

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK

DRILL ☒DEEPEN ☐PLUG BACK ☐

b. TYPE OF WELL

OIL
WELL ☐GAS
WELL ☒

OTHER

SINGLE
ZONE ☒MULTIPLE
ZONE ☐

2. NAME OF OPERATOR

PAN AMERICAN PETROLEUM CORPORATION

3. ADDRESS OF OPERATOR

P. O. Box 480, Farmington, New Mexico

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)

At surface 1450 FNL and 2510 FNL

At proposed prod. zone Same

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*

44 miles southeast of Blanco, New Mexico

15. DISTANCE FROM PROPOSED*

LOCATION TO NEAREST
PROPERTY OR LEASE LINE, FT.
(Also to nearest drlg. unit line, if any)

1190'

18. DISTANCE FROM PROPOSED LOCATION*
TO NEAREST WELL, DRILLING, COMPLETED,
OR APPLIED FOR, ON THIS LEASE, FT.

2800'

16. NO. OF ACRES IN LEASE

1120

19. PROPOSED DEPTH

8100'

17. NO. OF ACRES ASSIGNED
TO THIS WELL

320

20. ROTARY OR CABLE TOOLS

Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)

Will report later.

22. APPROX. DATE WORK WILL START*

May 17, 1965

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
13-3/4"	10-3/4"	48#	200'	250 Sacks
9-7/8"	7-5/8"	24#	300'	1000 Sacks
6-3/4"	4-1/2"	10.5#	100'	450 Sacks (2 Stage tool set 100' below base of Mesaverde)

Copies of Location Plat are attached.

Copies of any logs run will be furnished upon completion of well.

Verbal approval received 5-13-65, Dick Krahle to J. C. Glover.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24. F. L. Nabors, District Engineer

SIGNED

HOLLINGSWORTH

TITLE

DATE

May 13, 1965

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

APPROVED BY

TITLE

DATE

CONDITIONS OF APPROVAL, IF ANY:

DISTRICT ENGINEER

*See Instructions On Reverse Side

5. LEASE DESIGNATION AND SERIAL NO.

SF-079,492-A

6. IF INDIAN, ALLOTTEE OR TRIBAL NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME

San Juan 27-5 Unit

9. WELL NO.

57

10. FIELD AND POOL, OR WILDCAT

Basin Dakota

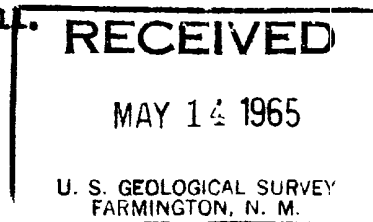
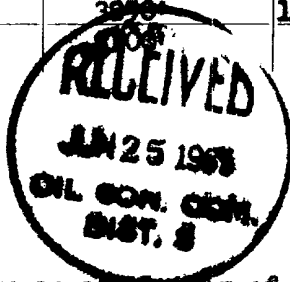
11. SEC., T., R., M., OR BLK.
AND SURVEY OR AREASE 1/4 NW 1/4 Section 13,
T-27-N, R-5-W

