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# NEW MEXICO OIL CONSERVATION COMMISSION

Form C-101  
Revised 1-1-65

30-043-20094

5A. Indicate Type of Lease	
STATE <input type="checkbox"/>	FEE <input checked="" type="checkbox"/>
5. State Oil & Gas Lease No.	

## APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work		7. Unit Agreement Name	
b. Type of Well DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/> PLUG BACK <input type="checkbox"/> OIL WELL <input checked="" type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER <input type="checkbox"/> SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>		8. Farm or Lease Name Santa Fe	
2. Name of Operator Shell Oil Company (Rocky Mountain Division Production)		9. Well No. <del>14-14</del> 1	
3. Address of Operator 1700 Broadway, Denver, Colorado 80202		10. Field and Pool, or Wildcat Cactus Area (WC)	
4. Location of Well UNIT LETTER _____ LOCATED 1500.06 FEET FROM THE south LINE AND 1070.32 FEET FROM THE west LINE OF SEC. 13 TWP. 13N RGE. 3E NMPM		12. County Sandoval	
21. Elevations (Show whether DE, RT, etc.) 5733 GL		19. Proposed Depth 13,000'	19A. Formation Pre-Cambrian
21A. Kind & Status Plug. Bond \$10,000 Blanket	21B. Drilling Contractor Unknown at present	20. Rotary or C.T. Rotary	
		22. Approx. Date Work will start - 6-15-72	

## PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP

As per attached drilling prognosis and certified survey plat.

*Confidential*

APPROVAL VALID  
FOR 90 DAYS UNLESS  
DRILLING COMMENCED,

EXPIRES 9-12-72



IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

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

Signed Original Signed By  
J. C. HOWELL Title Division Operations Engineer Date May 23, 1972

(This space for State Use)

APPROVED BY [Signature] TITLE SUPERVISOR DIST. #3 DATE JUN 14 1972

CONDITIONS OF APPROVAL, IF ANY:

**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.

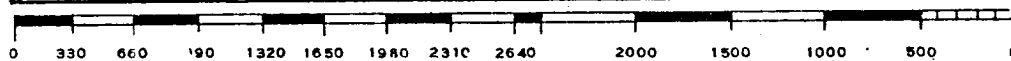
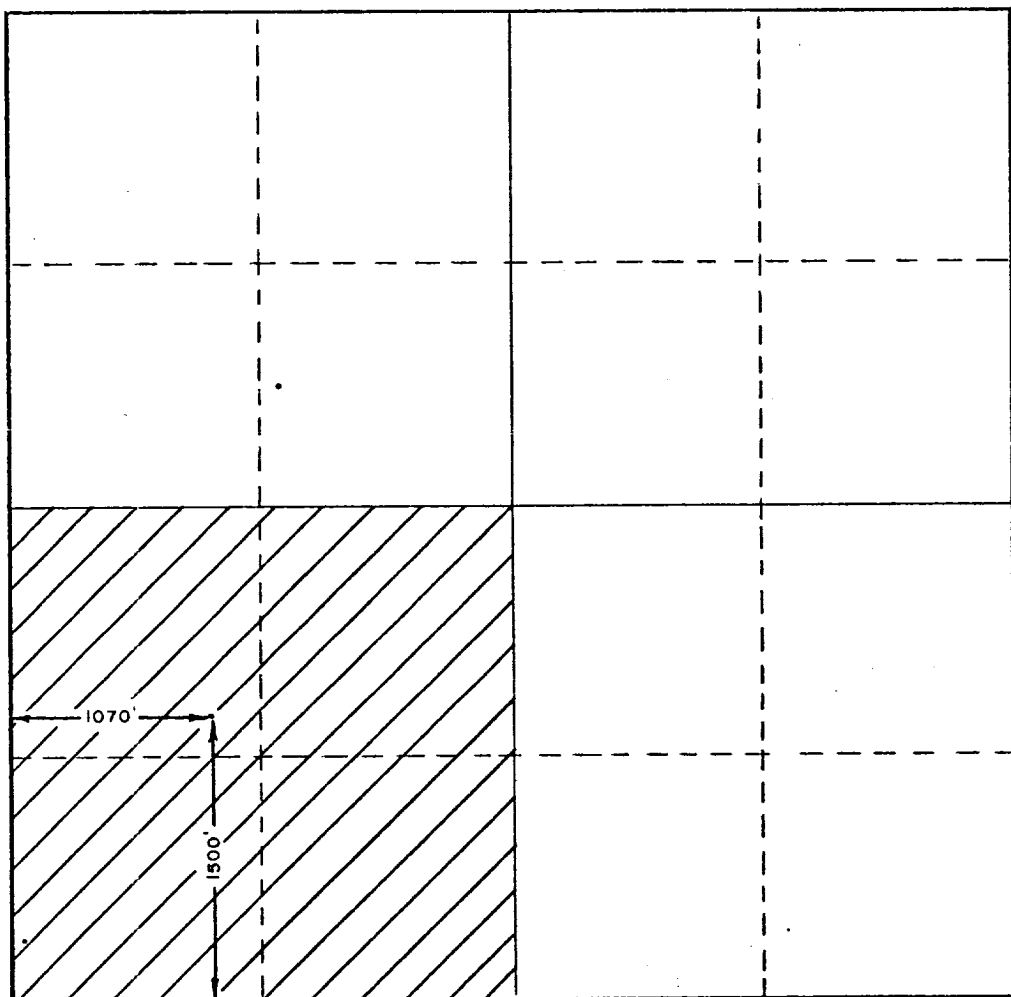
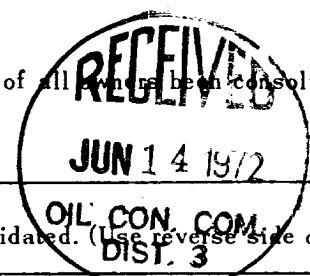
Shell Oil Company			Lease (NM-7188) <i>Santa Fe</i>		Well No. Santa Fe No. 1
East Quarter	Section 18	Township 13N	Range 3E	County Sandoval	
Actual Footage Location of Well: 1500 feet from the south line and 1070 feet from the west line					
Ground Level Elev. 5733	Producing Formation Unknown	Pool N/A	Dedicated Acreage: 160 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 N/A

