

CASE NO.

6225

APPLICATION,  
TRANSCRIPTS,  
SMALL EXHIBITS,

ETC.



STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:

CASE NO. 6225  
Order No. R-5736

APPLICATION OF PETROLEUM  
DEVELOPMENT CORPORATION FOR  
A DUAL COMPLETION, LEA COUNTY,  
NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 o'clock a.m. on May 17, 1978, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 2nd day of November, 1978, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Petroleum Development Corporation, seeks authority to complete its Sun McKay Federal Well No. 2, located in Unit G of Section 10, Township 19 South, Range 32 East, NMPM, Lea County, New Mexico, as a dual completion (conventional) to produce oil from the Wolfcamp formation through tubing and gas from the Morrow formation through the casing-tubing annulus by means of a cross-over assembly.
- (3) That the Morrow formation producing gas-liquid ratio is very low, being less than 30,000 cubic feet of gas per barrel of condensate.
- (4) That the Division has heretofore determined that the production of condensate from low gas-liquid ratio gas wells through the casing-tubing annulus is inefficient,

-2-

Case No. 6225

Order No. R-5736

requires an excessive amount of reservoir energy, and causes waste.

(5) That the Division has a long-established policy of prohibiting the production of low gas-liquid ratio gas wells through the casing-tubing annulus in the absence of evidence disproving those determinations cited in Finding No. (4) above.

(6) That the applicant in this case offered no evidence to disprove said determinations.

(7) That the application should be denied.

IT IS THEREFORE ORDERED:

(1) That the application of Petroleum Development Corporation to complete its Sun McKay Federal Well No. 2, located in Unit G of Section 10, Township 19 South, Range 32 East, NMPM, Lea County, New Mexico, as a dual completion (conventional) to produce oil from the Wolfcamp formation through tubing and gas from the Morrow formation through the casing tubing annulus by means of a cross-over assembly is hereby denied.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
JOE D. RAMEY,  
Director

  
S E A L

dr/

BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO

MAY 17, 1979

COMMISSION HEARING

IN THE MATTER OF:

Application of Petroleum Development Corporation for a dual completion,  
Lea County, New Mexico.

CASE 6225

BEFORE: Richard L. Stamets, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil Conservation Commission:

Joe Ramey, Chairman  
Emery Arnold, Commissioner  
Phil Lucero, Commissioner  
Richard L. Stamets, Staff Member

Lynn Teschendorf, Esq., Legal Counsel

**LANPHERE REPORTING SERVICE**

P. O. BOX 449  
58 SOUTH FEDERAL PLACE  
SANTA FE, NEW MEXICO 87501

FOR PETROLEUM DEVELOPMENT CORPORATION:

KEGEL & McCULLOH, PA  
1231 Paseo De Peralta  
Santa Fe, New Mexico 87501  
BY: WALTER R. KEGEL, Esq.

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SANTA FE, NEW MEXICO 87501

MR. STAMETS: Call the next Case, 6225.

MS. TESCHENDORF: Case 6225, Application of Petroleum Development Corporation for a dual completion, Lea County, New Mexico.

MR. STAMETS: Call for appearances.

MR. KEGEL: Walter R. Kegel, Attorney, Santa Fe, New Mexico for the Applicant.

I have one witness, J. C. Johnson, President of the Applicant.

MR. STAMETS: Any other appearances?

Okay, Mr. Johnson, stand and be sworn, please.

J. C. JOHNSON

the witness herein, having been duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KEGEL:

Q State your name, address, and occupation, please.

A J. C. Johnson, Albuquerque, New Mexico, President of Petroleum Development Corporation.

Q Have you previously appeared before this Commission?

A I have.

Q And been qualified to testify as an expert?

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SANTA FE, NEW MEXICO 87501

A Yes, I have.

Q Would you state briefly the purpose of and summarize the application which you have filed?

A We filed an application to dual complete the Sun McKay Federal No. 2 from the Morrow gas zone and the Wolfcamp oil zone. The application applies to flow the oil zone through 2-3/8 inch tubing and the gas zone utilizing a cross-over between the 5-1/2 inch and 2-3/8 inch casing annulus.

Q Have all other section offset operators been notified of this hearing?

A Yes, they have.

Q Is there any information which you wish to present in addition to that which is contained in the application in the exhibits?

A On the-- We filed all the exhibits as required in the Form C-107. The exhibits will be-- The proposed dual completion will be done as shown on the Exhibit A. The 5-1/2 inch casing will be tested to 4,000 pounds prior to perforating the Wolfcamp zone.

The Morrow gas zone does make condensate at approximately gas-oil ratio of 25,000. The volume of this well we feel is sufficient to unload the annulus at all

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times. In the event there is any problem on the diagram shown as the upper part SS, we have a sliding sleeve and below it a flow nipple which will enable us to set a plug shutting off the Wolfcamp zone, open the sliding sleeve and unload any liquids if they accumulate in the annulus.

Seven days after we actually install the dual completion, we will perform a packer laches (sic) test.

MR. KEGEL: No further questions, Mr. Examiner.

EXAMINATION

BY MR. STAMETS:

Q Mr. Johnson, did you say the gas-oil ratio in the Morrow was 25,000?

A Yes, approximately 25,000 to 1.

Q 25,000 cubic feet?

A Yes.

Q That sounds an awful lot like an oil well, Mr. Johnson.

A Well, it's--- They'll vary in this particular area. Of course, it's definitely condensate of around 55 to 60 degree gravity.

Q Do you have a copy of the mole point test on the Morrow zone with you?

A No, I don't. It's just currently being run.

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We're going by other Morrow wells we have in that area.

Q Mr. Johnson, in the associated pool rules, any well with a gas-oil ratio less than 30,000 to 1 is considered an oil well, and if the Morrow is producing at that rate it certainly sounds to me like an associated pool or an oil pool rather than a gas pool. I'm sure you're aware it's been the Commission's policy not to permit annulus flow from oil reservoirs. Were you aware of that--

A Yes, I am. Right.

Q Do you have any evidence to indicate that the liquids can be produced through this annulus efficiently?

A Yes, I do. Number 1, the Morrow in this area, and I'm going by the other wells, we have several other completions in this particular area. The-- This well it appears will flow at a rate of in excess of a million a day. To unload these liquids, we calculated it'll take approximately 5-- to 600 Mcf a day. The Morrow zones in this area will start off around 25,000 to 1 gas-oil ratio. Now, this well may not be the same. We should have that AOF completed in the next-- The bottom hole pressure is still on the holes.

Q So your 25,000 to 1 is not based on this well?

A No, it's based on the other wells that we started

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off in this area. Well-- However, within a short period of time, and I'm depending on the size of the well, these gas-oil ratios will climb right on up. The wells start off with a gas-oil ratio of say 20--, some wells as 20,000. Within a period of 6 months, they're usually up to 30-- or 40,000 gas-oil.

Q What pool is this in?

A This is in the Los Morrow pool.

Q Do you have any evidence to present that shows this gas-oil ratio increase that you're talking about?

