

U. S. LAND OFFICE Hobbs, N. M.

SERIAL NUMBER -----

LEASE OR PERMIT TO PROSPECT -----

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LOG OF OIL OR GAS WELL

LOCATE WELL CORRECTLY

Company Western Drilling Company Address P. O. Box 1428, Odessa, Texas

Lessor or Tract McDermott Federal Field Sawyer San Andres State New Mexico

Well No. 2 Sec. 19 T. 9S R. 38E Meridian NMPM County Lea

Location 660 ft. N of S Line and 1980 ft. E of W Line of Section 19 Elevation 3953
(Derrick floor relative to sea level)

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.

Date February 14, 1961 Title Partner

The summary on this page is for the condition of the well at above date.

Commenced drilling January 13, 1961 Finished drilling January 28,, 1961

OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from 4923 to 4998 No. 4, from _____ to _____

No. 2, from _____ to _____ No. 5, from _____ to _____

No. 3, from _____ to _____ No. 6, from _____ to _____

IMPORTANT WATER SANDS

No. 1, from _____ to _____ No. 3, from _____ to _____

No. 2, from _____ to _____ No. 4, from _____ to _____

CASING RECORD

[illegible]

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
8 5/8	401'	300	Halliburton		Natural
4 1/2	5008'	400	Halliburton	9.8	Brine Water

PLUGS AND ADAPTERS

Heaving plug—Material _____ Length _____ Depth set _____

Adapters—Material _____ Size _____

SHOOTING RECORD

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out

TOOLS USED

Rotary tools were used from 0' feet to 5020' feet, and from _____ feet to _____ feet

Cable tools were used from _____ feet to _____ feet, and from _____ feet to _____ feet.

DATES

Put to producing _____, 19____

The production for the first 24 hours was 25 barrels of fluid of which 90 % was oil; ----- % emulsion; 7 % water; and 3 % sediment. Gravity, °Bé. -----

If gas well, cu. ft. per 24 hours 750,000 Gallons gasoline per 1,000 cu. ft. of gas _____

Rock pressure, lbs. per sq. in. 1375

EMPLOYEES

-----J. L. Martin-----, Driller -----R. E. Shields-----, Driller

_____ **A. E. Mize** _____, Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
0	270	270	Surface Sand & Caliche
270	414	144	Sand & Red Bed
414	2010	1596	Red Bed & Shells
2010	2218	208	Shale & Shells
2218	3370	1152	Anhydrite & Salt
3370	3660	290	Anhydrite & Shells
3660	3782	122	Anhydrite & Gyp
3782	4207	425	Anhydrite
4207	4630	423	Anhydrite & Dolomite
4630	4780	150	Dolomite & Lime
4780	4845	65	Dolomite & Anhydrite
4845	5020	175	Dolomite

GEOLOGIC TOPS PICKED FROM ELECTRIC LOG

Russler	2300'
Yates	2920
San Andres	4190

FROM	TO	TOTAL FEET	FORMATION
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[illegible]

16-43094-2 U. S. GOVERNMENT PRINTING OFFICE

HISTORY OF OIL OR GAS WELL

It is of the greatest importance to have a complete history of the well. Please state in detail the dates of redrilling, together with the reasons for the work and its results. If there were any changes made in the casing, state fully, and if any casing was "sidetracked," or left in the well, give its size and location. If the well has been dynamited, give date, size, position, and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position, and results of pumping or balling.