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.*

*J. C. Howell*  
Name J. C. Howell  
Position Division Operations Engr.  
Company Shell Oil Company  
Date 5-31-72

*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.

## DRILLING WELL PROGNOSIS

WELL NAME Santa Fe 14X-18  
 TYPE WELL Exploration Department  
 FIELD/AREA Cactus

APPROX. LOCATION (SUBJECT TO SURVEY) SW/4 SW/4 Section 18-T13N-R3E, Sandoval County, New Mexico

EST. G. L. ELEVATION 5,700 PROJECTED TD 13,000 OBJECTIVE Pre-Cambrian

HOLE SIZE	CASING PROGRAM	LOGGING PROGRAMS	MAX DEV.	DEPTHS AND FORMATION TOPS	SPECIAL INSTRUCTIONS
	26" or 20"	Conductor		30' Min.	SAMPLES:
17½"	13 3/8"		1°	400' ±	10' Conductor pipe to TD
12½"	9 5/8"	BHC-Sonic-GR-CAL CNL-FDC PML DIL	3°	Mancos 4050 (+1650) Dakota 6050 (-350) 6100'	CORES: No conventional cores
				Morrison Sands 6150 (-450) Entrada 7050 (-1350) Triassic 7350 (-1650)	DST'S: Approximately 6 DST's from sfc to TD
				Agua Zarca Sd 8750 (-3050) Permian 9200 (-3500)	DEVIATION CONTROL Dogleg severity not to exceed 1½°/100' interval
				San Andres Ls. 9300 (-3600) Glorietta Sds 9500 (-3800) Meseta Blanch Sd 10,000 (-4300) Pennsylvanian 11,900' (-6200)	CEMENT See "Csg and Cementing" Prognosis for details (WOC minimum 8 hrs with 500 psi min. comp. strength in cement)
				Mississippian 12,900' (-7200)	MUD See "Mud Program" for details
8 3/4"	7" or 5½" If Req'd	BHC-Sonic-GR-CAL CNL-FDC PML DIL 2 Man Mud Logging Unit	Buildup Should Not Exceed 1°/1000' Interval  60	TD 13,000'	General SFC - 6100' Air-mist or low solids non-dispersed as required for evaluation of water aquifers 6100' - TD Low solids non-dispersed or dispersed if well conditions dictate



ORIGINATOR: D. E. Smith

DATE 5/11/72

ENGINEERING APPROVAL: 2aw

PETROLEUM: 5/12/72

OPERATIONS: 2aw

OPERATIONS APPROVAL: E. S. Martich

DIV. DRILLING SUPT.





# SHELL OIL COMPANY

1700 BROADWAY  
DENVER, COLORADO 80202

October 17, 1972



Oil Conservation Commission  
State of New Mexico  
1000 Rio Brazos Road  
Aztec, New Mexico 87401

Attention Mr. Arnold

Gentlemen:

The following is an analysis of potential fresh water horizons encountered in the Tertiary Formations of the Santa Fe No. 1, Sandoval County, New Mexico.

