Spike	Sample	MS	MS	QC
	Added	Concentration	Concentration	Percent	Limits
Analyte	(ug/L)	(ug/L)	(ug/L)	Recovery	% 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
	100	100	100		••
Benzene	100	100	100	ļi	20
Toluene	100	101	101	l	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

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.

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

Prep Batch: AK980519-1

Sample Aliquot:

100 ML

% Moisture: N/A

QCBatchID: AK980519-1-2 Run ID: AK980519-1A

Final Volume: 100 ML

Date Collected: 19-May-98 Date Extracted: 19-May-98

Cleanup: NONE

Date Analyzed: 19-May-98

Basis: N/A

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
11-43-8	TOTAL ALKALINITY As CaCO3	100	95.7	MG/L	5		96	85 - 115

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

Final Volume: 3 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	5/20/98	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:

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

Prep Batch: NN980519-1

Sample Aliquot:

Final Volume:

3 ML

% Moisture: N/A

Date Collected: N/A

QCBatchID: NN980519-1-1 Run ID: NN980520-2A

3 ML

Date Extracted: 19-May-98

Date Analyzed: 20-May-98

Cleanup: NONE

Basis: N/A

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:

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

Prep Batch: NN980519-1

Sample Aliquot:

3 ML

% Moisture: N/A

Date Collected: 19-May-98

QCBatchID: NN980519-1-1 Run ID: NN980520-2A

Final Volume:

3 ML

Date Extracted: 19-May-98 Date Analyzed: 20-May-98 Cleanup: NONE

Basis: N/A

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

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
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:

TOTAL ALKALINITY As CaCO3

Method EPA310.1

Sample Results

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

Client Project ID: \$98-0181
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:

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: Final Volume: 100 ML

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:

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: \$98-0181

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

Sample Aliquot:

Final Volume:

100 ML

100 ML

Cleanup: NONE

Basis: N/A

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:

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: \$98-0181

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:

Final Volume:

100 ML 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

Page 1 of 2

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

	Spike	BS	BS	QC
	Added	Concentration	Percent	Limits
Analyte	(ug/L)	(ug/L)	Recovery	% 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

	Spike	BSD	BSD		QC
	Added	Concentration	Percent		Limits
Analyte	(ug/L)	(ug/L)	Recovery	RPD	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 L	imits
2,3,4-Trifluorotoluene	99	101	88 - 119	

D = Detected

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

Date Collected: N/A

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

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.

Method 8021

Sample ID

S98-0182

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0181

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..

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..

Method 8021

Sample ID

S98-0184

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0181

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
224 T :0	0.7	00 110
2,3,4-Trifluorotoluene	97	88 - 119

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 Extracted: 5/20/98 Date Analyzed: 5/20/98

Date Collected: 5/13/98

Sample Volume: 5 mL Sample Matrix: Water

Dilution Factor: 1

		Reporting
Analyte	Conc (ug/L)	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	alyte % Recovery	
2 2 4 T-: G	0.0	00 110
2,3,4-Trifluorotoluene	98	88 - 119

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

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

Sample Matrix: Water

Date Extracted:

5/20/98

Date Analyzed:

5/20/98

Sample Volume: 5 mL

	Spike	BS	BS	QC
	Added	Concentration	Percent	Limits
Analyte	(ug/L)	(ug/L)	Recovery	% 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

	Spike	BSD	BSD		QC
	Added	Concentration	Percent		Limits
Analyte	(ug/L)	(ug/L)	Recovery	RPD	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



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.

<u>Analyte</u>	Sample ID
Silicon	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.

```
mg CaCO_3/L = (2.497 * Ca conc. (mg/L)) + (4.118 * Mg conc. (mg/L))

S98-0184 (PAI ID 9805143-5) - 193 mg CaCO_3/L

S98-0186 (PAI ID 9805143-6) - 247 mg CaCO_3/L
```



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

Senior Inorganic Chemist

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	<u> </u>	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.

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

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.

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 Matrix: Water

Sample ID

\$98-0186

Date Collected: 05/13/98

Prep Date: 05/21/98

Date Analyzed: 05/21/98

Analyte	Concentration mg/L	Reporting Limit mg/L
Calcium		,
1	66	1
Magnesium	20	1
Potassium	3	1
Silicon	27	0.05
Sodium	65]1

ND = Not detected at or above the reporting limit.

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	
Magnesium	40	5	47	105	
Potassium	40	< 1	42	105	
Silicon	0.5	3.7	4.3	120	See note
Sodium	40	< 1	43	108	1

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

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





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 7° 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 5-27-98

Susan Converse Date

Inorganic Technician

SW 5/2.8/98

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
\$98-0186	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.

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	РН	7.8	0.1		0	10

Comments:

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





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 7° 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:



a	· 🔨
D UDALDO	Converse

5 27-98

Susan Converse

Date

Inorganic Technician

5/28/98 Date

Reviewer's Initials

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	<u> </u>	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: \$98-0181
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
\$98-0185	9805143-4	5/13/98	5/20/98	5/20/98	N/A	1	5100	umhos/cm			50 ML
\$98-0184	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

Date Printed: Wednesday, May 27, 1998

Paragon Analytics Inc.

Page 1 of 1

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.

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

EL PASO NATURAL GAS

CHAIN OF CUSTODY RECORD

9805143

Г	.]		ŀ	-							
PHOLECI NOMBER						REQUES.	REQUESTED ANALYSIS	YSIS	CONTR	CONTRACT LABORATORY	ومرورية والمساورة والمراورة والمراورة والمراورة والمراورة والمراورة والمراورة والمراورة والمراورة والمراورة والمراورة
SAMPIERS: (Simplify)	DATE				-	-			+		
S. C. M.		5113िस	IATNO:	nsoan Bara					_		
LABID DATE TIME MATRIX	SAMPLE NUMBER			15		الع جهدد: دوسرات	37.E				REMARKS
Col shake cease has	S98-0181		3		` 'X	×	×				
02 slishe 0935 140	8910-872		3		یر	×	×				
03 द्राशिक्षााम मिर	596.0183	0	3			×	×				
04 slishe 1515 HZO	398-0185		3			х х	×				
<u>/</u>	/										
			_								
						_					
			/	/							
					/						
										-	
								/_	1		
REMOUSHED BY: (Signatura)	SATESTIME SAN PR. COCO	RECEIVED BY: (Signature)	(0)		. H	INQUISHE	RELINQUISHED BY: (Signature)	(ture)		DATE/TIME	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	/e)		JA .	JNOUISHED	RELINQUISHED BY: (Signature)	ture)	12	5/15/98 9.40c	RECEIVED OF LABORATORY BY: Linguishum)
REQUESTED TURNAROUND TIME:		SAMPLE RECEIPT REMARKS	AARKS					RESULTS	RESULTS & INVOICES TO:	ı	o de la companya de l
CARRIER CO.								····		EL PASO NATURA 8645 RAILROAD D	ELPBOKATONT SERVICES BELFASO NATURAL GAS COMPANY 8645 ROLLEVAS 7000A
BILL NO.:		CHARGE CODE						1		915-759-2229	FAX: 915-759-2335
ONG - record - records - records	o Diot . Field Samole										

White - Testing Laboratory Canary - EPNG Lab Pink - Field Sampler

FM 38 3566 (Pev 4-3c

EL PASO NATURAL GAS

CHAIN OF CUSTODY RECORD

9805143

PROJECT NUMBER PROJECT NAME		#3	 		REQUE	REQUESTED ANALYSIS	LYSIS	01	CONTRACT LABORATORY
SAMPLERS: (Signature)	C 12 96	MUMB BNIATH	SAR:	5c.	U	-			
LABID DATE TIME MATRIX	SAMPLE NUMBER			4246 546 546 14344A	yprpr	· ·		<u> </u>	REMARKS
05 slisterizas HZ	S98-0184	5		×	×				
06 shipping 40	598.0186				×				
		/							
			/	/					
				/	/				
						/_	/		
							/		
REINCHEAGE BY Signaline	8	RECEIVED BY: (Signature)		ec.	ELINOUISH	RELINQUISMED BY: (Signatura)	aturo)		
RELINQUISHED BY: (Signatura)		RECEIVED BY: (Signature)		<u> </u>	EUNOUISH	RELINGUISHED BY: (Signature)	ature)		SISTEMME RECEIVED OF LABORATORY BY: (Squalure)
REQUESTED TURNAROUND TIME:	SAMPLE	SAMPLE RECEIPT REMARKS	SX.	<u> </u> 			RESUL	RESULTS & INVOICES TO:	1
CARRIER CO.									ELPASO NATURAL GAS COMPANY 864 S RAILROAD DRIVE FI PASO TEXAS 79004
:0)וד אס	CHARGE CODE	CODE					.		915-759-2229 FAX 915-759-2335
While . Testing Laboratory Canary . EPNG Lab	Lab Pink . Field Sampler								FW-LE 0566 (Rev : Jr

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

	Anions & Cations	Preservative	Bottle & Sample Size
1	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

CLIE	$NT: \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad$:		
WOR	KORDER NO. 9805143 INITIALS:	DAT	E: 5/1	5/98
1.	Does this project require special handling according to NEESA, Level 3,		Yes	(NO)
	or CLP protocols?			
	If yes, complete a. and b.			
	a. Cooler Temperature			
	b. Lot No's.			
	c. Airbill Number	,		
2.	Are custody seals on the cooler intact? If so, how many	N/A	Yes	(No)
3.	Are custody seals on sample containers intact?	N/A	Yes	No
4.	Is there a Chain of Custody (COC) or other representative documents,		(185)	No
	letters or shipping memos?			
5.	Is the COC complete?	N/A	Yes) No
	Relinquished: Yes No Requested Analysis: Yes No			
6.	Is the COC in agreement with the samples received?		Yes	No
	No. of Samples: Yes No Sample ID's: Yes No		` _	
	Matrix: Yes No No. of Containers: Yes No			
7.	Are the samples requiring chemical preservation preserved correctly?	N/A	(Yes)	No
8.	Is there enough sample? If so, are they in the proper containers?		Yes	No
9.	Are all samples within holding times for the requested analyses?		Yes	No
10.	Were the sample(s) shipped on ice?	N/A	Yes	No
11.	Were all sample containers received intact? (not broken or leaking, etc.)		Yes	No
12.	Are samples requiring no headspace, headspace free?	N/A)	Yes	No
13.	Do the samples require quarantine?		Yes	AD
14.	Do samples require Paragon disposal?		(Yes)	5 γρ
15.	Did the client return any unused bottles?		Yes	(No)
Desc	ribe "NO" items (except No's 1, 13, &14):			-
If	the client contacted? YesNo yes, Date:Name of person contacted: ribe actions taken or client instructions:			-
Grou	p 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
pН	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.

Solvennie Mackeyum

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

- All surrogate recoveries were within acceptance criteria. 9.
- 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

| C-/2-98 |
| Date |
| Date |
| C-/2-98 |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date |
| Date

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: \$98-0188

Client PO Number:

Client Sample	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
S98-0188	9805151-1	<u></u>	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

Method 8021

Sample ID

Reagent Blank

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188

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

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.

S98-0191

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188

Date Collected: 5/14/98

Lab Sample ID: 9805151-4

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

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.

S98-0192

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188

Date Collected: 5/14/98

Lab Sample ID: 9805151-5

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

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc. Client Name: El Paso Natural Gas Co. S98-0194

Client Project ID: S98-0188

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.

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

	Spike	BS	BS	QC
	Added	Concentration	Percent	Limits
Analyte	(ug/L)	(ug/L)	Recovery	% 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

	Spike Added	BSD Concentration	BSD Percent		QC Limits
Analyte	(ug/L)	(ug/L)	Recovery	RPD	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	I	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		



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:

Analyte	<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.
- 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:

Reporter's Initials

6-22-98

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	<u> </u>	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

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:

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: Final Volume: 100 ML 100 ML

Lab ID	Date Collected	Date Prepared	Date Analyzed		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

Date Printed: Thursday, June 18, 1998

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 Extracted: 19-May-98

Date Analyzed: 19-May-98

Date Collected: 19-May-98

Prep Batch: AK980519-1 QCBatchID: AK980519-1-2

Run ID: AK980519-1A

Sample Aliquot:

Final Volume:

100 ML

100 ML

Cleanup: NONE

Basis: N/A

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
11-43-8	TOTAL ALKALINITY As CaCO3	100	95.7	MG/L	5		96	85 - 115

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
s	HARED 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.

TODARO

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
\$98-0189	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:

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:

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

Prep Batch: AK980519-1

Sample Aliquot:

100 ML

% Moisture: N/A

Date Collected: 19-May-98

QCBatchID: AK980519-1-2 Run ID: AK980519-1A

Final Volume:

100 ML

Date Extracted: 19-May-98

Cleanup: NONE Basis: N/A

Date Analyzed: 19-May-98

BS % Control Reporting Result **CASNO Target Analyte** Spike BS Units Qualifier Limits Limit Rec. Added Result 96 85 - 115 **BICARBONATE AS CACO3** 95.7 MG/L 10-13-9 100

Method EPA310.1M

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9805151

Client Name: El Paso Natural Gas Co.

ClientProject ID: \$98-0188

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:

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:

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	<u> </u>	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
\$98-0187	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:

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:

SULFATE

Method EPA300.0

Sample Results

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

Client Project ID: \$98-0188
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
\$98-0190	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:

Date Printed: Monday, June 22, 1998

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

Sample Aliquot: Final Volume: 5 ML 5 ML

Basis: N/A

CASNO	Target Analyte	DF	Result	Units	Reporting Limit	Result Qualifier	EPA Qualifier
14808-79-8	SULFATE	1	1	MG/L	1	υ	
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	

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%

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: \$98-0188

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		Units	Reporting Limit	MSD % Rec.	RPD	RPD Limits
SULFATE	400	521	MG/L	20	98	0.6	15

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
\$98-0190	9805151-3	5/14/98	5/19/98	5/19/98	N/A	2	1.6	MG/L	0.1	·	3 ML
\$98-0191	9805151-4	5/14/98	5/19/98	5/19/98	N/A	1	0.05	MG/L	0.05	U	3 ML
\$98-0192	9805151-5	5/14/98	5/19/98	5/19/98	N/A	1	0.05	MG/L	0.05		3 ML

Comments:

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

Sample Aliquot: Final Volume:

3 ML 3 ML

Cleanup: NONE Basis: N/A

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:

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

Prep Batch: NN980519-1

QCBatchID: NN980519-1-1

Run ID: NN980519-1A

Sample Aliquot: Final Volume: 3 ML 3 ML

Date Collected: 19-May-98

Date Extracted: 19-May-98

Cleanup: NONE

Date Analyzed: 19-May-98

Basis: N/A

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

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: \$98-0188

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

MSD Lab ID: 9805056-2MSD

Date Printed: Monday, June 22, 1998

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

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 Aliquo
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
\$98-0190	9805151-3	5/14/98	5/20/98	5/20/98	N/A	1	420	MG/L	20		100 ML
\$98-0191	9805151-4	5/14/98	5/20/98	5/20/98	N/A	1	20	MG/L	20	U	100 ML
\$98-0192	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
\$98-0193	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:

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

er Prep Batch: TD980520-1
QCBatchID: TD980520-1-1

Sample Aliquot:

100 ML

. ...

% Moisture: N/A Date Collected: N/A

Run ID: TD980520-1A

Final Volume: 100 MG/L

Date Extracted: 20-May-98

Cleanup: NONE

Date Analyzed: 20-May-98

Basis: N/A

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

Comments:

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

Prep Batch: TD980520-1

Sample Aliquot:

Final Volume:

100 ML 100 MG/L

% Moisture: N/A

Date Collected: 20-May-98

QCBatchID: TD980520-1-1

Run ID: TD980520-1A

Cleanup: NONE

Date Extracted: 20-May-98 Date Analyzed: 20-May-98

Basis: N/A

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

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:

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.
- 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.

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

2

Susan Converse.

5-29-98

Susan Converse Inorganic Technician Date

5/29/98

Reviewer's Initials

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: \$98-0188

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: \$98-0188
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
\$98-0189	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	РН	0.1		20 ML
S98-0191	9805151-4	5/14/98	5/29/98	5/29/98	N/A	1	5.6	РН	0.1		20 ML
\$98-0192	9805151-5	5/14/98	5/29/98	5/29/98	N/A	1	8.1	PH	0.1		20 ML

Comments:

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:





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.

