

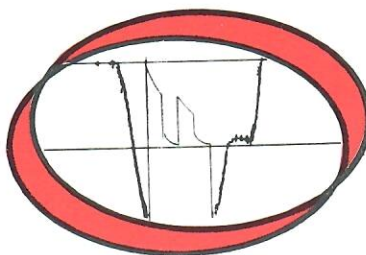
Formation Testing Service Report



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MAY 4 1979

COLO. OIL & GAS CONS. COMM.



| |
|-----|
| DVR |
| FJP |
| HHM |
| JAM |
| JJD |
| RLS |
| COM |

HALLIBURTON SERVICES

DUNCAN, OKLAHOMA

— PRESSURE —
↓

624976-533

— TIME —→

624976-534

Each Horizontal Line Equal to 1000 p.s.i.

~~MAY 4 1979~~

[illegible]

| | | | | | | | | | | | | | | | |
|-------------------|---------------------|------------------------|--------------------------|----------------------------------------|------------------------|---------------------|------------------------|---------------------------|----------------------------------------|------------------------|---------------------|------------------------|--------------------------|----------------------------------------|------------------------|
| Gauge No. 533 | | | | | | Depth 3328' | | Clock No. 18764 | | | 12 hour | Ticket No. 624976 | | | |
| First Flow Period | | | First Closed In Pressure | | | Second Flow Period | | Second Closed In Pressure | | | Third Flow Period | | Third Closed In Pressure | | |
| | Time Defl. .000" | PSIG Temp. Corr. | Time Defl. .000" | $\text{Log} \frac{t + \theta}{\theta}$ | PSIG Temp. Corr. | