PIT REMEDIATION PLAN AND CLOSURE REPORT

P.O. Box 1613
E. Clinton Suite 102
Hobbs, New Mexico 88240
505/397-0510
Fax 505/393-4388
www.sesi-nm.com

1R054

Safety & Environmental Solutions, Inc.

February 28, 2003

Mr. Wayne Price
New Mexico Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

RE: Plugging of Chevron Texaco Naomi Keenan Monitor Wells

Dear Wayne:

The following is a description of how the Chevron Texaco Naomi Keenan Monitor wells were plugged.

In November of 1998 Safety & Environmental Solutions, Inc. (SESI) installed three (3) ground monitor at the Naomi Keenan Site located in Unit O of Section 14, Township 21S, Range 37E, in Lea county New Mexico. The monitor wells were sampled for a period of almost two years. The samples reveled that the monitor wells had no BTEX and the Chlorides level was minimal. The results did not appear to indicate any appreciable increase in Chloride concentration. A letter dated March 30, 2001 was sent to you requesting that the site receive final closure and the monitor wells be plugged. That request was approved on June 27, 2002.

On February 3, 2003 SESI arrived on the site to plug all three monitor wells. The casing in each well was cut off at a depth of 5 feet below ground surface and the monitor well pads and risers were excavated. The bottom of each well was filled with 50 lbs. of Betonite and 46.3 lbs. of cement and then backfilled to normal grade. The monitor well pads and risers were transported to Lea County Landfill in Eunice, New Mexico.

If you should have any questions regarding this matter or if I may be of further service please contact me at 505-397-0510.

Thank you,

Bob Allen

Bob Allen, CHMM, REM, CET, CES
President
BA/jl

Price, Wayne

From: Price, Wayne
Sent: Thursday, June 27, 2002 2:44 PM
To: 'mriw@chevron.com'
Cc: 'ballen@sesi-nm.com'
Subject: Chevron USA Naomi Keenan OCD Case # 1R0054

Contacts: R.W. (Rick) Massey

Dear Mr. Massey:

The OCD is in receipt of the final report dated March 30, 2001 submitted by Safety & Environmental Solutions, Inc. OCD herby approves of the closure of this site. Please provide a monitor well plugging report by September 10, 2002.

Please be advised that NMOCD approval of this plan does not relieve Chevron of liability should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve Chevron of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Sincerely:

Wayne Price
New Mexico Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505
505-476-3487
fax: 505-476-3462
E-mail: WPRICE@state.nm.us

P.O. Box 1613
703 E. Clinton Suite 102
Hobbs, New Mexico 88240
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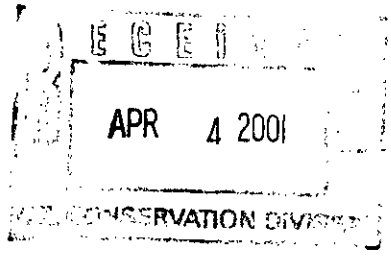
Safety & Environmental Solutions, Inc.

March 30, 2001



Mr. Wayne Price
Mr. Bill Olson
New Mexico Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

IR0054

Dear Wayne and Bill:

This letter is being written on behalf of Chevron USA regarding the Naomi Keenan Leak Site. We have sampled the monitor wells onsite for a period of almost two years. I have enclosed a graph and table of sample results for that period for your information. As you can see, the monitor wells have no BTEX and the Chloride level is minimal. The water in up gradient well contains the highest level of Chlorides and this has been the case since the installation. The results do not appear to indicate any appreciable increase in Chloride concentration.

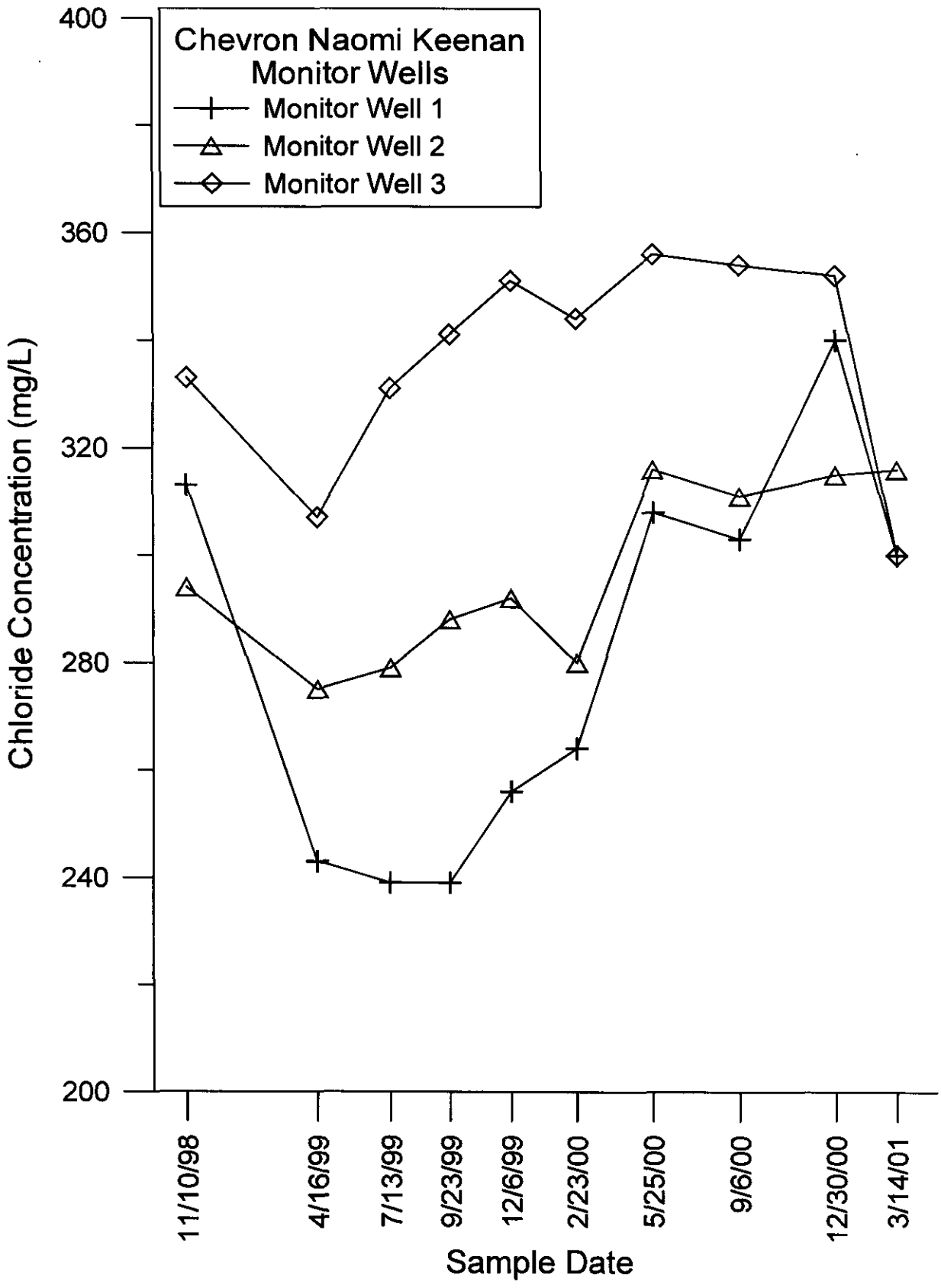
In light of these sampling results, we would request that this site receive final closure and the monitor wells be plugged.

If you have any questions, or I can be of further assistance please contact me at (505) 397-0510.

Sincerely,

Bob Allen

Bob Allen CHMM, REM, CET, CES
President


Chevron Naomi Keenan
Monitor Wells
Monitor Well 1
Monitor Well 2
Monitor Well 3
400
360
320
280
240
200
Chloride Concentration (mg/L)
11/10/98
4/16/99
7/13/99
9/23/99
12/6/99
2/23/00
5/25/00
9/6/00
12/30/00
3/14/01
Sample Date

Monitor Well 1 Contaminant:	Date	Chloride (mg/L)	Selenium (mg/L)	TDS (mg/L)	Benzene (mg/L)	Toluene (mg/L)	E. Benzene (mg/L)	Total Xylenes (mg/L)	TPH (mg/L)
Date:									
11/10/98	36109	313	0.08	1,045	0.008	0.023	0.016	0.027	88.9
4/16/99	36266	243	<.05	966	<0.002	<0.002	<0.002	<0.006	<2.5
7/13/99	36354	239	<.05	968	<0.002	<0.002	<0.002	<0.006	<10
9/23/99	36426	239	<.05	968	<0.002	<0.002	<0.002	<0.006	<1.00
12/6/99	36500	256	<.05	971	<0.002	<0.002	<0.002	<0.006	<1.00
2/23/00	36579	264	0.057	1,017	<0.002	<0.002	<0.002	<0.006	<1.00
5/25/00	36671	308	<0.05	948	<0.002	<0.002	<0.002	<0.006	<1.00
9/6/00	36775	303	<0.05	1,215	<0.002	<0.002	<0.002	<0.006	2.00
12/30/00	36890	340	<0.05	1,177	<0.002	<0.002	<0.002	<0.006	<1.00
3/14/01	36964	300	0.063	1,139	<0.002	<0.002	<0.002	<0.006	6.90
WQCC Standard		250	0.05	1,000	0.01	0.75	0.75	0.62	N/A

Monitor Well 2									
Contaminant:	Date	Chloride (mg/L)	Selenium (mg/L)	TDS (mg/L)	Benzene (mg/L)	Toluene (mg/L)	E. Benzene (mg/L)	Total Xylenes (mg/L)	TPH (mg/L)
Date:									
11/10/98	36109	294	0.12	1,030	0.007	0.024	0.021	0.039	64.9
4/16/99	36266	275	<0.05	1,068	<.002	<.002	<.002	<.006	<2.5
7/13/99	36354	279	<0.05	1,073	<.002	<.002	<.002	<.006	<10
9/23/99	36426	288	<0.05	1,060	<.002	<.002	<.002	<.006	44.1
12/6/99	36500	292	<0.05	1,055	<.002	<.002	<.002	<.006	<1.0
2/23/00	36579	280	<0.05	1,066	<.002	<.002	<.002	<.006	<1.0
5/25/00	36671	316	<0.05	1,022	<.002	<.002	<.002	<.006	1.52
9/6/00	36775	311	<0.05	1,151	<.002	<.002	<.002	<.006	1.45
12/30/00	36890	315	<0.05	1,064	<.002	<.002	<.002	<.006	<1.0
3/14/01	36964	316	0.092	1,154	<.002	<.002	<.002	<.006	1.53
WQCC Standard		250	0.05	1,000	0.01	0.75	0.75	0.62	N/A

Monitor Well 3 Contaminant:	Date	Chloride (mg/L)	Selenium (mg/L)	TDS (mg/L)	Benzene (mg/L)	Toluene (mg/L)	E. Benzene (mg/L)	Total Xylenes (mg/L)	TPH (mg/L)
11/10/98	36109	333	0.13	1,118	0.006	0.022	0.019	0.034	28.4
4/16/99	36266	307	<0.05	1,162	<0.002	<0.002	<0.002	<0.006	<2.5
7/13/99	36354	331	<0.05	1,230	<0.002	<0.002	<0.002	<0.006	<10
9/23/99	36426	341	<0.05	1,169	<0.002	<0.002	<0.002	<0.006	3.55
12/6/99	36500	351	<0.05	1,170	<0.002	<0.002	<0.002	<0.006	<1.0
2/23/00	36579	344	<0.05	1,174	<0.002	<0.002	<0.002	<0.006	<1.0
5/25/00	36671	356	<0.05	1,169	<0.002	<0.002	<0.002	<0.006	<1.0
9/6/00	36775	354	<0.05	1,226	<0.002	<0.002	<0.002	<0.006	1.72
12/30/00	36890	352	<0.05	1,169	<0.002	<0.002	<0.002	<0.006	<1.0
3/14/01	36964	300	0.064	1,180	<0.002	<0.002	<0.002	<0.006	<1.0
WQCC Standard		250	0.05	1,000	0.01	0.75	0.75	0.62	N/A

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

April 14, 1999

CERTIFIED MAIL
RETURN RECEIPT NO. P 288 259 120

Mr. Curtis Blake
Chevron USA
P.O. Box 1949
Eunice, NM 88231

Re: Chevron Naomi Keenan (old pit)
UL O Sec 14-Ts21s-R37e

The New Mexico Oil Conservation Division (NMOCD) is in receipt of Chevron USA's (CUSA) two documents "Naomi Keenan Monitor Well Report dated November 10, 1998 and Naomi Keenan Closure Report" dated December 15, 1998 submitted by Safety & Environmental Solutions, Inc. for the above referenced facility. The NMOCD has the following comments and request:

1. The closure report indicated there will be continued monitoring for the next 18 months. Therefore NMOCD will defer comments on closure until the final monitoring is completed.

2. The groundwater data reflects Chlorides, TDS and Selenium were in exceedence of the WQCC groundwater standards. Therefore CUSA will be required to install additional monitor well(s) to determine the extent of the contamination.

3. The report did not have the final bottom and sidewall analytical results nor were the BTEX or Chlorides levels for the remediated soils that were placed back in the hole included in the report. Please provide at time of closure.

4. At time of closure CUSA shall install a permanent marker to be located in the center of the pit area to provide for future protection of the liner system. CUSA shall submit to NMOCD for approval the design of the permanent marker system.

If you require any further information or assistance please do not hesitate to write or call me at (505-827-7155).

Sincerely Yours,

Wayne Price

Wayne Price-Pet. Engr. S
Environmental Bureau

cc: OCD Hobbs Offi

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write *"Return Receipt Requested"* on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee): wp
1. ☐ Addressee's Address
2. ☐ Restricted Delivery
Consult postmaster for fee.

3. Article Addressed to:
CHEVRON USA
P.O. Box 1949
EUNICE NM 88231
ATT: MR. BLAKE

4a. Article Number P288 259 120

4b. Service Type
☒ Registered ☒ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery 1999 16

5. Received By: *(Print Name)*

8. Addressee's Address *(Only if requested and fee is paid)*

6. Signature: *(Addressee or Agent)*
X Ruth Buecker

PS Form **3811**, December 1994 102595-98-B-0229 Domestic Return Receipt

Thank you for using Return Receipt Service.

P.O. Box 1613
703 E. Clinton Suite 103
Hobbs, New Mexico 88240
505/397-0510
fax 505/393-4388
www.sesi-nm.com

Safety & Environmental Solutions, Inc.

December 31, 1998

Mr. Wayne Price
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

Dear Wayne:

Please find enclosed both the Naomi Keenan Monitor Well Report and the Closure Report for Chevron USA in Lea County, New Mexico.

If you have any questions, please feel free to contact my office. Thank you.

Sincerely,

James R. Allen

Bob Allen REM, CET, CES
President

BA/baa

enclosures

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
DISTRICT I HOBBS
PO BOX 1980, Hobbs, NM 88241
(505) 393-6161
FAX (505) 393-0720

Jennifer A. Salisbury
CABINET SECRETARY

September 16, 1998

Mr. Curtis Blake
Chevron USA (CUSA)
P.O. Box 1949
Eunice, NM 88231

Re: Chevron Naomi Keenan (old pit)
Sec 14-Ts21s-R37e

Dear Mr. Blake:

New Mexico Oil Conservation Division (NMOCD) is in receipt of the Work Plan for the above referenced site submitted by Safety & Environmental Solutions. Inc. **The plan is hereby approved and subject to the following conditions:**

1. An NMOCD pit closure report form shall be submitted at the end of the project.
2. The first round of groundwater sampling shall also include WQCC metals.
3. Pursuant to NMOCD Rule 116 CUSA shall notify the NMOCD upon discovery of groundwater contamination.
4. NMOCD shall be given a 48 hour notification before work commences or any significate event, such as monitor well drilling or sampling, bottom hole sampling, etc.
5. All monitor well closures must receive NMOCD approval prior to closing.
6. All waste disposed of off-site must receive NMOCD approval.
7. All future submittals shall include the Unit Letter in the legal description.
8. CUSA shall commence work on or before October 15, 1998. Extensions may be granted upon written request for a good cause shown.

Please be advised that NMOCD approval of this plan does not relieve CUSA of liability should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD District I approval does not relieve CUSA of responsibility for compliance with any other federal, state, or local laws and/or regulations.

If you require any further information or assistance please do not hesitate to call (505-393-6161) or write this office.

Sincerely Yours,

Wayne Price-Environmental Engineer

cc: Chris Williams-NMOCD District I Supervisor
Bill Olson-Environmental Bureau, Santa Fe, NM

attachments-pit closure form

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
DISTRICT I HOBBS
PO BOX 1980, Hobbs, NM 88241
(505) 393-6161
FAX (505) 393-0720

Jennifer A. Salisbury
CABINET SECRETARY

January 8, 1998

Mr. Curtis Blake
Operations Supervisor
Chevron U.S.A.
P.O. Box 1949
Eunice, NM 88231

Re: Texas-NM Pipeline spill/Chevron pit Eunice Area(Keenan)-Bill Stevans property.

Subject: Listing of action items generated during meeting.

Dear Mr. Curtis Blake and Donald Griffin:

Pursuant to the meeting held in the NMOCD Hobbs, NM office on January 7, 1998 concerning the above referenced site the NMOCD has the following action items that were agreed upon in the meeting, these are as follows:

1. Chevron will perform an environmental site assessment and delineate the vertical and horizontal extent of the contaminates in the pit area. The findings of the investigation will be submitted to the NMOCD on March 4, 1998 which was the agreed next scheduled meeting.

2. New Mexico Oil Conservation Division (NMOCD) agreed to supply Chevron information pertaining to NMOCD's legal authority in conducting such activities. Please find enclosed in part a copy of the New Mexico Statutes 1978 Annotated Chapter 70 Oil and Gas Act 70-2-12 Enumeration of powers primarily item B.(21).

   Please note any further legal questions concerning this matter should be directed to the NMOCD legal department Mr. Rand Carroll located at NMOCD, 2040 S. Pacheco, Santa Fe, NM 887505.

The NMOCD wants to personally thank both parties in their wiliness to cooperate on a voluntary basis and achieve a proper closure for the above referenced site.

If you require any further information or assistance please do not hesitate to call (505-393-6161) or write this office.

Sincerely Yours,

/s/ Wayne Price

Wayne Price-Environmental Engineer

cc: Chris Williams-NMOCD District I Supervisor
Roger Anderson-Environmental Bureau Chief
Rand Carroll- NMOCD Legal Bureau, Santa Fe, NM.
Tony Savoie- TNMPL
attachments: NMOCD Oil & Gas Act in part.

NEW MEXICO STATUTES 1978

ANNOTATED

Chapter 70
Oil and Gas

Pamphlet 111

1995 REPLACEMENT PAMPHLET

This pamphlet includes laws enacted through the First Regu[illegible] Session of the Forty-Second Legislature, 1995, and annotations through [illegible] P.2d [illegible], 116 S. Ct. [illegible] F.3d 145[illegible] F. Supp. 164[illegible] 159 F.R.D. 5[illegible] and 176 Bankr. 902.

THE MICHIE COMPANY
[illegible]
CHARLOTTESVILLE, [illegible]

51613-11

Law reviews. — For comment on Continental Oil Co. v. Oil Conservation Comm'n, 70 N.M. 310, 373 P.2d 809 (1962), see 3 Nat. Resources J. 178 (1963).

Am. Jur. 2d, A.L.R. and C.J.S. references. — 38 Am. Jur. 2d Gas and Oil §§ 145 to 148, 157. 58 C.J.S. Mines and Minerals §§ 229, 234.

70-2-12. Enumeration of powers.

A. Included in the power given to the oil conservation division is the authority to collect data; to make investigations and inspections; to examine properties, leases, papers, books and records; to examine, check, test and gauge oil and gas wells, tanks, plants, refineries and all means and modes of transportation and equipment; to hold hearings; to provide for the keeping of records and the making of reports and for the checking of the accuracy of the records and reports; to limit and prorate production of crude petroleum oil or natural gas or both as provided in the Oil and Gas Act [this article]; to require either generally or in particular areas certificates of clearance or tenders in connection with the transportation of crude petroleum oil or natural gas or any products of either or both oil and products or both natural gas and products.

B. Apart from any authority, express or implied, elsewhere given to or existing in the oil conservation division by virtue of the Oil and Gas Act or the statutes of this state, the division is authorized to make rules, regulations and orders for the purposes and with respect to the subject matter stated in this subsection:

(1) to require dry or abandoned wells to be plugged in a way to confine the crude petroleum oil, natural gas or water in the strata in which it is found and to prevent it from escaping into other strata; the division shall require a cash or surety bond in a sum not to exceed fifty thousand dollars ($50,000) conditioned for the performance of such regulations;

(2) to prevent crude petroleum oil, natural gas or water from escaping from strata in which it is found into other strata;

(3) to require reports showing locations of all oil or gas wells and for the filing of logs and drilling records or reports;

(4) to prevent the drowning by water of any stratum or part thereof capable of producing oil or gas or both oil and gas in paying quantities and to prevent the premature and irregular encroachment of water or any other kind of water encroachment which reduces or tends to reduce the total ultimate recovery of crude petroleum oil or gas or both oil and gas from any pool;

(5) to prevent fires;

(6) to prevent "blow-ups" and "caving" in the sense that the conditions indicated by such terms are generally understood in the oil and gas business;

(7) to require wells to be drilled, operated and produced in such manner as to prevent injury to neighboring leases or properties;

(8) to identify the ownership of oil or gas producing leases, properties, wells, tanks, refineries, pipelines, plants, structures and all transportation equipment and facilities;

(9) to require the operation of wells with efficient gas-oil ratios and to fix such ratios;

(10) to fix the spacing of wells;

(11) to determine whether a particular well or pool is a gas or oil well or a gas or oil pool, as the case may be, and from time to time to classify and reclassify wells and pools accordingly;

(12) to determine the limits of any pool producing crude petroleum oil or natural gas or both and from time to time redetermine the limits;

(13) to regulate the methods and devices employed for storage in this state of oil or natural gas or any product of either, including subsurface storage;

(14) to permit the injection of natural gas or of any other substance into any pool in this state for the purpose of repressuring, cycling, pressure maintenance, secondary or any other enhanced recovery operations;

(15) to regulate the disposition of water produced or used in connection with the drilling for or producing of oil or gas or both and to direct surface or subsurface disposal of the water in a manner that will afford reasonable protection against contamination of fresh water supplies designated by the state engineer;

(16) to determine the limits of any area containing commercial potash deposits and from time to time redetermine the limits;

(17) to regulate and, where necessary, prohibit drilling or producing operations for oil or gas within any area containing commercial deposits of potash where the operations would have the effect unduly to reduce the total quantity of the commercial deposits of potash which may reasonably be recovered in commercial quantities or where the operations would interfere unduly with the orderly commercial development of the potash deposits;

(18) to spend the oil and gas reclamation fund and do all acts necessary and proper to plug dry and abandoned oil and gas wells in accordance with the provisions of the Oil and Gas Act and the Procurement Code, including disposing of salvageable equipment and material removed from oil and gas wells being plugged by the state;

(19) to make well price category determinations pursuant to the provisions of the Natural Gas Policy Act of 1978 or any successor act and, by regulation, to adopt fees for such determinations, which fees shall not exceed twenty-five dollars ($25.00) per filing. Such fees shall be credited to the account of the oil conservation division by the state treasurer and may be expended as authorized by the legislature;

(20) to regulate the construction and operation of oil treating plants and to require the posting of bonds for the reclamation of treating plant sites after cessation of operations;

(21) to regulate the disposition of nondomestic wastes resulting from the exploration, development, production or storage of crude oil or natural gas to protect public health and the environment; and

(22) to regulate the disposition of nondomestic wastes resulting from the oil field service industry, the transportation of crude oil or natural gas, the treatment of natural gas or the refinement of crude oil to protect public health and the environment including administering the Water Quality Act [Chapter 74, Article 6 NMSA 1978] as provided in Subsection E of Section 74-6-4 NMSA 1978.

History: 1953 Comp., § 65-3-11, enacted by Laws 1978, ch. 71, § 1; 1986, ch. 76, § 1; 1987, ch. 234, § 61; 1989, ch. 289, § 1.

Cross references. — *For filing rules and regulations,* see 14-4-3 NMSA 1978. For public utilities commission's lack of power to regulate sale price at wellhead, see 62-6-4 NMSA 1978.

Repeals and reenactments. — Laws 1978, ch. 71, § 1, repealed 65-3-11, 1953 Comp. (former 70-2-12 NMSA 1978), relating to enumeration of powers, and enacted a new 70-2-12 NMSA 1978.

The 1986 amendment, effective May 21, 1986, substituted "oil conservation division" for "division" in Subsection A and in the introductory paragraph of Subsection B; substituted "provided in the Oil and Gas Act" for "in this act provided" in Subsection A; substituted "the Oil and Gas Act" for "this act" in the introductory paragraph of Subsection B; substituted "cash or surety bond" for "corporate surety bond" in Subsection B(1); added Subsection B(19), and made minor stylistic changes throughout the section.

The 1987 amendment, effective July 1, 1987, in Subsection B(18), substituted "Procurement Code" for "Public Purchases Act"; added Subsection B(20); and made minor changes in language and punctuation throughout the section.

The 1989 amendment, effective June 16, 1989, added Subsections B(21) and B(22).

Procurement Code. — See 13-1-28 NMSA 1978 and notes thereto.

Natural Gas Policy Act. — The federal Natural Gas Policy Act of 1978, referred to in Paragraph B(19), appears as 15 U.S.C. § 3301 et seq.

Powers pertaining to oil well fires. — The lawmakers intended commission not only to seek fire prevention to conserve oil, but also to conserve other property and lives of persons peculiarly subject to hazard of oil well fires. Continental Oil Co. v. Brack, 381 F.2d 682 (10th Cir. 1967).

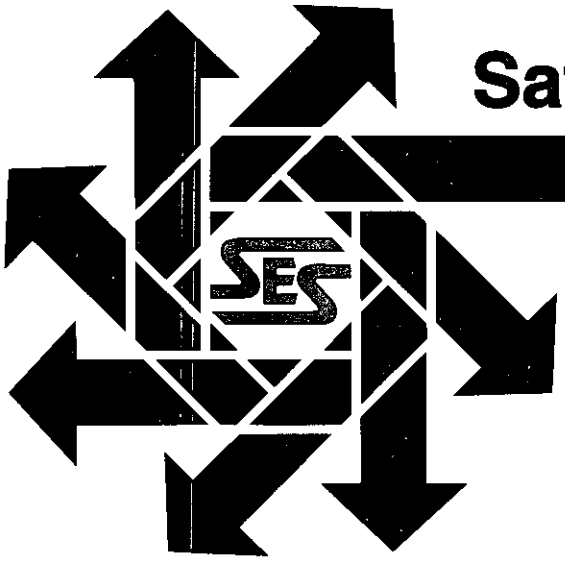
The terms "spacing unit" and "proration unit" are not synonymous and commission has power to fix spacing units without first creating proration units. Rutter & Wilbanks Corp. v. Oil Conservation Comm'n, 87 N.M. 286, 532 P.2d 582 (1975).

Am. Jur. 2d, A.L.R. and C.J.S. references. — 38 Am. Jur. 2d Gas and Oil §§ 145 to 163.

58 C.J.S. Mines and Minerals §§ 229 to 243.

70-2-13. Additional powers of commission or division; hearings before examiner; hearings de novo.

In addition to the powers and authority, either express or implied, granted to the oil conservation commission or division by virtue of the statutes of the state of New Mexico, the division is hereby authorized and empowered in prescribing its rules of order or procedure in connection with hearings or other proceedings before the division to provide for the appointment of one or more examiners to be members of the staff of the division to conduct hearings with respect to matters properly coming before the division and to make reports



Safety & Environmental Solutions, Inc.

Chevron USA

COPY

Naomi Keenan Closure Report

Lea County, New Mexico

Safety & Environmental Solutions, Inc.
703 E. Clinton Suite 103
Hobbs, New Mexico 88240
(505) 397-0510

I. Physical Description

The subject site is an area approximately 106' X 70' situated immediately west of the Naomi Keenan tank battery located in Unit O of Section 14 Township 21 S Range 37 E in Lea County, New Mexico. (Vicinity Map) The land is privately owned.

II. Background

The subject site was discovered after crude oil was released from the adjacent Texas New Mexico Pipeline Company line in July 1997. The crude oil spread over the site during the leak. The underlying contamination discovered at the subject site appeared to be historical. Safety & Environmental Solutions, Inc. (SES) was engaged on January 8, 1998 to perform a site assessment of an area. This assessment was performed in response to the letter from the New Mexico Oil Conservation Division District Office dated January 8, 1997. The release appeared to travel north following the lease road and then west over the subject area. The subject area had previously been plowed and fertilized to a depth of approximately 24" by Chevron USA. There was no evidence of past historical leaks along the pipeline.

The results of the assessment have been reported previously in the document entitled ***"Chevron USA Site Assessment, Section 14 Township 21 S Range 37 E, Lea County, New Mexico."***

The New Mexico Oil Conservation Division (NMOCD), Chevron USA, and Texas and New Mexico Pipeline Company agreed that Texas and New Mexico Pipeline would remove and dispose of the top 6' to 8' of contaminated soil over the area suspected of being an abandoned pit.

On September 16, 1998, Chevron USA received approval, with conditions, of the Work Plan submitted to the NMOCD on September 1, 1998.

III. Work Performed

The implementation of the approved work plan commenced on September 23, 1998. After excavation to the originally approved depth of 15', the soils still evidenced a strong hydrocarbon odor and visual contamination. Excavation was continued to a total depth of 42'. The final excavation area was 102' by 84' at surface with an inner hole at a 10' depth of 82' by 74'. The excavated soils were left to aerate and dry.