A I do not have it with me. I do have production history on a well that's mentioned in here on Exhibit B, the Sun McKay No. 1 which is approximately 1570 feet, a little farther than that I believe, but due west of this well that has been on production there for approximately 3 months; and it has shown a definite increase in gas-oil ratio.

Q Mr. Johnson, you might want to submit copies of your 122 to the Examiner following completion of the test. The Examiner will take note of our records on the well that you've pointed out, however, I also would point out that I find very little presented at this time with which I could render an affirmative decision in this case.

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SANTA FE, NEW MEXICO 87501

Anything further you wish to add in this case?

A Well, I'd like to also submit to you the records of the production history in the gas-oil ratio in the Sun McKay No. 1.

Q Okay.

A And also we'll submit the AOF and see what this gas-oil ratio is on this well.

Q This information should've been presented at this hearing rather than subsequent to it.

Anything further?

Witness may be excused.

Anybody else have anything else in this case?

Case will be taken under advisement.

(WHEREUPON, hearing on this case concluded.)

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SANTA FE, NEW MEXICO 87501

REPORTER'S CERTIFICATE

I, BETTY J. LANPHERE, a court reporter with offices in Santa Fe, New Mexico, do hereby certify that the foregoing transcript is a complete and accurate record of said proceedings as the same were recorded by me stenographically and reduced to typewritten transcript by me or under my supervision.

DATED at Santa Fe, New Mexico this 23rd day of October, 1978.

Betty J. Lanphere  
BETTY J. LANPHERE, Court Reporter

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 6225 heard by me on 5-19 1978.  
Richard L. Lane Examiner  
Oil Conservation Division

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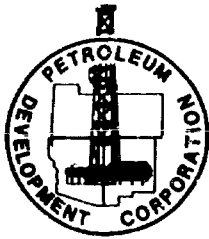
P.O. BOX 449  
58 SOUTH FEDERAL PLACE  
SANTA FE, NEW MEXICO 87501

I N D E X

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SANTA FE, NEW MEXICO 87501



## PETROLEUM DEVELOPMENT CORPORATION

9720-B CANDELARIA, NE  
ALBUQUERQUE, NEW MEXICO 87112  
TELEPHONE (505) 293-4044

May 22, 1978

Mr. Richard L. Stanmets  
New Mexico Oil Conservation Commission  
PO Box 2088  
State Land Office Building  
Santa Fe, New Mexico 87501

RE: Case 6225  
Sun McKay Federal #2  
G-Sec. 10, T19S, R32E  
Lea County, New Mexico

Dear Mr. Stanmets:

In regard to our letter dated May 19, 1978 referencing the above well,  
we have received the C-122 report and we are forwarding it to your  
attention.

If you have any questions, please call.

Sincerely,

  
J. C. Johnson  
President

JCJ/pb  
Encs.

