PADILLA & SNYDER
ATTORNEYS AT LAW
200 W. MARCY, SUITE 212
P.O. BOX 2523
SANTA FE, NEW MEXICO 87504-2523
(505) 988-7577

April 19, 1988

RECEIVED
APR 19 1988
OIL CONSERVATION DIVISION

HAND-DELIVERED

Mr. William LeMay, Director
Oil Conservation Division
State Land Office Building
Santa Fe, New Mexico 87504

Case 9368

Re: In the Matter of the Application of Siete Oil & Gas Corporation for Waterflood Project, Eddy County, New Mexico

Dear Mr. LeMay:

Enclosed for filing, in triplicate, please find the above-referenced Application. We request a hearing before the Oil Conservation Division at its next scheduled hearing date of May 11, 1988.

Very truly yours,

Ernest L. Padilla

ELP:crk

cc: Siete Oil & Gas Corporation

BEFORE THE OIL CONSERVATION DIVISION

IN THE MATTER OF THE APPLICATION OF
SIETE OIL & GAS CORPORATION
FOR WATERFLOOD PROJECT,
EDDY COUNTY, NEW MEXICO

No. 9368

APR 19 1993

OIL CONSERVATION DIVISION

APPLICATION FOR WATERFLOOD PROJECT

Applicant states:

1. That Applicant seeks authority to institute a waterflood project within the Shugart Yates 7-Rivers Queen Grayburg pool by the injection of water through the Blackhawk Federal Well No. 3, located 2040' FSL, 920' FWL, of Section 24, Township 18 South, Range 31 East, Eddy County, New Mexico.

2. That the horizontal limits of the waterflood project shall include the following described lands in Eddy County, New Mexico:

Township 18 South, Range 31 East,
Section 23: SE/4
Section 24: SW/4, SE/4 NW/4

3. That the injection formation is the Queen-Penrose with a perforated interval from 3722' to 3747', subsurface.

4. That the proposed injection well is planned as a conversion from an existing producing well.

5. The producing formation in the proposed project area is in an advanced stage of depletion and the area is suitable for waterflooding.

6. That attached hereto and made a part of this application is a Form C-108, together with its information requirements.

7. The proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste and should otherwise protect correlative rights.

WHEREBFORE, Applicant requests that the application be granted in its entirety, and for such other and proper relief as the Division deems proper and appropriate.

Respectfully submitted,

PADILLA & SNYDER

By: _____

Ernest L. Padilla
P. O. Box 2523
Santa Fe, New Mexico 87504-2523
(505) 988-7577

ATTORNEYS FOR APPLICANT

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: [X] Secondary Recovery [ ] Pressure Maintenance [ ] Disposal [ ] Storage
Application qualifies for administrative approval? [ ] yes [ ] no

II. Operator: Siete Oil and Gas Corporation

Address: P. O. Box 2523 Roswell, New Mexico 88202

Contact party: Eddie Rodriguez Phone: (505)-622-2202

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? [ ] yes [X] no
If yes, give the Division order number authorizing the project _____.

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

* VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

* X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)

* XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: Eddie Rodriguez Title Production/Reservoir Engineer

Signature: _____ Date: 3/24/88

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division district office.

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

(2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;

(3) the formation name and depth with expected maximum injection rates and pressures; and

(4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

SIETE OIL & GAS CORPORATION

Petroleum Building Suite 200
P.O. Box 2523 Roswell, New Mexico 88201
Telephone (505) 622-2202

SIETE OIL AND GAS CORPORATION

Blackhawk Federal No. 3 - Convert to Injection

NMOCD Form C-108 Section III

III. Data on injection well(s)

A. Injection well information (see attached schematic)

Tabular Data

1. Lease: Blackhawk Federal lease

   Well No: 3

   Location: 2040' FSL & 920' FWL
   Section 24: T18S, R31E
   Eddy County, New Mexico

2. Casing: 8-5/8" surface @ 351' w/500 sks.
   5-1/2" production @ 4498' w/1985 sks. circ. to surface

3. Injection tubing: ± 118 Jts. 2-3/8", 4.7 lb./ft., J-55 internally plastic coated tubing.

4. Packer: Baker Model AD-1 injection packer set @ 3670 feet.

B. Other well information

1. Injection formation: Queen-Penrose

   Field: Shugart Yates 7 - Rivers Queen Grayburg

2. Cased hole perforated interval from 3722' - 3747'

3. The Blackhawk Federal No. 3 well was originally drilled for oil and gas production.

4. There are no other perforated or tested intervals in the Blackhawk Federal No. 3 well.

5. Within the area of the Blackhawk Federal No. 3 there are no other lower or higher productive formations.

SIETE OIL & GAS CORPORATION

WELL: Blackhawk Federal No. 3
FIELD: Shugart
INTERVAL: Queen - Penrose
Comp: 2/01/86

LOCATION:
2040' FSL & 920' FWL
Section 24, T-18S, R-31E
Eddy County, N.M.

