

NEW MEXICO OIL CONSERVATION COMMISSION
One-point Back Pressure Test for Gas Wells
(Deliverability)

Form C-122-C
4-1-54

Pool Undesignated Formation Point Lookout County San Juan
Initial Annual Special Date of test 10-9-57
Company Sunray Mid-Continent Oil Co. Lease N.M. Federal "I" Well No. 1
Unit E Sec. 11 Twp. 29N Rge. 14W Purchaser No Market
Casing 5 1/2 Wt. 15.5 I.D. 4.95 Set at 5920' Perf. 3493 To 3505
Tubing 2 3/8 Wt. 4.6 I.D. 1.995 Set at 3502 Perf. - To -
Gas Pay: From 3484 To 3512 L 3500' x G 0.650 = GL 2280 Bar.Press. 13.2
Producing Thru: Casing - Tubing x Type Well Single
Single- Bradenhead-G.G. or G.O. Dual

FLOW DATA

| Started | | Taken | | Duration Hours | Type Taps | Line Size | Orifice Size | Static Press. | Differ- ential | Flow Temp. |
|---------|----------|---------|---------|-------------------|---------------|--------------|-----------------|------------------|-------------------|---------------|
| Date | time | Date | time | | | | | | | |
| 10-9-57 | 10:45 AM | 10-9-57 | AM | 3 | 2" | 2" | 1 1/4" | | | 80° F |
| | PM | | 1:45 PM | | Flow Meter | | | | | |

FLOW CALCULATIONS

| Static Pressure P _f | Differ- ential h _w | Meter Extension $\sqrt{P_f h_w}$ | 24-Hour Coeff- icient | Gravity Factor F _g | Temp. Factor F _t | Compress- ability F _{pv} | Rate of Flow MCF/Da. @ 15.025 psia Q |
|--------------------------------------|-------------------------------------|--|-----------------------------|-------------------------------------|-----------------------------------|---|--|
| | | | | 9.9606 | 0.9813 | - | 898 |

SHUT-IN DATA

| Shut-in | | Press. Taken | | Duration Hours | Wellhead Pressure (P _c) psia | | W.H. Working Pressure (P _w) and (P _t) psia | |
|---------|---------|--------------|---------|-------------------|---|--------|---|--------|
| Date | Time | Date | Time | | Tubing | Casing | Tubing | Casing |
| 10-9-57 | AM | 10-12-57 | AM | 72 | 818 | 173 | 109 | 385 |
| | 2:00 PM | | 2:00 PM | | | | | |

FRICTION CALCULATIONS(if necessary)

SUMMARY

NOV 25 1957
RELIEVED
OIL CON. COM
DIST. 2

P_c = 818 psia
Q = 898 MCF/Da.

DELIVERABILITY CALCULATIONS

P_w 385 P_c 818 P_w + P_c 1203
 $1 - \frac{P_w}{P_c} = 0.53$ $1 + \frac{P_w}{P_c} = 1.47$ $\left(1 - \frac{P_w}{P_c}\right) \left(1 + \frac{P_w}{P_c}\right) = M$ 0.78
 $.36 + M = 0.46$ Log 9.642-10 x (n) 1.005 = 1.7.5 +

P_w = 385 psia
P_d = 655 psia
D = 455 MCF/Da.

COMPANY Sunray Mid-Continent Oil Company
ADDRESS Box 128, Hobbs, New Mexico
AGENT and TITLE Hobbs Area Superintendent
WITNESSED _____
COMPANY _____

Log Q = 2.953
Log D = 2.658
Antilog = 455 = D

REMARKS

This form is to be used for reporting deliverability tests in the designated Dry Gas Pools of Lea County as ordered by New Mexico Oil Conservation Commission Directive dated March 15, 1954, which directive was provided for by Orders R-365-A through R-376-A. For details regarding this test please refer to the above mentioned Directive.

NOMENCLATURE

Q = Actual 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_d = Deliverability pressure; 80 % of 72 hour individual wellhead shut-in pressure (P_c). 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

D = Deliverability at Deliverability pressure (P_d) MCF/da. @ 15.025 psia and 60° F.

P_f = Static meter pressure, psia.

h_w = Differential meter pressure, inches water.

F_g = Gravity correction factor.

F_t = Flowing temperature correction factor.

F_{pv} = Supercompressibility factor.

n = Slope of back pressure curve.

DELIVERABILITY FORMULA

$$D = Q \left[\frac{.36}{1 - \frac{P_w}{P_c}} \left(1 + \frac{P_w}{P_c} \right) \right]$$

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 .

| | | |
|------------------------------|-----------|-------------------------------------|
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