*6-1-78*  
*Call*  
*Charles*

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

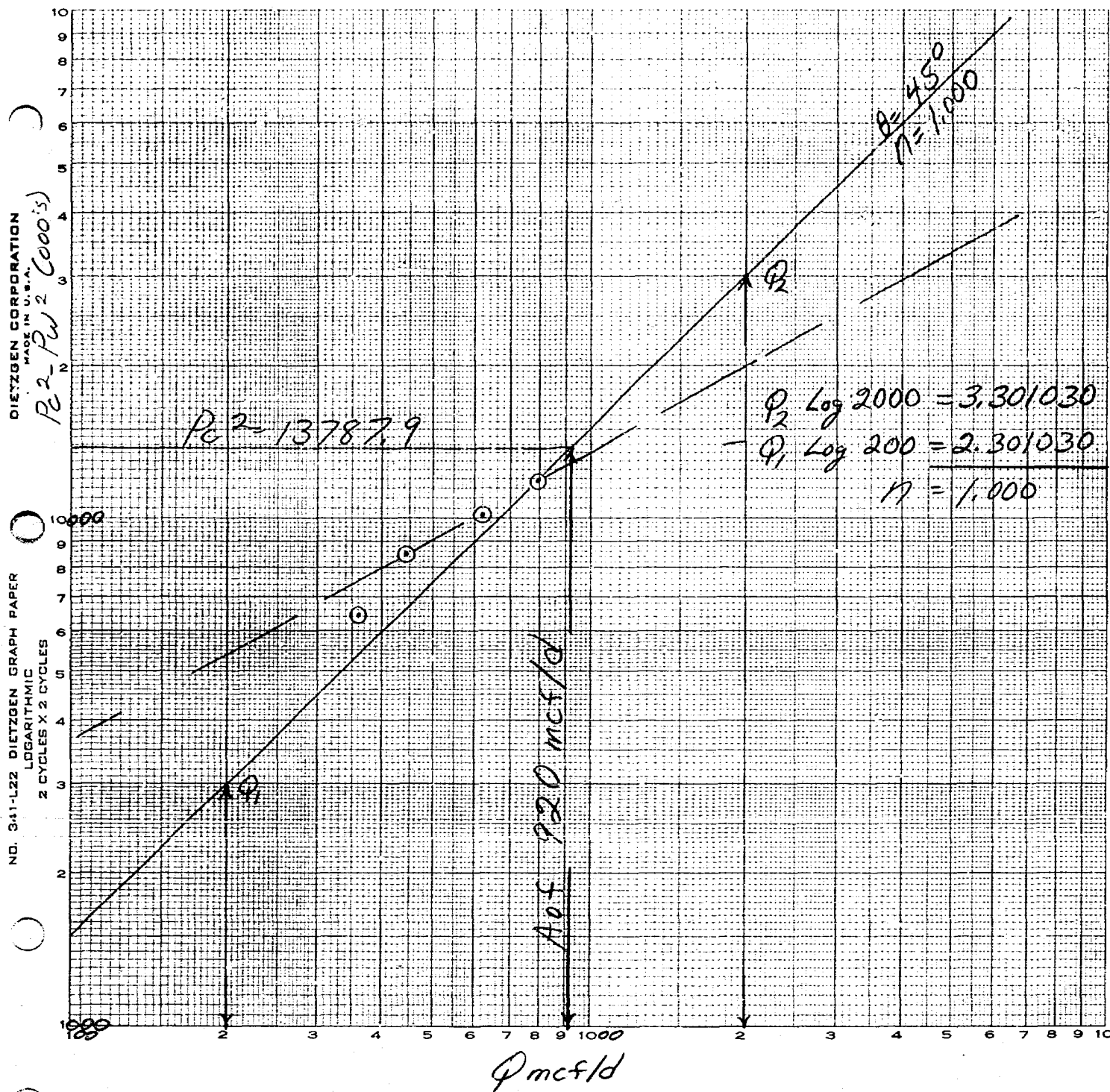
Form C-122  
Revised 9-1-65

Type Test <input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special		Test Date 5-13-78		SHUD DATE: 2-22-78							
Company Petroleum Development Corp.			Connection Air								
Pool North Lusk			Formation Morrow								
Completion Date 5-13-78		Total Depth 13093		Plug Back TD 13075							
Csg. Size 5 1/2		Set At 13093		Elevation 3661 GL							
Tub. Size 2 3/8		Set At 12720		From 12778 To 13052							
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single			Packer Set At 12720		Well No. 2						
Producing Thru Tbg.		Reservoir Temp. °F 201 @ 12720		Mean Annual Temp. °F 13.2							
L 12720		H 12720		Gg .662							
Gg .662		% CO <sub>2</sub>		% N <sub>2</sub>							
Prover		Meter Run 4"		Taps Flg.							
FLOW DATA			TUBING DATA		CASING DATA						
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	Duration of Flow
SI							3700				72 hrs.
1.	4	x	1.000	280	13.5	105	2700				1 hr.
2.	4	x	1.000	280	20.0	95	2294				1 hr.
3.	4	x	1.000	280	38.0	74	1870				1 hr.
4.	4	x	1.000	280	60.0	64	1345				1 hr.
5.											
RATE OF FLOW CALCULATIONS											
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P <sub>m</sub>	Flow Temp. Factor F <sub>L</sub>	Gravity Factor F <sub>g</sub>	Super. Compens. Factor F <sub>pv</sub>	Rate of Flow Q, Mcfd				
1	4.753	62.91	293.2	.9594	1.229	1.024	361				
2	4.753	76.58	293.2	.9680	1.229	1.025	444				
3	4.753	105.55	293.2	.9868	1.229	1.029	626				
4	4.753	132.63	293.2	.9962	1.229	1.030	795				
5											
NO.	P <sub>r</sub>	Temp. °R	T <sub>r</sub>	Z	Gas Liquid Hydrocarbon Ratio 37.100 Mcf/lbl.						
1	.44	565	1.49	.954	A.P.I. Gravity of Liquid Hydrocarbons 56 @ 60°						
2	.44	555	1.47	.951	Specific Gravity Separator Gas .662						
3	.44	534	1.41	.945	Specific Gravity Flowing Fluid .740						
4	.44	524	1.39	.942	Critical Pressure 670 P.S.I.A.						
5					Critical Temperature 378 °R						
$P_c = 3713.2$ $P_c^2 = 13787.9$											
NO.	P <sub>r</sub> <sup>2</sup>	P <sub>w</sub>	P <sub>w</sub> <sup>2</sup>	P <sub>r</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup>	$(1) \frac{P_r^2}{P_r^2 - P_w^2} = 1.157$ $(2) \left[ \frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 1.157$						
1		2716.8	7381.0	6406.9	$AGF = Q \left[ \frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 920$						
2		2312.3	5346.7	8441.2							
3		1889.9	3571.7	10216.2							
4		1368.1	1871.7	11916.2							
5											
Absolute Open Flow 920 Mcfd @ 15.025					Angle of Slope 45°			Slope, n 1.000			
Remarks:											
Approved By: Conducted By: Calculated By: Checked By:											
Petroleum Devel. Corp. Rick Pagan											



PETROLEUM DEVELOPMENT CORPORATION

Sun McKay Federal No. 2  
G-10-19-32 Lea County, New Mexico  
May 13, 1978



COMPANY Petroleum Development Corp. LEASE Sum McKay Fed. WELL NO. 2 DATE 5/13/78  
LOCATION: Unit G Section 10 Township 19 Range 32  
L 12720 H 12720 L/H 1.000 G<sub>m</sub> .740 % CO<sub>2</sub> \_\_\_\_\_ % N<sub>2</sub> \_\_\_\_\_ % H<sub>2</sub>S \_\_\_\_\_  
d 1.995 F<sub>r</sub> .01823 b<sub>m</sub> .361 M<sup>2</sup>ctd (L/H) (F<sub>r</sub>Q<sub>m</sub>)<sup>2</sup> .000043 P<sub>cr</sub> 667 T<sub>cr</sub> 405  
TABLE IX & X TABLE IX & X

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		0	6360		12720						
2	GH		0	4706.4		9412.8						
3	37.5GH		0	176490		352780						
4	P <sub>c</sub> or P <sub>n</sub>		2713.2	3396.1	3361.3	4004.2	3964.7			P <sub>s</sub> = 3953.0		
5	P <sub>r</sub>		4.07	5.09	5.04	6.00	5.94					
6	T		534	597.5	597.5	661	661					
7	T <sub>r</sub>		1.32	1.48	1.48	1.63	1.63					
8	Z		.657	.814	.812	.892	.889					
9	P/Z P/Z	4-8	4129.7	4172.2	4139.6	4489.0	4459.7					
10	P/TZ	9-6	2.7335	6.9827	6.9282	6.7912	6.7469					
11	(P/TZ) <sup>2</sup> /1000	(10 <sup>2</sup> /1000)	.059807	.048758	.048000	.046120	.045521					
12	L/H(F <sub>r</sub> Q <sub>m</sub> ) <sup>2</sup>		.000043	.000043	.000043	.000043	.000043					
13		I <sub>1</sub> + I <sub>2</sub>	.059850	.048801	.048043	.046163	.045564					
14	I <sub>n</sub>	I <sub>0</sub> + I <sub>3</sub>	129.215	143.085	144.209	147.113	148.076					
15	M = P <sub>n</sub> - P <sub>n-1</sub>			683	648	643	603					
16	N = I <sub>n</sub> + I <sub>n-1</sub>			272.300	273.424	291.322	292.285					
17	M x N	I <sub>5</sub> x I <sub>6</sub>			177218		176343					
18	Σ(M x N)	Σ I <sub>7</sub>			175762							

One copy to be filed in District Office (Work copy acceptable)

WORK SHEET FOR STEPWISE CALCULATION (SUBSURFACE) PRESSURE (P<sub>f</sub> & P<sub>s</sub>)  
(SURFACE) (P<sub>c</sub> & P<sub>w</sub>)

2nd

Form C-122-E  
Adopted 9-1-65

COMPANY Petroleum Development Corp. LEASE San McKay Fed. WELL NO. 2 DATE 5/13/78

LOCATION: Unit G Section 10 Township 19 Range 32

L 12720 H 12720 L/H 1.000 Gma .740 % CO<sub>2</sub> \_\_\_\_\_ % N<sub>2</sub> \_\_\_\_\_ % H<sub>2</sub>S \_\_\_\_\_

d 1.995 F<sub>r</sub> .018236 .444 M<sup>2</sup>cfd (L/H) (F<sub>r</sub>Q<sub>m</sub>)<sup>2</sup> .000066 P<sub>cr</sub> 667 T<sub>cr</sub> 405