The work plan was amended at this time to address the limitations set forth by the final excavation depth. The close proximity of three pipelines surrounding the site did not allow the excavation to be opened to the width prescribed by the OSHA excavation standard. Placement of workers in the excavation at this time was deemed to be unlawful

and dangerous. The liner to be placed in the bottom of the excavation could not be installed without endangering personnel. The amended work plan was submitted and approved on October 7, 1998.

Upon approval of the amended work plan, the excavated area was backfilled with 8' of clean soil. The pit area was then backfilled with 6' of dry and stabilized excavated soils having a field Total Petroleum Hydrocarbon (TPH) reading of 6326.4 ppm. The next 6' of excavation was backfilled with stabilized soils that had a field TPH reading of 12506.4 ppm. The next 5' of stabilized soil backfilled into the excavation had a field TPH reading of 9000 ppm. The next 7' of excavation was backfilled with stabilized soils that had a field TPH reading of 8986.6 ppm. The next 5' of excavated area was backfilled with stabilized soils that had a field TPH reading of 9947.4 ppm. This soil was domed at the center of the excavation for an additional 2'. The domed area was then covered with a liner as approved in the work plan. The remaining excavated area was then backfilled to grade with clean soil and seeded.

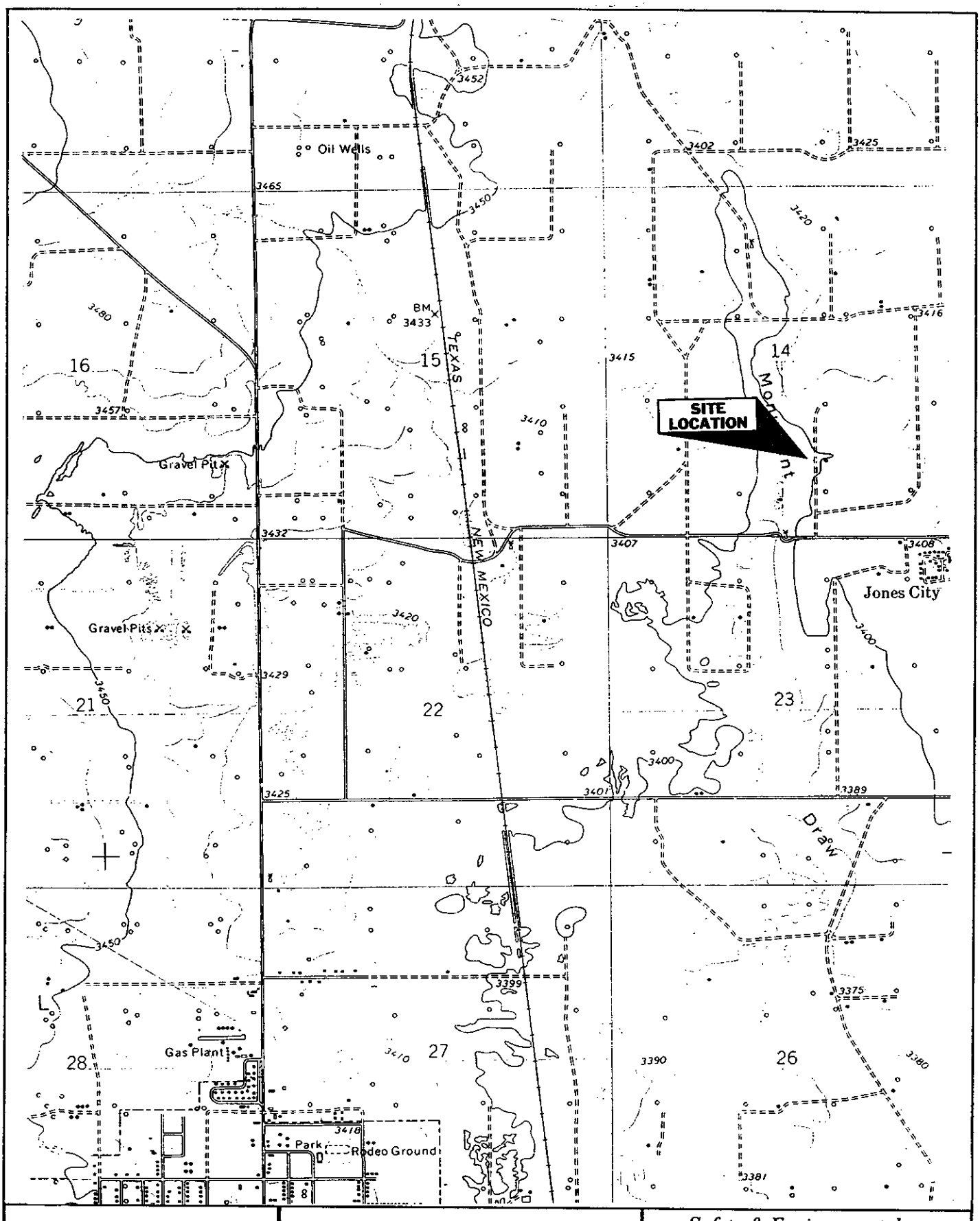
Installation of three monitor wells was completed as per the work plan and is detailed in the Monitor Well Report. The three monitor wells were initially tested for WQCC Metals, Major Cations & Anions, TPH and Benzene, Toluene, Ethyl Benzene and Total Xylenes (BTEX). The initial test results indicate slightly elevated levels of Chlorides, Total Dissolved Solids (TDS) and Selenium. (Laboratory Analyticals)

IV. Conclusion

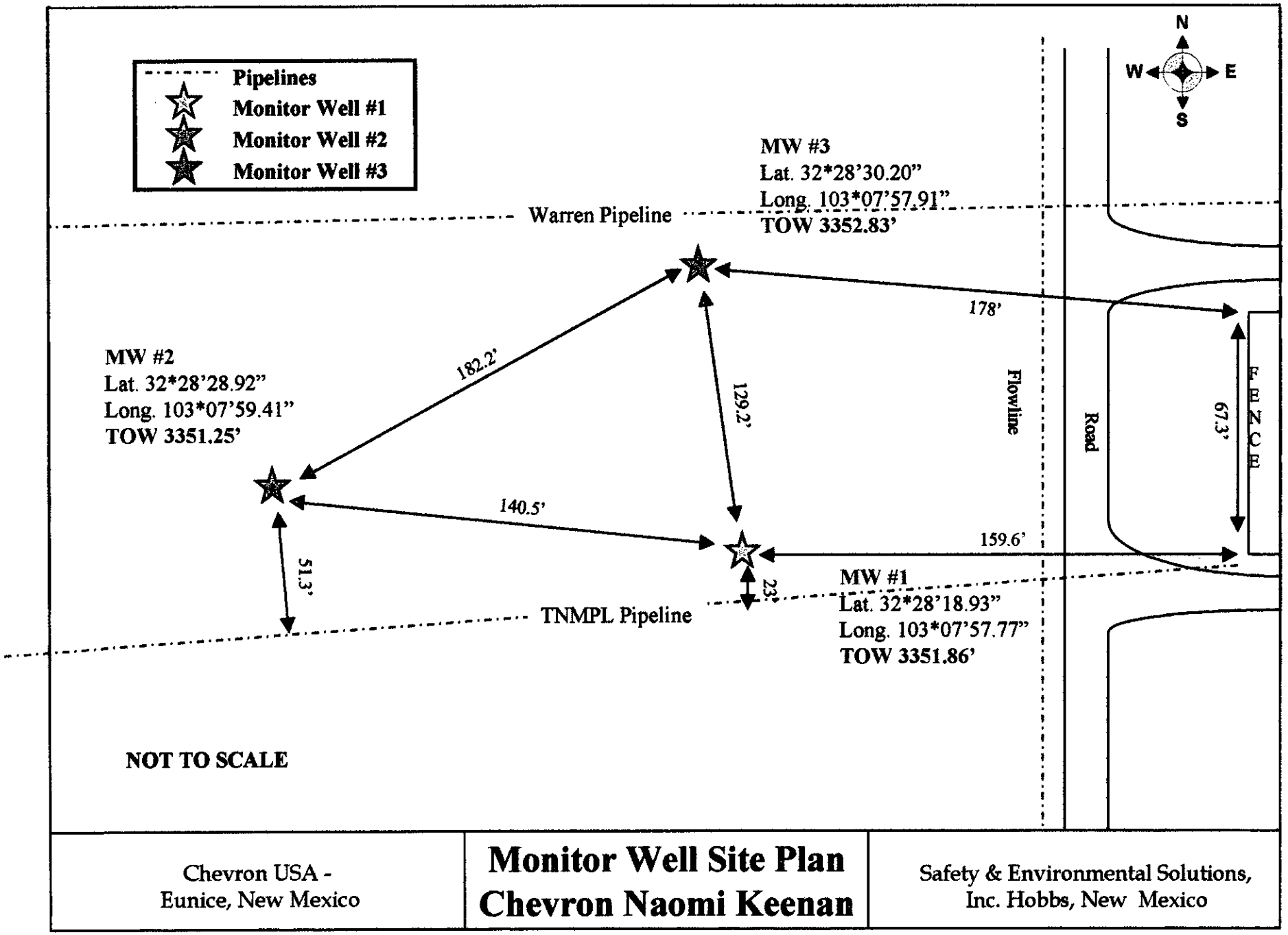
All worked completed at this site conformed to the Work Plan as amended. The levels of chlorides, TDS and Selenium were elevated in all three monitor wells. The TDS, chlorides and Selenium in monitor well #3, the up-gradient well, were 1118 ppm, 333 ppm and 0.13 ppm respectively. These levels represent the greatest extent of contamination of the three wells for those contaminants. The TPH level in monitor well #1, the southern most well, was 88.9 ppm which was the highest levels of the three wells for that contaminant. These levels of contamination are in excess of WQCC standards for those contaminants, however, the levels are only slightly above limits. In light of these findings, Chevron USA will continue to monitor these wells as prescribed in the approved work plan, sampling quarterly, for the identified contaminants over the next eighteen months.

V. Maps and Figures

Vicinity Map
Site Plan
Laboratory Analyticals



Chevron USA	**Section 14 T24S, R29E** **Vicinity Map**	*Safety & Environmental Solutions, Inc.* *Hobbs, NM*



Chevron USA - Eunice, New Mexico	**Monitor Well Site Plan Chevron Naomi Keenan**	Safety & Environmental Solutions, Inc. Hobbs, New Mexico

CARDINAL LABORATORIES

PHONE (915) 673-7001 · 2111 BEECHWOOD · ABILENE, TX 79603
PHONE (505) 393-2326 · 101 E MARLAND · HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DYKE BROWNING
703 W. CLINTON ST. SUITE 103
HOBBS, NM 88240
FAX TO:

Receiving Date: 11/10/98
Reporting Date: 11/17/98
Project Number: NOT GIVEN
Project Name: NAOMI KEENAN
Project Location: EUNICE, NM

Sampling Date: 11/10/98
Sample Type: GROUNDWATER
Sample Condition: COOL AND INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (u mhos/cm)	T-Alkalinity ($mgCaCO_3/L$)
ANALYSIS DATE:		11/12/98	11/12/98	11/12/98	11/12/98	11/12/98	11/12/98
H3920-1	WELL #1	184	69	36	14.10	1805	168
H3920-2	WELL #2	125	85	47	8.35	1814	144
H3920-3	WELL #3	136	91	49	10.11	1969	140
Quality Control		NR	48	46	4.96	1402	NR
True Value QC		NR	50	50	5.00	1413	NR
% Recovery		NR	96	92	99	99.2	NR
Relative Percent Difference		NR	0	12.0	-	0.1	NR
METHODS:			SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER	SAMPLE ID	Cl^- (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		11/12/98	11/12/98	11/12/98	11/12/98	11/12/98	11/12/98
H3920-1	WELL #1	313	124	0	205	7.74	1045
H3920-2	WELL #2	294	124	0	176	7.69	1030
H3920-3	WELL #3	333	123	0	171	7.91	1118
Quality Control		1301	48.64	112	221	6.96	NR
True Value QC		1319	50.00	124	259	7.00	NR
% Recovery		98.6	97.3	90.3	85.4	99	NR
Relative Percent Difference		0.2	0.6	-	-	0.1	0.7
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Chemist

11/17/98
Date

H3920-3.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DYKE BROWNING
703 W. CLINTON ST. SUITE 103
HOBBS, NM 88240
FAX TO:

Receiving Date: 11/10/98
Reporting Date: 11/18/98
Project Number: NOT GIVEN
Project Name: NAOMI KEENAN
Project Location: EUNICE, NM

Sampling Date: 11/10/98
Sample Type: GROUNDWATER
Sample Condition: COOL AND INTACT
Sample Received By: AH
Analyzed By: BC

LAB NO.	SAMPLE ID	TPH (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:		11/17/98	11/11/98	11/11/98	11/11/98	11/11/98
H3920-1	WELL #1	88.9	0.008	0.023	0.016	0.027
H3920-2	WELL #2	64.9	0.007	0.024	0.021	0.039
H3920-3	WELL #3	28.4	0.006	0.022	0.019	0.034
Quality Control		154	0.091	0.097	0.096	0.291
True Value QC		150	0.100	0.100	0.100	0.300
% Recovery		103	91.3	97.3	95.7	97.0
Relative Percent Difference		2.5	8.7	4.7	2.5	3.8

METHODS: TRPHC - EPA 600/7-79-020, 418.1; BTEX - EPA SW846-8020, 8260

Chemist

11/18/98
Date

H3920-4.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DYKE BROWNING
703 W. CLINTON ST. SUITE 103
HOBBS, NM 88240
FAX TO:

Receiving Date: 11/10/98
Reporting Date: 11/19/98
Project Number: NOT GIVEN
Project Name: NAOMI KEENAN
Project Location: EUNICE, NM

Sampling Date: 11/10/98
Sample Type: GROUNDWATER
Sample Condition: COOL AND INTACT
Sample Received By: AH
Analyzed By: AH

RCRA METALS

LAB NUMBER	SAMPLE ID	As ppm	Ag ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm
ANALYSIS DATE:		11/17/98	11/17/98	11/17/98	11/17/98	11/17/98	11/17/98	11/17/98	11/17/98
H3920-1	WELL #1	<0.1	<0.05	<0.1	<0.01	<0.05	<0.05	<0.002	0.08
H3920-2	WELL #2	<0.1	<0.05	<1	<0.01	<0.05	<0.05	<0.002	0.12
H3920-3	WELL #3	<0.1	<0.05	<1	<0.01	<0.05	<0.05	<0.002	0.13
Quality Control		0.049	4.40	4.80	0.450	2.23	4.75	0.0082	0.0089
True Value QC		0.050	5.00	5.00	0.500	2.50	5.00	0.0100	0.0100
% Recovery		98	88	96	90	89	95	82	89
Relative Percent Difference		7.27	2.5	0.9	3.2	4.7	3.4	2.0	0.3

METHODS: EPA 600/4-79-020	206.2	272.1	208.1	213.1	218.1	239.1	245.1	270.2
METHODS: SW-846	7060A	7760A	7080A	7130	7190	7420	7470A	7740

Chemist

11/19/98
Date

H3920-2.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DYKE BROWNING
703 W. CLINTON ST. SUITE 103
HOBBS, NM 88240
FAX TO:

Receiving Date: 11/10/98
Reporting Date: 11/19/98
Project Number: NOT GIVEN
Project Name: NAOMI KEENAN
Project Location: EUNICE, NM

Sampling Date: 11/10/98
Sample Type: GROUNDWATER
Sample Condition: COOL AND INTACT
Sample Received By: AH
Analyzed By: AH

TOTAL METALS

LAB NUMBER	SAMPLE ID	Al (ppm)	Co (ppm)	Cu (ppm)	Fe (ppm)
ANALYSIS DATE:		11/17/98	11/17/98	11/17/98	11/17/98
H3920-1	WELL #1	<5	<0.05	<0.05	<1
H3920-2	WELL #2	<5	<0.05	<0.05	1
H3920-3	WELL #3	<5	<0.05	<0.05	<1
Quality Control		2.88	0.243	1.00	0.490
True Value QC		3.00	0.250	1.00	0.500
% Recovery		96	97	100	98
Relative Percent Difference		1.0	3.0	1.5	1.9
METHODS: EPA 600/04-79-020		202.1	219.1	220.1	236.1

LAB NUMBER	SAMPLE ID	Mn (ppm)	Mo (ppm)	Ni (ppm)	Zn (ppm)
ANALYSIS DATE:		11/17/98	11/17/98	11/17/98	11/17/98
H3920-1	WELL #1	<0.2	<0.05	<0.05	<1
H3920-2	WELL #2	<0.2	<0.05	<0.05	<1
H3920-3	WELL #3	<0.2	<0.05	<0.05	<1
Quality Control		0.098	0.294	2.43	0.240
True Value QC		0.100	0.300	2.50	0.250
% Recovery		98	98	97	96
Relative Percent Difference		2.8	3.1	2.8	2.6
METHODS: EPA 600/04-79-020		243.1	246.1	249.1	289.1

Chemist

11/19/98
Date

H3920-1.XLS

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020

101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Page____ of____

Company Name:	SES, Inc	BILL TO	PO #:
Project Manager:	Dyke Brownlee	Company:	
Address:	703 E. Clinton, Suite 103	Attn:	
City:	Hobbs State: NM Zip: 88240	Address:	
Phone #:	397-0510	City:	
Fax #:		State:	Zip:
Project #:	Project Owner:	Phone #:	
Project Name:	Naomi Keenan	Fax #:	
Project Location:	Eunice		

FOR LAB USE ONLY				MATRIX						PRES.			SAMPLING		ANALYSIS REQUEST										
LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID:	ICE / COOL	OTHER:	DATE	TIME	WQCC standards	TPH									
H3920-1	Well #1		1	X							X		11/10	11:25	✓	✓									
-2	Well #2		1	X							X		11/10	11:25	✓	✓									
-3	Well #3		1	X							X		11/10	11:25	✓	✓									

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished:	Date: 11/10	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
	Time: 11:25		Fax Result: ☐ Yes ☐ No
Relinquished By:	Date:	Received By: (Lab Staff)	REMARKS: There you are; but where are you?
	Time:		393-4386
Delivered By: (Circle One)	Sample Condition Cool ☒ Yes ☐ No Intact ☒ Yes ☐ No	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other:			

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

MONITOR WELL REPORTS

Safety & Environmental Solutions, Inc.

COPY

Chevron USA

Naomi Keenan Monitor Well Report

Lea County, New Mexico

Safety & Environmental Solutions, Inc.
703 E. Clinton Suite 103
Hobbs, New Mexico 88240
(505) 397-0510

TABLE OF CONTENTS

I. Background

Safety & Environmental Solutions, Inc. (SESI) was engaged on January 8, 1998 to perform a site assessment of an area contaminated by a hydrocarbon release from a pipeline owned by Texas New Mexico Pipeline in July 1997. (See Vicinity Map) This assessment was performed in response to the letter from the New Mexico Oil Conservation Division District Office dated January 8, 1997. The subject area is located in Unit O of Section 14 Township 21 S Range 37 E in Lea County, New Mexico. The release appeared to travel north following the lease road and then west over the subject area, which had previously been plowed and fertilized, to a depth of approximately 24" by Chevron USA.

II. Work Performed

SESI contracted Atkins Engineering & Associates from Roswell, New Mexico to perform drilling services for this project. Cardinal Laboratories of Hobbs, New Mexico was also contracted to perform the laboratory analytical testing required for this project. Atkins Engineering used a hollow stem auger rig for the drilling and a split spoon for sampling. Three monitor wells were drilled on the subject site to the depth of the water table. (See Monitor Well Site Plan)

SES sampled the boreholes of the monitor wells at intervals of ten (10) feet and performed field analytical tests to determine the extent of contamination of each sample. The field analytical tests performed were Total Petroleum Hydrocarbons (TPH) (EPA Method 418.1) using a Mega TPH Analyzer, and Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) using headspace analysis with a Photovac Microtip MP 100 Photoionization Detector (PID) Serial # NA89005 calibrated with 100 ppm Isobutylene. Soil sampling was performed on soils from each test hole using SOPs found in **Environmental Protection Agency, 1984, Characterization of Hazardous Waste Site - A Methods Manual: Vol II.** Following is a breakdown of the field tests results for each well:

Monitor Well #1

Depth	TPH	BTEX
10'	50 ppm	7.4 ppm
20'	67 ppm	2.0 ppm
30'	24 ppm	2.0 ppm
40'	52 ppm	4.4 ppm
50'	79 ppm	16.0 ppm
54'	62 ppm	12.0 ppm
60'	54 ppm	15.0 ppm
70'	54 ppm	4.7 ppm

Monitor Well #2

Depth	TPH	BTEX
10'	0 ppm	0 ppm
20'	50 ppm	0 ppm
30'	60 ppm	0 ppm
40'	47 ppm	1.7 ppm
50'	57 ppm	0 ppm

Monitor Well #3

Depth	TPH	BTEX
10'	50 ppm	0 ppm
20'	67 ppm	0 ppm
30'	62 ppm	0 ppm
40'	43 ppm	0 ppm

SESI contracted Basin Surveys to conduct a survey of the monitor wells to determine the mean sea level elevation of the tops of casing of each monitor well. (See Survey Plat)

SESI measured the distance from the top of casing of each monitor well to the top of water using a Solinst #2222 Water Level Indicator. The measurements are summarized as follows:

Well Number	TOC Elevation	Distance to TOW	TOW
1	3402.18'	50.32'	3351.86'
2	3399.58'	48.33'	3351.25'
3	3402.19'	49.36'	3352.83'

The measurements indicate a groundwater flow from northeast to southwest under the subject site.

III. Monitor Well Installation

The monitor wells were installed according to the NMOCD approved work plan. A summary of each monitor well lithology is attached. (See Logs of Boring) Upon completion, samples were collected from the water table in each monitor well. The samples were preserved on ice and delivered along with Chain of Custody to Cardinal Laboratories for testing. The samples were analyzed for Total Petroleum Hydrocarbons (EPA Method 600/4-79-020, 418.1) and BTEX (EPA Method SW-846-8260), Cations and Anions, WQCC Metals, and Chlorides (EPA Method 600/4-79-020 325.3).

IV. Analytical Results

The analysis of the groundwater samples performed by Cardinal Laboratories are summarized as follows:

Contaminant	WQCC Standard	Monitor Well #1	Monitor Well #2	Monitor Well #3
Aluminum	5.0 ppm	<5.0 ppm	<5.0 ppm	<5.0 ppm
Arsenic	0.1 ppm	<0.1 ppm	<0.1 ppm	<0.1 ppm
Barium	1.0 ppm	<0.1 ppm	<1.0 ppm	<1.0 ppm
Cadmium	0.01 ppm	<0.01 ppm	<0.01 ppm	<0.01 ppm
Chloride	250.0 ppm	313 ppm	294 ppm	333 ppm
Chromium	0.05 ppm	<0.05 ppm	<0.05 ppm	<0.05 ppm
Cobalt	0.05 ppm	<0.05 ppm	<0.05 ppm	<0.05 ppm
Copper	1.0 ppm	<0.05 ppm	<0.05 ppm	<0.05 ppm
Iron	1.0 ppm	<1.0 ppm	1.0 ppm	<1.0 ppm
Lead	0.05 ppm	<0.05 ppm	<0.05 ppm	<0.05 ppm
Manganese	0.2 ppm	<0.2 ppm	<0.2 ppm	<0.2 ppm
Mercury	0.002 ppm	<0.002 ppm	<0.002 ppm	<0.002 ppm
Molybdenum	1.0 ppm	<0.05 ppm	<0.05 ppm	<0.05 ppm
Nickel	0.2 ppm	<0.05 ppm	<0.05 ppm	<0.05 ppm
Selenium	0.05 ppm	0.08 ppm	0.12 ppm	0.13 ppm
Silver	0.05 ppm	<0.05 ppm	<0.05 ppm	<0.05 ppm
Sulfate	600 ppm	124 ppm	124 ppm	123 ppm
Zinc	10.0 ppm	<1.0 ppm	<1.0 ppm	<1.0 ppm
TDS	1000.0 ppm	1045 ppm	1030 ppm	1118 ppm
PH	> 6 & <9	7.74	7.69	7.91
Benzene	0.01 ppm	0.008 ppm	0.007 ppm	0.006 ppm
Toluene	0.75 ppm	0.023 ppm	0.024 ppm	0.022 ppm
Ethyl Benzene	0.75 ppm	0.016 ppm	0.021 ppm	0.019 ppm
Total Xylenes	0.62 ppm	0.027 ppm	0.039 ppm	0.034 ppm
TPH		88.9 ppm	64.9 ppm	28.4 ppm

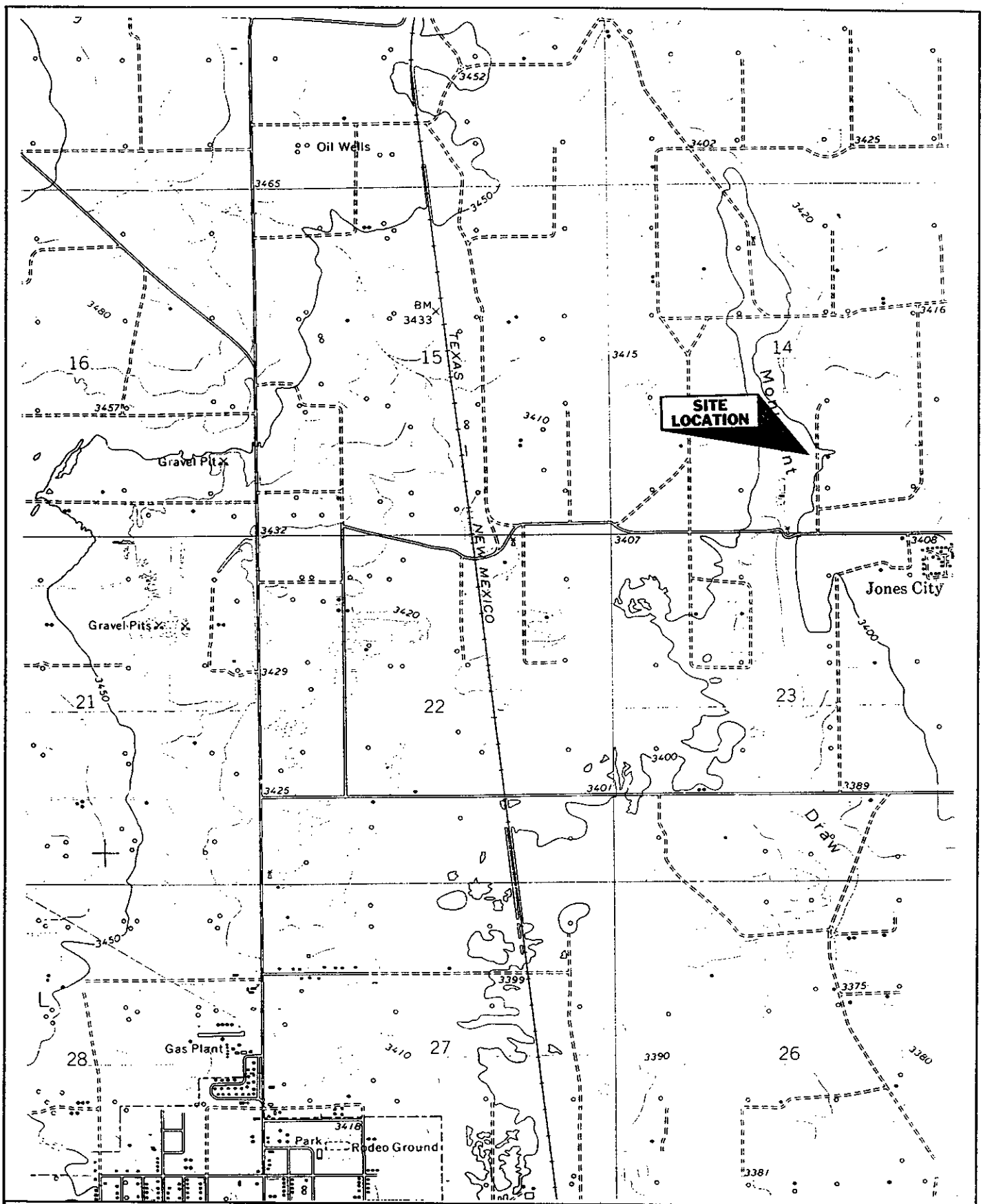
These tests showed slightly elevated levels of Total Dissolved Solids, Chlorides and Selenium above the WQCC limits in all three monitor wells. There were also readings for Total Petroleum Hydrocarbons in each monitor well. (See Attached Analytical Results)

V. Conclusion

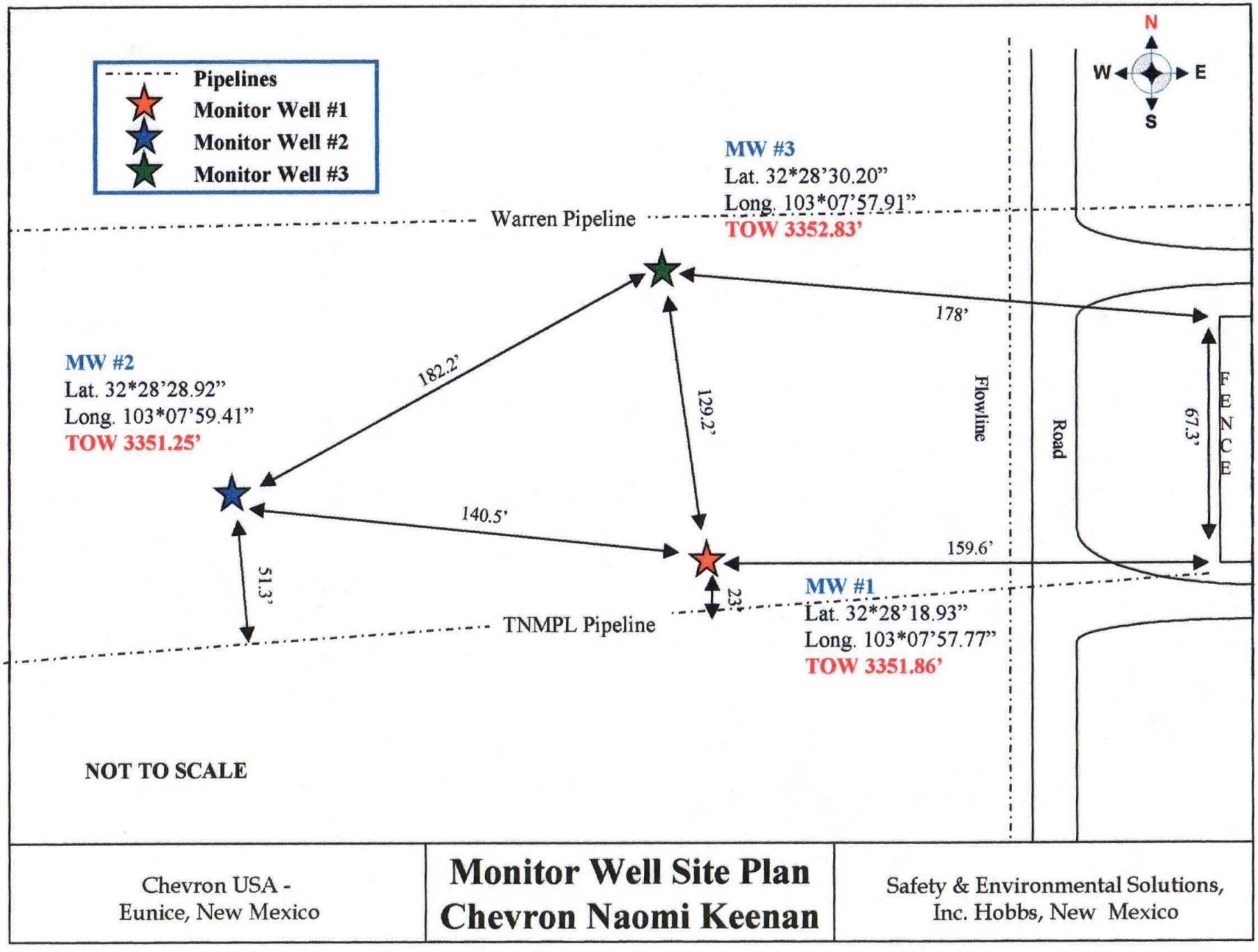
The analytical results reported by Cardinal Laboratories indicates that there is elevated levels of TPH, TDS, Chlorides and Selenium in all three monitor well installed during this project. The occurrence of contaminants in monitor well # 3, the up-gradient well, indicate the presence of these in this area has occurred from sources other than the subject site. It must be noted that the highest levels of TDS, Chlorides, and Selenium occur in the up-gradient well. However, it must also be noted that the highest level of TPH (88.9 ppm) was found in the southern most well. The fact that the levels BTEX in all groundwater samples are below WQCC levels is also noteworthy. Chevron USA will continue to monitor the groundwater in these wells on a quarterly basis for a proposed period of 18 months. At the end of the monitoring period a re-evaluation of the contamination will be performed.

VI. Maps and Figures

Vicinity Map
Monitor Well Site Plan
Logs of Boring
Survey Plat
Third Party Analytical Results



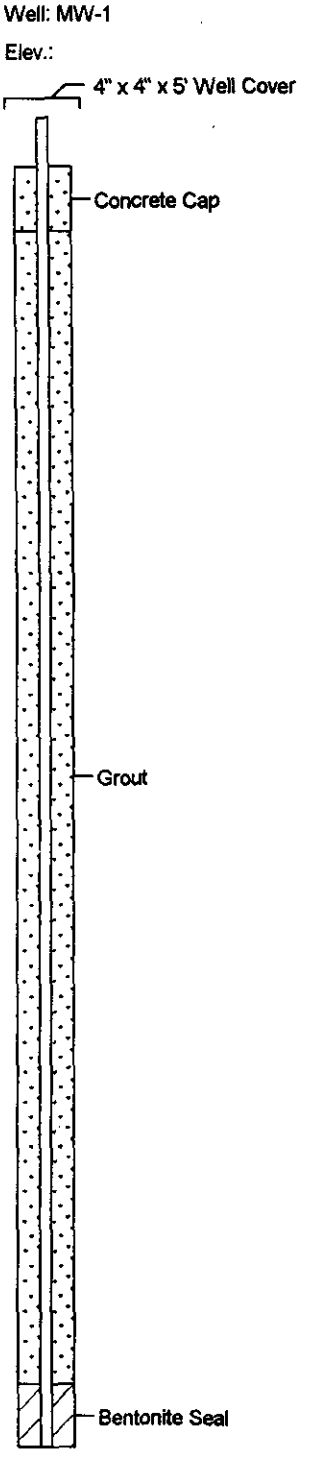
Chevron USA	**Section 14 T24S, R29E Vicinity Map**	*Safety & Environmental Solutions, Inc. Hobbs, NM*



Chevron USA - Eunice, New Mexico	**Monitor Well Site Plan Chevron Naomi Keenan**	Safety & Environmental Solutions, Inc. Hobbs, New Mexico

Atkins Engineering Associates, Inc. P.O. Box 3156 Roswell, New Mexico 88202	LOG OF BORING Chevron USA, Inc. MW #1 (Page 1 of 2)
Safety Environmental Solutions P.O. Box 1613 Hobbs, NM 88241 Contact: Mr. Dyke Browning Job #98340.00	Date : 11-9-98 Drill Start : 8:45 A.M. Drill End : 1:00 P.M. Boring Location : South of Pit Site Location : Section 14, T21S, R37E. Auger Type : Hollowstem Logged by : Mort Bates

Depth in feet	GRAPHIC	USCS	Samples	DESCRIPTION
0		CL		Silty Clay w/Caliche, Tan, Loose, Dry
5		SM		Silty Sand, Tan, Loose, Dry
10		SC	1	Silty Clayey Sand, Tan, Loose, Dry
15		SM		Silty Sand w/Caliche, Tan, Loose, Damp
20		SP	2	Sand, Red, Loose, Damp
25				
30		SP	3	Sand, Tan, Loose, Damp
35		SC		Silty Clayey Sand, Tan, Loose, Damp
40		SP		Sand, Tan to Red, Loose, Damp



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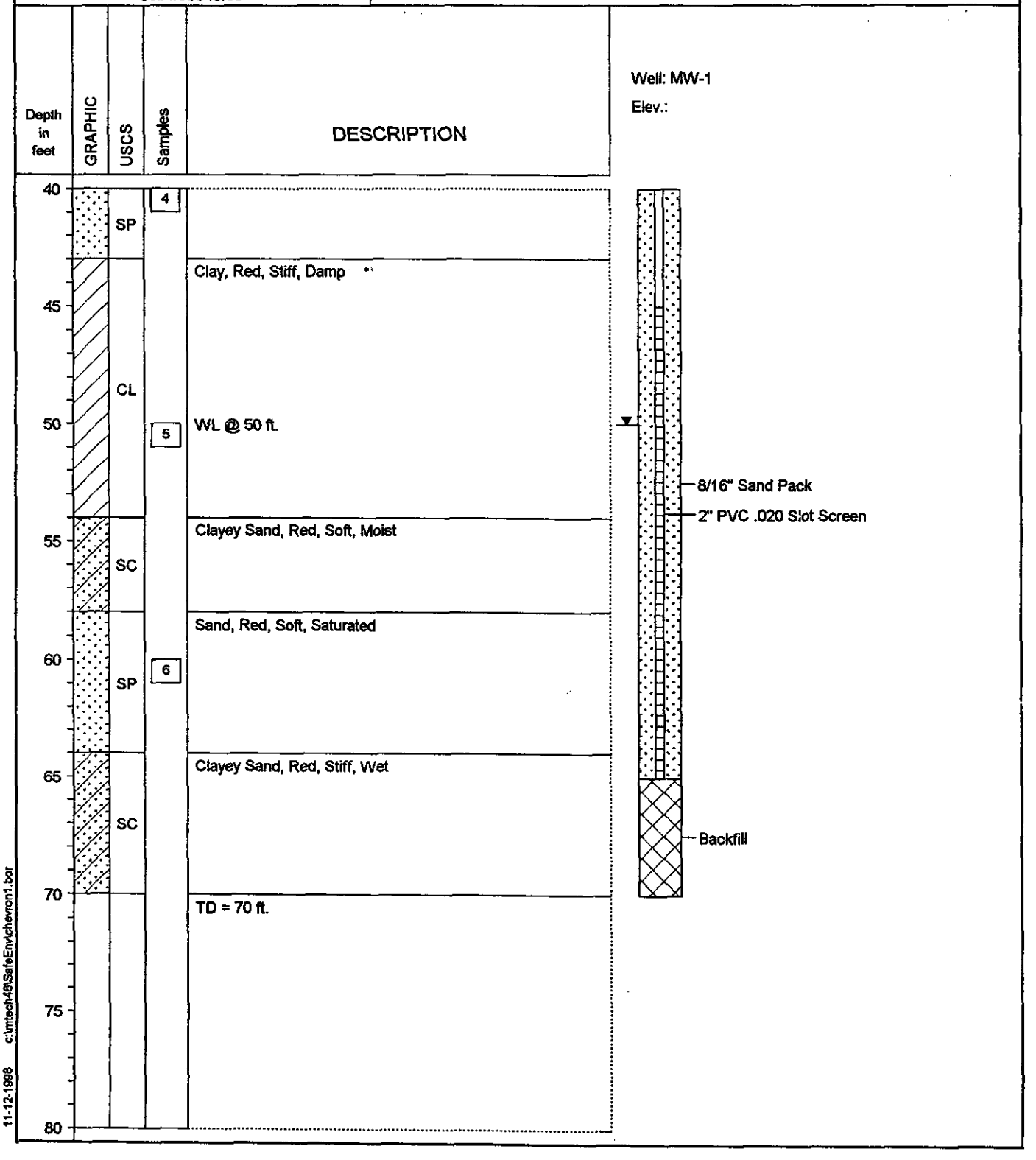
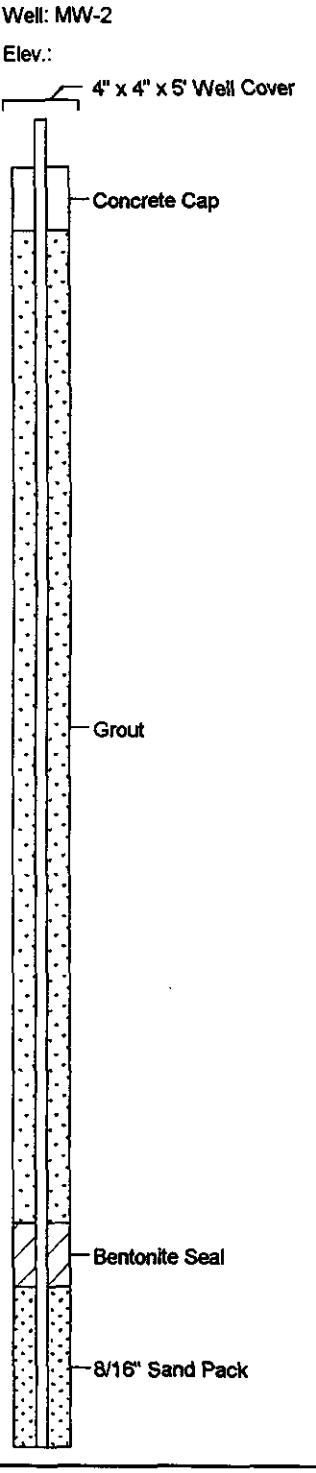
Atkins Engineering Associates, Inc. P.O. Box 3156 Roswell, New Mexico 88202	LOG OF BORING Chevron USA, Inc. MW #1 (Page 2 of 2)
Safety Environmental Solutions P.O. Box 1613 Hobbs, NM 88241 Contact: Mr. Dyke Browning Job #98340.00	Date : 11-9-98 Drill Start : 8:45 A.M. Drill End : 1:00 P.M. Boring Location : South of Pit Site Location : Section 14, T21S, R37E. Auger Type : Hollowstem Logged by : Mort Bates



11-12-1998 c:\mtech46\SafeEnv\chevron1.bor

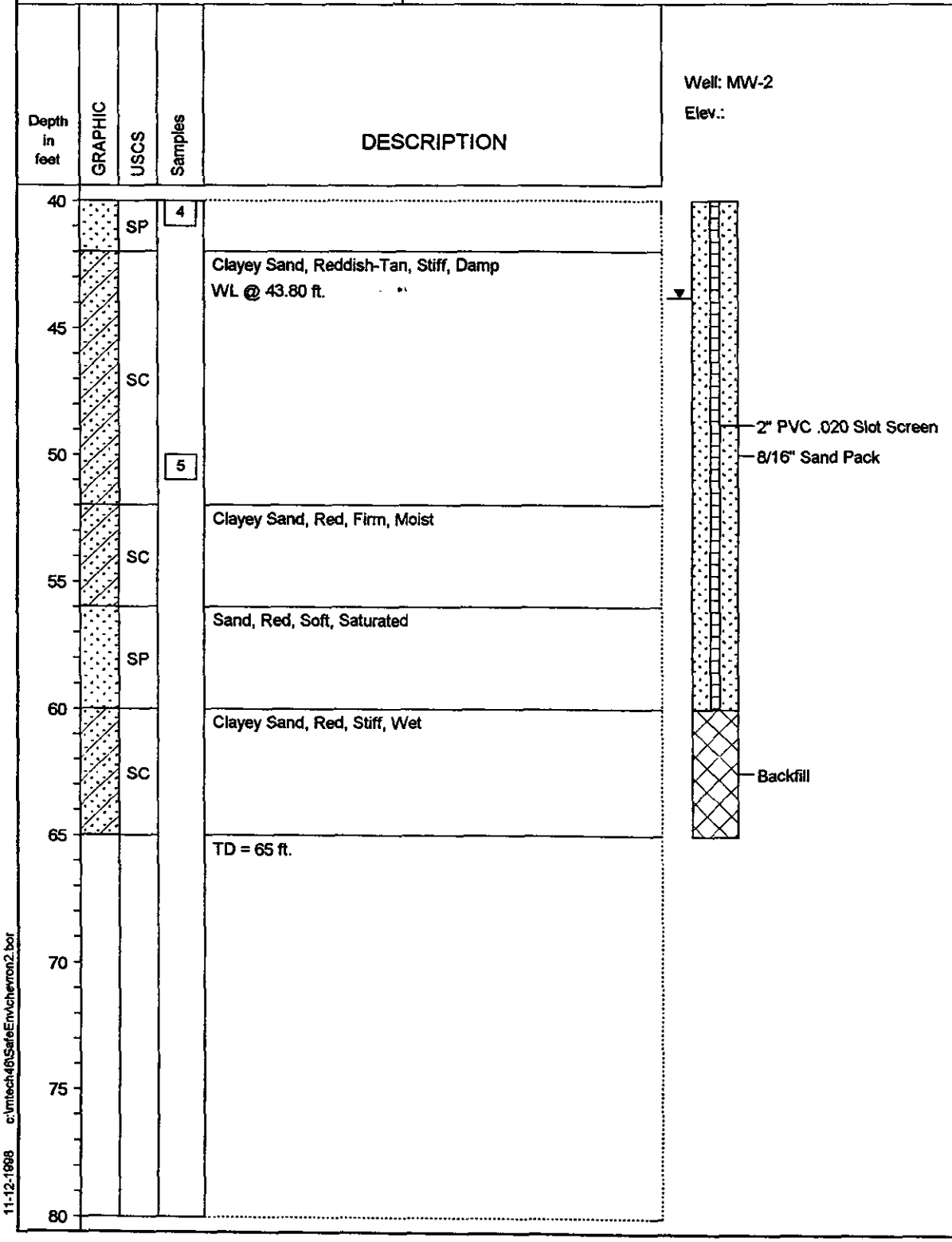
Atkins Engineering Associates, Inc. P.O. Box 3156 Roswell, New Mexico 88202	LOG OF BORING Chevron USA, Inc. MW #2 (Page 1 of 2)
Safety Environmental Solutions P.O. Box 1613 Hobbs, NM 88241 Contact: Mr. Dyke Browning Job #98340.00	Date : 11-9-98 Drill Start : 1:25 P.M. Drill End : 5:30 P.M. Boring Location : Southwest of Pit Site Location : Section 14, T21S, R37E. Auger Type : Hollowstem Logged by : Mort Bates

Depth in feet	GRAPHIC	USCS	Samples	DESCRIPTION
0		CL		Silty Clay w/Caliche, Tan, Loose, Dry
5				Caliche, White, Loose, Dry
10		SP	1	Silty Sand w/Caliche, Tan, Loose, Dry
15				Sand, Reddish-Tan, Loose, Damp
20			2	
25		SP		
30			3	
35				
40				



11-12-1998 c:\mtech46\SafeEnv\chevron2.bor

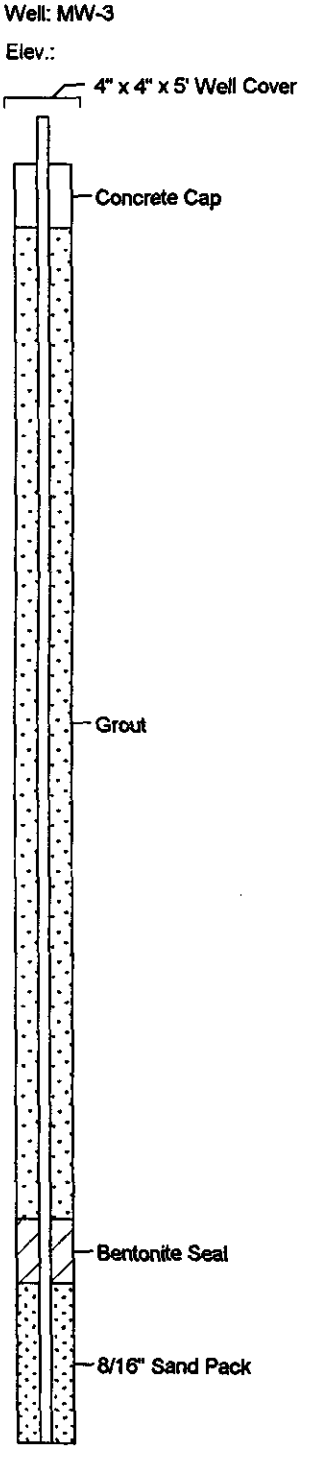
Atkins Engineering Associates, Inc. P.O. Box 3156 Roswell, New Mexico 88202	LOG OF BORING Chevron USA, Inc. MW #2 (Page 2 of 2)
Safety Environmental Solutions P.O. Box 1613 Hobbs, NM 88241 Contact: Mr. Dyke Browning Job #98340.00	Date : 11-9-98 Drill Start : 1:25 P.M. Drill End : 5:30 P.M. Boring Location : Southwest of Pit Site Location : Section 14, T21S, R37E. Auger Type : Hollowstem Logged by : Mort Bates



11-12-1998 c:\mtech46\SafeEnv\chevron2.bor

Atkins Engineering Associates, Inc. P.O. Box 3156 Roswell, New Mexico 88202	LOG OF BORING Chevron USA, Inc. MW #3 (Page 1 of 2)
Safety Environmental Solutions P.O. Box 1613 Hobbs, NM 88241 Contact: Mr. Dyke Browning Job #98340.00	Date : 11-10-98 Drill Start : 6:55 A.M. Drill End : 12:30 P.M. Boring Location : North of Pit Site Location : Section 14, T21S, R37E. Auger Type : Hollowstem Logged by : Mort Bates

Depth in feet	GRAPHIC	USCS	Samples	DESCRIPTION
0		CL		Silty Clay w/Caliche, Tan, Loose, Dry
5				
10		SM	1	Silty Sand, Tan, Loose, Dry
15				
20			2	
25				
30		SP	3	Sand, Tan, Loose, Damp
35				
40		SC		Clayey Sand, Tan, Loose, Damp

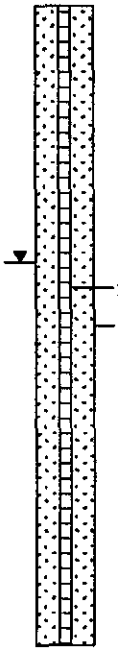


11-12-1998 c:\mtech46\SafeEnv\chevron3.bor

Atkins Engineering Associates, Inc. P.O. Box 3156 Roswell, New Mexico 88202	LOG OF BORING Chevron USA, Inc. MW #3 (Page 2 of 2)
Safety Environmental Solutions P.O. Box 1613 Hobbs, NM 88241 Contact: Mr. Dyke Browning Job #98340.00	Date : 11-10-98 Drill Start : 6:55 A.M. Drill End : 12:30 P.M. Boring Location : North of Pit Site Location : Section 14, T21S, R37E. Auger Type : Hollowstem Logged by : Mort Bates

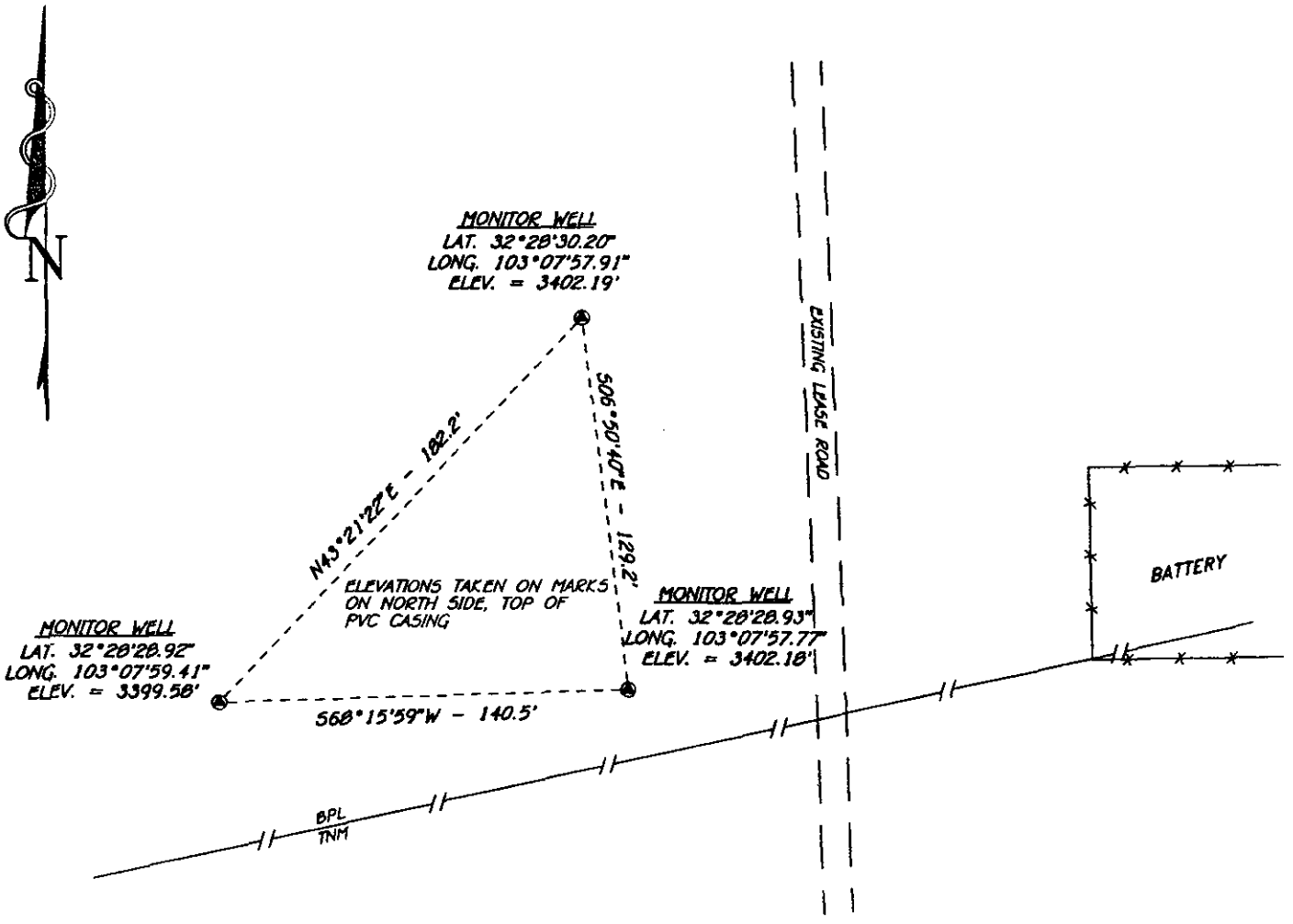
Depth in feet	GRAPHIC	USCS	Samples	DESCRIPTION
40		SC	4	Sand, Reddish-Tan, Firm, Damp
		SP		
45		SC		Clayey Sand, Red, Firm, Moist WL @ 48 ft.
50		SP		Sand, Red, Soft, Saturated
55				
60				TD = 60 ft.
65				
70				
75				
80				

Well: MW-3
Elev.:



11-12-1998 c:\mtech46\SafeEnv\chevron3.bor

SECTION 14, TOWNSHIP 21 SOUTH, RANGE 37 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.



NOTE:
ALL COORDINATE BEARINGS AND DISTANCES ARE GRID NEW MEXICO STATE PLANE EAST ZONE NAD 83 (1986) AND ELEVATIONS ARE NAD 88 BASED ON CALIBRATION TO NGS SECOND ORDER BENCH MARKS K98 & L98.

60 0 60 120

SCALE 1' = 60'

I HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM FIELD NOTES OF AN ACTUAL SURVEY AND IS MEETS OR EXCEEDS ALL REQUIREMENTS FOR LAND SURVEYS AS SPECIFIED BY THIS STATE.

GARY L. JONES N.M. P.S. No. 7977
TEXAS P.L.S. No. 5074

REGISTERED PROFESSIONAL LAND SURVEYOR — NEW MEXICO — 7977

BASIN SURVEYS P.O. BOX 1786 – HOBBS, NEW MEXICO

SAFETY AND ENVIROMENTAL SOLUTIONS

REF: MONITOR WELLS

THREE MONITOR WELLS LOCATED IN UNIT O, SECTION 14, TOWNSHIP 21 SOUTH, RANGE 37 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.

W.O. Number: 8511	Drawn By: K. GOAD		
Date: 12-02-98	Disk: KJG #119 - SES8511A.DWG	Survey Date: 11-24-98	Sheet 1 of 1 Sheets

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DYKE BROWNING
703 W. CLINTON ST. SUITE 103
HOBBS, NM 88240
FAX TO:

Receiving Date: 11/10/98
Reporting Date: 11/17/98
Project Number: NOT GIVEN
Project Name: NAOMI KEENAN
Project Location: EUNICE, NM

Sampling Date: 11/10/98
Sample Type: GROUNDWATER
Sample Condition: COOL AND INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (µmhos/cm)	T-Alkalinity (mgCaCO$_3$/L)
ANALYSIS DATE:		11/12/98	11/12/98	11/12/98	11/12/98	11/12/98	11/12/98
H3920-1	WELL #1	184	69	36	14.10	1805	168
H3920-2	WELL #2	125	85	47	8.35	1814	144
H3920-3	WELL #3	136	91	49	10.11	1969	140
Quality Control		NR	48	46	4.96	1402	NR
True Value QC		NR	50	50	5.00	1413	NR
% Recovery		NR	96	92	99	99.2	NR
Relative Percent Difference		NR	0	12.0	-	0.1	NR
METHODS:			SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER	SAMPLE ID	Cl$^-$ (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		11/12/98	11/12/98	11/12/98	11/12/98	11/12/98	11/12/98
H3920-1	WELL #1	313	124	0	205	7.74	1045
H3920-2	WELL #2	294	124	0	176	7.69	1030
H3920-3	WELL #3	333	123	0	171	7.91	1118
Quality Control		1301	48.64	112	221	6.96	NR
True Value QC		1319	50.00	124	259	7.00	NR
% Recovery		98.6	97.3	90.3	85.4	99	NR
Relative Percent Difference		0.2	0.6	-	-	0.1	0.7
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Chemist

11/17/98
Date

H3920-3.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2328 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DYKE BROWNING
703 W. CLINTON ST. SUITE 103
HOBBS, NM 88240
FAX TO:

Receiving Date: 11/10/98
Reporting Date: 11/18/98
Project Number: NOT GIVEN
Project Name: NAOMI KEENAN
Project Location: EUNICE, NM

Sampling Date: 11/10/98
Sample Type: GROUNDWATER
Sample Condition: COOL AND INTACT
Sample Received By: AH
Analyzed By: BC

LAB NO.	SAMPLE ID	TPH (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:		11/17/98	11/11/98	11/11/98	11/11/98	11/11/98
H3920-1	WELL #1	88.9	0.008	0.023	0.016	0.027
H3920-2	WELL #2	64.9	0.007	0.024	0.021	0.039
H3920-3	WELL #3	28.4	0.006	0.022	0.019	0.034
Quality Control		154	0.091	0.097	0.096	0.291
True Value QC		150	0.100	0.100	0.100	0.300
% Recovery		103	91.3	97.3	95.7	97.0
Relative Percent Difference		2.5	8.7	4.7	2.5	3.8

METHODS: TRPHC - EPA 600/7-79-020, 418.1; BTEX - EPA SW846-8020, 8260

Chemist

11/18/98
Date

H3920-4.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DYKE BROWNING
703 W. CLINTON ST. SUITE 103
HOBBS, NM 88240
FAX TO:

Receiving Date: 11/10/98
Reporting Date: 11/19/98
Project Number: NOT GIVEN
Project Name: NAOMI KEENAN
Project Location: EUNICE, NM

Sampling Date: 11/10/98
Sample Type: GROUNDWATER
Sample Condition: COOL AND INTACT
Sample Received By: AH
Analyzed By: AH

RCRA METALS

LAB NUMBER	SAMPLE ID	As ppm	Ag ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm
ANALYSIS DATE:		11/17/98	11/17/98	11/17/98	11/17/98	11/17/98	11/17/98	11/17/98	11/17/98
H3920-1	WELL #1	<0.1	<0.05	<0.1	<0.01	<0.05	<0.05	<0.002	0.08
H3920-2	WELL #2	<0.1	<0.05	<1	<0.01	<0.05	<0.05	<0.002	0.12
H3920-3	WELL #3	<0.1	<0.05	<1	<0.01	<0.05	<0.05	<0.002	0.13
Quality Control		0.049	4.40	4.80	0.450	2.23	4.75	0.0082	0.0089
True Value QC		0.050	5.00	5.00	0.500	2.50	5.00	0.0100	0.0100
% Recovery		98	88	96	90	89	95	82	89
Relative Percent Difference		7.27	2.5	0.9	3.2	4.7	3.4	2.0	0.3

METHODS: EPA 600/4-79-020	206.2	272.1	208.1	213.1	218.1	239.1	245.1	270.2
METHODS: SW-846	7060A	7760A	7080A	7130	7190	7420	7470A	7740

Chemist

11/19/98
Date

H3920-2.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DYKE BROWNING
703 W. CLINTON ST. SUITE 103
HOBBS, NM 88240
FAX TO:

Receiving Date: 11/10/98
Reporting Date: 11/19/98
Project Number: NOT GIVEN
Project Name: NAOMI KEENAN
Project Location: EUNICE, NM

Sampling Date: 11/10/98
Sample Type: GROUNDWATER
Sample Condition: COOL AND INTACT
Sample Received By: AH
Analyzed By: AH

TOTAL METALS

LAB NUMBER	SAMPLE ID	Al (ppm)	Co (ppm)	Cu (ppm)	Fe (ppm)
ANALYSIS DATE:		11/17/98	11/17/98	11/17/98	11/17/98
H3920-1	WELL #1	<5	<0.05	<0.05	<1
H3920-2	WELL #2	<5	<0.05	<0.05	1
H3920-3	WELL #3	<5	<0.05	<0.05	<1
Quality Control		2.88	0.243	1.00	0.490
True Value QC		3.00	0.250	1.00	0.500
% Recovery		96	97	100	98
Relative Percent Difference		1.0	3.0	1.5	1.9
METHODS: EPA 600/04-79-020		202.1	219.1	220.1	236.1

		Mn (ppm)	Mo (ppm)	Ni (ppm)	Zn (ppm)
ANALYSIS DATE:		11/17/98	11/17/98	11/17/98	11/17/98
H3920-1	WELL #1	<0.2	<0.05	<0.05	<1
H3920-2	WELL #2	<0.2	<0.05	<0.05	<1
H3920-3	WELL #3	<0.2	<0.05	<0.05	<1
Quality Control		0.098	0.294	2.43	0.240
True Value QC		0.100	0.300	2.50	0.250
% Recovery		98	98	97	96
Relative Percent Difference		2.8	3.1	2.8	2.6
METHODS: EPA 600/04-79-020		243.1	246.1	249.1	289.1

Chemist

11/19/98
Date

H3920-1.XLS

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page____ of____

Company Name:	SES, Inc.	BILL TO	PO #:
Project Manager:	D. Ike Brownlee	Company:	
Address:	703 E. Clinton, Suite 103	Attn:	
City:	Hobbs State: NM Zip: 88240	Address:	
Phone #:	397-0510	City:	
Fax #:		State: Zip:	
Project #:	Project Owner:	Phone #:	
Project Name:	Naomi Keenan	Fax #:	
Project Location:	Eunice		

FOR LAB USE ONLY				MATRIX							PRES.			SAMPLING		ANALYSIS REQUEST											
LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID:	ICE / COOL	OTHER :	DATE	TIME	WQCC standards	TPH											
H3920-1	Well #1		1	X							X		11/10	11:25	✓	✓											
-2	Well #2		1	X							X		11/10	11:25	✓	✓											
-3	Well #3		1	X							X		11/10	11:25	✓	✓											

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished:	Date: 11/10	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
	Time: 11:25		Fax Result: ☐ Yes ☐ No
Relinquished By:	Date:	Received By: (Lab Staff) Amy Hill	REMARKS: There you are; but where are you? 393-4386
	Time:		
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition Cool: ☒ Yes ☐ No Intact: ☒ Yes ☐ No	CHECKED BY: (Initials)

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

Safety & Environmental Solutions, Inc.

COPY

Chevron USA

Naomi Keenan
Monitor Well Report
Lea County, New Mexico

RECEIVED
JUL 26 1999
ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

June 28, 1999

Safety & Environmental Solutions, Inc.
703 E. Clinton Suite 103
Hobbs, New Mexico 88240
(505) 397-0510

TABLE OF CONTENTS

I. Background

The subject property is located in Unit O of Section 14, Township 21S Range37E in Lea County, New Mexico. Safety & Environmental Solutions, Inc. (SESI) performed sampling and data collection on the three (3) ground water monitor wells previously installed in November1998 at the site (See Vicinity Map). The casing size in all wells is 2".

II. Work Performed

On April 16, 1999, SESI environmental technician W. Dee Whatley arrived at the site. Ground water samples were taken from each well after a hand bailer was used to develop the wells. Three to five casing volumes of water were removed from each well until pH and temperature of the water were stabilized. The samples were obtained and placed in appropriate containers, preserved and transported under chain of custody to Cardinal Laboratories of Hobbs, New Mexico for analysis of the contaminants identified in the initial sampling of November 1998. (See Analytical Data)

In addition to the sampling, SESI also measured the depth to the top of the water table and the total depth of each well. The depth to the top of ground water was measured using a Solinst water level indicator. The total depth of each well was measured in order to compute the proper casing volumes. A summary of this data follows:

ID	Date	Depth to Water	Water Elevation	Free Product Thickness
MW – 1	4/16/99	50.18'	67.88'	0.00
MW – 2	4/16/99	48.12'	56.33'	0.00
MW – 3	4/16/99	49.26'	59.11'	0.00

III. Analytical Results

The analysis of the groundwater samples performed by Cardinal Laboratories are summarized as follows:

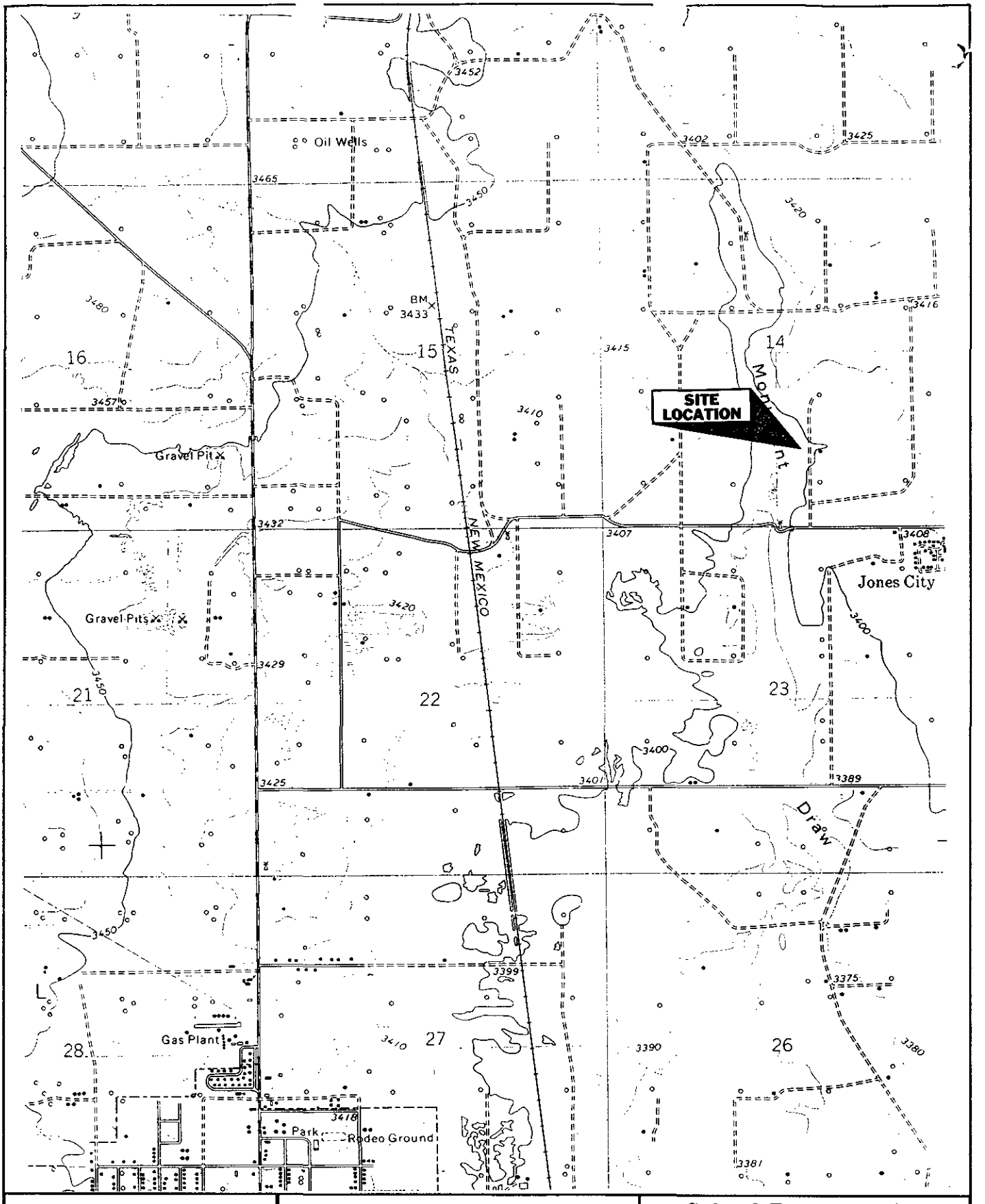
Contaminant	WQCC Standard	MW #1	MW #2	MW #3
Chloride	250.0 ppm	243ppm	275ppm	307ppm
Selenium	0.05 ppm	<.05ppm	<.05ppm	<.05ppm
TDS	1000 ppm	966ppm	1068ppm	1162ppm
Benzene	0.01 ppm	<.002ppm	<.002ppm	<.002ppm
Toluene	0.75 ppm	<.002ppm	<.002ppm	<.002ppm
Ethyl Benzene	0.75 ppm	<.002ppm	<.002ppm	<.002ppm
Total Xylenes	0.62 ppm	<.006ppm	<.006ppm	<.006ppm
TPH	N/A	<2.5ppm	<2.5ppm	<2.5ppm

IV. Figures and Appendices

Figures:
Vicinity Map

Appendices:
Analytical Results

Figure 1
Vicinity Map



Chevron USA	**Section 14 T24S, R29E Vicinity Map**	*Safety & Environmental Solutions, Inc. Hobbs, NM*

Appendix A
Analytical Results

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
701 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO:

Receiving Date: 04/16/99
Reporting Date: 04/22/99
Project Owner: CHEVRON
Project Name: CHEVRON STEVENS MONITOR WELLS
Project Location: NAOMI KEENAN (CHEVRON)

Sampling Date: 04/16/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: AH/GP

LAB NUMBER	SAMPLE ID	TDS (mg/L)	Cl (mg/L)	Se (mg/L)
ANALYSIS DATE		04/20/99	04/19/99	04/21/99
H4106-1	MW-#1	966	243	<0.05
H4106-2	MW-#2	1068	275	<0.05
H4106-3	MW-#3	1162	307	<0.05
Quality Control		NR	1255	0.051
True Value QC		NR	1319	0.05
% Accuracy		NR	95	102
Relative Percent Difference		1.2	1.0	4.6
METHODS: EPA 600/4-79-020		160.1	325.3	270.2

Chemist

4/22/99
Date

H4106B.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
701 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO:

Receiving Date: 04/16/99
Reporting Date: 04/17/99
Project Owner: CHEVRON
Project Name: CHEVRON STEVENS MONITOR WELLS
Project Location: NAOMI KEENAN (CHEVRON)

Sampling Date: 04/16/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC

LAB NO.	SAMPLE ID	TPH (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:		04/16/99	04/16/99	04/16/99	04/16/99	04/16/99
H4106-1	MW-#1	<2.5	<0.002	<0.002	<0.002	<0.006
H4106-2	MW-#2	<2.5	<0.002	<0.002	<0.002	<0.006
H4106-3	MW-#3	<2.5	<0.002	<0.002	<0.002	<0.006
Quality Control		3070	0.090	0.099	0.097	0.290
True Value QC		3000	0.100	0.100	0.100	0.300
% Recovery		102	89.5	99.3	97.3	96.6
Relative Percent Difference		2.2	2.3	0.5	5.1	3.3

METHODS: TRPHC - EPA SW-846 8015 M; BTEX - EPA SW-846 8260

Chemist

4/17/99
Date

H4106A.XLS

CARDINAL LABORATORIES, INC.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Page____ of____

Company Name: SESI	BILL TO PO #:
Project Manager: Doc Whitley	
Address:	Company:
City: State: Zip:	Attn:
Phone #: 397-0510	Address:
Fax #: 393-4388	City:
Project #: Project Owner: Chevron	State: Zip:
Project Name: Chevron Stevens Monitor Wells	Phone #:
Project Location: Naom, Keenan (Chevron)	Fax #:

FOR LAB USE ONLY				MATRIX						PRES.			SAMPLING		ANALYSIS REQUEST											
LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID:	ICE / COOL	OTHER :	DATE	TIME	TDS	Chlorides	Selenium	TPH 8015	BTEX							
H4106-1	MW-#1		3	✓							✓		4-16-99		✓	✓	✓	✓	✓							
-2	MW-#2		3	✓							✓		" "		✓	✓	✓	✓	✓							
-3	MW-#3		3	✓							✓		" "		✓	✓	✓	✓	✓							

Sampler Relinquished:	Date: 4/16/99	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
	Time: 11:48am		Fax Result: ☐ Yes ☐ No
Relinquished By:	Date:	Received By: (Lab Staff)	REMARKS:
	Time:		
Delivered By: (Circle One)	Sample Condition Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other:			

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

Safety & Environmental Solutions, Inc.

Chevron USA

Naomi Keenan
Monitor Well Report
Lea County, New Mexico

July 28, 1999

Safety & Environmental Solutions, Inc.
703 E. Clinton Suite 103
Hobbs, New Mexico 88240
(505) 397-0510

TABLE OF CONTENTS

I. Background

The subject property is located in Unit O of Section 14, Township 21S Range37E in Lea County, New Mexico. Safety & Environmental Solutions, Inc. (SESI) performed sampling and data collection on the three (3) ground water monitor wells previously installed in November1998 at the site (See Vicinity Map). The casing size in all wells is 2".

II. Work Performed

On July 13, 1999, SESI environmental technician W. Dee Whatley arrived at the site. Ground water samples were taken from each well after a hand bailer was used to develop the wells. Three to five casing volumes of water were removed from each well until pH and temperature of the water were stabilized. The water that was removed was placed in appropriate drums for disposal. The samples were obtained and placed in appropriate containers, preserved and transported under chain of custody to Cardinal Laboratories of Hobbs, New Mexico for analysis of the contaminants identified in the initial sampling of November 1998. (See Analytical Data)

In addition to the sampling, SESI also measured the depth to the top of the water table and the total depth of each well. The depth to the top of ground water was measured using a Solinst water level indicator. The total depth of each well was measured in order to compute the proper casing volumes.

A summary of this data follows:

ID	Date	Depth to Water	Total Well Depth	Free Product Thickness
MW – 1	7/13/99	50.38'	67.88'	0.00
MW – 2	7/13/99	48.32'	56.33'	0.00
MW – 3	7/13/99	49.46'	59.11'	0.00

III. Analytical Results

The analysis of the groundwater samples performed by Cardinal Laboratories are summarized as follows:

Contaminant	WQCC Standard	MW #1	MW #2	MW #3
Chloride	250.0 ppm	239ppm	279ppm	331ppm
Selenium	0.05 ppm	<.05ppm	<.05ppm	<.05ppm
TDS	1000 ppm	968ppm	1073ppm	1230ppm
Benzene	0.01 ppm	<.002ppm	<.002ppm	<.002ppm
Toluene	0.75 ppm	<.002ppm	<.002ppm	<.002ppm

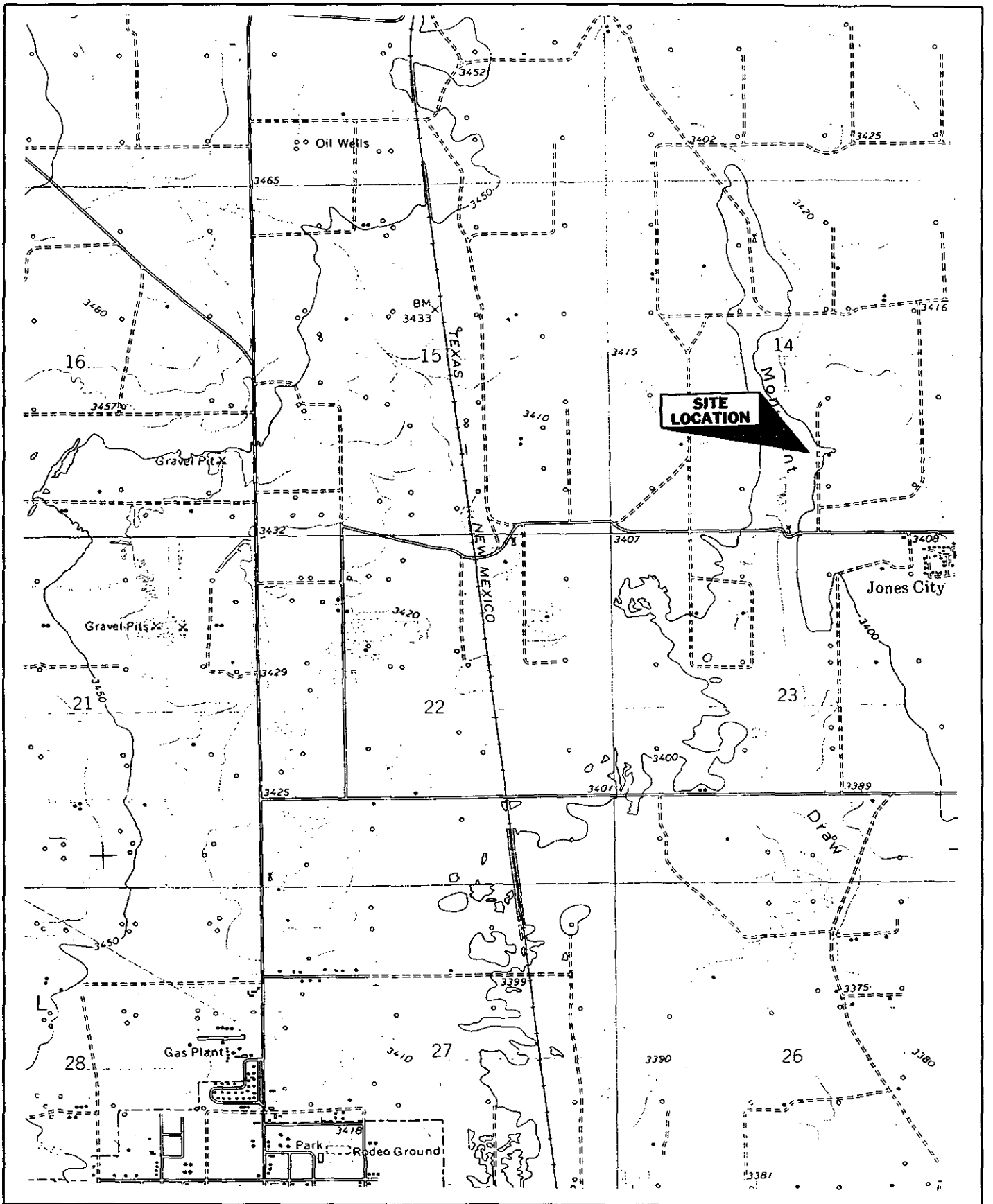
Ethyl Benzene	0.75 ppm	<.002ppm	<.002ppm	<.002ppm
Total Xylenes	0.62 ppm	<.006ppm	<.006ppm	<.006ppm
TPH	N/A	<10ppm	<10ppm	<10ppm

IV. Figures and Appendices

Figures:
Vicinity Map

Appendices:
Analytical Results

Figure 1
Vicinity Map



Chevron USA	**Section 14, T21S, R37E Vicinity Map**	*Safety & Environmental Solutions, Inc. Hobbs, NM*

Appendix A
Analytical Results

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 07/13/99
Reporting Date: 07/14/99
Project Owner: NOT GIVEN
Project Name: NOT GIVEN
Project Location: CHEVRON STEVENS

Sampling Date: 07/13/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH/GP

LAB NUMBER	SAMPLE ID	Cl (mg/L)	TDS (mg/L)	Se (mg/L)
ANALYSIS DATE		07/13/99	07/13/99	07/13/99
H4230-1	MW-1	239	968	<0.05
H4230-2	MW-2	279	1073	<0.05
H4230-3	MW-3	331	1230	<0.05
Quality Control		1295	NR	0.0451
True Value QC		1319	NR	0.0500
% Recovery		98.2	NR	90.2
Relative Percent Difference		2.3	0.4	2.3

METHODS:				
METHODS: EPA 600/4-79-020		4500-Cl B*	160.1	270.2

*Std. Methods

Chemist

07/14/99
Date

H4230B.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 07/13/99
Reporting Date: 07/14/99
Project Owner: NOT GIVEN
Project Name: NOT GIVEN
Project Location: CHEVRON STEVENS

Sampling Date: 07/13/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NUMBER	SAMPLE ID	GRO (C6-C10) (mg/L)	DRO (>C10-C28) (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:		07/13/99	07/13/99	07/13/99	07/13/99	07/13/99	07/13/99
H4230-1	MW-1	<5.0	<5.0	<0.002	<0.002	<0.002	<0.006
H4230-2	MW-2	<5.0	<5.0	<0.002	<0.002	<0.002	<0.006
H4230-3	MW-3	<5.0	<5.0	<0.002	<0.002	<0.002	<0.006
Quality Control		56.4	55.5	0.086	0.098	0.098	0.299
True Value QC		60.0	60.0	0.100	0.100	0.100	0.300
% Recovery		93.9	92.5	86.3	98.4	98.3	99.7
Relative Percent Difference		4.8	11.5	1.5	4.2	6.5	4.3

METHODS: TPH(GRO & DRO) - EPA SW-846 8015 M; BTEX/MTBE-EPA SW-846 8260

Burgess J. A. Cooke, Ph. D.

7/14/99
Date

H4230A.XLS

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240
(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page____ of ____

Company Name:	SESI	BILL TO	PO #:
Project Manager:	Doc Whatley	Company:	
Address:		Attn:	
City:	State: Zip:	Address:	
Phone #:		City:	
Fax #:		State:	Zip:
Project #:	Project Owner:	Phone #:	
Project Name:		Fax #:	
Project Location:	Chevron Stevens		

FOR LAB USE ONLY				MATRIX							PRES.			SAMPLING		ANALYSIS REQUEST													
LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID:	ICE / COOL	OTHER:	DATE	TIME	Chlorides	Selenium	TDS	BTEX	TPH - 8015M - Chevron Chemistry										
H4230-1	MW-1	✓	2	✓							✓		7-13-99	7:00 AM	✓	✓	✓	✓	✓										
-2	MW-2	✓	2	✓							✓		7-13-99	7:00 AM	✓	✓	✓	✓	✓										
-3	MW-3	✓	2	✓							✓		7-13-99	7:30 AM	✓	✓	✓	✓	✓										

Sampler Relinquished:	Date: 7-13-99	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
	Time: 7:00 AM		Fax Result: ☐ Yes ☐ No
Relinquished By:	Date: 7/13/99	Received By: (Lab Staff)	REMARKS:
	Time: 9:20		
Delivered By: (Circle One)	Sample Condition: Cool ☒ Yes ☐ No; Intact ☒ Yes ☐ No	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other:			

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

Safety & Environmental Solutions, Inc.

COPY

Chevron USA

Naomi Keenan
Monitor Well Report
Lea County, New Mexico

September 28, 1999

RECEIVED
DEC 2 1 1999
Environmental Bureau
Oil Conservation Division

Safety & Environmental Solutions, Inc.
703 E. Clinton Suite 103
Hobbs, New Mexico 88240
(505) 397-0510

TABLE OF CONTENTS

I. Background

The subject property is located in Unit O of Section 14, Township 21S Range37E in Lea County, New Mexico. Safety & Environmental Solutions, Inc. (SESI) performed sampling and data collection on the three (3) ground water monitor wells previously installed in November1998 at the site (See Vicinity Map). The casing size in all wells is 2".

II. Work Performed

On September 23, 1999, SESI environmental technician W. Dee Whatley arrived at the site. Ground water samples were taken from each well after a hand bailer was used to develop the wells. Three to five casing volumes of water were removed from each well until pH and temperature of the water were stabilized. The water that was removed was placed in appropriate drums for disposal. The samples were obtained and placed in appropriate containers, preserved and transported under chain of custody to Cardinal Laboratories of Hobbs, New Mexico for analysis of the Major Cations & Anions, and Benzene, Toluene, Ethyl Benzene and Total Xylenes (BTEX). (See Analytical Data)

In addition to the sampling, SESI also measured the depth to the top of the water table and the total depth of each well. The depth to the top of ground water was measured using a Solinst water level indicator. The total depth of each well was measured in order to compute the proper casing volumes.

