

EL PASO NATURAL GAS COMPANY
State of New Mexico
One-point Back Pressure Test for Gas Wells
(Deliverability)

App'd EX 1.
Case 1777

Pool Jalmat Formation Yates - 7 Rivers County Lea
Initial Annual X Special Date of test 3-6-59
Company El Paso Natural Gas Company Lease Wells Federal Well No. 13
Unit L Sec. 5 Twp. 25 Rge. 37 Purchaser El Paso Natural Gas Company
Casing 5.5 Wt. 15.5 I.D. Set at 3369 Perf. To
Tubing 2.0 Wt. 4.7 I.D. 1.995 Set at 3034 Perf. To
Gas Pay: From 3000 To 3034 L 3034 x G .657 = GL 1993 Bar. Press 13.2
Producing Thru: Casing Tubing X Type Well Single
Series 90 Meter Run Packer at Single - Bradenhead-G.C. or G.O. Dual

FLOW DATA

Started		Taken		Duration	Type	Line	Orifice	Static	Differ-	Flow
Date	Time	Date	Time	Hours	Taps	Size	Size	Press.	ential	Temp.
2-27-59	10:00AM	3-3-59	10:00AM	24	Flg.	4	1.000	238.2	18.49	65
	PM		PM							

FLOW CALCULATIONS

Static	Differ-	Meter	24-Hour	Gravity	Temp.	Compress-	Rate of Flow
Pressure	ential	Extension	Coeff-	Factor	Factor	ability	MCF/Da @ 15.025 psia
Pf	h _w	Pf h _w	icient	F _g	F _t	F _{pv}	Q
238.2	18.49	66.37	6.135	.9556	.9952	1.022	395.7

SHUT-IN DATA

Shut-in		Press. Taken		Duration	Wellhead Pressure		W.H. Working Pressure	
Date	Time	Date	Time	Hours	(P _c) psia	(P _w) and (P _t) psia		
					Tubing	Casing	Tubing	Casing
3-3-59	10:00 ^{AM}	3-4-59	10:00 ^{AM}	24	367.2		240.2	
		3-5-59		48	358.2			
		3-6-59		72	345.2			
	PM		PM					

FRICTION CALCULATION (if necessary)

$$P_w^2 = 57.7 + (15.5)(.128) = 59.7$$

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION

DELIVERABILITY CALCULATION EXHIBIT NO. 1

App'd
CASE P_w + P_c = .6653

SUMMARY

P_c = 367.2 psia
Q = 395.7 MCF/Da.
P_w = 244.3 psia
P_d = 293.8 psia
D = MCF/Da.
= 308.7
= 9.892174-10 +

P_w 244.3 P_c 367.2
1 - P_w .3347 1 + P_w 1.6653 1 - P_w .5574
P_c .36 + M .6459 Log 9.810165-10 x (n) .568

Log Q = 2.597366

Log D = 12.489540

Antilog = 308.7 = D

REMARKS

Company El Paso Natural Gas Company
Address P. O. Box 1384, Jal, New Mexico
Agent and Title R. T. Wright - Petroleum Engineer
Witnessed L. D. Southern - Gas Tester
Company El Paso Natural Gas Company

Form 1-1668 (5-1-58)

EL PASO NATURAL GAS COMPANY
State of New Mexico
One-point Back Pressure Test for Gas Wells
(Deliverability)

Appl Ex 2-A
Case 1777

Pool Jalmat Formation 7 Rivers County Lea
Initial Annual Special X Date of test 4-11-1958
Company El Paso Natural Gas Company Lease Wells B-4 Well No. 1
Unit D Sec. 4 Twp. 25 Rge. 37 Purchaser El Paso Natural Gas Company
Casing 7 Wt. 24 I.D. 6.336 Set at 3364 Perf. 2958 To 3152
Tubing 2 Wt. 4.7 I.D. 1.995 Set at 2995 Perf. To
Gas Pay: From 2985 To 3152 2995 x G .660 GL 1977 Bar. Press 13.2
Producing Thru: Casing Tubing X Type Well Single
Series Meter Run Packer at Single - Bradenhead-G.C. or G.C. Dual

FLOW DATA

Started		Taken		Duration Hours	Type Taps	Line Size	Orifice Size	Static Press.	Differ- ential	Flow Temp.
Date	Time	Date	Time							
4-7-58	10:40 AM	4-8-59	10:40 AM	24	FLG.	4"	1.000	600.2	1.00	71
	PM		PM							

FLOW CALCULATIONS

Static Pressure	Differ-ential	Meter Extension	44-Hour Coeff-icient	Gravity Factor	Temp. Factor	Compress-ibility	Rate of Flow MCF/Da @ 15.025 psia
P _s	h _w	P _t h _w	P _s	P _g	P _t	P _{pw}	Q
600.2	1.00	24.50	6.135	.9535	.9896	1.057	150

