

NEW MEXICO OIL CONSERVATION COMMISSION
One-point Back Pressure Test for Gas Wells
(Deliverability)

CASE NO: 1360
EXHIBIT NO: 2-B

Form C-122-C
4-1-54

Pool Jalmat Formation Yates-Seven Rivers County Lea
Initial Annual Special X Date of test 12-2: 12-4-57
Company Gulf Oil Corporation Lease Arnett-Ramsay "E" Well No. 2
Unit 0 Sec. 16 Twp. 25S Rge. 37E Purchaser Permian Basin PL Co.
Casing 7 Wt. 20 I.D. 6.456 Set at 2894 Perf. To
Tubing 2.375 Wt. 4.7 I.D. 1.995 Set at 3050 Perf. To
Gas Pay: From 2850 To 3153 L 3050 x G .650 = GL 1983 Bar.Press. 13.2
Producing Thru: Casing Tubing X Type Well Single
Single- Bradenhead-G.G. or G.O. Dual

FLOW DATA

Started		Taken		Duration Hours	Type Taps	Line Size	Orifice Size	Static Press.	Differ- ential	Flow Temp.
Date	time	Date	time							
12-2-57	AM	12-3-57	AM	27.25			4"x2.50 O.W.T.	13#		60
	PM		PM							

FLOW CALCULATIONS

Static Pressure P _f	Differ- ential h _w	Meter Extension $\sqrt{P_f h_w}$	24-Hour Coeff- icient	Gravity Factor F _g	Temp. Factor F _t	Compress- ability F _{pv}	Rate of Flow MCF/Da. @ 15.025 psia Q
				.9608	1.000		3,337

SHUT-IN DATA

FLOW DATA

Shut-in		Press. Taken		Duration Hours	Wellhead Pressure (P _c) psia		W.H. Working Pressure (P _w) and (P _t) psia	
Date	Time	Date	Time		Tubing	Casing	Tubing	Casing
12-3-57	AM	12-4-57	AM	23.5	539.5	539.2	92.2	456.2
	PM		PM					

FRICTION CALCULATIONS(if necessary)

SUMMARY

_____ P_c = _____ psia
 _____ Q = _____ MCF/Da.
 _____ P_w = _____ psia
 _____ P_d = _____ psia
 _____ D = _____ MCF/Da.
 _____ = _____ +

DELIVERABILITY CALCULATIONS

P_w _____ P_c _____ P_w + P_c _____
 $1 - \frac{P_w}{P_c} + \frac{P_w}{P_c} \left(1 - \frac{P_w}{P_c} \right) \left(1 + \frac{P_w}{P_c} \right) = M$
 .36 + M _____ Log _____ x (n) _____ = _____ +

COMPANY Gulf Oil Corporation Log Q = _____
 ADDRESS Box 2167, Hobbs, N. M. Log D = _____
 AGENT and TITLE D.C. Sears, Gas Tester
 WITNESSED Joe Horton Antilog = _____ = D
 COMPANY Permian Basin Pipeline Company

REMARKS

Well made approximately 1.5 bbls. fluid, mostly water. Tubing has perforated anchor on bottom.

INSTRUCTIONS

This form is to be used for reporting deliverability tests in the designated Dry Gas Pools of Lea County as ordered by New Mexico Oil Conservation Commission Directive dated March 15, 1954, which directive was provided for by Orders R-365-A through R-376-A. For details regarding this test please refer to the above mentioned Directive.

NOMENCLATURE

- Q = Actual 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_d = Deliverability pressure; 80 % of 72 hour individual wellhead shut-in pressure (P_c). 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
- D = Deliverability at Deliverability pressure (P_d) MCF/da. @ 15.025 psia and 60° F.
- p_f = Static meter pressure, psia.
- h_w = Differential meter pressure, inches water.
- F_g = Gravity correction factor.
- F_t = Flowing temperature correction factor.
- F_{pv} = Supercompressibility factor.
- n = Slope of back pressure curve.

DELIVERABILITY FORMULA

$$D = Q \left[\frac{.36}{\left| 1 - \frac{P_w}{P_c} \right| \left| 1 + \frac{P_w}{P_c} \right|} \right]^n$$

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 .

PRODUCTION BY MONTHS - ARNOTT-RAMSAY "E" WELL NO. 2
JALMAT POOL, LEA COUNTY, NEW MEXICO

Case No. 1360
Exhibit 2-c

<u>MONTH-YEAR</u>	<u>UNDERPRODUCTION MCF</u>	<u>DAYS OPERATED</u>	<u>PRODUCTION MCF</u>	<u>CURRENT ALLOWABLE-MCF</u>
Sept. 55	58,426	0	0	46,953
Oct. 55	82,906	3	10,921	35,401
Nov. 55	86,267	16	35,176	38,537
Dec. 55	108,732	8	7,157	29,622
Jan. 56	124,805	9	17,091	33,164
Feb. 56	138,786	29	18,847	32,828
Mar. 56	160,698	18	16,887	38,799
Apr. 56	219,949	0	0	59,251
May 56	214,203	25	30,290	24,544
June 56	193,456	27	43,200	22,453
July 56	195,457	30	30,881	32,882
Aug. 56	221,245	0	0	25,788
Sept. 56	238,607	19	27,841	45,203
Oct. 56	243,642	29	33,319	38,354
Nov. 56	248,920	24	25,983	31,261
Dec. 56	257,719	31	36,533	45,332
Jan. 57	247,846	31	35,778	25,905
Feb. 57	271,078	25	27,434	50,666
Mar. 57	262,134	31	32,502	23,558
Apr. 57	250,896	29	32,327	21,089
May 57	237,915	31	36,598	23,617
June 57	232,202	30	26,143	14,502
July 57	219,821	31	27,327	14,946
Aug. 57	231,215	31	27,511	38,905
Sept. 57	243,732	30	23,147	35,664
Oct. 57	253,201	31	20,822	30,291
Nov. 57	272,857	29	16,771	36,427