MC DERMOTT FEDERAL NO. 2
WELL HISTORY

1961
January

- 7 Location staked 660' FSL and 1980' FNL of Section 19, T-9-S, R-38-E, Lea County New Mexico by John A. Shearman of Lovington, New Mexico.
- 8-11 Building road and location with Wagley Construction Company of Plains, Texas.
- 12 Moving Rotary Tools on location - Western Service Drilling Company's Rig No. 13.
- 13 7:00 AM to 3:00 PM - Rigging up rotary tools.
5:00 PM to 12:00 PM - Drilling surface hole; 0' to 11', Substructure, 11' to 270', Surface Sand and Caliche.
- 14 12:01 AM to 3:00 AM - Drilling; 270' to 414', Sand and Red Bed.
3:00 AM to 8:00 AM - Ran 12 joints and Guide shoe of 8 5/8", J-55, 240' casing to 413' or 401' from ground level. Set casing with 300 sacks of neat cement.
Cement circulated.
8:00 AM to 12:00 PM - A.O.C. 16 hours.
- 15 12:01 AM to 6:00 AM - A.O.C. 6 hours.
6:00 AM to 12:00 Midnight - Drilling; 414' to 2010', Red Bed and Shells. 1/4° deviation at 1600'.
- 16 12:00 PM to 4:15 AM - Drilling 2010' to 2218', Shale and Shells.
4:15 AM to 8:00 AM - 1/2 trip out of hole for Bit No. 3.
8:00 AM to 10:45 AM - 1/2 trip in hole with Bit No. 3.
10:45 AM to 12:00 Midnight - Drilling; 2218' to 2635', Anhydrite and Salt.
- 17 12:01 AM to 9:15 AM - Drilling; 2635' to 2960', Anhydrite and Salt. 1/4° Deviation at 2960'.
9:15 AM to 12:15 PM - Trip for Bit No. 4.
12:15 PM to 12:00 Midnight - Drilling; 2960' to 3370', Anhydrite and Salt.
- 18 12:01 AM to 12:01 PM - Drilling; 3370' to 3660', anhydrite and Shells. 1/4° Deviation at 3600'.
12:01 PM to 6:45 PM - Trip for Bit No. 5 and repairs.
6:45 PM to 12:00 Midnight - Drilling; 3660' to 3782', Anhydrite and Gyp.
- 19 12:01 AM to 5:15 PM - Drilling; 3782' to 4028', Anhydrite.
5:15 PM to 9:30 PM - Trip out for Bit No. 6.
9:30 PM to 12:01 AM - Drilling; 4028' to 4043', Anhydrite.
- 20 12:01 AM to 8:45 AM - Pulling plugged bit.
8:45 AM to 9:00 PM - Drilling; 4043' to 4207', Anhydrite. 3/4° Deviation at 4207'.
- 21 12:01 AM to 2:15 AM - Trip in with Bit No. 7.
2:15 AM to 1:30 PM - Drilling; 4207' to 4287', Anhydrite and Dolomite.
1:30 PM to 5:30 PM - Trip for Bit No. 8.
5:30 PM to 12:01 AM - Drilling; 4287' to 4345', Anhydrite and Dolomite.

1961

January

- 22 12:01 AM to 2:30 PM - Drilling; 4345' to 4458', Dolomite and Anhydrite
2:30 PM to 7:45 PM - Trip for Bit No. 8.
7:45 PM to 12:01 AM - Drilling 4458 to 4490', Anhydrite & Dolomite.
- 23 12:01 AM to 9:35 PM - Drilling; 4490' to 4630', Dolomite and Anhydrite.
9:35 PM to 12:01 AM - 1/2 trip out to change bit.
- 24 12:01 AM to 2:30 AM - 1/2 trip in with Bit No. 10.
2:30 AM to 12:00 PM - Drilling; 4630' to 4758', Dolomite & lime.
- 25 12:01 AM to 9:00 AM - Drilling; 4758' to 4780', Dolomite and lime.
9:00 AM to 3:15 PM - Trip for Bit No. 11.
3:15 PM to 12:00 PM - Drilling; 4780' to 4845', Dolomite and Anhydrite.
- 26 12:01 AM to 7:00 AM - Drilling; 4845' to 4881', Dolomite.
7:00 AM to 12:00 Noon - Trip for Bit No. 12.
12:00 Noon to 12:00 Midnight - Drilling; 4881 to 4978', Dolomite.
- 27 12:01 AM to 3:00 AM - Drilling; 4978' to 5015', Dolomite.
3:00 AM to 4:00 AM - Circulating to run Electric Logs.
4:00 AM to 1:00 PM - Trip out to run Logs. Completed Logs.
1:00 PM to 4:00 PM - Trip in with Bit No. 12.
4:00 PM to 5:00 PM - Drilling; 5015' to 5020', I.D. Dolomite.
5:00 PM to 12:01 AM - Laying down a 1 1/2" Drill Pipe to run casing.
- 28 12:01 AM to 6:30 AM - Ran 153 joints of 4 1/2", 11.60w, J-55 Casing. Set at 5018' from K. B. or 5008.54' from Braden Head. One Centralizer per joint on bottom 5 joints. Cemented with 300 sacks with 4 % Gel and 100 sacks of neat with 45 gallons of Latex. Plug down at 6:30 AM.
6:30 AM to 12:01 AM - W.O.C.
- 29 W.O.C. - 24 hours - Stacked out rotary tools.
- 30 W.O.C. - 24 hours
- 31 12:01AM to 8:00 AM - W.O.C.
8:00 AM to 10:00 AM - Rig up Well Service Unit. Test Casing with 1500# pressure. Test O.K. Ran Collar locator and Tie in log.
10:00 AM to 12:30 PM - Perforating with line shells Type A 15/32" gun, 4 shots per foot. Perforated zones; 4940' to 4958' and 4970' to 4996'.
12:30 PM to 5:30 PM - Pick up 2 3/8" Tubing.
5:00 PM to 5:45 PM - Spotted 500 gallons of mud acid over perforations. Formation broke at 3100#. Minimum Pressures: Casing 1800#, Tubing 2800#. Injection rate 4.2 barrels per minute.
5:55 PM to 7:15 PM - Acidising with 10,000 gallons of low surface acid. Dropped 75 balls after 4000 gallons and 75 balls after 7500 gallons. 5 minutes shut in, 1400# pressure.
7:20 PM to 8:00 PM - Swabbing to pits.
10:00 PM to 12:00 PM - Flowing to pits, Acid Gas and Acid water.

