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STATE OF OREGON
DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
1069 State Office Building, Portland 1, Oregon

Permit No. 75
API No. 019-20012

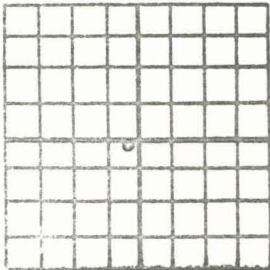
APPLICATION FOR PERMIT TO DRILL NEW WELL OR STRATIGRAPHIC HOLE
(To be accompanied by a \$100 permit fee for new wells only and a surety bond conditioned as provided by law.)

Oregon December 6 1977

Department of Geology and Mineral Industries
Portland, Oregon

In compliance with rules and regulations pursuant to ORS 520 (Chapter 667 OL 1953) application is hereby made for permit to drill

a (new well) to be known as Mobil Oil Corporation Sutherland Unit
(stratigraphic hole))
Well No. 1 in NE/4 SW/4 of Sec. 36, T. 24S, R. 5W W. B. & M.,
Wildcat Field, Douglas County.



Section of land
Area 640 acres

This well is 2580 ^{Approx.*} feet (N) (X) of the South Section line and 2480 ^{Approx.*} feet (E)(W) of the West Section line of Section 36-24S-5W.

(Give location from section or other legal subdivision lines or corners. Cross out wrong directions)

Elevation of ground above sea level is 550 ^{Approx.*} feet. All depth measurements are taken from top of Kelly Bushing, which is 10 ^{Approx.*} feet above ground.

The lessee is Mobil Oil Corporation

Address P. O. Box 5444, Denver, Colorado 80217

The lessor is David R. and Reva D. Little

LOCATE WELL CORRECTLY

Address 2172 1/2 LaCresta Road, El Cajon, California 92021

We estimate that the first productive oil or gas sand should occur at a depth of about 9000 feet. ^{to} 10,000'
We propose to use the following strings of casing and to land or cement them as herein indicated:

Size of hole	Size of casing	Weight in pounds per foot	Grade and type	New or second hand	Depth	Landed or cemented No. sacks cement
			(See attached Casing and Drilling Program)			

We propose to drill with rotary tools
~~rod~~

If changes in the above plan become advisable we will notify you before cementing or landing casing.

Additional information including names of and expected depths to objective sands (Use additional sheets as needed):

* Approximate numbers will be confirmed when location is surveyed and drilling rig is on location.

I understand that this plan of work must receive approval in writing by the Director of the State Department of Geology and Mineral Industries.

Approved _____, 19____
except as follows:

DEPARTMENT OF GEOLOGY & MINERAL INDUSTRIES
By _____ Director

Mobil Oil Corporation
COMPANY OR OPERATOR
By Abm Credie
Position Division Regulatory Engineer
Send communications regarding well to:
Name A. J. McCredie Telephone 572-2045
Address P. O. Box 5444
Denver, Colorado 80217

12/7/77

SUTHERLIN UNIT #1
WILLAMETTE BASIN
SEC. 36, T 24S, R 5W

DEPTH	CASING SIZE	WEIGHT	GRADE	HOLE SIZE	* CEMENT
100'	24"	135	-	30"	240 sax
600'	20"	94	K-55	17½ - 26"	1250 sax
2000'	16"	75	K-55	17½ - 20"	1970 sax
5000'	13-3/8"	72	S-95	12½ - 17"	4735 sax
12000'	9-5/8"	53.5	S-95	12½	3202 sax
14000'	5-1/2" Liner	23	N-80	8½	780 sax
Top of Liner 11500'					

* Cement volume includes 50% excess. Volume equivalent - Class "G" neat cement.

