NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Blanco-Pictured Cliffs Formation Pictured Cliffs County San Juan

Initial x Annual _____ Special _____ Date of Test 12-29-58

Company PAN AMERICAN PETROLEUM CORP. Lease L. H. Elliott "C" Well No. 1

Unit J Sec. 9 Twp. 30-N Rge. 9W Purchaser El Paso Natural Gas Company

Casing 4-1/2" Wt. 9.5 I.D. 4.090 Set at 2931 Perf. 2856 To 2886

Tubing 1.66 Wt. 2.3 I.D. 1-1/4 Set at 2878 Perf. 2872 To 2878

Gas Pay: From 2856 To 2886 L 2856 xG 0.69(est) GL 1971 Bar.Press. 12

Producing Thru: Casing x Tubing _____ Type Well Gas - single
Single-Bradenhead-G. G. or G.O. Dual

Date of Completion: 12-22-58 Packer none Reservoir Temp. 105°

OBSERVED DATA

Tested Through ~~(Prover)~~ (Choke) ~~(Meter)~~ Type Taps _____

No.	Flow Data (Line) Size	Flow Data (Choke) Size	Flow Data Press. psig	Flow Data Diff. h_w	Flow Data Temp. °F.	Tubing Data Press. psig	Tubing Data Temp. °F.	Casing Data Press. psig	Casing Data Temp. °F.	Duration of Flow Hr.
SI	Shut in 7 days					1010		1010		
1.	2"	3/4"	122		60(est)	165	60(est)	122	60(est)	3 hr.
2.										
3.										
4.										
5.										

FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_w p_f}$	Pressure psia	Flow Temp. Factor F_t	Gravity Factor F_g	Compress. Factor F_{pv}	Rate of Flow Q-MCFPD @ 15.025 psia
1.	12.365		134	1.000	0.9325	1.015	1568
2.							
3.							
4.							
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio _____ cf/bbl.
Gravity of Liquid Hydrocarbons _____ deg.
F_c _____ $(1-e^{-s})$ _____

Specific Gravity Separator Gas _____
Specific Gravity Flowing Fluid _____
P_c 1022 P_c^2 1,044,484

No.	P_w P_t (psia)	P_t^2	F_cQ	$(F_cQ)^2$	$(F_cQ)^2$ $(1-e^{-s})$	P_w^2	$P_c^2-P_w^2$	Cal. P_w	$\frac{P_w}{P_c}$
1.						31,329	1,013,155		
2.									
3.									
4.									
5.									

Absolute Potential: 1609 MCFPD; n 0.85
COMPANY PAN AMERICAN PETROLEUM CORPORATION
ADDRESS Box 487, Farmington, New Mexico
AGENT and TITLE M. W. Dauer, Jr., Field Engineer
WITNESSED _____
COMPANY _____

REMARKS

INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

NOMENCLATURE

Q = Actual rate of flow at end of flow period at W. H. working pressure (P_w). MCF/da. @ 15.025 psia and 60° F.

P_c = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater. psia

P_w = Static wellhead working pressure as determined at the end of flow period. (Casing if flowing thru tubing, tubing if flowing thru casing.) psia

P_t = Flowing wellhead pressure (tubing if flowing through tubing, casing if flowing through casing.) psia

P_f = Meter pressure, psia.

h_w = Differential meter pressure, inches water.

F_g = Gravity correction factor.

F_t = Flowing temperature correction factor.

F_{pv} = Supercompressability factor.

n = Slope of back pressure curve.

Note: If P_w cannot be taken because of manner of completion or condition of well, then P_w must be calculated by adding the pressure drop due to friction within the flow string to P_t.

