Author: John Scott Alcorn
Affiliation: BTA Oil Producers
Date: August 1976

Field Name: Bagley (Pennsylvanian), North
Location: T-11, 12-S, R-33-E
County & State: Lea County, New Mexico

Discovery Well: Texas Pacific #1 Collier (10-11-33) Bagley (Lower Penn) North; July 1957 Cabot Corp. #1 Dallas (15-11-33) Bagley (Upper Penn) North; June 1962. On July 15, 1970, the Bagley (Penn), North Field was created by consolidating the above mentioned fields.

Exploration Method Leading to Discovery:
Subsurface, and oil shows encountered while drilling for Siluro-Devonian objective in area.

Pay Zone:
Formation Name: Pennsylvanian
Depth & Datum Discovery Well: 10,000 (-6000) Lower Penn
9,400 (-5400) Upper Penn
Lithology Description:
Limestone, white to tan chalky to fossiliferous, finely crystalline.

Approximate average pay: 1200 gross 200 net Productive Area 15000 acres

Type Trap: Porosity pinch-outs in a series of reefy limestone beds; developed in zones from the Cisco through the Strawn series. These beds are associated with a large anticlinal feature with gentle westward dip and steep eastward dip.

Reservoir Data:
6-10 % Porosity, Varies Md Permeability, 40 % Sw, _____ % So
Oil: 45° Gravity, sweet, amber-green color
Gas: Sweet - average GOR is 1500-1
Water: 37,160 Na+K, 6880 Ca, 462 Mg, 70,110 Cl, 850 SO_4, 195 CO_2, or HCO_3, 35.9 Fe
Specific Gravity 1.0797 Resistivity 0.087 ohms @ 77 °F
Initial Field Pressure: 3775 psi @ -6000 datum Reservoir Temp. 162 °F
Type of Drive:
Gas solution associated with connate water.

Normal Completion Practices:
Drill through Strawn series; run porosity and water saturation logs before setting casing on bottom. Pay zones are selectively perforated and acidized in two or three stages with up to 25,000 gallons.

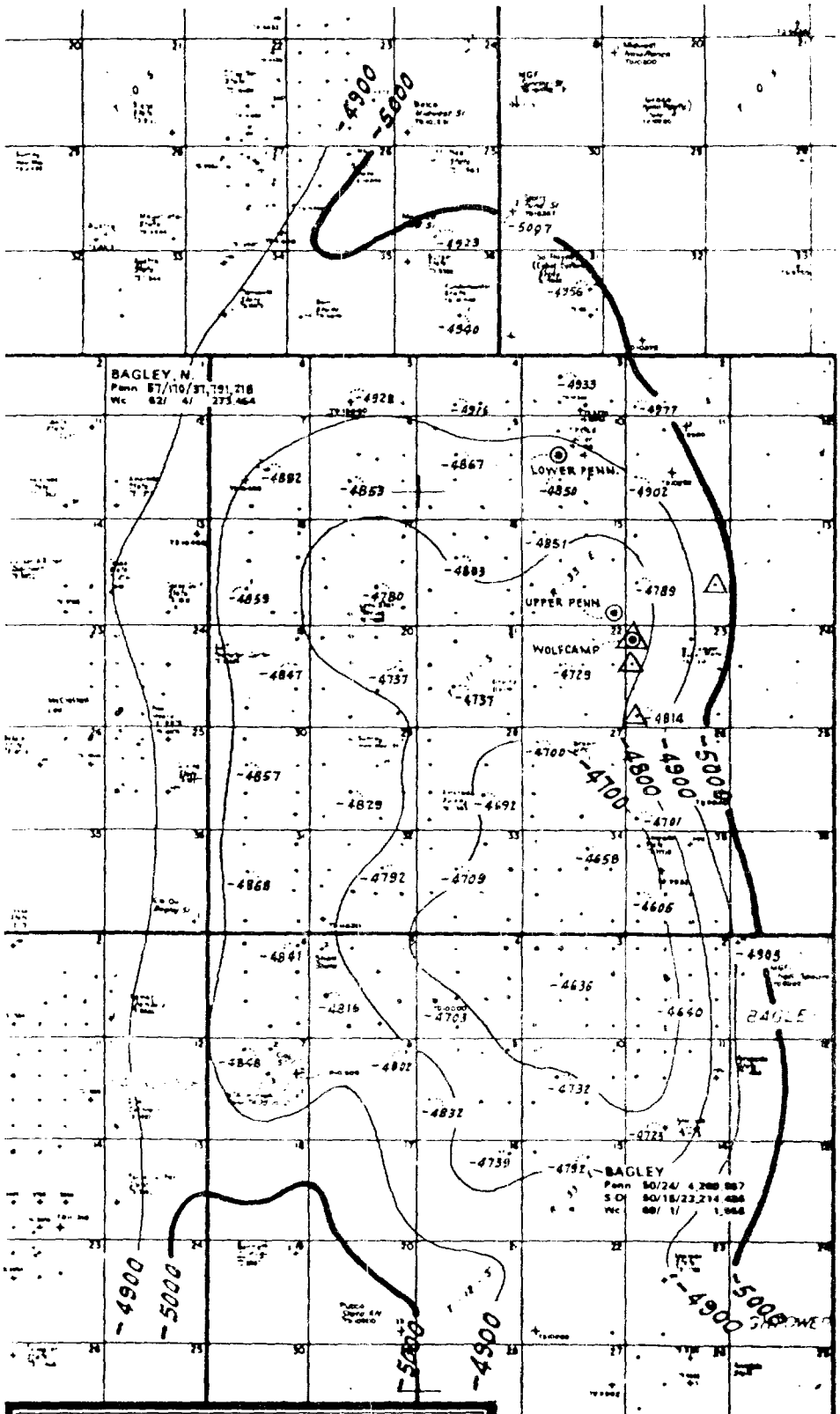
Type completion: Normal Well Spacing 80 Acres
Kobe or Beam Pump

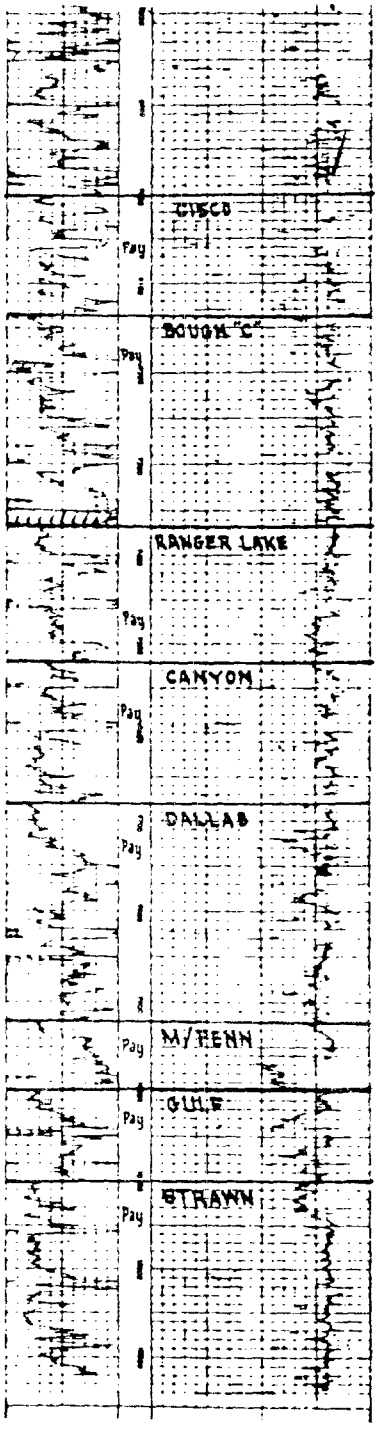
Deepest Horizon Penetrated & Depth:
Siluro-Devonian by Lone Star #1 Marley - TD 11686 (17-11-33)

Other Producing Formations in Field:
Wolfcamp

Production Data:

YEAR	TYPE	No. of wells @ yr. end		PRODUCTION OIL IN BARRELS GAS IN MMCF		YEAR	TYPE	No. of wells @ yr. end		PRODUCTION OIL IN BARRELS GAS IN MMCF	
		Prod.	S.I. or Abd.	ANNUAL	CUMULATIVE			Prod.	S.I. or Abd.	ANNUAL	CUMULATIVE
68	OIL	109	5	4,880,925	9,673,717	72	OIL	173	7	3,687,801	31,247,343
	GAS						GAS				
69	OIL	140	2	6,721,007	16,424,724	73	OIL	171	10	2,702,767	33,950,110
	GAS						GAS				
70	OIL	156	3	6,229,261	22,653,985	74	OIL	174	12	2,285,694	36,235,804
	GAS						GAS				
71	OIL	166	4	4,905,557	27,559,542	75	OIL	170	22	2,174,303	38,410,107
	GAS						GAS				





BAGLEY (PENN) NO. FIELD

LEA COUNTY, NEW MEXICO

STRUCTURAL CONTOURS ON

TOP BOUGH "C" LIME

CONTOUR INTERVAL = 100'

SCALE IN MILES

1/2 0 1

J. S. ALCORN JAN.-1976

LEGEND

- DISCOVERY WELLS
- PENN WELLS
- WOLFCAMP WELLS

ROSWELL GEOLOGICAL SOCIETY SYMPOSIUM

Author: William J. Lemay
Affiliation:
Date: May 1966

Field Name: Inbe Pennsylvanian
Location: T-10 & 11-S, R-33 & 34-E
County & State: Lea County, New Mexico

Discovery Well: T. F. Hodge #1 Humble State (originally called South Lane Field, but now combined). L. R. French, Jr. #1 Gulf State (Inbe). Hodge Humble State, SE/4 SW/4 Section 26, T-10-S, R-33-E, IPF 468 BOPD, 12/64" ck, GOR 1250, 3/29/62

Exploration Method Leading to Discovery:
100% Subsurface

Pay Zone:
Formation Name: Bough "C" Depth & Datum Discovery Well: 9658 (-5456)
Lithology Description: Tan to gray finely crystalline limestone with vugs and intercrystalline porosity. Vertical fracturing is common.

Approximate average pay: 27 gross 11 net Productive Area 4,000 acres

Type Trap: Structural & stratigraphic: updip pinchout of Bough "C" porosity westward with structural nosing and closure along a north-south trend.

Reservoir Data:
6 % Porosity, 104 Md Permeability, 38 % Sw, _____ % So
Oil: 47.8 green, sweet
Gas: GOR 1170, sweet
Water: _____ Na+K, _____ Ca, _____ Mg, _____ Cl, _____ SO_4, _____ CO_2, or HCO_3, _____ Fe
Specific Gravity _____ Resistivity _____ ohms @ _____ °F
Initial Field Pressure: 3473 psi @ 9,700 datum Reservoir Temp. 143 °F
Type of Drive: water drive ??

Normal Completion Practices: DST and/or core pay. Set 4 1/2" or 5 1/2" casing through pay and perforate net pay with 4 SPF. Acidize with 500-1,000 gals. A typical well will flow 200 to 300 BOPD but within a month structurally low wells will be on the pump and production will drop below top allowable.

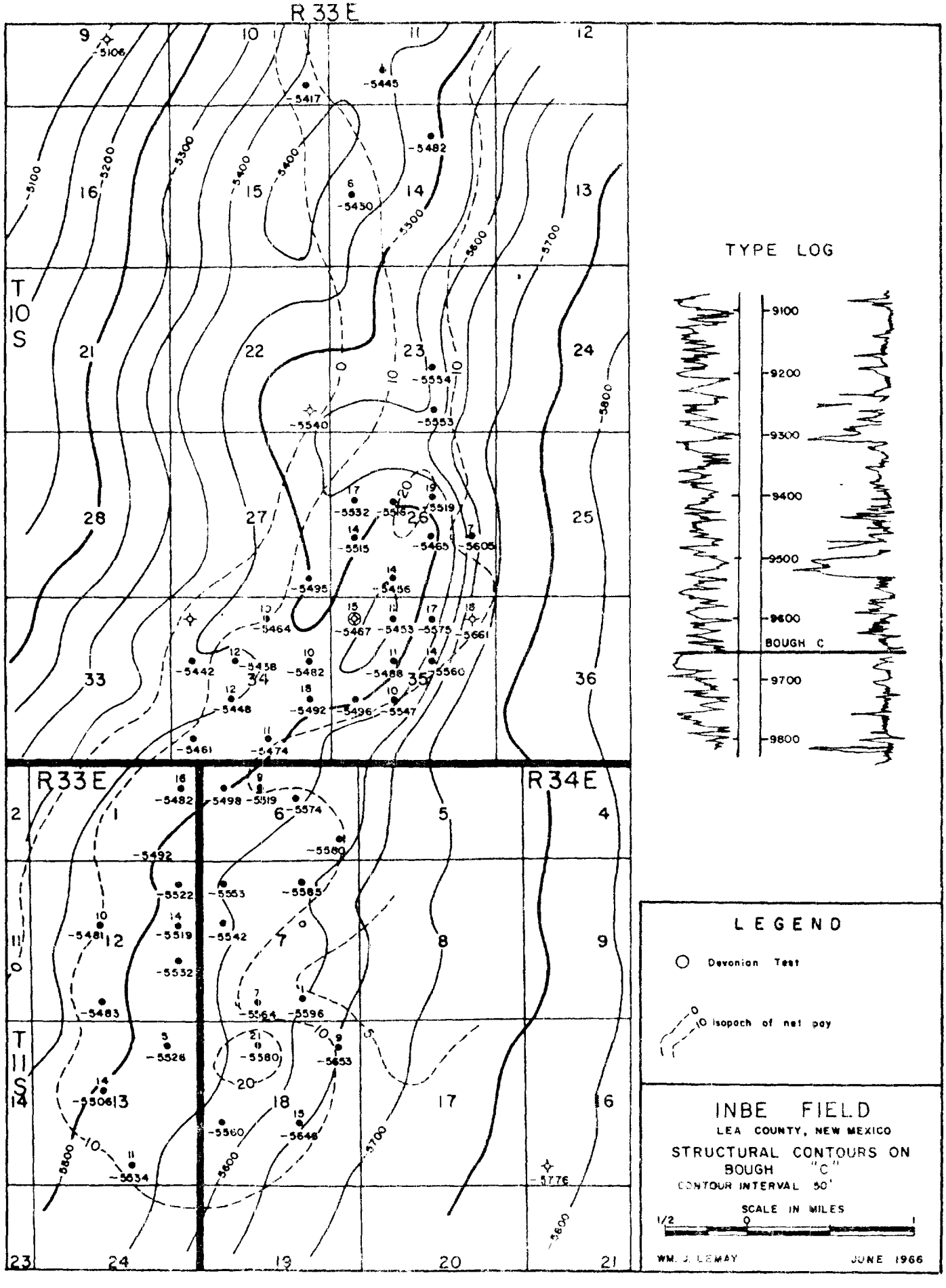
Type completion: Normal Well Spacing 80 Acres

Deepest Horizon Penetrated & Depth: Devonian 12,819'

Other Producing Formations in Field: Wolfcamp 9,310'

Production Data:

YEAR	TYPE	No. of wells @ yr. end: Prod.	S.I. or Abd.	PRODUCTION OIL IN BARRELS GAS IN MMCF: ANNUAL	CUMULATIVE	YEAR	TYPE	No. of wells @ yr. end: Prod	S.I. or Abd.	PRODUCTION OIL IN BARRELS GAS IN MMCF: ANNUAL	CUMULATIVE
1962	OIL	5	2	136,726	136,726		OIL				
	GAS			168,010	168,010		GAS				
1963	OIL	19	4	583,949	720,675		OIL				
	GAS			642,210	810,220		GAS				
1964	OIL	25	7	925,542	1,646,217		OIL				
	GAS			970,507	1,780,727		GAS				
1965	OIL	34	9	1,273,978	2,920,195		OIL				
	GAS			1,191,007	2,971,734		GAS				


R 33 E
R33E
R34E
T 10 S
T 11 S
TYPE LOG
9100
9200
9300
9400
9500
9600
BOUGH C
9700
9800
LEGEND
Devonian Test
Isopach of net pay
INBE FIELD
LEA COUNTY, NEW MEXICO
STRUCTURAL CONTOURS ON
BOUGH "C"
CONTOUR INTERVAL 50'
SCALE IN MILES
1/2
0
1
WM. J. LEMAY
JUNE 1966

APPLICATION FOR AUTHORIZATION TO INJECT:

I. Disposal.

II. Southern Union Exploration Company of Texas
Suite 400, Texas Federal Savings Bldg.
1217 Main Street
Dallas, Texas 75202

CONTACT: Ronald M. Sentz
OFFICE: 214-742-6051
HOME: 214-775-2027

III. A.

(1) SXT Bough "C" Unit #1
1980' FEL & 1980' FSL
Sec 35, T10S, R33E

(2) Drilled 16" hole with cable tools to 402'. Set 404' of 13 3/8", 61#/ft. J-55, ST&C casing on 4/17/81. Cemented with 400 sacks of Class "C" cement with 2% CaCl; circulated 10 sacks to surface. Cement fell back to 40' from surface. Tested casing to 500# for 15 minutes with no pressure loss. Cemented from 40' to surface using ready mix cement.

Drilled 409', 5' of new hole and pressure tested to 1500# for 30 minutes, no leak off.

Drilled 12 1/4" hole to 3990', set 9 5/8" casing on 6/14/81 to 3990'; string consisted of 19 joints of 40#/ft., J-55, ST&C and 76 joints of 36# per ft., J-55, ST&C. Cemented using 1250 sacks of Halliburton Lite with 15#/sack salt + 5#/sack gilsonite + 1/4#/sack flocele and tailed in with 300 sacks Class "C" with 2% CaCl. Cement circulated to surface. Tested casing to 1500# for 15 minutes, no leak off.

Drilled 5' of new formation with 7 7/8" bit and tested to 1000# for 15 minutes, no leak off.

Drilled 7 7/8" hole to 9951', set 5 1/2", 17#, N80, LT&C casing on 7/16/81. Two D.V. Tools where in the production casing, the first is at 8990', the second is at 6850'. The total cement used in the three stages was 2330 sacks of Class "H" containing 1864# of salt and 1314# of Halad 26.

The casing was cleaned out to 9915' and tested to 1500# for 15 minutes with no leaks. The top of cement for production casing was above 3800' according to a bond log run on 7/24/81 by Schlumberger.

(3) The tubing to be used will be 2 7/8", 6.4#/ft., N80, seal lock. The tubing will have plastic linings inserted and sealed in each joint. The 2 7/8" will be set to a depth of 9750'.

(4) A 2 3/8" x 5 1/2" Guiberson Uni VI packer with 2 3/8" x 2 3/8" F-1 on and off seal connector will be set at 9700'.

B.

(1) Formation - Bough "C"
Field & Pool - Inbe Permo Penn

(2) Perforations - 9816' to 9836', 1 SPF for 21 holes (cased).

(3) This well was originally drilled as an oil well; no commercial quantities of oil or gas were found. SXT feels this would make a good disposal well as the Bough "C" appears depleted.

(4) The perforations in the Bough "C" which are listed in III "B" (2) are the only shot in this well.

(5) No other gas or oil producing zones have been found on the Electric Logs and none were detected in the drilling samples.

IV. This is not an expansion of an existing project.

V. Maps showing 2 mile & 1/2 mile radius circles are attached.

VI. Schematics are attached.

VII (1) 5 loads per day - 900 bbls.

(2) The system will be opened to all on a contractual basis, no one will be able to use the system unless they have a key to the interlock control panel.

(3) Under present conditions there will be no injection pressure. The well will take all water on a vacuum. Tests have shown the bottom hole pressure to be 65#.

(4) Sources and a copy of an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water is attached.

(5) A chemical analysis of the disposal zone formation water is attached.

VIII. Appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth is attached.

IX. The well will be acidized with 2000 gallons of 15% HCl with scale inhibitor and flushed with 2% KCl water. The well will be acidized at 6 month intervals with the same volume and type of acid and flushed with injection water. The acid treatment will be done at any other time that well conditions indicate it is needed.

X. Appropriate logs and test data are attached.

XI. A chemical analysis of fresh water from two or more fresh water wells is attached.

XII. All Geological & Engineering materials have been reviewed and no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

Roy G. Sharrock
Vice-President & Chief Geologist

Ronald M. Sentz
Drilling & Production Engineer

Richard Thomas
Reservoir Engineer

XIII. There are no other operators that fall within the half mile radius circle; therefore, there are no operators to be notified.

GEOLOGICAL DRILLING REPORT
SOUTHERN UNION EXPLORATION COMPANY OF TEXAS

SUSCO STATE 35 #1
LEA COUNTY, NEW MEXICO

Michael L. Davies

MICHAEL L. DAVIES
Staff Geologist

SXT

ABSTRACT

The Southern Union Exploration of Texas' SUSCO State #35-1 was spudded on March 20, 1981 and drilled to a total depth of 9944' Logger, 9950' Driller, on July 13, 1981.

The samples were examined by a geologist in the field from 8900' to 9950'. Schlumberger logged the well from 9942' to surface.

Production was indicated and casing set on July 18, 1981.

LOCATION

1980' FSL & 1980' FEL, Sec. 35, T10S-R33E, Lea County, New Mexico

ELEVATION

KB: 4210.51', DF: 4209.51', GL: 4196.51'

CONTRACTOR

BJM Drilling Company, Rig #4
Toolpusher: Alton Willis
Drilling Consultant: Bodie Hooper (Foy Boyd)

SPUD AND COMPLETION DATA

Spud Date: March 20, 1981
Rotary Spud Date: June 5, 1981
Date TD Reached: July 13, 1981
Production Csg set on July 17, 1981

CASING

13 3/8" surface casing set at 404' with 400 sks Class 'C' cement
9 5/8" intermediate casing set at 3990' with 300 sks Class 'C' cement
5-1/2" production casing set at 9953' with 2330 sks Class'H' cement

ELECTRICAL SURVEYS

Schlumberger: DLL/GR/CL from 9942' to 3982'
CNL/FDC/GR/CL from 9940' to surface
Cyberlook from 9925' to 8725'

FORMATION TOPS

Permian	Depth	KB Datum
Anhydrite	1955'	+2256'
Yates	2663'	+1548
Queen	3500'	+ 711'
San Andres	3838'	+ 323'
Glorieta	5378'	-1167+
Abo	7680'	-3469+
Wolfcamp	8920'	-4709

	Depth	KB Datum
Permo-Penn	9655'	-5444
Pennsylvanian		
Bo 'C'	9810'	-5599
TD	9944'	-5733

DEVIATION RECORD

No.	Degree	Depth
1	3/4	745'
2	1/2	1235'
3	1/4	1731'
4	1/4	1933'
5	1/2	2433'
6	3/4	2758'
7	1-1/4	3516'
8	3/4	3990'
9	3/4	4485'
10	3/4	5094'
11	3/4	5353'
12	3/4	6049'
13	3/4	6573'
14	3/4	7032'
15	3/4	7765'
16	1	8079'
17	1-1/4	8 08'
18	1-1/4	8708'
19	1-1/2	8916'
20	1-1/4	9416'
21	1-1/4	9849'
22	1-1/4	9950'

BIT RECORD

No.	Make	Size	Type	Depth Out	Footage	Hours Run
1	HTC	12-1/4	RT	1458	1458	19
2	HTC	12-1/4	OWV-J	2758	825	20 1/2
3	STC	12-1/4	F-3	3355	597	33
4	SEC	12-1/4	S86-F	3990	645	69-1/4
5	HTC	7-7/8	J33	3990	0	0
6	HTC	7-7/8	J33	5135	1146	55 1/4
7	STC	7-7/8	F-57	8079	2943	202 1/2
8	SEC	7-7/8	M89-FF	8208	129	35 1/4

No.	Make	Size	Type	Depth Out	Footage	Hours Run
9	Reed	7-7/8	HPMH-S	8916	708	86 1/2
10	STC	7-7/8	F-57	9950	1034	136 1/2

TOTAL ROTATING HOURS: 657 3/4 hours

SAMPLE SUMMARY

10' Rotary samples were examined in the field by a geologist from 8900' to 9950'. Sample descriptions detailed on description sheets (attached).

8900-9670 LS: wht-lt gry, some buff, vyf-fxln, frm-hard, dns, tite, N-S, occ fossil crinoid frags, sl dolomitic

Sh: red-green, some lt gry, sft, clayey-silty, blky

9590-9620 Ss: wht, f-mg, sbang, poorly srtd, sl clay-filled, occ mafic incl, hard, poor interstitial porosity, N-S.

9670-9950 LS: wht-buff-gry, fxln, frm-hard, dns, mostly tite, N-S, occ fossil crinoid frags.

Sh: red-blk-gry, some green, sft-frm, sl slty, blky, some carb, some calc, blky.

Bo 'C'
9735-9770 correction is 9814-9849' (Pennsylvanian)
(driller's depth)

LS: wht-brn, fxln, frm-hard, mostly dns, occ grain with good vuggy and interxln porosity, N-S, some sl dolomitic.

Michael L. Davies
July 21, 1981

DAILY DRILLING REPORT

03/20/81 MI & RU. Spudded @ 1 PM, 3/19/81. Drilled 16" hole to 28', Caliche & sand.