A summary of this data follows:

ID	Date	Depth to Water	Total Well Depth	Free Product Thickness
MW – 1	9/23/99	50.19'	67.88'	0.00
MW – 2	9/23/99	48.13'	56.33'	0.00
MW – 3	9/23/99	49.29'	59.11'	0.00

III. Analytical Results

The analysis of the groundwater samples performed by Cardinal Laboratories are summarized as follows:

Contaminant	WQCC Standard	MW #1	MW #2	MW #3
Chloride	250.0 ppm	243ppm	288ppm	341ppm
Selenium	0.05 ppm	<.05ppm	<.05ppm	<.05ppm
TDS	1000 ppm	958ppm	1060ppm	1169ppm
Benzene	0.01 ppm	<.002ppm	<.002ppm	<.002ppm
Toluene	0.75 ppm	<.002ppm	<.002ppm	<.002ppm

Ethyl Benzene	0.75 ppm	<.002ppm	<.002ppm	<.002ppm
Total Xylenes	0.62 ppm	<.006ppm	<.006ppm	<.006ppm
TPH	N/A	<1.0ppm	44.1ppm	3.55ppm

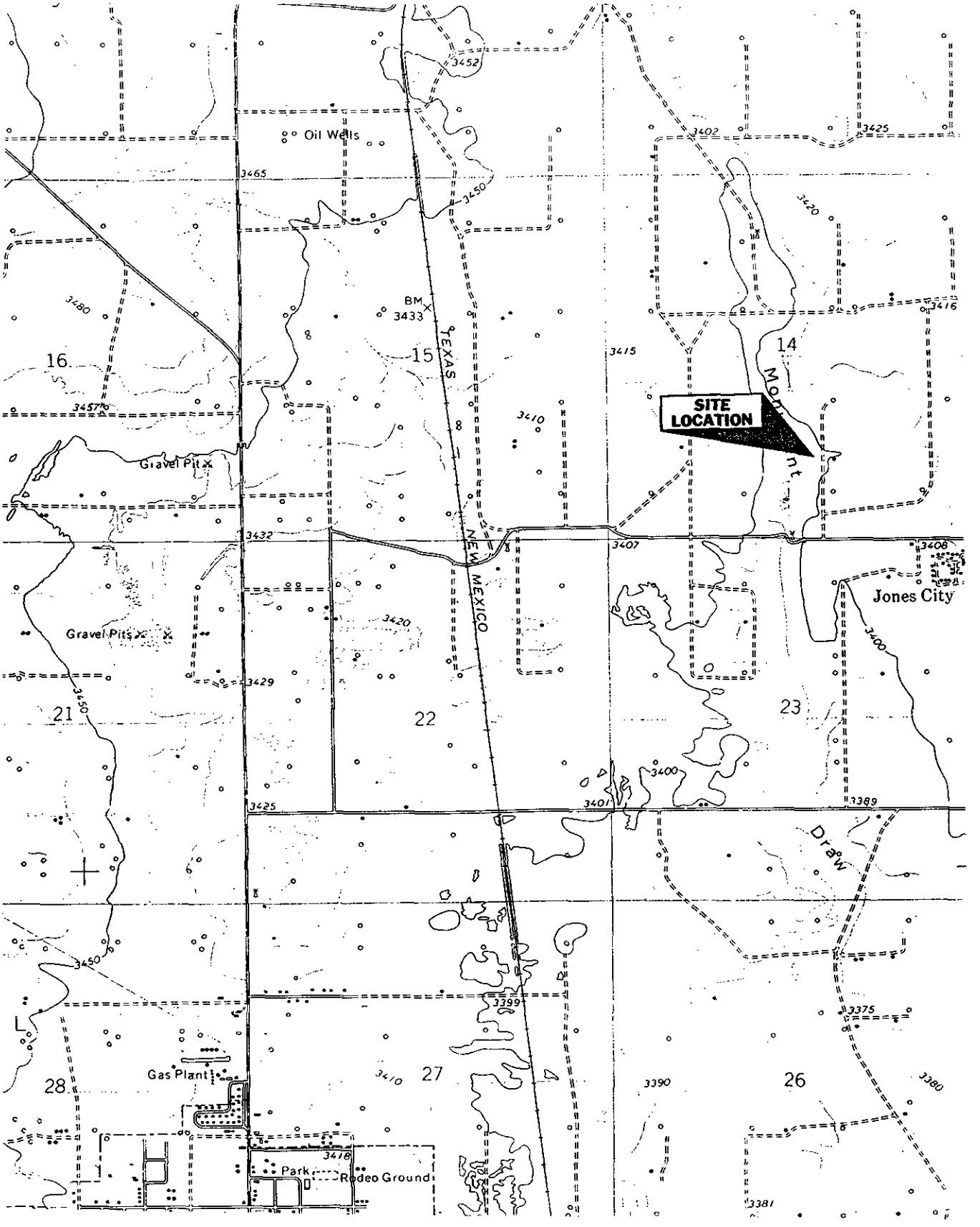
SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	CO_3 (mg/L)	SO_4 (mg/L)	HCO_3 (mg/L)
MW – 1	150	94	32	6.91	0	176	215
MW – 2	170	102	31	5.12	0	200	176
MW – 3	181	109	39	6.0	0	197	181

IV. Figures and Appendices

Figures:
Vicinity Map
Potentiometric Map

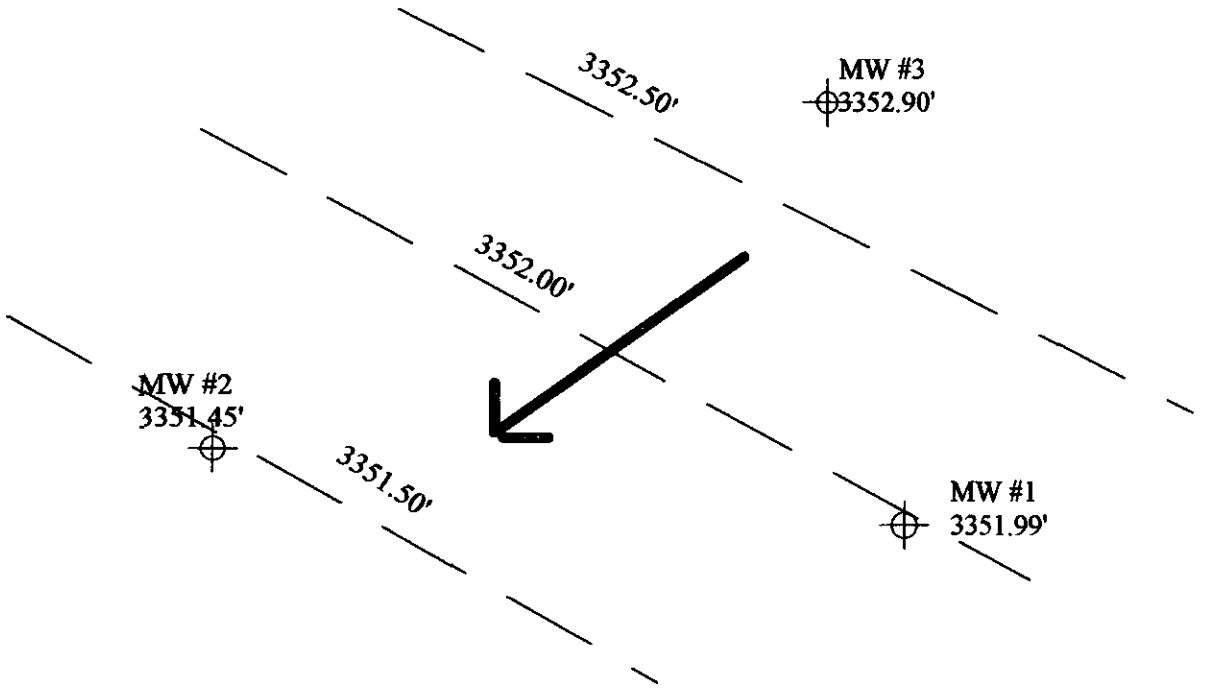
Appendices:
Cumulative Well Data
Analytical Results

Figure 1
Vicinity Map



Chevron USA	**Section 14, T21S, R37E Vicinity Map**	*Safety & Environmental Solutions, Inc. Hobbs, NM*

Figure 2
Potentiometric Map



Chevron USA
Potentiometric Surface Map

Naomi Keenan Site
Lea County, New Mexico

September 28, 1999

Scale: 1" = 50'

Appendix A
Cumulative Well Data

Monitor Well #1

Contaminant	WQCC Standard	11/10/98 Initial test	4/16/99 Quarterly Test	7/13/99 Quarterly Test	9/23/99 Quarterly Test
Chloride	250.0 ppm	313ppm	243ppm	239ppm	239ppm
Selenium	0.05 ppm	0.08ppm	<.05ppm	<.05ppm	<.05ppm
TDS	1000 ppm	1045ppm	966ppm	968ppm	968ppm
Benzene	0.01 ppm	0.008ppm	<.002ppm	<.002ppm	<.002ppm
Toluene	0.75 ppm	0.023ppm	<.002ppm	<.002ppm	<.002ppm
E. Benzene	0.75 ppm	0.016ppm	<.002ppm	<.002ppm	<.002ppm
Total Xylenes	0.62 ppm	0.027ppm	<.006ppm	<.006ppm	<.006ppm
TPH	N/A	88.9ppm	<2.5ppm	<10ppm	<1.0ppm
Sodium	N/A	184ppm			150ppm
Calcium	N/A	69ppm			94ppm
Magnesium	N/A	36ppm			32ppm
Potassium	N/A	14.10ppm			6.91ppm
Conductivity	N/A	1805ppm			1410ppm
T-Alkalinity	N/A	168ppm			176ppm
CO_3	N/A	0ppm			0ppm
HCO_3	N/A	205ppm			215ppm
pH	>6-9<	7.74ppm			7.47
Sulfate	600 ppm	124ppm			176ppm

Monitor Well #2

Contaminant	WQCC Standard	11/10/98 Initial Test	4/16/99 Quarterly Test	7/13/99 Quarterly Test	9/23/99 Quarterly Test
Chloride	250.0 ppm	294ppm	275ppm	279ppm	288ppm
Selenium	0.05 ppm	0.12ppm	<.05ppm	<.05ppm	<.05ppm
TDS	1000 ppm	1030ppm	1068ppm	1073ppm	1060ppm
Benzene	0.01 ppm	0.007ppm	<.002ppm	<.002ppm	<.002ppm
Toluene	0.75 ppm	0.024ppm	<.002ppm	<.002ppm	<.002ppm
E. Benzene	0.75 ppm	0.021ppm	<.002ppm	<.002ppm	<.002ppm
Total Xylenes	0.62 ppm	0.039ppm	<.006ppm	<.006ppm	<.006ppm
TPH	N/A	64.9ppm	<2.5ppm	<10ppm	44.1ppm
Sodium	N/A	125ppm			170ppm
Calcium	N/A	85ppm			102ppm
Magnesium	N/A	47ppm			31ppm
Potassium	N/A	8.35ppm			5.12ppm
Conductivity	N/A	1814ppm			1541ppm
T-Alkalinity	N/A	144ppm			144ppm
CO_3	N/A	0ppm			0ppm
HCO_3	N/A	176ppm			176ppm
pH	>6-9<	7.69			7.53
Sulfate	600 ppm	124ppm			200ppm

Monitor Well #3

Contaminant	WQCC Standard	11/10/98 Initial Test	4/16/99 Quarterly Test	7/13/99 Quarterly Test	9/23/99 Quarterly Test
Chloride	250.0 ppm	333ppm	307ppm	331ppm	341ppm
Selenium	0.05 ppm	0.13ppm	<.05ppm	<.05ppm	<.05ppm
TDS	1000 ppm	1118ppm	1162ppm	1230ppm	1169ppm
Benzene	0.01 ppm	0.006ppm	<.002ppm	<.002ppm	<.002ppm
Toluene	0.75 ppm	0.022ppm	<.002ppm	<.002ppm	<.002ppm
E. Benzene	0.75 ppm	0.019ppm	<.002ppm	<.002ppm	<.002ppm
Total Xylenes	0.62 ppm	0.034ppm	<.006ppm	<.006ppm	<.006ppm
TPH	N/A	28.4ppm	<2.5ppm	<10ppm	3.55ppm
Sodium	N/A	136ppm			181ppm
Calcium	N/A	91ppm			109ppm
Magnesium	N/A	49ppm			39ppm
Potassium	N/A	10.11ppm			6.00ppm
Conductivity	N/A	1969ppm			1635ppm
T-Alkalinity	N/A	140ppm			148ppm
CO_3	N/A	0ppm			0ppm
HCO_3	N/A	205ppm			181ppm
pH	>6-9<	7.74ppm			7.50
Sulfate	600 ppm	124ppm			197ppm

Appendix B
Analytical Results

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 09/23/99
Reporting Date: 09/29/99
Project Number: NOT GIVEN
Project Name: STEVENS
Project Location: NAOMI KEENAN

Analysis Date: 09/28/99
Sampling Date: 09/23/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: GP

LAB NUMBER	SAMPLE ID	Se (ppm)
H4358-1	MW #1	<0.05
H4358-2	MW #2	<0.05
H4358-3	MW #3	<0.05
Quality Control		0.050
True Value QC		0.050
% Recovery		100
Relative Percent Difference		7.1

METHOD: EPA 600/4-79-020 270.2

Chemist

09/29/99
Date

H4358SE.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 09/23/99
Reporting Date: 09/28/99
Project Number: NOT GIVEN
Project Name: STEVENS
Project Location: NAOMI KEENAN

Sampling Date: 09/23/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC/GP/JP

LAB NO.	SAMPLE ID	TPH (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:		09/27/99	09/23/99	09/23/99	09/23/99	09/23/99
H4358-1	MW #1	<1.0	<0.002	<0.002	<0.002	<0.006
H4358-2	MW #2	44.1	<0.002	<0.002	<0.002	<0.006
H4358-3	MW #3	3.55	<0.002	<0.002	<0.002	<0.006
Quality Control		41.3	0.095	0.094	0.093	0.288
True Value QC		40.0	0.100	0.100	0.100	0.300
% Recovery		103	94.8	94.3	92.9	96.0
Relative Percent Difference		0.6	2.9	6.0	6.7	4.5

METHODS: TRPHC - EPA 600/4-79-020, 418.1; BTEX - EPA SW-846 8260

Chemist

9/28/99
Date

H4358A.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 09/23/99
Reporting Date: 09/27/99
Project Number: NOT GIVEN
Project Name: STEVENS
Project Location: NAOMI KEENAN

Sampling Date: 09/23/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (u mhos/cm)	T-Alkalinity ($mgCaCO_3/L$)
ANALYSIS DATE:		09/24/99	09/24/99	09/24/99	09/24/99	09/24/99	09/24/99
H4358-1	MW #1	150	94	32	6.91	1410	176
H4358-2	MW #2	170	102	31	5.12	1541	144
H4358-3	MW #3	181	109	39	6.00	1635	148
Quality Control		NR	48	49	4.96	1443	NR
True Value QC		NR	50	50	5.00	1413	NR
% Accuracy		NR	96	98	99	102	NR
Relative Percent Difference		NR	6.3	5.1	0	0.4	NR
METHODS:			SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER	SAMPLE ID	Cl^- (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		09/24/99	09/24/99	09/24/99	09/24/99	09/24/99	09/25/99
H4358-1	MW #1	243	176	0	215	7.47	958
H4358-2	MW #2	288	200	0	176	7.53	1060
H4358-3	MW #3	341	197	0	181	7.50	1169
Quality Control		973	47.47	112	221	7.00	NR
True Value QC		1000	50.00	124	259	7.00	NR
% Accuracy		97	94.9	90.3	85.4	100	NR
Relative Percent Difference		5.2	5.2	-	-	1.4	NR
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Chemist

09/29/99
Date

H4358B.XLS

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020

101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Page____ of____

Company Name: SESI	BILL TO PO #:
Project Manager: Dee Ulstly	Company: SAME
Address: 703 E. CLINTON, #103	Attn:
City: HOBBS State: NM Zip: 88240	Address:
Phone #: (505) 397-0510	City:
Fax #: (505) 393-4388	State: Zip:
Project #: Project Owner:	Phone #:
Project Name: STEVENS	Fax #:
Project Location: Naomi, NM	

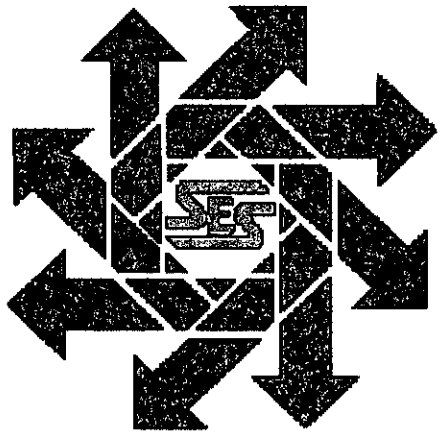
FOR LAB USE ONLY LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRES.: ACID:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	ANALYSIS REQUEST: BTEX	TPH 418	Cations + Anions	Selenium
H4358-1	MW #1		4	✓							✓		9-23-99	3:35pm	✓	✓	✓	✓
-2	MW #2		4	✓							✓		9-23-99		✓	✓	✓	✓
-3	MW #3		3	✓							✓		9-23-99		✓	✓	✓	✓

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished:	Date: 9-23-99	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
	Time: 3:35pm		Fax Result: ☐ Yes ☐ No
			REMARKS:
Relinquished By:	Date: 9/23/99	Received By: (Lab Staff)	
	Time: 3:40		
Delivered By: (Circle One)	Sample Condition: Cool ☒ Yes ☐ No / Intact ☐ Yes ☐ No	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other:			

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.



Chevron USA

Naomi Keenan
Monitor Well Report
Lea County, New Mexico

For Year Ending December 31, 1999

Safety & Environmental Solutions, Inc.
703 E. Clinton Suite 103
Hobbs, New Mexico 88240

TABLE OF CONTENTS

I. Background

The subject property is located in Unit O of Section 14, Township 21S Range37E in Lea County, New Mexico. Safety & Environmental Solutions, Inc. (SESI) performed sampling and data collection on the three (3) ground water monitor wells previously installed in November1998 at the site (See Vicinity Map). The casing size in all wells is 2".

II. Work Performed

Beginning in April of 1999, SESI personnel performed monitor well sampling at the site on a quarterly basis. Ground water samples were taken from each well after a hand bailer was used to develop the wells. Three to five casing volumes of water were removed from each well until pH and temperature of the water were stabilized. The water that was removed was placed in appropriate drums for disposal. The samples were obtained and placed in appropriate containers, preserved and transported under chain of custody to Cardinal Laboratories of Hobbs, New Mexico. The samples were analyzed for Total Petroleum Hydrocarbons (TPH), Selenium, Major Cations & Anions, and Benzene, Toluene, Ethyl Benzene and Total Xylenes (BTEX) based upon the initial well sampling results when the wells were installed. (See Analytical Data)

In addition to the sampling, SESI also measured the depth to the top of the water table and the total depth of each well. The depth to the top of ground water was measured using a Solinst water level indicator. The total depth of each well was measured in order to compute the proper casing volumes. (See Cumulative Water Elevation Data)

III. Summary

The analysis of the groundwater samples performed by Cardinal Laboratories throughout the test period indicate only elevated levels of Total Dissolved Solids (TDS) and Chlorides in Monitor Wells #2 and #3 for the entire test period. Testing in the fourth quarter of 1999 also indicated **slightly** elevated levels of Chloride in Monitor Well #1, 256ppm with a limit of 250ppm allowable. No evidence of other contaminates tested for from the initial sampling was found.

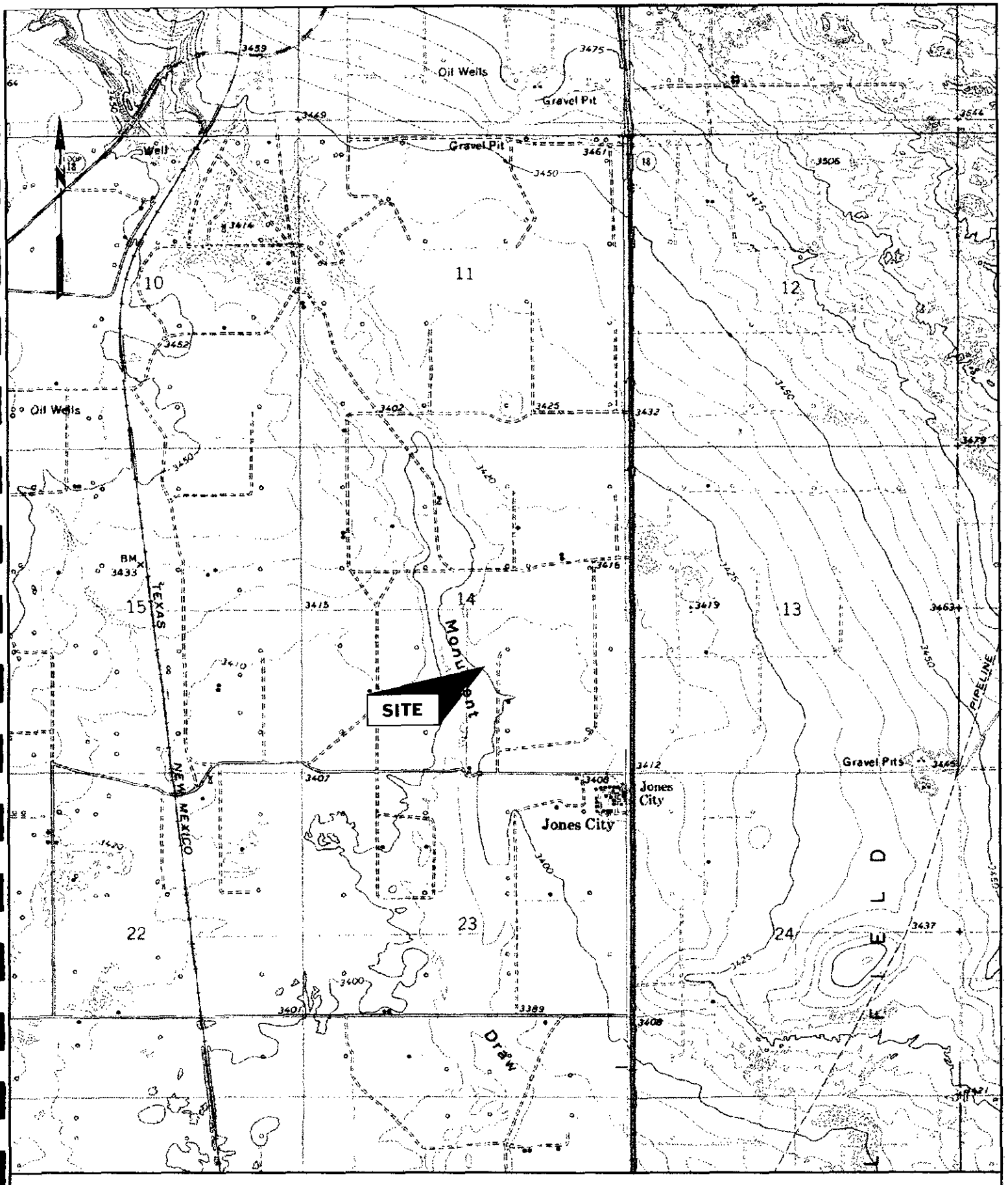
The ground water elevations indicate flow to be in the southwesterly direction throughout the test period.

IV. Figures and Appendices

Figures:
Vicinity Map
Potentiometric Maps

Appendices:
Cumulative Water Elevation Data
Cumulative Well Data
Analytical Results

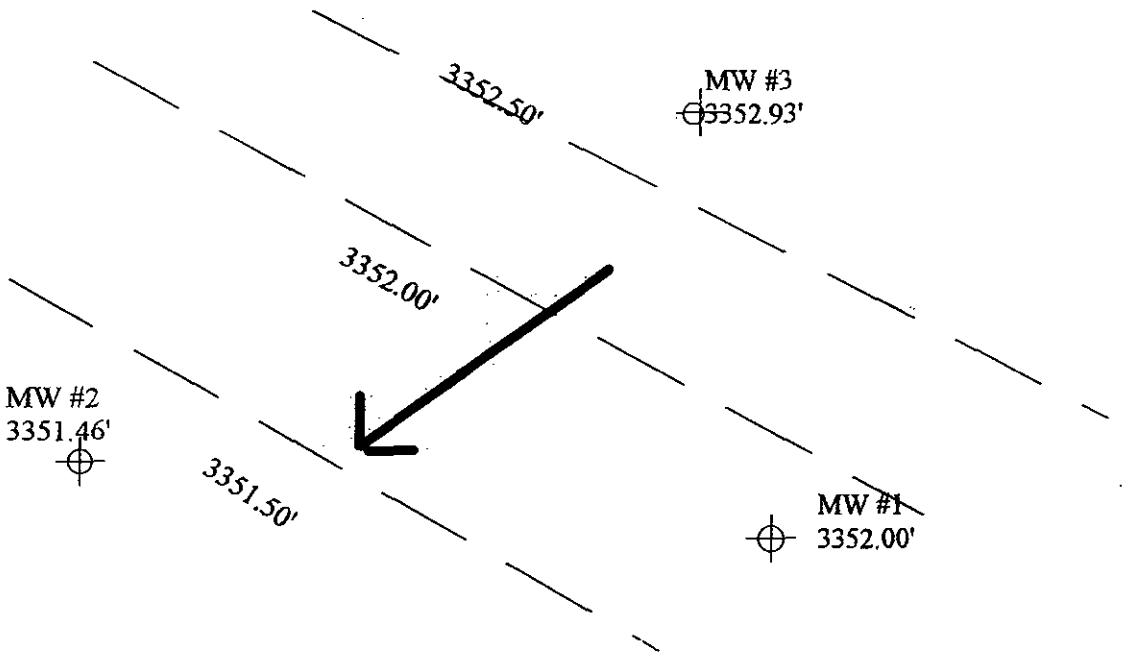
Figure 1
Vicinity Map



Name: EUNICE
Date: 3/31/100
Scale: 1 inch equals 2000 feet

Location: 032° 28' 46.9" N 103° 07' 52.8" W
Caption: Chevron Naomi Keenan Vicinity Map

Figure 2
Potentiometric Maps

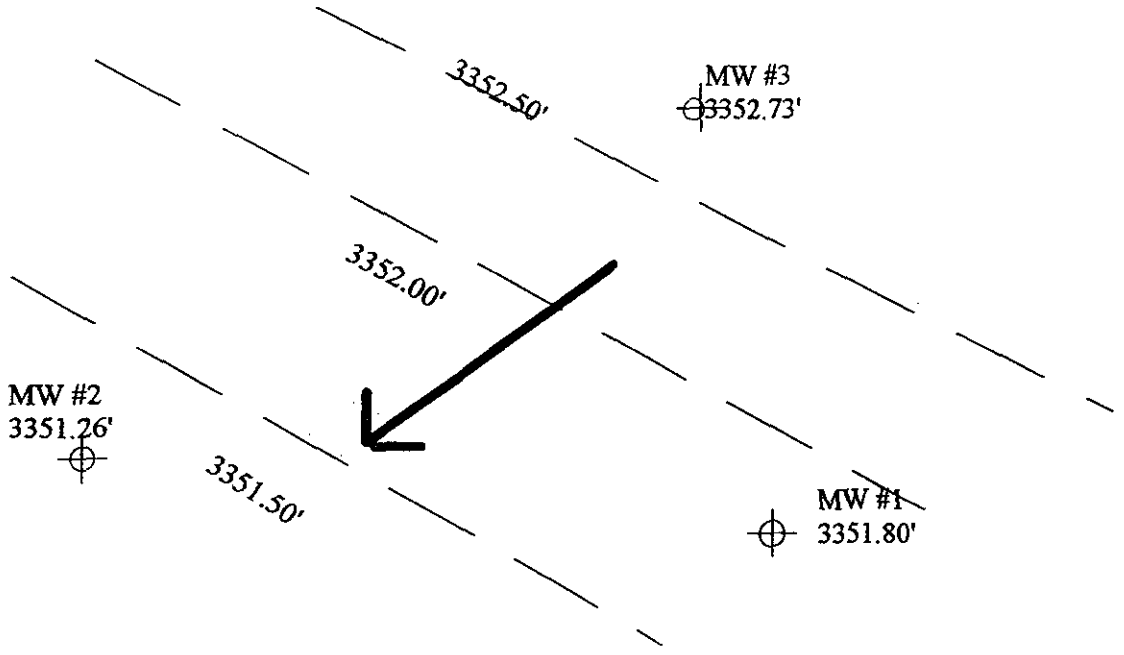


Chevron USA
Potentiometric Surface Map

Naomi Keenan Site
Lea County, New Mexico

April 16, 1999

Scale: 1" = 50'

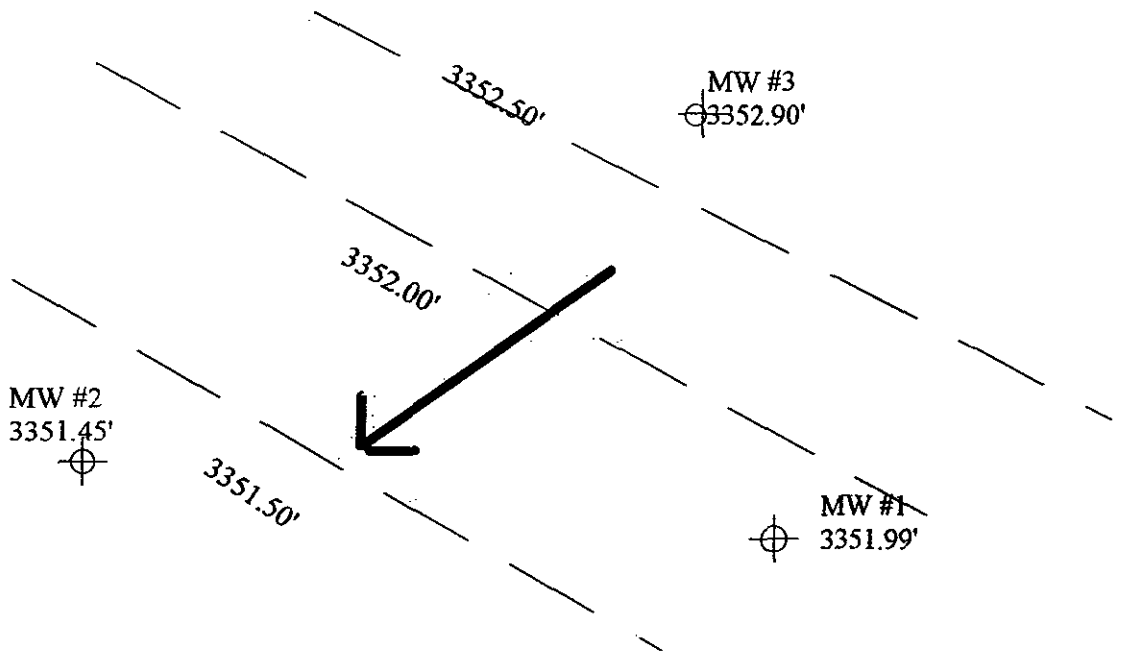


Chevron USA
Potentiometric Surface Map

Naomi Keenan Site
Lea County, New Mexico

July 13, 1999

Scale: 1" = 50'

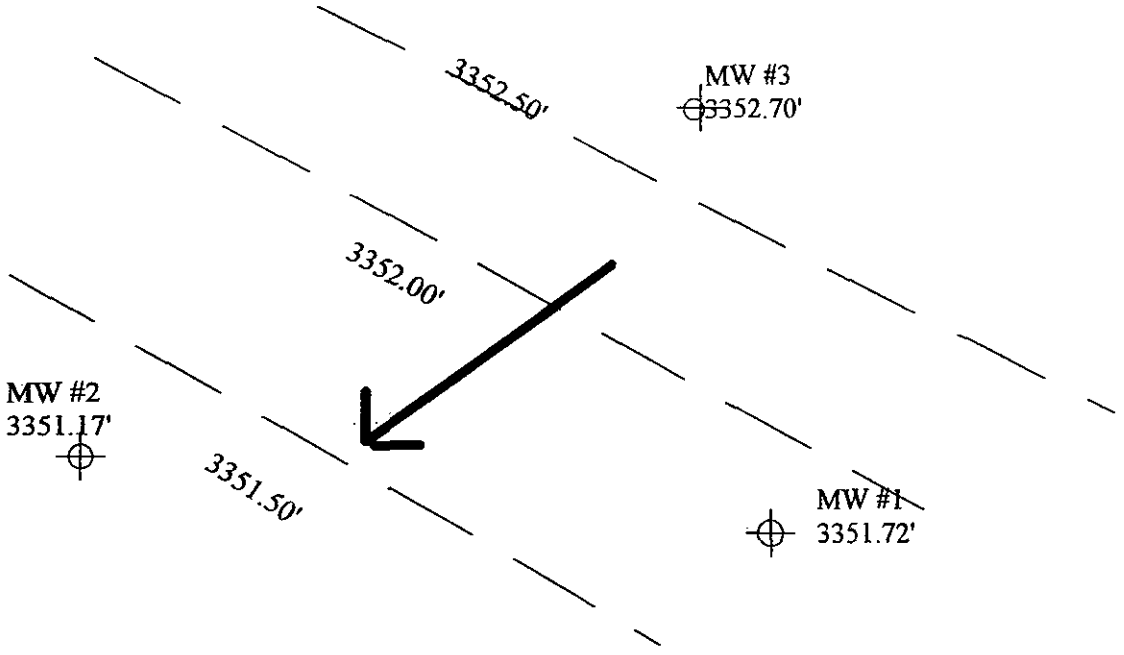


Chevron USA
Potentiometric Surface Map

Naomi Keenan Site
Lea County, New Mexico

September 28, 1999

Scale: 1" = 50'



Chevron USA
Potentiometric Surface Map

Naomi Keenan Site
Lea County, New Mexico

December 6, 1999

Scale: 1" = 50'