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



Susan Converse

5.29-98 Date

Inorganic Technician

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: \$98-0188

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: \$98-0188
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 MI
\$98-0189	9805151-2	5/14/98	5/29/98	5/29/98	N/A	1	1900	umhos/cm			50 MI
\$98-0190	9805151-3	5/14/98	5/29/98	5/29/98	N/A	1	690	umhos/cm			50 MI
S98-0191	9805151-4	5/14/98	5/29/98	5/29/98	N/A	1	15	umhos/cm			50 M
S98-0192	9805151-5	5/14/98	5/29/98	5/29/98	N/A	1	670	umhos/cm			50 M
S98-0187	9805151-6	5/14/98	5/29/98	5/29/98	N/A	1	2400	umhos/cm			50 M
S98-0193	9805151-7	5/14/98	5/29/98	5/29/98	N/A	1	850	umhos/cm			50 M
S98-0194	9805151-8	5/14/98	5/29/98	5/29/98	N/A	1	860	umhos/cm			50 M

Comments:

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: \$98-0188

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	

Paragon Analytics Inc.

Comments:



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.



- 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.

<u>Analyte</u>	Sample ID
Silicon	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.

 $mg CaCO_3/L = (2.497 * Ca conc. (mg/L)) + (4.118 * Mg conc. (mg/L))$

Sample ID	mg CaCO ₃ /L
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 persannel listed below:

Darry Patrick

Date

Senior Inorganic Chemist

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

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

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

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

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	i
Potassium	10	1
Silicon	21	0.05
Sodium	110	1

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

Sample ID

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

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

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
	40	•
Calcium	48	1
Magnesium	12	1
Potassium	4	1
Silicon	17	0.05
Sodium	72	1

TOTAL RECOVERABLE METALS MATRIX SPIKE

Sample ID

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

Lab Sample ID: 9805151-1

S98-0188

Prep Date: 06/01/98

Sample Matrix: Water 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	
h	1 1				
Magnesium	40	52	93	103	
Potassium	40	10	51	103	
Silicon	0.50	21.0	21.6	120	See note
Sodium	40	115	156	103	

	MSD	MSD	Relative	
	Conc.	% Rec.	% Difference	
Analyte	mg/L	(limits 80-120%)	(limits 0-20%)	Flags
Calcium	186	103	1	
Magnesium	92	100	1	
Potassium	50	100	2	
Silicon	21.6	120	0	See note
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	LCS	LCS
	Result	True Value	%
	mg/L	mg/L	Recovery
Silicon	0.56	0.50	112

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

EL PASO NATURAL GAS

CHAIN OF CUSTODY RECORD

Page

151 50 86

PROJECT NUMBER PROJECT NAME	-	-	-				CONTRACTIABORATORY	
	83			REQUEST	REQUESTED ANALYSIS	<u>, 1 </u>		
SAMPLERS: (Signalure)	SC C	MUMB ONTAINE POSITE BARD		C134				
LABID DATE TIME MATRIX SAMPLE NUMBER			5.4AO 5.77.4A	79 HV 78 E				HEMARKS
01 SIMPRION 1420 SPR-0188	3	\ .	×	×				
H20	V)	\ 0	×	×				
No.		Y	٧	· X				
1910-199 STO SPA-019		· ×	义	又				
05 SIMPRIBLES HZO S98-0193			يز	×				
		/						
				/				
RELINGUISHED BY: CSONNIUN) DATE/TIME R	RECEIVED BY: (Signature)			RELINOUISHED BY: (Signature)	BY: (Signature)		DATECTIME	RECEIVED BY: (Signature)
An Mark 1300	Fed C	<u>ب</u> د		120	よ ス		5/11/88 1005	
	RECEIVED BY: (Signatura)	6		RELINQUISHED BY: (Signature)	BY: (Signature)		DATE/TIME	RECEIVED OF LABORATORY ST. (Synatura)
REQUESTED TURNAROUND TIME:	SAMPLE RECEIPT REMARKS	AKS			R	RESULTS & INVOICES TO:		
							LABORATORY SEI EL PASO NATURA 8645 RAILROAD DE PASO DE	LABORATORY SERVICES EL PASO NATURAL GAS COMPANY B645 RALLROAD DRIVE FI PASO TEXAS 7900-1
BILL NO:	CHARGE CODE						915-759-2229	FAX. 915-759-2335
White . Testing Laboratory Canary . EPNG Lab Pink . Field Sampler								

White . Testing Laboratory Canary . EPNG Lab Pink . Field Sampler

FNF-08-05:06 (Rev. 4-36)

EL PASO NATURAL GAS

CHAIN OF CUSTODY RECORD

1815181

₹

PECEIVED OF LABOHATOHY BY: (Signature) a Machine RECEIVED BY: (Signature) FAX: 915-759-2335 LABORATORY SERVICES EL PASO NATURAL GAS COMPANY 8645 RAILROAD DRIVE EL PASO, TEXAS 79904 REMARKS 1000 915-759-2229 CONTRACT LABORATORY 11/18/8 RESULTS & INVOICES TO: REQUESTED ANALYSIS RELINQUISHED BY: (Signature) RELINQUISHED BY: (Signature) Fed Ex 对18 X يز ۷ במרוניה ב מרוניה ביניר لع X У ¥ 501 ሃ 10 COMPOSITE OR SAMPLE RECEIPT REMARKS TOTAL NUMBER OF CONTAINERS % Fid Ex 3 ~ RECEIVED BY: (Signature) RECEIVED BY: (Signature) CHARGE CODE रामिष्ट SAMPLE NUMBER 598-0187 598-0184 598-0193 4/15/18/1300 5/14/8/1555 142O TIME | MATRIX Sh-16/1555 1420 Slyke OFOR NA PROJECT NAME REQUESTED TURNAROUND TIME: O RUSH DATE SAMPLERS: (Signeture) PROJECT NUMBER CARRIER CO. C ROUTINE **JAB 10** ぐく 5 BIL NO: ئخ

White . Testing Laboratory Canary . EPNG Lab Pink . Field Sampler

FM 08-05:66 (Rev. + 3r)

ANALYISIS 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: Ul Para Malural Gas SHIPPING CONTAINER	#: <u>EP</u>	NG cool	ei, noidt
WORKORDER NO. 98 C/S /S/ INITIALS: AM	DA:	πε: <u>\$ //</u> Δ	198
1. Does this project require special handling according to NEESA, Level 3,		Yes	No
or CLP protocols?			
If yes, complete a, and b.			1
a. Cooler Temperature			,
b. Lot No's.	•		\triangleright
c. Airbill Number			
2. Are custody seals on the cooler intact? If so, how many	N/A	Yes	No
3. Are custody seals on sample containers intact?	N/A	Yes	No
4. Is there a Chain of Custody (COC) or other representative documents,		Yes	No
letters or shipping memos?			
5. Is the COC complete?	N/A	Yes	No
Relinquished: Yes V No Requested Analysis: Yes X No	<u> </u>		
6. Is the COC in agreement with the samples received?		Yes	No
No. of Samples: Yes \vee No Sample ID's: Yes \vee No			
Matrix: Yes \checkmark No. of Containers: Yes \checkmark No.			
7. Are the samples requiring chemical preservation preserved correctly?	N/A	Yes	No
8. Is there enough sample? If so, are they in the proper containers?		Yes	No
9. Are all samples within holding times for the requested analyses?		Yes	No
10. Were the sample(s) shipped on ice?	N/A	Yes	No
11. Were all sample containers received intact? (not broken or leaking, etc.)		Yes	No
12. Are samples requiring no headspace, headspace free?	N/A	Yes	(No)
13. Do the samples require quarantine?		Yes	(NO)
14. Do samples require Paragon disposal?		Yes	No
15. Did the client return any unused bottles?		Yes	NO NO
Describe "NO" items (except No's 1, 13, &14): 412: Rubble in I vial	J 597	3-0191	(-04).
Was the client contacted? Yes No			-
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: \$98-0188

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 Aromatic Volatile Organics pages 1-12 pages 1-28 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



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>	Method
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.



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:

Reporter's Initials

6-30-98

NP

10150145

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: 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	<u> </u>	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

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	υ	100 ML
\$98-0190	9806023-4	6/1/98	6/8/98	6/8/98	N/A	1	170	MG/L	5		100 ML
\$98-0224	9806023-5	6/1/98	6/8/98	6/8/98	N/A	1	150	MG/L	5		100 ML
\$98-0225	9806023-6	6/1/98	6/8/98	6/8/98	N/A	1	5	MG/L	5	U	100 ML

Comments:

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
\$98-0224	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:

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

Sample Aliquot:

Final Volume:

100 ML

100 ML

Cleanup: NONE

Basis: N/A

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:

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

Final Volume:

Sample Aliquot:

100 ML

100 ML

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
11-43-8	TOTAL ALKALINITY As CaCO3	100	98.2	MG/L	5		98	85 - 115

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:

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 QCI

Prep Batch: AK980608-1

Sample Aliquot: Final Volume:

100 ML 100 ML

Date Collected: N/A

Date Extracted: 08-Jun-98 Date Analyzed: 08-Jun-98 QCBatchID: AK980608-1-2 Run ID: AK980608-1A

Cleanup: NONE

Basis: N/A

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:

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

Prep Batch: AK980608-1

Sample Aliquot:

100 ML

% Moisture: N/A

QCBatchID: AK980608-1-2

Run ID: AK980608-1A

Final Volume:

100 ML

Date Collected: 08-Jun-98

Date Extracted: 08-Jun-98 Date Analyzed: 08-Jun-98 Cleanup: NONE

Basis: N/A

CASNO	Target Analyte	Spike Added	BS Result	Units	Reporting Limit	Result Qualifier	BS % Rec.	Control Limits
10-13-9	BICARBONATE AS CACO3	100	98.2	MG/L	5		98	85 - 115

Method EPA310.1

Duplicate Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: \$98-0188

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:

Method EPA300.0 Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: \$98-0188

Field ID: 598-0189

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: IC980603-1-2

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		

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	

Method EPA300.0 Sample Results

Lab Name: Paragon Analytics, Inc.

Work Order Number: 9806023

Client Name: El Paso Natural Gas Co.

ClientProject ID: \$98-0188

Field ID: \$98-0224

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

Sample Aliquot:

Final Volume:

5 ML

5 ML

Run ID: IC980603-2A Cleanup: NONE

Basis: As Received

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		

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: \$98-0225

Lab ID: 9806023-6

Sample Matrix: Water

% Moisture: N/A

Date Collected: 01-Jun-98

Date Analyzed: 03-Jun-98

Date Extracted: 03-Jun-98

Prep Batch: IC980603-1

QCBatchID: IC980603-1-2

Run ID: IC980603-2A

Cleanup: NONE

Basis: As Received

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	

5 ML

5 ML

Sample Aliquot:

Final Volume:

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

Date Printed: Saturday, June 27, 1998

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

Sample Aliquot:

Final Volume:

5 ML

5 ML

Cleanup: NONE

Basis: N/A

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	υ	

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

Prep Batch: IC980603-1

QCBatchID: IC980603-1-2

Sample Aliquot: Final Volume: 5 ML 5 ML

Date Collected: 03-Jun-98

Date Extracted: 03-Jun-98

Date Analyzed: 03-Jun-98

Run ID: IC980603-2A Cleanup: NONE

Basis: N/A

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	, I	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%

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

Target Analyte

Sample Matrix: Water

% Moisture: N/A

Date Collected: 01-Jun-98

3.3

MG/L

Date Extracted: 03-Jun-98

Date Analyzed: 03-Jun-98

1.4

Prep Batch: IC980603-1

QCBatchID: IC980603-1-2

Run ID: IC980603-2A

Cleanup: NONE Basis: As Received

2

Sample Aliquot: 5 ML Final Volume: 5 ML

80 - 120%

Control Spike MS % Result Sample MS Units Reporting Qualifier Limits Result Result Limit Added Rec. 5 98 ! 85 - 115% 0.71 5.61 MG/L 0.2

0.1

MSD Lab ID: 9806023-1MSD

BROMIDE

FLUORIDE

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

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
\$98-0188	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
\$98-0190	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

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

Prep Batch: nn980625-1

Sample Aliquot:

3 ML

% Moisture: N/A

QCBatchID: nn980625-1-1 Run ID: nn980625-1a

Final Volume:

3 ML

Date Collected: N/A

Date Extracted: 25-Jun-98 Date Analyzed: 25-Jun-98 Cleanup: NONE

Basis: N/A

Lab ID	Date Collected	Date Prepared	Date Analyzed		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:

Date Printed: Tuesday, June 30, 1998

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

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

Prep Batch: nn980625-1

Sample Aliquot:

3 ML

% Moisture: N/A

QCBatchID: nn980625-1-1 Run ID: nn980625-1a

Final Volume:

3 ML

Date Collected: 25-Jun-98

Date Extracted: 25-Jun-98 Date Analyzed: 25-Jun-98 Cleanup: NONE

Basis: N/A

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

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: \$98-0188

Field ID: \$98-0188

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:

Final Volume:

3 ML 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

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 Aliquo
S98-0188	9806023-1	6/1/98	6/8/98	6/8/98	N/A	1	1500	MG/L	20		100 ML
\$98-0189	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	υ	100 ML
\$98-0190	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.

Date Printed: Saturday, June 27, 1998

Paragon Analytics Inc.

Page 1 of 1

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

ஓட்கு ID: TD980608-1LCS

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

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

100 ML

100 ML

Sample Aliquot:

Final Volume:

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

Lab ID: TD980608-1MB

Sample Matrix: Water

% Moisture: N/A

Prep Batch: TD980608-1 QCBatchID: TD980608-1-1 Sample Aliquot:

100 ML

Date Collected: N/A

Run ID: TD980608-1A

Final Volume:

100 ML

Date Extracted: 08-Jun-98

Cleanup: NONE

Basis: N/A

Date Analyzed: 08-Jun-98

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.

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

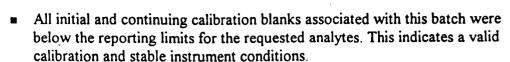
Order Number - 9806023

- 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





- 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.

 $mg CaCO_3/L = (2.497 * Ca conc. (mg/L)) + (4.118 * Mg conc. (mg/L))$

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

Darry Patrick

Senior Inorganic Chemist

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.

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

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

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



Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188 Lab Sample ID: 9806023-1

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

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: \$98-0188 Lab Sample ID: 9806023-2

Sample Matrix: Water

Sample ID

S98-0189

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

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: 06/01/98

Prep Date: 06/08/98

Date Analyzed: 06/10/98

Sample Matrix: Water

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

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

Client Project ID: S98-0188

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	i
Potassium	10	1
Silicon	21	0.05
Sodium	85	1



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

Client Project ID: S98-0188 Lab Sample ID: 9806023-5

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



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

Client Project ID: S98-0188 Lab Sample ID: 9806023-6

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 ND	1
Potassium	ND	1
Silicon	0.16	0.05
Sodium	ND	1

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	

	MSD Conc.	MSD % Rec.	Relative % Difference	
Analyte	mg/L	(limits 80-120%)	(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	





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.

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



Susan Converse

6-12-98 Date

Inorganic Technician

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.

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: \$98-0188

Client PO Number:

Client Sample	Lab Sample Number				Time Collected	
S98-0188	9806023-1	<u> </u>	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: \$98-0188
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	Sampk Aliquo
S98-0188	9806023-1	6/1/98	6/8/98	6/8/98	N/A	1	7.5	РН	0.1		20 M
S98-0189	9806023-2	6/1/98	6/8/98	6/8/98	N/A	1	7.4	РН	0.1		20 M
S98-0223	9806023-3	6/1/98	6/8/98	6/8/98	N/A	1	6	РН	0.1		20 M
S98-0190	9806023-4	6/1/98	6/8/98	6/8/98	N/A	1	8	РН	0.1		20 M
S98-0224	9806023-5	6/1/98	6/8/98	6/8/98	N/A	1	8	РН	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: \$98-0188

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.