Accum Cost $1,020

03/21/81 Drlg @ 70', made 42' in sand & clay. PU water sand @ 60'.

Daily Cost $720 Accum Cost $1,740

03/22/81 Reaming 16" hole to 17" hole, water sand. Set 16" pipe @ 70' to shut off water.

03/23/81 SD for Sunday.

03/24/81 Set 75' of 16" casing to shut off water. Drlg 16" hole to 80'

03/25/81 Drlg @ 110' in red clay, 16" hole.

03/26/81 Drlg @ 145' in sand, made 35'. Drlg a 16" hole.

03/27/81 Drlg @ 165' in red clay.

03/28/81 Drlg @ 185' in red clay, made 20'.

03/29/81 Drlg @ 205' in red clay, made 20'.

03/30/81 No operations.

03/31/81 Pulled 16" pipe, reamed hole. Run 125' of 16" pipe.

04/1/81 Clean out to 205'. Drld to 210' in red bed.

04/2/81 Drlg @ 225' in red clay, 16" hole.

04/3/81 No report.

04/4/81 Drlg @ 255' in blue clay.

04/5/81 Drlg @ 270' in blue clay, made 15'.

04/6/81 No operations,SD for Sunday.

04/07/81 Drlg @ 285' in blue clay, made 15'.

04/8/81 Drlg @ 300 in a 16" hole in blue clay, made 15'.

04/9/81 Drlg @ 315' in red clay, made 15'.

04/10/81 Drlg 16" hole from 315-330' in red clay.

04/11/81 Drlg @ 343' in red clay, in 16" hole, made 13'.

04/12/81 Drlg @ 350' in red clay, in 16" hole, made 7'.

04/13/81 No report.

04/14/81 Drlg @ 362' in 16" hole, in red clay, made 12'.

04/15/81 Drlg @ 379' in blue clay, made 17'.

04/16/81 Drlg @ 395' in 16" hole in blue clay, made 16'.

Will probably run surface pipe 04/17/81.

04/17/81 Drlg @ 402' in 16" hole in blue clay, made 7'.

04/18/81 Run 404' of 13 3/8" pipe. Cemented with 400 sacks of Class "C" cement, 2% cc. Circulated 10 sacks.

04/19/81 Drlg cement from 265-365'. Cement fell back 40'. Will cement 4/20/81 with ready mix.

04/20/81 No report.

04/21/81 Cemented 40' to surface and drilled cement 365-390'.

04/22/81 Drlg cement from 390-401'.

04/23/81 Drlg @ 408' in 12¼" hole in red clay, made 7'.

04/24/81 Drlg @ 418' in 12¼" hole in red clay, made 10'.

04/25/81 Drlg @ 425' in 12¼" hole in gray shale, made 7'.

04/26/81 Drlg @ 431' in 12¼" hole in gray shale, made 6'.

04/27/81 No report.

04/28/81 Drlg @ 438' in 12¼" hole in gray shale, made 7'.
Rig released.

04/29/81 Preparing to move out rig.

04/30/81 No further report until rotary rig moves in.

06/03/81 MI & RU rig. Working on draw works.

06/04/81 Working on rig.

Day 1

06/05/81 Drlg @ 500' in Redbed, made 25'.

MW 8.3, Vis 29, PH 10, CH 120,000

Bit #1, 12¼", OSC 38, in at 475', made 25' in ½ hr (WOB 65,000#, 80 RPM, pump C350, 5½" liner, 50 SPM 1000 psi). Pumping 7.4 BPM.

BHA: Drl collars 20-6¼"total 38,000#. 3 point reamer 38' above bit, 3 point reamer 69' above bit, shock sub on top of bit.

½ hr test BOP, 4 hrs PU DC, ½ hr drlg 25' cement, ½ hr drlg formation, 18½ hrs rig repairs, tagged cement @ 450', casing shoe set @ 475', 25' of cement on top of casing shoe.

Accum Cost $12,875

06/06/81 2nd day, Drlg @ 1933' in anhydrite and salt, made 1433' in 18½ hrs.

W.O. magnet, lost 2 cones.

Deviation: 3/4° @ 745'
½° @ 1235'
¼° @ 1731'
¼° @ 1933'

Bit #1, 12¼", OSC 3A, in @ 475' out @ 1933', made 1458' in 19 hrs (WOB 50,000#, 80 RPM).

Drlg 18½ hrs, 3/4 hr circ for survey, ½ hr survey, ¼ hr service rig, 3 hrs trip.

Daily Mud Cost $330 Daily Cost $7900
Accum Mud Cost $330 Accum Cost $25,338

06/07/81 3rd day, Drlg @ 1933' in anhydrite and salt, drlg with brine water.

MW 9.2, Vis 31, PH 10 CH 145,000.

RIH w/10" ID magnet 11 7/16" OD and PU 30 bearings plus other metal parts. No indication of large pieces. RIH w/ OWV bit.

W.O. magnet 2½ hrs, 20 hrs trip, 1½ hrs fishing.

Daily Cost $7900 Accum Cost $33,238

06/08/81 4th day, Drlg @ 2653' in anhydrite and salt, made 720' in 15 3/4 hrs, drlg 45.7'/hrs in brine cut mud.

MW 10, Vis 31, PH 12.5, CH 149,000.

Deviation: ½° @ 2433'.

Bit #2, 12¼", OWV, in @ 1933', made 720' in 15 3/4 hrs (60,000# WOB, 90 RPM).
Drlg 15 3/4 hrs, 6 3/4 hrs trip, 1 hr wash to bottom, ¼ hr totco.

Daily Mud Cost $657 Accum Cost $657
Daily Cost $8300 Accum Cost $41,538

06/09/81 Drlg @ 3012' in anhydrite, made 359' w/rate of 20.5'/hr.

Deviation 3/4° @ 2758'

MW 10, Vis 31, PH 12.

Bit #2, out @ 2758', made 825' in 20 1/2 hrs, W.O.B. 60,000#, RPM 80.
Bit #3, 12 1/4", F3, made 254' in 12 3/4 hrs., W.O.B. 50,000#, RPM 60.

17 1/2 hrs. drlg, 5 hrs. trip, 1 1/4 hr. wash 60' to bottom,
1/4 hr. service rig.

Daily Mud Cost $528 Accum Mud Cost $1,439
Daily Cost $8,300 Accum Cost $49,838

06/10/81 Drlg @ 3355' in anhydrite & lime, made 342' @ rate of 17.1'/hr.

Deviation 1 1/2° @ 3240'
1 1/2° @ 3355'

MW 10, Vis 31, PH 12.

20 hrs. drlg, 1 1/2 hrs. trip, 1 1/4 hrs. survey, 1/4 hr. service rig.

Bit #3, out @ 3355', made 597' in 32 3/4 hrs., W.O.B. 50,000#, RPM 60.
Bit #4, 12 1/4", S86F.

Daily Mud Cost $528 Accum.Mud Cost $1,439
Daily Cost $9,217 Accum Cost $59,055

06/11/81 Drlg @ 3498' in anhydrite, made 143'.

MW 10, Vis 30, PH 12.

15 1/4 hrs. drlg, 6 1/2 hrs. trip, 2 1/4 hrs. wash & ream 60' to bottom.

Bit #4, made 143' in 15 1/4 hrs., W.O.B. 40,000#, RPM 50.

Daily Mud Cost $159 Accum Mud Cost $1,801
Daily Cost $19,062 Accum Cost $70,818

06/12/81 Drlg @ 3715' in anhydrite, made 215', rate 9.25'/hr.

MW 10.1, Vis 31, PH 12.

Bit #4, made 360' in 38½ hrs (WOB 50,000#, 60 RPM).

Deviation: 1¼° @ 3516'.

23¼ hrs drlg, ½ hr survey, ¼ hr service rig.

Daily Mud Cost $159 Accum Mud Cost $1,801
Daily Cost $8300 Accum Cos$78,218

06/13/81 9th day, Drlg at 3947' in anhydrite, made 232' in 23¼ hrs, drlg 9.9'/hr.

MW 10.1, Vis 31, PH 12, CH 164,000.

Bit #4, 12¼", in at 3355', made 592' in 61 3/4 hrs, 9.8'/hr.

Drlg 23¼ hrs, ¼ hr service rig, ½ repair stand pipe.

Daily Mud Cost $160 Accum Mud Cost $1801
Daily Cost $8300 Accum Cost $86,518

06/14/81 Drlg @ 3990' in anhydrite, made 53'.

6½ hrs drlg, 1½ hrs circ, ¼ hr survey, 6 3/4 hrs trip, 1 hr W.O. fill, ¼ hr service rig, 1¼ hr RU casing crew and LD machine, 6½ hrs running 9 5/8" casing.

MW 10.5, Vis 34, PH 12, 4% oil.

Deviation: 3/4° @ 3990'.

Bit #4, 12¼", out @ 3990', made 635' in 68¼ hrs (WOB 50,000#, 60 RPM).

Daily Mud Cost $159 Accum Mud Cost $180
Daily Cost $8900 Accum Cost $95,418

06/15/81 Depth 3990'. Running 9 5/8" casing, set @ 3990'.

Cemented 2/1250 sacks of Halliburton lite, 15# salt, 5# gilsonite, ¼# flocele, 300 sacks Class "C" 2% chloride. PD @ 1:15 p.m. CST. Plug held 1500# pressure.

Ran 19 joints of 40#, 9 5/8" casing. Ran 76 joints of 36# 9 5/8",shoe joint set @ 3990'. Ran centralizers as per program.

5 hrs running casing, 2 hrs circ and wasing 40' to bottom, 2¼ hrs cementing, 1 hr hanging BOP, 5 hrs set slips and W.O. cement, 2 hrs cut 9 5/8" casing, put on wellhead, test same to 1000#, held ok, 6 3/4 hrs rig repairs. Rig released at 11:15 p.m.

Daily Cost $21,086
Accum Cost $111,704

06/16/81 Depth @ 3990' in anhydrite. Down 24 hrs. for rig repair.

Daily Cost $1,000 Accum Cost $112,704

06/17/81 Day 13, Drlg @ 3990' in anhydrite. Present operation checking DC in holes.

MW 8.2, Vis 29, PH 12.

Bit #5, 7 7/8" J33, in @ 3990'.

BHA: 4½"-DP E grade, 4½" XO connection, 21-DC 6¼" 63,000#, 6 point reamer at bit, shock sub 9' above bit, 3 point reamer 16' above bit, 3 point reamer 53' above bit.

20 hrs rig repair, 2 hrs NU BOP, ½ hrs test BOP to 1000#, ok. 1½ hrs checking DC in hole.

Daily Cost $12,622 Accum Cost $123,835

06/18/81 Days 14, Drlg @ 4051' in anhydrite and lime, made 61' in 4½ hrs, rate 13.5'/hr.

MW 8.3, Vis 28, PH 10, CH 12,000.

Bit #5, 7 7/8" J33 in @ 3990' out @ 3990'. Bit #6, 7 7/8" J33 in @ 3990', made 61 in 4½ hrs (WOB 30,000#, RPM 40).

4½ hrs drlg, 2 hrs checking DC in hole, 1½ hrs cut drlg line, 9½ hrs trip, 2 hrs W.O. magnet, ½ hr fishing, 1 hr trying to work past junk with bit #5 (retrieved ½ of cone from 12¼" bit).

Daily Mud Cost $522 Accum Mud Cost $3242
Daily Cost $11,822 Accum Cost $135,657

06/19/81 Drlg @ 4544' in anhydrite and lime, made 493' in 23 3/4 hrs, 20.75'/hr.

MW 8.4, Vis 28, PH 10, CH 240,000.

Bit #6, 7 7/8" J33,in @ 3990' made 554' in 23 3/4 hrs, WOB 40,000#, 19.6'/hrs.

Drlg 23 3/4 hrs, ¼ hr service rig.

Daily Mud Cost $216 Accum Mud Cost $3022

Daily Cost $10,163 Accum Cost $138,521

06/20/81 16th day, Drlg @ 5062' in limestone and sandstone, made 518'.

Deviation 3/4° @ 4485'

MW 8.5, Vis 28, PH 11, Chl 24,000.

Bit #6, made 1072' in 51 3/4 hrs., W.O.B. 40,000#, RPM 48.

23 1/2 hrs. drlg, 1/2 hr. survey.

Daily Mud Cost $356 Accum Mud Cost $3598
Daily Cost $8,300 Accum Cost $146,820

06/21/81 Drlg @ 5355' in shale & limestone, made 293'.

Deviation 3/4° @ 5094'

MW 8.2, Vis 85, WL 28, PH 10.5, CH 24,000.

Bit #6, 7 7/8" J33, in @ 3990', out @ 5136', made 1146' in 53 3/4 hrs (40,000# WOB, 48 RPM). Bit #7, 7 7/8"F57, in @ 5136', made 219' in 16 3/4 hrs.

18 3/4 hrs drlg, 4½ hrs trip, ½ hr survey, ¼ hr wash 14' to bottom.

Daily Mud Cost $273 Accum Mud Cost $4636
Daily Cost $8300 Accum Cost $155,120

06/22/81 Drlg @ 5877' in lime and shale, made 522' in 23¼ hrs, 22.45'/hr.

MW 8.5, Vis 28, PH 10, CH 104,000.

Deviation: 3/4° @ 5353'.

Bit #7, 7 7/8" F57, in @ 5136', made 741' in 40 hrs (WOB 40,000#, 48 RPM).

23¼ hrs drlg, ½ hr totco, ¼ hr service rig.

Daily Mud Cost $296 Accum Mud Cost $8300
Daily Cost $5328 Accum Cost $163,320

06/23/81 Drlg @ 6310' in lime & shale, made 433'.

Deviation 3/4^{o} @ 6049'

MW 8.5, Vis 28, PH 10.5.

23 1/4 hrs. drlg, 1/2 hr. survey, 1/4 hr. service rig.

Bit #7, made 1174' in 63 1/4 hrs., W.O.B. 40,000#, RPM 48.

Daily Cost $11,430 Accum Cost $167,451

06/24/81 Drlg @ 6527' in lime & shale, made 217' w/rate of 14.23'/hr.

MW 9, Vis 28, PH 10.5.

15 1/2 hrs. drlg, 1/4 hr. service rig, 8 1/4 hr. down (replace stand pipe & derrick).

Bit #7, made 1391' in 78 3/4 hrs., W.O.B. 40,000#, 48 RPM

Daily Mud Cost $290 Accum Mud Cost $5,801
Daily Cost $8,300 Accum Cost $168,451

06/25/81 Drlg @ 6888' in lime & shale, made 361', rate of 16.36'/hr.

Deviation 3/4^{o} @ 6573'

MW 9, Vis 28, PH 10.5.

Bit #7, made 1752' in 102 1/4 hrs., W.O.B. 40,000#, RPM 48.

23 1/2 hrs. drlg, 1/2 hr. survey.

Daily Mud Cost $295 Accum Cost $6250
Daily Cost $10,200 Accum Cost $171,351

06/26/81 Drlg @ 7230' in lime & shale, made 342' w/rate of 14.14'/hr. Day 22

Deviation 3/4^{o} @ 7032'

MW 9.1, Vis 28, PH 10.5

Bit #7, made 2094' in 125 1/2 hrs., W.O.B. 40,000#, 48 RPM.

23 hrs. drilling, 1/2 hr. survey, 1/2 hr. service rig.

Daily Mud Cost $330 Accum Mud Cost $7,281
Daily Cost $11,400 Accum Cost $175,496

5/27/81 23rd day, Drlg @ 7565' in limestone and shale, made 335' in 23 3/4 hrs, 14.5'/hr, mudding up.

Salt gel MW. 9.6, Vis 30, PH 10.5, CH 145,000.

Bit #7, 7 7/8" F57, in @ 5136', made 2429' in 149¼ hrs (WOB 40,000#, 48 RPM) 16.3'/hr 23 3/4 hrs drlg, ¼ hrs rig service.

Daily Mud Cost $341 Accum Mud Cost $7353
Daily Cost $8400 Accum Cost $183,486

5/28/81 24th day, Drlg @ 7765', made 20' in 16 hrs, 12.5'/hr.

Mud brine gel, MW 9.8, Vis 33, solids 2%, 5% oil, PH 10.5, CH 148,000.
Put in 25 BO yesterday.

Bit #7, 7 7/8" F57, in @ 5136', made 2629' in 166½ hrs (WOB 40,000#, 48 RPM) 15.79'/hr.

16 hrs drlg, ¼ hr service rig, 7 3/4 hrs working tight hole, pulled 3 joints and drlg back to bottom (also tight).

Daily Mud Cost $386 Accum Mud Cost $9256
Daily Cost $9700 Accum Cost $193,186

5/29/81 25th day, Drlg @ 7856' in abo shale, made 91' in 11¼ hrs, 8.1'/hr.

Salt gel, MW 10, Vis 36, solids 3%, oil 5%, PH 10, CH 148,000.

Deviation: 3/4° @ 7765'.

Bit #7, 7 7/8" F57, in @ 5136', made 2719' in 176 3/4 hrs (WOB 40,000#, RPM 48) 15.38'/hr.

11¼ hrs drlg, 11½ hrs TIH for DP, 25 stands, working tight hole back to bottom, 1 hr totco, 1½ hrs service rig.

Daily Mud Cost $410 Accum Mud Cost $10,335
Daily Cost $8300 Accum Cost $201,487

06/30/81 26th day, Drlg @ 8060' in abo shale, made 204', 8.25'/hr.

MW 9.5, Vis 37, PH 10.5.

23 3/4 hrs drlg, ¼ hr service rig.

Bit #7, made 2923' in 200¼ hrs (WOB 40,000#, 48 RPM).

Daily Mud Cost $412 Accum Mud Cost $10,735
Daily Cost $8300 Accum Cost $209,786

07/01/81 Day 27, Drlg @ 8109' in abo shale, made 49' in 12¼ hrs.

Salt water gel, MW 9.5, Vis 37, solids 4.5%, oil 3%, PH 10, CH 138,000.

Deviation: 1° @ 8079'.

Bit #7, 7 7/8" F57, in @ 5136' out @ 8079', made 2943' in 202¼ hrs (WOB 40,000#, 48 RPM). Graded 7 7 1/8. Bit #8, 7 7/8" M89TF, in @ 8079', made 30' in 10 hrs (WOB 30,000#, 48 RPM).

12¼ hrs drlg, ¼ hr totco, ¼ hr service rig, 9½ hrs trip, 1½ hrs cut drlg line. Strap talley 8076.34'.

Daily Mud Cost $214 Accum Mud Cost $13,162
Daily Cost $11,458 Accum Cost $213,945

07/02/81 28th day, Drlg @ 8194' in abo shale, made 85', 3/57'/hr.

MW 10, Vis 37, oil 2½%, PH 10.

23 3/4 hrs drlg, ¼ hr service rig.

Bit #8, made 115' in 33 3/4 hrs (WOB 40,000#, RPM 48).

Daily Mud Cost $451 Accum Mud Cost $14,219

Daily Cost $11,450 Accum Cost $225,395

07/03/81 29th day, Drlg @ 8263' in the abo, made 69' in 14 hrs, 5'/hr.

Salt water gel, MW 9.7, Vis 36, WL NC, Solids 3.9%, oil 3% PH 10, Chl 9300.

Deviation: 1¼° @ 8208'.

Bit #8, 7 7/8" M89TF in @ 8079' out @ 8208', made 129' in 38¼ hrs (WOB 40,000#, 48 RPM). 1/16 out of gauge.
Bit #9, 7 7/8" Reed HPMH, in @ 8208', made 55' in 9½ hrs (WOB 35,000#, 50 RPM) 5.79'/hr.

14 hrs drlg, ¼ hr survey, 8 3/4 hrs trip, 1 jet pits.

Daily Mud Cost $566 Accum Mud Cost $14,785
Daily Cost $12,300 Accum Cost $237,695

07/04/81 30th day, Drlg @ 8449' in lime and shale, made 186' in 23 3/4 hrs, 7.85'/hr.

Salt water gel, MW 9.7, Vis 33, WL NC, Solids 3.8%, oil 3%, PH 10, YP 18, PV 5, CHL 93,000.

Bit #9, 7 7/8" HPMH in @ 8208, made 241' in 33¼ hrs (WOB 35,000#, 60 RPM, 7.25'/hr).

23 3/4 hrs drlg. ¼ hr service rig.

Daily Mud Cost $498 Accum Mud Cost $14,936
Daily Cost $8300 Accum Cost $245,995

07/05/81 31st day, Drlg @ 8615' in lime and shale, made 166' in 23 3/4 hrs, 6.99'/hr.

Salt gel, MW 9.6, Vis 36, WL NC, solids 3.5%, oil 3%, PH 10, CHL 96,000.

Bit #9, 7 7/8" HPMH in @ 8079', made 413' in 57 hrs (WOB 35,000#, 60 RPM, 7.25'/hr).

23 3/4 hrs drlg, ¼ hr service rig.

Daily Mud Cost $5488 Accum Mud Cost $16,467
Daily Cost $8300 Accum Cost $254,295

07/06/81 32nd day, Drlg @ 8850' in shale and lime, made 235', 9.89'/hr.

MW 9.4, Vis 36, PH 9.9, oil 1.8%.,

23 1/4 hrs drlg , 3/4 hrs survey and service rig.

Deviation: 1¼° @ 8708'.

Bit #9, made 642' in 80 3/4 hrs (WOB 35,000#, 60 RPM).

Daily Mud Cost $547 Accum Mud Cost $17,517
Daily Cost $8300 Accum Cost $262,595

07/07/81 Drlg @ 8965' in shale & lime, made 116'.

MW 9.6, Vis 35, FC 3/32, PH 10, oil 1%.

Deviation 1 1/2° @ 8916'

Bit #9, made 709' in 88 hrs., out @ 8916'. W.O.B. 35,000#, 60 RPM.
Bit #10, F57, 3/11, in @ 8916', made 49' in 10 1/2 hrs., W.O.B. 40,000#, RPM 50.

14 3/4 hrs. drlg, 1/4 hr. survey, 1/4 hr. service rig, 8 3/4 hrs. trip.

Daily Cost $12,400 Accum Cost $274,995

07/08/81 Day 34, Drlg @ 9151' in shale & lime, made 186', rate 7.8'/hr.

MW 9.6, Vis 35, FC 3/32, PH 10.5, oil 1%

23 3/4 hrs. drlg, 1/4 hr. service rig.

Bit #10, made 235' in 34 1/4 hrs., W.O.B. 45,000#, 60 RPM.

Daily Mud Cost $544 Accum Cost $18,519
Daily Cost $8,300 Accum Cost $283,295

07/09/81 35th day. Drlg @ 9330' in shale & lime, made 179'.

MW 9.5, Vis 34, PH 10, oil .75%

Bit #10, made 414' in 57 3/4 hrs., W.O.B. 40,000#, RPM 60.

23 1/2 hrs. drlg, 1/2 hr. jet shale pits & service rig.

Daily Mud Cost $535 Accum Mud Cost $18,753
Daily Cost $9,265 Accum Cost $292,560

07/10/81 36th day. Drlg @ 9503' in shale & lime, made 173'.

Deviation 1 1/4° @ 9416'

MW 9.6, Vis 35, FC 1/32, PH 10, oil .75%.

Bit #10, made 507' in 81 hrs., W.O.B. 40,000#, RPM 60.

23 1/4 hrs. drlg, 3/4 hr. service rig & survey.

Daily Cost $15,473 Accum Cost $318,033

07/11/81 Day 37, drlg @ 9679' in shale & lime, made 176'.

MW 9.5, Vis 35, FC 1/32, PH 10.

Bit #10, made 763' in 104 3/4 hrs., W.O.B. 40,000#, RPM 60.

23 3/4 hrs. drlg, 1/4 hr. rig service.

Daily Mud Cost $529 Accum Mud Cost $19,586
Daily Cost $8,300 Accum Cost $326,333

07/12/81 Day 38. Strap out of hole. Geolograph depth 9770'. Pipe strap @ 9849'. Drilled 91' of lime & shale in 15 1/2 hrs.

MW 9.6, Vis 41, WL 9, PH 10.

Bit #10, made 844' in 120 hrs., W.O.B. 40,000#, 60 RPM.

15 1/2 hrs. drlg, 3 hrs. trip, 1/4 hr. survey, 1/4 hr. rig service, 5 hrs. circulating.

Daily Cost $8,300 Accum Cost $334,633

07/13/81 Day 39, drlg @ 9903' in shale & lime, made 54'.

Deviation 1 1/4° @ 9849'

MW 9.5, Vis 38, WL 12, PH 9.5.

Bit #10, made 899' in 133 1/4 hrs., W.O.B. 40,000#, 60 RPM.

10 hrs. drlg, 7 hrs. trip, 4 hrs. cut drlg line, 1 3/4 hrs. preparing mud line, 3/4 hr. wash to bottom, 1/2 hr. W.O. orders.

Daily Mud Cost $106 Accum Mud Cost $23,523
Daily Cost $9,100 Accum Cost $343,733

Drlg @ 9950' in shale and lime, made 47' in 9 hrs, 5.22 /hr.