Appendix A
Cumulative Water Elevation Data

Naomi Keenan Cumulative Water Elevation Data

Monitor Well	Casing Elevation	Elevation 4/16/99	Elevation 7/13/99	Elevation 9/23/99	Elevation 12/6/99
#1	3402.18'	3352.0'	3351.80'	3351.99'	3351.72'
#2	3399.58'	3351.46'	3351.26'	3351.45'	3351.17'
#3	3402.19'	3352.93'	3352.73'	3352.90'	3352.70'

Appendix B
Cumulative Well Data

Naomi Keenan Cumulative Monitor Well Data

Monitor Well #1

Contaminant	WQCC Standard	11/10/98 Initial test	4/16/99 Quarterly Test	7/13/99 Quarterly Test	9/23/99 Quarterly Test	12/6/99 Quarterly Test
Chloride	250.0 ppm	313ppm	243ppm	239ppm	239ppm	256ppm
Selenium	0.05 ppm	0.08ppm	<.05ppm	<.05ppm	<.05ppm	<.05ppm
TDS	1000 ppm	1045ppm	966ppm	968ppm	968ppm	971ppm
Benzene	0.01 ppm	0.008ppm	<.002ppm	<.002ppm	<.002ppm	<.002ppm
Toluene	0.75 ppm	0.023ppm	<.002ppm	<.002ppm	<.002ppm	<.002ppm
E. Benzene	0.75 ppm	0.016ppm	<.002ppm	<.002ppm	<.002ppm	<.002ppm
Total Xylenes	0.62 ppm	0.027ppm	<.006ppm	<.006ppm	<.006ppm	<.006ppm
TPH	N/A	88.9ppm	<2.5ppm	<10ppm	<1.0ppm	<1.0ppm
Sodium	N/A	184ppm			150ppm	87ppm
Calcium	N/A	69ppm			94ppm	96ppm
Magnesium	N/A	36ppm			32ppm	34ppm
Potassium	N/A	14.10ppm			6.91ppm	8ppm
Conductivity	N/A	1805ppm			1410ppm	1478ppm
T-Alkalinity	N/A	168ppm			176ppm	172ppm
CO_3	N/A	0ppm			0ppm	0ppm
HCO_3	N/A	205ppm			215ppm	210ppm
pH	>6-9<	7.74ppm			7.47	7.50
Sulfate	600 ppm	124ppm			176ppm	45ppm

Monitor Well #2

Contaminant	WQCC Standard	11/10/98 Initial Test	4/16/99 Quarterly Test	7/13/99 Quarterly Test	9/23/99 Quarterly Test	12/6/99 Quarterly Test
Chloride	250.0 ppm	294ppm	275ppm	279ppm	288ppm	292ppm
Selenium	0.05 ppm	0.12ppm	<.05ppm	<.05ppm	<.05ppm	<.05ppm
TDS	1000 ppm	1030ppm	1068ppm	1073ppm	1060ppm	1055ppm
Benzene	0.01 ppm	0.007ppm	<.002ppm	<.002ppm	<.002ppm	<.002ppm
Toluene	0.75 ppm	0.024ppm	<.002ppm	<.002ppm	<.002ppm	<.002ppm
E. Benzene	0.75 ppm	0.021ppm	<.002ppm	<.002ppm	<.002ppm	<.002ppm
Total Xylenes	0.62 ppm	0.039ppm	<.006ppm	<.006ppm	<.006ppm	<.006ppm
TPH	N/A	64.9ppm	<2.5ppm	<10ppm	44.1ppm	<1.0ppm
Sodium	N/A	125ppm			170ppm	104ppm
Calcium	N/A	85ppm			102ppm	112ppm
Magnesium	N/A	47ppm			31ppm	39ppm
Potassium	N/A	8.35ppm			5.12ppm	7ppm
Conductivity	N/A	1814ppm			1541ppm	1576ppm
T-Alkalinity	N/A	144ppm			144ppm	148ppm
CO_3	N/A	0ppm			0ppm	0ppm
HCO_3	N/A	176ppm			176ppm	181ppm
pH	>6-9<	7.69			7.53	7.68
Sulfate	600 ppm	124ppm			200ppm	52ppm

Monitor Well #3

Contaminant	WQCC Standard	11/10/98 Initial Test	4/16/99 Quarterly Test	7/13/99 Quarterly Test	9/23/99 Quarterly Test	12/6/99 Quarterly Test
Chloride	250.0 ppm	333ppm	307ppm	331ppm	341ppm	351ppm
Selenium	0.05 ppm	0.13ppm	<.05ppm	<.05ppm	<.05ppm	<.05ppm
TDS	1000 ppm	1118ppm	1162ppm	1230ppm	1169ppm	1170ppm
Benzene	0.01 ppm	0.006ppm	<.002ppm	<.002ppm	<.002ppm	<.002ppm
Toluene	0.75 ppm	0.022ppm	<.002ppm	<.002ppm	<.002ppm	<.002ppm
E. Benzene	0.75 ppm	0.019ppm	<.002ppm	<.002ppm	<.002ppm	<.002ppm
Total Xylenes	0.62 ppm	0.034ppm	<.006ppm	<.006ppm	<.006ppm	<.006ppm
TPH	N/A	28.4ppm	<2.5ppm	<10ppm	3.55ppm	<1.0ppm
Sodium	N/A	136ppm			181ppm	104ppm
Calcium	N/A	91ppm			109ppm	120ppm
Magnesium	N/A	49ppm			39ppm	37ppm
Potassium	N/A	10.11ppm			6.00ppm	8ppm
Conductivity	N/A	1969ppm			1635ppm	1724ppm
T-Alkalinity	N/A	140ppm			148ppm	140ppm
CO_3	N/A	0ppm			0ppm	0ppm
HCO_3	N/A	205ppm			181ppm	171ppm
pH	>6-9<	7.74ppm			7.50	7.62
Sulfate	600 ppm	124ppm			197ppm	52ppm

Appendix C
Analytical Results

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
701 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO:

Receiving Date: 04/16/99
Reporting Date: 04/22/99
Project Owner: CHEVRON
Project Name: CHEVRON STEVENS MONITOR WELLS
Project Location: NAOMI KEENAN (CHEVRON)

Sampling Date: 04/16/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: AH/GP

LAB NUMBER	SAMPLE ID	TDS (mg/L)	Cl (mg/L)	Se (mg/L)
ANALYSIS DATE		04/20/99	04/19/99	04/21/99
H4106-1	MW-#1	966	243	<0.05
H4106-2	MW-#2	1068	275	<0.05
H4106-3	MW-#3	1162	307	<0.05
Quality Control		NR	1255	0.051
True Value QC		NR	1319	0.05
% Accuracy		NR	95	102
Relative Percent Difference		1.2	1.0	4.6

METHODS: EPA 600/4-79-020	160.1	325.3	270.2

Chemist

4/22/99
Date

H4106B.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
701 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO:

Receiving Date: 04/16/99
Reporting Date: 04/17/99
Project Owner: CHEVRON
Project Name: CHEVRON STEVENS MONITOR WELLS
Project Location: NAOMI KEENAN (CHEVRON)

Sampling Date: 04/16/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC

LAB NO.	SAMPLE ID	TPH (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:		04/16/99	04/16/99	04/16/99	04/16/99	04/16/99
H4106-1	MW-#1	<2.5	<0.002	<0.002	<0.002	<0.006
H4106-2	MW-#2	<2.5	<0.002	<0.002	<0.002	<0.006
H4106-3	MW-#3	<2.5	<0.002	<0.002	<0.002	<0.006
Quality Control		3070	0.090	0.099	0.097	0.290
True Value QC		3000	0.100	0.100	0.100	0.300
% Recovery		102	89.5	99.3	97.3	96.6
Relative Percent Difference		2.2	2.3	0.5	5.1	3.3

METHODS: TRPHC - EPA SW-846 8015 M; BTEX - EPA SW-846 8260

Chemist

4/17/99
Date

H4106A.XLS

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page____ of____

Company Name:	SESI	BILL TO	PO #:
Project Manager:	Doc Whitley	Company:	
Address:		Attn:	
City:	State: Zip:	Address:	
Phone #:	397-0510	City:	
Fax #:	393-4388	State:	Zip:
Project #:	Project Owner: Chevron	Phone #:	
Project Name:	Chevron Stevens Monitor Wells	Fax #:	
Project Location:	Naom, Keenar (Chevron)		

FOR LAB USE ONLY LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRES.: ACID:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	ANALYSIS REQUEST: TDS	Chlorides	Selenium	TPH 8015	BTEX
N4106-1	MW-#1		3	✓							✓		4-16-99		✓	✓	✓	✓	✓
-2	MW-#2		3	✓							✓		" "		✓	✓	✓	✓	✓
-3	MW-#3		3	✓							✓		" "		✓	✓	✓	✓	✓

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Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished:	Date: 4/16/99	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
	Time: 11:48am		Fax Result: ☐ Yes ☐ No
Relinquished By:	Date:	Received By: (Lab Staff)	REMARKS:
	Time:		
Delivered By: (Circle One)	Sample Condition: Cool ☐ Yes ☐ No, Intact ☐ Yes ☐ No	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other:			

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 07/13/99
Reporting Date: 07/14/99
Project Owner: NOT GIVEN
Project Name: NOT GIVEN
Project Location: CHEVRON STEVENS

Sampling Date: 07/13/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH/GP

LAB NUMBER	SAMPLE ID	Cl (mg/L)	TDS (mg/L)	Se (mg/L)
ANALYSIS DATE		07/13/99	07/13/99	07/13/99
H4230-1	MW-1	239	968	<0.05
H4230-2	MW-2	279	1073	<0.05
H4230-3	MW-3	331	1230	<0.05
Quality Control		1295	NR	0.0451
True Value QC		1319	NR	0.0500
% Recovery		98.2	NR	90.2
Relative Percent Difference		2.3	0.4	2.3
METHODS: EPA 600/4-79-020		4500-Cl⁻B*	160.1	270.2

*Std. Methods

Chemist

07/14/99
Date

H4230B.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 07/13/99
Reporting Date: 07/14/99
Project Owner: NOT GIVEN
Project Name: NOT GIVEN
Project Location: CHEVRON STEVENS

Sampling Date: 07/13/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NUMBER	SAMPLE ID	GRO (C6-C10) (mg/L)	DRO (>C10-C28) (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:		07/13/99	07/13/99	07/13/99	07/13/99	07/13/99	07/13/99
H4230-1	MW-1	<5.0	<5.0	<0.002	<0.002	<0.002	<0.006
H4230-2	MW-2	<5.0	<5.0	<0.002	<0.002	<0.002	<0.006
H4230-3	MW-3	<5.0	<5.0	<0.002	<0.002	<0.002	<0.006
Quality Control		56.4	55.5	0.086	0.098	0.098	0.299
True Value QC		60.0	60.0	0.100	0.100	0.100	0.300
% Recovery		93.9	92.5	86.3	98.4	98.3	99.7
Relative Percent Difference		4.8	11.5	1.5	4.2	6.5	4.3

METHODS: TPH(GRO & DRO) - EPA SW-846 8015 M; BTEX/MTBE-EPA SW-846 8260

Burgess J. A. Cooke, Ph. D.

7/14/99
Date

H4230A.XLS

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page____ of____

Company Name: SESI	BILL TO PO #:
Project Manager: Dee Ulatley	Company:
Address:	Attn:
City: State: Zip:	Address:
Phone #:	City:
Fax #:	State: Zip:
Project #: Project Owner:	Phone #:
Project Name:	Fax #:
Project Location: Chevron Stevens	

FOR LAB USE ONLY				MATRIX							PRES.			SAMPLING		ANALYSIS REQUEST											
LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID:	ICE / COOL	OTHER:	DATE	TIME	Chlorides	Selenium	TDS	BTEX	TPH - 8015M - Volatile Chlorides								
H4230-1	MW-1	✓	2	✓							✓		7-13-99	7:00AM	✓	✓	✓	✓	✓								
-2	MW-2	✓	2	✓							✓		7-13-99	7:00AM	✓	✓	✓	✓	✓								
-3	MW-3	✓	2	✓							✓		7-13-99	7:30AM	✓	✓	✓	✓	✓								

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Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished:	Date: 7-13-99	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
	Time: 7:00AM		Fax Result: ☐ Yes ☐ No
Relinquished By:	Date: 7/13/99	Received By: (Lab Staff)	REMARKS:
	Time: 7:20		
Delivered By: (Circle One)		Sample Condition Cool ☒ Yes ☐ No Intact ☒ Yes ☐ No	CHECKED BY: (Initials)
Sampler - UPS - Bus - Other:			

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

CARDINAL LABORATORIES

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ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 09/23/99
Reporting Date: 09/29/99
Project Number: NOT GIVEN
Project Name: STEVENS
Project Location: NAOMI KEENAN

Analysis Date: 09/28/99
Sampling Date: 09/23/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: GP

LAB NUMBER	SAMPLE ID	Se (ppm)
H4358-1	MW #1	<0.05
H4358-2	MW #2	<0.05
H4358-3	MW #3	<0.05
Quality Control		0.050
True Value QC		0.050
% Recovery		100
Relative Percent Difference		7.1

METHOD: EPA 600/4-79-020 270.2

Chemist

09/29/99
Date

H4358C.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 09/23/99
Reporting Date: 09/28/99
Project Number: NOT GIVEN
Project Name: STEVENS
Project Location: NAOMI KEENAN

Sampling Date: 09/23/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC/GP/JP

LAB NO.	SAMPLE ID	TPH (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:		09/27/99	09/23/99	09/23/99	09/23/99	09/23/99
H4358-1	MW #1	<1.0	<0.002	<0.002	<0.002	<0.006
H4358-2	MW #2	44.1	<0.002	<0.002	<0.002	<0.006
H4358-3	MW #3	3.55	<0.002	<0.002	<0.002	<0.006
Quality Control		41.3	0.095	0.094	0.093	0.288
True Value QC		40.0	0.100	0.100	0.100	0.300
% Recovery		103	94.8	94.3	92.9	96.0
Relative Percent Difference		0.6	2.9	6.0	6.7	4.5

METHODS: TRPHC - EPA 600/4-79-020, 418.1; BTEX - EPA SW-846 8260

Chemist

9/28/99
Date

H4358A.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON, SUITE 103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 09/23/99
Reporting Date: 09/27/99
Project Number: NOT GIVEN
Project Name: STEVENS
Project Location: NAOMI KEENAN

Sampling Date: 09/23/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (u mhos/cm)	T-Alkalinity (mgCaCO3/L)
ANALYSIS DATE:		09/24/99	09/24/99	09/24/99	09/24/99	09/24/99	09/24/99
H4358-1	MW #1	150	94	32	6.91	1410	176
H4358-2	MW #2	170	102	31	5.12	1541	144
H4358-3	MW #3	181	109	39	6.00	1635	148
Quality Control		NR	48	49	4.96	1443	NR
True Value QC		NR	50	50	5.00	1413	NR
% Accuracy		NR	96	98	99	102	NR
Relative Percent Difference		NR	6.3	5.1	0	0.4	NR
METHODS:			SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

		Cl⁻ (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		09/24/99	09/24/99	09/24/99	09/24/99	09/24/99	09/25/99
H4358-1	MW #1	243	176	0	215	7.47	958
H4358-2	MW #2	288	200	0	176	7.53	1060
H4358-3	MW #3	341	197	0	181	7.50	1169
Quality Control		973	47.47	112	221	7.00	NR
True Value QC		1000	50.00	124	259	7.00	NR
% Accuracy		97	94.9	90.3	85.4	100	NR
Relative Percent Difference		5.2	5.2	-	-	1.4	NR
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Chemist

09/29/99
Date

H4358-XLS

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020

101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Page____ of____

Company Name: SESI	BILL TO PO #:
Project Manager: Dee Hurley	Company: SAME
Address: 703 E. CLINTON, #103	Attn:
City: HOBBS State: NM Zip: 88240	Address:
Phone #: (505) 397-0510	City:
Fax #: (505) 393-4388	State: Zip:
Project #: Project Owner:	Phone #:
Project Name: STEVENS	Fax #:
Project Location: Naomi Kirkman	

ANALYSIS REQUEST

FOR LAB USE ONLY LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRES.: ACID:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	BTEX	TPH 418	Cations + Anions	Selenium
H4358-1	MW #1		4	✓							✓		9-23-99	3:35pm	✓	✓	✓	✓
-2	MW #2		4	✓							✓		9-23-99		✓	✓	✓	✓
-3	MW #3		3	✓							✓		9-23-99		✓	✓	✓	✓

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished:	Date: 9-23-99	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
	Time: 3:35pm		Fax Result: ☐ Yes ☐ No
Relinquished By:	Date: 9/23/99	Received By: (Lab Staff)	REMARKS:
	Time: 3:40		
Delivered By: (Circle One)	Sample Condition Cool ☑ Yes ☐ No / Intact ☑ Yes ☐ No	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other:			

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: BETH ALDRICH
703 E. CLINTON, STE 103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 12/06/99
Reporting Date: 12/08/99
Project Number: NOT GIVEN
Project Name: CHEVRON STEVENS
Project Location: EAST OF EUNICE

Analysis Date: 12/08/99
Sampling Date: 12/06/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Se (mg/L)
H4494-1	MW #1	<0.05
H4494-2	MW #2	<0.05
H4494-3	MW #3	<0.05
Quality Control		0.198
True Value QC		0.200
% Recovery		99
Relative Percent Difference		4.5

METHOD: EPA 600/4-79-020 270.2

Chemist

12/08/99
Date

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: BETH ALDRICH
703 E. CLINTON, SUITE #103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 12/06/99
Reporting Date: 12/08/99
Project Number: NOT GIVEN
Project Name: CHEVRON STEVENS
Project Location: EAST OF EUNICE

Sampling Date: 12/06/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NO.	SAMPLE ID	TPH (mg/kg)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL BENZENE (mg/kg)	TOTAL XYLENES (mg/kg)
ANALYSIS DATE:		12/07/99	12/07/99	12/07/99	12/07/99	12/07/99
H4494-1	MW #1	<1.0	<0.002	<0.002	<0.002	<0.006
H4494-2	MW #2	<1.0	<0.002	<0.002	<0.002	<0.006
H4494-3	MW #3	<1.0	<0.002	<0.002	<0.002	<0.006
Quality Control		3.93	0.087	0.094	0.094	0.290
True Value QC		4.00	0.100	0.100	0.100	0.300
% Recovery		98.1	86.9	94.4	94.2	96.6
Relative Percent Difference		5.6	1.3	6.2	<0.1	0.8

METHODS: TRPHC - EPA 600/4-79-020, 418.1; BTEX - EPA SW-846 8260

Chemist

12/8/99
Date

H4494A.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: BETH ALDRICH
703 E. CLINTON, SUITE #103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 12/06/99
Reporting Date: 12/08/99
Project Number: NOT GIVEN
Project Name: CHEVRON STEVENS
Project Location: EAST OF EUNICE

Sampling Date: 12/06/99
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (u mhos/cm)	T-Alkalinity (mgCaCO3/L)
ANALYSIS DATE:		12/07/99	12/07/99	12/06/99	12/06/99	12/07/99	12/06/99
H4494-1	MW #1	87	96	34	8	1478	172
H4494-2	MW #2	76	112	39	7	1576	148
H4494-3	MW #3	104	120	37	8	1724	140
Quality Control		NR	48	49	4.96	1443	NR
True Value QC		NR	50	50	5.00	1413	NR
% Accuracy		NR	96	98	99	102	NR
Relative Percent Difference		NR	6.3	5.1	0	0.4	NR
METHODS:			SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER	SAMPLE ID	Cl⁻ (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		12/07/99	12/07/99	12/06/99	12/06/99	12/07/99	12/08/99
H4494-1	MW #1	256	45	0	210	7.50	971
H4494-2	MW #2	292	52	0	181	7.68	1055
H4494-3	MW #3	351	52	0	171	7.62	1170
Quality Control		978	50.06	112	221	7.02	NR
True Value QC		1000	50.00	124	259	7.00	NR
% Accuracy		98	100	90	85	100	NR
		2.2	5.2	-	-	0.1	NR
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Gayle A. Potter, Chemist

12/08/99
Date

H4494R.XLS

CARDINAL LABORATORIES, INC.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

Page ____ of ____

Company Name: SESI	BILL TO PO #:
Project Manager:	Company: SAME
Address: 703 E. CLINTON, #103	Attn:
City: HOBBS State: NM Zip: 88240	Address:
Phone #: (505) 397-0510	City:
Fax #: (505) 393-4388	State: Zip:
Project #: Project Owner:	Phone #:
Project Name: Chevron Stevens	Fax #:
Project Location: East of Eunice	

FOR LAB USE ONLY				MATRIX						PRES.			SAMPLING		ANALYSIS REQUEST													
LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID:	ICE / COOL	OTHER:	DATE	TIME	TPH 418.1	BTEX	Cations & Anions	Selenium										
H14494-1	MW #1	C	4	X							X		12-6-99	2:28 pm	X	X	X	X										
-2	MW #2	C	4	X							X		"	2:41 pm	X	X	X	X										
-3	MW #3	C	4	X							X		"	3:10 pm	X	X	X	X										

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collection, including attorney's fees.

Sampler Relinquished:	Date:	Received By:	Phone Result: ☐ Yes ☐ No Additional Fax #:
	Time:		Fax Result: ☐ Yes ☐ No
Relinquished By: Sergio Contreras	Date: 12/6/99	Received By: (Lab Staff)	REMARKS:
	Time: 6:05 PM		
Delivered By: (Circle One)	Sample Condition: Cool: ☒ Yes ☐ No Intact: ☒ Yes ☐ No	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other:			

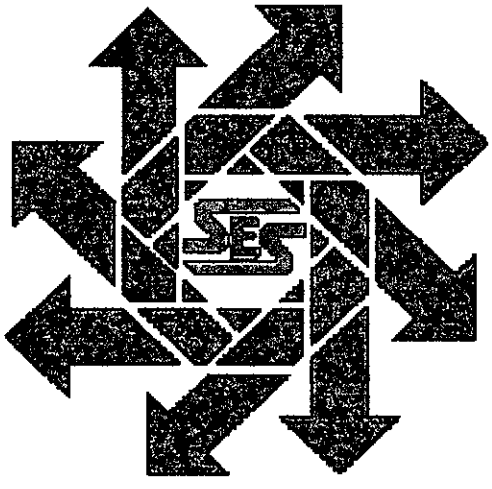
† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

12/08/99 01:36 FAX 01

Chevron USA

Naomi Keenan
Monitor Well Report
Lea County, New Mexico

March 31, 2000



Safety & Environmental Solutions, Inc.
703 E. Clinton Suite 103
Hobbs, New Mexico 88240
(505) 397-0510

TABLE OF CONTENTS

I. Background

The subject property is located in Unit O of Section 14, Township 21S Range37E in Lea County, New Mexico. Safety & Environmental Solutions, Inc. (SESI) performed sampling and data collection on the three (3) ground water monitor wells previously installed in November1998 at the site (See Vicinity Map). The casing size in all wells is 2".

II. Work Performed

On February 23, 2000, SESI environmental technician Sergio Contreras Jr. arrived at the site. Ground water samples were taken from each well after a hand bailer was used to develop the wells. Three to five casing volumes of water were removed from each well until pH and temperature of the water were stabilized. The water that was removed was placed in appropriate drums for disposal. The samples were obtained and placed in appropriate containers, preserved and transported under chain of custody to Cardinal Laboratories of Hobbs, New Mexico for analysis of the Total Petroleum Hydrocarbons (TPH), Selenium, Major Cations & Anions, and Benzene, Toluene, Ethyl Benzene and Total Xylenes (BTEX). (See Analytical Data)

In addition to the sampling, SESI also measured the depth to the top of the water table and the total depth of each well. The depth to the top of ground water was measured using a Solinst water level indicator. The total depth of each well was measured in order to compute the proper casing volumes.

A summary of this data follows:

ID	Date	Top of Casing Elevation	Depth to Water	Potentiometric Elevation	Total Well Depth	Free Product Thickness
MW – 1	2/23/00	3402.18'	50.54'	3351.64'	67.88'	0.00
MW – 2	2/23/00	3399.58'	48.51'	3351.07'	56.33'	0.00
MW – 3	2/23/00	3402.19'	49.58'	3352.61'	59.11'	0.00

III. Analytical Results

The analysis of the groundwater samples performed by Cardinal Laboratories are summarized as follows:

Contaminant	WQCC Standard	MW #1	MW #2	MW #3
Chloride	250.0 ppm	264 ppm	280 ppm	344 ppm
Selenium	0.05 ppm	0.057 ppm	<.05 ppm	<.05 ppm
TDS	1000 ppm	1017 ppm	1066 ppm	1174 ppm
Benzene	0.01 ppm	<.002ppm	<.002ppm	<.002ppm
Toluene	0.75 ppm	<.002ppm	<.002ppm	<.002ppm
Ethyl Benzene	0.75 ppm	<.002ppm	<.002ppm	<.002ppm
Total Xylenes	0.62 ppm	<.006ppm	<.006ppm	<.006ppm
TPH	N/A	<1.0ppm	<1.0ppm	<1.0ppm

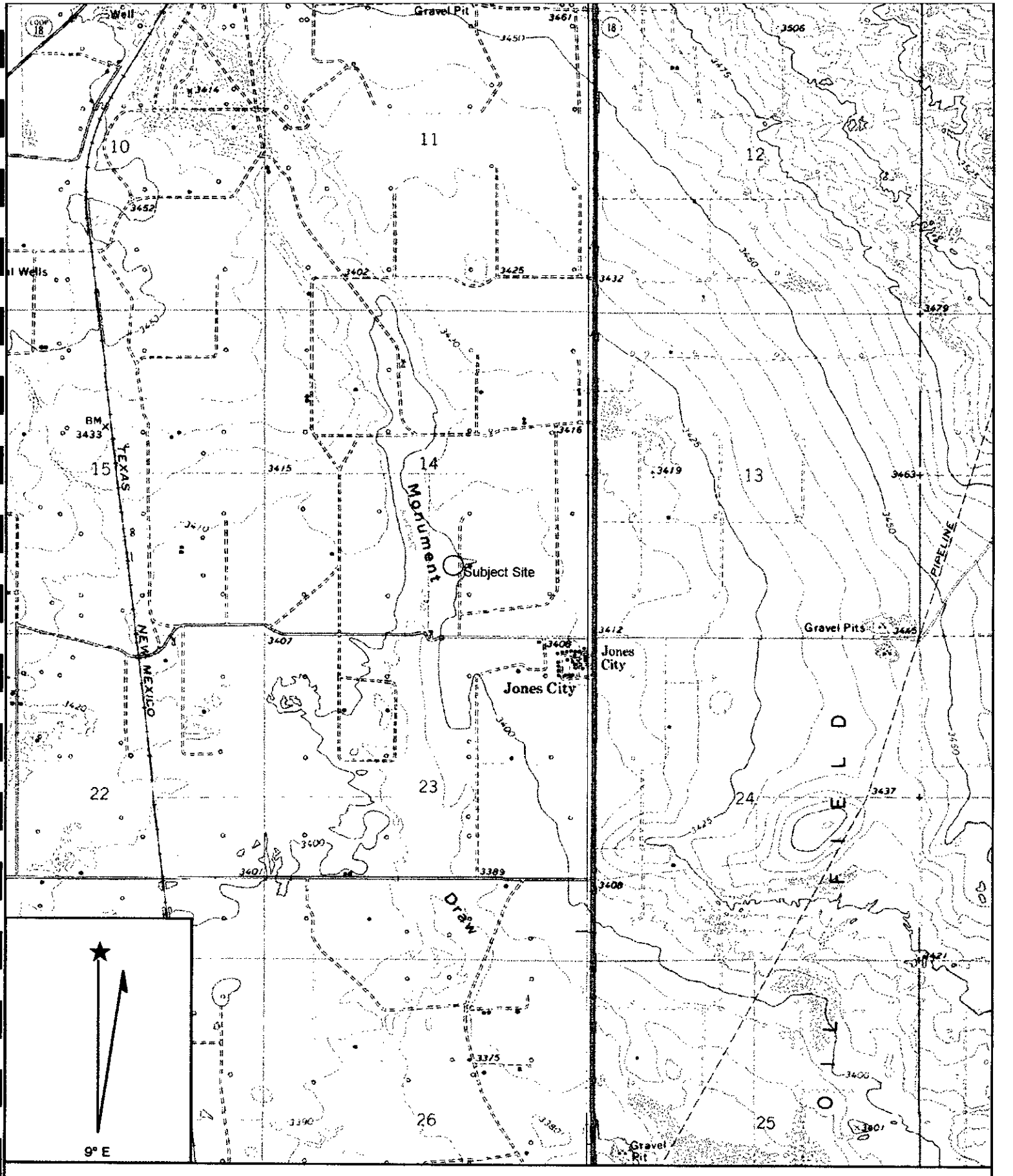
SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	CO_3 (mg/L)	SO_4 (mg/L)	HCO_3 (mg/L)
MW – 1	79	99	37	8.5	0	40.6	205
MW – 2	82	99	36	6.7	0	46.6	171
MW – 3	106	106	43	7.4	0	44.2	185