GEOLOGICAL PROGNOSIS:

MARKERS	DEPTH (KB)
Roseburg Fm "A" Unit	5235'
Roseburg Fm "B" Unit	8650'
Hornbrook Fm "C" Unit	12250'

MUD PROGRAM

DEPTH	MUD WEIGHT	MUD GRADIENT	MUD TYPE
0'-100'	No Control		Fresh Water
100'-600'	8.7	.452	Fresh water/Gel/Lignosulfonate.
600'-2000'	9.2	.478	"
2000'-5000'	9.7	.503	"
5000'-12000'	10.2	.529	"
12000'-14000'	10.5	.545	"

FORMATION PRESSURE:

Normal gradient .45-.50 psi/ft. NOTE: Possible lost circulation or possible higher pressure gradient may be encountered in the "A" unit. Normal precautions for these conditions should be exercised while drilling.

B.O.P.E.: 20" Hydril 2000 psi 100'/2000'.
16" Rams & Hydril 5000 psi 2000'/14000'.

EST. TIME: 128 days (dry), 138 days (completed).

EST. COST: 100% - \$2.485 MM (dry), \$2.814 MM (completed)

EXPECTED SPUD: April - May, 1978.

MJM/sf

M. J. Meyer

*See Ramp
Notm Peterson*

*Oil + Gas
Regulation*

74 RR

STATE PERMIT NO 75
API No 36-019-20012
V.C. Newton 8-28-78

BOPE Memo

Operator Mobil Oil Corporation
Well No. Sutherland Unit No. 1 SW 4 Sec. 36, T. 24S, R. 5W, WM B&M
Field Oakland, County Douglas. On August 21 and 28, 1978
Mr. Mr. V. Newton, representative of the supervisor was present from --
to --. There was also present Mr. Dick Boozer and Bruce Hannan
Casing record of well: 24" casing cemented at 100', 20" casing cemented at 643'
and 16" casing cemented at 1,858'.

The operations were performed for the purpose of testing (inspecting) the blowout-prevention equipment and installation.

/X/ The blowout-prevention equipment and installation are (~~not~~) approved.

Hole size: 30 " fr. 0 ' to 100 ', 26 " to 650 ' & 20 " to 1879 '

X	Installed							Tested	Date	Psi	Time
	Casing (BOPE Anchor)				Cemented		Top of Fill				(Min.)
	Size	Wt.	Top	Bottom	Date	MO-Depth	Volume	Annulus	Casing		
x	20"	94#	0	643'	7/18		888 sax	0	700'	400	15
x	16"	75#	0	1858'	8/18		1378 sax	0	1808'	800	15

Blowout Preventers

Types Enumerated	Overhaul	Flange	Clamp	Psi		
Top to Bottom	Date	Bolt	Size	Rating		
x Annular	Hydril Bag	20"		2000	8/21	800 15
x Pipe rams	Shaffer Gate	20"		2000	8/21	800 15
x Blind rams	Shaffer Gate	20"		2000	8/21	800 15

Accessories

Type	Psi Rating	Size or Capacity
x Accumulator	2000	100 gal
x Nitrogen bottle	2000	6 bottles
x Mud pump	6 x 5 1/2"	
x Standpipe gauge		N.A.
x Check valve	(Pump to Kelly)	
x Inside FOP	5000	4 1/2"
x Kelly cock	5000	N.A.
x Spool	5000	

X	Type	Psi Rating	Size or Capacity
x	Choke line	5000	3"
x	Fill-up line	5000	3"
x	Kill line	5000	3"
x	Control lines	5000	3"
	Rotating head	N.A.	N.A.
	Banjo box & blow line	N.A.	N.A.
	Muffler on blowline	N.A.	N.A.
	Pressure relief valve		

Drilling Fluid Program

Type	Weight	Water Loss	Cake	Viscosity	Storage
Clay-Barite	19.6#/gal	25cc		65 sec	1800 BBL

BOPE Control Stations	
Remote:	<u>Driller Rig Floor</u>
Remote:	<u>North of Rig</u> - 60
Manual:	<u></u>

Monitoring Devices	Alarm	
	Yes	No
Calibrated mud pit	x	
Mud pit level indicator	x	
Gas detector	x	
Continuous (mud densimeter or) (temperature recorder)	x	