==========

ELEVATION: 3700' KB
ZERO: 8' AGL

TOPS
----
1. B/ Salt - 2152'
2. Yates 2422'
3. Queen - 3483'
4. Q - Penrose - 3716'
5. GraybURG - 4052'
6. San Andres - 4432'

8-5/8", 24#, J-55 surface csg @ 351' w/ 250 sxs DS High Early-2 cmt. & 250 Class A cmt. circ. to surface.

EQUIPMENT IN HOLE
==========
1. 118 Jts. 2-3/8" J-55. 4.7#/ft, P.L.* tbg. w/ 5-1/2" Baker Model AD-1 inj. pkr @ 3670'.

* Plastic Lined

PROPOSED INJECTION INTERVAL
==========
Queen - Penrose
* <-- perfs 3722, 23, 26, 28, 29, 30,
* 37, 38, 39.5, 41, 42.5, 44, 45.5,
* <-- 47 w/ 1 JSPF (14 holes)

Reperf 3736, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46 w/ 1 JSPF

5-1/2", 15.5#/ft, K-55 @ 4498' w/ 450 sxs 50-50 Pozmix tailed w/ 1535 sxs Dowell's light wt cement circ. to surface.

TD: 4500'
PBTD: 4463'

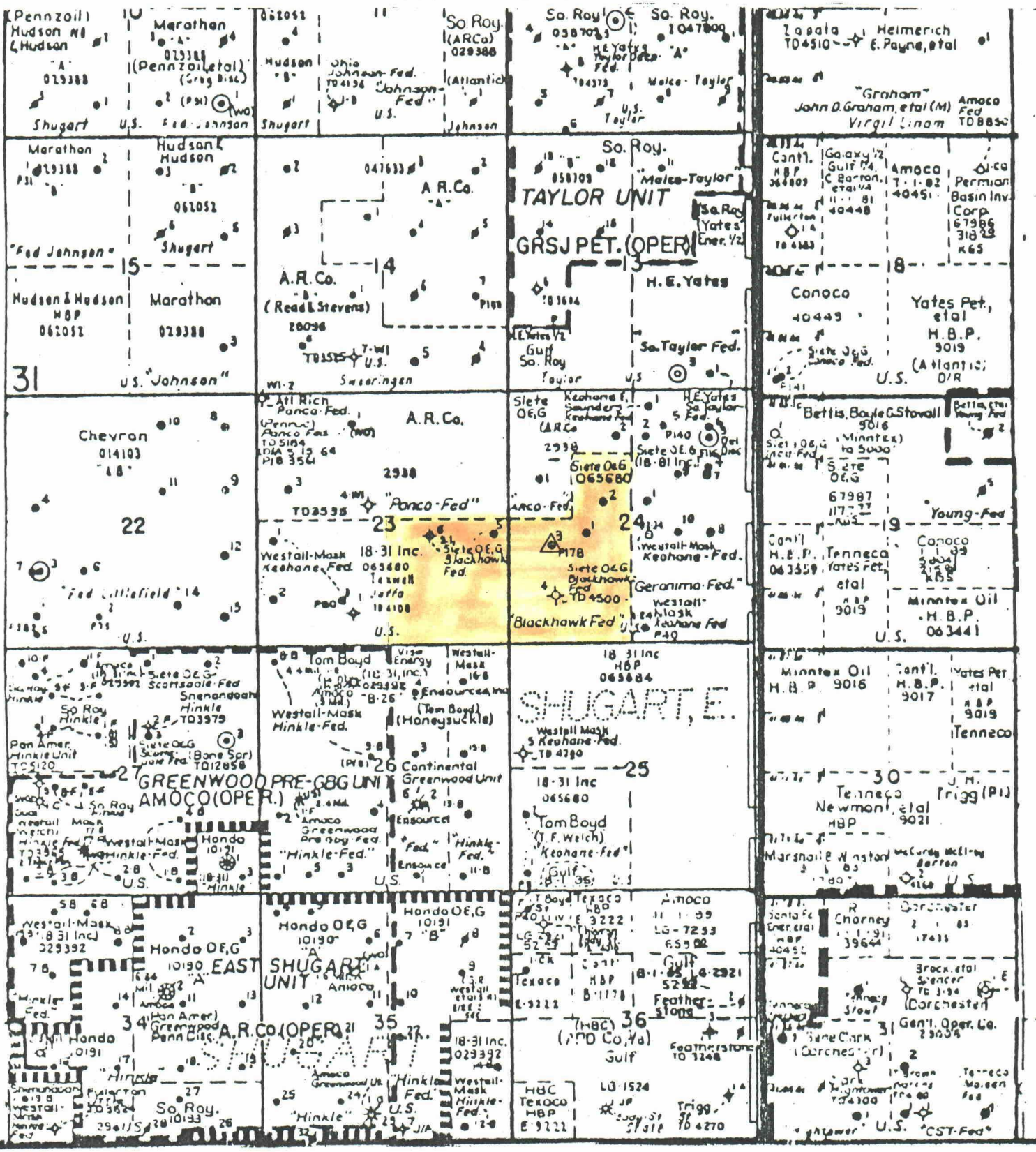
Notes
-----
1. Well originally drilled and completed for oil production.
2. No zones other than indicated have been tested.
3. No productive oil or gas zones exists above or below the proposed injection interval in the Blackhawk Federal No. 3.