Presently logging, reached TD 2:15 p.m., 7/13/81.

MW 9.5, Vis 46, WL 8, solids 5%, PH 10, Ch 67,000.

Deviation: 1 ¼° @ 9950'.

Bit #10, 7 7/8" F57 in @ 8916' out @ 9950', made 946'(WOB 40,000#, 60 RPM). Grade T6, B6, G116.

9 hrs drlg, 6 hrs circ, ¼ hr totco, 5 3/4 hrs scrap out of hole, 3/4 hr down time, repair drum chain , 1 hr RU lubricator, 1 hr logging.

Log depth 9944', strap depth 9953.35'.
Received truck load of 13 3/8" pipe for Susco 27 State #1.

Daily Mud Cost $1355 Accum Mud Cost $24,878
Daily Cost $15,067 Accum Cost $358,880

07/15/81 Day 41, Drlg @ 9950' in lime and shale.

Circ hole to LD DP.

Salt water gel, MW 9.5, Vis 44, WL 8, solids 5%, PH 10, CH 67,000.

Bit #10, running back into hole to circ hole.

19 hrs logging, 4 hrs trip, 1 hr circ.

Fluid caliper log, RIH to 7750'.

Daily Cost $46,216 Accum Cost $397,797

07/16/81 TD 9950' in shale and lime.

Running 5½" casing.

MW 9.6, Vis 44, WL 8, PH 10.

7 hrs circ hole, 7½ hrs LD DP & DC, ½ hr down (repair air valve), 1 hr change pipe rams and RU to run casing, 6 hrs run 5½" casing, 2 hrs W.O. set of tongs.

Daily Cost $8300 Accum Cost $406,096

07/17/81 Day 42, TD 9950' in shale and lime.

2½ hrs W.O. Cores, 1½ hrs running 5½" casing, 2 hrs washing 8' and circ to bottom, 4½ hrs cementing, 12 hrs circ, 1 3/4 hrs PU BOP and set 5½" slips.

Daily Cost $52,835 Accum Cost $451,634

07/18/81 Day 43, TD 9950', RD and moving rig, 4½ hrs. Set 5½" casing and NU well-head. Released rig @ 10:15 a.m.

Daily Cost $2292 Accum Cost $453,927

Cementing procedure:

1-FS
1-jt 5½" 17# N80
1-FC
25-jts 5½" 17# N80
1-DV tool
63-jts 5½" 17# N80
1-DV tool
198-jts 5½"17# N80

FS @ 9951.41', 1st DV tool set @ 8990', 2nd DV tool set @ 6850'. Cemented w/2330 sks Class "H" w/1864# salt, 1314# of Halad 26, 6%.

1st stage, pump 10 BW, 25 bbls of cement, dropped 1st DV plug and opened DV tool, then displaced 230 bbls of mud. Circ for 6 hrs, pumped 10 BW and 117 bbls of cement, dropped send plug and displaced w/210 bbls of mud. Closed 1st DV tool and opened 2nd DV tool and circ 6 hrs. Pumped 10 BW and 319 bbls of cement, dropped closing plug and displaced w/119 bbls of mud. Bumped plug and closed tool with 2108# of pressure. Set slips, waited 5 hrs and cut casing, pipe set with 7000#. Good circ throughout entire job.

07/19/81 Moving out rig.

07/20/81 RD BJM and moved to Susco "27" State #1.

SOUTHERN UNION SUPPLY COMPANY | #1 | Sesco State 35 | Lea | New Mexico

LOCATION 1930' S & E L's Sec 35, T10S - R33E | KIND OF SAMPLES 10' rotary | DESCRIBED BY M.L. Davies | DATE 7-10-81 | ELEVATION 4210.5' KB | PAGE 1

DEPTH	DOLOMITE %	DOLOMITE Color	DOLOMITE Texture & Acc. Mat.	LIMESTONE %	LIMESTONE Color	LIMESTONE Texture & Acc. Mat.	ANHY & GYP %	ANHY & GYP Col.	Salt Ptd. A.	SHALES blk	SHALES g	SHALES r	SHALES gn	SHALES	SANDSTONE %	SANDSTONE Col.	SANDSTONE Texture & Acc. Mat.	CHERT %	CHERT Col.	POROSITY %	POROSITY GR.	POROSITY Type	Rock	STAIN %	STAIN GR.	FLUOR %	FLUOR Col.	REMARKS
3900-10	70	gry	fxln, frm, limey								X	X		slty-clayey, silty						sl		Int	Dol					Tr dolomitic lim
10-20				50	wht-buff	frm, vyfxln, dns, tite					X	X	X	AA variegated						sl		Int	Ls					scat por
10-30				20	AA	AA					X	X	X	AA														
20-40				20	AA	AA					X	X	X	AA				Tr.	orange									
40-50				50	wht.	fvm, cryptxl-cryp xln, dns, tite						X	X	AA														
50-60				80	AA	AA						X	X	AA														
60-70				30	AA	fvm, vyfxln, dns, tite						X	X	AA														Ls, some dolo
70-80				70	gry-buff	fvm, fxln, dns						X	X	AA						Tr		Int.	Ls					Ls dolomitic
80-90				70	wht	vyfxln, dns, tite						X	X	AA														″
90-9000				80	AA	AA						X	X	AA clayey														″
9000-10																												
10-20				90	wht-buff	vyfxln, dns, tite						X	X	AA														″
20-30				90	grey	fxlny, dns, tite						X	X	AA														″
30-40				70	AA	AA						X	X	AA														
40-50				70	AA	AA						X	X	AA														
50-60				50	AA	AA						X	X	AA														

SOUTHERN UNION SUPPLY COMPANY | 1 | Susan 35 | Lea | New Mexic

LOCATION: 1980' fs & els Sec 35, T10s - R33E

KIND OF SAMPLES	DESCRIBED BY	DATE	ELEVATION	PAGE
10' rotary	M. L. Davies	7-10-81	4210 5 KB	2

DEPTH	DOLOMITE			LIMESTONE			ANHY & GYP		Salt Ptd.	SHALES					SANDSTONE			CHERT		POROSITY			Rock	STAIN		FLUOR		REMARKS
	%	Color	Texture & Acc. Mat.	%	Color	Texture & Acc. Mat.	%	Col.	A.	blk	g	r	gn		%	Col.	Texture & Acc. Mat.	%	Col.	%	GR.	Type		%	GR.	%	Col.	
9060-70				80	gry-buff	frm, fxln, dns, tite						X	X	blky, clayey														Ls. sl dolomitic
70-80				90	AA	AA						X	X	AA														"
80-90				90	gry-dk gry	AA, carbonaceous						X	X	AA														"
90-9100				90	AA	AA						X	X	AA														"
9100-10				90	wht-some gry	frm, vyf-fxln, dns, tite						X		AA														"
10-20				90	wht-gry	AA, fxln						X	X	AA														"
20-30				90	AA	AA						X	X	AA														"
30-40				90	AA	AA						X	X	AA														"
40-50				90	wht-some gry	AA						X	X	AA														"
50-60				100	AA	AA																						
60-70				70	gry-wht	fxln, frm, dns, tite						X	X	AA														"
70-80				90	wht	vyfxln, frm, tite						X	X	AA														Ls. gy sl dolom.
80-90				50	AA	AA						X	X	AA														"
90-9200				30	AA	AA						X	X	AA														"
9200-10				80	wht, some gry	frm, vyfxln, dns, tite						X	X	AA														
10-20	20	dk gry	sl xln, frm, dns	60	wht	frm, vfxln, dns, tite						X	X	AA						<10		Int.						

SOUTHERN UNION SUPPLY COMPANY	1	Susco State 35	Lea	New Mex

LOCATION	KIND OF SAMPLES	DESCRIBED BY	DATE	ELEVATION	PAGE
1980' fsl & fel Sec 35, T10S-R33E	10' rotary	M.L. Davis	7-10-81	4210.5 KB	3

DEPTH	DOLOMITE			LIMESTONE			ANHY & GYP		Salt Ptd.	SHALES						SANDSTONE			CHERT		POROSITY			Rock	STAIN		FLUOR		REMARKS
	%	Color	Texture & Acc. Mat.	%	Color	Texture & Acc. Mat.	%	Col.	A.	blk	g	r	gn			%	Col.	Texture & Acc. Mat.	%	Col.	%	GR.	Type		%	GR.	%	Col.	
9220-30	30	dk gry	AA	60	AA	AA						x	x	AA							<10		Int	dol					Ls dolomitic
30-40	30	AA	AA	60	AA	AA						x	x	AA							<10		Int	dol					Ls dolomitic
40-50				70	gry-wht	fxln, frm, dns tite.						x	x	AA.															AA
50-60				40	AA	AA						x	x	AA															AA
60-70	10	gry-buff	fxln, frm, dns, tite	60	wht	frm, vfxln, dns tite						x	x	AA															AA
70-80	20	AA	AA	30	AA	AA						x	x	AA							<10		Int	dol					Ls dolomitic
80-90				50	wht-gry	fxln, dns.						x	x	AA							10		Int	Ls					"
90-9300				20	AA	AA, tite.						x	x	AA															
9300-10				10	wht	vvfxln, fxln, frm, dns, tite.						x	x	AA																Ls dolomitic
10-20				20	AA	AA, sa-vbu Sft.						x	x	AA															"
20-30				40	bru Sft-wht	fxln, frm, dns, tite.						x	x	AA															"
30-40												x	x	AA															"
40-50				20	wht	fxln-fgrn dns tite.						x	x	AA															"
50-60				20	wht-gry	AA						x	x	AA															Ls sl dolomitic
60-70				20	AA	AA						x	x	AA															"
70-80				80	wht-sme	bru Sft, fxln, frm, dns, tite						x	x	AA															"
80-90				50	AA	AA						x	x	AA															"

SOUTHERN UNION SUPPLY COMPANY | 1 | Jasco State 35 | Lea | New Mex

LOCATION 1980' FSL & FEL, Sec 35, T10S-R33E | KIND OF SAMPLES 10' Rotary | DESCRIBED BY M.L. Davies | DATE 7-10-81 | ELEVATION 4210.5' KB | PAGE 4

DEPTH	DOLOMITE			LIMESTONE			ANHY & GYP		Salt Ptd.	SHALES					SANDSTONE			CHERT		POROSITY			Rock	STAIN		FLUOR		REMARKS
	%	Color	Texture & Acc. Mat.	%	Color	Texture & Acc. Mat.	%	Col.	A.	blk	g	r	gn		%	Col.	Texture & Acc. Mat.	%	Col.	%	GR.	Type		%	GR.	%	Col.	
0-9400				50	wht-lgy	f-mxln, frm, dns.						x	x	AA						<10		int						
9400-10												x	x	AA														
10-20				10	wht-gray	AA						x	x	AA														
20-30				20	AA	AA						x	x	AA														
30-40	20	dk gry		10	AA	AA						x	x	AA														
40-50	20	dk gry	f-xln, frm, dns, tite	10	AA	AA						x	x	AA														
50-60	20	AA	AA	10	AA	AA						x	x	AA														
60-70												x	x	AA														
70-80												x	x	AA														
80-90												x	x	AA														
90-9500												x	x	AA														
9500-10				80	wht-tan	f-xln, dns, frm tite						x	x	AA														orc fossil frag crinoids?
10-20				90	wht-buff	f-mxln, dns, frm						x	x	AA						<10		int						
20-30				70	wht-gry	f-xln, frm, dns						x	x	AA														
30-40				30	AA	AA						x	x	AA														
40-50				60	gry	vy f-xln, hard dns tite						x	x	AA														
50-60				70	wht-gry	AA, some frm,						x	x	AA														

SOUTHERN UNION SUPPLY COMPANY | 1 | Susco State 35 | Lea | New Mex.

LOCATION 1980' fs & els Sec 35, T10S - R33E

KIND OF SAMPLES: 10' Rotary | DESCRIBED BY: M.L. Davies | DATE: 7-10-81 | ELEVATION: 4210.5' KB | PAGE 5

DEPTH	DOLOMITE %	DOLOMITE Color	DOLOMITE Texture & Acc. Mat.	LIMESTONE %	LIMESTONE Color	LIMESTONE Texture & Acc. Mat.	ANHY & GYP %	ANHY & GYP Col.	Salt Ptd. A.	SHALES blk	SHALES g	SHALES r	SHALES gn	SHALES	SHALES	SANDSTONE %	SANDSTONE Col.	SANDSTONE Texture & Acc. Mat.	CHERT %	CHERT Col.	POROSITY %	POROSITY GR.	POROSITY Type	Rock	STAIN %	STAIN GR.	FLUOR %	FLUOR Col.	REMARKS
3560-70				60	wht	vyfxln, fxm, dns lte					x	x	x		soft-frm blky, clayey														
70-80				10	AA	AA					x	x	x		AA														
80-90				10	AA	AA					x	x	x		AA														
90-9600				10	AA	AA					x	x	x		AA	50	wht	f-mg, sbang, poorly srtd, sl clayey w/ mod incl			10		Int		10				

SOUTHERN UNION SUPPLY COMPANY | #1 | Susco State 35 | Lea | N. M.

LOCATION: 1980 fs & el's Sec 35, T10S-R33E | KIND OF SAMPLES: 10' rotary | DESCRIBED BY: M. L. Davies | DATE: 7-10-81 | ELEVATION: 4210.5 KB | PAGE: 6

DEPTH	DOLOMITE			LIMESTONE			ANHY & GYP		Salt Ptd.	SHALES					SANDSTONE			CHERT		POROSITY			Rock	STAIN		FLUOR		REMARKS
	%	Color	Texture & Acc. Mat.	%	Color	Texture & Acc. Mat.	%	Col.	A.	blk	g	r	gn		%	Col.	Texture & Acc. Mat.	%	Col.	%	GR.	Type		%	GR.	%	Col.	
9500-10				20	wht	fim-cryptoxln anhydrous					X	X		sft-silty	20	wht	vyf-fg, sbrd clayey			10		Int	Ss					D-S Ls sl dol
10-20				10	AA	AA, some dns, tite					X	X		AA	20	AA	AA, some clear			10		Int	ss					D-S
20-30				20	AA	AA					X	X		AA														trace pyrite
30-40				20	AA	AA					X	X		AA	10	AA	AA			10		Int	ss					D-S
40-50				10	AA	AA																						
				10	wht	hard, dns, tite, cryptoxln					X	X		AA															D-S trace fossil
50-60				20	wht	hard dns tite cryptoxln					X	X		AA								tite						D-S
60-70				30	wht-gry	AA					X	X		AA	Tr	wht	AA											D-S
70-80				30	AA	AA					X	X		AA														D-S
80-90				60	AA	AA					X	X		AA								tite						D-S
90-9700				30	AA	AA					X	X		AA														D-S
																												D-S
9700-10				80	wht-lt gry	f-xln, dm, dns, tite, dolomitic					X	X		AA														
10-20				80	AA	AA					X	X		AA						10		Int	Ls					D-S
20-30				70	AA	AA					X	X		AA														
30-40				30	wht-tan	f-mxln, hard, sl dolomitic					X	X	X	AA						10		Int	Ls					D-S
40-50				50	wht-buff	f-dm, hard, dns tite sl dolomitic					X	X	X	AA														

SOUTHERN UNION SUPPLY COMPANY | 1 | Susco State "35" | Lea | New Mex

LOCATION: 1980' fs&els Sec 35, T10S-R33E

KIND OF SAMPLES: 10' Rotary | DESCRIBED BY: M.L. Davies | DATE: 7-11-81 | ELEVATION: 4210.51' KB | PAGE

DEPTH	DOLOMITE %	DOLOMITE Color	DOLOMITE Texture & Acc. Mat.	LIMESTONE %	LIMESTONE Color	LIMESTONE Texture & Acc. Mat.	ANHY & GYP %	ANHY & GYP Col.	Salt Ptd. A.	SHALES blk	SHALES g	SHALES r	SHALES gn	SHALES	SANDSTONE %	SANDSTONE Col.	SANDSTONE Texture & Acc. Mat.	CHERT %	CHERT Col.	POROSITY %	POROSITY GR.	POROSITY Type	Rock	STAIN %	STAIN GR.	FLUOR %	FLUOR Col.	REMARKS
9750-60				60	wht-buff	vyf-fxln, frm, dns, tite						x		AA														
				10	brn	fxln, hard, sl dolomitic														10		Int	Ls					NS
60-70				70	wht-brn	AA					x	x		AA						10		Int	Ls					NS
60-70 ½hr.				70	AA	AA					x	x		AA						sl		Int	Ls					NS
60-70 1hr				80	wht-brn-buff	fxln, frm-hard, sl dolomitic					x	x		AA						sl		Int	Ls					NS
60-70 1½hr				80	AA	AA					x	x		AA						sl		Int	Ls					NS
Pipe tally correction all data from 9770 up, 75' to shallow.																												
9850-60				80	AA	AA					x	x		AA														Occ grain with good [illegible] intercr[illegible] por N-S
60-70				90	wht-brn	frm-hard, sl dolomitic, dns					x	x		AA						sl		int	Ls					
70-80				50	AA	AA					x	x		AA						sl		int	Ls					
										x				frm platy, flaky, carb.														
80-90				30	AA	AA				x	x	x		AA						sl		int	Ls					
90-9900				50	AA	AA				x	x	x		AA						sl		int	Ls					
9900-10				10	AA	AA				x	x	x		AA						sl		int	Ls					

SOUTHERN UNION SUPPLY COMPANY	#1	Susco State 36	Lea	New Mexico

LOCATION 1980' Ss & els, sec 35, T10S - R33E | KIND OF SAMPLES 10' Dry | DESCRIBED BY M.L. Davies | DATE 7-12-81 | ELEVATION 4210.5' KB | PAGE 8

DEPTH	DOLOMITE			LIMESTONE			ANHY & GYP		Salt Ptd.	SHALES						SANDSTONE			CHERT		POROSITY			Rock	STAIN		FLUOR		REMARKS
	%	Color	Texture & Acc. Mat.	%	Color	Texture & Acc. Mat.	%	Col.	A.	blk	g	r	gn			%	Col.	Texture & Acc. Mat.	%	Col.	%	GR.	Type		%	GR.	%	Col.	
										x																			
1910-20				10	AA	AA				x	x	x			AA						sl		lnt	Ls					
20-30				20	AA	AA, tite				x	x	x			AA														
0-40				40	buff-gry,	frm, frm-hard, some carb, sl dolomitic				x	x	x			AA						sl		lnt	Ls					
40-50				40	AA	AA				x	x	x			AA						sl		lnt	Ls					

Min / Ft
4
5
6
7
8
9
10
18
23
8800
8900
Samples not la
Sample descrip
detailed in rep
9000
9100
9200
9300
9400
9500
9600
9700
depth correct
9800
occ grain w/ good vug
interxln por.
9900
TD 9950, July 13,
10000

W82-1245

TO Southern Union

Cl
Hardness

Submitted by ________ Date Received ________

Well No. ________ Depth ________ Formation ________

County ________ Field ________ Source ________

	Disp. Line		Windmill		Kenneth's Tank Car Warfield (1B) Sec 31, T12S, R34E		Frior (1L) Sec 29, T12S R34E	
Res.	Southern Union Exploration Co.							
S. G.	Mg/L	PPM	Mg/L	PPM	Mg/L	PPM	Mg/L	PPM
pH								
Ca	2.8	2,800	1.2	120	6.6	6,600	7.2	7200
Mg	2.0	1,200	0.6	36	0.2	120	3.0	1,800
Cl	(1) 28.3	141,500	(B) 0.4	400	13.0	65,000	16.5	82,500
SO_4	San Andres waters		Ogallala		Upper Penn		Upper Penn	
HCO_3	4500 - 4700'		150'		10,000'		10,000'	
T Fe	Produced		fresh		Produced		Produced	

DEC 1982
SX
ENG. DEPT.

ENGINEERING OPERATIONS

HALLIBURTON SERVICES
MIDLAND DIVISION
HOBBS, NEW MEXICO 88240

LABORATORY WATER ANALYSIS

No. W80-409

To: Southern Union

Date: 4/19/80

1st International Bldg.

Dallas, TX

1980' FWL & FNL Sec 17, T14S, R36E

Submitted by: Well Service N Hands

Date Rec. 4/16/80

Well No. State 17 #1 (?) Depth: Formation:

County: Field: Source:

	Mississippian 13,200'	Mississippian @ 13,200
Resistivity	.093 @ 70°	Produced
Specific Gravity	1.062	
pH	5.9	
Calcium (Ca)	9700 ppm	*MPL
Magnesium (Mg)	nil	
Chlorides (Cl)	52,500 ppm	
Sulfates (SO_4)	nil	
Bicarbonates (HCO_3)	245 ppm	
Soluble Iron (Fe)	light	
A.P.I. Gravity	39.4	

Remarks:

*Milligrams per liter

Respectfully submitted,

Analyst: Jackson

HALLIBURTON COMPANY

By: Jim Jackson
CHEMIST

future well work

file

NOTICE

THIS REPORT IS LIMITED TO THE DESCRIBED SAMPLE TESTED. ANY USER OF THIS REPORT AGREES THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER IT BE TO ACT OR OMISSION, RESULTING FROM SUCH REPORT OR ITS USE.

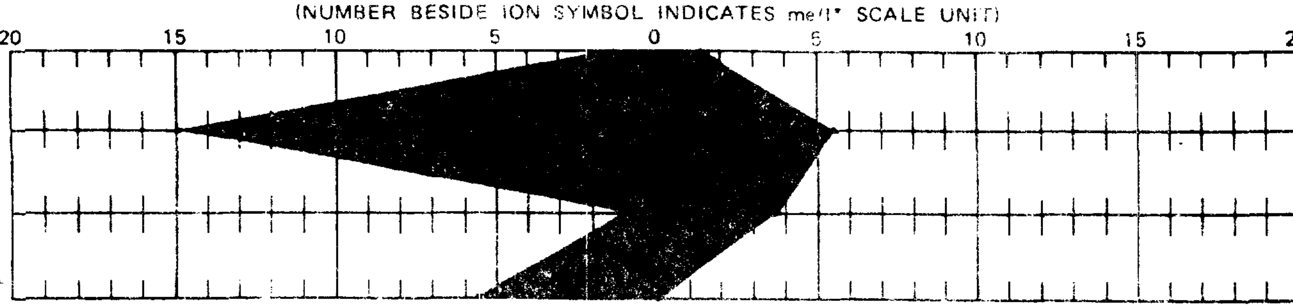
BAKER OIL TREATING
A Baker Oil Tools Company

WATER ANALYSIS REPORT

520' FSL + 660' FWL
Sec 3, T11S, R33E

COMPANY: SOUTHERN UNION	ANALYSIS NUMBER: #1371
COMPANY ADDRESS: Bough "C" @ 9800 — Produced	DATE: 8/20/82
FIELD	COUNTY OR PARISH: LEA	STATE: N.M.
LEASE OR UNIT: ST. A	WELL(S) NAME OR NO.: #2	WATER SOURCE (FORMATION)
DEPTH, FT.	BHT °F	SAMPLE SOURCE: WELLHEAD	TEMP °F	WATER, BBL/DAY	OIL, BBL/DAY	GAS, MMCF/DAY
DATE SAMPLED: 8/18/82	TYPE OF WATER: ☒ PRODUCED ☐ SUPPLY ☐ WATERFLOOD ☐ SALT WATER DISPOSAL

WATER ANALYSIS PATTERN
(NUMBER BESIDE ION SYMBOL INDICATES me/l* SCALE UNIT)



DISSOLVED SOLIDS

CATIONS	me/l*	mg/l*
Total Hardness	160	---
Calcium, Ca^{++}	150	3000
Magnesium, Mg^{++}	10	122
Iron (Total) Fe^{+++}	.54	10
Barium, Ba^{++}	---	---
Sodium, Na^{+} (calc.)	1235.28	28410.98

ANIONS	me/l*	mg/l*
Chloride, Cl^{-}	1352	48000
Sulfate, $SO_4^{=}$	38.3	1840
Carbonate, $CO_3^{=}$	-0-	-0-
Bicarbonate, HCO_3^{-}	5.5	335.5
Hydroxyl, OH^{-}	-0-	-0-
Sulfide, $S^{=}$	---	---

TOTAL SOLIDS (QUANTITATIVE) 81718.48

DISSOLVED GASES

Hydrogen Sulfide, H_2S	30	mg/l*
Carbon Dioxide, CO_2	166.32	mg/l*
Oxygen, O_2	---	mg/l*

PHYSICAL PROPERTIES

pH	6.85	
Specific Gravity	1.053	
Total Dissolved Solids (calc.)	81708.48	mg/l*
Stability Index @ 23 °C	+.03	
@ °C		
$CaSO_4$ Solubility @ 23 °C	56.6	me/l*
@ °C		me/l*
Max. $CaSO_4$ Possible (calc.)	38.3	me/l*
Max. $CaSO_4$ Possible (calc.)		me/l*
Residual Hydrocarbons		ppm(Vol/Vol)
Residual Hydrocarbons		ppm(Vol/Vol)

REMARKS AND RECOMMENDATIONS:

@23°C SLIGHT CARBONATE SCALING IS INDICATED, ALSO A SLIGHT CORRSIVE TENDENCY IS LIKELY.

@23°C CALCIUM SULFATE SCALING IS UNLIKELY.

*NOTE: me/l and mg/l are commonly used interchangeably for epm and ppm respectively. Where epm and ppm are used, corrections should be made for specific gravity.

BAKER OIL TREATING REPRESENTATIVE: W.H. FORT	ADDRESS	TELEPHONE OFF. RES.
ANALYZED BY: R.D. HARDIN	DATE: 8/20/82	

HALLIBURTON SERVICES
MIDLAND DIVISION
HOBBS, NEW MEXICO 88240

LABORATORY WATER ANALYSIS

No. _____

To SOUTHERN UNION SUPPLY

Date 12/9/77

FOY BOYD ASS.

1306 Gihls Tower West-Midland, Texas

ATT: John Mullos

660'FSL & 1980'FWL Sec 19, T-9-S, R-33E

Produced

Submitted by Bob Munsell San Andres @ 4600' Date Rec _____

Well No. Susco State #3 Depth 4600 Formation San Andres

County Lea Field _____ Source Swab

~~660'FNL & 460'FWL Sec 3, T10S, R 37E~~

Resistivity	.041 @72° F	
Specific Gravity	1.160	
pH	5.6	
Calcium (Ca)	35,250 ppm	*MPL
Magnesium (Mg)	8,100 ppm	
Chlorides (Cl)	149,000 ppm	
Sulfates (SO_4)	Med.	
Bicarbonates (HCO_3)	425 ppm	
Soluble Iron (Fe)	Heavy	

Remarks:

*Milligrams per liter

RECEIVED
DEC 12 1977

Respectfully submitted,

Analyst: _____

FOY BOYD ASSOCIATES, INC.
HALLIBURTON COMPANY

By _____
CHEMIST

NOTICE

THIS REPORT IS LIMITED TO THE DESCRIBED SAMPLE TESTED. ANY USER OF THIS REPORT AGREES THAT HALLIBURTON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, WHETHER IT BE TO ACT OR OMISSION, RESULTING FROM SUCH REPORT OR ITS USE.

7

P 285 020 074

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL
(See Reverse)

SENT TO Bogle Farms	
STREET AND NO. SW of Dexter	
P.O., STATE AND ZIP CODE Dexter, NM 88230	
POSTAGE	$
CONSULT POSTMASTER FOR FEES — CERTIFIED FEE	¢
OPTIONAL SERVICES — SPECIAL DELIVERY	¢
OPTIONAL SERVICES — RESTRICTED DELIVERY	¢
RETURN RECEIPT SERVICE — SHOW TO WHOM AND DATE DELIVERED	¢
RETURN RECEIPT SERVICE — SHOW TO WHOM, DATE, AND ADDRESS OF DELIVERY	¢
RETURN RECEIPT SERVICE — SHOW TO WHOM AND DATE DELIVERED WITH RESTRICTED DELIVERY	¢
RETURN RECEIPT SERVICE — SHOW TO WHOM, DATE AND ADDRESS OF DELIVERY WITH RESTRICTED DELIVERY	¢
TOTAL POSTAGE AND FEES	$
POSTMARK OR DATE	1983

LAND DEPT

PS Form 3800, Apr. 1976

SOUTHWESTERN ENERGY PRODUCTION COMPANY
P.O. BOX 1827 • FAYETTEVILLE, ARKANSAS 72702-1827
501-521-1149

February 25, 1983

Mr. Gilbert Quintana
State Oil & Conservation Div.
P. O. Box 2088
Santa Fe, New Mexico 87501

Gentlemen:

This letter is to advise your office that Southwestern Energy Production Company has received a copy of a letter dated January 25, 1983, (attached) and various other data from Southern Union Exploration Company of Texas concerning their application for authorization for injection.

Southwestern Energy Production Company, Southern Unions business partner, is in agreement with the pending application. If further information is needed, please advise.

Very truly yours,

SOUTHWESTERN ENERGY PRODUCTION COMPANY

Lowell D. Boynton

Lowell Boynton
Division Manager

LB/rs

LARGE FORMAT EXHIBIT HAS BEEN REMOVED AND IS LOCATED IN THE NEXT FILE

NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
SOUTHERN UNION EXPLORATION COMPANY	Shell-Groebl, et al	1

Unit Letter	Section	Township	Range	County
B	30	9 South	33 East	Lea

Actual Footage Location of Well:
1840 feet from the east line and 520 feet from the north line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage
4367.2	San Andres	Flying "M"	80 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

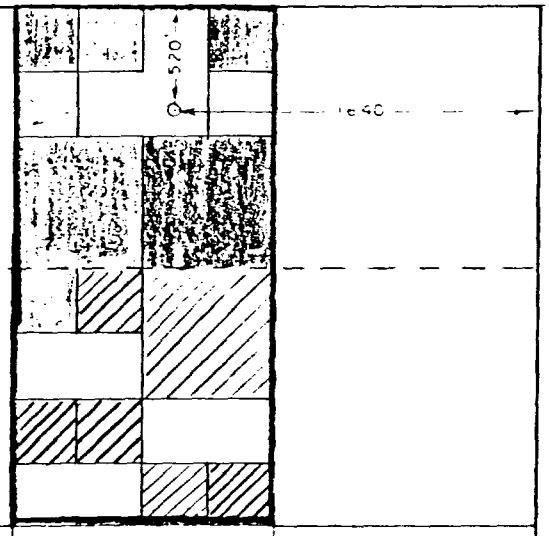
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☑ Yes ☐ No If answer is "yes," type of consolidation Pooling Provisions in Lease

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.

LEASE	ROYALTY
Cash	1/8
Edwards	1/8
Heaton	1/8
Shell	30%
Cash	1/8
Mayer	3/16
Cash	1/8
Anderson	1/8
Hyde, et ux	1/8
Murphy, et ux	3/16
Fraiberg	1/8
Cross	1/8
Mitchell A&B	1/8
Cash	1/8
Groebli	3/16
Dunne	1/8



1320 1650 1980 2310 2640 2000 1500 1000 500 0

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: Ronald M. Sentz
Position: D & P Eng
Company: Southern Union Exp
Date: 11/2/79

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: June 14, 1978

Registered Professional Engineer and/or Land Surveyor

Certificate No. John W. West 676
Ronald J. Eidson 3239

RECEIVED
MAY 18 1983
OIL CONSERVATION DIVISION

NEW MEXICO OIL CONSERVATION COMMISSION
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective

RECEIVED
MAY 18 1983
OIL CONSERVATION DIV.

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
SOUTHERN UNION SUPPLY COMPANY	SUSCO State	1

Unit Letter	Section	Township	Range	County
"P"	19	9 South	33 East	Lea

Actual Footage Location of Well:
660 feet from the South line and 660 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
4368.7	San Andres	Flying M	80 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

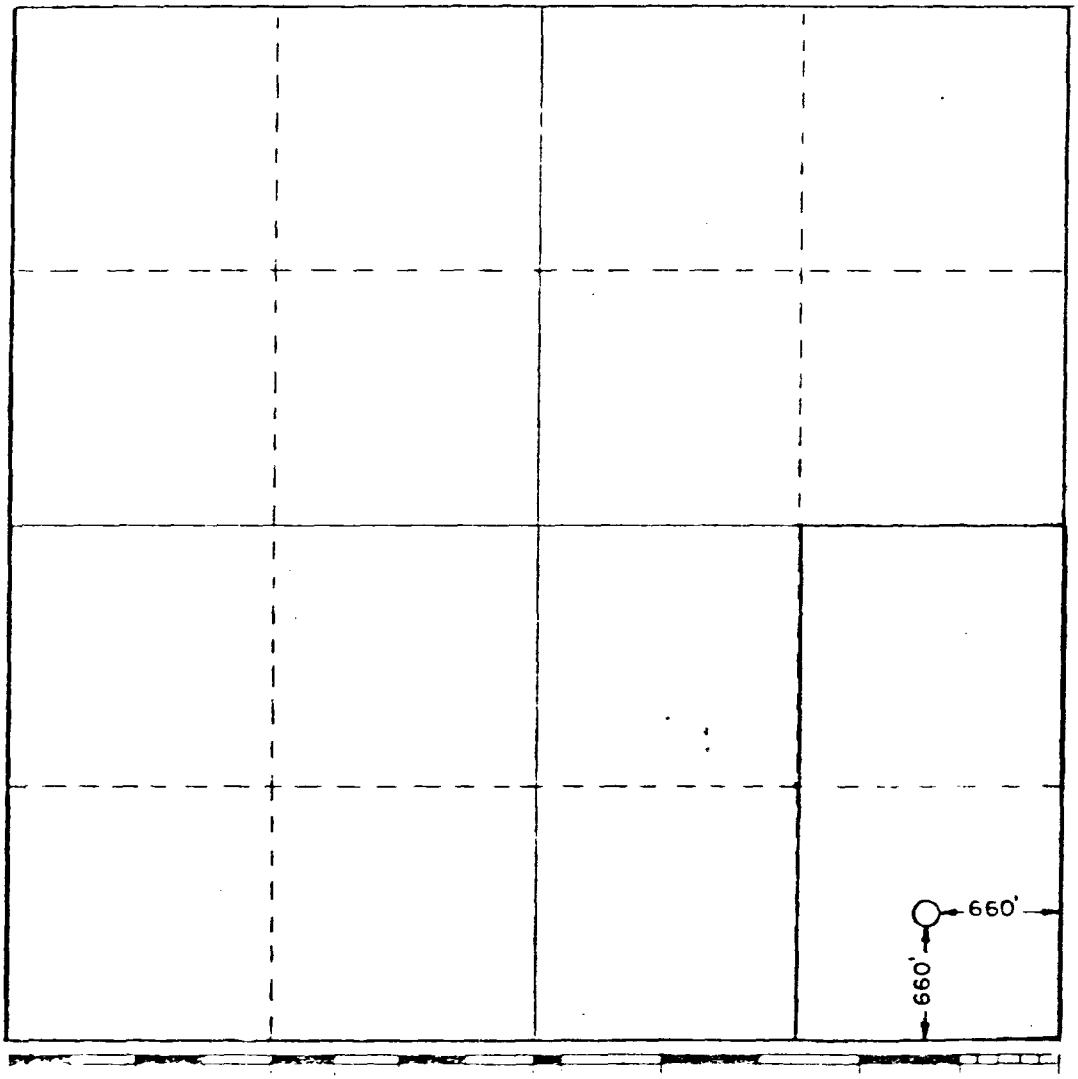
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: Donna Wallace
Position: Agent
Company: Southern Union Supply Co.
Date: May 27, 1977

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: 26, 1977

Registered Professional Engineer and/or Land Surveyor: HERSCHEL L. JONES 3640

STATE OF NEW MEXICO REGISTERED LAND SURVEYOR

Certificate No.

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-102
Supersedes C-128
Effective 1-1-65

WELL LOCATION AND ACREAGE DEDICATION PLAT

RECEIVED
MAY 18 1983
OIL CONSERVATION DIVISION
Hobbs, New Mexico

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
Southern Union Exploration Co.	SUSCO State	2

Unit Letter	Section	Township	Range	County
J	19	9 South	33 East	Lea

Actual Footage Location of Well:
1980 feet from the South line and 1980 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
4374.5			Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

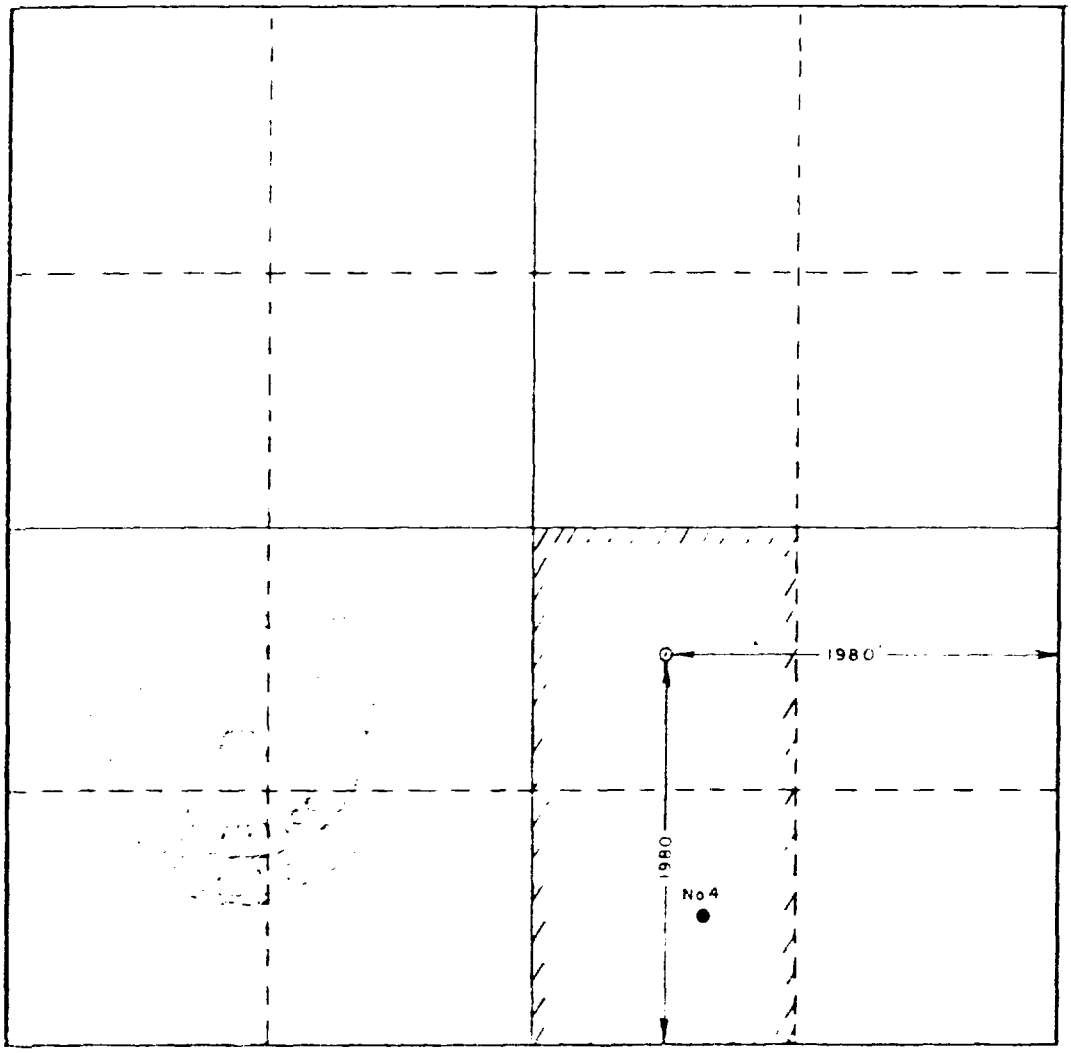
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



330 660 90 1320 1650 1980 2310 2640 2000 1500 1000 500

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

Name: John W. West

Position: Agent

Company: Southern Union Exploration Co.

Date: August 28, 1978

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: August 2, 1977

Registered Professional Engineer and/or Land Surveyor

John W West

Certificate No. John W. West / 676

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

RECEIVED
MAY 18 1983
OIL CON. COM.

Operator	Lease	Well No.
Southern Union Exploration Co.	Susco State	5

Unit Letter	Section	Township	Range	County
I	19	9 South	33 East	Lea

Actual Footage Location of Well:
1840 feet from the South line and 800 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
4372.2	San Andres	Flying M	40 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

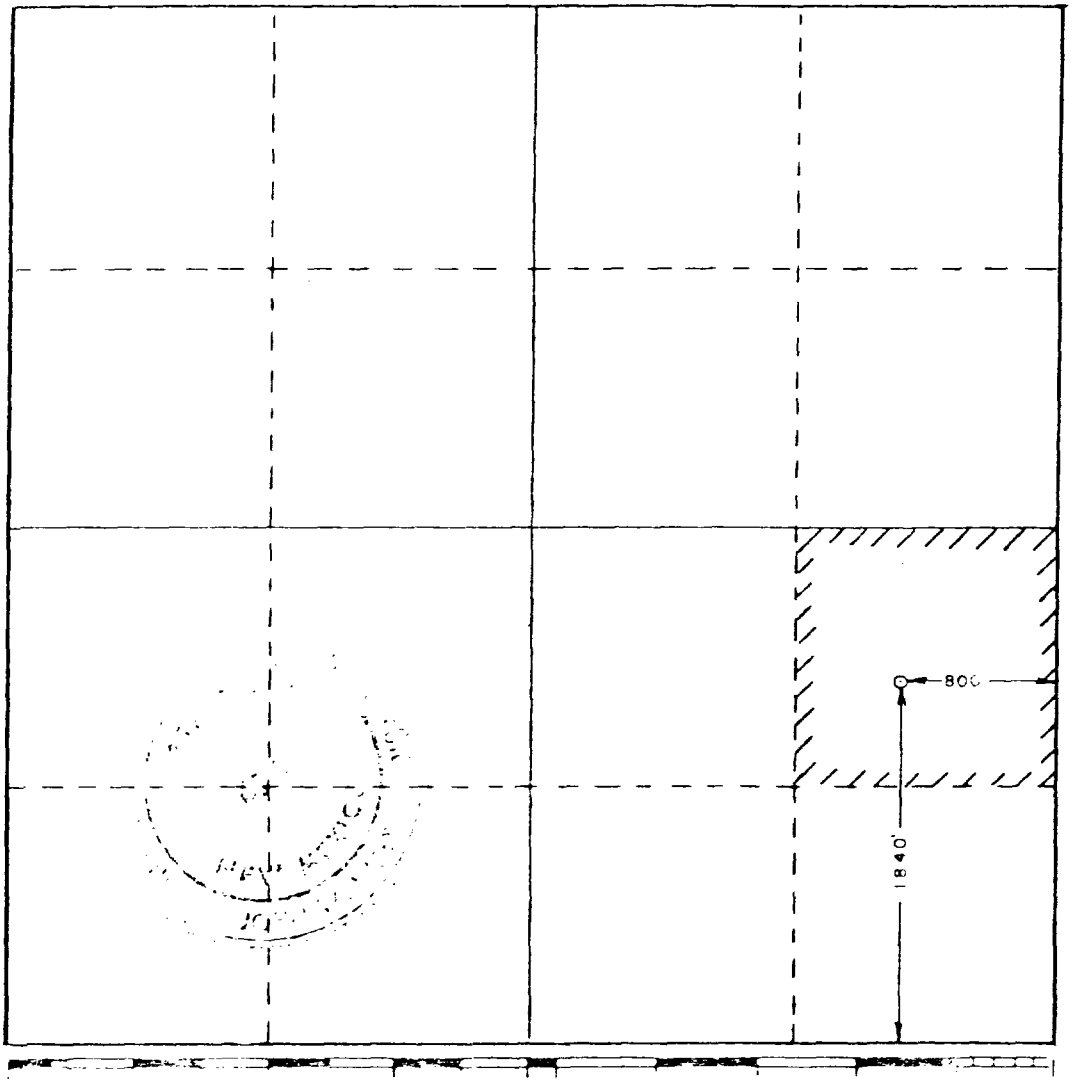
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

Name: John W West

Position: Agent

Company: Southern Union Exploration Co.

Date: August 18, 1978

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: August 16, 1978

Registered Professional Engineer and/or Land Surveyor

Certificate No. John W West 676
Ronald J. Eidson 3239

NEW MEXICO OIL CONSERVATION COMMISSION

RECEIVED

MAY 18 1983

OIL CONSERVATION DIVISION

Form C-102
Supersedes C-128
Effective 1-1-65

WELL LOCATION AND ACREAGE DEDICATION PLAT

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
SOUTHERN UNION EXPLORATION CO.	SUSCO STATE	6

Unit Letter	Section	Township	Range	County
H	19	9 SOUTH	33 EAST	LEA

Actual Footage Location of Well:
2120 feet from the NORTH line and 800 feet from the EAST line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
4375.7	San Andres	Flying H San Andres	80*

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty). *To Be Shared With #7

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

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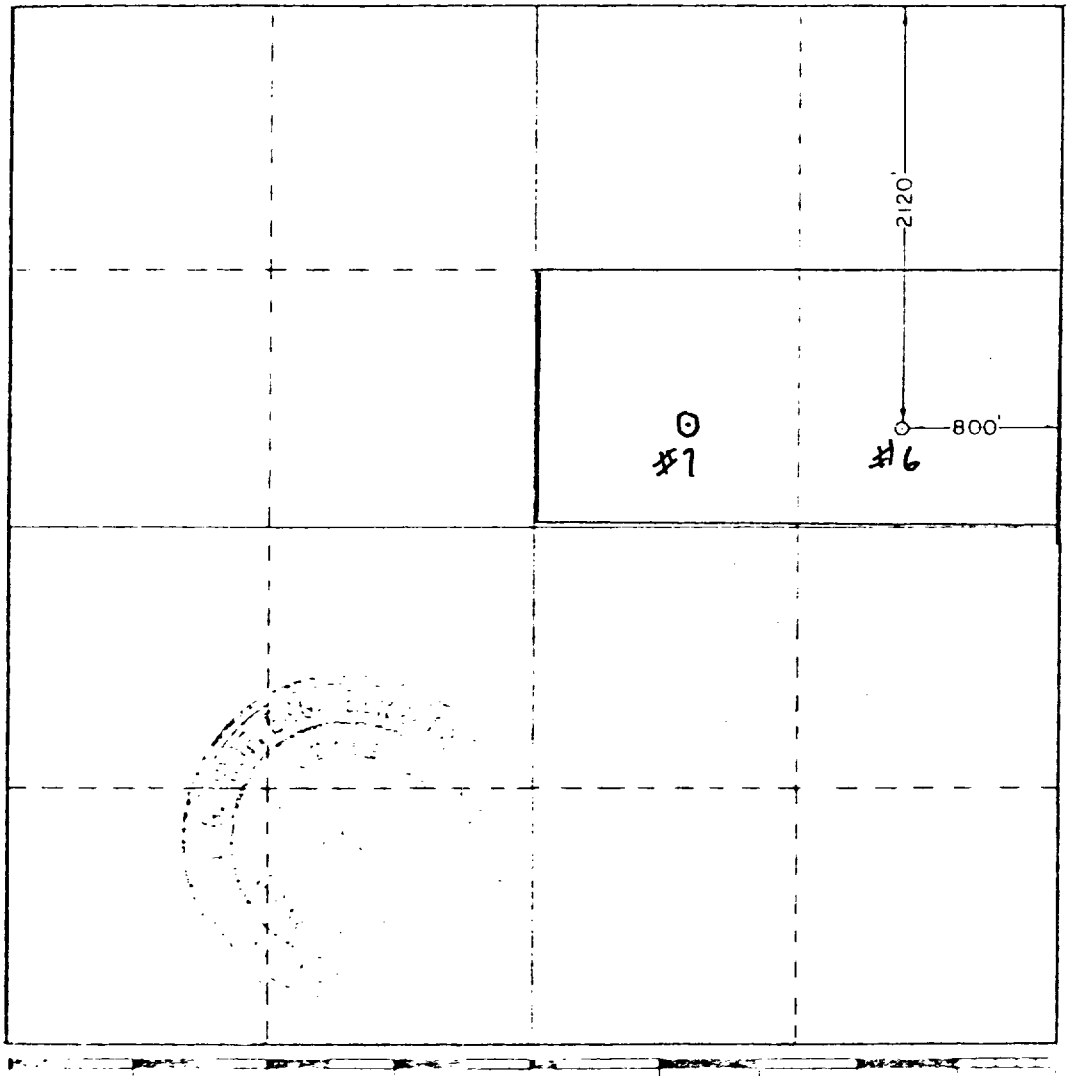

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Ronald M. Sentz

Name: Ronald M. Sentz

Position: Drilling & Production Eng

Company: Southern Union Exp. Co.