12. COUNTY OR PARISH

Rio Arriba

13. STATE

New Mexico



WELL LOCATION AND ACREAGE DEDICATION PLAT

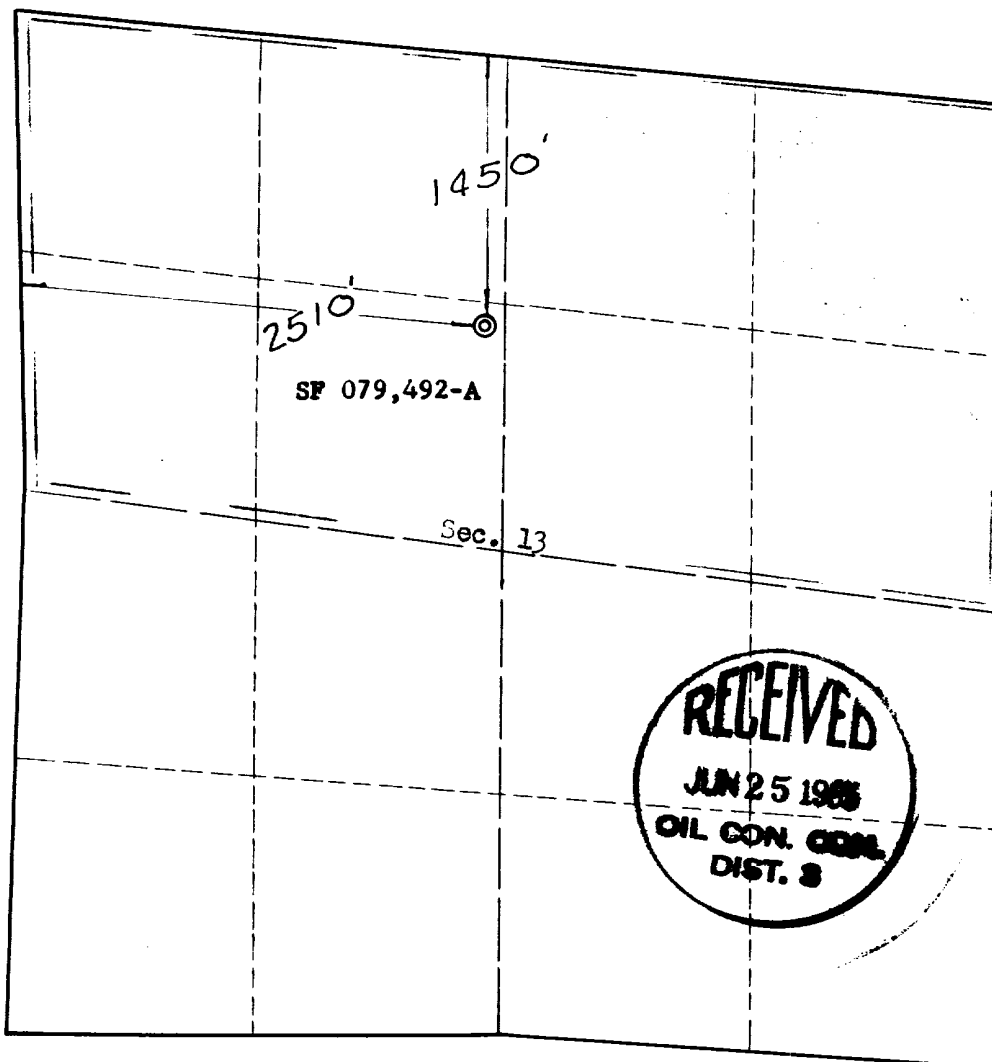
DATE May 12, 1965

OPERATOR **Pan American Petroleum Corporation** LEASE **San Juan 27-5 Unit**
WELL NO. **57** UNIT LETTER **F** SECTION **13** TOWNSHIP **27 North** RANGE **5 West** NMPM
LOCATED **1450** FEET FROM **North** LINE, **2510** FEET FROM **West** LINE
COUNTY **Rio Arriba** G. L. ELEVATION **Report Later** DEDICATED ACREAGE **320** ACRES
NAME OF PRODUCING FORMATION **Dakota** POOL **Basin Dakota**

1. IS THE OPERATOR THE ONLY OWNER* IN THE DEDICATED ACREAGE OUTLINED ON THE PLAT BELOW? YES. **X** NO.
2. IF THE ANSWER TO QUESTION ONE IS "NO," HAVE THE INTERESTS OF ALL THE OWNERS BEEN CONSOLIDATED BY COMMUNITIZATION AGREEMENT OR OTHERWISE? YES. . . . NO. . . . IF ANSWER IS "YES," TYPE OF CONSOLIDATION

3. IF THE ANSWER TO QUESTION TWO IS "NO," LIST ALL THE OWNERS AND THEIR RESPECTIVE INTERESTS BELOW:
- | OWNER | LAND DESCRIPTION |
|-------|------------------|
|-------|------------------|

SECTION B.



THIS IS TO CERTIFY THAT THE
INFORMATION IN SECTION A
ABOVE IS TRUE AND COMPLETE
TO THE BEST OF MY KNOWLEDGE
AND BELIEF.

PAN AMERICAN PETROLEUM CORP.

(OPERATOR)
F.H. Haggard

F. H. Hollingsworth
(REPRESENTATIVE

P. O. Box 480
Farmington, New Mexico

THIS IS TO CERTIFY THAT THE
WELL LOCATION SHOWN ON THE
PLAT IN SECTION 8 WAS PLOT-
TED FROM FIELD NOTES OF AC-
TUAL SURVEYS MADE BY ME OR
UNDER MY SUPERVISION AND
THAT THE SAME IS TRUE AND
CORRECT TO THE BEST OF MY
KNOWLEDGE AND BELIEF.