DRAWN BY: JER
DATE: December 22, 1987

SIETE OIL & GAS CORPORATION

Blackhawk Federal No. 3 - Convert to injection

NMOCD Form C-108 Section V



SIETE OIL & GAS CORPORATION

Blackhawk Federal No. 3 - Convert to Injection

NMOCD Form C-108 Section V

The following wells are within the area of review (1/2) mile of Siete's Blackhawk Federal No. 3 proposed producing to injection well conversion.

Shugart Yates 7-Rivers Queen Grayburg

Well Name	Location	O/G	TD	Casing	Comp. Interval
Siete O & G Blackhawk Federal No. 3 Spudded 1/12/86	2040' FSL & 920' FWL Sec. 24: T18S, R31E Eddy County, NM	Oil	4500'	8 5/8" Surface @ 351' w/500 sks. 5 1/2" Production @ 4498' w/1985 sks.	Queen - Penrose (3722'-3747')
Siete O & G Blackhawk Federal No. 1 Spudded 3/24/85	2310' FSL & 1650' FWL Sec. 24: T18S, R31E Eddy County, NM	Oil	4527'	13 3/8" Surface @ 374' w/400 sks. 4 1/2" Production @ 4525' w/2150 sks.	Queen - Penrose (3761'-3814')
Siete O & G Blackhawk Federal No. 2 Spudded 8/4/85	2310' FSL & 1980' FWL Sec. 24: T18S, R31E Eddy County, NM	Oil	4500'	8 5/8" Surface @ 350' w/400sks. 5 1/2" Production @ 4500' w/2050 sks.	Queen - Penrose (3750'-3791')
Siete O & G Arco Federal No. 2 Spudded 6/2/86	950' FNL & 2310' FWL Sec. 24: T18S, R31E Eddy County, NM	Oil	4500'	8 5/8" Surface @ 357' w/250 sks. 5 1/2" Production @ 4497' w/750 sks.	Grayburg (4264'-4272')
Siete O & G Arco Federal No. 1 Spudded 3/12/85	1830' FNL & 660' FWL Sec. 24: T18S, R31E Eddy County, NM	Oil	5256'	13 3/8" Surface @ 350' w/370 sks. 4 1/2" Production @ 5255' w/2300 sks.	Queen - Penrose (3740'-3752') Grayburg (4247'-4254')
Siete O & G Blackhawk Federal No. 5 Spudded 11/14/86	2310' FSL & 330' FEL Sec. 23: T18S, R31E Eddy County, NM	Oil	4500'	8 5/8" Surface @ 351' w/225 sks. 5 1/2" Production @ 4500' w/990 sks.	Grayburg (4234'-4246')
Siete O & G Blackhawk Federal No. 6 Spudded 4/10/886	2310' FSL & 1650' FEL Sec. 23: T18S, R31E Eddy County, NM	* P&A	4500'	8 5/8" Surface @ 350' w/225 sks. 5 1/2" Production @ 4500' w/799 sks.	Grayburg (4214'-4229')

*Blackhawk Federal No. 6 was tested non-commercial and plugged 11/24/87 (See attached wellbore schematic).

SIETE OIL & GAS CORPORATION

Blackhawk Federal No. 3 - Convert to Injection

NMOCD Form C-108 Section V

The following wells are within the area of review (1/2) mile of Siete's Blackhawk Federal No. 3 proposed producing to injection well conversion.

Shugart Yates 7-Rivers Queen Grayburg

Well Name	Location	O/G	TD	Casing	Comp. Interval
Siete O & G Blackhawk Federal No. 4 Spudded 6/11/86	990' FSL & 990' FWL Sec. 24: T18S, R31E Eddy County, NM	**P&A	4500'	8 5/8" Surface @ 366' w/ 250 sks. No Production Casing in hole	Dry & Abandoned
Westall-Mask Keohane "24" Federal No. 1 Spudded 11/30/78	330' FSL & 2310' FEL Sec. 24: T18S, R31E Eddy County, NM	Oil	4200'	8 5/8" Surface @ 685' w/300 sks. 4 1/2" Production @ 4200' w/365 sks.	Grayburg (3785'-4135')
Westall-Mask Keohane "24" Federal No. 2 Spudded 10/18/85	2310' FSL & 2220' FEL Sec. 24: T18S, R31E Eddy County, NM	Oil	4500'	8 5/8" Surface @ 687' w/410 sks. 4 1/2" Production @ 4496' w/870 sks.	San Andres (4266'-4338') (4318'-4338')

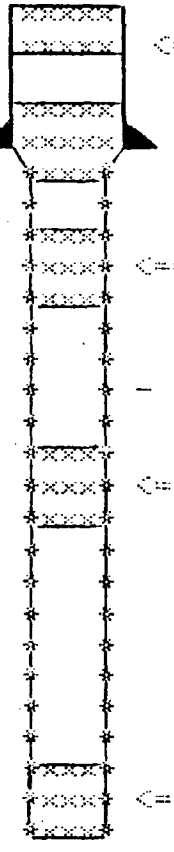
**Blackhawk Federal No. 4 determined dry and plugged (see attached wellbore schematic).