TABLE IX & X

TABLE IX & X

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		0	6360		12720						
2	GH		0	4706.4		9412.8						
3	37.5GH		0	176490		352780						
4	P <sub>c</sub> or P <sub>n</sub>		2307.2	2911.3	2882.3	3452.1	3422.6		P <sub>s</sub> =	3411.3		
5	P <sub>r</sub>		3.46	4.36	4.32	5.18	5.13					
6	T		534	597.5	597.5	661	661					
7	T <sub>r</sub>		1.32	1.48	1.48	1.63	1.63					
8	Z		.632	.785	.784	.852	.851					
9	P/Z P/Z	4+8	3650.6	3708.7	3676.4	4051.7	4021.9					
10	P/TZ	9+8	6.8364	6.2070	6.1529	6.1297	6.0846					
11	(P/TZ) <sup>2</sup> /1000	(10) <sup>2</sup> /1000	.046736	.038527	.037858	.037523	.037022					
12	L/H(F <sub>r</sub> Q <sub>m</sub> ) <sup>2</sup>		.000066	.000066	.000066	.000066	.000066					
13		I <sub>1</sub> + I <sub>2</sub>	.046802	.038593	.037924	.037639	.037088					
14	I <sub>n</sub>	I <sub>0</sub> + I <sub>3</sub>	146.071	160.834	162.244	162.857	164.059					
15	M = P <sub>n</sub> - P <sub>n-1</sub>			604	575	570	540					
16	N = I <sub>n</sub> + I <sub>n-1</sub>			306.905	308.315	325.101	326.303					
17	M x N	15 x 16			177301		176329					
18	Σ(M x N)	Σ I <sub>7</sub>			175679							

One copy to be filed in District Office (Work copy acceptable)

WORK SHEET FOR STEPWISE CALCULATION (SUBSURFACE) PRESSURE (P<sub>f</sub> & P<sub>s</sub>)  
(SURFACE) (P<sub>c</sub> & P<sub>w</sub>)

Form C-122-E  
Adopted 9-1-65

COMPANY Petroleum Development Corp. Sun McKay Fed. WELL NO. 2 DATE 5/13/78

LOCATION: Unit G Section 10 Township 19 Range 32

L 12720 H 12720 L/H 1.000 G<sub>m</sub>/z .740 % CO<sub>2</sub> \_\_\_\_\_ % N<sub>2</sub> \_\_\_\_\_ % H<sub>2</sub>S \_\_\_\_\_

d 1.995 F<sub>r</sub> .018236 b<sub>m</sub> .626 M<sup>2</sup>cfd (L/H) (F<sub>r</sub>Q<sub>m</sub>)<sup>2</sup> .000130 P<sub>cr</sub> 667 T<sub>cr</sub> 405

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		0	6360		12720						
2	GH		0	4706.4		9412.8						
3	37.5GH		0	176490		352980						
4	P <sub>c</sub> or P <sub>n</sub>		1883.2	2381.6	2360.8	2834.0	2818.8		P <sub>s</sub> =	2807.4		
5	P <sub>r</sub>		2.82	3.57	3.54	4.25	4.23					
6	T		534	597.5	597.5	661	661					
7	T <sub>r</sub>		1.32	1.48	1.48	1.63	1.63					
8	Z		.627	.771	.771	.816	.823					
9	P/Z P/Z	4+8	3003.5	3088.9	3062.0	3473.1	3425.0					
10	P/TZ	9+6	5.6245	5.1698	5.1246	5.2542	5.1815					
11	(P/TZ) <sup>2</sup> /1000	(10 <sup>2</sup> /1000)	.031636	.026727	.026262	.027607	.026848					
12	L/H(F <sub>r</sub> Q <sub>m</sub> ) <sup>2</sup>		.000130	.000130	.000130	.000130	.000130					
13		11+12	.031766	.026857	.026392	.027737	.026978					
14	I <sub>n</sub>	10+13	177.064	192.495	194.175	1894.30	192.064					
15	M=P <sub>n</sub> -P <sub>n-1</sub>			498	478	473	458					
16	N=I <sub>n</sub> +I <sub>n-1</sub>			369.559	371.239	383.605	386.239					
17	M x N	15 x 16			177292		176894					
18	Σ(M x N)	Σ 17			175688							

One copy to be filed in District Office (Work copy acceptable)

WORK SHEET FOR STEPWISE CALCULATION (SUBSURFACE) PRESSURE ( $P_f$  &  $P_s$ )  
(SURFACE) ( $P_c$  &  $P_w$ )

Form C-122-E  
Adopted 9-1-65

COMPANY Petroleum Development Corp. LEASE Sun McKay Fed. WELL NO. 2 DATE 5/13/78

LOCATION: Unit G Section 10 Township 19 Range 32

L 12720 H 12720 L/H 1.000 Gma .740 % CO<sub>2</sub> \_\_\_\_\_ % N<sub>2</sub> \_\_\_\_\_ % H<sub>2</sub>S \_\_\_\_\_

d 1.995 F<sub>r</sub> .018236 m .795 M<sup>2</sup> cfd (L/H) (F<sub>r</sub> Q<sub>m</sub>)<sup>2</sup> .000210 P<sub>cr</sub> 667 T<sub>cr</sub> 405  
TABLE IX & X TABLE IX & X

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		0	6360		12720						
2	GH		0	4706.4		9412.8						
3	37.5GH		0	176490		352780						
4	P <sub>c</sub> or P <sub>n</sub>		1358.2	1692.3	1685.1	2010.6	2008.8			P <sub>s</sub> = 2004.2		
5	P <sub>r</sub>		2.04	2.54	2.53	3.01	3.01					
6	T		534	597.5	597.5	661	661					
7	T <sub>r</sub>		1.32	1.48	1.48	1.63	1.63					
8	Z		.682	.794	.794	.825	.825					
9	P/Z P/Z	4+8	1991.5	2131.3	2122.3	2437.0	2434.9					
10	P/TZ	9+6	3.7294	3.5671	3.5579	3.6869	3.6837					
11	(P/TZ) <sup>2</sup> /1000	(9+6) <sup>2</sup> /1000	.013908	.012724	.012616	.013593	.013569					
12	L/H(F <sub>r</sub> Q <sub>m</sub> ) <sup>2</sup>		.000210	.000210	.000210	.000210	.000210					
13		11+12	.014118	.012934	.012826	.013803	.013779					
14	I <sub>n</sub>	10+13	264.151	275.789	276.929	267.102	267.330					
15	M = P <sub>n</sub> - P <sub>n-1</sub>			334	327	325	324					
16	N = I <sub>n</sub> + I <sub>n-1</sub>			539.940	541.080	544.03	544.259					
17	M x N	15 x 16			176863		176191					
18	Σ(M x N)	Σ 17			176117							

One copy to be filed in District Office (Work copy acceptable)

WORK SHEET FOR STEPWISE CALCULATION

(SUBSURFACE)  
(SURFACE)

PRESSURE  $(P_c \text{ or } P_w)$

Form C-122-E  
Adopted 9-1-65

COMPANY Petroleum Development Corp. LEASE Lun McKay Fed. WELL NO. 2 DATE 5/13/78

LOCATION: Unit G Section 10 Township 19 Range 32

L 12720 H 12720 L/H 1.000  $G_{gr}$  .740 % CO<sub>2</sub> \_\_\_\_\_ % N<sub>2</sub> \_\_\_\_\_ % H<sub>2</sub>S \_\_\_\_\_

d 1.995  $F_r$  .01823  $Q_m$  0  $M^2_{old}$  (L/H)  $(F_r Q_m)^2$  0  $P_{cr}$  667  $T_{cr}$  405  
TABLE IX & X TABLE IX & X