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.

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



Susan Converse

6-12-98

Susan Converse

Inorganic Technician

6/12/98

Reviewer's Initials

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: 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	·L	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

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
\$98-0188	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.

Page 1 of 1



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.

- 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 8. Mayfield Date

Date

Fuels Analyst

mb eviewer's Initials 6-28-98

Date

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
\$98-0223	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

AROMATIC VOLATILE ORGANICS

Method 8021

Sample ID

Reagent Blank

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188

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.

Method 8021

Sample ID

S98-0188

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: 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

Method 8021

Sample ID

S98-0189

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188

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

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

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.

S98-0190

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188

Date Collected: 6/01/98

Lab Sample ID: 9806023-4

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

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc. Client Name: El Paso Natural Gas Co. S98-0224

Client Project ID: S98-0188

Date Collected: 6/01/98

Lab Sample ID: 9806023-5

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

Method 8021

Sample ID

S98-0225

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188

Lab Sample ID: 9806023-6

Sample Matrix: Water

Date Collected: 6/01/98

Date Extracted: 6/09/98

Date Analyzed: 6/09/98

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

AROMATIC VOLATILE ORGANICS BLANK SPIKE

Method 8021

Sample ID

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188

Lab Sample ID: WBS1

Sample Matrix: Water

Blank Spike

Date Extracted:

6/09/98

Date Analyzed:

6/09/98

Sample Volume: 5 mL

	Spike	BS	BS	QC
	Added	Concentration	Percent	Limits
Analyte	(ug/L)	(ug/L)	Recovery	% 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

	Spike	BSD	BSD		QC
	Added	Concentration	Percent		Limits
Analyte	(ug/L)	(ug/L)	Recovery	RPD	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/BSD

Analyte	% Recovery BS	% Recovery BSD	% Rec Limits
2,3,4-Trifluorotoluene	100	102	88 - 119

AROMATIC VOLATILE ORGANICS MATRIX SPIKE

Method 8021

Sample ID

S98-0188

Lab Name: Paragon Analytics, Inc.

Client Name: El Paso Natural Gas Co.

Client Project ID: S98-0188

Lab Sample ID: 9806023-1MS

Sample Matrix: Water

Date Collected:

6/01/98

Date Extracted:

6/09/98

Date Analyzed:

6/09/98

Sample Volume: 5 mL

Dilution Factor: 1

	Spike Added	Sample Concentration	MS Concentration	MS Percent	QC Limits
Analyte	(ug/L)	(ug/L)	(ug/L)	Recovery	% 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

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: \$98-0188

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	<u></u>	Water	6/1/98	18:50
S98-0225	9806023-6		Water	6/1/98	18:55

CHAIN OF

COSTODY	
スポープスプ	1
 , i	20.00

	00000	
いとなっている。	はまでは、おび、これがある	

LABORATORY	
	Page_
	Q _

							Y GOV	Control of the Contro	THE STATE OF		,
ROJECT NUMBER PROJECT NAME	-			REQUE	REQUESTED ANALYSI	MLYSIS		CONTR	CONTRACT LABORATORY	RATORY	
AMPLERS: (Signatury) CATE:		Т	- 1	\dashv	-	\dashv	-	\dagger			
Mm) Subjus	TAL NU	MPOSI GRA	<u>زگري</u>	ŧΚ	1ED_			П			
LABID DATE TIME MATRIX SAMPLE NUMBER		Avid	cat	BT.	see Allad				I		REMARKS
01 6/18 1615 HO S98-0188	۸	_		χ Υ	7			Resamble	mble		
3 WARS 1615 HUO S98-0189	5			B	<u>প</u>			Resort	mole		
-03 WIRB ISHS HOO S98-0223	5		8	প ~	x				-		
1830 4.0	5		8_	が ア	"			2)	RESAMPLE		
<u> </u>	1	-	8	X	א				-		
	2		8	77	<u>s</u>						
	/	 	u		_						
				-/	/	<u> </u>					
						-	/				
DATETIME RECEIVED BY: (Signature)	alwe)		AEI AEI	-COLX	FECULX	(nature)		6	0398 9.2	18 9.30	(1)-398930cm
	ature)		Æ	HSINONL	RELINQUISHED BY: (Signature)	pnature)			DAT	DATETIME	RECEIVED OF LABORATORY BY: (Sypnature)
JROUTINE DRUSH SAMPLE RECEIPT REMARKS	EMARKS					R	SULTS & IN	RESULTS & INVOICES TO:		NICAL SERVIC SO NATURAL PAILROAD DR	TECHNICAL SERVICES DIVISION LABORATORY EL PASO NATURAL GAS COMPANY 8645 RAILROAD DRIVE EL PASO, TEXAS 79904
CHARGE CODE						-			915-7	915-759-2229 F	FAX: 915-759-2335
thite - Testing Laboratory Canary - EPNG Lab Pink - Field Sampler											EV 00 2556 (D.: 13 25)

thite - Testing Laboratory Canary - EPNG Lab Pink - Field Sampler

FM-08-0566 (Rev. 12-36)

ANALYISIS 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



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

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

MONTGOMERY WATSON LABS. SUBMITTED ON

AUG 24 1998

EB Debbie Frank

Report#: 46193 SUBCONTRACT

Laboratory Report #46193

555 East Walnut Street Pasadena, California 91101 818 568 6400; Fax: 818 568 6324; 1 800 566 LABS (1 800 566 5227)

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	Dilut
S98-028	9 P9808	8043-01	(98081418	30)	Sampled on	08/10/98			
	08/16/98	82462	(ML/SM 4500	F) Fluoride	•	1.9	mg/l	0.10	1
	08/19/98	82671	(ML/EPA 300.0) Sulfate		57	mg/l	2.0	1
S98-029	0 P9808	8043-02	(98081418	31)	Sampled on	08/08/98			
	08/16/98	82462	(ML/SM 4500	F) Fluoride	9	ND	mg/l	0.10	1
	08/19/98	82671	(ML/EPA 300.0) Sulfate		ND	mg/l	2.0	1
S98-029	1 P980	8043-03	(9808141	82)	Sampled on	08/10/98			
	08/16/98	82462	(ML/SM 4500	F) Fluorid	•	ND	mg/1	0.10	1
	08/19/98	82671	(ML/EPA 300.0) Sulfate		ND	mg/l	2.0	1
S98-029	3 P980	8043-04	(9808141	B3)	Sampled on	08/11/98			
	08/16/98	82462	(ML/SM 4500	F) Fluorid	_ •	1.9	mg/l	0.10	1
	08/19/98	82671	(ML/EPA 300.0) Sulfate		110	mg/l	2.0	1
S98-029	4 P980	8043-05	(9808141	84)	Sampled on	08/11/98			
	08/16/98	82462	(ML/SM 4500	F) Fluorid	•	1.3	mg/l	0.10	1
	08/19/98	82671	(ML/RPA 300.0) Sulfate		130	mg/l	6.0	3
S98-029	5 P980	8043-06	(9808141	85)	Sampled on	08/11/98			
	08/16/98	82462	(ML/SM 4500	F) Fluorid	6	1.1	mg/l	0.10	1
	08/19/98	82671	(ML/EPA 300.0) Sulfate		140	mg/l	8.0	4
S98-029	6 P980	8043-07	(9808141	86)	Sampled on	08/11/98			
	08/16/98	82462	(ML/SM 4500	F) Fluorid	_	1.6	mg/l	0.10	1
	08/19/98	82671	(ML/EPA 300.0) Sulfate		110	mg/l	2.0	1

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
S98-029	7 P9808	8043-08	(980814187)	Sampled on	08/11/98			
	08/16/98	82462	(ML/SN 4500F)	Fluoride	ND	mg/1	0.10	1
	08/19/98	82671	(ML/EPA 300.0)	Sulfate	ND	mg/l	2.0	1
S98-029	8 P980	8043-09	(980814188)	Sampled on	08/11/98			
	08/16/98	82462	(ML/SM 4500F)	Pluoride	1.8	mg/l	0.10	1
	08/19/98	82671	(ML/EPA 300.0)	Sulfate	54	mg/l	2.0	1

Laboratory QC Report #46193

555 East Walnut Street Pasadena, California 91101 818 568 6400; Fax: 818 568 6324; 1 800 566 LABS (1 800 566 5227)

Nevada Environmental Laboratory

	QC Batch #82462	Fluori	de			
QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
KS	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				
KS	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	Sulfat	e			
QC	Analyte	Spiked	Recovered	(*) bleif	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				
KS	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 Mathod Blanks with positive results are highlighted by <u>Underlining</u>. Criteria for MS and DUP are not applicable for ICR monitoring.



555 East Walnut Street Pasadena, California 91101 818 568 6490; 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

MONTGOMERY WATSON LABS. SUBMITTED ON

AUG 24 1998

Debbie Frank

Report#: 46192 SUBCONTRACT

555 East Walnut Street Pazadena, California 91101 818 568 6400: Fax: 818 568 6324; 1 800 566 EABS (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	Dilutio
S98-029	2 P9808	3044-01	(980814178) Sampled o	n 08/13/98			
	08/15/98	82594	(ML/EPA 300.0) Sulfate	83	mg/1	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
S98-029	9 P9808	3044-02	(980814179) Sampled o	n 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/1	0.88	2

Laboratory QC Report #46192

555 East Walnut Street Pasadena, California 91101 818 568 6400; Fax: 818 568 6324; 1 800 566 LABS (1 800 566 5227)

Nevada Environmental Laboratory

	QC Batch #82594	Sulfat	e			
QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
KS	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)	
KSD	Sulfate	50	52.4	104.8	(80.00 - 120.00)	0.00
	QC Batch #82645	Nitrat	e by I	C as NO3	& N	
QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
KS	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
KS	Nitrate-N	2.5	2.6	104.0	(75.00 - 125.00)	
NSD	Nitrate-N	2.5	2.5	100.0	(75.00 - 125.00)	3.9
MBLK	Nitrate as NO3 by IC	MD				

Spikes which exceed Limits and Method Blanks with positive results are highlighted by <u>Underlining.</u>
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.

Van Wagenen Laboratory Manager

CERTIFICATIONS:

Arizona

California

Las Vegas S. California. Reno AZ0520 AZ0518 AZ0583

2002

2264 1707 US Army Corps Certified Certified Certified of Engineers

Idaho Montana Nevada

Washington

Reno Certified Certified NV033

Las Vegas S. California Certified

Certified NV052

CA084 Certified

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:

PARAMETER	RESULT RE	PORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
Calcium	47 Jm	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Magnesium	12	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Potassium	4.2	0.25 mg/L	0.5	EPA 200.7	8/13/98	8/18/98
Silica	19	10.mg/L	5	SM 3111 D	8/18/98	8/18/98
Sodium	79	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98

PROJECT NAME: NA PROJECT NUMBER: NA CLIENT ID: S98-0290

DATE SAMPLED: 8/10/98

NEL SAMPLE ID: P9808043-02

TEST:

Cations by EPA 6010B, December 1996

MATRIX: Aqueous

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
Calcium	ND	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	0.68	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98

PROJECT NAME: PROJECT NUMBER: NA

S98-0291

DATE SAMPLED: 8/10/98

NEL SAMPLE ID: P9808043-03

TEST:

Cations by EPA 6010B, December 1996

MATRIX:

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
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

PROJECT NAME:

CLIENT ID: DATE SAMPLED: 8/11/98

598-0293

Acw-15

PROJECT NUMBER: NA

NEL SAMPLE ID: P9808043-04

TEST:

Cations by EPA 6010B, December 1996

MATRIX:

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
Calcium	48	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Magnesium	16	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Potassium	5.5	0.25 mg/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	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98

PROJECT NAME: NA PROJECT NUMBER: NA

598-0294 CLIENT ID:

DATE SAMPLED: 8/11/98

NEL SAMPLE ID: P9808043-05

ACW-12

TEST:

Cations by EPA 6010B, December 1996

MATRIX:

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
Calcium	180	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Magnesium	62	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Potassium	9.8	0.25 mg/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	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98

CLIENT: El Paso?

PROJECT NAME: NA PROJECT NUMBER: NA CLIENT ID: S98-0295

DATE SAMPLED: 8/11/98

NEL SAMPLE ID: P9808043-06

ACW-120.

TEST:

Cations by EPA 6010B, December 1996

MATRIX: Aqueous

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
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

PROJECT NAME: PROJECT NUMBER: NA

NA

CLIENT ID: S98-0296 DATE SAMPLED: 8/11/98

NEL SAMPLE ID: P9808043-07

ACW-13

Cations by EPA 6010B, December 1996

MATRIX:

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
Calcium	43	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Magnesium	14	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Potassium	9.4	0.25 mg/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	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98

PROJECT NAME: NA PROJECT NUMBER: NA

S98-0297 CLIENT ID:

DATE SAMPLED: 8/11/98 NEL SAMPLE ID: P9808043-08

TEST:

Cations by EPA 6010B, December 1996

MATRIX:

PARAMETER	RESULT mg/L	REPORTING LIMIT	<u>D. F.</u>	<u>METHOD</u>	DIGESTED	ANALYZED
Calcium	ND	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

PROJECT NAME: NA PROJECT NUMBER: NA

S98-0298 CLIENT ID:

DATE SAMPLED: 8/11/98 NEL SAMPLE ID: P9808043-09

TEST:

Cations by EPA 6010B, December 1996

MATRIX: Aqueous

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
Calcium	47	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Magnesium	12	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Potassium	4.1	0.25 mg/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	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98

NEL LABORATORIES

CLIENT: El Paso Natural Gas Company

PROJECT NAME: NA PROJECT NUMBER: NA

CLIENT ID: Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: P08043I-BLK

TEST

Cations by EPA 6010B, December 1996

PARAMETER	RESULT mg/L	REPORTING LIMIT	<u>D. F.</u>	<u>METHOD</u>	DIGESTED	ANALYZED
Calcium	ND.	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Magnesium	ND	$0.25\mathrm{mg/L}$	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
Sodium	ND	$0.25\mathrm{mg/L}$	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 Comp

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

	RESULT	REPORTING				
PARAMETER	mg/L	LIMIT	D. F.	METHOD	DIGESTED	<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.

PROJECT NAME: PROJECT NUMBER: NA CLIENT ID: \$98-0289

DATE SAMPLED: 8/10/98

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	ReportingLimit
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

PROJECT NAME: NA PROJECT NUMBER: NA CLIENT ID: \$98-0290

DATE SAMPLED: 8/10/98 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	ReportingLimit
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

PROJECT NAME: NA PROJECT NUMBER: NA

CLIENT ID: \$98-0291

DATE SAMPLED: 8/10/98
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

PROJECT NAME: NA PROJECT NUMBER: NA CLIENT ID: S98-0293

DATE SAMPLED: 8/11/98 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

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

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	101	86 - 115
Toluene-d8	99	86 - 110

PROJECT NAME: NA PROJECT NUMBER: NA **CLIENT ID: \$98-0294**

DATE SAMPLED: 8/11/98 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

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	101	86 - 115
Toluene-d8	101	86 - 110

PROJECT NAME: NA PROJECT NUMBER: NA **CLIENT ID: \$98-0295**

DATE SAMPLED: 8/11/98 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
Toluene	ND	2. μg/L
Ethylbenzene	ND	2. μg/L
Total Xylenes	ND	2. μg/L

ND - Not Detected

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	100	86 - 115
Toluene-d8	98	86 - 110

PROJECT NAME: NA PROJECT NUMBER: NA **CLIENT ID: S98-0296** DATE SAMPLED: 8/11/98 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

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

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	100	86 - 115
Toluene-d8	100	86 - 110

PROJECT NAME: NA PROJECT NUMBER: NA **CLIENT ID: \$98-0297**

DATE SAMPLED: 8/11/98 NEL SAMPLE ID: P9808043-08

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous **DILUTION: 1**

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

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	100	86 - 115
Toluene-d8	100	86 - 110

PROJECT NAME: PROJECT NUMBER: NA **CLIENT ID: \$98-0298**

DATE SAMPLED: 8/11/98 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

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	99	86 - 115
Toluene-d8	100	86 - 110

PROJECT NAME: PROJECT NUMBER: NA

CLIENT ID: Method Blank

DATE SAMPLED: 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

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	100	86- 115
Toluene-d8	100	86 - 110



MONTGOMERY WATSON LABORATORIES

555 East Walest Street Pasadena, California 51101 818 569 6400; Fax: 818 968 6324; 1 808 568 LABS (1 800 586 5227)

Laboratory Report

for

Nevada Environmental Laboratory 1030 Matley Lane

Reno , NV 89502

Attention: Evelyn Snell Fax: (702) 348-2546

MONTGOMERY WATSON LABS.