SIETE OIL & GAS CORPORATION

WELL: Blackhawk Federal No. 4
FIELD: Shugart
INTERVAL: Proposed Queen-Grayburg
Spudded 6/11/86
Drv & Abandoned; plugged 6/20/86

LOCATION:
990' FSL & 990' FWL
Section 24, T-18S, R-31E
Eddy County, N.M.

ELEVATION: 3713' KB
ZERO: 8' AGL



<== Plug # 5 (surface)
50' to surface

Plug # 4 ==>
100 foot cement plug
300'-400'

8-5/8", 24 #/ft K-55 @ 366'
w/ 250 sxs DS High Yield II circ.

<== Plug #3
100 foot cement plug 850-950

TOPS
---
1. B/ Salt - 2168'
2. Yates 2430'
3. Queen - 3491'
4. D - Penrose - 3732'
5. Grayburg - 3984'

- 7-7/8" Hole

<== Plug # 2
100 foot cement plug 2100-2200
tag top of plug @ 2085' @ 2 hrs.

Ran CNL-LDT-GR-Cal, DLL-MSFL & Cyberlook

<== Plug # 1
100 foot cement plug 4400-4500

TD: 4500'

DRAWN BY: JER
DATE: November 7, 1987

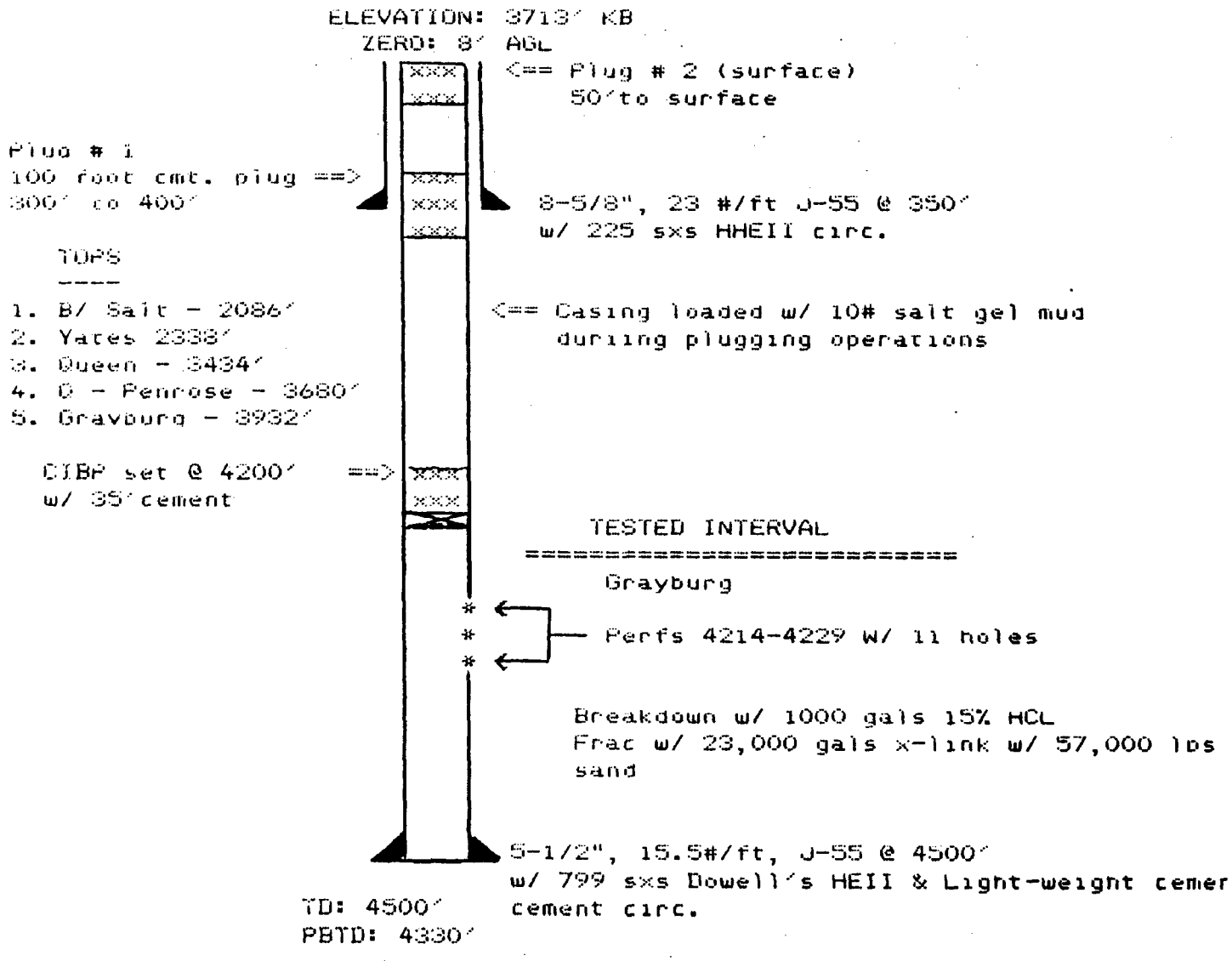
SIETE OIL & GAS CORPORATION

WELL: Blackhawk Federal No. 6
FIELD: Shugart
INTERVAL: Grayburg
Como: Well tested non-commercial
IP: 1 BOPD, 60 BWPD, TSTM-MCFGPD (GOR N/A)

LOCATION:
2310' FSL & 1650' FEL
Section 23, T-18S, R-31E
Eddy County, N.M.