## Santa Fe Formation 600' - 2,970'

The upper interval of the Santa Fe from 600 feet to 1,500 feet is primarily interbedded sandstones, red shales, and siltstones. There is approximately 250 feet of sand that is both clean and permeable as indicated from well log interpretation. Log analysis shows the average formation water Total Dissolved Solids concentration in these sands is  $\pm 2,000$  ppm. An exception is noted in the zone 850 feet to 856 feet where calculations show TDS =  $\pm 500$  ppm. Porosities of these sands are in the 20 percent to 40 percent range.

The lower interval of the Santa Fe from 1,500 feet to 2,970 feet is largely sandstone with some shale and siltstone. Evaluation of the formation waters from wireline logs indicates a gradual increase in Total Dissolved Solids concentration from 1,400 ppm at 1,500 feet to 8,000 ppm at 2,900 feet. Porosities range from 30 percent at the top of this interval to 25 percent at the base of the Santa Fe Formation.

## Galisteo Formation 2,970' - 3,644'

The Galisteo is a sand-shale-siltstone sequence similar to the Santa Fe Formation. There are two large sands in this interval, both approximately 90 feet thick. Porosities in these sands range from 20 percent to 25 percent and Total Dissolved Solids concentration in both are greater than 10,000 ppm.

Yours very truly,

N. J. Isto  
Division Production Manager  
Rocky Mountain Division

CWV/kjl

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
9-5/8" csg @ 6940'

6940/79/23/0. Circ thru DV collar @ 3081. Ran 167  
jts (6977.82') 9-5/8" 40# LT&C csg to 6940'. DV  
collar @ 3081. Circ and reciprocated 3/4 hr. Cmtd w/  
600 sx Hal Lite w/1% CFR-2 and 250 sx Class "B" w/2%  
gel and 1% CFR-2. Plug down @ 3 AM, 7/12. Displaced w/  
522 bbls (14 bbls over). Slurry vol 266.6 bbls. Dropped  
bomb and opened DV collar and started circ thru DV collar  
@ 3:35 AM. Float held OK. SLC 6937 = 6940.  
Mud: 9.2 x 55 x 6.0 JUL 12 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
9-5/8" csg @ 6940'

6940/79/24/0. Nippling up BOP's while WOC. Circ  
thru DV collar @ 3081 until 10 AM, 7/12. RU Hal  
and cmtd thru DV collar w/1140 sx Hal Lite w/1%  
CFR-2, 12 1/2# Gilsonite (slurry 1365.7 bbls), followed by  
200 sx Class "B" cmt w/1% CFR-2 and 2% gel (slurry  
48.5 bbls). Plug down @ 12:25 PM. Had full returns.  
Circ out approx 100 bbls slurry. Started nippling  
down 3000 psi and 5000 psi BOP's. JUL 13 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
9-5/8" csg @ 6940'

6940/79/25/0. Nippling up BOP's. WOC.  
JUL 14 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
9-5/8" csg @ 6940'

7/15: 6962/79/26/22. Drilling. Finished Nippling up  
BOP's. Drld DV collar. Press tested to 2150 psi, OK.  
Drld cmt and shoe @ 6940.  
Mud: (gradient .475) 8.9 x 33 x 10.0  
7/16: 7036/79/27/74. Tripping for new bit. Laid down  
DP and checked DC's.  
Mud: (gradient .462) 8.9 x 34 x 10  
7/17: 7067/79/28/31. Drilling. Dev: 2 1/2° @ 7031'. No  
trip gas. Reamed 96' to btm. Laid down 5" DP and DC's.  
Picked up 4 1/2" DP. Laid down two bad DC's (box washed).  
Mud: (gradient .458) 8.8 x 33 x 7.6 JUL 17 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
9-5/8" csg @ 6940'

7295/79/29/228. Drilling. Total gas: 0-1 unit. Dev:  
2 1/2° @ 7217.  
Mud: (gradient .458) 8.8 x 30 x 8 JUL 18 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
9-5/8" csg @ 6940'

7535/79/30/240. Drilling.  
Mud: (gradient .458) 8.8 x 34 x 9.2 JUL 19 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
9-5/8" csg @ 6940'

7535/79/31/0. Running DST #2. Tested interval 7535-7503. IF 5 min - weak blows, SI 1 hr.  
Mud: (gradient .458) 8.8 x 40 x 9.6 JUL 20 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
9-5/8" csg @ 6940'

7683/79/32/148. Drilling. Washed 5' of fill.  
DST #2  
IF 5 min, opened weak, SI 60 min.  
Open 45 min, blow remained weak throughout test, SI 120 min.  
Recovery: 3.7 bbls sli MCW (1350 ppm Cl, 2223 ppm total solids)  
Temp: 173° and 179°  
Pressures: IF 20, FIF 34, ISIP 3120, 2nd flow 49.3, FF 250, FSIP 2998.5, IHP 3403, FHP 3417  
Mud: 8.9 x 37 x 8.8 JUL 21 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
9-5/8" csg @ 6940'

7/22: 7816/79/33/133. Drilling. Dev: 3 1/2° @ 7694' and 3° @ 7785'

Mud: (gradient .458) 8.8 x 34 x 10.4

7/23: 8013/79/34/197. Drilling. Background gas: 2 units.