1961
February

- 1 12:01 AM to 7:00 AM - Swabbing acid water, some oil and gas showing. 175# pressure on casing.
7:00 AM to 3:00 PM - Well started flowing. Flowing to pits.
3:00 PM to 6:30 PM - Flowing back acid water, oil and gas to tanks.
6:30 PM to 12:01 AM - Shut in.
- 2 2:30 PM - Found well blowing out through braden on 8 5/8" and 4 1/2" casing. Waiting on Halliburton and salt water to kill well.
7:00 PM to 8:30 PM - Pump salt water in well with Halliburton. Well dead.
8:30 PM to 12:00 PM - Waiting on pulling unit.
- 3 12:01 AM to 7:30 AM - Waiting on pulling unit.
7:30 AM to 8:30 AM - Rig up pulling unit.
8:30 AM to 12:00 Noon - Pulling tubing.
12:01 PM to 2:00 PM - Running packer to find leak. Found leak at 429' below head.
2:00 PM to 3:00 PM - Pulled packer
3:00 PM to 6:00 PM - Waiting on tools.
6:00 PM to 9:30 PM - Picked casing off slip, made casing up 10 rounds, 1 1/4", set casing back on head slips.
9:30 PM to 10:30 PM - Ran packer back in casing on tubing. Found casing still leaking at 429' from surface.
10:30 PM to 12:01 AM - Pulling packer and waiting on Homco with string shot to back casing off below leak.
- 4 12:01 AM to 4:00 AM - Waiting on Homco and pack-off tool.
4:00 AM to 5:00 PM - Went in hole with primer cord and collar locator, picked and set at 490'. Left tubing in hole for guide. Pulled 14 joints of 4 1/2" casing. Found bad joint with a flaw in the steel 1 foot under collar on 14th joint. Replaced bad joint with new joint and went back in using tubing as a guide. Made up casing 2 1/4" using power tongs. Used sector seal on all joints. Cut off top joint, welded on collar and installed tubing head. Packed off head with stripper rubber and tested casing above packer, set at 50', with 2000# pressure for 30 minutes. Casing tested O.K. and job was completed at 5:00 PM.
5:00 PM to 6:00 PM - Pulled 16 joints of 2 3/8" tubing with section nipple on bottom. Set head and packed off tubing. Shut in gate.
- 5 Shut down until daylight due to weather.
8:00 AM to 7:00 PM - Swabbing salt water out of hole that was used to kill well in order to make casing repairs.
7:00 PM to 12:00 PM - Shut down.
- 6 12:01 AM to 8:00 AM - Shut down.
8:00 AM to 6:30 PM - Swabbing, showing a small amount of gas.
6:30 PM to 12:01 AM - Shut in.
- 7 12:01 AM to 8:00 AM - Shut in. Casing pressure 750#.
8:00 AM to 6:30 PM - Flowing and swabbing water and gas to pits. Water and gas slightly oil cut.
6:30 PM to 12:01 AM - Shut in.
- 8 12:00 AM to 8:00 AM - Shut in, Casing pressure 1375#, Tubing pressure 1200#.

1961
February

- 8 8:00 AM to 6:30 PM - Flowing to test tanks. Casing pressure 740#, Tubing pressure 430# on 16/64 " choke. Making oil, water and approximately 500,000 cubic feet of gas. Swabbing unit released at 2:30 PM. 6:30 PM to 12:01 AM - Testing.
- 9 Testing and cleaning up. 85% of water recovered.