==========

WELL PLUGGED AND ABANDONED ON 11/24/87



DRAWN BY: JER
DATE: November 23, 1987

/015

SIETE OIL & GAS CORPORATION

Petroleum Building Suite 200
P.O. Box 2523 Roswell, New Mexico 88201
Telephone (505) 622-2202

SIETE OIL AND GAS CORPORATION

Blackhawk Federal No. 3 - Convert to Injection

NMOCD Form C-108 Sections VII - XIII

VII. Injection Data

1. Injection Rates
   a. Proposed average daily water injection is 300 BWPD.
   b. Maximum rate of daily water injection is 500 BWPD.

2. The injection station for the gathering and processing injection water will be a closed system.

3. Injection pressures
   a. Proposed average daily injection pressures 370 PSI.
   b. Maximum daily injection pressure is 740 PSI.*

*Note: Maximum injection pressure abides by .2 PSI/Ft. maximum injection pressure imposed by the NMOCD. Future necessary increases in surface pressure will be obtained administratively from the NMOCD using field obtained "Step Rate Test" data.

4. Chemical analysis of injection and formation water (See attached Nalco water analysis).

   a. Proposed injection fluid will be produced water from offsetting Siete operated leases which currently produce from both the East Shugart Delaware and Shugart Grayburg formations. These leases are the Geronimo Federal lease (E/2 Sec. 24, T18S, R31E), Arco Federal lease (NE/4 NW/4 and SW/4 NW/4 Section 24, T18S, R31E), and Blackhawk Federal lease (Grayburg production only; located NE/4 NE/4 Section 23, T18S, R31E) in Eddy County, New Mexico and the Conoco Federal lease (SW/4 SW/4 Section 18, T18S, R32E), Inca Federal lease (N/2 and SW/4 NW/4 Section 19, T18S, R32E) and Jade Federal lease (SE/4 NW/4 Section 19, T18S, R32E) in Lea County, New Mexico.

   b. A sample of formation water was obtained from a nearby Siete operated Queen-Penrose producing well since a water sample could not be obtained from the existing active Penrose producers on the Blackhawk Federal lease. This well, the Scottsdale Federal No. 1 is in the NW/4 NE/4 of Section 27, T18S, R31E in Eddy County, New Mexico approximately 1 - 1/2 miles of the Blackhawk Federal No. 3 proposed injection well.

5. Water injection will be into a zone currently productive of oil and gas.

VIII. Geologic Data:

The injection interval on the proposed Blackhawk Federal waterflood is the Penrose sand of the Queen formation. This interval is a fine to medium grained sandstone of the Guadalupian Series and Permian age. The Penrose interval exists at an average depth of 3723 feet (-16 feet subsea) and has an average gross thickness of approximately 200 feet. The average net pay thickness of the injection interval is approximately 8 feet. There are no sources of drinking water overlying or underlying the proposed injection interval.

IX. No formation stimulation of the Penrose formation during the conversion of the Blackhawk Federal No. 3 to injection is anticipated.

X. The Blackhawk Federal No. 3 has a cumulative oil recovery of 19.3 MBO and a daily production of 11 BOPD, 0 BWPD, and 49 MCFGPD.

XI. There are no fresh water sources within 1 mile of Blackhawk Federal No. 3 proposed injection well.

XII. I, Eddie Rodriguez, a Production/Reservoir Engineer for Siete Oil and Gas Corporation and in behalf of, have compiled and examined all available geologic and engineering data and have not found any evidence of hydrologic connections between the proposed Blackhawk Federal Penrose injection zone and any sources of underground drinking water.

XIII. Proof of Notice - requirements

1. See attached mailing list and registered mail certificates.

DL FIELD SERVICES DIVISION
VISCO CHEMICALS

NALCO CHEMICAL COMPANY
6520 CARLSBAD HIGHWAY ▯ HOBBS NEW MEXICO 88240 ▯ AREA 505 393-0436

January 18, 1988

Siete Oil & Gas
Roswell, NM

Attention: Eddie Rodriguez

Eddie,

As you requested I have conducted water analyses on produced water from the Geronimo, Arco and Scottsdale leases. In addition, compatibility was determined to ensure that these waters will not cause scaling problems when mixed. The compatability report attached is for a combination of Geronimo/Arco water and Scottsdale water. The water labeled "produced" is the Geronimo/Arco water that you plan to inject and the sample labeled "fresh" is the water that is present in the formation now.

As you can see from the report, the $CaCO_3$ and the $CaSO_4$ indices are positive at some mixture ratios and temperatures. However, the magnitude of the indices is small and indicates only a slight chance of scale precipitation in the formation. If this is determined to be a problem, a concentration of 1-2 ppm of Visco 953 Scale Inhibitor can be added to the waters before injection.

