

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE

(See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

5. LEASE DESIGNATION AND SERIAL NO.

NM 23003

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT ACCESSION NAME

8. FARM OR LEASE NAME

LLANO-MCKAY FEDERAL

9. WELL NO.

2

10. FIELD AND POOL OR WILDCAT

Undesignated Morrow

11. SEC., T., R., M. OR BLOCK AND SURVEY OR AREA

Sec. 13, T19S, R31E

12. COUNTY OR PARISH

Eddy

13. STATE

New Mexico

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ DRY ☐ Other

b. TYPE OF COMPLETION:

NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESSUR ☐ Other

2. NAME OF OPERATOR

PETROLEUM DEVELOPMENT CORPORATION

3. ADDRESS OF OPERATOR

9720 B Candelaria NE, Albuquerque, NM 87112

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

At surface

660' FWL, 750' FNL

At top prod. interval reported below

At total depth

14. PERMIT NO.

DATE ISSUED

O.C.D.

ARTESIA OFFICE

15. DATE SPUNDED

3/10/80

16. DATE T.D. REACHED

6/13/80

17. DATE COMPL. (Ready to prod.)

6/30/80

18. ELEVATIONS (DF, REB, RT, GR, ETC.)*

3580KB

19. ELEV. CASINGHEAD

3563

20. TOTAL DEPTH, MD & TVD

12660

21. PLUG, BACK T.D., MD & TVD

12609

22. IF MULTIPLE COMPL., HOW MANY*

--

23. INTERVALS DRILLED BY

ROTARY TOOLS

145-12660

CABLE TOOLS

0-145

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*

12526-12548 - Morrow

25. WAS DIRECTIONAL SURVEY MADE

No

26. TYPE ELECTRIC AND OTHER LOGS RUN

Dual Laterlog, Micro-SFL & Compensated Neutron Formation Density

27. WAS WELL CORED

No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8	48	400'	17 1/2"	450 SX.	
8-5/8	24-32	3882'	11"	1125 SX.	
4 1/2	11.6-13.5	12,655'	7-7/8"	720 SX.	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
					2-3/8"	12,670'	12,674'

31. PERFORATION RECORD (Interval, size and number)

12,526-530 - 4 JHPF

12,545-548 - 4 JHPF

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
NONE	

33.*

PRODUCTION

DATE FIRST PRODUCTION

6/30/80

PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)

flowing

WELL STATUS (Producing or shut-in)

shut-in

DATE OF TEST

6/30/80

HOURS TESTED

4

CHOKE SIZE

8/64-15/64

PROD'N. FOR TEST PERIOD

OIL—BBL.

15.83

GAS—MCF.

343.54

WATER—BBL.

0

GAS-OIL RATIO

21.702

FLOW. TUBING PRESS.

3060-2475

CASING PRESSURE

pkR

CALCULATED 24-HOUR RATE

195

OIL—BBL.

2061

GAS—MCF.

2061

WATER—BBL.

OIL GRAVITY-API (CORR.)

57° @ 60°F

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

vented

TEST WITNESSED BY

J. C. Johnson

35. LIST OF ATTACHMENTS

AOF, DLL, CND logs

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED

TITLE

President

DATE

7/9/80

*(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:

SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPER, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
Wolfcamp	10422	10442	oil
Morrow	12298	12400	gas
Morrow	12526	12548	gas

38.

GEOLOGIC MARKERS

NAME	MEAS. DEPTH	TRUE VERT. DEPTH
Rustler	680	
Yates	2357	
Seven Rivers	2763	
Queen	3260	
Grayburg	3693	
Delaware	4998	
Bone Spring	6940	
Wolfcamp	10321	
Strawn	11152	
Atoka	11565	
Morrow	11870	

MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 6/27/80		JUL 10 1980	
Company PETROLEUM DEVELOPMENT CORP. ✓				Connection None				O. C. D.	
Pool <u>Undesignated Lusk Morrow</u>				Formation Morrow				Unit ARTESIA OFFICE	
Completion Date 6/25/80		Total Depth 13060		Plug Back TD 13009		Elevation 3580KB		Farm or Lease Name Llano-McKay Federal	
Csg. Size 4½	Wt. 13.5#	Set At 13055	Perforations: From 12526 To 12548			Well No. 2			
Tbg. Size 2-3/8	Wt. 4.7	Set At 12551	Perforations: From Open To End			Unit Sec. Twp. Rge. D 13 19S 31E			
Type Well - Single - Brdrenhead - G.G. or G.O. Multiple Single						Packer Set At 12472'		County Eddy	
Producing Thru tubing		Reservoir Temp. °F 162° @ 12500		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2		State New Mexico	
L 12537	H 12537	Cg 0.668	% CO ₂ 0.641	% N ₂ 0.789	% H ₂ S --	Prover	Meter Run 3"	Taps flg	

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow	
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. hw	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.		Temp. °F
1.	3		1.75	522	10.5	77	3475		pkc.		24hr.
2.	3		1.75	522	15.5	80	3060				1hr.
3.	3		1.75	522	21.0	75	2850				1hr.
4.	3		1.75	522	42.0	82	2475				1hr.
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1.	15.61	74.96	535.2	0.9840	1.224	1.052	1483
2.	15.61	91.08	535.2	0.9813	1.224	1.052	1796
3.	15.61	106.02	535.2	0.9859	1.224	1.054	2105
4.	15.61	149.93	535.2	0.9795	1.224	1.051	2949
5.							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1.	0.80	537	1.42	0.903	21.934	
2.	0.80	540	1.42	0.903	570 @ 60	
3.	0.80	535	1.41	0.901		
4.	0.80	542	1.43	0.906		
5.						