Date: 8-9-79

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: JULY 28TH, 1979

Registered Professional Engineer and/or Land Surveyor

John W West

Certificate No. John W. West 676
Ronald J. Eidson 3239

0 330 660 990 1320 1650 1980 2310 2640 2000 1500 1000 500 0

NEW MEXICO OIL CONSERVATION COMMISSION

RECEIVED
MAY 18 1983
OIL CONSERVATION DIVISION
SANTA FE

WELL LOCATION AND ACREAGE DEDICATION PLAT

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
SOUTHERN UNION EXPLORATION CO.	SUSCO STATE	7

Unit Letter	Section	Township	Range	County
G	19	9 SOUTH	33 EAST	LEA

Actual Footage Location of Well:
2120 feet from the NORTH line and 1840 feet from the EAST line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage
4378.3	San Andres	~~Susco~~ N San Andres	80*

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty). *To be Shared with #5

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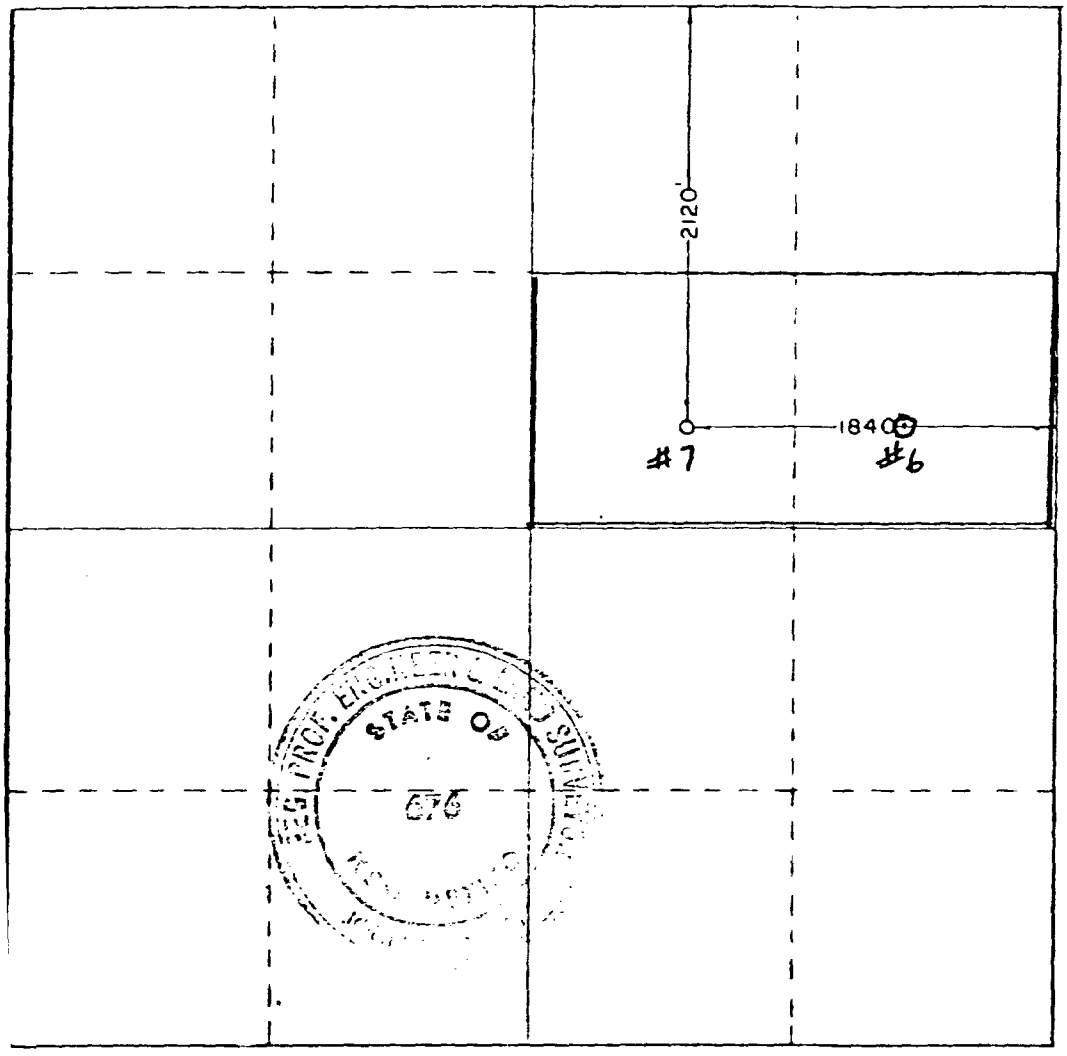

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: Ronald M. Seitz

Position: Drlg. & Prod. Engineer

Company: Southern Union Expl. Co.

Date: 8-9-79

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: JULY 28TH, 1979

Registered Professional Engineer and/or Land Surveyor

John W West

Certificate No. John W West 676

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

RECEIVED
MAY 18 1983
OIL CONSERVATION DIVISION
SANTA FE

Operator	Lease	Well No.
Corinne ~~Xxxxxxx~~ GRACE	T P STATE	1

Unit Letter	Section	Township	Range	County
A	17	10 SOUTH	33 EAST	

Actual Footage Location of Well:
660 feet from the NORTH line and 660 feet from the EAST line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
4190	San Andres	Wildcat	40 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

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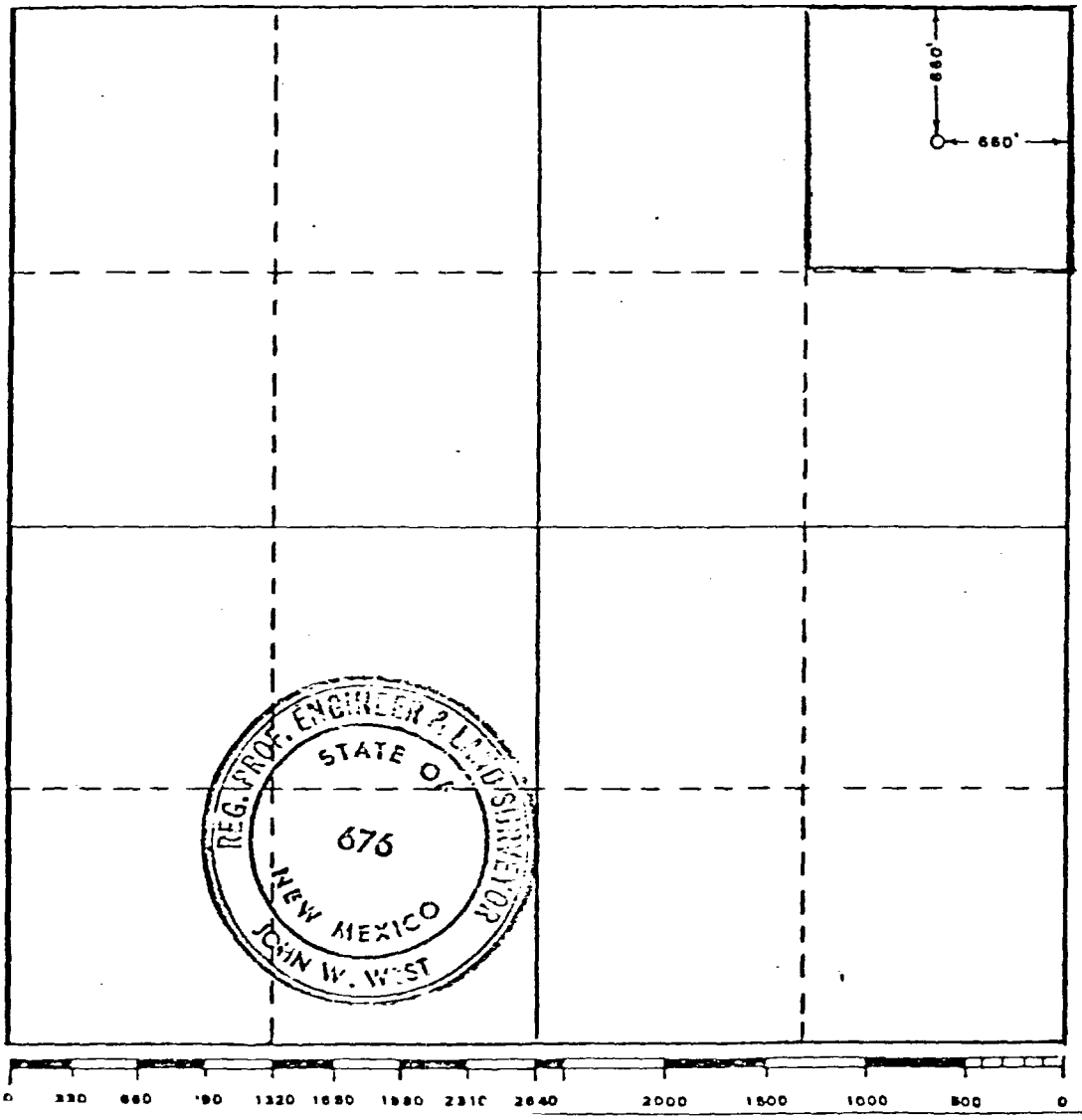

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: Donna Kolbe

Position: Agent

Company: Corinne Grace

Date: 12/23/68

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: DECEMBER 17, 1968

Registered Professional Engineer and/or Land Surveyor

John W West

Certificate No. 676

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-12
Effective 1-1-65

All distances must be from the outer boundaries of the section

Operator	Lease	Well No.
Southern Union Exploration Co.	Susco State	4

Unit Letter	Section	Township	Range	County
O	19	9 South	33 East	Lea

Actual Footage Location of Well: 460 feet from the South line and 1780 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
4367.8	San Andres	Flying "M"	80 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

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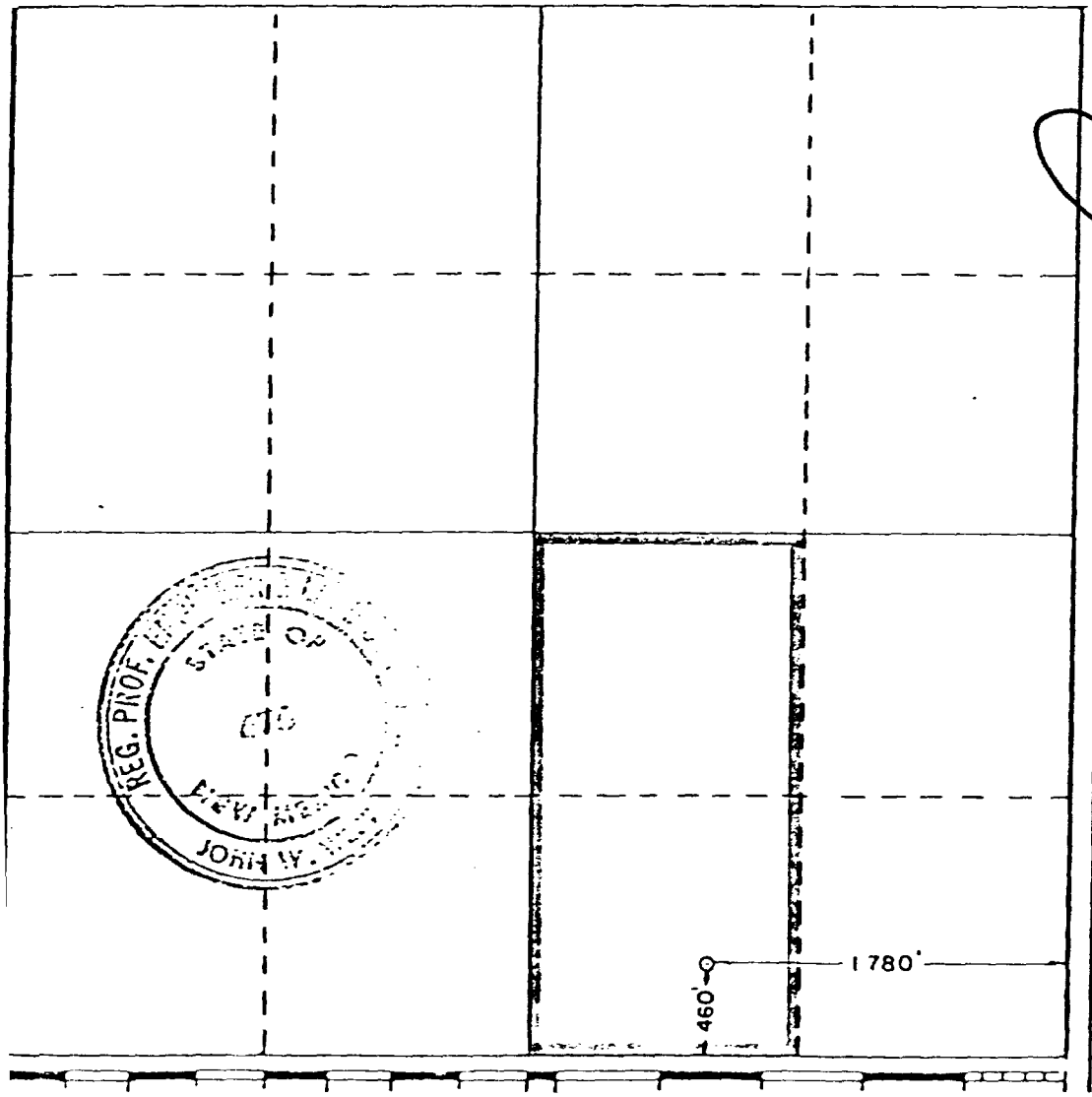


CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: John W. Mulloy

Position: Agent

Company: Southern Union Exploration Co

Date: 5-31-78

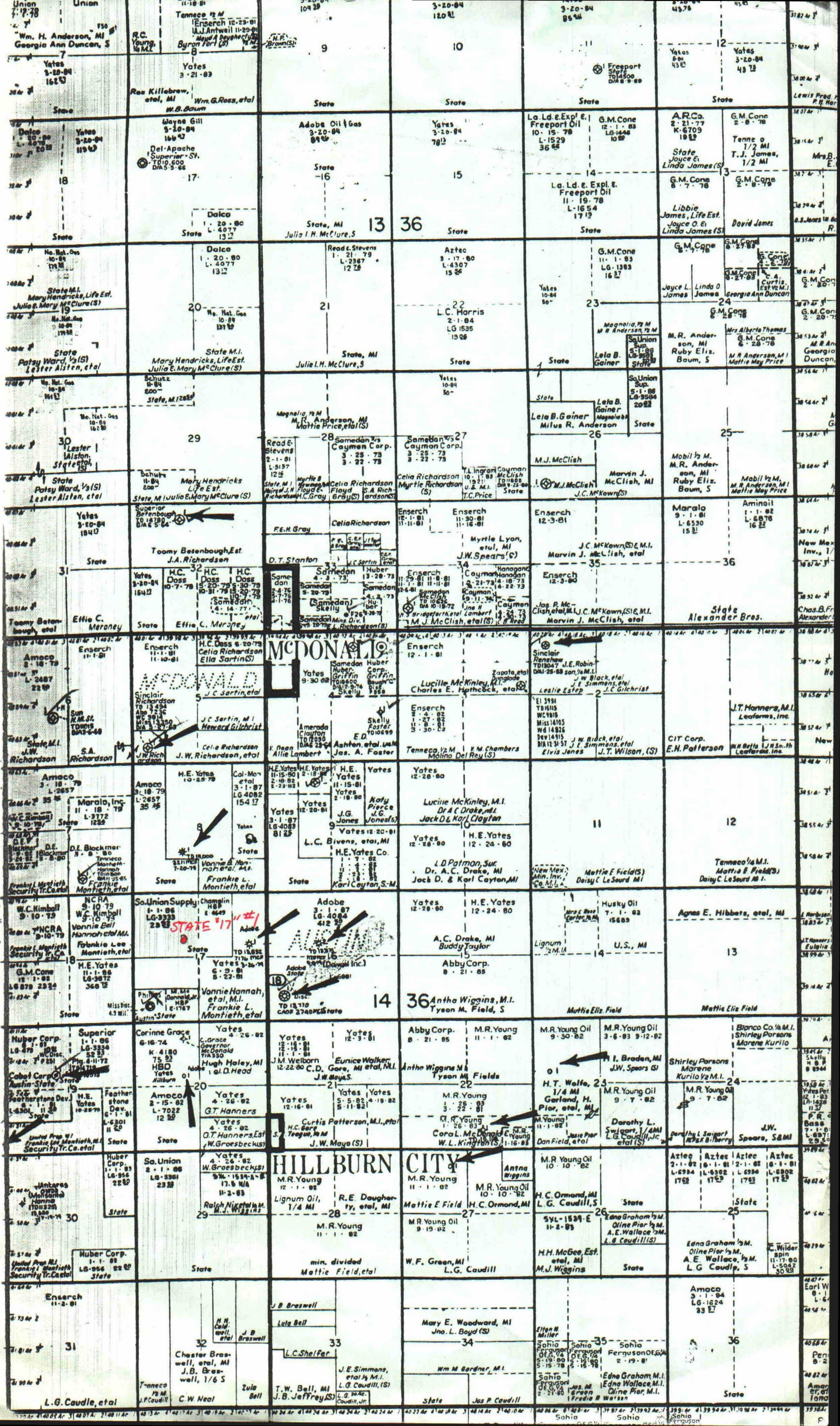
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: 4/22/78

Registered Professional Engineer and/or Land Surveyor

John W. West

Certificate No. John W West 676



Wm. H. Anderson, MI
Georgia Ann Duncan, S
Yates
3-21-83
Ross Killebrew, etal, MI
Wm. G. Ross, etal
W. B. Baum
State
Adobe Oil & Gas
3-20-84
Yates
3-20-84
La. Ld. & Expl. & Freeport Oil
10-15-78
L-1529
G. M. Cone
A. R. Co.
2-21-77
K-6709
Tenneco 1/2 MI
T. J. James, 1/2 MI
Linda James (S)
Wayne Gill
3-20-84
Del-Apache Superior-St.
Dalco
1-20-80
L-4077
Julia I. H. McClure, S
La. Ld. & Expl. & Freeport Oil
11-19-78
L-1654
Libbie James, Life Est.
Joyce O. E. Linda James (S)
David James
No. Nat. Gas
State M.I.
Mary Hendricks, Life Est.
Julia & Mary McClure (S)
Read & Stevens
1-21-79
L-2367
Aztec
3-17-80
L-4307
L. C. Harris
2-1-84
LG 1535
G. M. Cone
11-1-83
LG-1383
Joyce L. James
Linda O. James
Georgia Ann Duncan
State
Patsy Ward, 1/3 (S)
Lester Alsten, etal
Mary Hendricks, Life Est.
Julia & Mary McClure (S)
State, MI
Julia I. H. McClure, S
M. R. Anderson, MI
Ruby Eliz. Baum, S
Lela B. Gainer
M. R. Anderson, MI
Mattie May Price
So. Union Sup.
5-1-86
Magnolia, 1/2 M
M. R. Anderson, MI
Mattie Price, etal (S)
Read & Stevens
2-1-81
L-5137
Samedan 2/3 Caymen Corp.
3-25-73
3-22-73
Lela B. Gainer
Milus R. Anderson
M. J. McClish
Marvin J. McClish, MI
J. C. McKown (S)
Mobil 1/2 M.
M. R. Anderson, MI
Ruby Eliz. Baum, S
Celia Richardson
Myrtle Richardson (S)
Floyd & Gray (S)
S. A. Richardson (S)
T. C. Price
Mary Hendricks Life Est.
Julia E. Mary McClure (S)
Lester Alston, etal
Superior Betenbaugh
Toomy Betenbaugh, Est.
J. A. Richardson
F. & H. Gray
Celia Richardson
D. T. Stanton
Ensearch
11-30-81
11-16-81
Myrtle Lyon, etal, MI
J. W. Spears (S)
Ensearch
12-3-81
J. C. McKown (S) & M.I.
Marvin J. McClish, etal
Marala
9-1-81
L-6530
Aminoil
1-1-82
L-6876
H. C. Doss
10-7-79
Samedan
4-3-73
Huber
3-28-73
Caymen
Hanagan
Ensearch
12-3-80
Effie C. Meroney
Samedan
Skelly
Mons Div. I
L. Richardson (S)
M. J. McClish, etal (S)
Jas. P. Mc-Clish, etal, MI
J. C. McKown (S) & M.I.
Marvin J. McClish, etal
State
Alexander Bros.
Amoco
2-18-79
L-2657
Ensearch
11-1-81
H. C. Doss
6-20-79
Celia Richardson
Ella Sartin (S)
McDONALD
Ensearch
12-1-81
Sinclair Renshaw
J. E. Robinson, 1/2 M.I.
J. W. Black, etal
J. E. Simmons, etal
J. C. Gilchrist
Leslie Estep
J. C. Sartin, etal
Yates
9-30-82
Lucille McKinley, MI
Charles E. Hathcock, etal
Zapata, etal
J. T. Hanners, M.I.
Leafarms, Inc.
Sinclair Richardson
J. C. Sartin, M.I.
Howard Gilchrist
Amerada Clayton
E. D. Ashton, etal
Jas. A. Foster
Ensearch
2-4-82
Tenneco, 1/2 M
Molino Del Rey (S)
J. W. Black, etal
J. E. Simmons, etal
J. T. Wilson, (S)
Elvis Jones
CIT Corp.
E. H. Patterson
J. W. Richardson, etal
Celia Richardson
S. A. Richardson
J. W. Richardson
Allie Lambert
Amoco
3-18-79
L-2657
H. E. Yates
10-25-79
Col-Mon etal
3-1-87
LG 4082
H. E. Yates
11-15-81
Yates
12-28-80
Lucille McKinley, M.I.
Dr A C Drake, MI
Jack D & Karl Clayton
Marala, Inc.
11-18-79
L-3172
Yates
3-1-87
LG-4083
J. G. Jones
Katy Pierce
J. G. Jones (S)
L. C. Bivens, etal, MI
H. E. Yates Co.
Karl Cayton, S-MI
Yates
12-28-80
H. E. Yates
12-24-80
L. D. Patman, Sur.
Dr. A. C. Drake, MI
Jack D. & Karl Cayton, MI
D. E. Blackmer
Frankie Montieth, etal
Vonnie & Hannah etal, MI
Frankie L. Montieth, etal
New Mex. Min. Inv. Co. M.I.
Mattie E Field (S)
Daisy C Le Sourd MI
Tenneco 1/4 M.I.
Mattie E Field (S)
Daisy C. Le Sourd M.I.
Frankie L. Montieth
Security Tr. Co. etal
W. C. Kimball
3-10-79
NCRA
So. Union Supply
1-1-86
LG-3333
Champlin
STATE "17" #1
Adobe
3-1-87
LG 4084
AUSTIN
Yates
12-28-80
H. E. Yates
12-24-80
Husky Oil
7-1-82
Agnes E. Hibbets, etal, MI
Vonnie Bell Hannah etal MI.
Frankie Lee Montieth, etal
A. C. Drake, MI
Buddy Taylor
Abby Corp.
8-21-85
Lignum 1/2 M.I.
U. S., MI
G. M. Cone
11-1-86
H. E. Yates
11-1-86
Yates
6-9-81
Adobe State
Vonnie Hannah, etal, M.I.
Frankie L. Montieth, etal
Austin State
Antha Wiggins, M.I.
Tyson M. Field, S
Mattie Eliz. Field
Huber Corp.
Superior
1-1-86
LG-3334
Corinne Grace
6-16-74
K-4180
HBO
Hugh Haley, MI
J. D. Head
Yates
4-26-82
Yates
12-3-81
Abby Corp.
8-21-85
M. R. Young
11-1-82
M. R. Young Oil
9-30-82
M. R. Young Oil
3-6-83
9-12-82
Blanco Co. 1/4 M.I.
Shirley Parsons
Marene Kurilo
Cabot Corp.
Austin-State
J. M. Welborn
12-22-80
C. D. Gore, MI
J. W. Moya S.
Eunice Walker, etal, M.I.
Antha Wiggins M.I.
Tyson M. Fields
T. I. Braden, MI
J. W. Spears (S)
Shirley Parsons
Marene Kurilo 1/2 M.I.
Amoco
2-15-82
L-7022
Yates
4-26-82
G. T. Hanners
Yates
12-16-81
Yates
5-5-82
Yates
4-19-82
M. R. Young
3-22-81
H. T. Wolfe, 1/4 MI
Garland, H. Pior, etal, MI
M. R. Young Oil
9-7-82
M. R. Young Oil
9-7-82
O. T. Hanners Est.
W. Groesbeck (S)
Curtis Patterson, M.I., etal
J. W. Maya (S)
Coral L. McDonald
W. L. Kingston (S)
Dan Field, etal
Dorothy L. Swigart 1/4 MI
J. W. Speers, S&MI
Huber Corp.
So. Union
2-1-86
LG-3361
Yates
4-26-82
W. Groesbeck (S)
HILLBURN CITY
M. R. Young
M. R. Young Oil
10-10-82
Aztec
Ralph Nixon
Lignum Oil, 1/4 MI
R. E. Daugherty, etal, MI
Mattie E Field
M. R. Young Oil
10-10-82
H. C. Ormond, MI
H. C. Ormond, MI
L. G. Caudill, S
Edna Graham 1/3 M.
Oline Pior 1/3 M.
A. E. Wallace 1/3 M.
L. G. Caudill (S)
M. R. Young
11-1-82
M. R. Young Oil
9-19-82
H. H. McGee, Est. etal, MI
M. J. Wiggins
Edna Graham 1/3 M.
Oline Pior 1/3 M.
A. E. Wallace, 1/3 M.
L. G. Caudle, S
Huber Corp.
1-1-83
LG-956
min. divided
Mattie Field, etal
W. F. Green, MI
L. G. Caudill
Ensearch
11-2-81
J B Braswell
Lula Bell
L. C. Shelfer
Mary E. Woodward, MI
Jno. L. Boyd (S)
Amoco
3-1-84
LG-1624
Chester Braswell, etal, MI
J. B. Braswell, 1/6 S
Zula Bell
T. W. Bell, MI
J. B. Jeffrey (S)
J. E. Simmons, etal 1/2 M.I.
L. G. Caudill, (S)
Wm M Gardner, MI
Sohio
Ferguson
Edna Graham, M.I.
Edna Wallace, M.I.
Oline Pior, M.I.
L. G. Caudle, etal
C. W. Neal
Jas P Caudill
State

QUESTIONNAIRE TO BE COMPLETED IN CONNECTION
WITH SALT WATER DISPOSAL WELL EASEMENT

1. What is the oil and gas mineral ownership of the land from which the salt water will be produced? Private_____%, State 100 %, Federal_____%.