IV. Figures and Appendices

Figures:
Vicinity Map
Potentiometric Map

Appendices:
Cumulative Well Data
Analytical Results

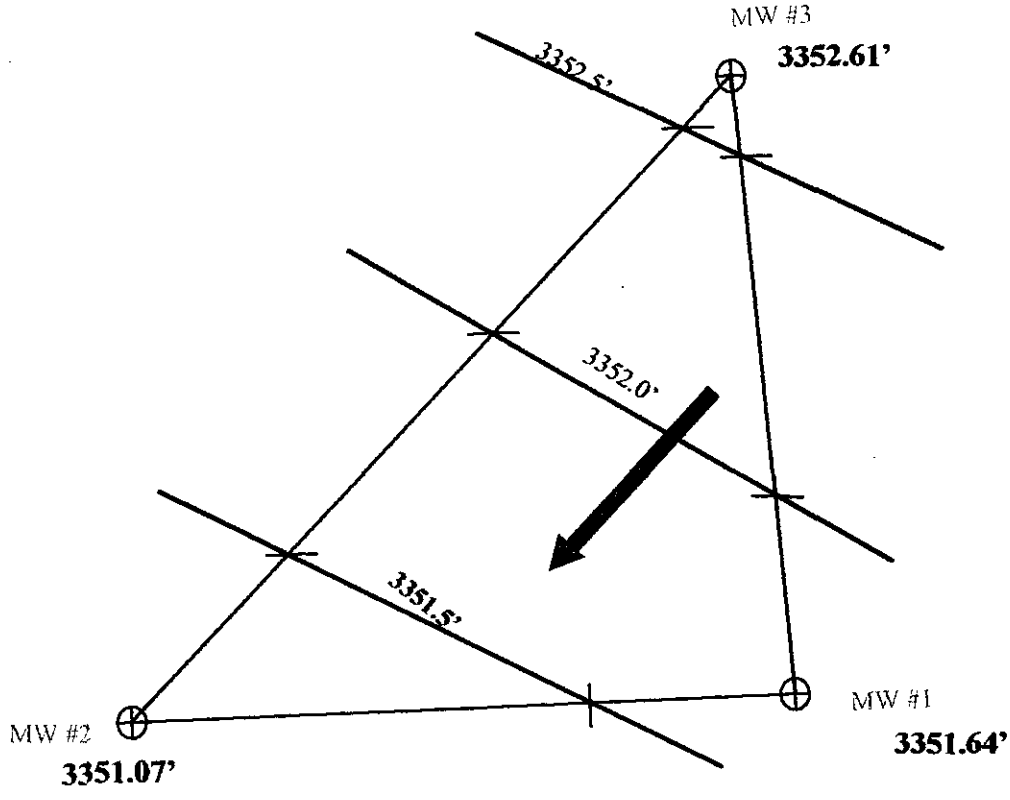
Figure 1
Vicinity Map



Name: EUNICE
Date: 5/21/2000
Scale: 1 inch equals 2000 feet

Location: 032° 28' 25.9" N 103° 07' 46.6" W
Caption: Chevron USA
Naomi Keenan
Vicinity Map

Figure 2
Potentiometric Map



Unit O Section 14,
Township 21 South
Range 37 East

Scale 1"= 40'
Contour Interval 0.5'

Chevron USA	**Potentiometric Surface Map** **Naomi Keenan** **February 23, 2000**	***Safety & Environmental Solutions, Inc.*** ***Hobbs, New Mexico***

Appendix A
Cumulative Well Data

Naomi Keenan Cumulative Monitor Well Data

Monitor Well #1

Contaminant	WQCC Standard	11/10/98 Initial test	2-23-00 Quarterly Test			
Chloride	250.0 ppm	313ppm	264 ppm			
Selenium	0.05 ppm	0.08ppm	0.057 ppm			
TDS	1000 ppm	1045ppm	1017 ppm			
Benzene	0.01 ppm	0.008ppm	<0.002 ppm			
Toluene	0.75 ppm	0.023ppm	<.002ppm			
E. Benzene	0.75 ppm	0.016ppm	<.002ppm			
Total Xylenes	0.62 ppm	0.027ppm	<.006ppm			
TPH	N/A	88.9ppm	<1.0ppm			
Sodium	N/A	184ppm	79ppm			
Calcium	N/A	69ppm	99ppm			
Magnesium	N/A	36ppm	37ppm			
Potassium	N/A	14.10ppm	8.5ppm			
Conductivity	N/A	1805ppm	1684ppm			
T-Alkalinity	N/A	168ppm	168ppm			
CO_3	N/A	0ppm	0ppm			
HCO_3	N/A	205ppm	205ppm			
pH	>6-9<	7.74ppm	7.33ppm			
Sulfate	600 ppm	124ppm	40.6ppm			

Monitor Well #2

Contaminant	WQCC Standard	11/10/98 Initial Test	2-23-00 Quarterly Test			
Chloride	250.0 ppm	294ppm	280			
Selenium	0.05 ppm	0.12ppm	<.05ppm			
TDS	1000 ppm	1030ppm	1066ppm			
Benzene	0.01 ppm	0.007ppm	<.002ppm			
Toluene	0.75 ppm	0.024ppm	<.002ppm			
E. Benzene	0.75 ppm	0.021ppm	<.002ppm			
Total Xylenes	0.62 ppm	0.039ppm	<.006ppm			
TPH	N/A	64.9ppm	<1.0ppm			
Sodium	N/A	125ppm	82ppm			
Calcium	N/A	85ppm	99ppm			
Magnesium	N/A	47ppm	36ppm			
Potassium	N/A	8.35ppm	6.7ppm			
Conductivity	N/A	1814ppm	1774ppm			
T-Alkalinity	N/A	144ppm	140ppm			
CO_3	N/A	0ppm	0ppm			
HCO_3	N/A	176ppm	171ppm			
pH	>6-9<	7.69	7.34ppm			
Sulfate	600 ppm	124ppm	46.6ppm			

Monitor Well #3

Contaminant	WQCC Standard	11/10/98 Initial Test	2-23-00 Quarterly Test			
Chloride	250.0 ppm	333ppm	344			
Selenium	0.05 ppm	0.13ppm	<.05ppm			
TDS	1000 ppm	1118ppm	1174ppm			
Benzene	0.01 ppm	0.006ppm	<.002ppm			
Toluene	0.75 ppm	0.022ppm	<.002ppm			
E. Benzene	0.75 ppm	0.019ppm	<.002ppm			
Total Xylenes	0.62 ppm	0.034ppm	<.006ppm			
TPH	N/A	28.4ppm	<1.0ppm			
Sodium	N/A	136ppm	106ppm			
Calcium	N/A	91ppm	106ppm			
Magnesium	N/A	49ppm	43ppm			
Potassium	N/A	10.11ppm	7.4ppm			
Conductivity	N/A	1969ppm	1936ppm			
T-Alkalinity	N/A	140ppm	152ppm			
CO_3	N/A	0ppm	0ppm			
HCO_3	N/A	205ppm	185ppm			
pH	>6-9<	7.74ppm	7.32ppm			
Sulfate	600 ppm	124ppm	44.2ppm			

Appendix B
Analytical Results

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: BETH ALDRICH
703 E. CLINTON, SUITE #103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 02/23/00
Reporting Date: 02/25/00
Project Number: NOT GIVEN
Project Name: CHEVRON-STEVENS
Project Location: EAST OF EUNICE

Sampling Date: 02/23/00
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC

LAB NO.	SAMPLE ID	TPH (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:		02/24/00	02/23/00	02/23/00	02/23/00	02/23/00
H4668-1	MW #1	<1.0	<0.002	<0.002	<0.002	<0.006
H4668-2	MW #2	<1.0	<0.002	<0.002	<0.002	<0.006
H4668-3	MW #3	<1.0	<0.002	<0.002	<0.002	<0.006
Quality Control		3.94	0.104	0.105	0.098	0.293
True Value QC		4.00	0.100	0.100	0.100	0.300
% Recovery		98.5	104	105	98.1	97.5
Relative Percent Difference		1.8	3.9	1.0	2.4	3.7

METHODS: TRPHC - EPA 600/4-79-020, 418.1; BTEX - EPA SW-846 8260

Chemist

2/25/00
Date

H4668A.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: BETH ALDRICH
703 E. CLINTON, SUITE #103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 02/23/00
Reporting Date: 02/28/00
Project Number: NOT GIVEN
Project Name: CHEVRON-STEVENS
Project Location: EAST OF EUNICE

Sampling Date: 02/23/00
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (u mhos/cm)	T-Alkalinity (mgCaCO$_3$/L)
ANALYSIS DATE:		02/28/00	02/25/00	02/25/00	02/25/00	02/25/00	02/25/00
H4668-1	MW #1	79	99	37	8.5	1684	168
H4668-2	MW #2	82	99	36	6.7	1774	140
H4668-3	MW #3	106	106	43	7.4	1936	152
Quality Control		NR	52	53	4.89	1392	NR
True Value QC		NR	50	50	5.00	1413	NR
% Recovery		NR	104	106	98	98.5	NR
Relative Percent Difference		NR	7.7	7.5	NR	0.2	NR
METHODS:			SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER	SAMPLE ID	Cl$^-$ (mg/L)	SO$_4$ (mg/L)	CO$_3$ (mg/L)	HCO$_3$ (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		02/25/00	02/25/00	02/25/00	02/25/00	02/25/00	02/25/00
H4668-1	MW #1	264	40.6	0	205	7.33	1017
H4668-2	MW #2	280	46.6	0	171	7.34	1066
H4668-3	MW #3	344	44.2	0	185	7.32	1174
Quality Control		960	53.2	NR	971	7.01	NR
True Value QC		1000	50.0	NR	1000	7.00	NR
% Recovery		96	106	NR	97	100	NR
Relative Percent Difference		5.2	8.5	NR	NR	0	NR
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Amy Hill
Chemist

02/28/00
Date

H4668B.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: BETH ALDRICH
703 E. CLINTON, SUITE #103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 02/23/00
Reporting Date: 02/28/00
Project Number: NOT GIVEN
Project Name: CHEVRON-STEVENS
Project Location: EAST OF EUNICE

Analysis Date: 02/28/00
Sampling Date: 02/23/00
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Se (mg/L)
H4668-1	MW#1	0.057
H4668-2	MW#2	<0.05
H4668-3	MW#3	<0.05
Quality Control		0.053
True Value QC		0.050
% Recovery		106
Relative Percent Difference		0.7

METHOD: EPA 600/4-79-020, 270.2

Amy Hill
Chemist

02/28/00
Date

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020
101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page ____ of ____

Company Name: SESI
Project Manager:
Address: 703 E. CLINTON, #103
City: HOBBS State: NM Zip: 88240
Phone #: (505) 397-0510
Fax #: (505) 393-4388
Project #: Project Owner:
Project Name: CHEVRON - STEVENS
Project Location: East of Eunice

BILL TO PO #:
Company: SAME
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

FOR LAB USE ONLY LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRES.: ACID:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	ANALYSIS REQUEST: TPH 418.1	BTEX	Cations & Anions	Selenium
H4668-1	M.W. #1		4	X							X		2-23-00	1:10 pm	X	X	X	X
-2	M.W. #2		4	X							X		2-23-00	1:30 pm	X	X	X	X
-3	M.W #3		4	X							X		2-23-00	2:00 pm	X	X	X	X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

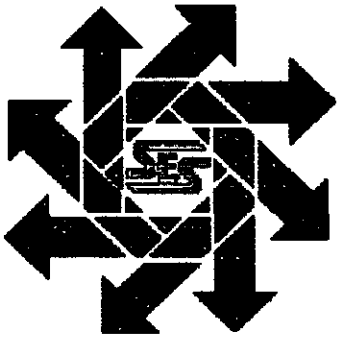
Sampler Relinquished:	Date: / Time:	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
			Fax Result: ☐ Yes ☐ No
			REMARKS:
Relinquished By: SERGIO CONTRERAS, JR.	Date: 2-23-00 / Time: 4:00P	Received By: (Lab Staff)	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition: Cool ☒ Yes ☐ No; Intact ☑ Yes ☐ No	CHECKED BY: (Initials)

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

Naomi Keenan Monitor Well Report
Unit O, Section 14,T21S, R37E
Lea County, New Mexico

September 6, 2000

COPY



RECEIVED
OCT 25 2000
ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Prepared for:

Chevron USA
P.O. Box 1949
Eunice, New Mexico 88231

By:

Safety & Environmental Solutions, Inc.
703 E. Clinton Suite 103
Hobbs, New Mexico 88240
(505) 397-0510

TABLE OF CONTENTS

I. Background

The subject property is located in Unit O of Section 14, Township 21S Range 37E in Lea County, New Mexico. Safety & Environmental Solutions, Inc. (SESI) performed sampling and data collection on the three (3) ground water monitor wells previously installed in November1998 at the site (See Vicinity Map). The casing size in all wells is 2".

II. Work Performed

On September 6, 2000, SESI environmental technician Gabriel Terrazas arrived at the site. Ground water samples were taken from each well after a hand bailer was used to develop the wells. Three to five casing volumes of water were removed from each well until pH and temperature of the water were stabilized. The water that was removed was placed in appropriate drums for disposal. The samples were obtained and placed in appropriate containers, preserved and transported under chain of custody to Cardinal Laboratories of Hobbs, New Mexico for analysis of the Total Petroleum Hydrocarbons (TPH), Selenium, Major Cations & Anions, and Benzene, Toluene, Ethyl Benzene and Total Xylenes (BTEX). (See Analytical Data)

In addition to the sampling, SESI also measured the depth to the top of the water table and the total depth of each well. The depth to the top of ground water was measured using a Solinst water level indicator. The total depth of each well was measured in order to compute the proper casing volumes.

A summary of this data follows:

ID	DATE	TOP OF CASING ELEVATION	DEPTH TO WATER	POTENTIO-METRIC ELEVATION	TOTAL WELL DEPTH	FREE PRODUCT THICKNESS
MW – 1	9/6/00	3,402.18'	49.39'	3352.79'	67.88'	0.00
MW – 2	9/6/00	3,399.58'	47.30'	3352.28'	56.33'	0.00
MW – 3	9/6/00	3,402.19'	48.57'	3353.62'	59.11'	0.00

III. Analytical Results

The analysis of the groundwater samples performed by Cardinal Laboratories are summarized as follows:

CONTAMINANT	WQCC STANDARD	MW #1	MW #2	MW #3
Chloride	250.0 ppm	303ppm	311ppm	354ppm
Selenium	0.05 ppm	<0.05ppm	<0.05ppm	<0.05ppm
TDS	1000 ppm	1215ppm	1151ppm	1226ppm
Benzene	0.01 ppm	<0.002ppm	<0.002ppm	<0.002ppm
Toluene	0.75 ppm	<0.002ppm	<0.002ppm	<0.002ppm
Ethyl Benzene	0.75 ppm	<0.002ppm	<0.002ppm	<0.002ppm
Total Xylenes	0.62 ppm	<0.006ppm	<0.006ppm	<0.006ppm
TPH	N/A	2.00ppm	1.45ppm	1.72ppm

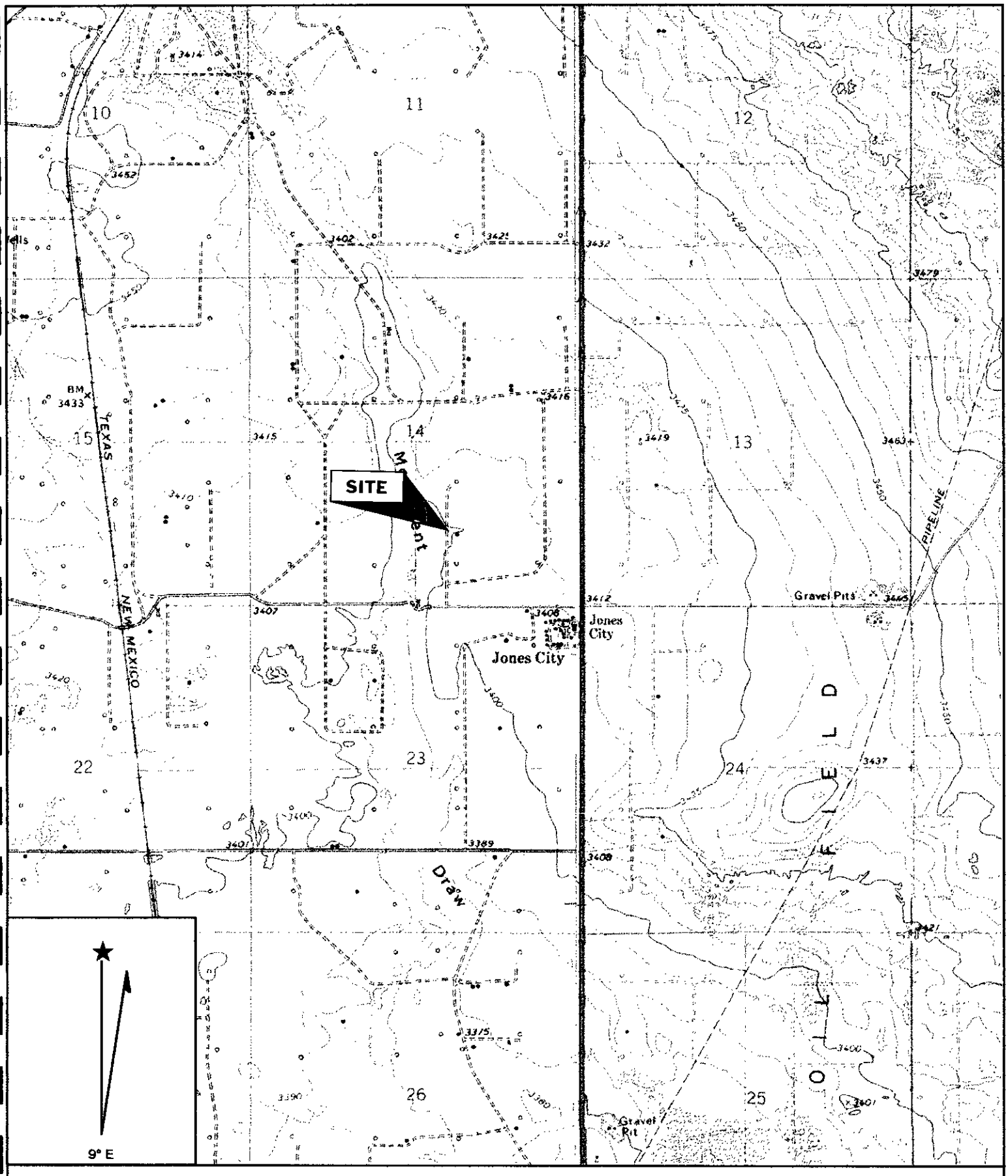
SAMPLE ID	NA (MG/L)	CA (MG/L)	MG (MG/L)	K (MG/L)	CO_3 (MG/L)	SO_4 (MG/L)	HCO_3 (MG/L)
MW – 1	217	86	27	5.47	0	225	255
MW – 2	214	79	28	4.86	0	229	260
MW – 3	226	82	26	3.76	0	225	210

IV. Figures and Appendices

Figures:
Vicinity Map
Potentiometric Map

Appendices:
Cumulative Well Water Quality Data
Analytical Results
Water Analysis Validation

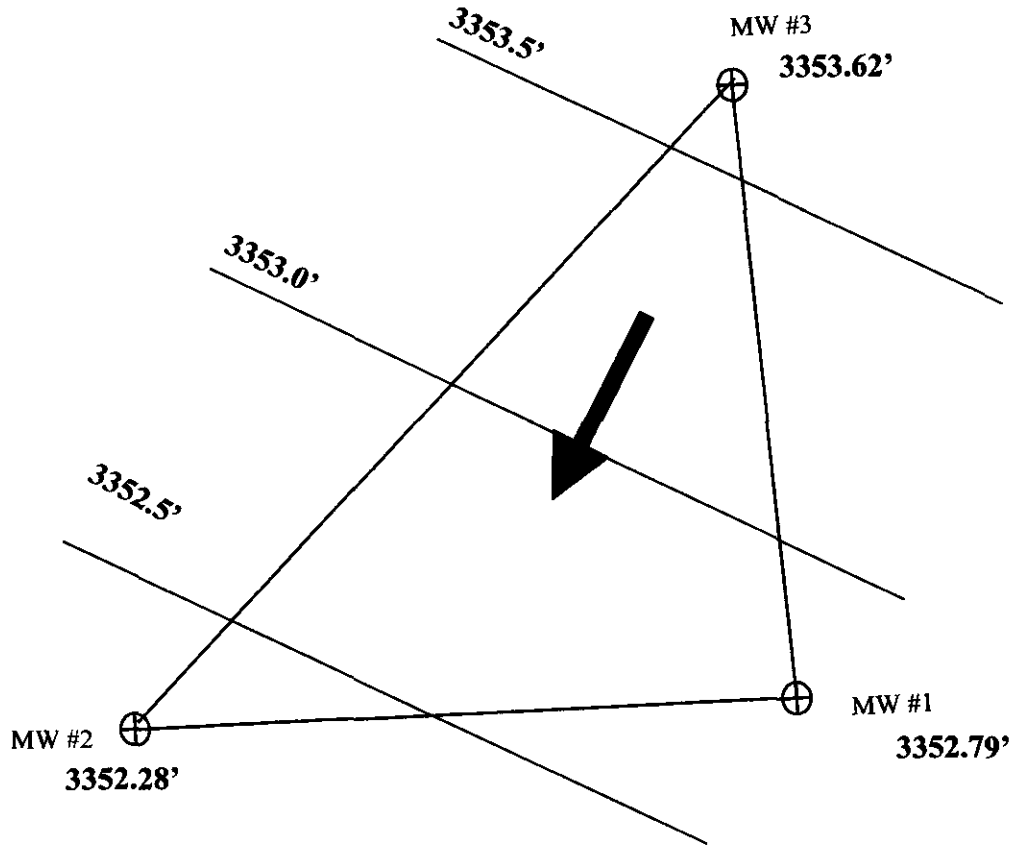
Figure 1
Vicinity Map



Name: EUNICE
Date: 9/25/2000
Scale: 1 inch equals 2000 feet

Location: 032° 28' 20.6" N 103° 07' 43.2" W
Caption: Chevron USA
Naomi Keenan Monitor Wells
Vicinity Map

Figure 2
Potentiometric Map



Unit O Section 14,
Township 21 South
Range 37 East

Scale 1"= 40'
Contour Interval 0.5'
Gradient 0.0076

Chevron USA	**Potentiometric Surface Map** **Naomi Keenan Monitor Wells** **September 6, 2000**	**Safety & Environmental Solutions, Inc.**

Appendix A
Cumulative Well Water Quality Data

Naomi Keenan Cumulative Monitor Well Data

Monitor Well #1

Contaminant	WQCC Standard	11/10/98 Initial test	2/23/00 Quarterly Test	5/25/00 Quarterly Test	9/6/00 Quarterly Test
Chloride	250.0ppm	313ppm	264ppm	308ppm	303ppm
Selenium	0.05ppm	0.08ppm	0.057ppm	<0.05ppm	<0.05ppm
TDS	1000ppm	1045ppm	1017ppm	948ppm	1215ppm
Benzene	0.01ppm	0.008ppm	<0.002ppm	<0.002ppm	<0.002ppm
Toluene	0.75ppm	0.023ppm	<0.002ppm	<0.002ppm	<0.002ppm
E. Benzene	0.75ppm	0.016ppm	<0.002ppm	<0.002ppm	<0.002ppm
Total Xylenes	0.62ppm	0.027ppm	<0.006ppm	<0.006ppm	<0.006ppm
TPH	N/A	88.9ppm	<1.0ppm	<1.00ppm	2.00ppm
Sodium	N/A	184ppm	79ppm	229ppm	217ppm
Calcium	N/A	69ppm	99ppm	99ppm	86ppm
Magnesium	N/A	36ppm	37ppm	35ppm	27ppm
Potassium	N/A	14.10ppm	8.5ppm	9.8ppm	5.47ppm
Conductivity	N/A	1805ppm	1684ppm	1376ppm	1702ppm
T-Alkalinity	N/A	168ppm	168ppm	188ppm	209ppm
CO_3	N/A	0ppm	0ppm	0ppm	0ppm
HCO_3	N/A	205ppm	205ppm	229ppm	255ppm
pH	>6-9<	7.74ppm	7.33ppm	7.03ppm	7.45ppm
Sulfate	600ppm	124ppm	40.6ppm	197ppm	225ppm

Monitor Well #2

Contaminant	WQCC Standard	11/10/98 Initial Test	2/23/00 Quarterly Test	5/25/00 Quarterly Test	9/6/00 Quarterly Test
Chloride	250.0ppm	294ppm	280ppm	316ppm	311ppm
Selenium	0.05ppm	0.12ppm	<0.05ppm	<0.05ppm	<0.05ppm
TDS	1000ppm	1030ppm	1066ppm	1022ppm	1151ppm
Benzene	0.01ppm	0.007ppm	<0.002ppm	<0.002ppm	<0.002ppm
Toluene	0.75ppm	0.024ppm	<.002ppm	<0.002ppm	<0.002ppm
E. Benzene	0.75ppm	0.021ppm	<.002ppm	<0.002ppm	<0.002ppm
Total Xylenes	0.62ppm	0.039ppm	<.006ppm	<0.006ppm	<0.006ppm
TPH	N/A	64.9ppm	<1.0ppm	1.52ppm	1.45ppm
Sodium	N/A	125ppm	82ppm	217ppm	214ppm
Calcium	N/A	85ppm	99ppm	106ppm	79ppm
Magnesium	N/A	47ppm	36ppm	32ppm	28ppm
Potassium	N/A	8.35ppm	6.7ppm	7.2ppm	4.86ppm
Conductivity	N/A	1814ppm	1774ppm	1465ppm	1717ppm
T-Alkalinity	N/A	144ppm	140ppm	164ppm	213ppm
CO_3	N/A	0ppm	0ppm	0ppm	0ppm
HCO_3	N/A	176ppm	171ppm	200ppm	260ppm
pH	>6-9<	7.69	7.34ppm	7.32ppm	7.46ppm
Sulfate	600ppm	124ppm	46.6ppm	211ppm	229ppm

Monitor Well #3

Contaminant	WQCC Standard	11/10/98 Initial Test	2/23/00 Quarterly Test	5/25/00 Quarterly Test	9/6/00 Quarterly Test
Chloride	250.0ppm	333ppm	344ppm	356ppm	354ppm
Selenium	0.05ppm	0.13ppm	<.05ppm	<0.05ppm	<0.05ppm
TDS	1000ppm	1118ppm	1174ppm	1169ppm	1226ppm
Benzene	0.01ppm	0.006ppm	<.002ppm	<0.002ppm	<0.002ppm
Toluene	0.75ppm	0.022ppm	<.002ppm	<0.002ppm	<0.002ppm
E. Benzene	0.75ppm	0.019ppm	<.002ppm	<0.002ppm	<0.002ppm
Total Xylenes	0.62ppm	0.034ppm	<.006ppm	<0.006ppm	<0.006ppm
TPH	N/A	28.4ppm	<1.0ppm	<1.00ppm	1.72ppm
Sodium	N/A	136ppm	106ppm	232ppm	226ppm
Calcium	N/A	91ppm	106ppm	112ppm	82ppm
Magnesium	N/A	49ppm	43ppm	37ppm	26ppm
Potassium	N/A	10.11ppm	7.4ppm	7.2ppm	3.76ppm
Conductivity	N/A	1969ppm	1936ppm	1601ppm	1802ppm
T-Alkalinity	N/A	140ppm	152ppm	185ppm	172ppm
CO_3	N/A	0ppm	0ppm	0ppm	0ppm
HCO_3	N/A	205ppm	185ppm	185ppm	210ppm
pH	>6-9<	7.74ppm	7.32ppm	7.35ppm	7.59ppm
Sulfate	600ppm	124ppm	44.2ppm	221ppm	225ppm

Appendix B
Analytical Results

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 (915) 673-7001 Fax (915) 673-7020

101 East Marland, Hobbs, NM 88240 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page____ of ____

Company Name: SEST
Project Manager:
Address: 703 E. CLINTON, #103
City: HOBBS State: NM Zip: 88240
Phone #: (505) 397-0510
Fax #: (505) 393-4388
Project #: Project Owner:
Project Name: CHEVRON STEVENS
Project Location:

BILL TO PO #:
Company: SAME
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

ANALYSIS REQUEST

LAB I.D. (FOR LAB USE ONLY)	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRES.: ACID:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	TPH - 418.1	BTEX	Cations-Anions	Selenium
45152-1	M-W 1		4	X							X		9-7-00	8:45 A	X	X	X	X
-2	M-W 2		4	X							X		〃	8:15 A	X	X	X	X
-3	MW 3		4	X							X		〃	9:10 A	X	X	X	X

Sampler Relinquished: Date: Time: Received By:

Relinquished By: [illegible signature] Date: 9-7-00 Time: 9:50 Received By: (Lab Staff) [illegible signature]

Delivered By: (Circle One) Sampler - UPS - Bus - Other: (Sampler circled)

Sample Condition: Cool ☒ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials)

Phone Result ☐ Yes ☐ No Additional Fax #:
Fax Result: ☐ Yes ☐ No
REMARKS:

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: BOB ALLEN
703 E. CLINTON, #103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 09/07/00
Reporting Date: 09/12/00
Project Number: NOT GIVEN
Project Name: CHEVRON STEVENS
Project Location: NOT GIVEN

Sampling Date: 09/07/00
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (mS/cm)	T-Alkalinity ($mgCaCO_3/L$)
ANALYSIS DATE:		09/11/00	09/08/00	09/08/00	09/0800	09/08/00	09/08/00
H5152-1	MW 1	217	86	27	5.47	1702	209
H5152-2	MW 2	214	79	28	4.86	1717	213
H5152-3	MW 3	226	82	26	3.76	1802	172
Quality Control		2.096	42	45	5.05	1368	NR
True Value QC		2.000	50	50	5.00	1413	NR
% Recovery		105	84	91	101	96.7	NR
Relative Percent Difference		0.2	0	2.4	0	0.1	NR

METHODS:		SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER	SAMPLE ID	Cl^- (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		09/08/00	09/08/00	09/08/00	09/08/00	09/08/00	09/11/00
H5152-1	MW 1	303	225	0	255	7.45	1215
H5152-2	MW 2	311	229	0	260	7.46	1151
H5152-3	MW 3	354	225	0	210	7.59	1226
Quality Control		1025	51.51	NR	1088	6.99	NR
True Value QC		1000	50.00	NR	1000	7.00	NR
% Recovery		97.6	103	NR	109	99.9	NR
Relative Percent Difference		6.1	1.5	NR	8.1	0	NR