SHUT-IN DATA

FLOW DATA

Shut-in		Press. Taken		Duration	Wellhead Pressure		W.H. Working Pressure	
Date	Time	Date	Time	Hours	(P _o) Tubing	(P _w) and (P _t) Casing	(P _w) Tubing	(P _t) Casing
		4-9-58		24	651.2	651.2		
4-8-58	10:40AM	4-10-58	10:40AM	48	663.2	663.2	600.2	623.2*
		4-11-58		72	658.2	658.2		
	PM		PM					

FRICTION CALCULATION

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Appl EXHIBIT NO. 2A
CASE NO. 1777

SUMMARY

P _w Measured	P _o = 663.2 psia
	Q = 150 MCF/Da.
	P _w = 623.2 psia
	P _t = 530.6 psia
	D = 356 MCF/Da.
	.3758017
P _w 623.2	P _o 663.2
P _t .0604	P _o 1.9396
P _o + M 3.072	P _o .4874212
	M. .1172
	.771 **

Company El Paso Natural Gas Company Log Q = 2.1760913
Address P.O. Box 1384; Jal, New Mexico Log D = 2.5518930
Agent and Title Earl G. Smith, Gas Engineer
Witnessed J.B. Murray Anti. H. = 356
Company El Paso Natural Gas Company

REMARKS

* Unable to obtain 10% draw down due to restriction in chokes.

** Average Jalmat Slope.

EL PASO NATURAL GAS COMPANY
 State of New Mexico
 One-point Back Pressure Test for Gas Wells
 (Deliverability)

Appl Case **Ex 2-8**
1777

Pool **Jalmat** Formation **7 Rivers** County **Lea**
 Initial Annual **X** Special Date of test **3-6-59**
 Company **El Paso Natural Gas Company** Lease **Wells B-4** Well No. **1**
 Unit **D** Sec. **4** Twp. **25** Rge. **37** Purchaser **El Paso Natural Gas Company**
 Casing **7.0** Wt. **24.0** I.D. Set at **3364** Perf. To
 Tubing **2.0** Wt. **4.7** I.D. Set at **2995** Perf. To
 Gas Pay: From **2985** To **3152** L **2995** x G **.656** = GL **1965** Bar. Press **13.2**
 Producing Thru: Casing Tubing **X** Type Well **Single**
 Series **40** Meter Run Packer at **None** Single - Bradenhead-G.G. or G.O. Dual

FLOW DATA

Started		Taken		Duration	Type	Line	Orifice	Static	Differ-	Flow
Date	Time	Date	Time	Hours	Taps	Size	Size	Press.	ential	Temp.
2-27-59	10:40AM	3-3-59	10:40AM	24	Flg.	4	1.750	242.2	5.76	68
	PM		PM							

FLOW CALCULATIONS

Static	Differ-	Meter	24-Hour	Gravity	Temp.	Compress-	Rate of Flow
Pressure	ential	Extension	Coeff-	Factor	Factor	ability	MCF/Da @ 15.025 psia
Pf	hw	Pf hw	icient	Fg	Ft	Fpv	Q
242.2	5.76	37.35	19.27	.9564	.9924	1.022	698.1

SHUT-IN DATA

Shut-in		Press. Taken		Duration Hours	Wellhead Pressure (Pc) psia		W.H. Working Pressure (Pw) and (Pt) psia	
Date	Time	Date	Time		Tubing	Casing	Tubing	Casing
3-3-59	10:40AM PM	3-4-59	10:40AM PM	24	589.2	589.2	257.2	475.2
		3-5-59		48	588.2	588.2		
		3-6-59		72	587.2	587.2		

FLOW DATA

FRICTION CALCULATION (if necessary)

SUMMARY

Pw Measured

BEFORE EXAMINER NUTTER**OIL CONSERVATION COMMISSION**

DELIVERABILITY CALCULATIONS

CASE NO.

EXHIBIT NO.

2B**1777**

Pw **475.2** Pc **589.2** $P_w + P_c$ **.8065**
 $1 - \frac{P_w}{P_c}$ **.1935** $1 + \frac{P_w}{P_c}$ **1.8065** $1 - \frac{P_w}{P_c}$ $1 + \frac{P_w}{P_c}$ **.3496**
 $.36 + M$ **1.030** Log **.012837** x (n) **.771** = **.009897** +

Pc = **589.2** psiaQ = **698.1** MCF/Da.Pw = **475.2** psiaPd = **471.4** psiaQ = **714.2** MCF/Da.Log Q = **2.843918**Log D = **2.853815**Antilog = **714.2**

= D

REMARKS

Company **El Paso Natural Gas Company**
 Address **P. O. Box 1384, Jal, New Mexico**
 Agent and Title **R. T. Wright - Petroleum Engineer**
 Witnessed **L.D. Southern, Gas Tester**
 Company **El Paso Natural Gas Company**