X 2. What is the approximate number of barrels of salt water that will be injected into the well per day? 500.

X 3. What is the formation into which the salt water will be injected? Devonian

4. Have you enclosed consent of the oil and gas lessee for the use as a salt water disposal well? NO - So. Union is lessee

X 5. From which well (s) is the salt water being produced and to be injected? Give complete description of oil wells. (Attached plat showing oil wells, dry hole or well to be drilled in relation to injection well.

Sunco State #1, 2, 4, 5, 6, 7; TP State #1; Shell Grokble #1

X 6. What is your O.C.C. Order No. SWD-58

X 7. What reaction have the adjacent wells reflected from the injected water? (Answer only if this is a renewal application)

None

X 8. What is estimated reservoir of oil still to be recovered from wells which are the source of the salt water?

380,200 BBls

X 9. What is the estimated time that it will take to deplete the well or wells?

20 years

Signed by:_____

Address:_____

FOR OFFICE USE ONLY

Approved by O.C.C.:_____

LARGE FORMAT EXHIBIT HAS BEEN REMOVED AND IS LOCATED IN THE NEXT FILE

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

RECEIVED
MAY 18 1983
OIL CONSERVATION DIVISION
HOBBS, NEW MEXICO

Operator	Lease	Well No.
SOUTHERN UNION EXPLORATION CO.	SUSCO STATE	7

Unit Letter	Section	Township	Range	County
G	19	9 SOUTH	33 EAST	LEA

Actual Footage Location of Well: 2120 feet from the NORTH line and 1840 feet from the EAST line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage
4378.3	San Andres	~~Mescalero~~ M San Andres	80*

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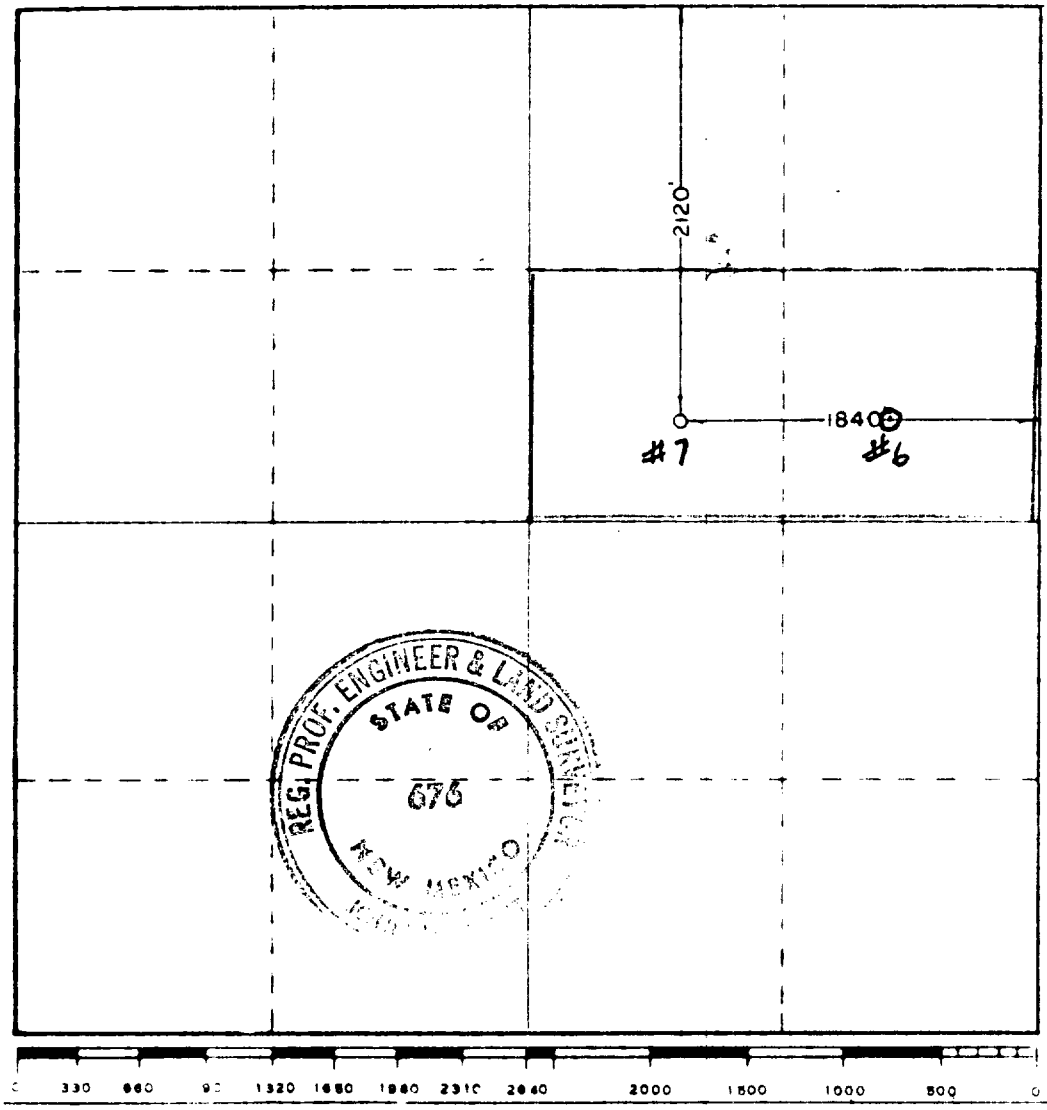

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Ronald M. Seitz

Name: Drlg. & Prod. Engineer

Position: Southern Union Expl. Co.

Company:

Date: 8-9-79

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: JULY 28TH, 1979

Registered Professional Engineer and/or Land Surveyor

John W West

Certificate No. John W. West 676
Ronald J. Eidson 3239

N. MEXICO OIL CONSERVATION COMMISS

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

RECEIVED
MAY 18 1983
OIL CONSERVATION DIVISION
SANTA FE

All distances must be from the outer boundaries of the Section

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SOUTHERN UNION EXPLORATION CO.	SUSCO STATE	6

Unit Letter	Section	Township	Range	County
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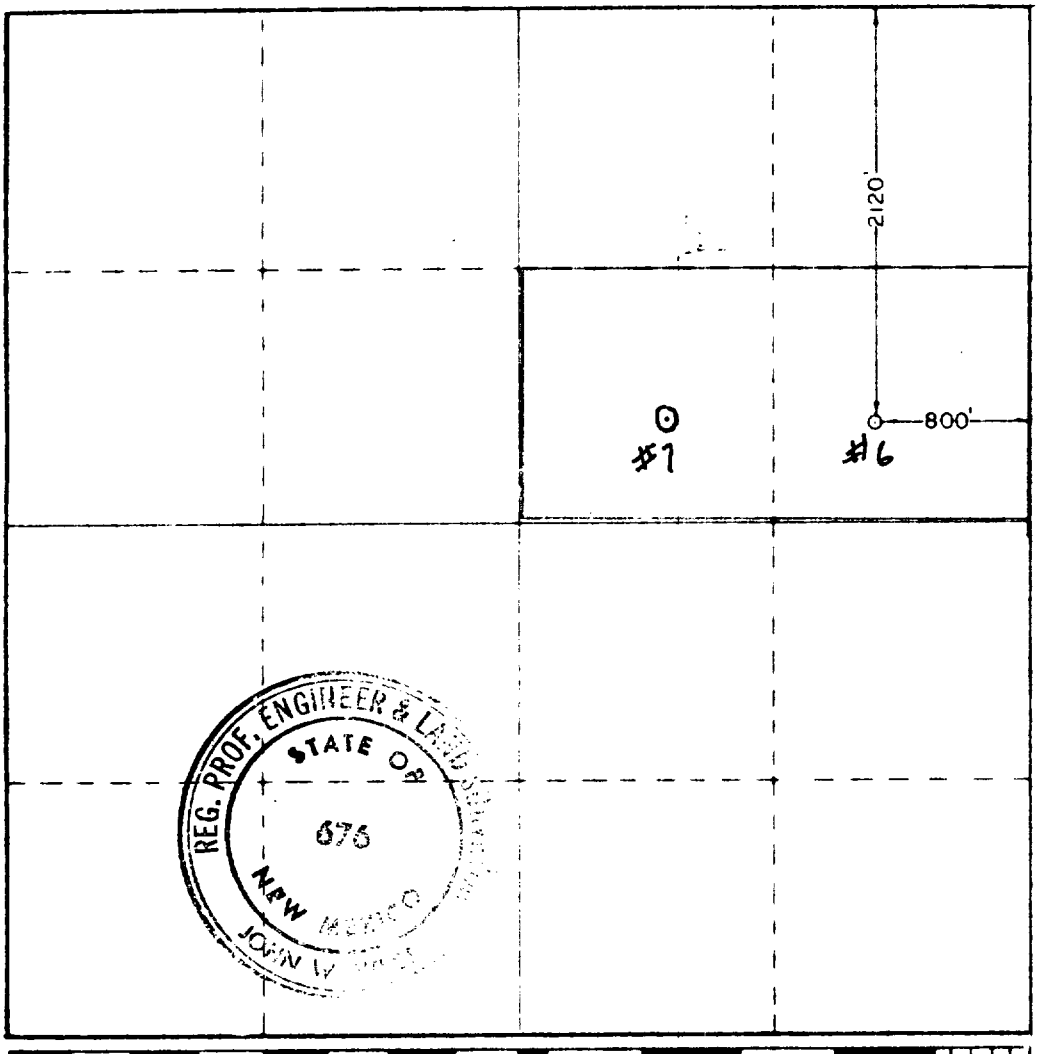

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Ronald M. Sentz

Name: Ronald M. Sentz

Position: Drilling & Production Eng

Company: Southern Union Exp. Co.

Date: 8-9-79

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Date Surveyed: JULY 28TH, 1979

Registered Professional Engineer and/or Land Surveyor

John W West

Certificate No. John W. West 676
Ronald J. Eidson 3239

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WELL LOCATION AND ACREAGE DEDICATION PLAT

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MAY 18 1983
OIL CONSERVATION DIVISION
SANTA FE

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
SOUTHERN UNION EXPLORATION CO.	SUSCO STATE	6

Unit Letter	Section	Township	Range	County
H	19	9 SOUTH	33 EAST	LEA

Actual Footage Location of Well:
2120 feet from the NORTH line and 800 feet from the EAST line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
4375.7	San Andres	Flying H San Andres	80* Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

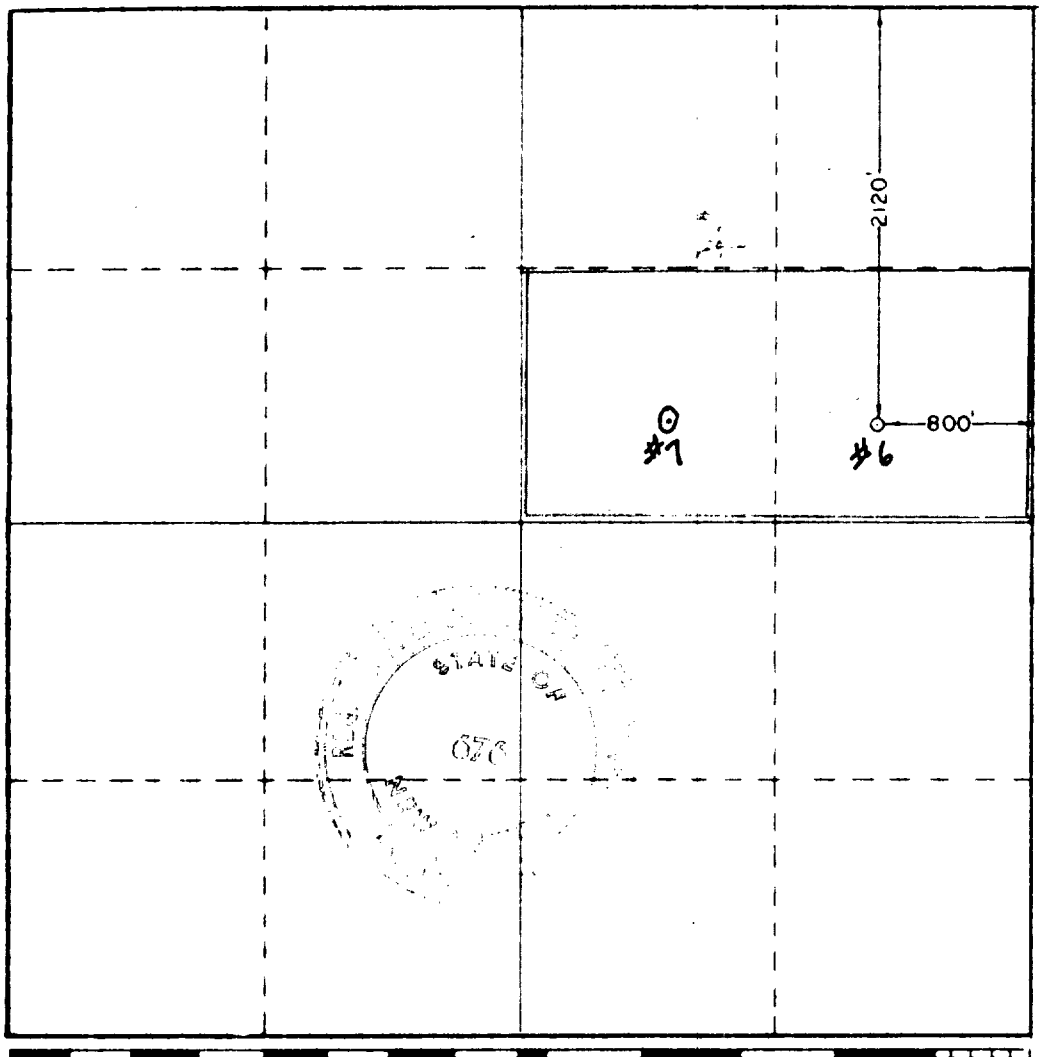
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty). *To Be Shared With #7

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

Ronald M. Sentz

Name: Ronald M. Sentz

Position: Drilling & Production Eng

Company: Southern Union Exp. Co.

Date: 8-9-79

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: JULY 28TH, 1979

Registered Professional Engineer and/or Land Surveyor

John W West

Certificate No. John W. West 676
Ronald J. Eidson 3239

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

RECEIVED
MAY 18 1983
OIL CONSERVATION DIVISION
SANTA FE

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
Southern Union Exploration Co.	SUSCO State	2

Unit Letter	Section	Township	Range	County
J	19	9 South	33 East	Lea

Actual Footage Location of Well:
1980 feet from the South line and 1980 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
4374.5			Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

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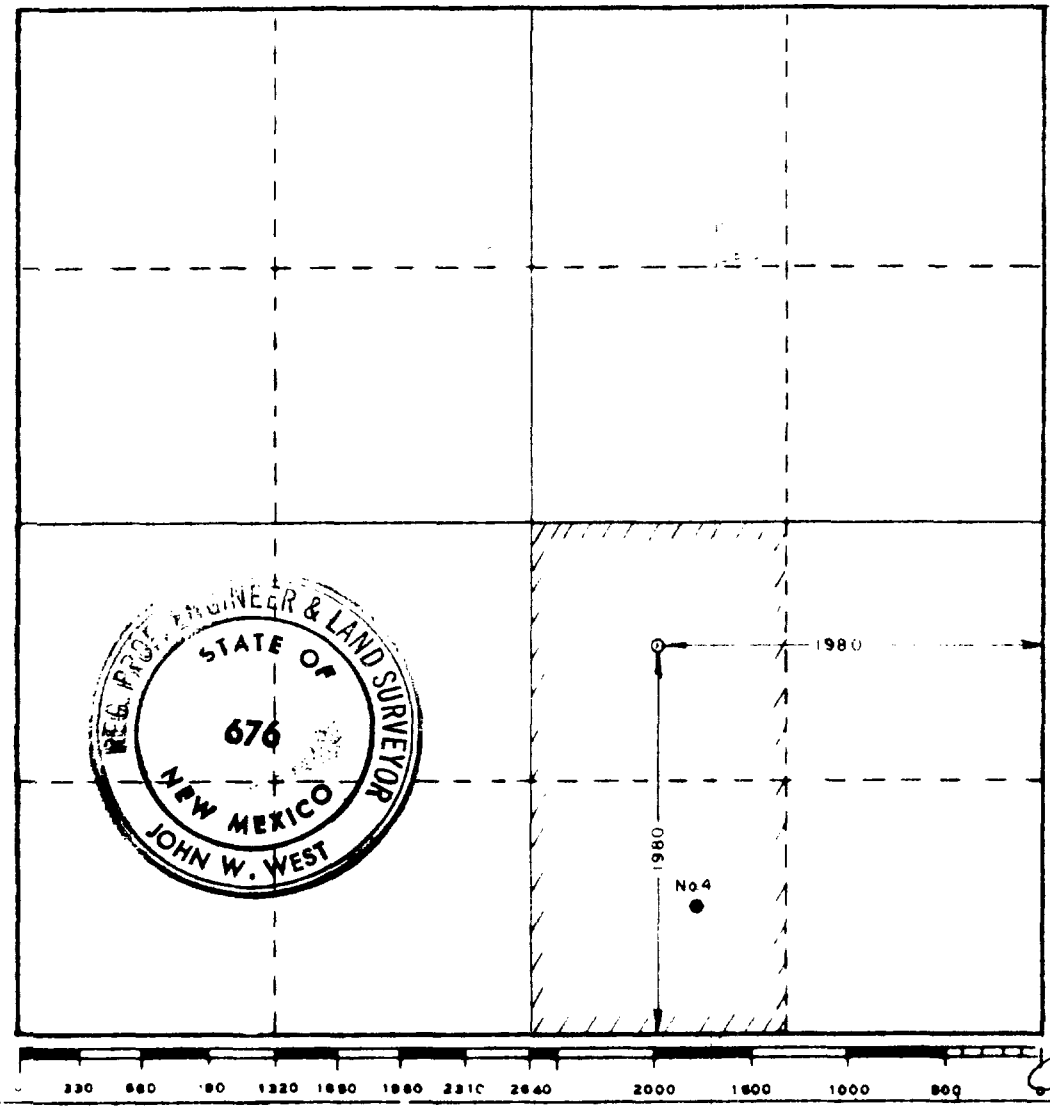

REG. PROFESSIONAL ENGINEER & LAND SURVEYOR
STATE OF NEW MEXICO
676
JOHN W. WEST

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: John W. West

Position: Agent

Company: Southern Union Exploration Co.

Date: August 28, 1978

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: August 2, 1977

Registered Professional Engineer and/or Land Surveyor

John W West

Certificate No. John W. West 676
Ronald J. Eidson 3239

NEW CO OIL CONSERVATION COMMISSIO

WELL LOCATION AND ACREAGE DEDICATION PL

Form C-1
Supersedes C-xxx
Effective 1-1-65

All distances must be from the outer boundaries of the Section

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SANTA FE

Operator	Lease	Well No.
Southern Union Supply Co.	SUSCO State	2

Unit Letter	Section	Township	Range	County
J	19	9 South	33 East	Lea

Actual Footage Location			
1980 feet from the	South line and	1980 feet from the	East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage
374.5	San Andres	Flying "M"	80

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

Yes No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

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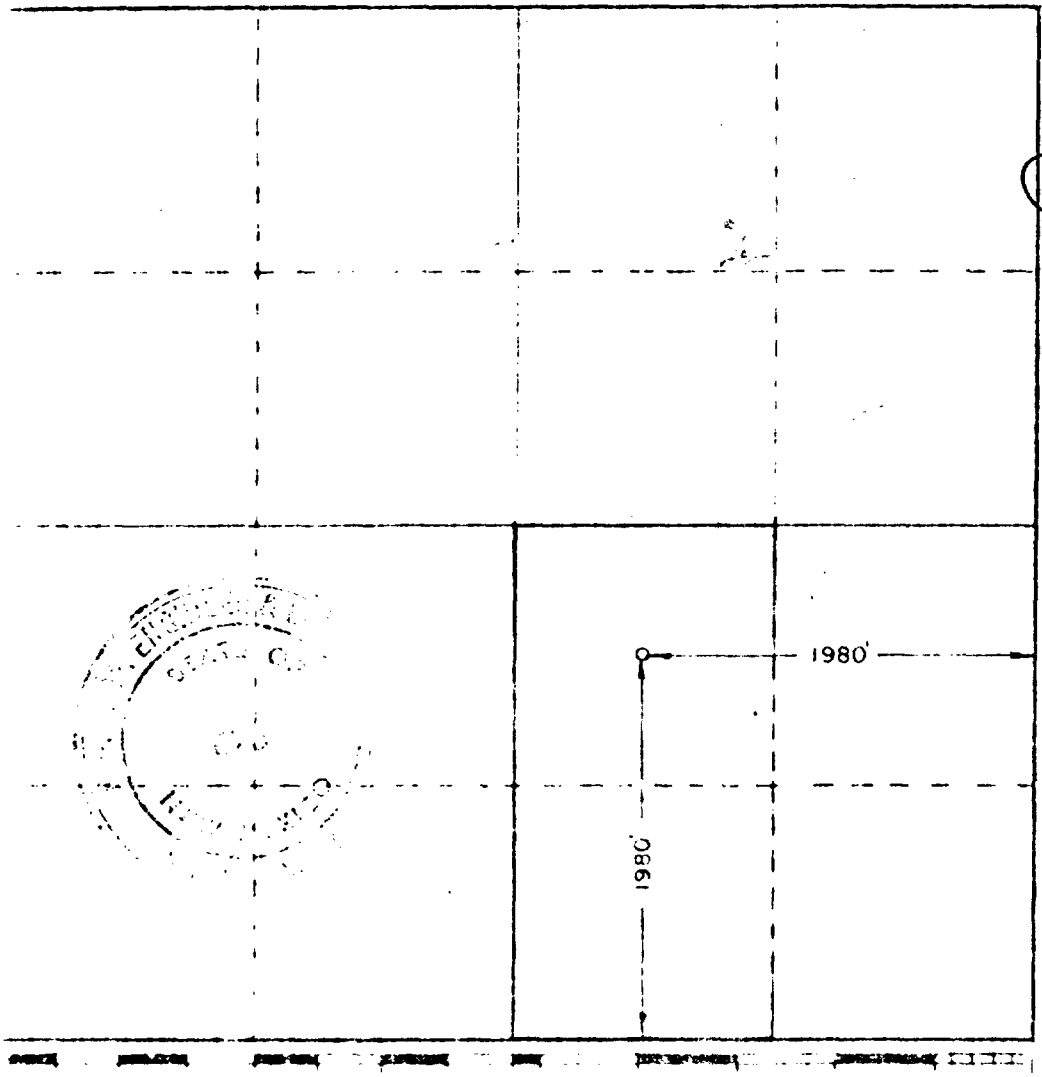

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

J. W. Mulloy

Name
J. W. Mulloy

Position
Agent

Company
Southern Union Supply Co.