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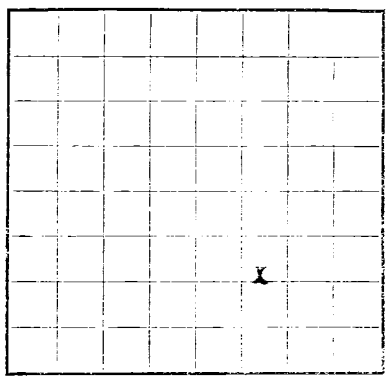
Form 9-330

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

U. S. Land Office Santa Fe
Serial Number SF 078139
Lease or Permit to Prospect



LOCATE WELL CORRECTLY

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

RECEIVED
JAN 2 1959
GEOLOGICAL SURVEY
FARMINGTON, NEW MEXICO

LOG OF OIL OR GAS WELL

Company Pan American Petroleum Corporation Address Box 487, Farmington, New Mexico
Lessor or Tract E. S. Elliott "C" Field Blanco-Pictured Cliffs State New Mexico
Well No. 1 Sec. 9 T. 30N R. 9W Meridian N.M.P.M. County San Juan
Location 1650 ft. [N.] of S Line and 1455 ft. [E.] of E Line of Section 9 Elevation 6094
(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 December 30, 1958 Title Field Engineer

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

Commenced drilling December 14, 19 58 Finished drilling December 19, 19 58

OIL OR GAS SANDS OR ZONES

(*Denote gas by G*)

No. 1, from 2856 to 2886 (G) 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"	22.7	Slip Joint	Armco	205	Guide				Surface
4-1/2"	9.50	8RT	National	2935	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"	215	160 sacks cement	Halliburton No. 1 Plug		
4-1/2"	2931	750 sacks 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 2931 feet, and from ____ feet to ____ feet
Cable tools were used from ____ feet to ____ feet, and from ____ feet to ____ feet

DATES

Completed as shut in Blanco Pictured Cliffs Field Development Gas Well December 22, 1958 Preliminary Test
Put to producing Shut-In for pipeline connection, 19 December 22, 58

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

If gas well, cu. ft. per 24 hours 1,520,000 Gallons gasoline per 1,000 cu. ft. of gas ____
Rock pressure, lbs. per sq. in. ____ Shut-In casing pressure 7 days

EMPLOYEES

F. J. Buck, Driller — John Wright, Driller
Pete Estes, Driller — Jackie White, Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
0	1605	1605	Surface sand, shale and Animas shale.
1605	1697	92	Ojo Alamo sandstone.
1697	2480	783	Kirtland-Farmington sand & shale.
2480	2852	372	Fruitland sands, shales, and coals.
2852	2931	79	Pictured Cliffs sand.

[OVER]

FOLD | MARK

FORMATION RECORD—Continued

FROM—	TO—	TOTAL FEET	FORMATION

16—43094-2 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.

E. E. Elliott "C" No.1 was spudded on December 14, 1958 and on December 15, 1958. 8-5/8" casing was set at 215' with 160 sacks of cement. After waiting on cement for 24 hours casing and water shut off were tested with 300 pounds pressure for thirty minutes which held with no drop in pressure. Reduced hole to 7-7/8" at 216' and resumed drilling operations.

On December 19, 1958, 4-1/2" casing was set at 2931' with 700 sacks 6 per cent gel cement with two pounds Tuf Plug per sack, followed by 50 sacks neat cement. 4-1/2" casing was tested with 2500 pounds pressure for thirty minutes, which held with no drop in pressure. Released rotary rig on December 19, 1958.

On December 20, 1958, spotted 200 gallons 15 per cent mud clean out agent and perforated Pictured Cliffs with two shots per foot 2856-2886. Sand-water fracked with 30,000 gallons water and 50,000 pounds sand. Formation broke at 1475 pounds. Treating pressure 2000 pounds. Average injection rate 41 barrels per minute. 1-1/4" tubing landed at 2878'. Completed as shut-in Blanco-Picutred Cliffs Field Development gas well December 22, 1958. Preliminary test 1520 MCFPD Pitot Tube Measurement after blowing 4 hours.