AUG 2 U 1998

Same c. Hu

DEB Debbie Frank

Report#: 46193 SUBCONTRACT

PROJECT NAME: NA PROJECT NUMBER: NA CLIENT ID: S98-0289 DATE SAMPLED: 8/10/98 NEL SAMPLE ID: P9808043-01

TEST:

Inorganic Non-Metals

PARAMETER	RESULT	UNITS	REPORTIN LIMIT	IG D. F.	METHOD	ANALYZED
рН	7.84	°C	2.	1	EPA 150.1	8/14/98
Hardness, Total (as CaCO3)	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

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

PARAMETER	RESULT	UNITS	REPORTIN LIMIT	iG D. F.	метнор	ANALYZED
Hardness, Total (as CaCO3)	ND	mg/L	1.	1	EPA 6010A	8/18/98
рН	5.08	°C	2.	1	EPA 150.1	8/14/98
pH Temperature	18.8	°C	i.	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.	i	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

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

PARAMETER	RESULT	UNITS	REPORTING LIMIT	iG D. F.	METHOD	ANALYZED
pH	9.56	pH Units	2.	1	EPA 150.1	8/14/98
Hardness, Total (as CaCO3)	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.	ı	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

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

		J	REPORTIN	G		—· — ·
PARAMETER	RESULT	UNITS	LIMIT	D. F.	METHOD	ANALYZED
Hardness, Total (as CaCO3)	190	mg/L	1.	1	EPA 6010A	8/18/98
pН	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

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

			REPORTIN			
PARAMETER	RESULT	UNITS	LIMIT	D. F.	METHOD	ANALYZED
Hardness, Total (as CaCO3)	710	mg/L	1.	1	EPA 6010A	8/18/98
pН	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

PROJECT NAME: NA PROJECT NUMBER: NA

CLIENT ID: S98-0295 DATE SAMPLED: 8/11/98 NEL SAMPLE ID: P9808043-06

TEST:

Inorganic Non-Metals

			REPORTIN	G		
PARAMETER	RESULT	UNITS	LIMIT	D. F.	METHOD	ANALYZED
рН	7.51	pH Units	2.	1	EPA 150.1	8/14/98
Hardness, Total (as CaCO3)	700	mg/L	1.	.1	EPA 6010A	8/18/98
pH Temperature	19.3	°C	ī.	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

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

			REPORTIN	IG		
PARAMETER	RESULT	UNITS	LIMIT	D. F.	METHOD	ANALYZED
Hardness, Total (as CaCO3)	170	mg/L	ı.	1	EPA 6010A	8/18/98
рН	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	ı.	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

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

	• •	-	REPORTIN	īG		
PARAMETER	RESULT	UNITS	LIMIT	D. F.	METHOD	ANALYZED
рН	5.16	pH Units	2.	1	EPA 150.1	8/14/98
Hardness, Total (as CaCO3)	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

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

PARAMETER	RESULT	UNITS	REPORTING LIMIT	iG D. F.	METHOD	ANALYZED
pH	8.13	pH Units	2.	1	EPA 150.1	8/14/98
Hardness, Total (as CaCO3)	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

	EL PASO				(HAIN OF CHETODY BECORD		due 8/20/98
	2014		_		5			OI NECO	2	Pageof
PROJECT NUMBER	NUMBER	PROJECT NAME	AME		893 843	яo	REC	REQUESTED ANALYSIS	YSIS	CONTRACT LABORATORY
SAMPLER	SAMPLERS: (Signature)			DATE:	INIATNO:	SARS SARS	25	X	B 200	
LABID	DATE	TIME	MATRIX	SAMPLE NUMBER	TOT 0 40		12 CALC TT 59.0	TB sei	2500	REMARKS
	Bloke	सम्बद्ध । क्रिय	A ₂ O	S98- 09.89	9		X	X		
	Bloke	वानिह १७५०	H20	598-0390	5		×	y V		P9808043-02
	Bhokellesa	वड्ना	Aco	598-0891	5		X	٧ ×		P9708043-03
	Blinks		Aro	598-0893	4		X X	×		49707043-04
	Shills	811198 1335 H20	Heo	598-0894	٧,		у у	×		49808243-05
	BH.ha	01 / See 184118	M.O.	598-0895	>		×	y y		49808043-70
	BHIIB	81.14RJ1433	12 co		8		×	火 ∠	\	Custody Seal intact? Y N None Temp. 1/ Condition when received Freed
	BHIIB			,	8		γ γ	Y		7_ 1
	841118	02412021841118	Mro	.୧୨୫- ପର୍ମଣ	8	_	x	¥		P9808043-09
	I									when received go
										None Temp.
-		<					1			
RELLIGUE	JISHED BY: (Signatur	Sales Sales		DATE/TIME RECEIVED BY: (Signature)	nefure)	1	RELINO	RELINQUISHED BY: (Signature)	ture)	DATE/TIME RECEIVED BY: (Signature)
NEW NOOF	AERNOCLISHED BY: (5)	Towns.	1	BIRES OLO CO DATEMINE PRECEIVED BY: (Signature)	nature)		RELINO	RELINQUISHED BY: (Signeture)	(eura)	DATE/TIME RECEIVED OF LABORATORY BY: (Spreadury)
				Reci	1	4	T.	() P	37 5	3 B1.09m
CARRIER CO.	REQUESTED TURNAROUND TIME: CHOUTINE CHOSH CARRIER CO.	JSH		SAMPLE REGEIPT REMARKS	REMARKS .				RESULTS A INVOICES TO	VOICES TO: TECHNICAL SERVICES DIVISION LABORATORY EL PASO NATURAL GAS COMPANY 8645 RAILROAD DRIVE
BILL NO.:				CHARGE CODE						EL PASO, TEXAS 79904 915-759-2229 FAX: 915-759-2335

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.

Van Wagenen Laboratory Manager

CERTIFICATIONS:

Las Vegas S. California. Reno Arizona AZ0520 AZ0518 AZ0583 California 1707 2002 2264 Certified

US Army Corps Certified Certified of Engineers

Idaho Montana Nevada

Washington

Reno Certified Certified NV033

Las Vegas S. California Certified Certified

NV052 CA084 Certified

PROJECT NAME: NA PROJECT NUMBER: NA CLIENT ID: \$98-0292

DATE SAMPLED: 8/10/98 NEL SAMPLE ID: P9808044-01

TEST: Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX: Aqueous **DILUTION: 1**

EXTRACTED: 8/14/98

ANALYZED: 8/14/98

ANALYST: JDG

PARAMETER	Result	Reporting Limit
Benzene	ND	2. μg/L
Toluene	ND	2. μg/L
Ethylbenzene	ND	2μg/L
Total Xylenes	ND	2. μg/L

ND - Not Detected

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	100	86 - 115
Toluene-d8	100	86 - 110

PROJECT NAME:

PROJECT NUMBER: NA

CLIENT ID: \$98-0299

DATE SAMPLED: 8/11/98 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

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	100	86 - 115
Toluene-d8	101	86 - 110

PROJECT NAME: 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
Toiuene	ND	2 μg/L
Ethylbenzene	ND	2 μg/L
Total Xylenes	ND	2 μg/L

ND - Not Detected

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	100	86 - 115
Toluene-d8	98	86 - 110

PROJECT NAME: NA PROJECT NUMBER: NA - CLIENT ID: 598-0292

DATE SAMPLED: 8/10/98 NEL SAMPLE ID: P9808044-01

TEST:

Cations by EPA 6010B, December 1996

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
Calcium	53	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Magnesium	17	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Potassium	4.3	0.25 mg/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	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98

PROJECT NAME: NA

PROJECT NUMBER: NA

CLIENT ID: S98-029

DATE SAMPLED: 8/11/98

NEL SAMPLE ID: P9808044-02

TEST:

Cations by EPA 6010B, December 1996

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
Calcium	72	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Magnesium	20	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98
Potassium	5.0	0.25 mg/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	0.25 mg/L	0.5	EPA 200.7	8/18/98	8/18/98

PROJECT NAME:

NA PROJECT NUMBER: NA

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: P08043I-BLK

TEST:

Cations by EPA 6010B, December 1996

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
Calcium	ND	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	$0.25\mathrm{mg/L}$	0.5	EPA 200.7	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.

PROJECT NAME: NA PROJECT NUMBER: NA DATE SAMPLED: NA

CLIENT ID:

Method Blank

NEL SAMPLE ID: P08043M-BLK

TEST:

Silicon Oxide by Standard Method 3111D

	RESULT	REPORTING				
<u>PARAMETER</u>	mg/L	LIMIT	D. F.	METHOD	DIGESTED	<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.

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

			REPORTIN	G		
PARAMETER	RESULT	UNITS	LIMIT	D. F.	METHOD	ANALYZED
Hardness, Total (as CaCO3)	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.	ī	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

CLIENT: El Paso Natural Gas Company

PROJECT NAME: NA PROJECT NUMBER: NA

CLIENT ID: \$98-0299 DATE SAMPLED: 8/11/98

NEL SAMPLE ID: P9808044-02

TEST:

Inorganic Non-Metals

]	REPORTIN	IG		
PARAMETER	RESULT	UNITS	LIMIT	D. F.	METHOD	ANALYZED
Hardness, Total (as CaCO3)	260	mg/L	1.	1	EPA 6010A	8/18/98
Hq	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

EL PASO NATURALGAS

CHAIN OF CUSTODY RECORD

Page |

CONTRACT LABORATORY	REMARKS	PGSORUH-01.	PG80804H-62		-		Custody Seal intact? Y (N) None Temp. 1/ C	1		DATE/TIME RECEIVED BY: (Signature)	Rouns Rellin	DATETIME RECEIVED ON LABORATORY BY: (SIGNARIU)	5 8-13-98 11. Usm	RESULTS & INVOICES TO:	TECHNICAL SERVICES DIVISION LABORATORY EL PASO NATURAL GAS COMPANY 8645 RALROAD DRIVE	EL PASO, IEXAS / 9904 915-759-2229 FAX: 915-759-2335
-	TOTAL NUMB COMPOSITE COMPOSITE COMPOSITE SP. COUCH.	X X X X	х . х . х							ure) RELINQUISHED BY: (Signature)		ure) RELINOUISHED BY: (Signeture)	from the via U.F.			
PROJECT NUMBER PROJECT NAME	SAMPLERS: (Stynator) LAB ID DATE TIME MATRIX SAMPLE NUMBER	Blinks 1845 A20 598-029.2								RELINGUISHED BY (Signature) DATE/TIME RECEIVED BY: (Signature)	Ar Blakelasod	S BY: (Signature)		REQUESTED TURNAROUND TIME: SAMPLE RECEIPT REMARKS	1	SILL NO.:

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

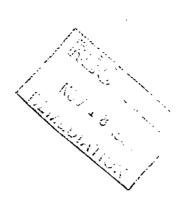
MATRIX: Water

SAMPLE DESCRIPTION: Monitor Well ACW #3

S D CONTINUED:

S D CONTINUED:

SAMPLE TIME: 19:55 SAMPLE DATE: 10/19/98



SAMPLE 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 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 Dooms

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 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 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

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 Wagehen
Laboratory Manager

CERTIFICATIONS:

Reno Las Vegas S. California
Arizona AZ0520 AZ0518 AZ0583
California 1707 2002 2264
US Army Corps Certified Certified Certified of Engineers

Idaho Certified
Montana Certified
Nevada NV033

Washington

Reno Las Vegas
Certified Certified
Certified Certified

NV052

CA084 Certified

S. California

CLIENT: El Paso Natural Gas Company

PROJECT NAME: PROJECT NUMBER: NA

NA

CLIENT ID: DATE SAMPLED: 10/19/98

S98-0451

NEL SAMPLE ID: P9810071-01

TEST:

AZ METALS PKG

MATRIX:

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F	METHOD	DIGESTED	ANALYZED
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	l 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

CLIENT: El Paso Natural Gas Company

PROJECT NAME: PROJECT NUMBER: NA

NA

DATE SAMPLED: 10/19/98 NEL SAMPLE ID: P9810071-02

TEST:

AZ METALS PKG

MATRIX:

Aqueous

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
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

CLIENT ID:

S98-0452

CLIENT: El Paso Natural Gas Company

PROJECT NAME: NA PROJECT NUMBER: NA

CLIENT ID: \$98-0454

DATE SAMPLED: 10/19/98

NEL SAMPLE ID: P9810071-03

TEST:

AZ METALS PKG

MATRIX: Aqueous

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
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	10mg/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

CLIENT: El Paso Natural Gas Company

PROJECT NAME: NA PROJECT NUMBER: NA

CLIENT ID: \$98-0455

DATE SAMPLED: 10/19/98

NEL SAMPLE ID: P9810071-04

TEST:

AZ METALS PKG

MATRIX: Aqueous

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
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

CLIENT: El Paso Natural Gas Company

PROJECT NAME: PROJECT NUMBER: NA

NA

CLIENT ID: S98-0458 DATE SAMPLED: 10/20/98 NEL SAMPLE ID: P9810071-05

TEST:

AZ METALS PKG

MATRIX:

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	<u>METHOD</u>	DIGESTED	ANALYZED
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	l 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

CLIENT: El Paso Natural Gas Company

PROJECT NAME: PROJECT NUMBER: NA

NA

CLIENT ID: S98-0459 DATE SAMPLED: 10/20/98

NEL SAMPLE ID: P9810071-06

TEST:

AZ METALS PKG

MATRIX:

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
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

CLIENT: El Paso Natural Gas Company

PROJECT NAME: NA PROJECT NUMBER: NA

CLIENT ID: \$98-0460

DATE SAMPLED: 10/20/98

NEL SAMPLE ID: P9810071-07

TEST:

AZ METALS PKG

MATRIX: Aqueous

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
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

CLIENT: El Paso Natural Gas Company

PROJECT NAME:

NA

PROJECT NUMBER: NA

CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: P10070I-BLK

TEST:

AZ METALS PKG

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
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

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

	RESULT	REPORTING			•	
PARAMETER	mg/L	LIMIT	D. F.	METHOD	DIGESTED	<u>ANALYZED</u>
Silica	ND	$0.25\mathrm{mg/L}$	5	EPA 200.8	10/30/98	10/30/98

D.F. - Dilution Factor

ND - Not Detected

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

	RESULT	REPORTING				
<u>PARAMETER</u>	mg/L	LIMIT	D. F.	<u>METHOD</u>	DIGESTED	<u>ANALYZED</u>
Silica	ND	0.05 mg/L	1	EPA 200.8	10/26/98	10/28/98

D.F. - Dilution Factor

ND - Not Detected

NA

CLIENT: El Paso Natural Gas Company

PROJECT NAME:

PROJECT NUMBER: NA

CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: P9810112i-BLK

TEST:

AZ METALS PKG

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
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	$0.05\mathrm{mg/L}$	0.5	EPA 200.7	10/29/98	10/29/98

D.F. - Dilution Factor

ND - Not Detected

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA

NA

CLIENT ID: **DATE SAMPLED: 10/19/98**

S98-0451

NEL SAMPLE ID: P9810071-01

TEST:

Inorganic Non-Metals

MATRIX:

		REPORTING				
<u>PARAMETER</u>	RESULT	LIMIT	<u>D. F.</u>	METHOD	UNITS	ANALYZED
Alkalinity - Bicarbonate	ND	25.	i	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 CaCO3)	1.2	1.	i	EPA 6010	mg/L	10/27/98
Nitrate/Nitrite as N, Total	ND	0.05	1 .	SM 4500-NO3 F	mg/L-N	10/27/98
pН	5.95	. 2.	1	EPA 150.1	pH Units	10/22/98
pH Temperature	17.8	1.	i	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