METHODS:	SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Amy Hill
Chemist

9-12-00
Date

H5152B.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: BOB ALLEN
703 E. CLINTON, #103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 09/07/00
Reporting Date: 09/11/00
Project Number: NOT GIVEN
Project Name: CHEVRON STEVENS
Project Location: NOT GIVEN

Analysis Date: 09/11/00
Sampling Date: 09/07/00
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Se (mg/L)
H5152-1	MW 1	<0.05
H5152-2	MW 2	<0.05
H5152-3	MW 3	<0.05
Quality Control		0.215
True Value QC		0.200
% Recovery		108
Relative Percent Difference		5.4

METHOD: EPA 600/4-79-020 270.2

Amy Hill
Chemist

9-11-00
Date

H5152M.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: BOB ALLEN
703 E. CLINTON, #103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 09/07/00
Reporting Date: 09/08/00
Project Number: NOT GIVEN
Project Name: CHEVRON STEVENS
Project Location: NOT GIVEN

Sampling Date: 09/07/00
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC

LAB NO.	SAMPLE ID	TPH (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:		09/08/00	09/07/00	09/07/00	09/07/00	09/07/00
H5152-1	MW 1	2.00	<0.002	<0.002	<0.002	<0.006
H5152-2	MW 2	1.45	<0.002	<0.002	<0.002	<0.006
H5152-3	MW 3	1.72	<0.002	<0.002	<0.002	<0.006
Quality Control		10.6	0.088	0.094	0.097	0.294
True Value QC		12.0	0.100	0.100	0.100	0.300
% Recovery		88.7	87.6	94.0	97.1	98.1
Relative Percent Difference		9.0	2.6	3.7	11.1	9.0

METHODS: TRPHC - EPA 600/4-79-020, 418.1; BTEX - EPA SW-846 8260

Chemist

9/5/00
Date

H5152A.XLS

Appendix C
Water Analysis Validation

Cations and Anions Calculation Check								
	Sample Name	H5152-1	H5152-2	H5152-3				
	Well Number	MW1	MW2	MW3				
	Date	09/06/00	09/06/00	09/06/00				
Equivalent Weight:	**Lab**	Cardinal	Cardinal	Cardinal				
22.99	**Sodium (mg/L)**	217	214	226				
20.04	**Calcium (mg/L)**	86	79	82				
12.15	**Magnesium (mg/L)**	27	28	26				
39.09	**Potassium (mg/L)**	5.5	4.9	3.8				
35.45	**Chloride (mg/L)**	303	311	354				
48.04	**Sulfate (mg/L)**	225	229	225				
30.00	**Carbonate (mg/L)**	0.0	0.0	0.0				
61.01	**Bicarbonate (mg/L)**	255	260	210				
50.04	**Alkalinity (mg/L CaCO3)**	209	213	172				
62.00	**Nitrate (mg/L)**	0.0	0.0	0.0				
	Sum Cations (meq/L)	16.1	15.7	16.2				
	Sum Anions (meq/L)	17.4	17.8	18.1				
	Percent Difference	3.9	6.3	5.7				
	Measured TDS (evap., mg/L)	1,215	1,151	1,226				
	TDS (calc. USGS sum, mg/L)	989	994	1,020				
	TDS (meas.) / TDS (calc. USGS)	1.2	1.2	1.2				
	TDS (calc. sum, mg/L)	1,118	1,126	1,127				
	Elect. Conductivity (umhos/cm)	1,702	1,717	1,802				
	TDS (C*0.7, mg/L)	1,191	1,202	1,261				
	TDS (calc. USGS) / Conductivity	0.58	0.58	0.57				
Test Criteria								
1. Anion-Cation Balance:			Anion Sum	Max % diff.				
			0 - 3.0	± 0.2				
			3.0 - 10.0	± 2				
			10.0 - 800	± 5				
2. TDS, Measured to Calculated:			1.0 < (measured TDS/calculated TDS) < 1.2					
3. TDS (calculated USGS) to EC Ratio:			Calculated TDS/conductivity = 0.55 - 0.7					

COPY

Naomi Keenan Monitor Well Report
Unit O, Section 14,T21S, R37E
Lea County, New Mexico

March 14, 2001

Prepared for:

Chevron USA
P.O. Box 1949
Eunice, New Mexico 88231

By:

Safety & Environmental Solutions, Inc.
703 E. Clinton Suite 102
Hobbs, New Mexico 88240
(505) 397-0510

TABLE OF CONTENTS

I. Background

The subject property is located in Unit O of Section 14, Township 21S Range 37E in Lea County, New Mexico. Safety & Environmental Solutions, Inc. (SESI) performed sampling and data collection on the three (3) ground water monitor wells previously installed in November 1998 at the site (See Vicinity Map). The casing size in all wells is 2".

II. Work Performed

On March 14, 2001, an environmental technician with SESI arrived at the site. Ground water samples were taken from each well after a hand bailer was used to develop the wells. Three to five casing volumes of water were removed from each well until pH and temperature of the water were stabilized. The water that was removed was placed in appropriate drums for disposal. The samples were obtained and placed in appropriate containers, preserved and transported under chain of custody to Cardinal Laboratories of Hobbs, New Mexico for analysis of the Total Petroleum Hydrocarbons (TPH), Selenium, Major Cations & Anions, and Benzene, Toluene, Ethyl Benzene and Total Xylenes (BTEX). (See Analytical Data)

In addition to the sampling, SESI also measured the depth to the top of the water table and the total depth of each well. The depth to the top of ground water was measured using a Solinst water level indicator. The total depth of each well was measured in order to compute the proper casing volumes. A summary of this data follows:

ID	DATE	TOP OF CASING ELEVATION	DEPTH TO WATER	POTENTIO-METRIC ELEVATION	TOTAL WELL DEPTH	FREE PRODUCT THICKNESS
MW – 1	3/14/01	3,402.18'	49.00'	3353.18'	67.88'	0.00
MW – 2	3/14/01	3,399.58'	46.85'	3352.73'	56.33'	0.00
MW – 3	3/14/01	3,402.19'	48.20'	3353.99'	59.11'	0.00

III. Analytical Results

The analysis of the groundwater samples performed by Cardinal Laboratories are summarized as follows:

CONTAMINANT	WQCC STANDARD	MW #1	MW #2	MW #3
Chloride	250.0 ppm	300ppm	316ppm	300ppm
Selenium	0.05 ppm	0.063ppm	0.092ppm	0.064ppm
TDS	1000 ppm	1139ppm	1154ppm	1180ppm
TPH	N/A	6.90ppm	1.53ppm	<1.0ppm
Benzene	0.01 ppm	<0.002ppm	<0.002ppm	<0.002ppm
Toluene	0.75 ppm	<0.002ppm	<0.002ppm	<0.002ppm
Ethyl Benzene	0.75 ppm	<0.002ppm	<0.002ppm	<0.002ppm
Total Xylenes	0.62 ppm	<0.006ppm	<0.006ppm	<0.006ppm

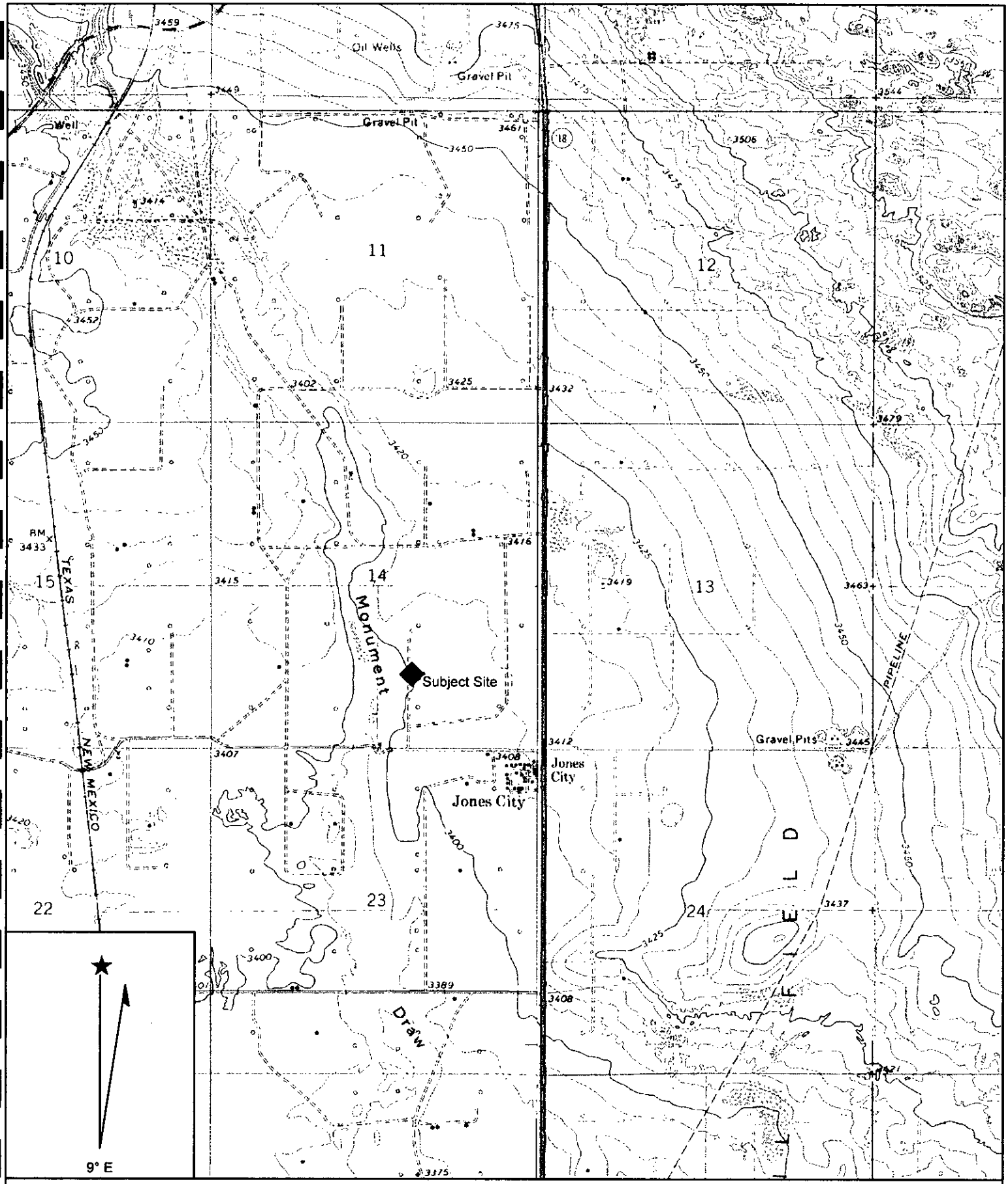
SAMPLE ID	NA (MG/L)	CA (MG/L)	MG (MG/L)	K (MG/L)	CO_3 (MG/L)	SO_4 (MG/L)	HCO_3 (MG/L)
MW – 1	104	127	36	7.19	0	266	233
MW – 2	340	120	30	4.72	0	260	216
MW – 3	231	129	33	4.86	0	242	216

IV. Figures and Appendices

Figures:
Vicinity Map
Potentiometric Map

Appendices:
Cumulative Well Water Quality Data
Analytical Results
Water Analysis Validation

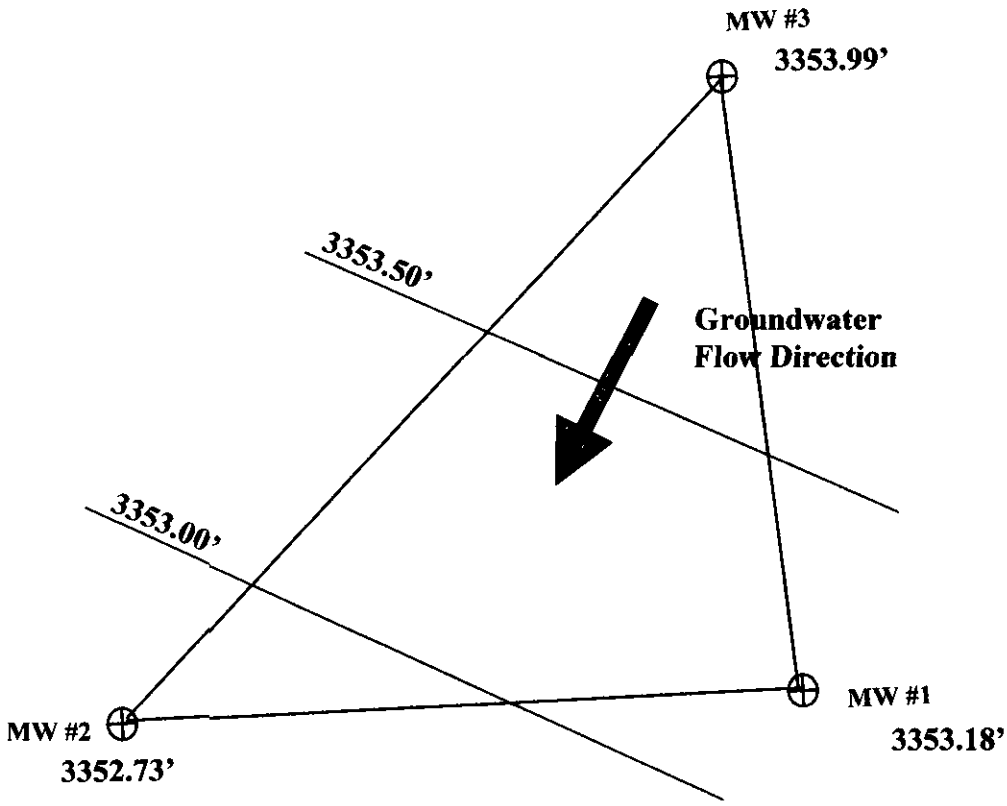
Figure 1
Vicinity Map



Name: EUNICE
Date: 3/26/2001
Scale: 1 inch equals 2000 feet

Location: 032° 28' 42.6" N 103° 07' 35.9" W
Caption: Chevron USA
Naomi Keenan Monitor Wells
Unit O, Section 14, T21S, R37E

Figure 2
Potentiometric Map



Unit O Section 14,
Township 21 South
Range 37 East

Scale 1"= 40'
Contour Interval 0.5'
Gradient 0.0072

Chevron USA	**Potentiometric Surface Map** **Naomi Keenan Monitor Wells** **March 14, 2001**	**Safety & Environmental Solutions, Inc.**

Appendix A
Cumulative Well Water Quality Data

Naomi Keenan Cumulative Monitor Well Data

Monitor Well #1

Contaminant	WQCC Standard	11/10/98 Initial Test	2/23/00 Quarterly Test	5/25/00 Quarterly Test	9/6/00 Quarterly Test	12/30/00 Quarterly Test
Chloride	250.0ppm	313ppm	264ppm	308ppm	303ppm	340ppm
Selenium	0.05ppm	0.08ppm	0.057ppm	<0.05ppm	<0.05ppm	<0.05ppm
TDS	1000ppm	1045ppm	1017ppm	948ppm	1215ppm	1177ppm
Benzene	0.01ppm	0.008ppm	<0.002ppm	<0.002ppm	<0.002ppm	<0.002ppm
Toluene	0.75ppm	0.023ppm	<0.002ppm	<0.002ppm	<0.002ppm	<0.002ppm
E. Benzene	0.75ppm	0.016ppm	<0.002ppm	<0.002ppm	<0.002ppm	<0.002ppm
Total Xylenes	0.62ppm	0.027ppm	<0.006ppm	<0.006ppm	<0.006ppm	<0.006ppm
TPH	N/A	88.9ppm	<1.0ppm	<1.00ppm	2.00ppm	<1.0ppm
Sodium	N/A	184ppm	79ppm	229ppm	217ppm	222ppm
Calcium	N/A	69ppm	99ppm	99ppm	86ppm	124ppm
Magnesium	N/A	36ppm	37ppm	35ppm	27ppm	42ppm
Potassium	N/A	14.10ppm	8.5ppm	9.8ppm	5.47ppm	7.38ppm
Conductivity	N/A	1805ppm	1684ppm	1376ppm	1702ppm	1907ppm
T-Alkalinity	N/A	168ppm	168ppm	188ppm	209ppm	214ppm
CO_3	N/A	0ppm	0ppm	0ppm	0ppm	0ppm
HCO_3	N/A	205ppm	205ppm	229ppm	255ppm	262ppm
pH	>6-9<	7.74ppm	7.33ppm	7.03ppm	7.45ppm	7.56ppm
Sulfate	600ppm	124ppm	40.6ppm	197ppm	225ppm	270ppm

Monitor Well #1 (Continued)

Contaminant	WQCC Standard	3/14/01 Quarterly Test
Chloride	250.0ppm	300ppm
Selenium	0.05ppm	0.063ppm
TDS	1000ppm	1139ppm
Benzene	0.01ppm	<0.002ppm
Toluene	0.75ppm	<0.002ppm
E. Benzene	0.75ppm	<0.002ppm
Total Xylenes	0.62ppm	<0.006ppm
TPH	N/A	6.90ppm
Sodium	N/A	104ppm
Calcium	N/A	127ppm
Magnesium	N/A	36ppm
Potassium	N/A	7.19ppm
Conductivity	N/A	1742ppm
T-Alkalinity	N/A	191ppm
CO_3	N/A	0ppm
HCO_3	N/A	233ppm
pH	>6-9<	7.19ppm
Sulfate	600ppm	266ppm

Monitor Well #2

Contaminant	WQCC Standard	11/10/98 Initial Test	2/23/00 Quarterly Test	5/25/00 Quarterly Test	9/6/00 Quarterly Test	12/30/00 Quarterly Test
Chloride	250.0ppm	294ppm	280ppm	316ppm	311ppm	315ppm
Selenium	0.05ppm	0.12ppm	<0.05ppm	<0.05ppm	<0.05ppm	<0.05ppm
TDS	1000ppm	1030ppm	1066ppm	1022ppm	1151ppm	1064ppm
Benzene	0.01ppm	0.007ppm	<0.002ppm	<0.002ppm	<0.002ppm	<0.002ppm
Toluene	0.75ppm	0.024ppm	<0.002ppm	<0.002ppm	<0.002ppm	<0.002ppm
E. Benzene	0.75ppm	0.021ppm	<0.002ppm	<0.002ppm	<0.002ppm	<0.002ppm
Total Xylenes	0.62ppm	0.039ppm	<0.006ppm	<0.006ppm	<0.006ppm	<0.006ppm
TPH	N/A	64.9ppm	<1.0ppm	1.52ppm	1.45ppm	<1.0ppm
Sodium	N/A	125ppm	82ppm	217ppm	214ppm	154ppm
Calcium	N/A	85ppm	99ppm	106ppm	79ppm	107ppm
Magnesium	N/A	47ppm	36ppm	32ppm	28ppm	42ppm
Potassium	N/A	8.35ppm	6.7ppm	7.2ppm	4.86ppm	4.75ppm
Conductivity	N/A	1814ppm	1774ppm	1465ppm	1717ppm	1781ppm
T-Alkalinity	N/A	144ppm	140ppm	164ppm	213ppm	163ppm
CO_3	N/A	0ppm	0ppm	0ppm	0ppm	0ppm
HCO_3	N/A	176ppm	171ppm	200ppm	260ppm	199ppm
pH	>6-9<	7.69	7.34ppm	7.32ppm	7.46ppm	7.77ppm
Sulfate	600ppm	124ppm	46.6ppm	211ppm	229ppm	167ppm

Monitor Well #2 (Continued)

Contaminant	WQCC Standard	3/14/01 Quarterly Test
Chloride	250.0ppm	316ppm
Selenium	0.05ppm	0.092ppm
TDS	1000ppm	1154ppm
Benzene	0.01ppm	<0.002ppm
Toluene	0.75ppm	<0.002ppm
E. Benzene	0.75ppm	<0.002ppm
Total Xylenes	0.62ppm	<0.006ppm
TPH	N/A	1.53ppm
Sodium	N/A	340ppm
Calcium	N/A	120ppm
Magnesium	N/A	30ppm
Potassium	N/A	4.72ppm
Conductivity	N/A	1797ppm
T-Alkalinity	N/A	177ppm
CO_3	N/A	0ppm
HCO_3	N/A	216ppm
pH	>6-9<	7.46
Sulfate	600ppm	260ppm

Monitor Well #3

Contaminant	WQCC Standard	11/10/98 Initial Test	2/23/00 Quarterly Test	5/25/00 Quarterly Test	9/6/00 Quarterly Test	12/30/00 Quarterly Test
Chloride	250.0ppm	333ppm	344ppm	356ppm	354ppm	352ppm
Selenium	0.05ppm	0.13ppm	<0.05ppm	<0.05ppm	<0.05ppm	<0.05ppm
TDS	1000ppm	1118ppm	1174ppm	1169ppm	1226ppm	1169ppm
Benzene	0.01ppm	0.006ppm	<0.002ppm	<0.002ppm	<0.002ppm	<0.002ppm
Toluene	0.75ppm	0.022ppm	<0.002ppm	<0.002ppm	<0.002ppm	<0.002ppm
E. Benzene	0.75ppm	0.019ppm	<0.002ppm	<0.002ppm	<0.002ppm	<0.002ppm
Total Xylenes	0.62ppm	0.034ppm	<0.006ppm	<0.006ppm	<0.006ppm	<0.006ppm
TPH	N/A	28.4ppm	<1.0ppm	<1.00ppm	1.72ppm	<1.0ppm
Sodium	N/A	136ppm	106ppm	232ppm	226ppm	180ppm
Calcium	N/A	91ppm	106ppm	112ppm	82ppm	116ppm
Magnesium	N/A	49ppm	43ppm	37ppm	26ppm	39ppm
Potassium	N/A	10.11ppm	7.4ppm	7.2ppm	3.76ppm	5.61ppm
Conductivity	N/A	1969ppm	1936ppm	1601ppm	1802ppm	1913ppm
T-Alkalinity	N/A	140ppm	152ppm	185ppm	172ppm	168ppm
CO_3	N/A	0ppm	0ppm	0ppm	0ppm	0ppm
HCO_3	N/A	205ppm	185ppm	185ppm	210ppm	205ppm
pH	>6-9<	7.74ppm	7.32ppm	7.35ppm	7.59ppm	7.71ppm
Sulfate	600ppm	124ppm	44.2ppm	221ppm	225ppm	177ppm

Monitor Well #3 (Continued)

Contaminant	WQCC Standard	3/14/01 Quarterly Test
Chloride	250.0ppm	300ppm
Selenium	0.05ppm	0.064ppm
TDS	1000ppm	1180ppm
Benzene	0.01ppm	<0.002ppm
Toluene	0.75ppm	<0.002ppm
E. Benzene	0.75ppm	<0.002ppm
Total Xylenes	0.62ppm	<0.006ppm
TPH	N/A	<1.0ppm
Sodium	N/A	231ppm
Calcium	N/A	129ppm
Magnesium	N/A	33ppm
Potassium	N/A	4.86ppm
Conductivity	N/A	1850ppm
T-Alkalinity	N/A	177ppm
CO_3	N/A	0ppm
HCO_3	N/A	216ppm
pH	>6-9<	7.41ppm
Sulfate	600ppm	242ppm

Appendix B
Analytical Results

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: BOB ALLEN
703 E. CLINTON, STE. 103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 03/14/01
Reporting Date: 03/19/01
Project Number: NOT GIVEN
Project Name: CHEVRON STEVENS
Project Location: EAST OF EUNICE

Sampling Date: 03/14/01
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (mS/cm)	T-Alkalinity ($mgCaCO_3/L$)
ANALYSIS DATE:		03/16/01	03/15/01	03/15/01	03/15/01	03/15/01	03/15/01
H5705-1	MW #1	104	127	36	7.19	1742	191
H5705-2	MW #2	340	120	30	4.72	1797	177
H5705-3	MW #3	231	129	33	4.86	1850	177
Quality Control		1.170	47	52	5.02	1489	NR
True Value QC		1.000	50	50	5.00	1413	NR
% Accuracy		117	94.3	104	100	105	NR
Relative Percent Difference		4.3	0	0	2.8	0.3	NR
METHODS:			SM3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER	SAMPLE ID	Cl^- (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		03/15/01	03/15/01	03/15/01	03/15/01	03/15/01	03/16/01
H5705-1	MW #1	300	266	0	233	7.19	1139
H5705-2	MW #2	316	260	0	216	7.46	1154
H5705-3	MW #3	300	242	0	216	7.41	1180
Quality Control		1050	54.86	NR	995	7.04	NR
True Value QC		1000	50.00	NR	1000	7.00	NR
% Accuracy		105	110	NR	99.5	101	NR
Relative Percent Difference		10.5	7.4	NR	0	0	NR
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Gayle A. Potter, Chemist

03/22/2001
Date

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR

SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: BOB ALLEN
703 E. CLINTON, STE. 103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 03/14/01
Reporting Date: 03/19/01
Project Number: NOT GIVEN
Project Name: CHEVRON STEVENS
Project Location: EAST OF EUNICE

Analysis Date: 03/19/01
Sampling Date: 03/14/01
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Se (ppm)
H5705-1	MW #1	0.063
H5705-2	MW #2	0.092
H5705-3	MW #3	0.064
Quality Control		0.049
True Value QC		0.050
% Recovery		98.0
Relative Percent Difference		4.1

METHOD: EPA 600/4-79-020 270.2

Chemist

03/22/2001
Date

H5705MXLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON, #103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 03/14/01
Reporting Date: 03/22/01
Project Number: NOT GIVEN
Project Name: CHEVRON-STEVENS
Project Location: EAST OF EUNICE

Sampling Date: 03/14/01
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

LAB NO.	SAMPLE ID	TPH (mg/L)	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE:		03/21/01	03/14/01	03/14/01	03/14/01	03/14/01
H5705-1	MW #1	6.90	<0.002	<0.002	<0.002	<0.006
H5705-2	MW #2	1.53	<0.002	<0.002	<0.002	<0.006
H5705-3	MW #3	<1.0	<0.002	<0.002	<0.002	<0.006
Quality Control		5.73	0.113	0.105	0.108	0.315
True Value QC		6.00	0.100	0.100	0.100	0.300
% Recovery		95.5	113	105	108	105
Relative Percent Difference		5.4	1.6	9.0	6.6	7.2

METHODS: TRPHC - EPA 600/4-79-020, 418.1; BTEX - EPA SW-846 8260

Chemist

03/22/2001
Date

H5705A.XLS

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240
(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: SESI	BILL TO PO #:
Project Manager:	Company: SAME
Address: 703 E. CLINTON, #103	Attn:
City: HOBBS State: NM Zip: 88240	Address:
Phone #: (505) 397-0510	City:
Fax #: (505) 393-4388	State: Zip:
Project #: Project Owner:	Phone #:
Project Name: CHEVRON-STEVENS	Fax #:
Project Location: East of Eunice	

FOR LAB USE ONLY				MATRIX						PRES.			SAMPLING		ANALYSIS REQUEST											
LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID:	ICE / COOL	OTHER:	DATE	TIME	TPH 418.1	BTEX	Cations & Anions	Selenium								
H5705-1	MW#1		4	X							X		3-14-01		X	X	X	X							
-2	MW#2		4	X							X		3-14-01		X	X	X	X							
-3	MW#3		4	X							X		3-14-01		X	X	X	X							

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished:	Date:	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
	Time:		Fax Result: ☐ Yes ☐ No
Relinquished By:	Date: 3/14/01	Received By: (Lab Staff)	REMARKS:
	Time: 3:00pm		
Delivered By: (Circle One)	Sample Condition Cool ☒ Yes ☐ No Intact ☒ Yes ☐ No	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other:			

† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020

Appendix C
Water Analysis Validation

Cations and Anions Calculation Check								
	Sample Name	H5705-1	H5705-2	H5705-3				
	Well Number	MW1	MW2	MW3				
	Date	03/14/01	03/14/01	03/14/01				
Equivalent Weight:	Lab	Cardinal	Cardinal	Cardinal				
22.99	Sodium (mg/L)	104	340	231				
20.04	Calcium (mg/L)	127	120	129				
12.15	Magnesium (mg/L)	36	30	33				
39.09	Potassium (mg/L)	7.2	4.7	4.9				
35.45	Chloride (mg/L)	300	316	300				
48.04	Sulfate (mg/L)	266	260	242				
30.00	Carbonate (mg/L)	0.0	0.0	0.0				
61.01	Bicarbonate (mg/L)	233	216	216				
50.04	Alkalinity (mg/L CaCO3)	191	177	177				
62.00	Nitrate (mg/L)	0.0	0.0	0.0				
	Sum Cations (meq/L)	14.0	23.4	19.3				
	Sum Anions (meq/L)	17.8	17.9	17.0				
	Percent Difference	12.0	-13.3	-6.3				
	Measured TDS (evap., mg/L)	1,139	1,154	1,180				
	TDS (calc. USGS sum, mg/L)	955	1,177	1,046				
	TDS (meas.) / TDS (calc. USGS)	1.2	1.0	1.1				
	TDS (calc. sum, mg/L)	1,073	1,287	1,156				
	Elect. Conductivity (umhos/cm)	1,742	1,797	1,850				
	TDS (C*0.7, mg/L)	1,219	1,258	1,295				
	TDS (calc. USGS) / Conductivity	0.55	0.65	0.57				
Test Criteria								
1. Anion-Cation Balance:			Anion Sum	Max % diff.				
			0 - 3.0	± 0.2				
			3.0 - 10.0	± 2				
			10.0 - 800	± 5				
2. TDS, Measured to Calculated:			1.0 < (measured TDS/calculated TDS) < 1.2					
3. TDS (calculated USGS) to EC Ratio:			Calculated TDS/conductivity = 0.55 - 0.7					