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		12720	6360		0						
2	GH		9412.8	4706.4		0						
3	37.SGH		352980	176490		0						
4	$P_c$ or $P_n$		3953.0	3358.7	3350.5	2748.8	2704.1	2707.2		$P_w = 2716.8$		
5	$P_r$		5.93	5.04	5.02	4.12	4.05	4.06				
6	T		661	597.5	597.5	534	534	534				
7	$T_r$		1.63	1.48	1.48	1.32	1.32	1.32				
8	Z		.888	.812	.811	.660	.656	.657				
9	P/Z P/Z	$\bar{4} + \bar{8}$	4451.6	4136.3	4131.3	4164.8	4122.0	4120.5				
10	P/TZ	$\bar{9} + \bar{6}$	6.7346	6.9227	6.9144	7.7992	7.7192	7.7163				
11	$(P/TZ)^2 / 1000$	$(10^2 / 1000)$										
12	$L/H(F_r Q_m)^2$											
13		$\bar{11} + \bar{12}$										
14	$I_n$	$\bar{10} + \bar{13}$	148.487	144.452	144.626	128.218	129.548	129.595				
15	$M = P_n - P_{n-1}$			594	602	602	646	643				
16	$N = I_n + I_{n-1}$			292.939	293.113	272.844	274.174	274.221				
17	M x N	$\bar{15} \times \bar{16}$			176595			176415				
18	$\Sigma(M \times N)$	$\Sigma \bar{17}$			176385							

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WORK SHEET FOR STEPWISE CALCULATION

(SUBSURFACE)  
(SURFACE)

PRESSURE  $(P_c \text{ \& } P_w)$

Form C-122-E  
Adopted 9-1-65

COMPANY Petroleum Development Corp. LEASE Run McKay Fed. WELL NO. 2 DATE 5/13/78

LOCATION: Unit G Section 10 Township 19 Range 32

L 12720 H 12720 L/H 1.000 G .740 % CO<sub>2</sub> 0 % N<sub>2</sub> 0 % H<sub>2</sub>S 0

d 1.995 F<sub>r</sub> .01823 Q<sub>m</sub> 0 V<sub>2</sub> cfd (L/H) (F<sub>r</sub> Q<sub>m</sub>)<sup>2</sup> 0 P<sub>cr</sub> 667 T<sub>cr</sub> 405

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		12720	6360		0						
2	GH		9412.8	4706.4		0						
3	37.5GH		352982	176490		0						
4	P <sub>c</sub> or P <sub>n</sub>		3411.3	2875.5	2872.6	2334.1	2299.4	2303.0	P <sub>w</sub> = <u>2312.3</u>			
5	P <sub>r</sub>		5.11	4.31	4.31	3.50	3.45	3.45				
6	T		661	597.5	597.5	534	534	534				
7	T <sub>r</sub>		1.63	1.48	1.48	1.32	1.32	1.32				
8	Z		.850	.784	.784	.633	.632	.632				
9	P/Z P/Z	4-8	4013.3	3667.8	3664.0	3687.4	3638.2	3644.0				
10	P/TZ	9-6	6.0715	6.1385	6.1322	6.9053	6.8131	6.8239				
11	(P/TZ) <sup>2</sup> /1000	(10) <sup>2</sup> /1000										
12	L/H(F <sub>r</sub> Q <sub>m</sub> ) <sup>2</sup>											
13		11 + 12										
14	I <sub>n</sub>	10-13	164.703	162.906	163.073	144.817	146.775	146.544				
15	M = P <sub>n</sub> - P <sub>n-1</sub>			536	539	538	573	570				
16	N = I <sub>n</sub> + I <sub>n-1</sub>			327.609	327.776	307.890	309.848	309.617				
17	M x N	15 x 16			176490			176358				
18	Σ(M x N)	Σ 17			176490							

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WORK SHEET FOR STEPWISE CALCULATION

(SURFACE)

PRESSURE  $(P_c \text{ \& } P_w)$

Form C-122-E  
Adopted 9-1-65

COMPANY Petroleum Development Corp. LEASE Run McKay Fed. WELL NO. 2 DATE 5/13/78

LOCATION: Unit C Section 10 Township 19 Range 32

L 12720 H 12720 L/H 1.000 G<sub>gc</sub> .740 % CO<sub>2</sub> \_\_\_\_\_ % N<sub>2</sub> \_\_\_\_\_ % H<sub>2</sub>S \_\_\_\_\_

d 1.995 F<sub>r</sub> .01823 Q<sub>m</sub> 0 h<sup>2</sup> cfd (L/H) (F<sub>r</sub> Q<sub>m</sub>)<sup>2</sup> 0 P<sub>cr</sub> 667 T<sub>cr</sub> 405

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		12720	6360		0						
2	GH		9412.8	4706.4		0						
3	37.5GH		352980	176490		0						
4	P <sub>c</sub> or P <sub>n</sub>		2807.4	2351.4	2354.2	1900.5	1879.0	1881.9		P <sub>w</sub> =	1889.9	
5	P <sub>r</sub>		4.21	3.53	3.53	2.85	2.82	2.82				
6	T		661	597.5	597.5	534	534	534				
7	T <sub>r</sub>		1.63	1.48	1.48	1.32	1.32	1.32				
8	Z		.822	.771	.771	.626	.627	.627				
9	P/Z P/Z	4-8	3415.3	3049.9	3053.5	3036.0	2996.7	3001.4				
10	P/TZ	9-6	5.1669	5.1044	5.1104	5.6853	5.6119	5.6206				
11	(P/TZ) <sup>2</sup> /1000	(10) <sup>2</sup> /1000										
12	L/H(F <sub>r</sub> Q <sub>m</sub> ) <sup>2</sup>											
13		I <sub>1</sub> + I <sub>2</sub>										
14	I <sub>n</sub>	I <sub>0</sub> ÷ I <sub>3</sub>	193.539	195.910	195.679	175.892	178.194	177.917				
15	M = P <sub>n</sub> - P <sub>n-1</sub>			456	453	454	475	472				
16	N = I <sub>n</sub> + I <sub>n-1</sub>			389.449	389.218	371.571	373.873	373.596				
17	M x N	I <sub>5</sub> x I <sub>6</sub>			176385			176464				
18	Σ(M x N)	Σ I <sub>7</sub>			176575							

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WORK SHEET FOR STEPWISE CALCULATION

(SUBSURFACE)

(SURFACE)

PRESSURE  $(P_c \text{ \& } P_w)$

Form C-122-E  
Adopted 9-1-65

COMPANY Petroleum Development Corp. LEASE Jun McKay Fed. WELL NO. 2 DATE 5/13/78

LOCATION: Unit C7 Section 10 Township 19 Range 32

L 12720 H 12720 L/H 1.000 Gas .740 % CO<sub>2</sub> \_\_\_\_\_ % N<sub>2</sub> \_\_\_\_\_ % H<sub>2</sub>S \_\_\_\_\_

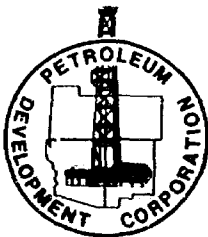
d 1.995 F<sub>r</sub> .01823 Q<sub>m</sub> 0 M<sup>2</sup>cfd (L/H) (F<sub>r</sub>Q<sub>m</sub>)<sup>2</sup> 0 P<sub>cr</sub> 667 T<sub>cr</sub> 405