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA

NA

DATE SAMPLED: 10/19/98

CLIENT ID:

S98-0452

NEL SAMPLE ID: P9810071-02

TEST:

Inorganic Non-Metals

MATRIX:

PARAMETER	RESULT	REPORTING LIMIT	<u>D. F.</u>	METHOD	UNITS	ANALYZED
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.	l	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 CaCO3)	ND	1.	1	EPA 6010	mg/L	10/27/98
Nitrate/Nitrite as N, Total	ND	0.05	1	SM 4500-NO3 F	mg/L-N	10/27/98
рH	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

CLIENT:

El Paso Natural Gas Company

PROJECT ID:

NA

NA PROJECT #:

CLIENT ID:

S98-0454

DATE SAMPLED: 10/19/98

NEL SAMPLE ID: P9810071-03

TEST:

Inorganic Non-Metals

MATRIX:

<u>PARAMETER</u>	RESULT	<u> </u>	LIMIT	<u>D. F.</u>	METHOD	UNITS	ANALYZED
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	Jl	0.4	1	SM 4500-F C	mg/L	10/27/98
Hardness, Total (as CaCO3)	3100		5.	5	EPA 200.7	mg/L	10/29/98
Nitrate/Nitrite as N, Total	ND	RL	0.5	10	SM 4500-NO3 F	mg/L-N	10/28/98
pН	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

CLIENT:

PROJECT ID: PROJECT #:

NA

NA

DATE SAMPLED: 10/19/98

CLIENT ID:

S98-0455

NEL SAMPLE ID: P9810071-04

TEST:

Inorganic Non-Metals

MATRIX:

Aqueous

REPORTING

		***		•			
PARAMETER	RESULT		LIMIT	<u>D. F.</u>	METHOD	UNITS	ANALYZED
Alkalinity - Bicarbonate	1500		25.	I	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.	l	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 CaCO3)	11		0.5	0.5	EPA 200.7	mg/L	10/29/98
Nitrate/Nitrite as N, Total	ND		0.05	1	SM 4500-NO3 F	mg/L-N	10/27/98
pН	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

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA

NA

CLIENT ID: DATE SAMPLED: 10/20/98

S98-0458

NEL SAMPLE ID: P9810071-05

TEST:

Inorganic Non-Metals

MATRIX:

		R	EPORTING				
<u>PARAMETER</u>	RESULT	· 	LIMIT	<u>D. F.</u>	METHOD	UNITS	ANALYZED
Alkalinity - Bicarbonate	840		25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity - Carbonate	ND		25.	i	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	ИD	RL	5.	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 CaCO3)	700		0.5	0.5	EPA 200.7	mg/L	10/29/98
Nitrate/Nitrite as N, Total	ND		0.05	1	SM 4500-NO3 F	mg/L-N	10/27/98
pН	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

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA NA

CLIENT ID: DATE SAMPLED: 10/20/98

S98-0459

NEL SAMPLE ID: P9810071-06

TEST:

Inorganic Non-Metals

MATRIX:

		R	EPORTING				
PARAMETER	RESULT	<u></u> 2	LIMIT	<u>D. F.</u>	METHOD	<u>UNITS</u>	<u>ANALYZED</u>
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 CaCO3)	1700		5.	5	EPA 200.7	mg/L	10/29/98
Nitrate/Nitrite as N, Total	ND		0.05	1	SM 4500-NO3 F	mg/L-N	10/27/98
рН	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

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA

NA

CLIENT ID: DATE SAMPLED: 10/20/98

S98-0460

NEL SAMPLE ID: P9810071-07

TEST:

Inorganic Non-Metals

MATRIX:

		R	EPORTING			•	
<u>PARAMETER</u>	RESULT		LIMIT	<u>D. F.</u>	METHOD	UNITS	ANALYZED
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
рН	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

CLIENT:

PROJECT #:

El Paso Natural Gas Company

PROJECT ID:

NA

NA

CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 981023TDS-BLK

TEST:

Non-Metals

REPORTING

PARAMETER

RESULT ND

LIMIT 25

D. F.

METHOD SM 2540 C

UNITS mg/L

ANALYZED 10/23/98

D.F. - Dilution Factor

Total Dissolved Solids

ND - Not Detected

CLIENT:

PROJECT ID: NA

NA

CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 981026TDS-BLK

TEST:

PROJECT #:

Non-Metals

REPORTING

PARAMETER RESULT ANALYZED LIMIT D. F. **METHOD** UNITS **Total Dissolved Solids** 25 SM 2540 C 10/26/98 ND mg/L

D.F. - Dilution Factor

ND - Not Detected

CLIENT:

PROJECT ID: NA PROJECT #:

NA

CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 981027NO2NO3-BLK

TEST:

Non-Metals

REPORTING

PARAMETER RESULT LIMIT D. F. **METHOD** ANALYZED 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

CLIENT:

PROJECT #:

PROJECT ID:

NA

NA

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 981028ALK-BLK

TEST:

Non-Metals

		REPORTING				
<u>PARAMETER</u>	RESULT	LIMIT	<u>D. F.</u>	METHOD	UNITS	ANALYZED
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

CLIENT:

PROJECT ID:

PROJECT #:

NA

NA

CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 981028NO2NO3-BLK

TEST:

Non-Metals

REPORTING

PARAMETER ANALYZED **RESULT** LIMIT D. F. UNITS Nitrate/Nitrite as N, Total 1 SM 4500-NO3 F

ND

0.05

mg/L-N

10/28/98

D.F. - Dilution Factor

ND - Not Detected

CLIENT:

PROJECT #:

PROJECT ID:

NA

NA

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 981029ICAQ-BLK

TEST:

Non-Metals

PARAMETER	RESULT	REPORTING LIMIT	D. F.	METHOD	UNITS	ANALYZED
Bromide	ND	0.2	1	EPA 300.0	mg/L	10/29/98
Chloride	ND	0.1	I	EPA 300.0	mg/L	10/29/98
Fluoride	ND	0.1	i	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

CLIENT: El Paso Natural Gas Company

PROJECT NAME: NA PROJECT NUMBER: NA

CLIENT ID: \$98-0451

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

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	98	86- 115
Toluene-d8	98	88 - 110

ND - Not Detected

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

ANALYST: SRP ANALYZED: 10/23/98

PARAMETER	Result	Reporting Limit
Benzene	ND	
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	100	86-115
Toluene-d8	99	88 - 110

ND - Not Detected

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

PARAMETER	Result	Reporting
Benzene	190 μg/L	<u>Limit</u> 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:

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	95	86- 115
Toluene-d8	102	88- 110

ND - Not Detected

CLIENT: El Paso Natural Gas Company

PROJECT NAME: NA PROJECT NUMBER: NA

CLIENT ID: \$98-0455

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

		Reporting	
PARAMETER	Result	Limit	
Benzene	180 μg/L	2. μg/L	
Toluene	340 Jm μg/L	2. μg/L	
Ethylbenzene	38 Jmμg/L	2. μg/L	
Total Xylenes	72 Jmμg/L	2. μg/L	

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	512	86- 115
Toluene-d8	100	88 - 110

ND - Not Detected

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

PARAMETER	Result	Reporting Limit
Benzene		2. μg/L
Tolucne	4 Jmµg/L	2. μg/L
Ethylbenzene	ND Jm	2. μg/L
Total Xylenes	ND Jm	2. μg/L

QUALITY CONTROL DATA:

Surrogate	% Recovery	Acceptable Range	
4-Bromofluorobenzene	116	86-, 115	
Toluene-d8	100	88 - 110	

ND - Not Detected

CLIENT: El Paso Natural Gas Company

PROJECT NAME: NA PROJECT NUMBER: NA

CLIENT ID: \$98-0459

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

PARAMETER	Resu	ılt	Reporting Limit
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:

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	101	86- 115
Toluene-d8	100	88 - 110

ND - Not Detected

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

PARAMETER	Result	Reporting Limit
Benzene	51 μg/L	
Toluenc	ND .	2. μg/L
Ethylbenzene	ND	2. μg/L
Total Xylenes	ND	2. μg/L
QUALITY CONTROL DATA:		
Surrogate	% Recovery	Acceptable Range

Surrogate	% Recovery	Acceptable Range		
4-Bromofluorobenzene	107	86-115		
Toluene-d8	101	88 - 110		

ND - Not Detected

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

		Reporting		
PARAMETER	Result	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	97	86- 115
Toluene-d8	96	88 - 110

ND - Not Detected

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA NA

TEST:

Metals

MATRIX:

PARAMETER	NEL Sample ID	Spike Amount	Spike Result	Percent Recovery	Acceptable Range	RPD
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	P100701-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	

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA NA

TEST:

Metals

MATRIX:

		<u>Spike</u>	<u>Spike</u>	Percent	Acceptable	
<u>PARAMETER</u>	NEL Sample ID	<u>Amount</u>	Result	Recovery	Range	<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	P100701-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	P100701-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	P100701-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	P100701-LCS	20	20	100	85 - 115	

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA NA

Metals

TEST:

MATRIX:

		Spike	Spike_	Percent	<u>Acceptable</u>	}
<u>PARAMETER</u>	NEL Sample ID	Amount	Result	Recovery	Range	<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

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA NA

TEST:

Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX:

		Spike	Spike	Percent	<u>Acceptable</u>	
<u>PARAMETER</u>	NEL Sample ID	Amount	Result	Recovery	Range	<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	

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA NA

TEST:

Metals

MATRIX:

Drinking Water

		Spike	<u>Spike</u>	Percent	Acceptable	
<u>PARAMETER</u>	NEL Sample ID	<u>Amount</u>	Result	Recovery ·	Range	<u>RPD</u>
Barium	P9810112i-LCS	1	0.992	99	85-115	
Barium	P100701-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	j	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	P100701-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	9 9	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	P100701-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	P100701-LCS	0.5	0.501	100	85-115	
Copper	P9810070-01-MS	0.5	0.501	100	75- 125	

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA NA

TEST:

Metals

MATRIX:

PARAMETER	NEL Sample ID	<u>Spike</u> Amount	Spike Result	Percent Recovery	Acceptable Range	<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	0.4
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	1.7
Iron	P9810070-01-MS	1	1.06	100	75 - 125	
Iron	P9810070-01-MSD	1	1.06	100	75 - 125 75 - 125	0.
Magnesium	P9810112i-LCS	20	21.4	107	85-115	0.
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	2.0
Magnesium	P9810070-01-MS	20	38	102	75 - 125	
Magnesium	P9810070-01-MSD	20	38.2	106	75 - 125 75 - 125	0.9
	P9810112i-LCS	0.5	0.533	100	85 - 115	0.9
Manganese	P9810112-LCS	0.5	0.535	107	70- 130	
Manganese	P9810112-01-MSD	0.5	0.513	104	70- 130	1.2
Manganese	P10070I-LCS	0.5	0.313	98	85- 115	1.2
Manganese			0.491	98 97	75 - 125	
Manganese	P9810070-01-MS	0.5	0.485	97 97	75- 125 75- 125	0.4
Manganese	P9810070-01-MSD	0.5		112	75- 125 85- 115	0.4
Nickel	P9810112i-LCS	1	1.12 1.08	108	70- 130	
Nickel	P9810112-01-MS	1				0.9
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	1.5
Potassium	P9810112-01-MSD	20	21.1	97	70 - 130	1.3
Potassium	P10070I-LCS	20	20	100	85 - 115	
Potassium	P9810070-01-MS	20	24.2	101	75 - 125 75 - 125	0.5
Potassium	P9810070-01-MSD	20	24.3	101	75 - 125 85 - 115	0.5
Silver	P9810112i-LCS	0.5	0.517	103		
Silver	P9810112-01-MS	0.5	0.52	104	75 - 125	2.2
Silver	P9810112-01-MSD	0.5	0.508	102	75 - 125	2.3
Silver	P10070I-LCS	0.5	0.48	96 07	85- 115	
Silver	P9810070-01-MS	0.5	0.479	96 06	75 - 125	Λ
Silver	P9810070-01-MSD	0.5	0.479	96 106	75 - 125	0.
Sodium	P9810112i-LCS	20	21.1	106	70 - 130	
Sodium	P9810112-01-MS	20	26.8	106	70 - 130	1.0
Sodium	P9810112-01-MSD	20	26.4	104	70 - 130	1.9
Sodium	P10070I-LCS	20	20	100	85 - 115	

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA NA

TEST:

Metals

MATRIX:

		Spike	<u>Spike</u>	Percent	Acceptable	
<u>PARAMETER</u>	NEL Sample ID	Amount	Result	Recovery	Range	<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

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA NA

TEST:

Inorganic Non-Metals

MATRIX:

		Spike	Spike	Percent	Acceptable	
<u>PARAMETER</u>	NEL Sample ID	Amount	Result	Recovery	Range	<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	9810281CAQ-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	

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA NA

TEST:

Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX:

		Spike	Spike	Percent	Acceptable	
<u>PARAMETER</u>	NEL Sample ID	<u>Amount</u>	Result	Recovery	Range	<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

EL P	YASO TURAI	EL PASO NATURAL GAS			:	ĊH.	AIN OF	CHAIN OF CUSTODY RECORD	СОВО		(O) 29 (Page (Part))
PROJECT NUMBER		PROJECT NAME	AME			├	PC	REQUESTED ANALYSIS	ANALYSIS		CONTRACT LABORATORY
SAMPLERS: (Signature)	nature)		Ĕ	PATE:	aplablas	INIATHOO	MPOSITE SAAB SU		21۸ کر گرمداند		
O GI BY	DATE	TIME	MATRIX	SAMPLE NUMBER	/BER		sica	SEE AHA TA			REMARKS
TO,	जिस्सा ५००		02/1	1540-868		5	X	У	y y		P98(2071-01
Ó	वामा ब्रम्याव	Q F	420	598-045A		7	У	X	X	X	20
D	쁀	1019 102 1120	1420	८१६ ०५६५		8	X	X	У У		50
М	म्यु	1950 H20	Hzo	598-0455		3	X	X	X		50
10	13/KE	10/2/ke 1000 1400	Aro	SP0-8P2		5	Y	X Y	Y X		J 0
101	JAKE 1	10 H OF 11 84001	4,0	598.0459		\r	У	义 ×	<u>х</u> У		2
loi	अ०५६	10lauke 1332 1400	8,0	SA8-0460		47		×	۶ ۷	0	₹0 \\
-	1	\int				_(- ((; •		<u> </u>
						70		1 8 CO	122-0	1 7	1 2 F COM FORM FELL
						7	300	J. W.	0,G12)	Aprey Went	HERICAL TO THE COSTIGUE (2005)
									/		<u></u>
		<					•		<i> </i> .	/	
PELMOUISHED	JISHED BY: (Fignature)	(einje	, v(INANGR OLOO	RECEIVED BY: (Signatura)	(ture)		RELINQUISHED BY: (Signature)	: (Signature)		DATEITIME RECEIVED BY: (Signature)
AETINGUISHED BY: (Signature)	BY. (Signa	livre)		 	RECEIVED BY: (Signature)	iture)	1	PELINOUISHEDBY: (Signante)	: (Signatul e)		10/ DATESTIME RECEIVED OF CARBARATORY BY: (Signalura)
REQUESTED TURNAROUND TIME:	JANAROUR PRUS	ND TIME:			SAMPLE RECEIPT REMARKS	EMARKS			æ .	RESULTS & INVOICES TO	1
CARRIER CO.											EL PASO NATURAL GA COMPANY 8645 RAILROAD DRIVE EL PASO, TEXAS, 29904
BILL NO.:					CHARGE CODE						915-759-2229 FAX: 915-759-2335

CLIENT:

PROJECT ID: NA PROJECT #:

NA

CLIENT ID:

S98-0453

DATE SAMPLED: 10/19/98

NEL SAMPLE ID: P9810069-01

TEST:

Inorganic Non-Metals

MATRIX:

]	REPORTING	3			
PARAMETER	RESULT	LIMIT	<u>D. F.</u>	METHOD	UNITS	<u>ANALYZED</u>
Chloride	18000	1000.	10000	EPA 300.0	mg/L	10/27/98
Specific Conductance	44800	1.	I	SM 2510 B	μS/cm	10/27/98
Total Dissolved Solids	30000	25.	l	SM 2540 C	mg/L	10/23/98