Since the water tanks at the batteries are open to the atmosphere it will be necessary to remove the oxygen from the water before injection. This can be accomplished by adding an oxygen scavenger to the water before it is transferred to the skim tank. When the water station is complete and actual oxygen levels can be determined, the type and amount of oxygen scavenger can be selected.

Eddie, it is my opinion that the Geronimo/Arco water can be used for injection without any adverse results to the formation as long as the oxygen and scale problems are addressed. I look forward to working with you on this project in the near future. If you have any questions, please contact me at 505-393-0436. Thank you.

Respectfully,

David T. Parker
District Salesman

VISCO Water Compatibility Report

Prepared for SIETE OIL & GAS
LOCO HILLS

Parker, David T.
NALCO Chemical Company
21-JAN-88

	PRODUCED WATER	FRESH WATER
Sample Date	: 01/08/88	01/08/88
Water Source	: GERONIMO & ARCO	SCOTTSDALE

Temperature Degrees F	Water Mixture (Fresh/Produced)	CaCO3 Index Stiff-Davis units	CaSO4 Index Skillman units	Actual CaSO4 Mg/L
60	0 /100	* 0.29	* 11.81	992.
	20 / 80	* 0.35	* 9.40	907.
	40 / 60	* 0.39	* 6.90	822.
	50 / 50	* 0.40	* 5.61	779.
	60 / 40	* 0.40	* 4.28	737.
	80 / 20	* 0.41	* 1.49	652.
	100 / 0	* 0.41	* -1.57	567.
80	0 /100	* 0.52	* 11.84	
	20 / 80	* 0.58	* 9.43	
	40 / 60	* 0.62	* 6.94	
	50 / 50	* 0.62	* 5.65	
	60 / 40	* 0.62	* 4.32	
	80 / 20	* 0.64	* 1.53	
	100 / 0	* 0.63	* -1.52	
100	0 /100	* 0.80	* 11.76	
	20 / 80	* 0.87	* 9.35	
	40 / 60	* 0.90	* 6.85	
	50 / 50	* 0.91	* 5.56	
	60 / 40	* 0.91	* 4.22	
	80 / 20	* 0.92	* 1.42	
	100 / 0	* 0.92	* -1.64	
120	0 /100	* 1.14	* 11.36	
	20 / 80	* 1.20	* 8.92	
	40 / 60	* 1.24	* 6.38	
	50 / 50	* 1.24	* 5.07	
	60 / 40	* 1.24	* 3.71	
	80 / 20	* 1.26	* 0.86	
	100 / 0	* 1.25	* -2.27	

* Note: Nalco refered to the Scottsdales water (Similar to Blackhawk formation water, as fresh water

Temperature Degrees F	Water Mixture (Fresh/Produced)	CaCO3 Index Stiff-Davis units		CaSO4 Index Skillman units	
140	0 /100	*	1.53	*	11.39
	20 / 80	*	1.59	*	8.95
	40 / 60	*	1.63	*	6.42
	50 / 50	*	1.64	*	5.10
	60 / 40	*	1.64	*	3.75
	80 / 20	*	1.65	*	0.90
	100 / 0	*	1.65	*	-2.23
160	0 /100	*	1.98	*	11.46
	20 / 80	*	2.04	*	9.03
	40 / 60	*	2.08	*	6.51
	50 / 50	*	2.08	*	5.20
	60 / 40	*	2.08	*	3.85
	80 / 20	*	2.09	*	1.01
	100 / 0	*	2.09	*	-2.10
180	0 /100	*	2.48	*	11.54
	20 / 80	*	2.54	*	9.12
	40 / 60	*	2.58	*	6.60
	50 / 50	*	2.58	*	5.29
	60 / 40	*	2.58	*	3.95
	80 / 20	*	2.59	*	1.12
	100 / 0	*	2.59	*	-1.98

* At this temperature and total ionic strength, the value of "K" exceeds reported values. The index number given is estimated and if positive, scaling is expected.

SIETE OIL & GAS
LOCO HILLS

7-DEC-87

SCOTTSDALE FEDERAL
WELLHEAD

>>> Oil Field Water Analysis <<<

DISSOLVED SOLIDS

Cations		mg/l	meq/l		mg/l
Sodium	Na+	75,877.6	3,299.0	as NaCl	
Calcium	Ca++	7,600.0	380.0	as CaCO3	19,000.0
Magnesium	Mg++	5,346.0	440.0	as CaCO3	22,000.0
Barium	Ba++			as CaCO3	
Strontium	Sr++			as CaCO3	
Total Cations		88,823.6	4,119.0		

Anions		mg/l	meq/l		mg/l
Chloride	Cl-	145,680.0	4,108.2	as NaCl	240,000.0
Sulfate	SO4=	270.4	5.6	as Na2SO4	400.0
Carbonate	CO3=			as CaCO3	
Bicarb.	HCO3-	317.2	5.2	as CaCO3	260.0
Total Anions		146,267.6	4,119.0		