Date
August 5, 1977

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed
August 2, 1977

Registered Professional Engineer and/or Land Surveyor

676

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

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SANTA FE

Operator	Lease	Well No.
SOUTHERN UNION SUPPLY COMPANY	SUSCO State	1

Unit Letter	Section	Township	Range	County
"P"	19	9 South	33 East	Lea

Actual Footage Location of Well: 660 feet from the South line and 660 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
4368.7	San Andres	Flying M	80 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

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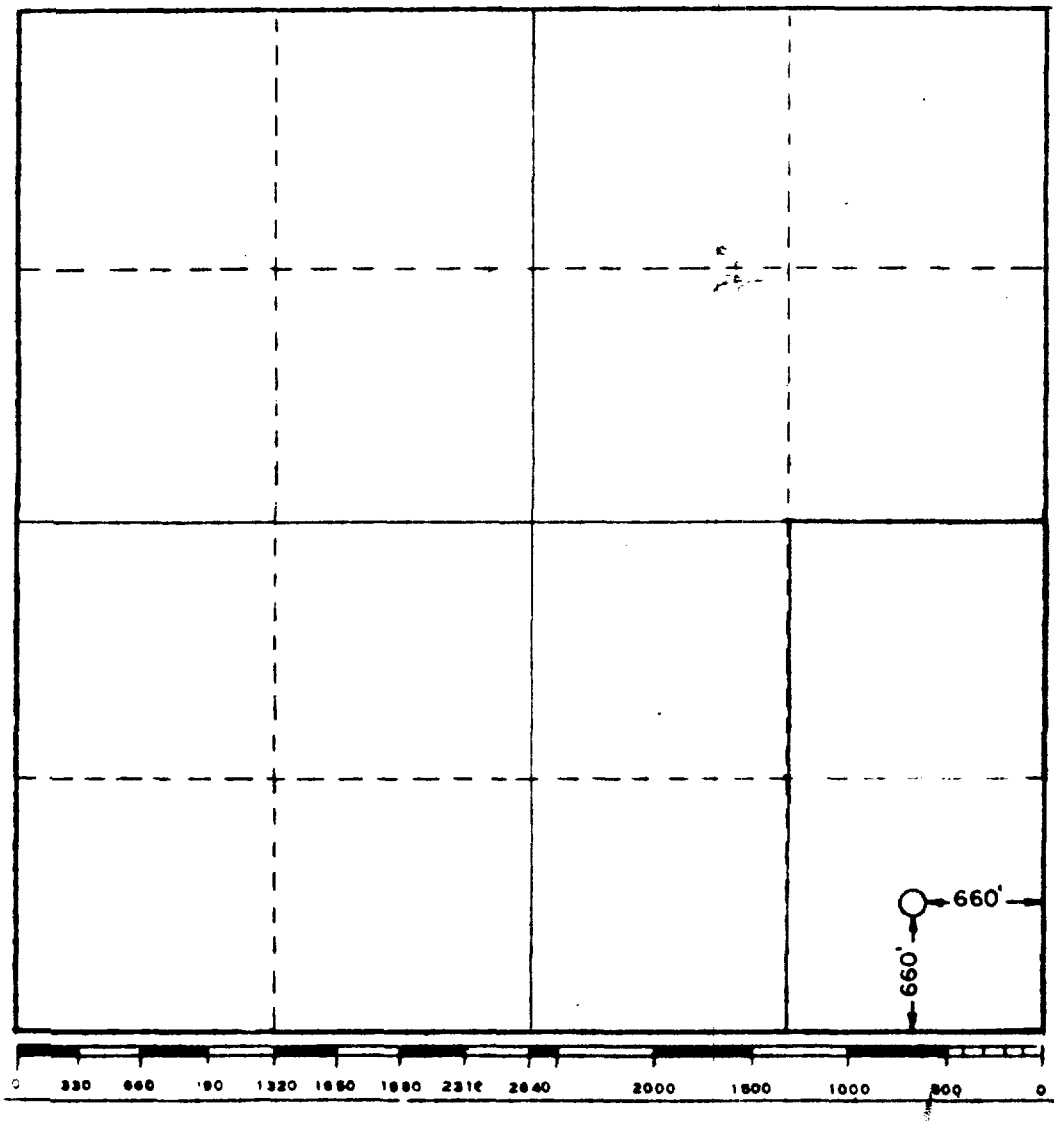

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: Donna Holden

Position: Agent

Company: Southern Union Supply Co.

Date: May 27, 1977

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: MAY 26, 1977

Registered Professional Engineer and/or Land Surveyor: HERSCHEL L. JONES 3640

Certificate No.

STATE OF NEW MEXICO
REGISTERED LAND SURVEYOR

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

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Operator	Lease	Well No.
Southern Union Exploration Co.	SUSCO State	1

Unit Letter	Section	Township	Range	County
P	19	9 South	33 East	Lea

Actual Footage Location of Well:
660 feet from the South line and 660 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
	San Andres	Flying M	80 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

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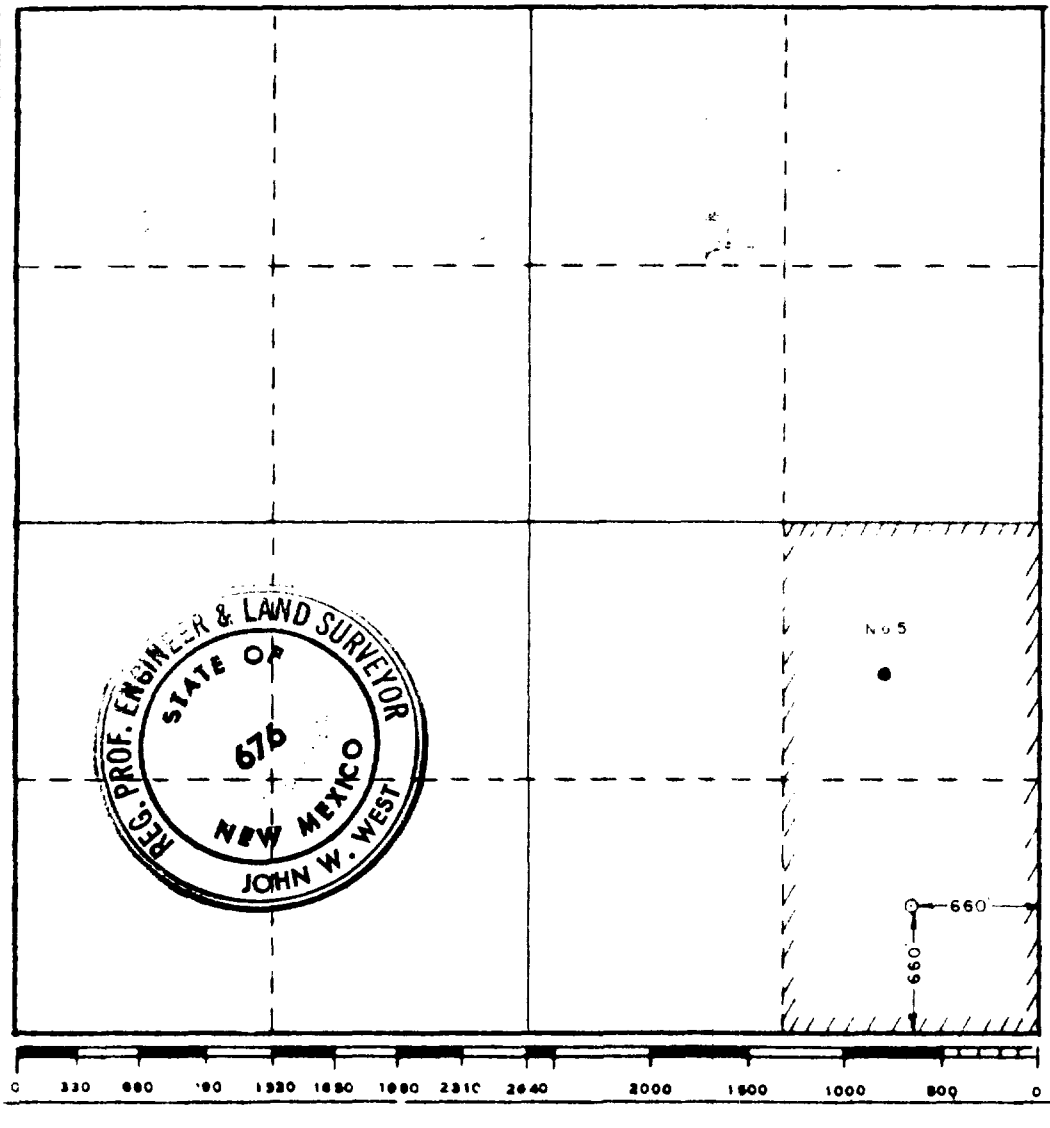

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: John W West

Position: Agent

Company: Southern Union Exploration Co.

Date: August 28, 1978

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed

Registered Professional Engineer and/or Land Surveyor

Certificate No. John W. West 676
Ronald J. Eidson 3239

MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

RECEIVED
MAY 18 1983
OIL CONSERVATION DIVISION
SANTA FE

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

Operator	Lease	
Southern Union Exploration Co.	Susco State	5

Unit Letter	Section	Township	Range	County
I	19	9 South	33 East	Lea

Actual Footage Location of Well:
1840 feet from the South line and 800 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
4372.2	San Andres	Flying M	40 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

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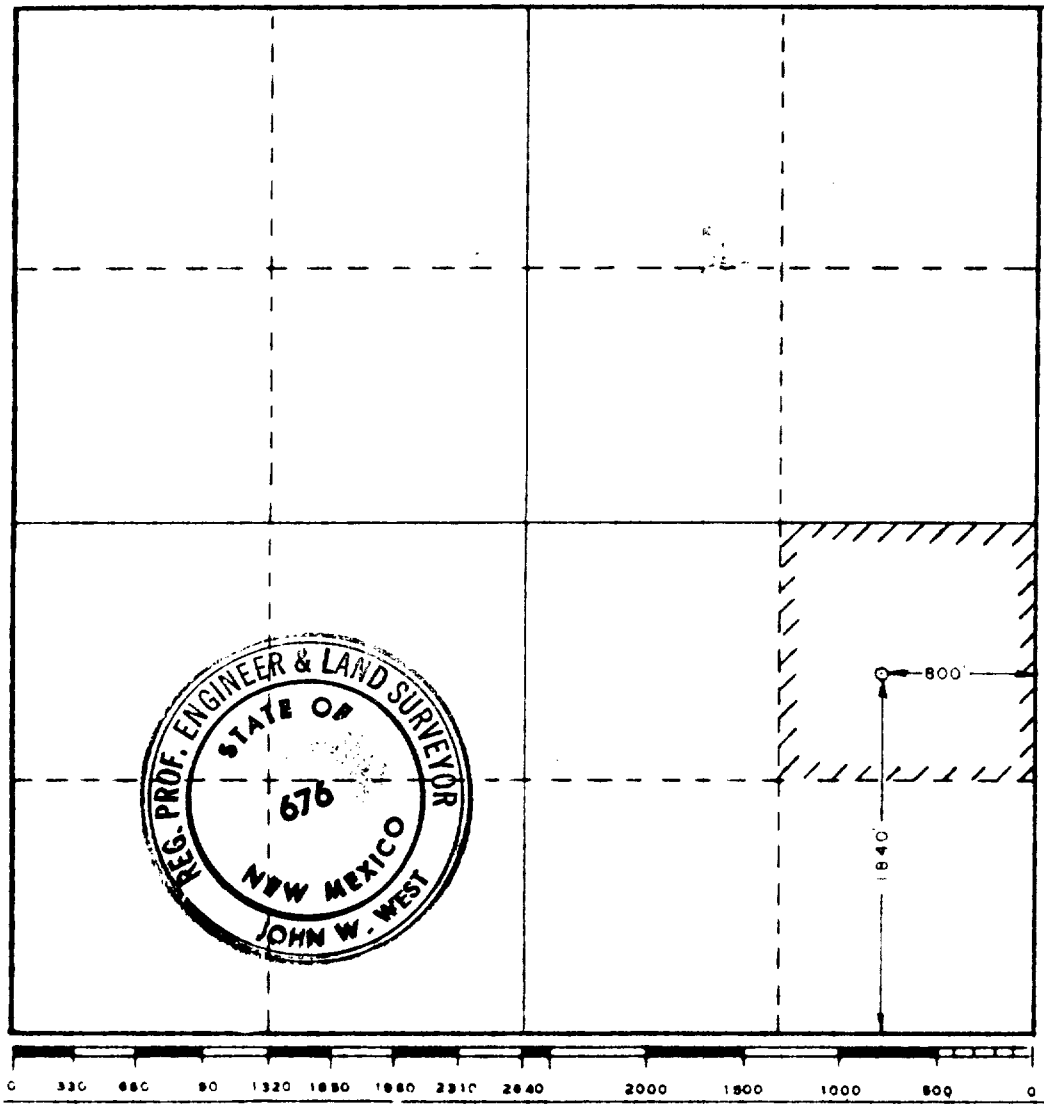

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: John W. West

Position: Agent

Company: Southern Union Exploration Co.

Date: August 18, 1978

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: August 16, 1978

Registered Professional Engineer and/or Land Surveyor

John W. West

Certificate No. John W. West 676
Ronald J. Eidson 3239

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OIL CONSERVATION DIVISION
SANTA FE

Form C-102
Supersedes C-128
Effective 1-1-65

WELL LOCATION AND ACREAGE DEDICATION PLAT

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
Southern Union Exploration Co.	Susco State	5

Unit Letter	Section	Township	Range	County
I	19	9 South	33 East	Lea

Actual Footage Location of Well:
1840 feet from the South line and 800 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
4372.2	San Andres	Flying M	40 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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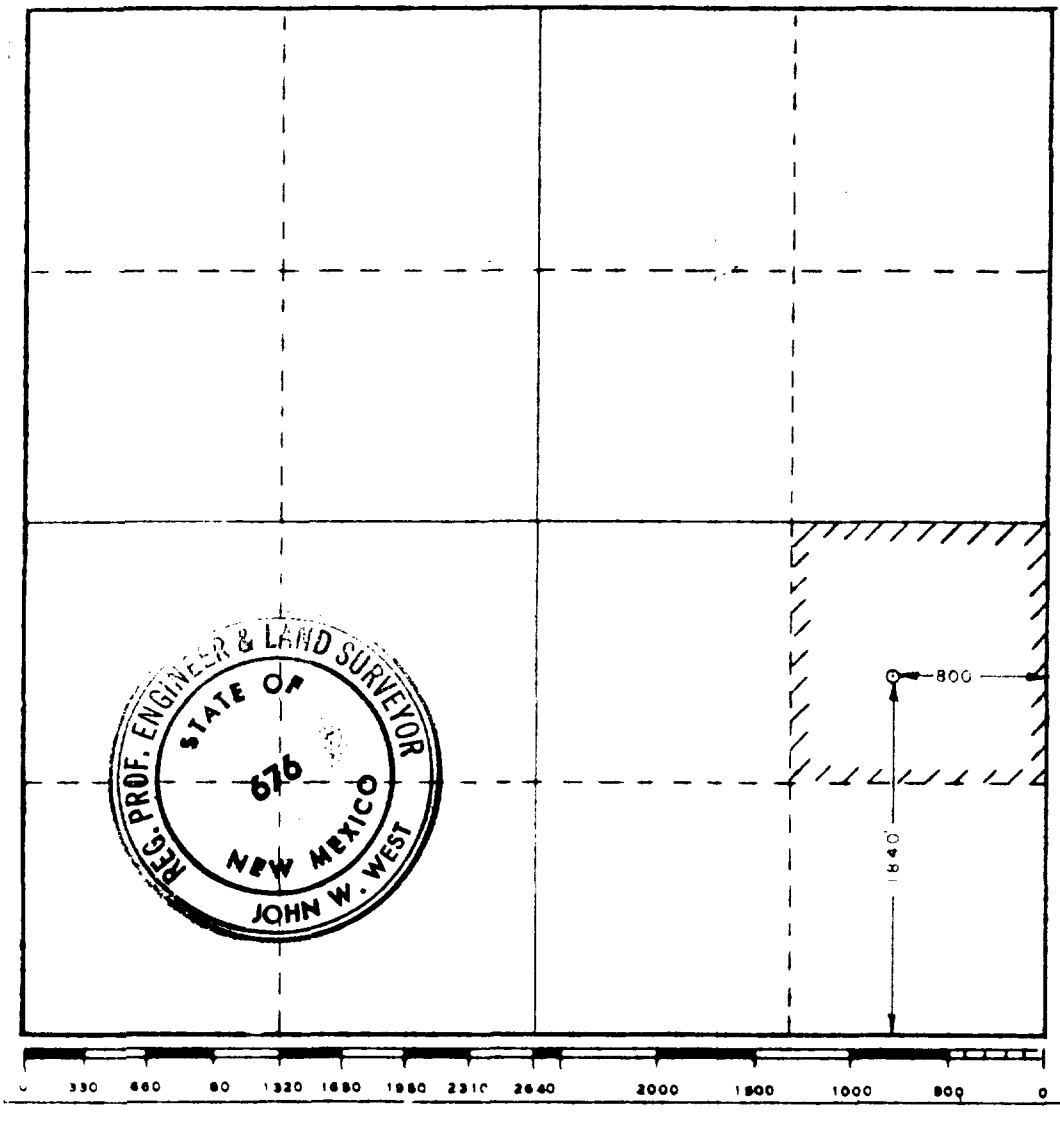

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: John W. West

Position: Agent

Company: Southern Union Exploration Co.

Date: August 18, 1978

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: August 16, 1978

Registered Professional Engineer and/or Land Surveyor

John W. West

Certificate No. John W. West 676
Ronald J. Eidson 3239

MEXICO OIL CONSERVATION COMMIS

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

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SANTA FE

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
Southern Union Exploration Co.	Susco State	5

Unit Letter	Section	Township	Range	County
I	19	9 South	33 East	Lea

Actual Footage Location of Well:
1840 feet from the South line and 800 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
4372.2	San Andres	Flying M	40 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

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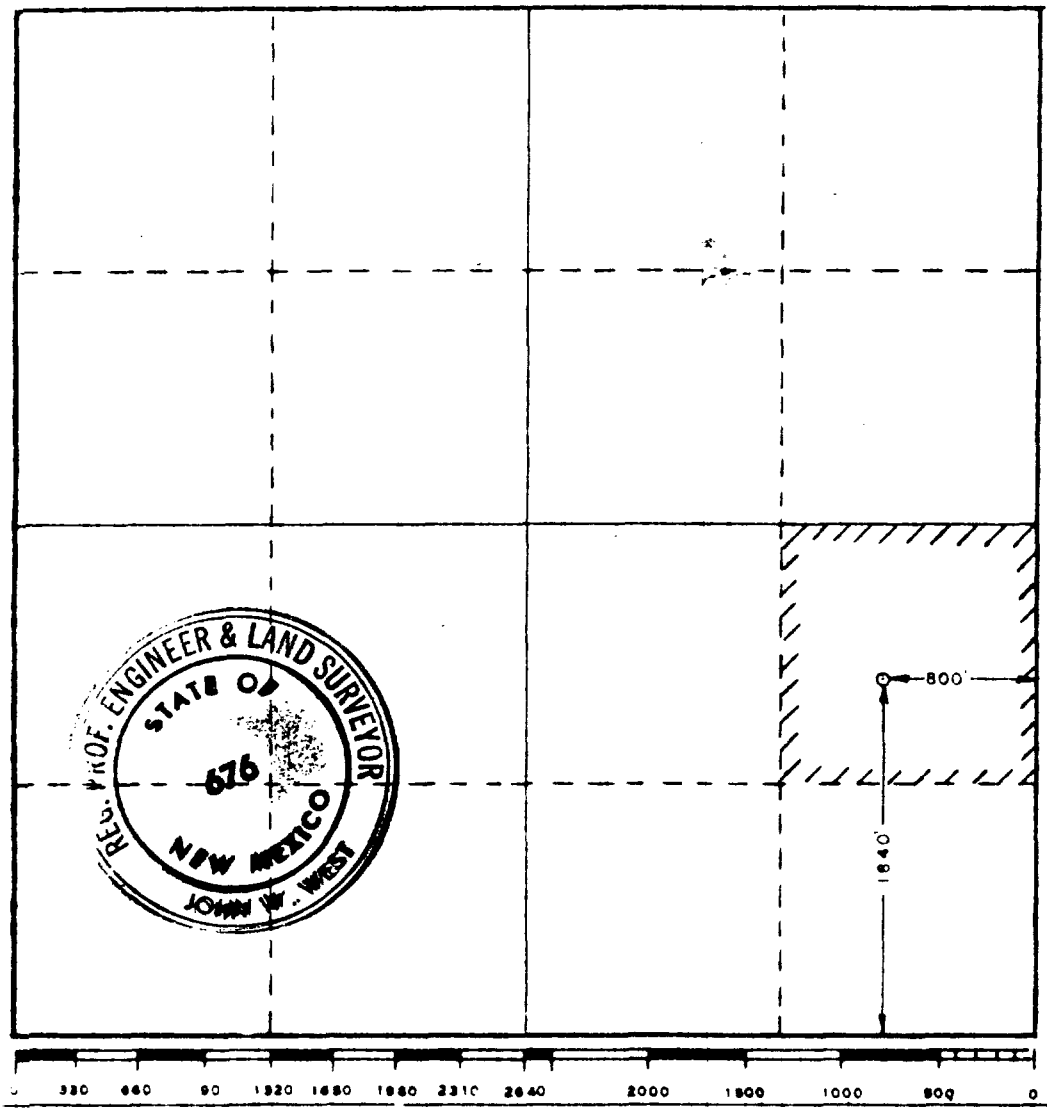

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: John W. West

Position: Agent

Company: Southern Union Exploration Co.

Date: August 18, 1978

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: August 16, 1978

Registered Professional Engineer and/or Land Surveyor

John W. West

Certificate No. John W. West 676
Ronald J. Eidson 3239

MEXICO OIL CONSERVATION COMMIS

WELL LOCATION AND ACREAGE DEDICATIO PLAT

Form C-102
Supersedes C-128
Effective 14-65

All distances must be from the outer boundaries of the Section

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SANTA FE

Operator	Lease	Well No.
Southern Union Exploration Co.	Susco State	4

Unit Letter	Section	Township	Range	County
O	19	9 South	33 East	Lea

Actual Footage Location of Well:
460 feet from the South line and 1780 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
4367.8	San Andres	Flying "M"	80 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

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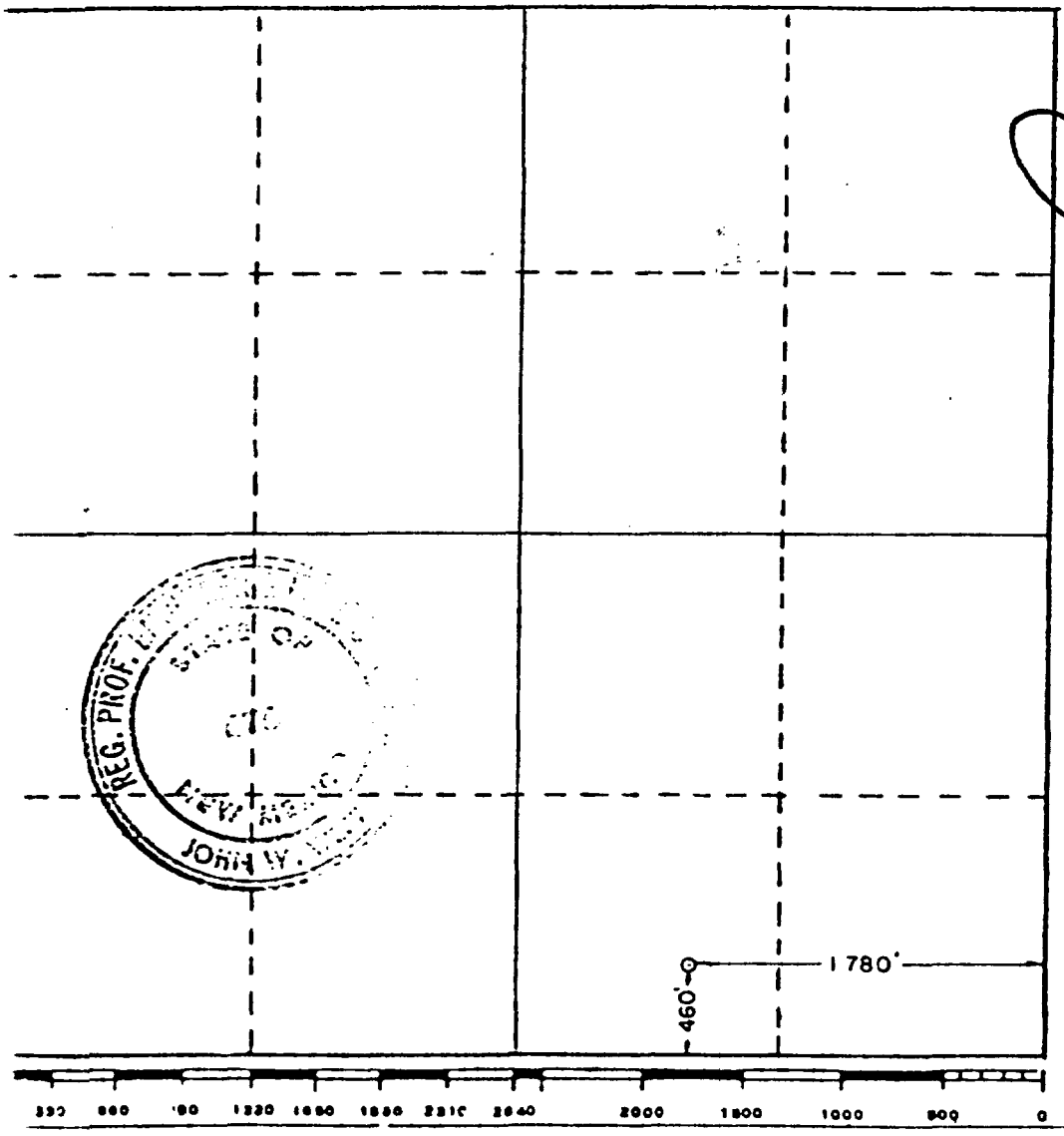

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: John W. Mulloy

Position: Agent

Company: Southern Union Exploration Co

Date: 5-31-78

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: 4/22/78

Registered Professional Engineer and/or Land Surveyor

John W. West

Certificate No. John W. West 676
Ronald J. Eidson 3239

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 14-65

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SANTA FE

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
SOUTHERN UNION EXPLORATION COMPANY	Susco-State	4

Unit Letter	Section	Township	Range	County
O	19	9 South	33 East	Lea

Actual Footage Location of Well:
1780 feet from the east line and 660 feet from the south line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
4367.8	San Andres	Flying "M"	80 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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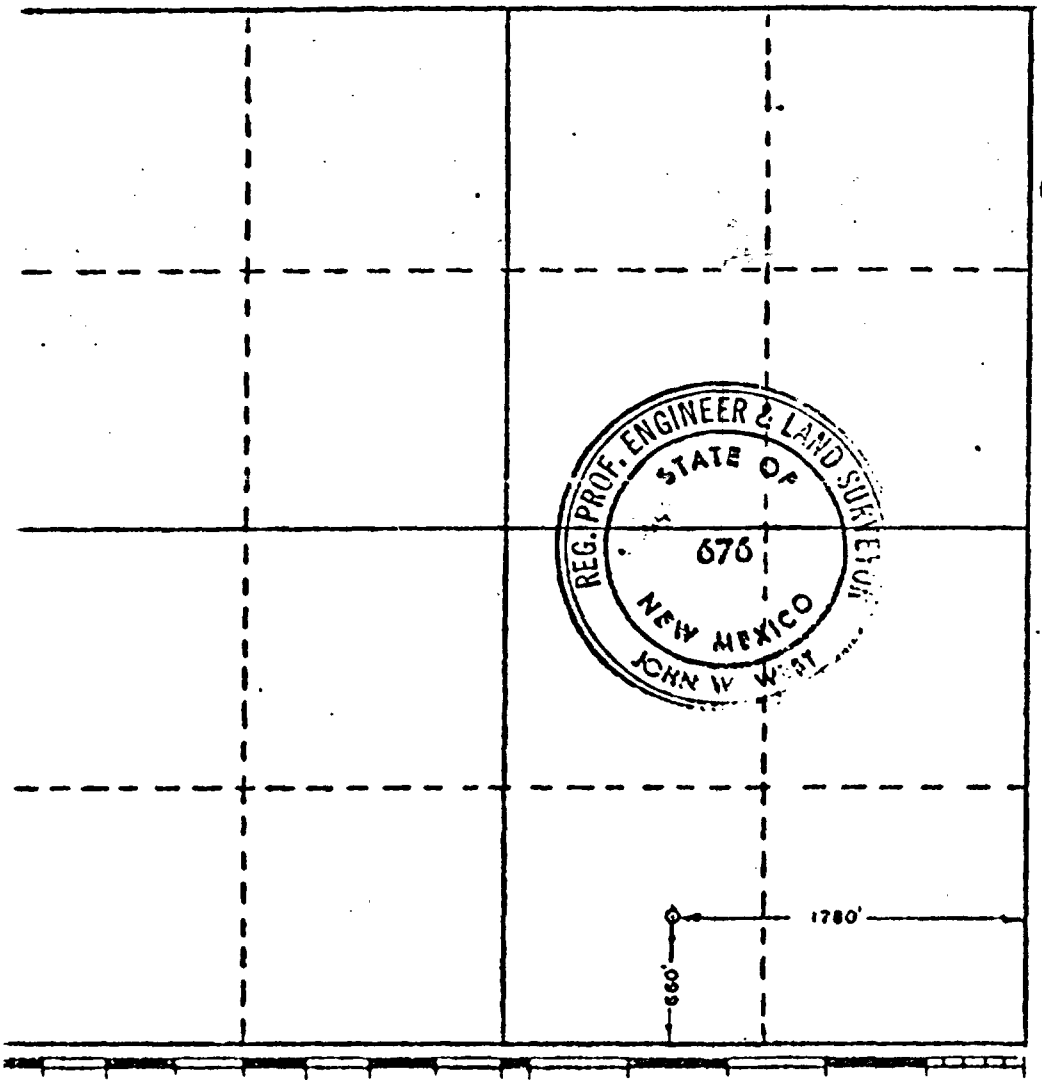

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

J. W. Mulloy

Name: J. W. Mulloy

Position: Agent

Company: Southern Union Exploration Co.