CLIENT:

CLIENT ID: 598-0456

PROJECT ID:

NA

DATE SAMPLED: 10/19/98

PROJECT #:

NA

NEL SAMPLE ID: P9810069-02

TEST:

Inorganic Non-Metals

MATRIX:

	1	REPORTING	3			
PARAMETER	RESULT	LIMIT	D. F.	METHOD	UNITS	<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

CLIENT:

CLIENT ID: DATE SAMPLED: 10/20/98

S98-0457

PROJECT ID: PROJECT #:

NA NA

NEL SAMPLE ID: P9810069-03

TEST:

Inorganic Non-Metals

MATRIX:

]	REPORTING	;			
PARAMETER	RESULT _	LIMIT	<u>D. F.</u>	METHOD	UNITS	<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

CLIENT:

CLIENT ID: S98-0461

PROJECT ID:

NA NA DATE SAMPLED: 10/20/98

PROJECT #:

NEL SAMPLE ID: P9810069-04

TEST:

Inorganic Non-Metals

MATRIX:

PARAMETER	RESULT	REPORTING LIMIT	D. F.	METHOD	UNITS	ANALYZED
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

CLIENT:

CLIENT ID: S98-0462

PROJECT ID:

NA NA DATE SAMPLED: 10/20/98

PROJECT #:

NEL SAMPLE ID: P9810069-05

TEST:

Inorganic Non-Metals

MATRIX:

		REPORTING				
PARAMETER	RESULT	LIMIT	<u>D. F.</u>	METHOD	UNITS	ANALYZED
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

ROJECT ID: NA NA

CLIENT ID: DATE SAMPLED: 10/20/98 NEL SAMPLE ID: P9810069-06

PROJECT #: TEST:

Inorganic Non-Metals

MATRIX: Aqueous

		REPORTING				
<u>PARAMETER</u>	RESULT	LIMIT	D. F.	<u>METHOD</u>	UNITS	<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

S98-0463

PROJECT ID: PROJECT #:

NA

NA

CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 981023TDS-BLK

TEST:

Non-Metals

REPORTING

RESULT LIMIT

METHOD

mg/L

ANALYZED

Total Dissolved Solids

PARAMETER

ND

25

SM 2540 C

mg/L

10/23/98

D.F. - Dilution Factor

ND - Not Detected

PROJECT ID: NA

NA PROJECT #:

CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 981027ICAQ-BLK

TEST:

Non-Metals

		REPORTING				
PARAMETER	RESULT	LIMIT	D. F.	METHOD	mg/L	ANALYZED
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

EL PASO NATURAL GAS

CHAIN OF CUSTODY RECORD

RECORD 10/29 UNION (PULL) + CAULY

0 Ċ RECEIVED BY: (Signature) FAX: 915-759-2335 LABORATORY SERVICE EL PASO NATURAL GAS COMPANY 8645 RAILROAD DRIVE EL PASO, TEXAS 79904 REMARKS 0 915-759-2229 CONTRACT LABORATORY Crafely Sealinfact? Y DATE/TIME REQUESTED ANALYSIS **RELINOUISHED BY: (Signature)** 42 Jose يز ኦ X × ķ ٧ X SQL × 19 × بر COMPOSITE OR SAMPLE RECEIPT REMARKS TOTAL NUMBER OF CONTAINERS 4. RECEIVED BY: (Signature) RECEIVED BY: (Signature) CHARGE CODE SAMPLE NUMBER 598-0453 598-045b 5940-815 SAB. UTIOD 598-0457 598-0461 प्रभक्ष विष्ठ DATE MATRIX 10 JUG 1747 410 1930 14 7 14 20 10 Re 1515 1420 10/2/18/08:30 11/20 102/1/102/12/201 019FE1955 14CO TIME REQUESTED TURNAROUND TIME: J AUSH SAMPLERS: (Signature) DATE PPOJECT NUMBER CARRIER CO. O ROUTINE ZB ID BILL NO.:

Reno · Las Vegas Phoenix • Irvine

Las Vegas Division 4208 Arcata Way, Suite A • Las Vegas, NV 89030 (702) 657-1010 · Fax: (702) 657-1577

S. California

CA084

Certified





CLIENT: El Paso Natural Gas Company

8645 Railroad Drive El Paso, TX 79904

ATTN: Darrell Campbell

PROJECT NAME:

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

CERTIFICATIONS:

Las Vegas S. California Las Vegas Reno Reno Arizona AZ0583 Certified Certified **AZ0520** AZ0518 Idaho California 1707 2002 2264 Montana Certified Certified US Army Corps Certified Certified Certified Nevada NV033 NV052 of Engineers Washington

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:

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
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	l 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

CLIENT: El Paso Natural Gas Company

PROJECT NAME:

NA

PROJECT NUMBER: NA

CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: P10070I-BLK

TEST:

AZ METALS PKG

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
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	$0.05\mathrm{mg/L}$	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

PROJECT NAME: NA

PROJECT NUMBER: NA

CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: P10079SI-BLK

TEST:

AZ METALS PKG

	RESULT	REPORTING				
PARAMETER	mg/L_	LIMIT	D. F.	METHOD	DIGESTED	<u>ANALYZED</u>
Silica	ND	$0.05\mathrm{mg/L}$	1	EPA 200.8	10/26/98	10/28/98

D.F. - Dilution Factor

ND - Not Detected

CLIENT:

PROJECT ID:

NA

CLIENT ID: S98-0464 DATE SAMPLED: 10/20/98 NEL SAMPLE ID: P9810070-01

PROJECT #:

NA

Inorganic Non-Metals

TEST: MATRIX:

PARAMETER	RESUL		REPORTING LIMIT	<u>D. F.</u>	METHOD	UNITS	ANALYZED
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
рН	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

CLIENT:

PROJECT ID: PROJECT #:

NA

NA

TEST: MATRIX:

Inorganic Non-Metals

Aqueous

PARAMETER	RESUL	_	REPORTING LIMIT	D. F.	METHOD	UNITS	ANALYZED
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 CaCO3)	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-NO3 F	mg/L-N	10/27/98
pН	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

CLIENT ID:

DATE SAMPLED: 10/20/98

NEL SAMPLE ID: P9810070-02

S98-0465

PROJECT ID: NA

NA

DATE SAMPLED: NA

NEL SAMPLE ID: 981023TDS-BLK

Method Blank

TEST:

PROJECT #:

Non-Metals

REPORTING

PARAMETER RESULT LIMIT D. F. **METHOD** mg/L ANALYZED **Total Dissolved Solids** ND 25 SM 2540 C mg/L 10/23/98

D.F. - Dilution Factor

ND - Not Detected

CLIENT:

PROJECT ID: PROJECT #:

NA

NA

DATE SAMPLED: NA

CLIENT ID:

NEL SAMPLE ID: 981026ALK-BLK

Method Blank

TEST:

Non-Metals

PARAMETER	RESULT	REPORTING LIMIT	D. F.	METHOD	mg/L	ANALYZED
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

CLIENT: PROJECT #:

PROJECT ID:

NA NA

CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 981027NO2NO3-BLK

TEST:

Non-Metals

REPORTING

PARAMETER

RESULT

LIMIT

D. F.

METHOD

ANALYZED

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

PROJECT ID: PROJECT #:

NA NA CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 981028ICAQ-BLK

TEST:

Non-Metals

		REPORTING		•		
PARAMETER	RESULT	LIMIT	D. F.	METHOD	mg/L	<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

PROJECT ID: PROJECT #:

NA

CLIENT ID: S98-0464

DATE SAMPLED: 10/20/98

TEST:

NA

NEL SAMPLE ID: P9810070-01

METHOD:

Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996 EPA 8260A

ANALYST:

MATRIX:

Aqueous

EXTRACTED:

10/23/98

DILUTION:

ANALYZED:

10/23/98

PARAMETER	Result	ReportingLimit
Benzene	ND	2. μg/L
Toluene	ND	2. μg/L
Ethylbenzene	ND	2. μg/L
Total Xylenes	ND	2. μg/L

QUALITY CONTROL DATA:	4 (11.7)	
Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	100	86- 115
Toluene-d8	98	88 - 110

ND - Not Detected

NA

NA PROJECT #:

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:

MATRIX:

PROJECT ID:

Aqueous

EXTRACTED:

DILUTION:

ANALYZED:

10/23/98 10/23/98

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:	A contable Dange	
Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	101	86- 115
Toluene-d8	99	88 - 110

ND - Not Detected

CLIENT: PROJECT ID:

NA

NA

CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 9810231WBTEX-BLK

TEST:

PROJECT #:

Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

METHOD:

EPA 8260A

ANALYST:

MATRIX: Aqueous EXTRACTED:

10/23/98

ANALYZED:

10/23/98

		Reporting		
PARAMETER	Result	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	97	86- 115
Toluene-d8	96	88 - 110

ND - Not Detected

CHAIN OF CUSTODY RECORD

ORD /0/1

ROUTINE BILL NO. CARRIER CO. REQUESTED TURNAROUND TIME: RELINQUISHED BY: (5) LAB ID SAMPLERS: (Signature) PROJECT NUMBER 10/30/18/1730 तारा हायुक्तांश DATE ☐ RUSH PROJECT NAME TIME HrC MATRIX H20 01-00 131-18P 59B. 0465 Falto-865 DATECTIME SAMPLE NUMBER DATE: 195/08/01 SAMPLE RECEIPT REMARKS RECEIVED BY: (Signature) RECEIVED BY: (Signatura CHARGE CODE TOTAL NUMBER OF CONTAINERS COMPOSITE OR GRAB Autous CAtions SEE Alached R A < RELINQUISHED BY: (Signature) K X REQUESTED ANALYSIS BTEX ¥ netals メ 1 TOS RESULTS & INVOICES TO: × X conductor Counted Seal Intent? Y CONTRACT LABORATORY 0 スパル 700/300 10001 124 LABORATORY SERVICES
EL PASO NATURAL GAS COMPANY
8645 RAILROAD DRIVE
EL PASO, TEXAS 79904 915-759-2229 DATETIME Condition when returned SF4C1 10-27-98, 8260 BTEX Z FAX: 915-759-2335 RECEIVED BY. (Signature) **Sog** REMARKS ţ 20 Ċ

White · Testing Laboratory Canary · EPNG Lab Pink · Field Sampler

FM-08-0566 (Rev. 4-98)

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

CERTIFICATIONS:

of Engineers

Las Vegas S. California Reno Arizona AZ0520 AZ0518 AZ0583 California 1707 2002 2264

US Army Corps Certified Certified Certified Idaho Montana Nevada

Washington

Certified Certified NV033

Reno

Las Vegas S. California Certified

3

Certified NV052

CA084 Certified

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA

DATE SAMPLED: 10/21/98

CLIENT ID:

S98-0466

NEL SAMPLE ID: P9810079-01

TEST:

NA

Inorganic Non-Metals

MATRIX:

		REPORTING				
PARAMETER	RESULT	LIMIT	<u>D. F.</u>	METHOD	UNITS	ANALYZED
Alkalinity - Bicarbonate	ND	25.	1	SM 2320 B	mg/L	10/28/98
Alkalinity - Carbonate	ND	2 5.	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 CaCO3)	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-NO3 F	mg/L-N	10/27/98
pН	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

CLIENT:

El Paso Natural Gas Company

PROJECT ID:

NA

NA PROJECT #:

S98-0467

DATE SAMPLED: 10/21/98

NEL SAMPLE ID: P9810079-02

CLIENT ID:

TEST:

Inorganic Non-Metals

MATRIX:

T.	REF	'n	R٦	M	C

	KELOKIING	,			
RESULT	LIMIT	<u>D. F.</u>	METHOD	UNITS	ANALYZED
830	25.	1	SM 2320 B	mg/L	10/28/98
ND	25.	1	SM 2320 B	mg/L	10/28/98
ND	25.	1	SM 2320 B	mg/L	10/28/98
830	25.	i	SM 2320 B	mg/L	10/28/98
ND	5.	25	EPA 300.0	mg/L	10/29/98
4400	250.	2500	EPA 300.0	mg/L	10/30/98
3.8	0.8	2	SM 4500-F C	mg/L	10/27/98
920	0.5	0.5	EPA 200.7	mg/L	10/27/98
ND	0.05	1	SM 4500-NO3 F	mg/L-N	10/28/98
7.05	2.	1	EPA 150.1	pH Units	10/23/98
20.3	1.	1	EPA 150.1	°C	10/23/98
14000	1.	1	SM 2510 B	μS/cm	10/27/98
130	2.5	25	EPA 300.0	mg/L	10/29/98
8290	25.	1	SM 2540 C	mg/L	10/28/98
	830 ND ND 830 ND 4400 3.8 920 ND 7.05 20.3 14000 130	RESULT LIMIT 830 25. ND 25. ND 25. 830 25. ND 5. 4400 250. 3.8 0.8 920 0.5 ND 0.05 7.05 2. 20.3 1. 14000 1. 130 2.5	830 25. 1 ND 25. 1 ND 25. 1 830 25. 1 830 25. 1 830 25. 1 ND 5. 25 4400 250. 2500 3.8 0.8 2 920 0.5 0.5 ND 0.05 1 7.05 2. 1 20.3 1. 1 14000 1. 1 130 2.5 25	RESULT LIMIT D. F. METHOD 830 25. 1 SM 2320 B ND 25. 1 SM 2320 B ND 25. 1 SM 2320 B 830 25. 1 SM 2320 B ND 5. 25 EPA 300.0 4400 250. 2500 EPA 300.0 3.8 0.8 2 SM 4500-F C 920 0.5 0.5 EPA 200.7 ND 0.05 1 SM 4500-NO3 F 7.05 2. 1 EPA 150.1 20.3 1. 1 EPA 150.1 14000 1. 1 SM 2510 B 130 2.5 25 EPA 300.0	RESULT LIMIT D. F. METHOD UNITS 830 25. 1 SM 2320 B mg/L ND 25. 1 SM 2320 B mg/L ND 25. 1 SM 2320 B mg/L 830 25. 1 SM 2320 B mg/L ND 5. 25 EPA 300.0 mg/L 4400 250. 2500 EPA 300.0 mg/L 3.8 0.8 2 SM 4500-F C mg/L 920 0.5 0.5 EPA 200.7 mg/L ND 0.05 1 SM 4500-NO3 F mg/L-N 7.05 2. 1 EPA 150.1 pH Units 20.3 1. 1 EPA 150.1 pC 14000 1. 1 SM 2510 B μS/cm 130 2.5 25 EPA 300.0 mg/L

CLIENT:

El Paso Natural Gas Company

373

PROJECT ID: PROJECT #:

NA NA CLIENT ID:

S98-0468

DATE SAMPLED: 10/21/98 NEL SAMPLE ID: P9810079-03

SM 2540 C

mg/L

10/28/98

TEST:

Inorganic Non-Metals

MATRIX:

Total Dissolved Solids

Aqueous

		REPORTING				
<u>PARAMETER</u>	RESULT	LIMIT	<u>D. F.</u>	<u>METHOD</u>	UNITS	ANALYZED
Alkalinity - Bicarbonate	130	25.	l	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.	l	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
pН	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

i

25.