Total Sclids 235,091.2

METALS

Total Iron,Fe	0.9	as Fe	0.9
Acid to Phen,CO2		as CaCO3	

OTHER PROPERTIES

pH	6.1
Specific Gravity	1.2
Turbidity	
Oxygen, as O2 ppm	
Sulfide as H2Sppm	
Temperature F	70.0

SIETE OIL & GAS
LOCO HILLS

7-DEC-87

SCOTTSDALE FEDERAL
WELLHEAD

>>> Scaling Indices <<<

Positive values indicate scaling tendencies

Temperature (Deg. F)	Calcium Carbonate	Calcium Sulfate	Barium Sulfate	Strontium Sulfate
60	-0.12	-28.74	NA	NA
80	+0.08	-28.80	NA	NA
100	+0.32	-28.72	NA	NA
120	+0.61	-28.24	NA	NA
140	+0.95	-28.22	NA	NA
160	+1.32	-23.03	NA	NA
180	+1.74	-28.27	NA	NA
200	+2.20	NA	NA	NA
220	NA	NA	NA	NA
240	NA	NA	NA	NA
260	NA	NA	NA	NA
280	NA	NA	NA	NA
300	NA	NA	NA	NA
320	NA	NA	NA	NA

SIETE OIL & GAS
LOCO HILLS

7-DEC-87

ARCO FEDERAL
WELLHEAD

>>> Oil Field Water Analysis <<<

DISSOLVED SOLIDS

Cations		mg/l	meq/l		mg/l
Sodium	Na+	70,047.0	3,045.5	as NaCl	
Calcium	Ca++	8,000.0	400.0	as CaCO3	20,000.0
Magnesium	Mg++	4,131.0	340.0	as CaCO3	17,000.0
Barium	Ba++			as CaCO3	
Strontium	Sr++			as CaCO3	
Total Cations		82,178.0	3,785.5		

Anions		mg/l	meq/l		mg/l
Chloride	Cl-	133,540.0	3,765.8	as NaCl	220,000.0
Sulfate	SO4=	811.2	16.9	as Na2SO4	1,200.0
Carbonate	CO3=			as CaCO3	
Bicarb.	HCO3-	170.8	2.8	as CaCO3	140.0
Total Anions		134,522.0	3,785.5		
Total Solids		216,700.0			

METALS

Total Iron,Fe	0.7	as Fe	0.7
Acid to Phen,CO2		as CaCO3	

OTHER PROPERTIES

pH	6.1
Specific Gravity	1.2
Turbidity	
Oxygen, as O2 ppm	
Sulfide as H2Sppm	
Temperature F	70.0

>>> Scaling Indices <<<

Positive values indicate scaling tendencies

Temperature (Deg. F)	Calcium Carbonate	Calcium Sulfate	Barium Sulfate	Strontium Sulfate
60	-0.44	-13.48	NA	NA
80	-0.25	-13.59	NA	NA
100	-0.01	-13.53	NA	NA
120	+0.27	-12.98	NA	NA
140	+0.60	-12.85	NA	NA
160	+0.97	-12.76	NA	NA
180	+1.39	-12.68	NA	NA
200	+1.86	NA	NA	NA
220	NA	NA	NA	NA
240	NA	NA	NA	NA
260	NA	NA	NA	NA
280	NA	NA	NA	NA
300	NA	NA	NA	NA
320	NA	NA	NA	NA

>>> Scaling Indices <<<

Positive values indicate scaling tendencies

Temperature (Deg. F)	* Calcium Carbonate	Calcium Sulfate	Barium Sulfate	Strontium Sulfate
60	-0.10	-7.92	NA	NA
80	+0.11	-7.86	NA	NA
100	+0.40	-7.88	NA	NA
120	+0.73	-8.15	NA	NA
140	+1.12	-8.36	NA	NA
160	+1.57	-8.56	NA	NA
180	+2.07	-8.77	NA	NA
200	+2.63	NA	NA	NA
220	NA	NA	NA	NA
240	NA	NA	NA	NA
260	NA	NA	NA	NA
280	NA	NA	NA	NA
300	NA	NA	NA	NA
320	NA	NA	NA	NA

* At this temperature and total ionic strength, the value of "K" exceeds reported values. The index number given is estimated and if positive, scaling is expected.

SIETE OIL & GAS
LOCO HILLS

7-DEC-87

GERONIMO BATTERY
WATER TANK

>>> Oil Field Water Analysis <<<

DISSOLVED SOLIDS

Cations		mg/l	meq/l		mg/l
Sodium	Na+	114,115.5	4,961.5	as NaCl	
Calcium	Ca++	15,200.0	760.0	as CaCO3	38,000.0
Magnesium	Mg++	3,402.0	280.0	as CaCO3	14,000.0
Barium	Ba++			as CaCO3	
Strontium	Sr++			as CaCO3	
Total Cations		132,717.5	6,001.5		

Anions		mg/l	meq/l		mg/l
Chloride	Cl-	212,450.0	5,991.1	as NaCl	350,000.0
Sulfate	SO4=	405.6	8.4	as Na2SO4	600.0
Carbonate	CO3=			as CaCO3	
Bicarb.	HCO3-	122.0	2.0	as CaCO3	100.0
Total Anions		212,977.6	6,001.5		

