

SUN OIL COMPANY

COPY

MAIL OFFICE 222

APR 25 AM 11:10

April 22, 1966

RE: San Augustin Plains Unit, Well No. 1 - M
Sun Oil Company, Operator, Catron
County, New Mexico
Federal Lease No. NM-058327

United States Department of the Interior
U. S. Geological Survey
Roswell, New Mexico

Gentlemen:



We are presently drilling at a depth of 7029 feet the San Augustin Plains Unit Well No. 1 in Section 29, Township 38-S, Range 9-W, Catron County, New Mexico, with projected total depth of 11,000 feet.

We have been advised by Mr. Roy W. Foster, Petroleum Geologist with the State Bureau of Mines and Mineral Resources, Socorro, New Mexico, that if the well is completed as a dry hole, the New Mexico Institute of Mining and Technology would be interested in taking over this well. Mr. Foster gave the following reasons why the school would want this hole:

- (1) The hole would be used for temperature surveys.
- (2) It would be used as a seismic station which would serve to reduce cultural and surface (atmospheric) noises.
- (3) It would be used for rock stress and rock mechanic tests.
- (4) It would be used to measure viscoelastic properties of the rock by correlating bore hole deformation, stress conditions and rock types.
- (5) It would be used for heat balance information by injection and recovery of water.
- (6) The hole could be used as a hydrofracing laboratory whereby any induced seismic activity could be measured relative to fracing by fluid injection.

We want to give this matter due consideration, and would like to have your comments and advice concerning the mechanics of transferring full responsibility of the well over to the NMIMT school if we are unable to develop hydrocarbons. We would need to have your approval and decide upon the necessary course to follow. No doubt, some advance agreements, releases, etc. would be necessary which will require some time to work out and we need to be able to move quickly at such time as it is decided to let NMIMT have the well. We would need to be relieved of further responsibility, both from requirements of your office and the Oil Conservation Commission. The school

THEORY

The theory of the present experiment is based on the fact that the rate of reaction between a substance and a reagent is proportional to the concentration of the substance.

When a substance is added to a reagent, the reaction proceeds at a certain rate. The rate of reaction is determined by the concentration of the substance and the concentration of the reagent.

The rate of reaction is also affected by the temperature of the reaction. The rate of reaction increases as the temperature increases. This is because the molecules have more energy and are more likely to collide and react.

The rate of reaction is also affected by the surface area of the substance. The rate of reaction increases as the surface area increases. This is because there are more molecules exposed to the reagent and more collisions are possible.

The rate of reaction is also affected by the presence of a catalyst. A catalyst is a substance that speeds up the reaction without being consumed. It works by providing an alternative pathway for the reaction that has a lower activation energy.

The rate of reaction is also affected by the concentration of the reagent. The rate of reaction increases as the concentration of the reagent increases. This is because there are more reagent molecules available to react with the substance.

The rate of reaction is also affected by the concentration of the substance. The rate of reaction increases as the concentration of the substance increases. This is because there are more substance molecules available to react with the reagent.

The rate of reaction is also affected by the volume of the reaction mixture. The rate of reaction increases as the volume of the reaction mixture decreases. This is because the concentration of the reagent and the substance increases as the volume decreases.

United States Department of the Interior
April 22, 1966
Page 2

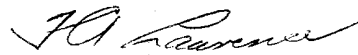
1-M
29-35-9W
Calkman

would need to make some arrangements in advance of the abandonment date concerning any further work of deepening or conditioning the hole for its needs.

It is apparent that a myriad of details must be worked out in advance and we would appreciate your advice concerning necessary methods of clearance with your Department.

Yours very truly,

SUN OIL COMPANY



F. A. Lawrence
Regional Superintendant

FAL:km

cc New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Handwritten notes and signatures at the top left of the page.

Official letterhead of the institution, including the name and address, dated April 22, 1953, and page number 2.

First paragraph of the letter, discussing the subject of the correspondence.

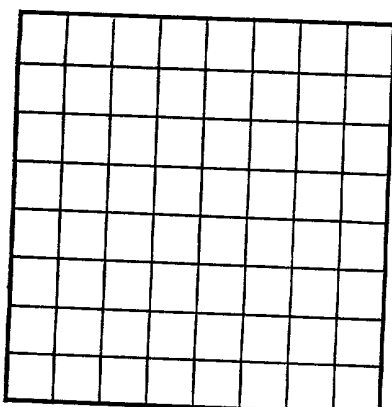
Second paragraph of the letter, continuing the discussion.

