NM OCC-3
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Truby-1
File-3

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool **South Blanco** Formation **Pictured Cliffs** County **Rio Arriba**

Initial **XX** Annual _____ Special _____ Date of Test **7-3-57**

Company **Northwest Production Corp.** Lease **"C"** Well No. **3-7**

Unit **L** Sec. **7** Twp. **25N** Rge. **4W** Purchaser **Not connected**

Casing **5** Wt. **11.5** I.D. _____ Set at **3411** Perf. **3350** To **3380**

Tubing **1½** Wt. **1.9** I.D. _____ Set at **3352** Perf. **3350** To _____

Gas Pay: From **3350** To **3380** L **3350** xG **.650** -GL **2178** Bar.Press. **12**

Producing Thru: Casing _____ Tubing **XX** Type Well **Single**
Single-Bradenhead-G. G. or G.O. Dual

Date of Completion: **6-27-57** Packer **--** Reservoir Temp. _____

OBSERVED DATA

Tested Through ~~(Prover)~~ (Choke) ~~(Meter)~~ **SI. 7 days** Type Taps _____

No.	Flow Data (Prover) (Line) Size	Flow Data (Choke) (Orifice) Size	Flow Data Press. psig	Flow Data Diff. h_w	Flow Data Temp. °F.	Tubing Data Press. psig	Tubing Data Temp. °F.	Casing Data Press. psig	Casing Data Temp. °F.	Duration of Flow Hr.
SI						994		994		SI
1.										
2.		3/4	149		49	149	49	834		3 hrs
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-MCFPD @ 15.025 psia
1.	12.3650		161	1.0108	.9608	1.015	1962
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 **1006** P_c^2 **1012.0**

No.	P_w P_t (psia)	P_t^2	F_cQ	$(F_cQ)^2$	$\frac{(F_cQ)^2}{(1-e^{-s})}$	P_w^2	$P_c^2-P_w^2$	Cal. P_w	$\frac{P_w}{P_c}$
1.						715.7	296.3		3.42
2.									
3.									
4.									
5.									

Absolute Potential: **4,934** MCFPD; n **.85/2.5148**
COMPANY **Pacific Northwest Pipeline Corp.**
ADDRESS **405½ W. Broadway, Farmington, New Mexico**
AGENT and TITLE **C. R. Wagner, Well Test Engineer**
WITNESSED _____
COMPANY _____

REMARKS

RECEIVED
JUL 15 1957
OIL CON. COM
DIST. 3

INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

NOMENCLATURE

Q = Actual rate of 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_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

P_f = Meter pressure, psia.

h_w = Differential meter pressure, inches water.

F_g = Gravity correction factor.

F_t = Flowing temperature correction factor.

F_{pv} = Supercompressability factor.

n = Slope of back pressure curve.

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.

DRILLING DEPARTMENT

COMPANY Northwest Production Corp.

LEASE "C" WELL NO. 3-7

DATE OF TEST 7-3-57

SHUT IN PRESSURE (PSIG): TUBING 994 CASING 994 S. I. PERIOD 7 DAYS

SIZE BLOW NIPPLE 3/4" T-C- Choke

FLOW THROUGH Tubing WORKING PRESSURES FROM Casing

TIME HOURS	TIME MINUTES	CHOKE PRESSURE	Q (MCFD) 15.025 PSIA & 60°F	WELLHEAD WORKING PRESSURE (PSIG)	TEMP
	34.5	208		894	45
	41.5	228		885	47
	50	263		879	48
1	0	240		870	48
	12	232		862	48
	21.5	227		855	48
	44	203		846	48
2	5	185		838	48
	30	171		836	49
3	0	149		834	49

START AT: 10:50 am END TEST AT 1:50 pm

REMARKS: Light fog of H_2O through out test

TESTED BY: C. R. Wagner

WITNESS: _____

OIL CONSERVATION COMMISSION		
AZTEC DISTRICT OFFICE		
No. Copies Received 3		
DISTRIBUTION		
	NO. FURNISHED	
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Santa Fe	1	
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Form C-122-A
Revised April 20, 1955