Total Solids 345,695.1

METALS

Total Iron,Fe	12.0	as Fe 12.0
Acid to Phen,CO2		as CaCO3

OTHER PROPERTIES

pH	6.0
Specific Gravity	1.3
Turbidity	
Oxygen, as O2 ppm	
Sulfide as H2Sppm	
Temperature F	70.0

Form 3160-4
(November 1983)
(formerly 9-330)

Case 9368

Form approved.
Budget Bureau No. 1004-0137
Expires August 31, 1985

SF

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NM OIL CONS COMMISSION
Drawer DD
Artesia, NM 88210

SUBMIT IN DUPLICATE (See other instructions on reverse side)

5. LEASE DESIGNATION AND SERIAL NO.: LC 065680
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
7. UNIT AGREEMENT NAME:
8. FARM OR LEASE NAME: Blackhawk Federal
9. WELL NO.: #3
10. FIELD AND POOL, OR WILDCAT: Shugart - ~~Penrose~~ Y-SR-Q-G
11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec.24, T18S, R31E

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other

b. TYPE OF COMPLETION: NEW WELL [ ] WORK OVER [ ] DEEP-EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other

2. NAME OF OPERATOR: Siete Oil and Gas Corporation

3. ADDRESS OF OPERATOR: P. O. Box 2523, Roswell, NM 88201

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: 2040' FSL, 920' FWL
At top prod. interval reported below: Same
At total depth: Same

BUREAU OF LAND MANAGEMENT
FEB 05 1986
DIST. 6 N.M.

RECEIVED BY
FEB 10 1986
O. C. D.
ARTESIA, OFFICE

14. PERMIT NO. 30-015-25516 DATE ISSUED
12. COUNTY OR PARISH: Eddy
13. STATE: NM

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
1/12/86	1/20/86	2/01/86	3692' GR	3694'

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
4500'	4463	N/A	→	4500'	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 3722' to 3747' - Penrose 14 shots

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN: Schlumberger - CNL - LDT - GR - Calip - DLL - MSFL

27. WAS WELL CORED: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
8 5/8"	24#	351'KB	12 1/4"	250 sx High-Early #2	N/A
				250 sx A	
5 1/2"	15.5#	4498'KB	7 7/8"	1535 sx Light Wt.	
				450 sx 50/50 Poz	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
N/A				

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 3/8"	3704'	N/A

31. PERFORATION RECORD (Interval, size and number): 3722' to 3747' - .32 - 14 shots

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
3722' - 3747'	1500 gal 15% HCL Acid
	20,000 gal crosslink -
	16,000# 20/40 - 15,000#
	12/20

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
2/01/86	Pumping - (Jensen 114)	Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
2/05/86	17	N/A		126	EST 150	24	1190/1

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
N/A	N/A		178	211	34	36 @ 52°

ACCEPTED FOR RECORD
FEB 6 1986
CARLSBAD, NEW MEXICO

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.): Sold

TEST WITNESSED BY: Dwight Adamson

35. LIST OF ATTACHMENTS: NM OCD Forms, C-124, C-116-2, Schlumberger Open Hole Logs - Deviation Survey

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Brenda A. Justice TITLE Production Supervisor DATE 2/05/86

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries):

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
Penrose	3716'	3746'	Sandstone, oil, producing
Grayburg	4236'	4320'	Sandstone, salt water, no tests
Grayburg	4406'	4432'	Sandstone, salt water, no tests

38. GEOLOGIC MARKERS

NAME	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH
B/Salt	2152'	
Yates	2422'	
Queen	3483'	
Penrose	3716'	
Grayburg	4052'	
San andres	4432'	

Telephone (505) 748-2205

L & M DRILLING, INC. — Oil Well Drilling Contractors

P. O. BOX 470 / ARTESIA, NEW MEXICO 88210

January 30, 1986

Siete Oil & Gas ✓
PO Box 2523
Roswell, NM 88201

Re: Blackhawk Federal
2040' FSL & 920' FWL
Sec. 24, T18S, R31E
Eddy County, New Mexico

Gentlemen:

The following is a Deviation Survey for the above captioned well.

DEPTH	DEVIATION
357'	1/4°
851'	1/2°
1371'	1/2°
1874'	1/2°
2289'	1/2°
2729'	1/2°
3230'	1/2°
3731'	1/4°
4115'	3/4°
4500'	1°

BUREAU OF LAND MANAGEMENT RECEIVED FEB 03 1986 DIST. 4 N.M. Carlsbad, New Mexico

Very truly yours,

B. N. Muncy Jr.
President

STATE OF NEW MEXICO §
COUNTY OF EDDY §

The foregoing was acknowledged before me this 30th day of January, 1986.

Regina L. Garner
NOTARY PUBLIC

OFFICIAL SEAL
REGINIA L. GARNER
NOTARY PUBLIC - NEW MEXICO
NOTARY BOND FILED WITH SECRETARY OF STATE
My Commission Expires 9-15-88