DATE SURVEYED April 6, 1965

**FOUR STATES
ENGINEERING CO.**

FARMINGTON, NEW MEXICO

REGISTERED ENGINEER OR
LAND SURVEYOR

CERTIFICATE NO. 3602

NEW MEXICO OIL CONSERVATION COMMISSION
MULTI-POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 12-1-55

Pool Basin		Formation Sabota		County El Arriba	
Initial X	Annual	Special	Date of Test 7-19-63		
Company SAN AMERICAN PETROLEUM CORPORATION		Lease San Juan 27-3 Unit		Well No. 57	
Unit 7	Sec. 13	Twp. 27N	Range 3W	Purchaser El Paso Natural Gas Company	
Casing 4-1/2	Wt. 11.6 12.3	I.D. 4.632	Set at 8152	Perf. 7873-99 7997-9997	To 8031-01 8073-93
Tubing 2-3/8	Wt. 4.7	I.D. 1.993	Set at 8031	Perf. 7993	To 8001
Gas Pay:	From 7873	To 8003	L 7993	G .700	GL 5386 Bar. Press. 12
Producing Through:		Casing	Tubing	Type Well - Single - Braden head - G.G. or G.O. Dual Single	
Date of Completion 7-12-63		Packer None		Reservoir Temp.	

OBSERVED DATA

Tested Through: Prover ☐ Choke ☒ Meter ☐							Type of Taps		
FLOW DATA					TUBING DATA		CASING DATA		DURATION OF FLOW HR.
No.	(Line) Size	(Choke) Size	Press. psig.	Diff. h _w	Temp. °F.	Press. psig.	Temp. °F.	Press. psig.	Temp. °F.
1.	2 inch	.730	330			2397 239	65°	2312	
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-MCF PD @ 15.025 psia
1.	12.3470		331	.9224	.9236	1.040	4147
2.							
3.							
4.							
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio _____ cf/bbl. Specific Gravity Separator Gas _____
 Gravity of Liquid Hydrocarbons _____ deg. Specific Gravity Flowing Fluid _____
 F_c _____ (1-e^{-S}) _____ P_c **2400** P_c² **5,800,001**

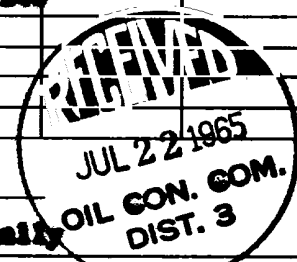
No.	$\frac{P_w}{P_t}$ psia	P _t ²	F _c Q	(F _c Q) ²	(F _c Q) ² (1-e ^{-S})	P _w ²	P _c ² - P _w ²	Cal P _w	$\frac{P_w}{P_c}$
1.						1,390,041	4,410,000		
2.									
3.									
4.									
5.									

ABSOLUTE POTENTIAL: **3002** MCFPD; n **.73**

COMPANY **SAN AMERICAN PETROLEUM CORPORATION** WITNESSED **Norman McLaughlin**

ADDRESS **Box 400, Farmington, New Mexico** COMPANY **El Paso Natural Gas Company**

AGENT AND TITLE **F. L. Hubers, District Engineer**
Original Signed By:
G. W. EATON, JR.



EL PASO NATURAL GAS COMPANY
OPEN FLOW TEST DATADATE July 19, 1965

Operator Pan American Petroleum Corporation		Lease San Juan 27-5 Unit No. 57	
Location 1450'N, 2510'W, Section 13, T-27-N, R-5-W		County Rio Arriba	State New Mexico
Formation Dakota		Pool Basin	
Casing: Diameter 4.500	Set At: Feet 8152	Tubing: Diameter 2.375	Set At: Feet 7995
Pay Zone: From 7873	To 8093	Total Depth: 8152	Shut In 7-12-65
Stimulation Method Sand Water Frac		Flow Through Casing	Flow Through Tubing X

Choke Size, Inches .750		Choke Constant: C 12.365		Company Distribution Only	
Shut-In Pressure, Casing, 2312 PSIG	+ 12 = PSIA 2324	Days Shut-In 7	Shut-In Pressure, Tubing 2397 PSIG	+ 12 = PSIA 2409	
Flowing Pressure: P 339 PSIG	+ 12 = PSIA 351		Working Pressure: P _w 1167 PSIG	+ 12 = PSIA 1179	
Temperature: T = 68 °F	F _t = .9924	n = .75	F _{pv} (From Tables) 1.040	Gravity .700	F _g = .9258

CHOKE VOLUME = Q = C × P_i × F_i × F_g × F_{pv}

$$Q = (12.365) (351) (.9924) (.9258) (1.040) = 4,147 \text{ MCF/D}$$

$$\text{OPEN FLOW} = Aof = Q \left(\frac{P_c^2}{P_c^2 - P_w^2} \right)^n$$

$$Aof = \left(\frac{5,803,281}{4,413,240} \right)^n = (4147) (1.3149)^{.75} = (4147) (1.2279)$$

$$Aof = 5092 \text{ MCF/D}$$

NOTE: Well produced a large slug of liquid after 5 minutes, then produced enough drip to make flame burn red for the remainder of test.

