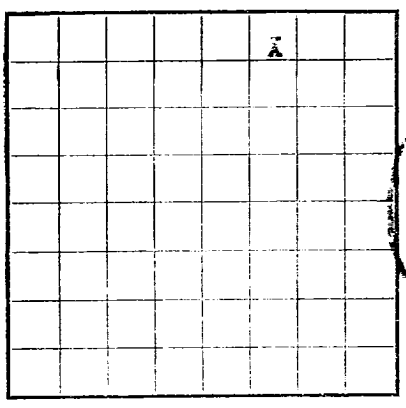
Form 9-330

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

U. S. LAND OFFICE New Mexico
SERIAL NUMBER NM 04443
LEASE OR PERMIT TO PROSPECT



LOCATE WELL CORRECTLY

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LOG OF OIL OR GAS WELL

Company Pan American Petroleum Corporation Address Box 487, Farmington, New Mexico
Lessor or Tract [illegible] Hoover "B" Field Horseshoe Gallup State New Mexico
Well No. 2 Sec. 15 T. 30-N R. 16-W Meridian N.M.P.M. County San Juan
Location 850 ft. {N./S.} of N Line and 1910 ft. {E./W.} of E Line of Section 15 Elevation 5414 (RDB)
(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, Jr.

Date May 10, 1960 Title Area Engineer

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

Commenced drilling April 24, 19 60 Finished drilling April 28, 19 60

OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from 1620 to 1658 No. 4, from to
No. 2, from 1681 to 1689 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"	24.7	Alls Jones	[illegible]	96	Guide				surface
5-1/2"	14	ERT	3-55	1751	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"	110'	50 sacks of cement	Halliburton 1 plug		
5-1/2"	1740'	130 sacks of cement	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 1750 feet, and from feet to feet
Cable tools were used from feet to feet, and from feet to feet

DATES

Completed as Pumping Oil Well Horseshoe Gallup Field May 4, 19 60 Date first new oil produced
Put to producing May 4, 19 60

Potential test pumped 384 barrels oil per day.
The production for the first 24 hours was 384 barrels of fluid of which 99.8% was oil; % emulsion; % water; and .2% sediment. Gravity, °Bé. 41.8°
Gas oil ratio not yet available.
If gas well, cu. ft. per 24 hours Gallons gasoline per 1,000 cu. ft. of gas
Rock pressure, lbs. per sq. in.

EMPLOYEES

[illegible] Field, Driller [illegible] Gall, Driller
[illegible] Riley, Driller V. F. McGee, Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
0	110	110	Surface sand and shale.
110	290	180	Mesaverde sands, shales and coals.
290	1579	1289	Mancos shale.
1579	1618	39	Gallup shale and sand.
1618	1750	132	Gallup pay sand and shale.
			(Tops from E. Log.)

FOLD MARK

16—43094-4

FORMATION RECORD—Continued

FROM—	TO—	TOTAL FEET	FORMATION

HISTORY OF OIL OR GAS WELL

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

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 12-1/4" hole on April 24, 1960 and drilled to 110'. 8-5/8" casing was set at 110' with 65 sacks cement containing 2 percent calcium chloride. Circulated cement. After waiting on cement, tested casing and water shut off with 400 psi for 30 minutes, which held with no indication of pressure drop. Reduced hole to 7-7/8" at 110' and resumed drilling operations.

Total depth 1750' 5-1/2" casing was set at 1744' with 50 sacks 6 percent gel cement with 1-1/2 pounds tuf plug per sack followed by 50 sacks neat cement. Spotted 250 gallons MCA on top of plug and displaced with oil. Tested casing with 3000 psi for 30 minutes which held with no indication of pressure drop. Released rig on April 29, 1960. Preparing for completion operations.

Plug back depth 1714'. Tested frac head and casing with 3000 psi for 15 minutes which held ok. Perforated lower Gallup with 4 shots per foot 1681' - 1689'. Sand oil fracked with 10,700 gallons oil and 10,000 pounds sand. Breakdown pressure 2700 psi to 700 psi. Average treating pressure 1150 psi, average injection rate 55 barrels per minute. Set bridge plug at 1670'. Tested bridge plug with 3000 psi which held with no indication of pressure drop. Perforated upper Gallup with 4 shots per foot 1620' - 1658'. Sand oil fracked with 36,600 gallons oil and 35,000 pounds sand. Breakdown pressure 1600 psi to 600 psi. Average treating pressure 1050 psi, average injection rate 50 barrels per minute. Landed 2" tubing at 1592'. Ran rods and pump.

Completed as pumping oil well Horseshoe Gallup Field May 6, 1960. Potential test May 6, 1960 pumped 34 barrels oil per day with 15-4" strokes per minute with 1-1/4" pump.