Mud: (gradient .464) 8.9 x 35 x 6.4

7/24: 8206/79/35/195. Drilling. Dev: 3 1/2° @ 8005'.

Max background gas: 4 units.

Mud: (gradient .465) 8.9 x 35 x 6.8 JUL 24 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
9-5/8" csg @ 6940'

8402/79/36/194. Drilling. Background gas: 4 units max.  
Dev: 3-3/4° @ 8225'

Mud: (gradient .468) 9.0 x 35 x 6.8 JUL 25 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
9-5/8" csg @ 6940'

8573/79/37/171. Drilling. Dev: 4° @ 8377. Background gas: 2 units max.

Mud: (gradient .468) 9.0 x 46 x 6.8 JUL 26 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
9-5/8" csg @ 6940'

8769/79/38/196. Drilling. Dev: 4°+ @ 8602'.

Background gas: 1-2 units. No shows. JUL 27 1972

Mud: 9.0 x 37 x 7.4

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
9-5/8" csg @ 6940'

8909/79/39/140. Drilling. Dev: 3-3/4° @ 8796'.

Changed out stabilizers @ 8796'. Background gas: 1-2 units.

Mud: (gradient .474) 9.1 x 38 x 6.0 JUL 28 1972

Shell-Santa Fe No. 1 (WC) Noble N-85 13,000' Precambrian Test 9-5/8" csg @ 6940'	<p>7/29: 9045/79/40/136. Drilling. Background gas: 0-4 units. Mud: (gradient .470) 9.0 x 34 x 6.8</p> <p>7/30: 9113/79/41/68. Tripping in hole w/new bit. Dev: 3-1/2° @ 9113'. Mud: (gradient .464) 8.9 x 34 x 7.4</p> <p>7/31: 9196/79/42/83. Drilling. Finished tripping in hole w/bit. Washed and reamed to btm - 40' fill. Mud: (gradient .460) 8.9 x 40 x 8.8 JUL 31 1972</p>
Shell-Santa Fe No. 1 (WC) Noble N-85 13,000' Precambrian Test 9-5/8" csg @ 6940'	<p>9283/79/43/87. Drilling. Dev: 4° @ 9276'. Background gas: 7 units. Washed to btm - 3' fill. AUG 1 1972 Mud: (gradient .470) 9.0 x 38 x 6.8</p>
Shell-Santa Fe No. 1 (WC) Noble N-85 13,000' Precambrian Test 9-5/8" csg @ 6940'	<p>9544/79/44/261. Drilling. AUG 2 1972 Mud: (gradient .473) 9.1 x 37 x 7.8</p>
Shell-Santa Fe No. 1 (WC) Noble N-85 13,000' Precambrian Test 9-5/8" csg @ 6940'	<p>9604/79/45/60. Reaming tight hole @ 9600'. Dev: 4 1/2° @ 9540. Reamed from 9384 to 9604 - lack 4' from being on btm. Max background gas: 4 units. AUG 3 1972 Mud: (gradient .478) 9.2 x 39 x 7.0</p>
Shell-Santa Fe No. 1 (WC) Noble N-85 13,000' Precambrian Test 9-5/8" csg @ 6940'	<p>9719/79/46/115. Tripping for new bit. Reamed to btm. Bit torquing severely. Max background gas: 4 units. Mud: (gradient .470) 9.0 x 35 x 6.4 AUG 4 1972</p>
Shell-Santa Fe No. 1 (WC) Noble N-85 13,000' Precambrian Test 9-5/8" csg @ 6940'	<p>8/5: 9800/79/47/81. Drilling. Magnafluxed 18 DC's, one 12' DC and stabilizer - OK. Picked up 30' BH DC. Tested BOP's, pipe rams, Hydril, lines and valves to 2000 psi, OK. Washed 30' to btm. Mud: (gradient .470) 9.1 x 39 x 7.2</p> <p>8/6: 9844/79/48/44. Drilling. Washed 5' to btm. Had 1' to 2' tight spot 4' off btm. Dev: 5° @ 9805'. Mud: (gradient .468) 9.0 x 34 x 9.0 AUG 7 1972</p> <p>8/7: 9905/79/49/61. Drilling. Gas: 0-2 units. Mud: (gradient .468) 9.0 x 39 x 8.0</p>
Shell-Santa Fe No. 1 (WC) Noble N-85 13,000' Precambrian Test 9-5/8" csg @ 6940'	<p>9965/79/50/60. Drilling. Dev: 5 1/2° @ 9915'. Tripped to change out reamer - put in stab. Changed bit @ 9923'. Washed to btm - tight hole. Had 15' fill. Mud: 9.1 x 37 x 6.8 AUG 8 1972</p>



Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
9-5/8" csg @ 6940'

10,130/79/51/165. Drilling. Gas: 0 to 2 units.  
Mud: (gradient .462) 8.9 x 37 x 6.8  
AUG 9 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
9-5/8" csg @ 6940'

10,202/79/52/72. Drilling. Dev: 6°+ @ 10,155.  
Tripped for new bit @ 10,158. Washed from 10,038-  
10,158. Had few tight spots from 8628 to TD. Gas:  
0 to 2 units.  
Mud: (gradient .470) 9.0 x 35 x 7.0  
AUG 10 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
9-5/8" csg @ 6940'

10,327/79/53/125. Drilling. Dev: 5-3/4° @ 10,200'.  
Circ samples @ 10,284. Gas: zero to 2 units.  
Mud: (gradient .474) 9.1 x 44 x 6.0  
AUG 11 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
9-5/8" csg @ 6940'

8/12: 10,477/79/54/150. Drilling. Gas: 2 units.  
Mud: (gradient .475) 9.1 x 42 x 4.8  
8/13: 10,557/79/55/80. Drilling. Gas: zero to 2 units.  
Dev: 1½° @ 10,510'.  
Mud: (gradient .488) 9.0 x 44 x 5.6  
8/14: 10,720/79/56/163. Drilling. Gas: zero to 4 units.  
Mud: (gradient .470) 9.0+ x 40 x 5.8  
AUG 14 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
9-5/8" csg @ 6940'

10,860/79/57/140. Tripping for new bit. Gas: zero  
to 2 units.  
Mud: (gradient .470) 9.0+ x 44 x 5.8  
AUG 15 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
9-5/8" csg @ 6940'

10,943/79/58/83. Drilling. Dev: 5-3/4° @ 10,855'.  
Washed 5' fill. Circ samples 1½ hrs @ 10,940. Gas:  
zero to 2 units.  
Mud: (gradient .472) 9.1 x 40 x 5.6  
AUG 16 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
9-5/8" csg @ 6940'

11,028/79/59/85. Tripping for new bit. Circ 2½ hrs.  
Dev: 5½° @ 11,028  
Mud: (gradient .472) 9.1 x 47 x 6.0  
AUG 17 1972

Shell-Santa Fe No. 1  
 (WC) Noble N-85  
 13,000' Precambrian Test  
 9-5/8" csg @ 6940'

11,045/79/60/17. Logging. Cut core #2 from 11,028-11,045, cutting 17', rec 16½'. Started logging @ 2:30 AM, 8/18. Tool stopped @ 8799. Pulled same and started in hole w/bit to cond hole. Mud: (gradient .474) 9.1+ x 50 x 6.0 AUG 18 1972

Shell-Santa Fe No. 1  
 (WC) Noble N-85  
 13,000' Precambrian Test  
 9-5/8" csg @ 6940'

8/19: 11,045/79/61/0. Logging. Circ hole 5½ hrs for logs. Ran BHCS-GR w/cal and DIL-SP. Mud: (gradient .470) 9.1 x 52 x 6.4  
 8/20: 11,045/79/62/0. Tripping. Ran CNL-FDC. Reran BHCS. Ran Dipmeter to 8800' - unable to get back down to 8800'. RD Schl and cond hole. Had 8' of fill. Mud: (gradient .470) 9.1 x 52 x 6.4  
 8/21: 11,045/79/63/0. Tripping. Ran proximity-Microlog. Reran Dipmeter. RU to run Schl tricore - tool failed before going in hole. Ran in w/sidewall core gun - unable to get below 8798. RD Schl and tripped in to cond hole. Had 65' fill. Mud: 9.1+ x 48 x 6.4 AUG 21 1972

Shell-Santa Fe No. 1  
 (WC) Noble N-85  
 13,000' Precambrian Test  
 9-5/8" csg @ 6940'

11,045/79/64/0. RD Schlumberger. Ran Schl tricore, cutting 19" and rec 14" - saw motor burned out. Core cut from interval 10,823.5-10,825. RU and ran sidewall cores, making 96 attempts, rec 66 samples. AUG 22 1972

Shell-Santa Fe No. 1  
 (WC) Noble N-85  
 13,000' Precambrian Test  
 9-5/8" csg @ 6940'

11,045/79/65/0. Tripping in w/DST #3. Circ 7-1/4 hrs prior to running test tools. Mud: (gradient .470) 9.1 x 58 x 6.4 AUG 23 1972