TESTED BY Joe Elledge (Pan American)WITNESSED BY H. E. McAnally (EPNG)

L. D. Galloway
L. D. Galloway



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE*

(See other in-
structions on
reverse side)Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

1a. TYPE OF WELL:		OIL WELL ☐	GAS WELL ☒	DRY ☐	Other _____		
b. TYPE OF COMPLETION:		NEW WELL ☒	WORK OVER ☐	DEEP-EN ☐	PLUG BACK ☐	DIFF. RESVR. ☐	Other _____
2. NAME OF OPERATOR						7. UNIT AGREEMENT NAME	
PAN AMERICAN PETROLEUM CORPORATION						San Juan 27-5 Unit	
3. ADDRESS OF OPERATOR						9. WELL NO.	
P. O. Box 480, Farmington, New Mexico						57	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)						10. FIELD AND POOL, OR WILDCAT	
At surface 1450 FNL X 2510 FNL						Basin Dakota	
At top prod. interval reported below						11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA	
At total depth Same						SE/4, NW/4 Section 13, T-27-N, R-5-W	
14. PERMIT NO.						12. COUNTY OR PARISH	
DATE ISSUED						Rio Arriba	
15. DATE SPUNDED						13. STATE	
6-14-65						New Mexico	
16. DATE T.D. REACHED		17. DATE COMPL. (Ready to prod.)		18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*		19. ELEV. CASINGHEAD	
6-26-65		7-12-65		6850 (RDB)		—	
20. TOTAL DEPTH, MD & TVD		21. PLUG, BACK T.D., MD & TVD		22. IF MULTIPLE COMPL., HOW MANY*		23. INTERVALS DRILLED BY	
8152		8117		—		ROTARY TOOLS 0-8152	
24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*						25. WAS DIRECTIONAL SURVEY MADE	
Graneros Dakota		Main Dakota		Lower Dakota		No	
7874-7996		7996-8050		8050-8094		No	
26. TYPE ELECTRIC AND OTHER LOGS RUN						27. WAS WELL CORED	
Electric - Gamma Ray and Gamma Ray-Neutron						No	
28. CASING RECORD (Report all strings set in well)							
CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD		AMOUNT PULLED	
10-3/4"	48#	203'	13-3/4"	250 Sacks		None	
7-5/8"	26#	3900'	9-7/8"	1050 Sacks		None	
4-1/2"	10.5#	8152'	6-3/4"	525 Sacks		None	
29. LINER RECORD				30. TUBING RECORD			
SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
					2-3/8"	8031'	
31. PERFORATION RECORD (Interval, size and number)				32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.			
7997-8007, 8051-61 with 2 shots per foot.				DEPTH INTERVAL (MD)			
8073-93 with 1 shot per foot.				7997-8093			
7873-99 with 2 shots per foot.				1100 Gallons 7-1/2% acid,			
				28,560 Gallons water and			
				25,000 pounds sand			
				7873-99			
				35,112 Gallons water and			
				39,720 pounds sand			
33.* PRODUCTION				WELL STATUS (Producing or shut-in)			
DATE FIRST PRODUCTION		PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)		Flow			
				Shut In			
DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
7-19-65	3 hours	3/4"	—		4147		
FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GAS WATER (BBL) (MCF) (BBL)	
339	1167	—		518			
34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)						TEST WITNESSED BY	
To be sold to El Paso Natural Gas Company						JUL 27 1965	
35. LIST OF ATTACHMENTS						U. S. GEOLOGICAL SURVEY FARMINGTON, N. M.	
None							
36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records							
ORIGINAL SIGNED BY		Fred L. Nabors, District Engineer		DATE		7-14-65	
SIGNED		F. H. HOLLINGSWORTH		TITLE			

*(See Instructions and Spaces for Additional Data on Reverse Side)

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: "Sacks Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:			38.		GEOLOGIC MARKERS	
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES						
FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.	NAME	MEAS. DEPTH	TRUE VERT. DEPTH
Surface Sand and Shale	0	3708				
Pictured Cliffs	3708	3796				
Lands Shale	3796	5453				
Mesaverde	5453	6010				
Mancos	6010	7072				
Gallup	7072	7460				
Base Gallup	7460	7783				
Greenhorn	7783	7846				
Graneros Shale	7846	7874				
Graneros Dakota	7874	7996				
Main Dakota	7996	8050				
Lower Dakota	8050	8152				