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Initial Deliverability
Test

Form C-122-A
Revised April 20, 1955

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 Basin Formation Dakota County San Juan
Purchasing Pipeline El Paso Natural Gas Co. Date Test Filed August 11, 1964
Operator Walter Duncan Oil Prop. Lease Shelly Gov't Well No. 2
Unit 15 Sec. 27N Twp. 9W Pay Zone: From 6600 To 6874
Casing: OD 4 1/2" WT. 10.54 Set At 6809 Tubing: OD 2 3/8" WT. 4.74 T. Perf. 6834
Produced Through: Casing 1 Tubing 1 Gas Gravity: Measured .490 Estimated
Date of Flow Test: From 7-20-64 To 7-25-64 * Date S.I.P. Measured 12-21-63
Meter Run Size 4" Orifice Size 1.500 Type Chart C.F. Type Taps Flange

OBSERVED DATA

Flowing casing pressure (Dwt) 680 psig + 12 = 662 psia (a)
Flowing tubing pressure (Dwt) 548 psig + 12 = 560 psia (b)
Flowing meter pressure (Dwt) 478 psig + 12 = 490 psia (c)
Flowing meter pressure (meter reading when Dwt. measurement taken:
Normal chart reading 6.95 psig + 12 = 483 psia (d)
Square root chart reading (6.95)² x spring constant 10 = 477 psia (d)
Meter error (c) - (d) or (d) - (c) ± = 6 psi (e)
Friction loss, Flowing column to meter:
(b) - (c) Flow through tubing: (a) - (c) Flow through casing = 170 psi (f)
Seven day average static meter pressure (from meter chart):
Normal chart average reading 6.95 psig + 12 = 483 psia (g)
Square root chart average reading (6.95)² x sp. const. 10 = 480 psia (g)
Corrected seven day avge. meter press. (p_f) (g) + (e) = 490 psia (h)
P_t = (h) + (f) = 560 psia (i)
Wellhead casing shut-in pressure (Dwt) 2115 psig + 12 = 2127 psia (j)
Wellhead tubing shut-in pressure (Dwt) 2161 psig + 12 = 2173 psia (k)
P_c = (j) or (k) whichever well flowed through = 2173 psia (l)
Flowing Temp. (Meter Run) °F + 460 = 1286 °Abs (m)
P_d = 1/2 P_c = 1/2 (l) = 1086 psia (n)

Q = 1361 X $\left(\frac{\sqrt{(c)}}{\sqrt{(d)}} \right) = \frac{1.0145}{1.0072} = 1.0072$ = 1351 MCF/day

DELIVERABILITY CALCULATION

D = Q 1351 $\left[\frac{(P_c^2 - P_d^2)}{(P_c^2 - P_w^2)} \right]^{.75} = \frac{3,542,933}{4,362,185}^{.75} = 1196$ MCF/day

SUMMARY

P_c = 2173 psia
Q = 1351 Mcf/day
P_w = 600 psia
P_d = 1086 psia
D = 1196 Mcf/day

Company Walter Duncan Oil Prop.
By Original signed by T. A. Dugan
Title Consulting Engineer
Witnessed by
Company

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

REMARKS OR FRICTION CALCULATIONS

GL	(1-e ^{-S})	(F _c Q) ²	(F _c Q) ² R ²	(1-e ^{-S})	P _t ² (Column i)	P _t ² + R ²	P _w
<u>4640</u>	<u>.386</u>	<u>361.343</u>	<u>46.144</u>		<u>313,600</u>	<u>359,744</u>	<u>600</u>