Shell-Santa Fe No. 1  
 (WC) Noble N-85  
 13,000' Precambrian Test  
 9-5/8" csg @ 6940'

11,045/79/66/0. Plugging well. Ran DP opened to 9550 and cmt w/100 sx reg cmt w/0.3% D-13R from 9550-9350 (Plug #1).  
DST #3 - Lynes inflatable pkr (Straddle Test) 9392-9510  
 Strong blow throughout test - no gas flow  
Recovery: 50 bbls fluid, mostly mud, very slt MCW, no odor.  
Sample Chamber Contained: 400 cc muddy wtr, no odor, gas or oil  
 R<sub>w</sub> 2000 ppm  
Pressures: IF 530, FF 1724, FSIP 3844, IHP 4471, FHP 4471. BHT 212°F @ 9375' AUG 24 1972

Shell-Santa Fe No. 1  
 (WC) Noble N-85  
 13,000' Precambrian Test  
 9-5/8" csg @ 6940'

11,045/79/67/0. PB 6850. WOC. Set second plug @ 7750-7500 w/125 sx reg cmt w/0.2% D-13R. Set third plug @ 7050-6850 w/100 sx cmt. Displaced mud w/wtr @ 6000'. Laid down DP and WOC 10½ hrs. AUG 25 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
9-5/8" csg @ 6940'

8/26: 11,045/79/68/0. PB 6850. RU to swab. RU Dresser Atlas and perf 2935-2945 w/4" csg gun. Ran 9-5/8" Baker full bore ret pkr, 4' sub, 2-7/8" seating nipple and 92 jts 2-7/8" EUE 8rd 6.5# J-55 tbg. Set pkr @ 2876 w/ 20,000# tension. Started water tests @ 8 AM, 8/24/72.  
8/27: 11,045/79/69/0. PB 2139. Pulling tbg and pkr to reperf 2nd zone. Swbd 21 BW, 4 bbls over load. Pulled tbg and pkr. Set 9-5/8" Baker CIBP @ 2145 and capped w/3 sx cmt. PBTB 2139. Perf 2078-2088. Ran 9-5/8" Baker pkr to 1995 and set w/20,000# tension. Swbd 14 BW, 2 bbls over load. Loaded tbg w/rig pump plus 5 bbls over-flush. Swbd 15 BW, 3 bbls over load. FL @ 1900'. Had no fluid entry. Started pulling tbg and pkr.  
8/28: 11,045/79/70/0. PB 1548. Reperf 2044-2054. Reran tbg and pkr, setting pkr @ 2026. Swbd 12 BF, swbg tbg dry. No fluid entry. Pulled tbg and pkr. Ran 9-5/8" Baker CIBP and set @ 1625. Capped w/3 sx cmt. PB 1619. Perf 1550-1560. Ran 9-5/8" Baker full bore ret pkr, setting pkr @ 1526. Swbd 12 BF. FL 450' from btm. Swab hung w/ sand hitch @ 650'. Attempted to pull loose. Cut swab line and pulled sd line in two @ 500' w/drlg rig. Pulled tbg and pkr, pulling first 3 stds wet w/wtr and next four stds packed solid w/wtr and sd. Rec swab and pkr, OK. Ran Hal measuring line. PBTB 1548' (sd 2' above top perfs). Laid down 2-7/8" tbg and 4 1/2" DP. AUG 28 1972

Shell-Santa Fe No. 1  
(WC)  
11,045' Precambrian Test  
9-5/8" csg @ 6940'

TD 11,045. PB 1548. Prep to cut off 9-5/8" csg hd w/ landing base and cap well at sfc. Laid down mouse and rat holes and kelly. Removed rotary table, Hydril, both sets of BOP's and drlg spool. Released rig @ 8 AM, 8/28/72. AUG 29 1972

Shell-Santa Fe No. 1  
(WC)  
11,045' Precambrian Test  
9-5/8" csg @ 6940'

TD 11,045. WELL PLUGGED AND ABANDONED. Cut off  
9-5/8" Cameron csghd. Welded 9-5/8" csg stub onto  
csg, extending 2' above GL, and welded 1/2" plate in  
top of 2" collar. Screwed 2" bullplug in collar.  
Welded Shell marker at top of 9-5/8" below plate.  
Filled cellar to GL.  
Elev: 5733 GL, 5753 KB.