NO.	P _r	P _w	P _r ²	P _w ²	P _r ² - P _w ²
1.		4605.2	21.208	4.398	
2.		4457.2	19.867	5.739	
3.		4385.2	19.230	6.376	
4.		3853.2	14.847	10.759	
5.					

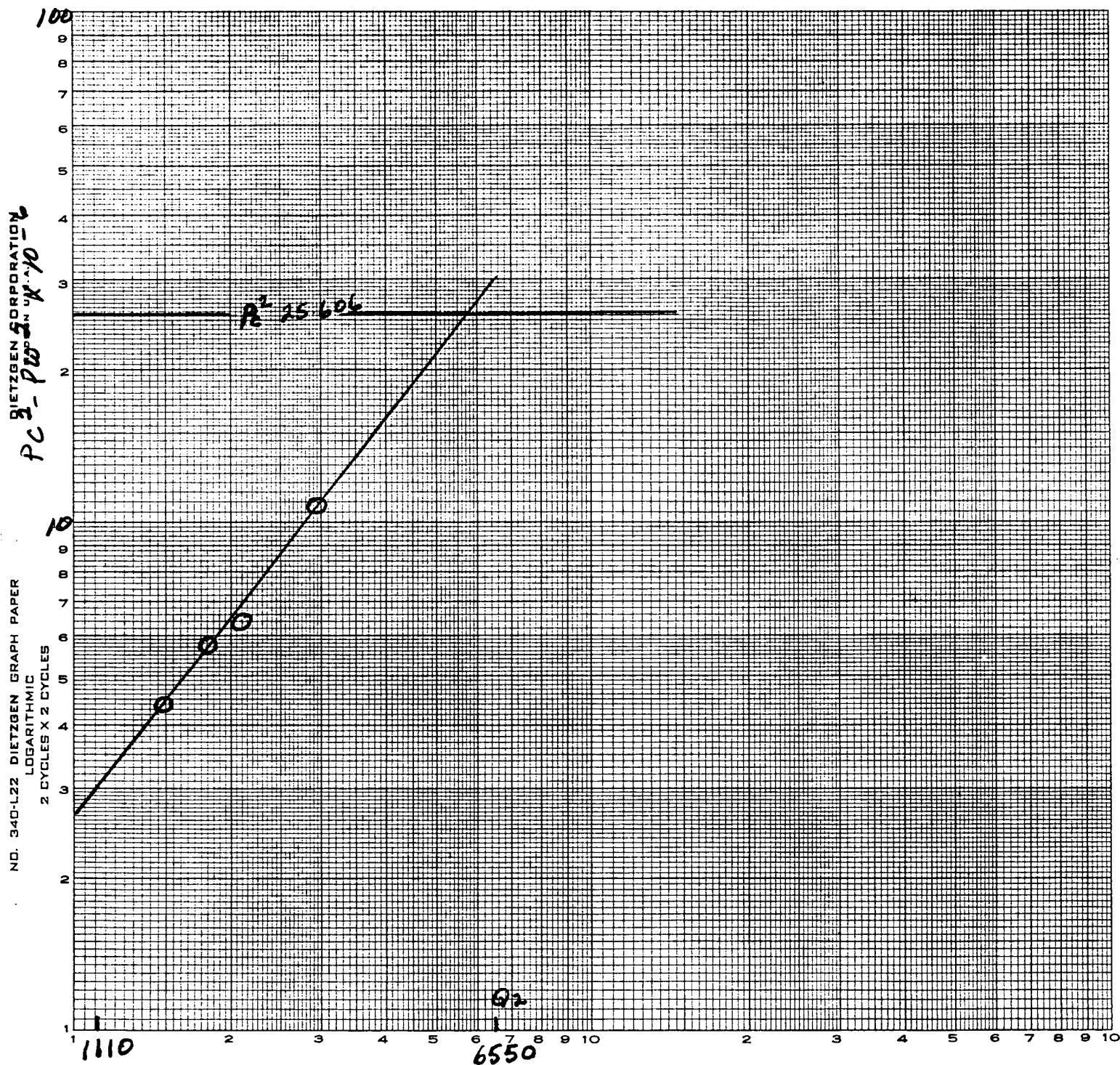
(1) $\frac{P_r^2}{P_r^2 - P_w^2} = 2.38$ (2) $\left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 1.9512$