Initial Deliverability Test

NEW MEXICO OIL CONSERVATION COMMISSION

GAS WELL TEST DATA SHEET - - SAN JUAN BASIN

(TO BE USED FOR FRUITLAND, PICTURED CLIFFS, MESAVERDE, & ALL DAKOTA EXCEPT BARKER DOME STORAGE AREA)

Pool **South Blanco** Formation **Pictured Cliffs** County **Rio Arriba**

Purchasing Pipeline **Pacific Northwest Pipeline Corp.** Date Test Filed **2-11-58**

Operator **Northwest Production Corp.** Lease **"C"** Well No. **3-7**

Unit **L** Sec. **7** Twp. **25N** Rge. **4 W** Pay Zone: From **3350** To **3380**

Casing: OD **5** WT. **11.5** Set At **3511** Tubing: OD **1½** WT. **2.3** T. Perf. **3350**

Produced Through: Casing **X** Tubing ____ Gas Gravity: Measured **.675** Estimated ____

Date of Flow Test: From **1-23-58** To **1-31-58** * Date S.I.P. Measured **7-3-57**

Meter Run Size **4.029** Orifice Size **1.000** Type Chart ____ Type Taps ____

OBSERVED DATA

Flowing casing pressure (Dwt)	____ psig + 12 =	____	psia	(a)
Flowing tubing pressure (Dwt)	____ psig + 12 =	____	psia	(b)
Flowing meter pressure (Dwt)	____ psig + 12 =	____	psia	(c)
Flowing meter pressure (meter reading when Dwt. measurement taken):				
Normal chart reading	____ psig + 12 =	____	psia	(d)
Square root chart reading (____)^2 x spring constant	=	____	psia	(d)
Meter error (c) - (d) or (d) - (c)	± =	____	psi	(e)
Friction loss, Flowing column to meter:				
(b) - (c) Flow through tubing: (a) - (c) Flow through casing	=	____	psi	(f)
Seven day average static meter pressure (from meter chart):				
Normal chart average reading **549**	psig + 12 =	**561**	psia	(g)
Square root chart average reading (____)^2 x sp. const.	=	**---**	psia	(g)
Corrected seven day avge. meter press. (p_f) (g) + (e)	=	**561**	psia	(h)
P_t = (h) + (f)	=	**561**	psia	(i)
Wellhead casing shut-in pressure (Dwt) **994**	psig + 12 =	**1006**	psia	(j)
Wellhead tubing shut-in pressure (Dwt) **994**	psig + 12 =	**1006**	psia	(k)
P_c = (j) or (k) whichever well flowed through	=	**1006**	psia	(l)
Flowing Temp. (Meter Run) **65** °F + 460	=	**525**	°Abs	(m)
P_d = ½ P_c = ½ (l)	=	**503**	psia	(n)

FLOW RATE CALCULATION

Q = ____ (integrated) X $\left(\frac{\sqrt{(c)}}{\sqrt{(d)}} = \frac{\quad}{\quad} = \frac{\quad}{\quad} \right)^*$ = ____ MCF/da

DELIVERABILITY CALCULATION

$$D = Q \left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} \right]^n = \text{MCF/da.}$$

D = Q **706** $\left[\frac{P_c^2 - P_d^2 = 759{,}027}{P_c^2 - P_w^2 = 697{,}109} \right]^n$ **1.0751 (1.0889)** = **759** MCF/da.

SUMMARY

P_c =	**1006**	psia	
Q =	**706**	Mcf/day	
P_w =	**561** **503**	psia	
P_d =	**759**	psia	
D =		Mcf/day	

Company **Northwest Production Corp.**
By **Ray Phillips** RAY PHILLIPS
Title **Asst Mgr, Prod Operations**
Witnessed by ____
Company ____

* This is date of completion test.
* Meter error correction factor

REMARKS OR FRICTION CALCULATIONS

GL	$(1-e^{-s})$	$(F_cQ)^2$	$\frac{(FcQ)^2 (1-e^{-s})}{R^2}$	Pt^2 (Column i)	$P_t^2 + R^2$	P_w
2261	**0.152**	**1.357**	**206**	**314,721**	**314,927**	**561.2**

Pc = 1.650

RECEIVED
FEB 13 1958
OIL CON. COM.
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