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA

NA

CLIENT ID:

S98-0469

DATE SAMPLED: 10/21/98 NEL SAMPLE ID: P9810079-04

Inorganic Non-Metals

TEST: MATRIX:

		REPORTING	;		•	
PARAMETER	RESULT	LIMIT	<u>D. F.</u>	METHOD	<u>UNITS</u>	ANALYZED
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 CaCO3)	250	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	10/28/98
pН	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

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA

NA

S98-0471

DATE SAMPLED: 10/21/98 NEL SAMPLE ID: P9810079-05

CLIENT ID:

TEST:

MATRIX:

Aqueous

Inorganic Non-Metals

PARAMETER	RESULT	REPORTING LIMIT	D F	METHOD	LINITE	ANALVZOD
	KESULI	LIMIT	<u>D. F.</u>	<u>METHOD</u>	<u>UNITS</u>	<u>ANALYZED</u>
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.	l	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 CaCO3)	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-NO3 F	mg/L-N	10/28/98
pН	7.70	2.	I	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

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA

NA

CLIENT ID: DATE SAMPLED: 10/21/98

S98-0472

NEL SAMPLE ID: P9810079-06

TEST:

Inorganic Non-Metals

MATRIX:

PARAMETER	RESULT		EPORTING LIMIT	<u>D. F.</u>	METHOD	UNITS	ANALYZED
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.	I	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 CaCO3)	4600		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	10/28/98
pН	6.49		2.	1	EPA 150.1	pH Units	10/23/98
pH Temperature	20.8		1.	i	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

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA

NA

CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 981027NO2NO3-BLK

TEST:

Non-Metals

REPORTING

PARAMETER

RESULT ND

LIMIT 0.05

D. F.

METHOD SM 4500-NO3 F mg/L-N mg/L-N

<u>ANALYZED</u> 10/27/98

D.F. - Dilution Factor

Nitrate/Nitrite as N, Total

ND - Not Detected

CLIENT:

PROJECT ID: PROJECT #:

NA

NA

CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 981028ALK-BLK

TEST:

Non-Metals

PARAMETER	RESULT	REPORTING LIMIT	D. F.	METHOD	mg/L	ANALYZED
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

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA

NA

CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 981028NO2NO3-BLK

TEST:

Non-Metals

REPORTING

RESULT

ND

LIMIT 0.05

D. F. 1

METHOD SM 4500-NO3 F mg/L-N mg/L-N

<u>ANALYZED</u> 10/28/98

D.F. - Dilution Factor

Nitrate/Nitrite as N, Total

ND - Not Detected

PARAMETER

CLIENT: PROJECT ID: El Paso Natural Gas Company

Method Blank

CLIENT ID:

DATE SAMPLED: NA

PROJECT #:

NA

NEL SAMPLE ID: 981028tds-BLK

TEST:

Non-Metals

NA

REPORTING

PARAMETER D. F. **RESULT** LIMIT **METHOD** mg/L ANALYZED Total Dissolved Solids 25 SM 2540 C ND mg/L 10/28/98

D.F. - Dilution Factor

ND - Not Detected

CLIENT:

PROJECT ID:

NA

NA PROJECT #:

CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 9810291CAQ-BLK

TEST:

Non-Metals

PARAMETER	RESULT	REPORTING LIMIT	D. F.	METHOD	mg/L	ANALYZED
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

CLIENT:

PROJECT ID:

NA

PROJECT #: NA

CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 9810301CAQ-BLK

TEST:

Non-Metals

		REPORTING				
<u>PARAMETER</u>	RESULT	LIMIT	D. F.	METHOD	mg/L	ANALYZED
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	i	EPA 300.0	mg/L	10/30/98

D.F. - Dilution Factor

ND - Not Detected

PROJECT NAME: NA PROJECT NUMBER: NA

CLIENT ID:

S98-0466

DATE SAMPLED: 10/21/98 NEL SAMPLE ID: P9810079-01

TEST:

AZ METALS PKG

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
Boron	ND	.01 mg/L	0.5	EPA 200.7	10/26/98	10/27/98
Calcium	3.2	.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	l 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	0.30	.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

PROJECT NAME: NA PROJECT NUMBER: NA

CLIENT ID: S98-0467 DATE SAMPLED: 10/21/98

NEL SAMPLE ID: P9810079-02

TEST:

AZ METALS PKG

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	<u>METHOD</u>	DIGESTED	ANALYZED
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

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

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
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

PROJECT NAME: NA PROJECT NUMBER: NA

CLIENT ID: S98-0469

DATE SAMPLED: 10/21/98 NEL SAMPLE ID: P9810079-04

TEST:

AZ METALS PKG

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
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

PROJECT NAME: NA PROJECT NUMBER: NA

CLIENT ID: S98-0471 DATE SAMPLED: 10/21/98

NEL SAMPLE ID: P9810079-05

TEST:

AZ METALS PKG

PARAMETER	RESULT mg/L	REPORTING LIMIT	_D. F	METHOD	DIGESTED	ANALYZED
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

PROJECT NAME: NA . PROJECT NUMBER: NA

CLIENT ID: S98-0472 DATE SAMPLED: 10/21/98

NEL SAMPLE ID: P9810079-06

TEST:

AZ METALS PKG

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F	METHOD	DIGESTED	ANALYZED
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

PROJECT NAME:

NA PROJECT NUMBER: NA

DATE SAMPLED: NA

CLIENT ID:

NEL SAMPLE ID: P10070I-BLK

Method Blank

TEST:

AZ METALS PKG

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F	METHOD	DIGESTED	ANALYZED
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

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:

Silica

AZ METALS PKG

RESULT REPORTING

 mg/L
 LIMIT

 ND
 0.05 mg/L

<u>D. F.</u>

METHOD EPA 200.8 DIGESTED 10/26/98 10/28/98

D.F. - Dilution Factor

ND - Not Detected

PARAMETER

PROJECT ID:

NA

CLIENT ID:

S98-0466

DATE SAMPLED: 10/21/98 NEL SAMPLE ID: P9810079-01

PROJECT #: TEST:

NA

Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

METHOD:

EPA 8260A

ANALYST:

MATRIX:

Aqueous

EXTRACTED:

10/26/98

DILUTION:

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:		4 4 1 5
Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	100	86 - 115
Toluene-d8	98	88 - 110

ND - Not Detected

PROJECT ID: NA

PROJECT #:

NA

CLIENT ID: S98-0467

DATE SAMPLED: 10/21/98 NEL SAMPLE ID: P9810079-02

TEST: METHOD:

Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

ANALYST:

MATRIX:

Aqueous

EXTRACTED:

10/27/98

DILUTION:

1

ANALYZED:

10/27/98

PARAMETER	Result		Reporting Limit
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:		Assentable Dange
<u>Surrogate</u>	% Recovery	Acceptable Range
4-Bromofluorobenzene	· 100	86-115
Toluene-d8	99	88- 110

ND - Not Detected

PROJECT ID: NA PROJECT #:

NA

CLIENT ID: S98-0468

DATE SAMPLED: 10/21/98 NEL SAMPLE ID: P9810079-03

Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

METHOD: MATRIX:

DILUTION:

TEST:

EPA 8260A

Aqueous

ANALYST:

EXTRACTED:

10/26/98

10/26/98 ANALYZED:

PARAMETER	Result	Reporting Limit
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:		4
Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	99	86- 115
Toluene-d8	99	88 - 110

ND - Not Detected

PROJECT ID: NA NA PROJECT #:

CLIENT ID: DATE SAMPLED: 10/21/98

NEL SAMPLE ID: P9810079-04

TEST:

Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

METHOD: MATRIX: Aqueous ANALYST: EXTRACTED:

10/27/98

DILUTION: 1 ANALYZED:

10/27/98

PARAMETER	Result	ReportingLimit
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:	A Askila Da	
Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	104	86 - 115
Toluene-d8	99	88- 110

ND - Not Detected

CLIENT ID: S98-0471 DATE SAMPLED: 10/21/98

PROJECT ID:

NA

NEL SAMPLE ID: P9810079-05

PROJECT #:

NA

Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

TEST: METHOD:

EPA 8260A

ANALYST:

MATRIX:

Aqueous

EXTRACTED:

10/26/98

DILUTION:

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:		Assentable Dongs
Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	102	86- 115
Toluene-d8	100	88 - 110

ND - Not Detected

NA

\$98-0472 DATE SAMPLED: 10/21/98

PROJECT ID: PROJECT #:

NA

NEL SAMPLE ID: P9810079-06

TEST:

Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

METHOD:

ANALYST:

CLIENT ID:

MATRIX:

Aqueous

EXTRACTED:

10/26/98

DILUTION:

1

ANALYZED:

10/26/98

PARAMETER	Result	ReportingLimit
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:		4 4 11 5
Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	103	86- 115
Toluene-d8	100	88 - 110

ND - Not Detected

NA

NA

CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 9810261BTEXM-BLK

TEST: METHOD:

MATRIX:

PROJECT ID:

PROJECT #:

Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

EPA 8260A

ANALYST:

Aqueous

EXTRACTED: ANALYZED:

10/26/98 10/26/98

		Reporting
PARAMETER	Result	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

CLIENT ID:

Method Blank

PROJECT ID: PROJECT #:

NA NA

DATE SAMPLED: NA

NEL SAMPLE ID: 9810271BTEX1-BLK

TEST:

EPA 8260A

Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996 ANALYST:

SRP

METHOD: MATRIX:

Aqueous

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

EL PASO NATURAL GAS

PGROD 74 CHAIN OF CUSTODY RECORD

Mrs.

Page ____

1 /01/07							A Commence of the Commence of
PROJECT NUMBER PROJECT NAME			REQUE	REQUESTED ANALYSIS		Ć	CONTRACT LABORATORY
SAMPLERS: (Signature) , DATE:	L NUMB ONTAINE POSITE GRAB				S	* FAY	
TRIX SAMPLE N		ANI CAT SEE AHAK		BTE HEF	SP	Concl	REMARKS
106/18/0755 NZO SP8-04/16/01	5	/	Κ	<i>/</i>	<u>۲</u>	0	What BARK TO RUNG
H.O.	S.	Κ.	K	X	K	8	Ch)
14.0 S98-0410 B	Л	*	Κ.	<u> </u>	X	20	5
M20	U\	×	K -	7	X	9	
103/18/1351 H20 S98-0471	べ	X	χ.	K	X	0	
100 KB 1537 H2O S98-6472	X	X	X.	K /	イメ	0	8
							S deline
			/_		ନ	Castody agos	Chandition when terrained keed
				-/	 	/-	
RECHARDISHED BY: (Signalura) DATE/TIME RECEIVED BY: (Signalura)	(Signature)	<u> </u>	RELINQUISHED BY: (Signature)	(ED BY: (Si	gnarure)		DATE/TIME RECEIVED BY: (Signature)
RELINOVISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)	(Signature)		REUNOUISHED OF	1 7 -1	(Summan)	D	DATESTIME RECEIVED OF LABOPATORY BY ISSUADURAL AND AND AND AND AND AND AND AND AND AND
REQUESTED TURNAROUND TIME: ROUTINE RUSH SAMPLE RECEIPT REMARKS	PT REMARKS		,		A.	SULTS & IF	ESULTS & INVOICES TO:
CARRIER CO.							EL PASO NATURAL GAS COMPANY 8645 RAILROAD DRIVE EL PASO, TEXAS 79904
BILL NO:							915-759-2229 FAX: 915-759-2335

White · Testing Laboratory Canary · EPNG Lab Pink · Field Sampler

FM-06-0566 (Rev. 4-26)

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 Wagenen Laboratory Manager

CERTIFICATIONS:

Las Vegas S. California Reno Arizona AZ0520 AZ0518 AZ0583 California 1707 2002

2264 Certified Certified Certified

Idaho Montana Nevada

Reno Certified Certified NV033

Las Vegas S. California Certified

Certified NV052

CA084

US Army Corps of Engineers

Washington

Certified

CLIENT: 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

	Ī	REPORTING	i			
<u>PARAMETER</u>	RESULT	LIMIT	<u>D. F.</u>	METHOD	<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

PROJECT ID: PROJECT #:

NA

NA

CLIENT ID.

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 981027TDS-BLK

TEST:

Non-Metals

REPORTING

PARAMETER Total Dissolved Solids ND

RESULT

<u>LIMIT</u> 25

SM 2540 C

mg/L

<u>ANALYZED</u> 10/27/98

D.F. - Dilution Factor

ND - Not Detected

PROJECT ID: PROJECT #:

NA NA Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 981029ICAQ-BLK

TEST:

Non-Metals

		REPORTING				
<u>PARAMETER</u>	RESULT	LIMIT	D. F.	METHOD	mg/L	ANALYZED
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

EL PASO NATURAL GAS

Ch/01

CHAIN OF CUSTODY RECORD

(Pay the truelt Ducky

PROJECT NUMBER PROJECT NAME		 	140	REQUESTED ANALYSIS		CONTRACT LABORATORY	
SAMPLERS: (Signature)	Olasho Iolasho	MUM JAT	MPOSITE GRAB	1 1			
LABID DATE TIME MATRIX	SAMPLE NUMBER			5 三 三 3		REMARKS	
100 1300 H2O	S98-0470	_		لا لا		10-28001850	
		/					
			/				
							7
					§ .	Carrectory agost transfer when received food	
RELNOUISHEOBY: (Signaturk)	DATE/TIME RECEIVED BY: (Signature)	nature)	,	RELINQUISHED BY: (Signatura)	(6	DATE/TIME RECEIVED BY: (Signature)	
		natura)		THELINOUISHED BYSSGARING	X	1923 (20) RECEIVED OFCABORATORY BY: (Signatura)	
REQUESTED TURNAROUND TIME:	SAMPLE RECEIPT REMARKS	REMARKS			RESULTS & INVOICES TO:	1	
CARRIER CO.						CABOTATION SERVICES EL PASO NATURAL GAS COMPANY B645 RAHIROAD DRIVE EL PASO, TEXAS 79904	
BILL NO:	CHARGE CODE					915-759-2229 FAX: 915-759-2335	

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:

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

CERTIFICATIONS:

Las Vegas S. California Reno Arizona AZ0520 AZ0518 AZ0583 California 2002 1707

US Army Corps Certified Certified of Engineers

2264 Certified

Idaho Montana Nevada

Washington

Reno Certified Certified NV033

Las Vegas Certified

Certified NV052

CA084 Certified

S. California

Corporate Office & Reno Division + 1030 Matley Lane + Reno. NV 89502 + (702) 348-2522

CLIENT: El Paso Natural Gas Company

PROJECT NAME: NA PROJECT NUMBER: NA

CLIENT ID: \$98-0473 DATE SAMPLED: 10/22/98

NEL SAMPLE ID: P9810080-01

TEST:

AZ METALS PKG

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	<u>METHOD</u>	DIGESTED	ANALYZED
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	$.0025\mathrm{mg/L}$	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

CLIENT: El Paso Natural Gas Company

PROJECT NAME: PROJECT NUMBER: NA

NA .