AOF = Q $\left[\frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 5754$

Posted 10-2-80 7-15-80 SZ

Absolute Open Flow 8454 Mcfd @ 15.025		Angle of Slope @ 45°	Slope, n 1
Remarks: Produced 15.83 BBL condensate. BHP by Amerada gauge @ 12,500'.			
Approved By Commission:	Conducted By: J.C. Johnson	Calculated By: J.C. Johnson	Checked By:

PETROLEUM DEVELOPMENT CORPORATION
 Llano-McKay Federal #2
 Unit D, Section 13, T19S, R31E
 Eddy County, New Mexico



$$\begin{array}{r} \log Q_2 \quad 3.81624 \\ \log Q_1 \quad 3.04532 \\ \hline 0.77092 \end{array}$$

Q - MCFPD

WELL NAME AND NUMBER LLANO MCKAY FEDERAL # 2 N
LOCATION Section 13, township 19S, range 31E
(Give Unit, Section, Township and Range)
OPERATOR PETROLEUM DEVELOPEMENT CORP.
DRILLING CONTRACTOR KENAI DRLG. OF NEW MEXICO

The undersigned hereby certifies that he is an authorized representative of the drilling contractor who drilled the above-described well and that he has conducted deviation tests and obtained the following results:

<u>Degrees @ Depth</u>	<u>Degrees @ Depth</u>	<u>Degrees @ Depth</u>
1.0 @ 400 - 6.98	1.0 @ 8808 - 153.56	
.75 @ 850 - 11.13	1.0 @ 9800 - 171.01	
.75 @ 1309 - 17.02	1.0 @ 10480 - 183.23	
2.50 @ 2400 - 104.69	1.0 @ 11000 - 191.95	
2.0 @ 2480 - 86.20	1.25 @ 11560 - 252.02	
2.0 @ 2760 - 95.97	1.50 @ 12440 - 325.40	
2.25 @ 3125 - 121.74	1.50 @ 12660 - 331.18	
2.0 @ 3625 - 126.00		
1.50 @ 4020 - 104.72		
1.0 @ 4528 - 79.40		
1.0 @ 5000 - 87.25		
2.0 @ 5800 - 202.04		
1.75 @ 6490 - 198.51		
1.25 @ 6900 - 149/72		
1.25 @ 7390 - 161.47		
1.0 @ 7900 - 137.86		

Drilling Contractor KENAI DRLG. OF NEW MEXICO

By: Earl Ellison
EARL ELLISON, DRLG. SUPT.

Subscribed and sworn to before me this 9th day of July, 1980

Virginia Spears
Notary Public

My Commission Expires: 5-22-82

Lew County State of N.M.

(505) 293-4044

ADDENDUM TO FORM 9-330 (WELL COMPLETION OR RECOMPLETION REPORT AND LOG)

Llano-McKay Federal #2, Eddy County, New Mexico

Sec. 13, T19S, R31E.

Dated 7/9/80

RECEIVED

JUL 10 1980

O. C. D.
ARTESIA, OFFICERECEIVED
JUL 14 1980
U.S. GEOLOGICAL SURVEY
ARTESIA, NEW MEXICO37. Summary of Porous Zones:

FORMATION	TOP	BOTTOM	DESCRIPTION
DST #1: 5/17/80	7165	7395	10"60"60"90". VWBA on pre-flow. No blow on FF. Recovered 20' DF. 10,500 chlorides. Resistivity 0.56 @ 68°. MFE recovery: 5psi. 1750 cc water; Chlorides: 11,000. Resistivity 0.6 @ 64°. Pit chlorides: 12,000; resistivity 0.38 @ 80°. HH: 3254-3254; IF 134-134; ISI-159; FF 134-134; FSI: 159. BHT 1150.
DST#2: 5/27/80	10380	10480	15"90"120"240". GTS 15". Gas volume on 2nd flow: 120MCFPD. Recovered 1400' oil. 41° gravity @ 60°. MFE chamber: 3.18 cc gas; 450#; 1800 cc oil. HP: 4589-4589; IFP: 117-180; FFP: 167-573; ISIP: 4425; FSIP 3664.
DST #3: 6/9/80	12250	12440	15"60"150"250". 1500' water blanket. IF: fair blow. FF: good blow. GTS: 110" during 2nd flow. TSTM. Recovered 1500' water blanket. 210' drilling fluid; 525 psi pressure; 3.2 cc's gas; 2500 cc's drilling fluid. IHP: 6456-6456 IF: 847; FFP 792 to 810; ISIP 3128; FSIP: 5206; BHT 1770.
DST #4: 6/13/80	12528	12640	15"90"120"240". GTS 8" on initial flow. 5500 MCFPD on 1/2" ck. 850# flowing pressure. FF stabilized in 45" @ 10,000 MCFPD on 1/2" ck. 1520 psi. IHP 6639; FHP 6603; IFP 1306-2244; ISIP 5150; FFP 1233-2796; FSIP 5026. MFE recovery 1900#; 16 cf gas; 100 cc condensate.