All potential reservoirs have been thoroughly  
evaluated by conventional coring, sidewall coring,  
drill stem testing and log analysis. E-log tops are  
as follows:

MENEFEE	3644	(+ 2109)
POINT LOOKOUT	4378	(+ 1375)
MANCOS SHALE	4520	(+ 1233)
DAKOTA	6600	(- 847)
MORRISON	6907	(- 1154)
TODILTO	7412	(- 1659)
ENTRADA	7530	(- 1777)
CHINLE	7726	(- 1973)
SAN ANDRES	8880	(- 3127)
YESO	8992	(- 3239)
MESETA BLANCA	9378	(- 3625)
ABO	9632	(- 3879)
MADERA	10375	(- 4622)
PRECAMBRIAN	10955	(- 5202)

FINAL REPORT. AUG 30 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
13-3/8" csg @ 600'

6892/79/17/65. Tripping and making mud line repairs.  
Dev: 2-3/4" @ 6892'. Max gas: 6 units. Circ 2 hrs  
@ 6891.  
Core No. 1 6797-6827 (cut 30', rec 27')  
Fine to coarse sd, mostly med grained white to light  
grey to pale grey-green. JUL 6 1972  
Mud: 9.3 x 40 x 7.0

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
13-3/8" csg @ 600'

6937/79/18/45. Logging. Dev: 2 3/4" at 6891.  
Max total gas - 4 units. JUL 7 1972  
Mud: 9.2 x 53 x 6

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
13-3/8" csg @ 600'

7/8: 6937/79/19/0. Logging. Ran logs as follows:  
BHCS-CR w/cal, DIL-SP, CNL-FDC, Proximity-Microlog,  
and HDT Dipmeter.  
7/9: 6937/79/20/0. Circ for DST #1. Finished running  
Proximity-Microlog. Reran DIL-SP. RU Seismic Reference  
Survey. Shot sidewall cores from 900-6900. Made 96 shots,  
rec 91 w/3 shots lost in hole, 1 misfired, and 1 no sample  
rec.  
Mud: 9.2 x 55 x 9.0  
7/10: 6937/79/21/0. Running DST #1. Circ and cond hole  
until 6 PM. Tripped out and laid down 9" DC. Picked up  
six 6" DC and made up DST tool, going in hole to test  
6720-6753. JUL 10 1972  
Mud: 9.2 x 52 x 6.0

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
13-3/8" csg @ 600'

6937/79/22/0. Circ prior to running 9-5/8" csg.  
DST #1 - 6720-6753  
IF 5 min - good blow, full bucket (12") after 1 1/2 min  
open, SI 49 min  
Open 60 min - good blow throughout, sli incr in blow  
after 45 min, SI 120 min  
Recovery: 650' WCM  
5172' wtr  
96.3 bbls wtr  
Sample Chamber contained: 900 cc wtr, plugged w/shale  
and sand  
R<sub>w</sub> = 2.28 @ 76°F, chloride = 900 ppm  
Press bomb @ 6706  
Pressures: IF 439-745, ISI 2871, FF 878-2559, FSI  
2879, IHP 3183, FHP 3165.  
BHT 158°F  
Mud: 9.2 x 55 x 6.0 JUL 11 1972

Shell-Santa Fe No. 1  
(WC) Noble  
13,000' Precambrian Test  
13-3/8" csg @ 600'

6/24: 3364/79/5/473. Drilling. Drld in sd and reddish  
brn mudstone. Fm sli more consolidated below 3190'. Had  
12 units trip gas @ 3198. H<sub>2</sub>S odor over pits when bit  
up. Carried a tr of propane after trip. Dev: 1/2° @  
3190'.

Mud: (gradient .480) 9.2 x 51 x 6.0

6/25: 4067/79/6/703. Drilling. Sample top: Cretaceous  
Menefee fm 3660. No background gas.

Mud: (gradient .460) 9.0 x 40 x 7.6

6/26: 4413/79/7/346. Drilling. Dev: 2 1/4° @ 4090, 2° @  
4150 and 1 1/2° @ 4310. No background gas.

Mud: 9.2 x 40 x 8.0 JUN 26 1972

Shell-Santa Fe No. 1  
(WC) Noble  
13,000' Precambrian Test  
13-3/8" csg @ 600'

4969/79/8/556. Drilling in sandstone, siltstone and  
shale. Tr background gas. Dev: 1-1/4° @ 4700' and  
3/4° @ 4920'.

Mud: (gradient .480) 9.3 x 39 x 10.0 JUN 27 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
13-3/8" csg @ 600'

5454/79/9/485. Tripping for new bit. Dev: 3/4° @  
5090'. Background gas: 2-4 units. Max gas @ 5240.  
180 units. No sample shows.

Mud: (.480) 9.4 x 34 x 7.6 JUN 28 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
13-3/8" csg @ 600'

5693/79/10/239. Drilling. Dev: 1° @ 5454', 1-1/4°  
@ 5693'. Background gas: 0-2 units. Trip gas: 8 units.  
No sample shows or gas shows.