CLIENT ID: DATE SAMPLED: 10/22/98

S98-0474

NEL SAMPLE ID: P9810080-02

TEST:

AZ METALS PKG

MATRIX:

Aqueous

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	<u>METHOD</u>	DIGESTED	ANALYZED
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

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

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
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	l 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

CLIENT: El Paso Natural Gas Company

PROJECT NAME: NA PROJECT NUMBER: NA

CLIENT ID: DATE SAMPLED: 10/22/98

S98-0476

NEL SAMPLE ID: P9810080-04

TEST:

AZ METALS PKG

MATRIX:

Aqueous

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
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	l 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

CLIENT: El Paso Natural Gas Company

PROJECT NAME: NA PROJECT NUMBER: NA

CLIENT ID: \$98-0477

DATE SAMPLED: 10/22/98

NEL SAMPLE ID: P9810080-05

TEST:

AZ METALS PKG

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	<u>METHOD</u>	DIGESTED	ANALYZED
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	$.0025\mathrm{mg/L}$	0.5	EPA 200.7	10/26/98	10/27/98
Potassium	4.0	l 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

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

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
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	I 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

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

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	METHOD	DIGESTED	ANALYZED
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

CLIENT: El Paso Natural Gas Company

PROJECT NAME: NA

PROJECT NUMBER: NA

CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: P10070I-BLK

TEST:

AZ METALS PKG

PARAMETER	RESULT mg/L	REPORTING LIMIT	D. F.	<u>METHOD</u>	DIGESTED	ANALYZED
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	$0.25\mathrm{mg/L}$	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	I.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

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

RESULT REPORTING
__mg/L __LIMIT ___D. F. __N

 PARAMETER
 mg/L
 LIMIT

 Silica
 ND
 0.05 mg/L

METHOD EPA 200.8 DIGESTED 10/26/98 ANALYZED 10/28/98

D.F. - Dilution Factor

ND - Not Detected

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA

NA

CLIENT ID: DATE SAMPLED: 10/22/98

S98-0473

NEL SAMPLE ID: P9810080-01

TEST:

Inorganic Non-Metals

MATRIX:

Aqueous

PARAMETER	RESULT	REPORTING LIMIT	<u>D. F.</u>	METHOD	UNITS	ANALYZED
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 CaCO3)	1200	5.	5	EPA 200.7	mg/L	10/27/98
Nitrate/Nitrite as N, Total	0.83	0.05	1	SM 4500-NO3 F	mg/L-N	10/28/98
рН	7.06	2.	1	EPA 150.1	pH Units	10/23/98
pH Temperature	20.8	1.	I	EPA 150.1	°C	10/23/98
Specific Conductance	2900	1.	i	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

CLIENT: PROJECT ID: El Paso Natural Gas Company

PROJECT #:

NA NA

Inorganic Non-Metals

MATRIX:

TEST:

Aqueous

CLIENT ID: S98-0474 DATE SAMPLED: 10/22/98

NEL SAMPLE ID: P9810080-02

		REPORTING				
<u>PARAMETER</u>	RESULT	LIMIT	<u>D. F.</u>	METHOD	UNITS	ANALYZED
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 CaCO3)	850	5.	5	EPA 200.7	mg/L	10/27/98
Nitrate/Nitrite as N, Total	0.44	0.05	1	SM 4500-NO3 F	mg/L-N	10/28/98
рН	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

CLIENT:

PROJECT #:

El Paso Natural Gas Company

PROJECT ID: NA

NA

CLIENT ID:

S98-0475

DATE SAMPLED: 10/22/98

NEL SAMPLE ID: P9810080-03

TEST:

Inorganic Non-Metals

MATRIX:

Aqueous

PARAMETER	DECHT	REPORTING	D.E	METHOD	UNITS	ANALYZED
	RESULT	LIMIT	<u>D. F.</u>	<u>METHOD</u>	UNIIS	ANALIZED
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.	l	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 CaCO3)	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-NO3 F	mg/L-N	10/28/98
pН	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

CLIENT: PROJECT ID: El Paso Natural Gas Company

PROJECT #:

NA

Inorganic Non-Metals

MATRIX:

TEST:

Aqueous

CLIENT ID:

S98-0476

DATE SAMPLED: 10/22/98

NEL SAMPLE ID: P9810080-04

PARAMETER	RESULT	REPORTING LIMIT	<u>D. F.</u>	METHOD	UNITS	ANALYZED
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 CaCO3)	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-NO3 F	mg/L-N	10/28/98
pH	7.94	2.	I	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

CLIENT:

El Paso Natural Gas Company

PROJECT ID: NA

NA

CLIENT ID: S98-0477 DATE SAMPLED: 10/22/98 NEL SAMPLE ID: P9810080-05

PROJECT #:

Inorganic Non-Metals

MATRIX:

TEST:

Aqueous

PARAMETER	RESULT	REPORTING LIMIT	<u>D. F.</u>	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 CaCO3)	160	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	10/28/98
рН	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.	I	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

CLIENT: PROJECT ID: El Paso Natural Gas Company

PROJECT #:

NA NA

TEST:

Inorganic Non-Metals

MATRIX:

Aqueous

CLIENT ID: S98-0478

DATE SAMPLED: 10/22/98

NEL SAMPLE ID: P9810080-06

		REPORTING			•	
PARAMETER	RESULT	LIMIT	<u>D. F.</u>	<u>METHOD</u>	<u>UNITS</u>	ANALYZED
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 CaCO3)	ND	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	10/28/98
pН	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

CLIENT:

El Paso Natural Gas Company

PROJECT ID:

PROJECT #:

NA NA

Inorganic Non-Metals

TEST: MATRIX:

Aqueous

CLIENT ID: S98-0480 DATE SAMPLED: 10/22/98

NEL SAMPLE ID: P9810080-07

PARAMETER	RESULT	REPORTING LIMIT	D. F.	METHOD	UNITS	ANALYZED
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 CaCO3)	ND	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	10/28/98
pН	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	10/30798
Total Dissolved Solids	59	25.	1	SM 2540 C	mg/L	10/27/98

CLIENT:

PROJECT ID:

NA

Method Blank DATE SAMPLED: NA

PROJECT #:

NA

NEL SAMPLE ID: 981027TDS-BLK

TEST:

Non-Metals

REPORTING

PARAMETER Total Dissolved Solids RESULT ND

LIMIT 25

SM 2540 C

mg/L

ANALYZED

10/27/98

D.F. - Dilution Factor

ND - Not Detected

CLIENT:

PROJECT ID:

NA

PROJECT #:

NA

CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 981028NO2NO3-BLK

TEST:

Non-Metals

REPORTING

PARAMETER

RESULT

LIMIT

D. F.

METHOD

ANALYZED

Nitrate/Nitrite as N, Total

ND

0.05

SM 4500-NO3 F

mg/L-N

10/28/98

D.F. - Dilution Factor

ND - Not Detected

CLIENT:

PROJECT ID: PROJECT #:

NA

NA

Method Blank CLIENT ID: DATE SAMPLED: NA

NEL SAMPLE ID: 981030ALK-BLK

TEST:

Non-Metals

PARAMETER	RESULT	REPORTING LIMIT	D. F.	METHOD	mg/L	ANALYZED
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	i	SM 2320 B	mg/L	10/30/98

D.F. - Dilution Factor

ND - Not Detected

CLIENT:

PROJECT ID: PROJECT #:

NA

NA

CLIENT ID: DATE SAMPLED: NA

Method Blank

NEL SAMPLE ID: 981030ICAQ-BLK

TEST:

Non-Metals

PARAMETER	RESULT	REPORTING LIMIT	D. F.	METHOD	mg/L	ANALYZED
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	. I	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

CLIENT: El Paso Natural Gas Company

PROJECT NAME: NA PROJECT NUMBER: NA

CLIENT ID: \$98-0473

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

PARAMETER	Result	Reporting
AKAMETEK		<u>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:

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	102	86- 115
Toluene-d8	100	88 - 110

ND - Not Detected

CLIENT: El Paso Natural Gas Company

PROJECT NAME: NA PROJECT NUMBER: NA

CLIENT ID: \$98-0474

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

PARAMETER	Result	Reporting Limit
Benzene		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

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

		Reporting	
PARAMETER	Result	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	102	86 - 115
Toluene-d8	99	88 - 110

ND - Not Detected

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

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	99	86- 115
Toluene-d8	9 9	88 - 110

ND - Not Detected

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

		Reporting	
PARAMETER	Result	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	100	86-115
Toluene-d8	99	88 - 110

ND - Not Detected

CLIENT: El Paso Natural Gas Company

PROJECT NAME: NA PROJECT NUMBER: NA CLIENT ID: \$98-0478

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: I

ANALYZED: 10/27/98

ANALYST: SRP

		Reporting
PARAMETER	Result	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	98	88 - 110

ND - Not Detected

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

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	99	88 - 110

ND - Not Detected

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

PARAMETER	Result	Reporting	
TANAMETER	Result	<u>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:

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 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

	-	Reporting
PARAMETER	Result	<u>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:

Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	101	86- 115
Toluene-d8	99	88- 110

ND - Not Detected

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA NA

TEST:

Metals

MATRIX:

Aqueous

		<u>Spike</u>	<u>Spike</u>	Percent	Acceptable	
<u>PARAMETER</u>	NEL Sample ID	<u>Amount</u>	Result	Recovery	Range	RPD
Barium	P100701-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	P100701-LCS	0.2	0.2	100	85 - 115	
Cadmium	P9810070-01-MS	0.2	0.197	9 9	75 - 125	
Cadmium	P9810070-01-MSD	0.2	0.198	99	75 - 125	0.5
Calcium	P100701-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	P100701-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	P100701-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	P100701-LCS	0.5	0.51	102	85 - 115	

NI) - Not Detected

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA NA

Metals

TEST:

MATRIX:

Aqueous

		Spike	<u>Spike</u>	Percent	Acceptable	
<u>PARAMETER</u>	NEL Sample ID	Amount	Result	Recovery	Range	<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

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>	NEL Sample ID	<u>Spike</u> <u>Amount</u>	<u>Spike</u> <u>Result</u>	Percent Recovery	Acceptable Range	RPD
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

EL PASO NATURAL GAS

10/40 P980080 /CHAIN OF CUSTODY RECORD

Mag Hes Util of

PROJECT NUMBER PROJECT NAME					REQUEST	REQUESTED ANALYSIS		CONTRACT LABORATORY
SAMPLERS: (Signature)	DATE:	०।३४ हिं	MUMENTAINS	360	!	SPE SPE	אן א ַרוד פּ	
LABID DATE TIME MATRIX	SAMPLE NUMBER	мвея		مهارر ميرة معرد	315 315 335	13H 10 92	क्ट्य	REMARKS
0 (10 laske 0890 110	598.0473	3	5				10	What BITEX TO RUM
02 Wash 1135 110	h thu-865	}	5				20	SISYMUM IN HAMMIN CHAM
07 HOBARAMAY 1420	SEHO-865	16	5		. <u>-</u>		20	<i>a</i> .
	JF40-8P2	و	S				40	Clirit DiD NOT RALINGUISHE
05 lotates, 1335 H20	59B.0477	7	۱,				8	Somethy I
0 6 Holaske,1455 1420	8460.865	පි	Š				8	Redwined 5 conthinners FOR
7	0330-85S	28	5				B	5x 598-0480 1/14ston
/	/							COC M. "
		/					Sept.	N Note Toler N N N N N N N N N N N N N N N N N N N
		/						
					/			
							-	
AELINOUISHED BY: (Signalure)	DATE/TIME	RECEIVED BY: (Signature)	lure)	# C	LINQUISHED	RELINQUISHED BY: (Signature)		DATE/TIME RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signatura)	(me)		LINGUISHED	RELINQUISHED BY: (Seignature)		10 27 March Merceived of Laggrature)
REQUESTED TURNAROUND TIME:		SAMPLE RECEIPT REMARKS	MARKE	}		-	RESULTS & INVOICES TO	1
1.						<u></u>		LABORATORY SERVICER EL PASO NATURAL GAS COMPANY BES RALLROAD DRIVE EL PASO
BILL NO.:	lo.	CHARGE CODE						915-759-2229 FAX: 915-759-2335
Islaira Taribal abarafaar Canani EDNAlab	1 sh Bink Eigld Complex							

NEL LABORATORIES ¹

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

CERTIFICATIONS:

Reno Arizona AZ0520 AZ0518 California 1707

Certified

2002 Certified

AZ0583 2264 Certified

Las Vegas S. California

Idaho Montana Nevada

NV033

Reno Certified Certified

Certified

Las Vegas S. California

Certified

NV052

CA084 Certified

CLIENT:

El Paso Natural Gas Company

PROJECT ID: PROJECT #:

NA NA CLIENT ID:

S98-0479

DATE SAMPLED: 10/22/98

NEL SAMPLE ID: P9810081-01

TEST:

Inorganic Non-Metals

MATRIX:

Aqueous

PARAMETER	RESULT	REPORTING LIMIT	D. F.	METHOD	UNITS	ANALYZED
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

CLIENT:

NA

CLIENT ID:

Method Blank

PROJECT ID: PROJECT #:

NA

DATE SAMPLED: NA

NEL SAMPLE ID: 981027TDS-BLK

TEST:

Non-Metals

REPORTING

PARAMETER Total Dissolved Solids

RESULT ND

LIMIT 25

D. F. 1

METHOD SM 2540 C

mg/L

ANALYZED 10/27/98

D.F. - Dilution Factor

ND - Not Detected

PROJECT ID: PROJECT #:

NA

CLIENT ID: Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 981029ICAQ-BLK

TEST:

Non-Metals

		REPORTING				
PARAMETER	RESULT	LIMIT	<u>D. F.</u>	METHOD	mg/L	ANALYZED
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	l	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

ABORATORIES so Natural Gas Company

CLIENT: PROJECT ID:

NA

CLIENT ID: S98-0479

DATE SAMPLED: 10/22/98

PROJECT #:

NA

NEL SAMPLE ID: P9810081-01

TEST: METHOD:

Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996 **EPA 8260A**

ANALYST:

MATRIX:

10/27/98

Toluene

Ethylbenzene

Total Xylenes

Aqueous

EXTRACTED:

DILUTION:

1

ANALYZED:

10/27/98

PARAMETER
Benzene

Result ND ND ND ND

Limit 2. μg/L 2. μg/L 2. μg/L 2. μg/L

Reporting

OULLITY CONTROL DATA:

QUALITY CONTROL DATA:		Associate Dance
Surrogate	% Recovery	Acceptable Range
4-Bromofluorobenzene	101	86- 115
Toluene-d8	100	88 - 110

ND - Not Detected

CLIENT: El Paso Natural Gas Company

PROJECT ID: NA

NA NA CLIENT ID:

Method Blank

DATE SAMPLED: NA

NEL SAMPLE ID: 9810271BTEX1-BLK

TEST: METHOD:

PROJECT #:

Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

ANALYST:

SRP

MATRIX:

EPA 8260A Aqueous

EXTRACTED:

10/27/98

ANALYZED:

10/27/98

PARAMETER	Result	Reporting Limit
Benzene	ND	
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

PROJECT ID: PROJECT #:

NA

TEST:

NA

Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX:

Aqueous

		<u>Spike</u>	Spike	Percent	Acceptable	
PARAMETER	NEL Sample ID	Amount	Result	Recovery	Range	<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:

Surrogate	Percent Recovery	Acceptable Range
4-Bromofluorobenzene	99	86 - 115
Toluene-d8	98	88 - 110

PROJECT ID:

PROJECT #:

NA

TEST:

Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX:

PARAMETER	NEL Sample ID	<u>Spike</u> Amount	Spike Result	Percent Recovery	Acceptable Range RPD
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:

Surrogate	Percent Recovery	Acceptable Range
4-Bromofluorobenzene	101	86- 115
Toluene-d8	98	88 - 110

PROJECT ID:

PROJECT #:

NA NA

TEST:

Volatile Organic Compounds by EPA SW846 Method 8260B, Dec. 1996

MATRIX:

		Spike	Spike	Percent	Acceptable	
<u>PARAMETER</u>	NEL Sample ID	Amount	Result	Recovery	Range	<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:

Surrogate	Percent Recovery	Acceptable Range
4-Bromofluorobenzene	105	86- 115
Toluene-d8	97	88 - 110

EL PASO NATURAL GAS

798008 (CHAIN OF CUSTODY RECORD

Urgus lend & Only

	(())	_						
PROJECT NUMBER PROJECT NAME	*		├	_	ä	REQUESTED ANALYSIS	NALYSIS	CONTRACT LABORATORY
	4			_		M	-	
SAMPLERS: (Signature)	. DATE:		MUN MATI	BAF	2	P	<u></u> х	
(wx /	ا0ا سملامير	ा अक्रायुक्त जिक्कायुक्त		9	7	راز	<u> </u>	
LABIQ DATE TIME MATRIX	SAMPLE NUMBER			G	<u> </u>	ر اد اد	R	REMARKS
0/ Hank 4.	らてかい、ひらく			تع ا	٤	<u>></u> >	\	REPRESENTANTED SCONTAINERS
				_	1			What to the YO
			 					17 WW 1/ 10-22-50 M
					-			
								Chart Dio nut
								Redinguista Surudas 1
			/	-				7
				_	/			
								Company Company
								(8)
RELINOUISHED BY: (Signature)	DATE/TIME RE	RECEIVED BY: (Signatura)	<u>(9)</u>		RELIN	RELINQUISHED BY: (Signatura)	Signature)	DATE/TIME RECEIVED BY: (Signature)
			\$					
RELINDUISHED BY: (Signatura)	DATE/TIME RE	RECEIVED BY: (Signagire)		L	BELIN TO THE TO	RELINGUISHED BY: (Signature)	Signature)	(2) DATEMINE RECEIVED OF COOPING 187: (Signature)
AEOUESTED TURNAROUND TIME: O ROUTINE O RUSH	Ϋ́	SAMPLE RECEIPT BEMARKS	(ARKS				RESULTS &	RESULTS & INVOICES TO:
CARRIER CO.								EL PASO NATURAL GAG COMPANY 8645 RAILOAD DRIVE I EL PASO TEXAS 29904
SILE NO.	<u>[</u> 8	CHARGE CODE						915-759-2229 FAX: 915-759-2335