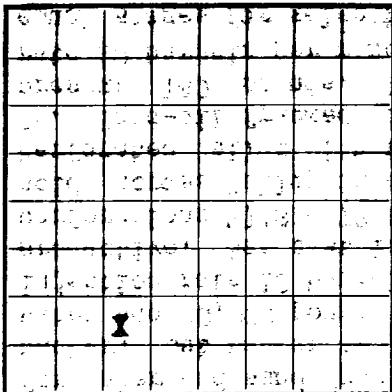


OIL CON. COM. UNITED STATES
DIST. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEYU. S. LAND OFFICE **Jicarilla Apache**
SERIAL NUMBER **Jicarilla Contract 11**
LEASE OR PERMIT TO PROSPECT **148**

LOG OF OIL OR GAS WELL

LOCATE WELL CORRECTLY

Company **Pan American Petroleum Corporation** Address **Box 487, Farmington, New Mexico**
Lessor or Tract **Jicarilla Contract 148** Field **Undesignated Gallup** **New Mexico**
Well No. **10** Sec. **14** T. **25N** R. **5W** Meridian **N.M.P.M.** County **Rio Arriba**
Location **210** ft. **N.** of **3** Line and **1720** ft. **E.** of **W** Line of **Section 14** Elevation **7053**
(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. Bauer, Jr.**
Date **November 18, 1958** Title **Field Engineer**

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

Commenced drilling **August 23**, 19**58** Finished drilling **September 28**, 19**58**

OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from **3260** to **3330 (G)** No. 4, from _____ to _____
No. 2, from **6600** to **6724** 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		Purpose
							From	To	
10-3/4	32.75	4 1/2	National	490	Guides				Surface
7-5/8	24	4 1/2	National	325	Guides				Intermediate
5-1/2	17.97	4 1/2	National	550	Guides				Production
HISTORY OF OIL OR GAS WELL									

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
10-3/4	498	325 sacks cement	Halliburton No. 2 Plug		
7-5/8	3514	200 sacks cement	Halliburton No. 2 Plug		
5-1/2	7797	550 sacks cement	Baugh-Ross Liner 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 **7807** feet, and from _____ feet to _____ feet
Cable tools were used from _____ feet to _____ feet, and from _____ feet to _____ feet

Completed as pumping oil well **November 10, 1958**, Date first new oil to tanks: _____, 19____
Undesignated Gallup Field, Potential test Put to producing _____, 19____
pumped **55 barrels oil in 24 hours** with **15-54"** barrels of fluid of which _____% was oil; _____%
strokes per minute. **55** Gravity, °Bé. **99.8**

emulsion; _____% water; and _____% sediment. Gallons gasoline per barrel of oil **40.6 API**
If gas well, cu. ft. per 24 hours _____ Gas oil ratio **not yet available**.

Rock pressure, lbs. per sq. in. _____

EMPLOYEES

_____, Driller **E. C. Quine**, Driller
E. F. Fleener, Driller **W. W. Warren**, Driller
T. C. Peterson

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
0	3260	3260	Undifferentiated sands & shale.
3260	3330	70	Pictured Cliffs sand.
3330	4931	1601	Lewis shale (La Ventana 4130-4182)
4931	5100	169	Cliffhouse sand.
5100	5542	442	Menefee sands, shales, & coals.
5542	5730	188	Point Lookout sands & shales.
5730	6492	762	Mancos shale.
6492	7073	581	Gallup sands & shales.
7073	7392	319	Sanastee sands & shales.
7392	7453	61	Greenhorn.
7453	7604	151	Graneros shales & sands.
7604	7807	203	Dakota sand.

FORMATION RECORD--Continued

FROM--	TO--	TOTAL FEET	FORMATION
			FORMATION RECORD
			CHANGES
			DATE
			TOOLS USED
			SHOOTING RECORD
			DATA AND ADAPTORS
			MIXING AND CEMENTING RECORD

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, state 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 testing.

Atlantic Contract 148 Well No. 10 was strudded on August 23, 1956, and on August 25, 1956, 10-5/8 casing was set at 498 feet with 525 sacks of cement, circulated out 75 sacks. After waiting on cement, casing and water shut-off were tested with 650 pounds pressure for thirty minutes, which held with no drop in pressure. Resumed drilling operations.

7-5/8 casing was landed at 3514, with 150 sacks of cement followed by 50 sacks neat cement. After waiting on cement, casing and water shut-off were tested with 900 pounds pressure for thirty minutes, which held with no drop in pressure.

5-1/2" liner was set at 3402 - 7797, with Bash Ross Lead Seal Hanger and cemented with 500 sacks 6% gel followed by 50 sacks neat cement. Temperature survey showed good cement top behind 5-1/2" liner at 5900 with possible cement stringer up to 5250 feet. Ran HRC tool set at 3343 feet, no cement top of liner. Was unable to pump around top liner with 3000 pounds. Drilled cement in 5-1/2 inch casing 7671' to 7773 feet. Displaced and in casing with water. Tested top of 5-1/2" liner with 2600 pounds, which held with no drop in pressure.

Perforated with four shots per foot 7718 - 7730 feet. Failed to breakdown formation with 3000 pounds. Ran HRC tool on 2 inch casing and set at 7649'. Pressured up and broke formation with 4500 pounds. Increased acid in formation at 915 barrels per minute with 4000 pounds. Shut in pressure 1800 pounds after five minutes 1000 pounds. Pulled packer. Attempted to pump down casing but could only obtain 2.5 barrels per minute injection rate at 2800 pounds. Re-perforated 7718 - 7730 feet with four shots per foot. Ran packer and set at 7647 feet. Added with 500 gallons HCA. Maximum treating pressure 4200 pounds, minimum 4000 pounds at four barrels per minute. Still unable to obtain satisfactory injection rate down casing. Pulled packer. Re-perforated 7728, 7725, 7722, 7719 with Molex formation frac tool. Pumped down casing at 4.7 barrels per minute with 2800 pounds. Injection rate too small for water and sand frac. Picked up sand packer at 8423 feet. Sand-water fracked with 21,200 gallons water and 20,000 pounds sand. Maximum treating pressure 3900 pounds, average injection rate 10 barrels per minute. The Dakota formation proved to be non-productive. Set east iron cement retainer at 7650 and squeezed off Dakota perforations 7718 - 7730 feet with 50 sacks cement. Spotted 500 gallons acid across casing interval. Tested casing to 5000 pounds with HRC tool. Perforated casing with two shots per foot 6604 - 6612, 6680 - 6700, 6708 - 24. Sand-oil fracked with 60,000 gallons oil and 60,000 pounds sand. Breakdown pressure 1800 pounds. Treating pressure 2200 - 2600 pounds, average injection rate 40 barrels per minute. Injected total 80 perforated ball sealers in four equal stages for selective treatment. Two inch tubing was landed at 6617 feet.

Completed as pumping oil well November 16, 1956, undersaturated gaslift field. Potential test pumped 55 barrels oil in 24 hours with 15-5/8 inch strokes per minute. Gas oil ratio not yet available. Gravity 40.6 degrees API.

WARRIOR OIL FIELD