TABLE IX & X

TABLE IX & X

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		12720	6360		0						
2	GH		9412.8	4706.4		0						
3	37.5GH		352980	176490		0						
4	P <sub>c</sub> or P <sub>n</sub>		2004.2	1679.9	1686.1	1366.4	1362.9	1363.6		P <sub>w</sub> =	1368.1	
5	P <sub>r</sub>		3.00	2.52	2.53	2.05	2.04	2.04				
6	T		661	597.5	597.5	534	534	534				
7	T <sub>r</sub>		1.63	1.48	1.48	1.32	1.32	1.32				
8	Z		.825	.795	.794	.681	.682	.682				
9	P/Z P/Z	4-8	2429.3	2113.1	2123.6	2006.5	1998.5	1999.4				
10	P/TZ	9-6	3.6752	3.5365	3.5541	3.7575	3.7424	3.7442				
11	(P/TZ) <sup>2</sup> /1000	(P/TZ) <sup>2</sup> /1000										
12	L/H(F <sub>r</sub> Q <sub>m</sub> ) <sup>2</sup>											
13		I <sub>1</sub> + I <sub>2</sub>										
14	I <sub>n</sub>	I <sub>0</sub> + I <sub>3</sub>	272.091	282.766	281.365	266.135	267.206	267.082				
15	M = P <sub>n</sub> - P <sub>n-1</sub>			3.24	318	320	323	323				
16	N = I <sub>n</sub> + I <sub>n-1</sub>			554.857	553.456	547.500	548.571	548.447				
17	M x N	I <sub>5</sub> x I <sub>6</sub>			176044			176896				
18	Σ(M x N)	Σ I <sub>7</sub>			176936							

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## PETROLEUM DEVELOPMENT CORPORATION

9720-B CANDELARIA, NE  
ALBUQUERQUE, NEW MEXICO 87112  
TELEPHONE (505) 293-4044

May 19, 1978

Mr. Richard L. Stanmets  
New Mexico Oil Conservation Commission  
PO Box 2088  
State Land Office Building  
Santa Fe, New Mexico 87501

RE: Case 6225  
Sun McKay Federal #2  
G-Sec. 10, T19S, R32E  
Lea County, New Mexico

Dear Mr. Stanmets:

In reference to testimony given by Mr. J. C. Johnson concerning Case 6225, the following shows the gas oil ratio of the Sun McKay Federal #1 located on Unit F, Sec. 10, T19S, R32E; production commenced on February 9, 1978:

C-122, dated 1/14/78, GOR 23,383 cf/bbl.

<u>Month</u>	<u>Oil BBLs.</u>	<u>Gas MCF</u>	<u>GOR cf/BBL.</u>
2/78	1015	32310	31833
3/78	1021	39514	38701

AOF for the Sun McKay Federal #2 was run on 5/13/78 by El Paso Natural Gas Company and we are waiting the results of this test. However, from the field estimates, it appears the gas oil ratio will be approximately 36,500 cf per bbl.

The testimony by Mr. Johnson concerning the possibility of a GOR in the range of 25,000 was made in reference to the GOR on the AOF test for the Sun McKay Federal #1 which was 23,383, and other wells west of these wells.

The C-122 will be forwarded to your attention upon receipt.

Sincerely,

  
J. C. Johnson  
President

JCJ/pb  
Encs.



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

Form C-122  
Revised 6-65

Type Test <input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special				Test Date 1/14/78																																																																																															
Company Petroleum Development Corp.				Connection None																																																																																															
Pool Lusk Morrow				Formation Morrow																																																																																															
Completion Date 1/14/78		Total Depth 13,000'		Plug Back TD 12,955																																																																																															
Elevation 3676 KB		Farm or Lease Name Sun McKay Federal																																																																																																	
Csg. Size 4 1/2"	Wt. 11.6#	d 4,000	Set At 13,000'	Perforations: From 12661 To 12935																																																																																															
Thg. Size 2-3/8"	Wt. 4.7#	d 1.995	Set At 12624	Perforations: From 12621 To 12624																																																																																															
Type Well - Single - Bradenhead - G.G. or G.O. Multiple				Packer Set At 12615																																																																																															
Producing Thru Tubing				Reservoir Temp. °F 164° @ 12984																																																																																															
Mean Annual Temp. °F 60°				Baro. Press. - P <sub>a</sub> 13.2																																																																																															
L 12624	H 12624	G <sub>g</sub> 0.659	% CO <sub>2</sub> 0	% N <sub>2</sub> 0	% H <sub>2</sub> S ---																																																																																														
Prover ---				Meter Run 3"																																																																																															
Taps flange				State New Mexico																																																																																															
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="6">FLOW DATA</th> <th colspan="2">TUBING DATA</th> <th colspan="2">CASING DATA</th> <th rowspan="2">Duration of Flow</th> </tr> <tr> <th>NO.</th> <th>Prover Line Size</th> <th>X</th> <th>Orifice Size</th> <th>Press. p.s.i.g.</th> <th>Diff. h<sub>w</sub></th> <th>Temp. °F</th> <th>Press. p.s.i.g.</th> <th>Temp. °F</th> <th>Press. p.s.i.g.</th> <th>Temp. °F</th> </tr> <tr> <td>SI</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>4000</td> <td></td> <td></td> <td></td> <td>14</td> </tr> <tr> <td>1.</td> <td>3" x 2"</td> <td></td> <td></td> <td>300</td> <td>30</td> <td>84</td> <td>1175</td> <td></td> <td></td> <td></td> <td>2</td> </tr> <tr> <td>2.</td> <td>3" x 2"</td> <td></td> <td></td> <td>300</td> <td>26</td> <td>82</td> <td>1425</td> <td></td> <td></td> <td></td> <td>1</td> </tr> <tr> <td>3.</td> <td>3" x 2"</td> <td></td> <td></td> <td>300</td> <td>18</td> <td>80</td> <td>1955</td> <td></td> <td></td> <td></td> <td>1</td> </tr> <tr> <td>4.</td> <td>3" x 2"</td> <td></td> <td></td> <td>290</td> <td>10</td> <td>70</td> <td>2440</td> <td></td> <td></td> <td></td> <td>1</td> </tr> <tr> <td>5.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>						FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow	NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h <sub>w</sub>	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	SI							4000				14	1.	3" x 2"			300	30	84	1175				2	2.	3" x 2"			300	26	82	1425				1	3.	3" x 2"			300	18	80	1955				1	4.	3" x 2"			290	10	70	2440				1	5.											
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Dockets Nos. 19-78 and 20-78 are tentatively set for hearing on June 7 and 21, 1978. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - MAY 17, 1978

9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM,  
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

