

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 Smith Bluffs Formation Dakota County San Juan
Purchasing Pipeline Southern Union Gas Company Date Test Filed 10-2-59
Operator Continental Oil Company Lease Brown "F" Well No. W-1
Unit A Sec. 33 Twp 27N Rge 6W Pay Zone: From 7400' To 7570'
Casing: OD 5 1/2" WT. 19.5 Set At 6771' Tubing: OD 1 1/2" WT. 2.54 T. Perf. 7390'
Produced Through: Casing No Tubing Yes Gas Gravity: Measured 0.623 Estimated _____
Date of Flow Test: From 9-8-59 To 9-16-59 * Date S.I.P. Measured 9-23-59
Meter Run Size 1 1/2" OD Orifice Size 1/2" Type Chart Normal Type Taps Standard

OBSERVED DATA

Flowing casing pressure (Dwt) 1760 psig + 12 = 1772 psia (a)
Flowing tubing pressure (Dwt) 105 psig + 12 = 117 psia (b)
Flowing meter pressure (Dwt) 190 psig + 12 = 202 psia (c)
Flowing meter pressure (meter reading when Dwt. measurement taken:
Normal chart reading 198 psig + 12 = 210 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 - = 15 psi (f)
Seven day average static meter pressure (from meter chart):
Normal chart average reading 190 psig + 12 = 202 psia (g)
Square root chart average reading () ² x sp. const. - = - psia (g)
Corrected seven day avge. meter press. (p_f) (g) + (e) - = 202 psia (h)
P_t = (h) + (f) - = 202 psia (i)
Wellhead casing shut-in pressure (Dwt) 1760 psig + 12 = 1772 psia (j)
Wellhead tubing shut-in pressure (Dwt) 1760 psig + 12 = 1772 psia (k)
P_c = (j) or (k) whichever well flowed through - = 1772 psia (l)
Flowing Temp. (Meter Run) 72 °F + 460 - = 532 °Abs (m)
P_d = 1/2 P_c = 1/2 (l) - = 886 psia (n)

FLOW RATE CALCULATION

$$Q = \frac{1145}{(\text{Integrated})} \times \left(\frac{\frac{V(c)}{V(d)} = \frac{102}{120} = .85}{1} \right) = \frac{1145}{1.145} = 1000 \text{ MCF/day}$$

DELIVERABILITY CALCULATION

$$D = Q \frac{1145}{1.145} \left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} \right]^{.888} = \frac{1145}{1.145} \left[\frac{2.121,988}{2.621,780} \right]^{.888} = 1051 \text{ MCF/day}$$

SUMMARY

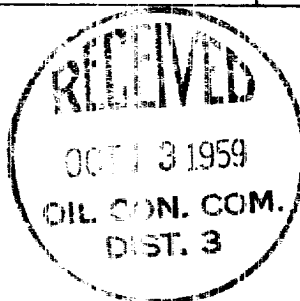
P_c = 1772 psia
Q = 1145 Mcf/day
P_w = 61.5 psia
P_d = 886 psia
D = 1051 Mcf/day

Company Continental Oil Company
By Charles Ferguson
Title Production Foreman
Witnessed by _____
Company Southern Union Gas 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 (1-e ^{-S}) R ²	P _t ² (Column i)	P _t ² + R ²	P _w
<u>4624</u>	<u>.286</u>	<u>806.2</u>	<u>228.8</u>	<u>229,081</u>	<u>407,082</u>	<u>630</u>



OK