Form 9-330

Budget Bureau No. 42-R355.4.
Approval expires 12-31-60.

U. S. LAND OFFICE Navajo Tribal
SERIAL NUMBER 14-20-603-2198
LEASE OR PERMIT TO PROSPECT Navajo Tribal "H"

RECEIVED JUN 27 1961

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

X

LOCATE WELL CORRECTLY

LOG OF OIL OR GAS WELL

Company Pan American Petroleum Corporation Address Box 480, Farmington, New Mexico
Lessor or Tract Navajo Tribal "H" Field Totah Gallup State New Mexico
Well No. 3 Sec. 33 T. 29N R. 13W Meridian N.M.P.M. County San Juan
Location 790 ft. [N.] of S. Line and 660 ft. [E.] of W. Line of Section 33 Elevation 5285 (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.

Signed ORIGINAL SIGNED BY R. M. Bauer
Date June 22, 1961 Title Senior Petroleum Engineer

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

Commenced drilling May 22, 19 61 Finished drilling June 7, 19 61

OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from 4979 to 4986 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

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated From—	Perforated To—	Purpose
8-5/8"	24#	8R	CF&I	199	Guide				Surface
4-1/2"	9.5#	8R	CF&I	5067	Guide				Oil String

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
8-5/8"	199	190	Halliburton 2 plug.		
4-1/2"	5067	450	Halliburton 2 plug.		

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 5070 feet, and from feet to feet
Cable tools were used from feet to feet, and from feet to feet

DATES

Completed as flowing Totah Gallup Field Well. June 16, 19 61 Date First New Oil. Put to producing June 13, 19 61

The production for the first 24 hours was 258 barrels of fluid of which 99.9% was oil; % emulsion; % water; and .1 % 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

K. R. Runyan, Driller M. W. McDonald, Driller
Jackie White, Driller R. D. Davis, Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
0	885	885	Surface sands and shales, including Kirtland Farmington, and Fruitland zones.
885	1095	210	Pictured Cliffs sands and shales.
1095	1852	757	Lewis shale.
1852	3685	1833	Mesaverde sands, shales, and coals.
3685	4605	920	Mancos shale.
4605	4975	370	Gallup sands and shales.
4975	5070	95	Gallup pay sands.

(Tops from "E" log)

FOLD MARK

[OVER]

16—48094-4

FORMATION RECORD—Continued

[OVER]

FROM—	TO—	TOTAL FEET	FORMATION
			(Zone from 4,966 TOP)
		56	Gallup Box Sands.
		116	Gallup Area Box Sands.
		250	Cubbos Sands.
		1554	Mesaverde Cliffs, Menefee and Point Lookout.
		1724	Dakota Sands.
		1870	Morrison, Bog Springs and Morgan.
		2025	Entrada Sandstone and Navajo.
		2362	Chinle Shale and Shinarump.
0	238	238	Surface Sands and Shales, Quaternary Alluvium

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
238	1025	1025	Dakota Shale.
1025	1554	1554	Dakota Sands.
1554	1870	1870	Mesaverde Cliffs, Menefee and Point Lookout.
1870	2025	2025	Cubbos Shale.
2025	2362	2362	Gallup Area Box Sands.
2362	2420	2420	Gallup Box Sands.

SHOOTING RECORD

Date	Depth shot	Quantity	Explosive used	Shell used	Size

TOOLS USED

Rotary tools were used from 0 feet to 2362 feet, and from feet to feet

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

DATES

Completed as Plugged Gallup Well Date First New Oil: Not to producing

Completed as Plugged Dry Hole on Date to Date eff.

The production for the first 24 hours was 24 barrels of fluid of which 99.9 % was oil; % emulsion; % water; and % sediment. Gravity, °Bé.

It was well, cu. ft. per 24 hours Gallons gasoline per 1,000 cu. ft. of gas

Rock pressure, lbs. per sq. in.

EMPLOYEES

R. L. Benson, Driller; M. W. Mcdonald, Driller

Thomas Estes, Driller; M. D. Deats, Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
0	238	238	Surface Sands and Shales, Quaternary Alluvium
238	1025	1025	Dakota Shale.
1025	1554	1554	Dakota Sands.
1554	1870	1870	Mesaverde Cliffs, Menefee and Point Lookout.
1870	2025	2025	Cubbos Shale.
2025	2362	2362	Gallup Area Box Sands.
2362	2420	2420	Gallup Box Sands.

CASING AND ADAPTERS

Size	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut off
8-5/8"	24#	8	Mansfield	203'	Baker	
4-1/2"	9.5#	8	Mansfield	5066'	Baker	

Heaving plug—Material ____ Length ____ Depth set ____

Adapters—Material ____ Size ____

RECORD OF PERFORATIONS

From	To	Number of shots per foot	Kind of shot	Date
4970	4986	4	Bullet	6-16-61

RECORD OF STIMULATION

Date	Gallons of oil	Gallons of acid	Quantity of sand	Gallons of water	Max. pressure	Min. pressure	Average rate
6-16-61	20,200	500	20,000		2100	2200	27

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 bailing.

Spudded 8-3/4" hole on May 27, 1961, to 178' and reamed 12-1/4" hole to 205'. Set 8-5/8" casing at 203' with 190 sacks cement containing 2 percent Calcium Chloride. Circulated 4 sacks of cement. After waiting on cement, tested 8-5/8" casing with 500 psi for 30 minutes, which held without indication of pressure drop. Reduced hole to 7-7/8" at 205' and resumed drilling operations.

Drill stem test No. 1 at 3370-3518'. Packer failed to hold. Unsuccessful test.
Drill stem test No. 2 at 3365-3518'. Packer failed to hold again. Pulled packer and drilled ahead.
Core No. 1 4935-4948'. Recovered 13' as follows: 13' of black shale.
Core No. 2 4948-4985'. Recovered 37' as follows: 25' black shale, 1' shaly sand; 9-1/2' sand medium grained, good porosity and permeability with slight bleed of oil and gas throughout, shale nodules 4981-4985'; 1-1/2' sandy shale with slight oil and gas bleed.

4-1/2" casing set at 5066' with stage collar at 3762'. Cement first stage with 125 sacks 6 percent gel cement containing 1-1/2 pounds medium tuf plug per sack, followed by 75 sacks neat. Test casing 3000 psi for 15 minutes. Test ok. Completed second stage with 250 sacks 6 percent gel cement containing 1-1/2 pounds medium tuf plug per sack. Wait on cement 18 hours. Drilled out stage collar. Tested casing with 900 psi for 30 minutes. Test ok.

Perforated Gallup 4970-4986' with 4 shots per foot. Fracured Gallup perforations with 20,200 gallons oil containing 50 pounds Adomite Mark II, 8 gallons J-105 per 1000 gallons and 20,000 pounds sand. Pressures were: Breakdown 2100 psi; maximum treating 2500 psi; minimum treating 2200 psi; Average injection rate 27 barrels per minute.

2-3/8" tubing landed at 4966'. Potential test June 16, 1961, 258 barrels of oil per day on 21/64" choke.

LOG OF OIL OR GAS WELL

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LEASE OR PERMIT TO PROSPECT
SERIAL NUMBER NM-03-015-SF 058
U. S. LAND OFFICE Santa Fe

Budget Bureau No. 42-R355.4
Approval expires 12-31-60.

FORM 9-330

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