Yours very truly,

WILLIAM L. BROWN

Enclosure
cc - Mr. Tolson
cc - Mr. Boardman

Very truly yours,
WILLIAM L. BROWN
Director, Federal Bureau of Investigation



LOCATE WELL CORRECTLY

RECEIVED

SEP 22 1966

O. C. C. UNITED STATES
ARTESIAL DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

U. S. LAND OFFICE

SERIAL NUMBER NMD58327

LEASE OR PERMIT TO PROSPECT

RECEIVED
SEP 3 1966
U. S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO

LOG OF OIL OR GAS WELL

Company Sun Oil Company Address Box 2792, Odessa, Texas
Lessor or Tract San Augustin Plains Field Wildcat State New Mexico
Well No. UT #1 Sec. 29 T. 3S R. 9W Meridian _____ County Catron
Location 860 ft. [N.] of S. Line and 660 ft. [E.] of W. Line of Sec. 29 Elevation 7056.1 Gr.
(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 9-2-66 Signed [Signature] Title Area Superintendent

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

Commenced drilling 3-12-66, 19____ Finished drilling 6-19, 1966

OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from None to _____ 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 293' to 297' No. 3, from _____ to _____
No. 2, from _____ to _____ No. 4, from _____ to _____

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated		Purpose
							From—	To—	
13 3/8	48	8R	Lone Star	500.15	Howco	none			
9 5/8	36	8R	ditto	577.30	Howco	none			

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
13 3/8	515.00	300			
9 5/8	5390.00	400	pump	12.1	
			pump	13.0	

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 12,284 feet, and from _____ feet to _____ feet
Cable tools were used from _____ feet to _____ feet, and from _____ feet to _____ feet

DATES

SEE BACK OF FORM FOR PLUGGING RECORD

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

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

Rock pressure, lbs. per sq. in. _____

EMPLOYEES

R. L. Deere, Driller H. L. Wonger, Driller
M. L. Bean, Driller _____, Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
0	233	233	Surface Rock Surface Rock
233	1009	776	Gravel and sand
1009	1208	199	Volcanic Lava
1208	1409	201	Sandstone volcanic quartz chert
1409	1565	156	Volc. quartz chert
1565	1631	66	Volc. quartz
1631	1994	363	Basalt
1994	2434	440	Volc. lava and basalt
2434	3036	602	Volc. tuff
3036	3219	183	Volc. fill and lime
3219	3413	194	Volc. fill, siltstone, lime
3413	4937	1524	Volc. fill, and xlime
4937	5218	281	Red bed, sand and anhydrite
5218	5446	228	Dolomite siltstone
5446	5635	189	Red bed and sand
5635	5874	239	Volc. lava
5874	6118	244	Volc. lava and red shale
6118	6518	400	Volc. rock and red shale
6518	6810	292	Red volc. shale, pan blown lime and volc. sand
6810	7594	784	Sand and shale
7594	7842	248	Shale, sand and tuff volcanic
7842	7929	87	Dark gray limey shale
7929	7982	53	Hard gray green sand (quartzite)
7982	8026	44	Quartz and shale
8026	8133	107	Shale, gray and green

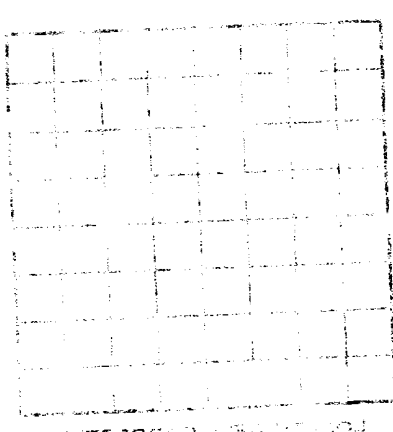
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16-43094-2

LOG OF OIL OR GAS WELL

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
UNITED STATES
SEP 2 1922

RECEIVED



Logs on this well will be sent to you by Sumner's Howell Office.

Notes: Well is not yet ready for final inspection.

Damage (ft.)

7" pipe was welded on top of water well. Water well released to Bureau of Land

Oil or Gas Spill or Leak

Well released to New Mexico School of Mines for use as a temperature and seismology

Left in well and bradenhead left on.

Plugging completed 6-23-66. Removed BOP and casing spool. 5390' of 9 5/8" OD casing

50 sks also set - 12,000-12,100
50 sks also set - 9,900-10,000
75 sks Incon - 8,250
50 sks Incon - 6,950
75 sks Incon - 5,320-5,470

Plugged well as follows:

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 "detached" or left in the well, give its size and location. If the well has been dynamited, give date, 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 bailing.

HISTORY OF OIL OR GAS WELL

FROM-	TO-	TOTAL FEET	FORMATION
8133	8543	410	Lime
8543	8667	124	Quartzite and sand
8667	8963	296	Quartzite and shale and sand
8963	9085	122	Dolomite and shale
9085	9146	61	Shale, sand and lime
9146	9256	110	Sandstone and shale
9256	9356	100	Dolomite
9356	9436	80	Shale, lime and dolomite
9436	9563	127	Sand and shale
9563	9632	69	Sand
9632	9692	60	Sand, shale and shaly lime
9692	9750	58	Dolomite and lime
9750	10024	274	Sand
10024	10100	76	Sandstone and tuff
10100	10247	147	Quartzite sand
10247	10304	57	Red shale
10304	11214	910	Hyolite
11214	11860	586	Quartzite
11860	12027	227	Red sandy shale
12027	12132	105	Shale and lime
12132	12171	9	Red shale
12171	12152	12	Shale and lime
12152	12284	132	Granite

FORMATION RECORD—Continued