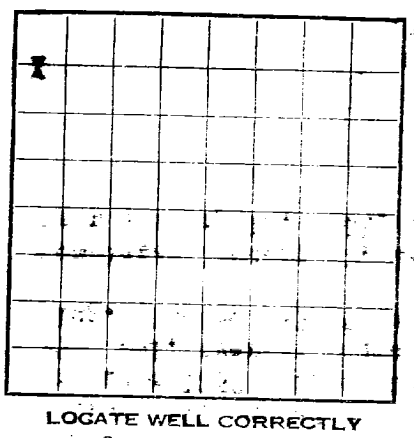
Form 9-330

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

U. S. LAND OFFICE Santa Fe
SERIAL NUMBER SF 077968
LEASE OR PERMIT TO PROSPECT
C. J. Holder



LOCATE WELL CORRECTLY

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LOG OF OIL OR GAS WELL

Company Pan American Petroleum Corporation Address Box 480, Farmington, New Mexico
Lessor or Tract C. J. Holder Field Cha Cha Gallup State New Mexico
Well No. 4 Sec. 16 T. 28N R. 13W Meridian N.M.P.M. County San Juan
Location 660 ft. [N.] of N Line and 980 ft. [E.] of W Line of Section 16 Elevation 6071 (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

Date January 16, 1961 Title Senior Petroleum Engineer

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

Commenced drilling December 16, 19 60 Finished drilling December 31, 19 60

OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from to No. 4, from to
No. 2, from 5702 to 5718 No. 5, from to
No. 3, from 5712 to 5733 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"	32	8RT	J-55	233	Guide				Surface
4-1/2"	9.5	8RT	J-55	5898	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"	224	175 sacks of cement	B. J. Service 1 plug		
4-1/2"	5866	200 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 feet to feet, and from feet to feet
Cable tools were used from 0 feet to 5875 feet, and from feet to feet

DATES

~~Completed January 12, 1960 as flowing oil well Cha Cha Gallup Field.~~ Put to producing January 11, 19 61 The first new oil produced:
The production for the first 24 hours was barrels of fluid of which % was oil; % emulsion; % water; and % sediment. 192 Gravity, °Bé. 44.6

If gas well, cu. ft. per 24 hours Gallons gasoline per 1,000 cu. ft. of gas 43.50 API
Rock pressure, lbs. per sq. in.

EMPLOYEES

, Driller , Driller
Jim Babcock , Driller Earl Babcock , Driller
Jim Spencer Sam Kinney

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
0	376	376	Surface sands and shales including Ojo Alamo sands and shales.
376	1687	1311	Undifferentiated Kirtland-Fruitland sands, shales and coals.
1687	1869	182	Pictured Cliffs sand and shale.
1869	2606	737	Lewis sand and shale.
2606	2649	43	Cliffhouse sand and shale.
2649	4195	1546	Menefee sand and shale.
4195	4459	264	Point Lookout sand and shale.
4459	5359	900	Mancos shale.
5359	5702	343	Gallup sand and shale.
5702	5875	173	Gallup pay sands.

(Tops from E log)

FOLD | MARK

(OVER)

16—48094-4

FORMATION RECORD—Continued

FROM—	TO—	TOTAL FEET	FORMATION

16—48004-2 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 bailing.

Spudded 12-1/4" hole on December 16, 1960 and drilled to 226'. Set 8-5/8" casing at 224' with 175 sacks cement containing 2 percent calcium chloride. Circulated 15 sacks of cement. After waiting on cement, tested 8-5/8" casing with 1000 psi for 30 minutes which held with no indication of pressure drop. Reduced hole to 7-7/8" at 226' and resumed drilling operations.

Core No. 1 5695-5728 Gallup - Core barrel jammed. Recovered 33' as follows: 1-1/2' sandy shale, 1' tight, fine grained shaly sand, 8-1/2' black shale with occasional sand streaks, 1' tight sand with shale nodules, 9' clean medium grained sand with occasional porosity and permeability, oil saturated with strong odor, 1' tighter sand, 3' tight shaley sand fine grained vertically fractured, 8' sandy shale to black sand.

Core No. 2 5728-[illegible] Recovered 60' as follows: 31' black shale, 7' sandy shale, no traces, 3' shaly sand, shale laminations, 9' clean medium grained sand with oil bleed throughout, 4' shaly sandy with shale laminations, 6' tight black shale.

Total depth 5875' - 4-1/2" casing set at 5866' with 125 sacks 6% gel cement with 1-1/2 pounds medium Tuf Plug per sack, followed by 75 sacks neat cement. Displaced with 900 gallons 15% HCA mixed with oil. Tested casing with 3000 psi for 30 minutes which held with no indication of pressure drop.

Ran correlation log and perforated Gallup 5767-79 with 4 shots per foot. Sand oil fracked with 29,650 gallons oil and 30,000 pounds sand with 500 pounds adomite Mark II. Breakdown [illegible] psi, average treating pressure [illegible] psi, average injection rate 32 barrels per minute. Ran Baker retrievable bridge plug and set at 5750'. Tested bridge plug at 3000 psi, which held with no drop in pressure. Perforated Gallup 5707-15 with 6 shots per foot. Sand oil fracked upper zone with 24,800 gallons oil and 27,000 pounds sand with 600 pounds adomite Mark II. Breakdown pressure 1250 psi, maximum treating pressure [illegible] psi, average pressure 2900 psi, average injection rate 25 barrels per minute. Pulled retrievable bridge plug. Landed 2-3/8" tubing at 5798'.

Completed January 12, 1961 as flowing oil well in the Gallup Field. Potential test January 12, 1961, flowed 192 barrels oil per day on 24/64" choke.