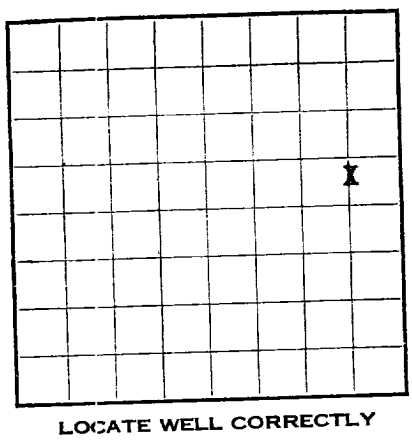
Budget Bureau No. 42-R355.4.
Approval expires 12-31-60.

U. S. LAND OFFICE Santa Fe
SERIAL NUMBER SF 081299-A
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 J. J. Lennori "A" Field Horseshoe Gallup State New Mexico
Well No. 2 Sec. 14 T. 30N R. 16W Meridian N.M.P.M. County San Juan
Location 2210 ft. [N.] of N. Line and 660 ft. [W.] of E. Line of Section 14 Elevation 5416 (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.

ORIGINAL SIGNED BY
Signed R. M. Baner, Jr.
Title Area Engineer
Date May 29, 1959

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

Commenced drilling April 29, 1959 Finished drilling May 11, 1959

OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from 3383 to 3407 No. 4, from ____ to ____
No. 2, from 3477 to 3505 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"	22.7	Ship Joint	Armco	202	Guide				Surface
5-1/2"	14	8RT	National	3602	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"	212	160 sacks of cement	Halliburton No. 1 plug		
5-1/2"	3586	130 sacks of cement	Halliburton No. 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 3588 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 22, 1959 19 Potential test pumped 67 barrels oil in 9-1/2 hrs. with 14 36" strokes per minute with 1-1/2" pump.

Put to producing Date first new oil produced: May 22, 1959
The production for the first 24 hours was 168 barrels of fluid of which 99.8% was oil; ____% emulsion; ____% water; and ____% sediment.
Gravity, °Bé. 41.0 API
If gas well, cu. ft. per 24 hours 2 Gallons gasoline per 1,000 cu. ft. of gas ____
Gas oil ratio not yet available.
Rock pressure, lbs. per sq. in. ____

EMPLOYEES

____, Driller ____, Driller
T. J. Beck, Driller A. Y. Old, Driller
R. I. Ledlow, Driller Orval Cook

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
0	763	551	Surface sand & shales.
763	1730	967	Menefee shale.
1730	2050	320	Point Lookout sandstone.
2050	3100	1050	Mancos shale.
3100	3325	225	Verde Gallup sand & shales.
3325	3470	145	Verde Gallup pay zone.
3470	3588	118	Horseshoe Gallup pay sand.
			(E log intrepretation)

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.

J. J. Lommori "A" Well No. 2 was spudded on April 29, 1959 and 8-5/8" casing was set at 212' with 160 sacks cement with 2% calcium chloride. After waiting on cement, casing and water shut off were tested with 400 pounds pressure for thirty minutes, which held with no drop in pressure. Reduced hole to 7-7/8" at 216' and resumed drillin- operations.

5-1/2" casing was set at 3586' with 80 sacks 6% gel cement with 1-1/2 pounds Tuf Plug per sack followed by 50 sacks neat cement. Released rotary rig on May 11, 1959. Moved in completion unit and tested casing with 3000 pounds pressure for fifteen minutes, which held with no drop in pressure.

Spotted 250 gallons breakdown acid. Perforated Lower Gallup with four shots per foot 3477-3505. Sand oil fracked with 25,620 gallons oil and 36,200 pounds sand. Formation broke at 3200 pounds. Maximum treating pressure 3175 pounds, minimum treating pressure 220 pounds. Tapered treatment with 10,000 gallons at 1 pound per gallon, 10,000 gallons at 1-1/2 pounds per gallon, 56,000 gallons at 2 pounds per gallon. Average injection rate 42 barrels per minute. Perforated Upper Gallup with four shots per foot 3383-3407. Bridge plug set at 3440. Sand-oil fracked Upper Gallup with 29,400 gallons oil an 29,400 pounds sand. Breakdown pressure 2850 pounds, treating pressure minimum 2400 pounds, maximum 2900 pounds. Average treating pressure 2700 pounds, injection rate 37 barrels per minute. Cleaned out to plug back depth and retrieved bridge plug. Landed 2" tubing at 3513', ran rods and pump. Released completion unit. Completed as pumping oil well Horseshoe-Gallup field May 22, 1959. Potential test pumped 67 barrels oil in 9-1/2 hours at rate of 168 barrels oil per day with 14-36" strokes per minute with 1-1/4" pump. Gas oil ratio not yet available. Oil gravity 41.0 API.