

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 Basin Dakota Formation Dakota County S.J.
Purchasing Pipeline El Paso Natural Gas Company Date Test Filed June 19, 1964
Operator El Paso Natural Gas Products Co. Lease Delhi-Taylor Well No. 1-C (OD)
Unit M Sec. 4 Twp. 26N Rge. 11W Pay Zone: From 6182' To 6376'
Casing: OD 7-3/8" WT. 26.40# Set At 4497' Tubing: OD 2-3/8" WT. 4.70# T. Perf. 6211'
Linear OD 5-1/2" Casing 15.50# Tubing 4404'-6526' Gas Gravity: Measured 0.701 Estimated
Date of Flow Test: From May 30, 1964 To June 7, 1964 * Date S.I.P. Measured June 15, 1964
Meter Run Size -- Orifice Size -- Type Chart -- Type Taps --

OBSERVED DATA

Flowing casing pressure (Dwt) 570 psig + 12 = 582 psia (a)
Flowing tubing pressure (Dwt) 541 psig + 12 = 553 psia (b)
Flowing meter pressure (Dwt) 501 psig + 12 = 513 psia (c)
Flowing meter pressure (meter reading when Dwt. measurement taken:
Normal chart reading 486 psig + 12 = 498 psia (d)
Square root chart reading (7.06)² x spring constant 10 = 498 psia (d)
Meter error (c) - (d) or (d) - (c) ± 15 psi (e)
Friction loss, Flowing column to meter:
(b) - (c) Flow through tubing; (a) - (c) Flow through casing = 40 psi (f)
Seven day average static meter pressure (from meter chart):
Normal chart average reading 450 psig + 12 = 462 psia (g)
Square root chart average reading (6.8)² x sp. const. 10 = 462 psia (g)
Corrected seven day avge. meter press. (p_f) (g) + (e) = 477 psia (h)
P_t = (h) + (f) = 517 psia (i)
Wellhead casing shut-in pressure (Dwt) 1540 psig + 12 = 1552 psia (j)
Wellhead tubing shut-in pressure (Dwt) 1352 psig + 12 = 1364 psia (k)
P_c = (j) or (k) whichever well flowed through = 1552 psia (l)
Flowing Temp. (Meter Run) 99 °F + 460 = 559 °Abs (m)
P_d = 1/2 P_c = 1/2 (l) = 776 psia (n)

FLOW RATE CALCULATION

$$Q = \frac{1.219}{(\text{Integrated})} \times \left(\frac{\sqrt{(c)} - \sqrt{(d)}}{\sqrt{(c)} - \sqrt{(d)}} \right) = \frac{22.65 - 22.32}{22.65 - 22.32} = 1.014 = 1,236 \text{ MCF/da}$$

DELIVERABILITY CALCULATION

$$D = Q \frac{1.236}{\left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} \right]^n} = \frac{1.236}{\left[\frac{1,806,528}{2,099,568} \right]^{0.75}} = 1,104 \text{ MCF/da.}$$

SUMMARY

$D_{500} = 1.236 \left[\frac{2,146,560}{2,195,260} \right]^{0.75} = 1,215 \text{ MCF/da.}$
P_c = 1,552 psia
Q = 1,236 Mcf/day
P_w = 556 psia
P_d = 776 psia
D = 1,104 Mcf/day
Company El Paso Natural Gas Products Company
By John J. [Signature]
Title Petroleum Engineer
Witnessed [Signature]
Company [Signature]

- * 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})	P _t ²	P _t ² + R _T ²	P _w
				R ²	(Column i)		
2-3/8"	646	0.0458	135.024	6.184			
31/32"	--	--	--	3			3
5-1/2"	51	0.0035	4.264	0.015			7553
2-3/8"	3659	0.234	135.024	31.595	R _T ² = 37.794	267.289	305.083
							556

Weymouth's Formula used to calculate friction in change-over tube. Dakota flow is as follows:
2-3/8" OD Tubing 6211'-5293'; 31/32" ID X 74" Long Change-over tube: Then annular flow 2-3/8" OD
Tubing X 4.950" ID Casing 5293'-5220', Then 2-3/8" OD Tubing 5220' to Surface. Two packers are
set, one at 5293' and one at 6210'.