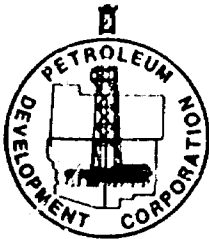
- CASE 6225: Application of Petroleum Development Corporation for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its Sun McKay Federal Well No. 2 located in Unit C of Section 10, Township 19 South, Range 32 East, Lea County, New Mexico, in such a manner as to produce oil from the Wolfcamp formation thru tubing and gas from the Morrow formation thru the casing tubing annulus by means of a cross-over assembly.
- CASE 6226: Application of Barber Oil, Inc. for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project on its Saladar Unit, by the injection of water into the Yates formation through five wells located in Units K, L, N and O of Section 33, Township 20 South, Range 28 East, Saladar-Yates Pool, Eddy County, New Mexico.
- CASE 6227: Application of Union Texas Petroleum for a non-standard proration unit, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 209.5-acre non-standard gas proration unit comprising the W/2 of Section 7, Township 31 North, Range 9 West, Blanco Pictured Cliffs Pool, San Juan County, New Mexico, to be dedicated to a well drilled at a standard location thereon.
- CASE 6228: Application of Depco, Inc., for an unorthodox location, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its R&S Federal Com Well No. 1 to be located 1980 feet from the South line and 990 feet from the West line of Section 17, Township 15 South, Range 28 East, Buffalo Valley-Pennsylvanian Gas Pool, Chaves County, New Mexico, the S/2 of said Section 17 to be dedicated to the well.
- CASE 6229: Application of Texas Oil & Gas Corporation for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for its South Wilson State Unit Area comprising 3,200 acres, more or less, of State land in Township 21 South, Range 34 East, Lea County, New Mexico.
- CASE 6230: Application of Texas Oil & Gas Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox location for its Duffield Fed. Com Well No. 1, a Wolfcamp-Pennsylvanian test to be located 1980 feet from the South line and 660 feet from the West line of Section 28, Township 16 South, Range 27 East, Eddy County, New Mexico, the S/2 of said Section 28 to be dedicated to the well.
- CASE 6215: (Continued from May 3, 1978, Examiner Hearing)
- Application of Texas Oil & Gas Corporation for a non-standard unit and an unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for a 320-acre non-standard proration unit comprising the N/2 of Section 29, Township 20 South, Range 36 East, North Osado-Morrow Gas Pool, Lea County, New Mexico, to be dedicated to a well to be located at an unorthodox location 660 feet from the North and West lines of said Section 29.
- CASE 6231: Application of Yates Petroleum Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its State "JM" Well No. 1, a Morrow test to be located 660 feet from the North and East lines of Section 25, Township 18 South, Range 24 East, Eddy County, New Mexico, the N/2 of said Section 25 to be dedicated to the well.
- CASE 6232: Application of Yates Petroleum Corporation for an unorthodox location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Cities "JG" Well No. 1 to be located 660 feet from the South and East lines of Section 13, Township 18 South, Range 24 East, Fordinkus Field, Eddy County, New Mexico, the E/2 of said Section 13 to be dedicated to the well.
- CASE 6233: Application of Amoco Production Company for salt water disposal, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Ojo Alamo formation through the perforated interval from 1175 feet to 1230 feet in its Cahn Gas Com Well No. 3 located in Unit F of Section 33, and from 1104 feet to 1122 feet in its Keys Gas Com "F" Well No. 1, located in Unit K of Section 27, all in Township 32 North, Range 10 West, Mt. Nebo-Fruitland Pool, San Juan County, New Mexico.

CASE 6214: (Continued from May 3, 1978, Examiner Hearing)

Application of Morris R. Antweil for an unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of a Morrow test well to be drilled at a point 660 feet from the North line and 1980 feet from the East line of Section 8, Township 12 South, Range 32 East, Lea County, New Mexico, the E/2 of said Section 8 to be dedicated to the well.

CASE 6213: (Continued & Readvertised)

Application of Morris R. Antweil for an unorthodox location and simultaneous dedication, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of his Rio Well No. 2, a Morrow test to be drilled at a point 660 feet from the North and West lines of Section 29, Township 18 South, Range 25 East, Eddy County, New Mexico, the N/2 of said Section 29 to be simultaneously dedicated to the aforesaid well and to applicant's Rio Well No. 1 located in Unit G of Section 29.



*Care 6995*

## PETROLEUM DEVELOPMENT CORPORATION

9720-B CANDELARIA, NE  
ALBUQUERQUE, NEW MEXICO 87112  
TELEPHONE (505) 293-4044

April 24, 1978

APR 24 1978

Mr. Joe D. Ramey, Secretary-Director  
New Mexico Oil Conservation Commission  
PO Box 2088  
State Land Office Building  
Santa Fe, New Mexico 87501

RE: Dual Completion  
Petroleum Development Corporation  
Sun McKay Federal #2 (Wolfcamp & Morrow)  
Section 10, T19S, R32E  
Lea County, New Mexico

Dear Sir:

Petroleum Development Corporation hereby applies for public hearing to authorize dual completion of our Sun McKay Federal #2 in the Wolfcamp (oil) and Morrow (gas) zones. The two zones have not been potentialed as of this date.

The captioned well will be completed through one string of 2-3/8" JD EUE tubing, and casing annulus, using packers to separate the Wolfcamp and Morrow zones as shown in the diagrammatic sketch (Exhibit A). The nearest Morrow completion is approximately 1570' east in Section 10 and the nearest Wolfcamp oil well is approximately 7400' south-southwest. There are no similar dual completions in the area.

Attached are three copies of an Application for Multiple Completion (Form C-107) and exhibits called for by Form C-107 setting forth all material facts pertinent to this application.

We request that this application be placed on the docket for May 17, 1978.

Yours very truly,

J. C. Johnson  
President

JCJ/pb  
Encs.

NEW MEXICO OIL CONSERVATION COMMISSION  
SANTA FE, NEW MEXICO  
APPLICATION FOR MULTIPLE COMPLETION

Case 62-25  
Form O-107  
5-1-61

Operator <b>PETROLEUM DEVELOPMENT CORPORATION</b>		County <b>Lea</b>	Date <b>April 24, 1978</b>
Address <b>9720 B Candelaria, NE, Albuquerque, NM 87112</b>		Lease <b>Sun McKay Federal</b>	Well No. <b>2</b>
Location of Well <b>G</b>	Unit <b>10</b>	Township <b>19 South</b>	Range <b>32 East</b>

1. Has the New Mexico Oil Conservation Commission heretofore authorized the multiple completion of a well in these same pools or in the same zones within one mile of the subject well? YES \_\_\_\_\_ NO X
2. If answer is yes, identify one such instance: Order No. \_\_\_\_\_; Operator Lease, and Well No.: \_\_\_\_\_

3. The following facts are submitted:	Upper Zone	Intermediate Zone	Lower Zone
a. Name of Pool and Formation	<b>Wolfcamp</b>	-----	<b>Morrow</b>
b. Top and Bottom of Pay Section (Perforations)	<b>10514 - 10557</b>		<b>12778 - 13052</b>
c. Type of production (Oil or Gas)	<b>Oil</b>		<b>Gas</b>
d. Method of Production (Flowing or Artificial Lift)	<b>Flow</b>		<b>Flow</b>