Date: 6-21-78

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: June 14, 1978

Registered Professional Engineer and/or Land Surveyor

John W. West

Certificate No. John W. West 676
Ronald J. Eidson 3239

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
Southern Union Exploration Co.	SUSCO State	4

Unit Letter	Section	Township	Range	County
O	19	9 South	33 East	Lea

Actual Footage Location of Well:
660 feet from the South line and 1780 feet from the East line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
4367.8	San Andres	Flying M	80 Acres

1st National Bldg. Midland, TX 79701

MAY 18 1983

OIL CONSERVATION DIVISION
SANTA FE

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

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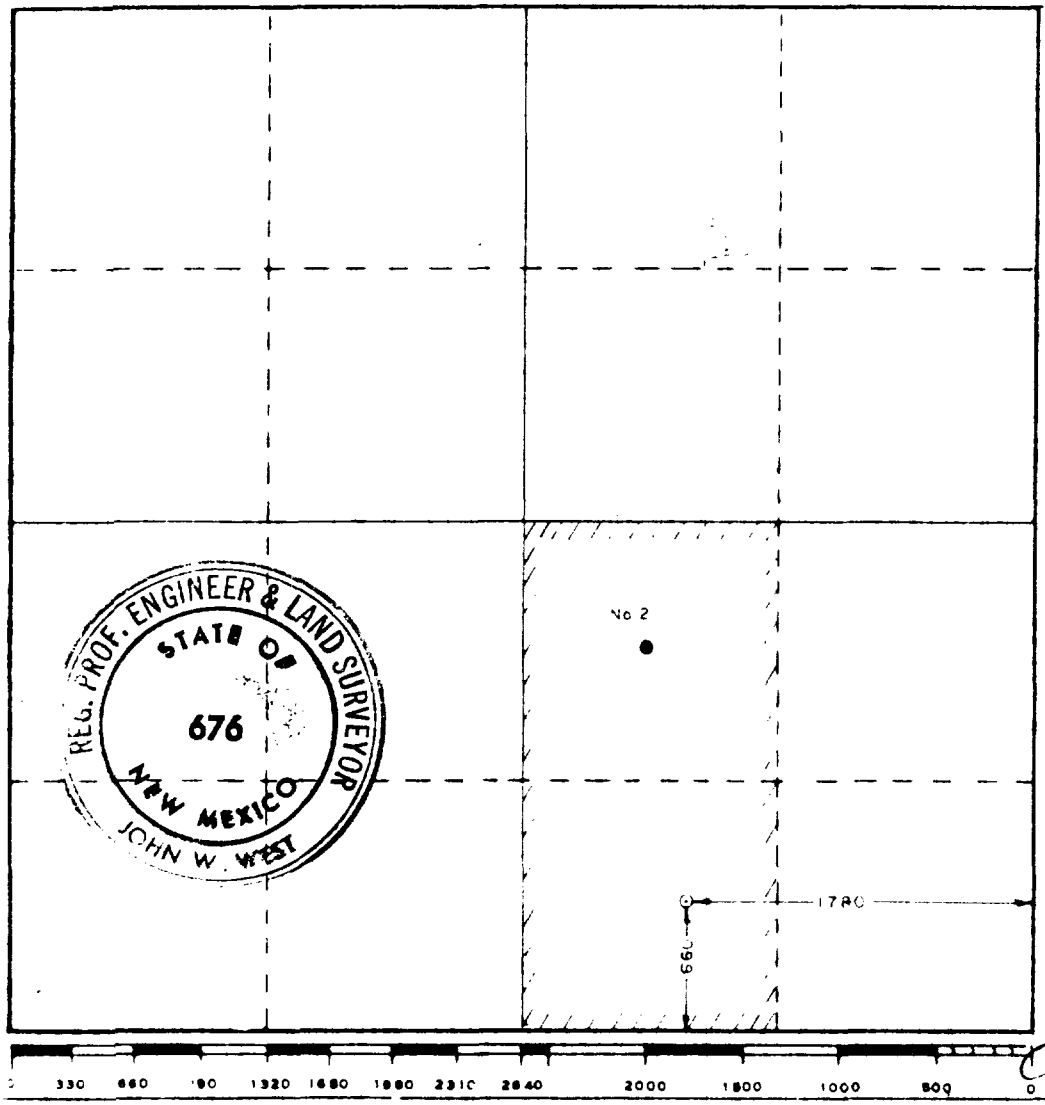

CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: John W West

Position: Agent

Company: Southern Union Exploration Co.

Date: August 28, 1978

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: June 14, 1978

Registered Professional Engineer and/or Land Surveyor

John W West

Certificate No. John W. West 676
Ronald J. Eidson 3239

N. . MEXICO OIL CONSERVATION COMMISS 4

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section

Operator	Lease	Well No.
Southern Union Exploration Co.	SUSCO State	4

Unit Letter	Section	Township	Range	County
O	19	9 South	33 East	Lea

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SANTA FE

Actual Footage Location of Well:
660 feet from the South line and 1780 feet from the East

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
4367.8	San Andres	Flying M	80 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

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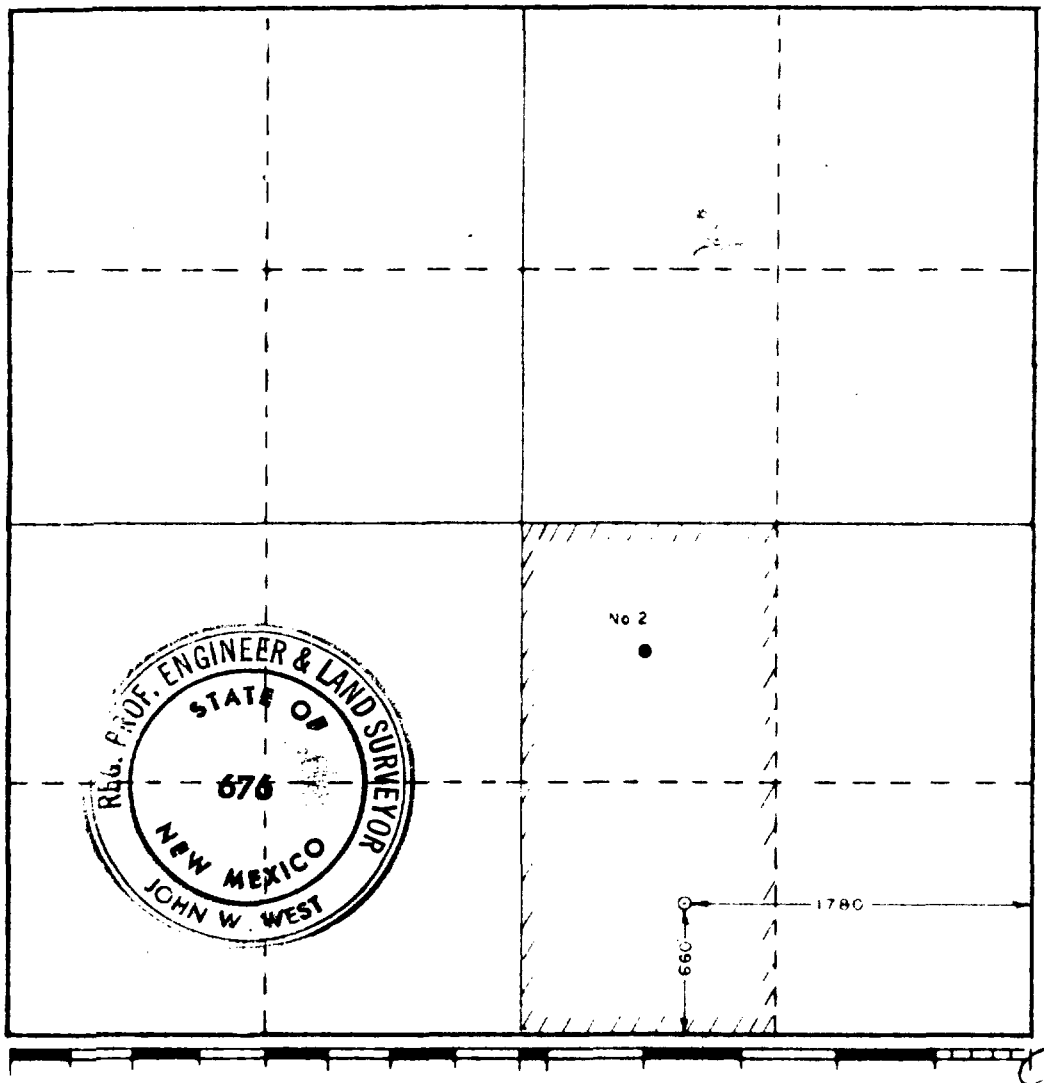

CERTIFICATION

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Name: John W West

Position: Agent

Company: Southern Union Exploration Co.

Date: August 28, 1978

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: June 14, 1978

Registered Professional Engineer and/or Land Surveyor

John W West

Certificate No. John W. West 676
Ronald J. Eidson 3239

NEW MEXICO OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

Operator	Lease	Well No.
Southern Union Supply Company	Susco State	3

Unit Letter	Section	Township	Range	County
N	19	9-S	33-E	Lea

Actual Footage Location of Well:
660 feet from the South line and 1980 feet from the West line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
4373	San Andres	Flying "M"	80 Acres

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OIL CONSERVATION DIVISION
SANTA FE

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

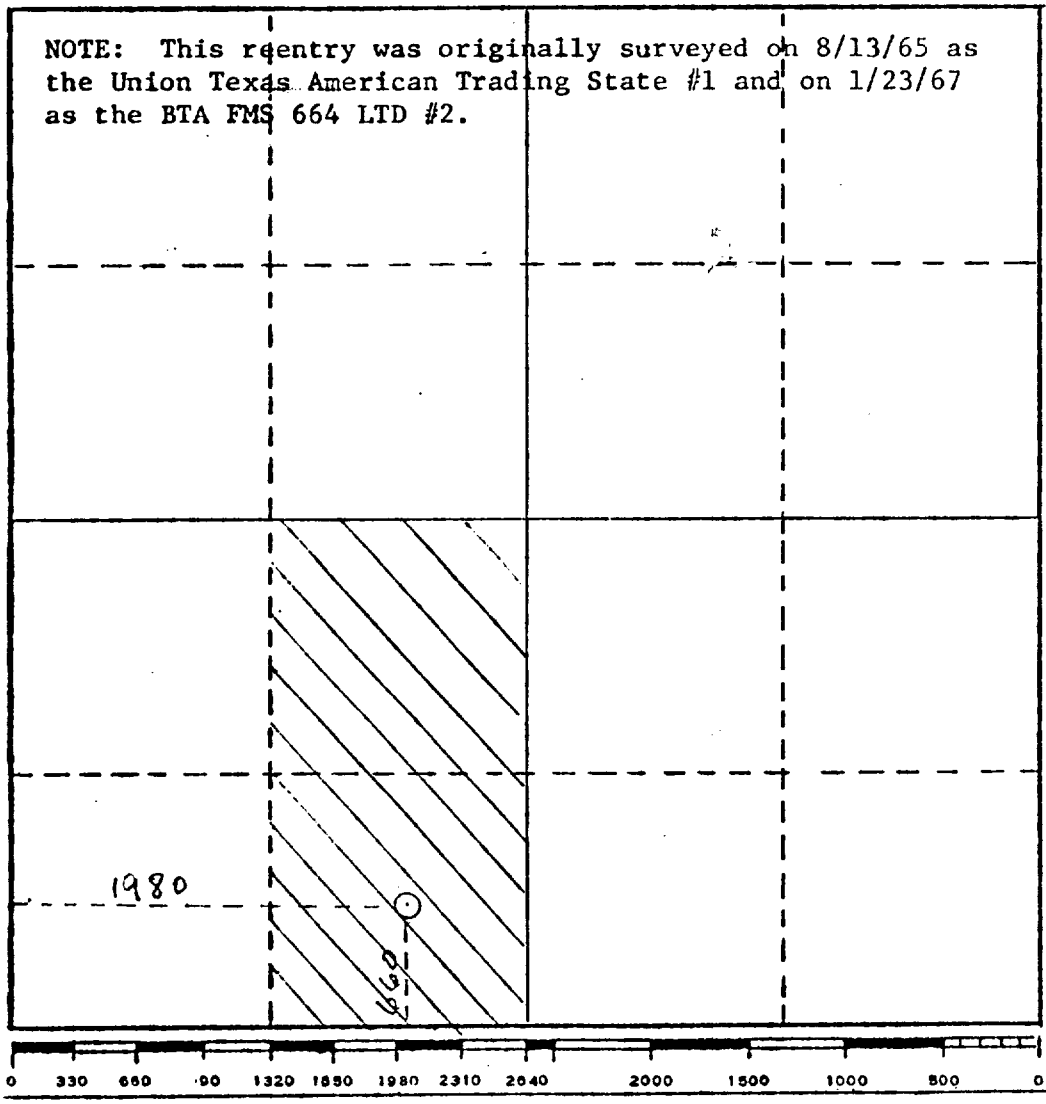
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.

NOTE: This reentry was originally surveyed on 8/13/65 as the Union Texas American Trading State #1 and on 1/23/67 as the BTA FMS 664 LTD #2.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

James S. Ellis

Name
Chief Petroleum Engineer

Position
Southern Union Company

Company
November 2, 1977

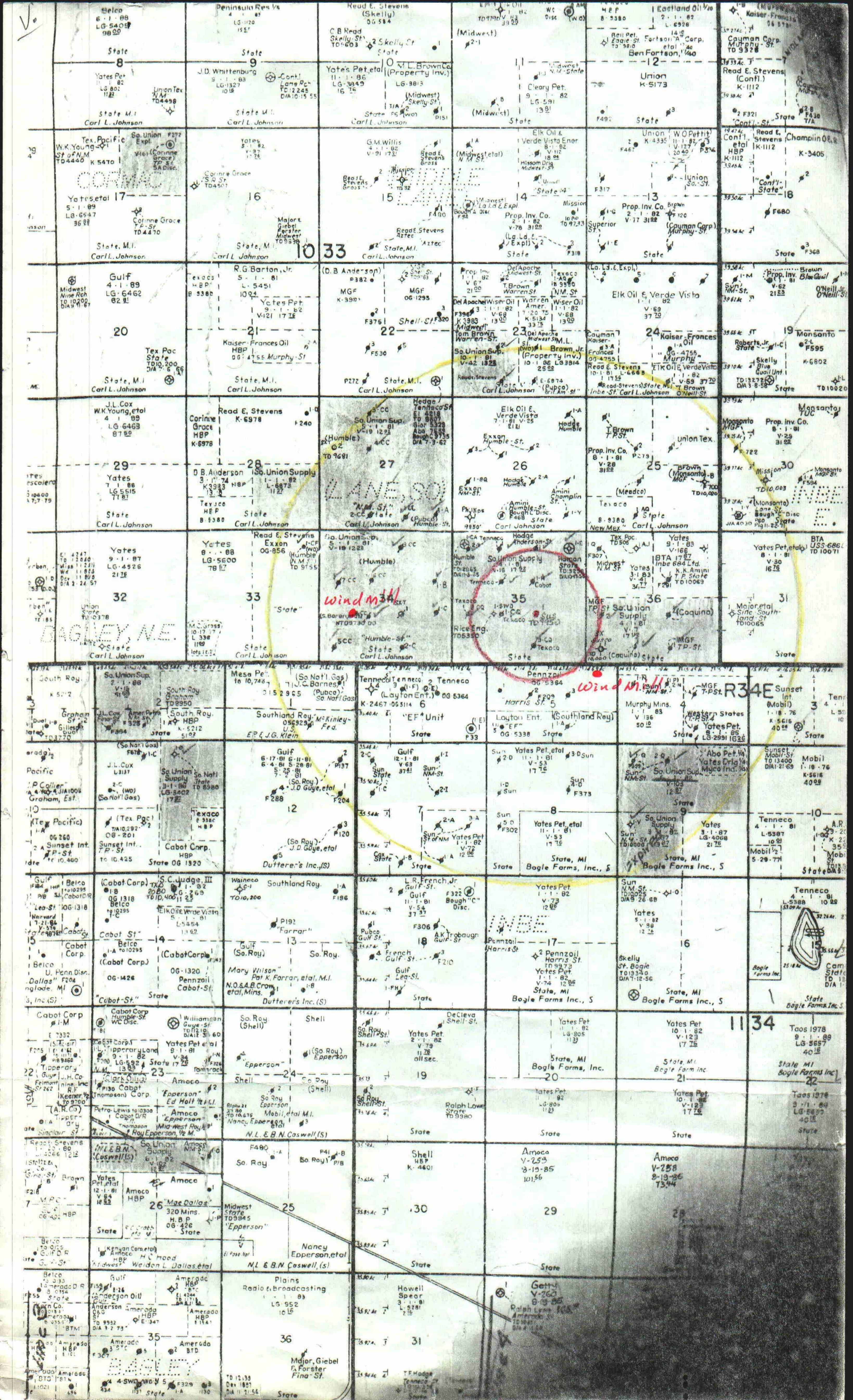
Date

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed

Registered Professional Engineer and/or Land Surveyor

Certificate No.



Belco
Peninsula Res
Read E. Stevens (Skelly)
Eastland Oil
Kaiser-Francis
J.D. Whittenburg
Yates Pet., etal
M.L. Brown Co. (Property Inv.)
(Midwest)
Ben Fortson
Union K-5173
Cayman Corp. Murphy-St.
Read E. Stevens (Contl.)
State M.I.
Carl L. Johnson
Cleary Pet.
State
W.K. Young
Tex. Pacific
So. Union Expl.
CORMAC
Yates etal
Corinne Grace
G.M. Willis
MIDDLE LANE
Elk Oil & Verde Vista Ener
Prop. Inv. Co.
Union
Champlin Oil & R
10 33
Aztec
Superior
(Cayman Corp.) Murphy-St.
Gulf
R.G. Barton, Jr.
(D.B. Anderson)
MGF
Shell-St.
Texaco
Elk Oil & Verde Vista
Kaiser-Frances Oil
Murphy-St.
Tex Pac State
So. Union Sup.
Tom Brown Warren-St.
M.L. Brown, Jr. (Property Inv.)
Monsanto
J.L. Cox
Read E. Stevens
Corinne Grace HBP
Hedge Tenneco St.
Elk Oil & Verde Vista
T. Brown T.P.St.
Prop. Inv. Co.
(Humble)
Exxon Humble-St.
Union Tex.
D.B. Anderson
So. Union Supply
LANE, SO.
Amini Champlin St.
(Meadco)
Mission
INBE, E.
Yates
Texaco
Carl L. Johnson
State
BTA
Yates Pet., etal
Read E. Stevens Exxon
So. Union Sup.
So. Union Supply
Humble
Wind Mill
35
36
31
32
33
BAGLEY, N.E.
Rice Eng.
MGF T.P.-St.
So. Union Supply
(Coquina)
Major, etal
South Roy.
So. Union Sup.
Mesa Pet.
(So. Nat'l. Gas) J.C. Barnes
Tenneco
(Layton Ent.)
Pennzoil
Harris St.
Wind Mill
"EF" Unit
Layton Ent.
(Southland Roy)
Murphy Mins.
Western States
Yates Pet.
R34E
Sunset Int. (Mobil)
Southland Roy. U.S.
E.P. & J.G. Klein
J.L. Cox
So. Union Supply
Gulf
J.D. Guye, etal
Sun State
Yates Pet., etal
Abo Pet.
Yates Drlg.
Myco Ind.
Mobil
(Tex. Pac)
Sunset Int. T.P.-St.
Cabot Corp.
State OG 1320
(So. Roy.) J.D. Guye, etal
Dutterer's Inc., (S)
Sun
Yates Pet., etal
State, MI
Bogle Farms, Inc., S
Tenneco
Gulf
Belco
(Cabot Corp.)
S.C. Judge, III
Elk Oil & Verde Vista
Southland Roy.
"Farrar"
L.R. French, Jr. Gulf-St.
Gulf
Bough "C" Disc.
A.K. Trobaugh Gulf-St.
INBE
Pennzoil Harris St.
Yates Pet.
Yates
Skelly St. Bogle
Cabot St.
Cabot Corp.
(So. Roy.)
Mary Wilson
Pat K. Farrar, etal, M.I.
So. Roy.
French Gulf-St.
Gulf Leg-St.
State, MI
Bogle Farms Inc., S
Cabot Corp.
Williamson Guye-St.
So. Roy. (Shell)
Shell
Yates Pet.
DeCleva Shell-St.
Yates Pet
11 34
Taos 1978
Tipperary
Yates Pet. etal
Amoco
"Epperson"
Ed Holt
Amoco
"Epperson"
Mobil, etal M.I.
Nancy Epperson, etal
Ralph Lowe State
State, MI
Bogle Farms, Inc.
Bogle Farm Inc.
Bogle Farms Inc.
N.L. & B.N. Caswell, (S)
Read Stevens
So. Union Supply
Amoco
Brown
So. Roy
Shell HBP K-4601
Amoco V-259 8-19-85
Amoco V-258 8-19-86
Amoco HBP
"Mae Dallas"
320 Mins.
Midwest State
"Epperson"
Nancy Epperson, etal
N.L. & B.N. Caswell, (s)
Belco
H.C. Hood
Weldon L. Dallas, etal
Plains Radio & Broadcasting
Howell Spear
Getty
Amerada
Anderson Oil
Major, Giebel & Forster Fina-St.
T.F. Hodge
BAGLEY

SWD #35

All cement brought back to surface