Mud: (gradient .470) 9.3 x 34 x 7.6

Correction to yesterday's wire: Incorrect max gas @  
5240' - disregard. JUN 29 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
13-3/8" csg @ 600'

5865/79/11/172. Tripping for bit. Background gas:  
2-4 units. Max units gas last 24 hrs: 6 units.  
Dev: 1-1/4° @ 5680, 1-3/4° @ 5745.

Mud: (gradient .470) 9.3 x 34 x 7.2 JUN 30 1972

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
13-3/8" csg @ 600'

7/1: 6139/79/12/274. Drilling. Max units gas @ 6080;  
26. Downtime gas for connection @ 6085: 40 units. Dev:  
1 1/2° @ 5860, 2° @ 6014.

Mud: 9.2 x 34 x 8.2

7/2: 6330/79/13/191. Tripping in w/new bit. Dev:  
2° @ 6014, 2 1/4° @ 6149, and 2° @ 6330. Background gas  
prior to trip: 14 units.

Mud: 9.5 x 35 x 8.0

JUL 3 1972

7/3: 6615/79/14/285. Drilling.

Mud: 9.3 x 37 x 6.0

Shell-Santa Fe No. 1  
(WC) Noble N-85  
13,000' Precambrian Test  
13-3/8" csg @ 600'

7/4: 6773/79/15/158. Drilling. Dev: 2° @ 6320, 3°  
@ 6676 and 2-3/4° @ 6770. Background gas: 6 units.  
Made SLC @ 6690 = 6693.

Mud: 9.3 x 32 x 5.8

7/5: 6827/79/16/54. Tripping out w/core. Dev: 2-3/4°  
@ 6770'. Circ hole 30 min prior to coring. Cored 6797-  
6827. Max gas @ 6773: 14 units. Core description later.

Mud: 9.2 x 38 x 6.4 JUL 5 1972

FROM: 6-16 - 8-30-72

LEASE

SANTA FE

WELL NO.

1

DIVISION

ROCKY MOUNTAIN

ELEV

5753 KP

COUNTY

SANDOVAL

STATE

NEW MEXICO

SEP 8 1972

NEW MEXICOCACTUS AREA

Shell-Santa Fe No. 1

(WC) Noble

13,000' Precambrian Test

"FR" MIRT.

Located 1076' FWL and 1500' FSL W/2 SW Section 18-T13N-R3E, Sandoval County, New Mexico

Elev: 5733' CL (ungraded)

13,000' Precambrian Test

Shell Working Interest: 100%

Drilling Contractor: Noble Drilling

This well initiates Shell's exploration of the Albuquerque Basin. The planned TD of 13,000' is expected to reach the Precambrian.

JUN 16 1972

Shell-Santa Fe No. 1

(WC) Noble

13,000' Precambrian Test

6/17: RURT

6/18: RURT

6/19: RU, prep to spud

JUN 19 1972

Shell-Santa Fe No. 1

(WC) Noble

13,000' Precambrian Test

600/79/1/600. Circ prior to running 13-3/8" csg.

Spudded well 9 AM, 6/19/72, below 30' of previously set 20" conductor csg. Conductor csg cmtd w/5 yds

Ready-Mix. Dev: 1/4" @ 62', 1/2" @ 162', 1/4" @ 266', 359', 412' and 500'.

Mud: 9.0 x 35

JUN 20 1972

Shell-Santa Fe No. 1

(WC) Noble

13,000' Precambrian Test

13-3/8" csg @ 600'

600/79/2/0. WOC. Nippling up. Ran and cmtd 15 jts (605') 54.5# 13-3/8" csg to 600' w/650 sx type "C"

cmt w/2% CaCl2 and 1/4#/sk Floseal. Started mixing @ 2:05 PM. Plug down @ 2:45 PM, 6/20. Circ cmt. Slurry and volume: 14.8 ppg - 150 bbls. Float held OK.

JUN 21 1972

Shell-Santa Fe No. 1

(WC) Noble

13,000' Precambrian Test

13-3/8" csg @ 600'

725/79/3/125. Tripping for stabs and DC. Finished nippling up BOP, testing to 800 psi w/no leaks. Started drlg cmt @ 11 PM, hitting hd cmt, and started new hole @ 1:15 AM.

Mud: 8.4 x 30

JUN 22 1972

Shell-Santa Fe No. 1

(WC) Noble

13,000' Precambrian Test

13-3/8" csg @ 500'

2891/79/4/2166. Drilling. Dev: 1" @ 720', 3/4" @ 915', 1/2" @ 1210', 1-1/4" @ 1710', 3/4" @ 2210' and 1" @ 2705'.

Mud: 9.0 x 32 x 6

JUN 23 1972