4. The following are attached. (Please check YES or NO)

- | Yes                                 | No                       |   |
|-------------------------------------|--------------------------|---|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | a. Diagrammatic Sketch of the Multiple Completion, showing all casing strings, including diameters and setting depths, centralizers and/or turbolizers and location thereof, quantities used and top of cement, perforated intervals, tubing strings, including diameters and setting depth, location and type of packers and side door chokes, and such other information as may be pertinent. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | b. Plat showing the location of all wells on applicant's lease, all offset wells on offset leases, and the names and addresses of operators of all leases offsetting applicant's lease.   |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | c. Waivers consenting to such multiple completion from each offset operator, or in lieu thereof, evidence that said offset operators have been furnished copies of the application.*  |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | d. Electrical log of the well or other acceptable log with tops and bottoms of producing zones and intervals of perforation indicated thereon. (If such log is not available at the time application is filed it shall be submitted as provided by Rule 112-A.)   |

5. List all offset operators to the lease on which this well is located together with their correct mailing address.

<b>Sun Oil Company</b>	<b>Shell Oil Company</b>
<b>PO Box 2880</b>	<b>PO Box 1509</b>
<b>Dallas, TX 75221</b>	<b>Midland, TX 79701</b>
<b>Attn.: Ed Stine</b>	<b>Attn.: Bill Kouns</b>

6. Were all operators listed in Item 5 above notified and furnished a copy of this application? YES X NO \_\_\_\_\_. If answer is yes, give date of such notification April 24, 1978.

CERTIFICATE: I, the undersigned, state that I am the President of the PETROLEUM DEVELOPMENT CORP. (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

J. C. Johnson

Signature

\*Should waivers from all offset operators not accompany an application for administrative approval, the New Mexico Oil Conservation Commission will hold the application for a period of twenty (20) days from date of receipt by the Commission's Santa Fe office. If, after said twenty-day period, no protest nor request for hearing is received by the Santa Fe office, the application will then be processed.

NOTE: If the proposed multiple completion will result in an unorthodox well location and/or a non-standard proration unit in one or more of the producing zones, then separate application for approval of the same should be filed simultaneously with this application.



Case  
6225

EXHIBIT "C"

Notification of Offset Operators,  
Application for Dual Completion.

The attached letter and a full copy of this application has been mailed  
to the following offset operators as evidenced by the attached Certified  
Mail receipts:

Sun Oil Company  
PO Box 2880  
Dallas, TX 75221  
Attn.: Ed Stine

Shell Oil Company  
PO Box 1509  
Midland, TX 79701  
Attn.: Bill Kouns

April 24, 1978

Case 6225

No. 563874

PS Form 3800  
Apr. 1971  
NO INSURANCE COVERAGE PROVIDED—  
NOT FOR INTERNATIONAL MAIL  
(See other side)

SENT TO  
*Shur Oil Company*  
STREET AND NO.  
*PO Box 1509*  
P.O., STATE AND ZIP CODE  
*Round Rock TX 79701*

OPTIONAL SERVICES FOR ADDITIONAL FEES

RETURN	1. Shows to whom and date delivered	15¢
RECEIPT	With delivery to addressee only	65¢
SERVICES	2. Shows to whom, date and where delivered	35¢
	With delivery to addressee only	85¢
DELIVER TO ADDRESSEE ONLY		50¢
SPECIAL DELIVERY (extra fee required)		

POSTMARK OR DATE

No. 563875

RECEIPT FOR CERTIFIED MAIL—30¢ (plus postage)

SENT TO  
*Shur Oil Company*  
STREET AND NO.  
*PO Box 2880*  
P.O., STATE AND ZIP CODE  
*Dallas, TX 75221* *ATL Ed Shur*

OPTIONAL SERVICES FOR ADDITIONAL FEES

RETURN	1. Shows to whom and date delivered	15¢
RECEIPT	With delivery to addressee only	65¢
SERVICES	2. Shows to whom, date and where delivered	35¢
	With delivery to addressee only	85¢
DELIVER TO ADDRESSEE ONLY		50¢
SPECIAL DELIVERY (extra fee required)		

POSTMARK OR DATE

PS Form 3800  
Apr. 1971  
NO INSURANCE COVERAGE PROVIDED—  
NOT FOR INTERNATIONAL MAIL  
(See other side)  
• GPO : 1972 O - 480-743

ROUGH

dr/

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:

*JS*  
CASE NO. 6225  
Order No. R- 5736

APPLICATION OF PETROLEUM DEVELOPMENT CORPORATION  
FOR A DUAL COMPLETION, LEA  
COUNTY, NEW MEXICO. *JS*

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 o'clock a.m. on  
May 17, 1978, at Santa Fe, New Mexico, before  
Examiner Richard L. Stamets.

NOW, on this \_\_\_\_\_ day of May, 1978, the  
Division Director, having considered the testimony, the record,  
and the recommendations of the Examiner, and being fully advised  
in the premises,

FINDS:

(1) That due public notice having been given as required by  
law, the Division has jurisdiction of this cause and the subject  
matter thereof.

(2) That the applicant, Petroleum Development Corporation,  
seeks authority to complete its Sun McKay Federal  
Well No. 2, located in Unit G of Section 10, Town-  
ship 19 South, Range 32 East, NMPM, Lea  
County, New Mexico, as a dual Completion (conventional) to  
~~produce gas~~ oil from the Wolfcamp formation thru tubing and gas  
from the Morrow formation through the casing-tubing annulus by  
means of a cross-over assembly.

(3) That ~~the~~ The Morrow formation producing gas-liquid ratio is very low, being less than 30,000 cubic feet of gas per barrel of condensate.

(4) (2) That the <sup>Division</sup> ~~Commission~~ has heretofore determined that the production of ~~oil~~ <sup>condensate from low gas-liquid ratio gas wells</sup> through the casing-tubing annulus is inefficient, requires an excessive amount of reservoir energy, and causes waste.

(5) (2) That the <sup>Division</sup> ~~Commission~~ has a long-established policy of prohibiting ~~oil production through the casing-tubing annulus~~ in the absence of evidence disproving those determinations cited in Finding No. (4) above.

The production of low gas-liquid ratio gas wells through the annulus casing.

(6) That the applicant in this case offered no evidence to disprove said determinations.

7. That the application should be denied.

- (3) That the mechanics of the proposed dual completion are feasible and in accord with good conservation practices.
- (4) That approval of the subject application will prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant Petroleum Development Corporation ~~is hereby authorized~~ to complete its Sun McKay Federal Well No. 2, located in Unit G of Section 10, Township 19 South, Range 32 East, NMPM, Lea County, New Mexico, as a dual completion (conventional) ~~combination~~ ~~tubingless~~ oil to produce ~~gas~~ from the Wolfcamp formation through tubing and gas from the Morrow formation through the casing tubing annulus by means of a cross-over assembly, is hereby denied.

PROVIDED HOWEVER, that the applicant shall complete, operate, and produce said well in accordance with the provisions of Rule 112-A of the Division Rules and Regulations insofar as said rule is not inconsistent with this order;

PROVIDED FURTHER, that the applicant shall take \_\_\_\_\_ tests upon completion and annually thereafter during the Annual \_\_\_\_\_ Test Period for the \_\_\_\_\_ Pool.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.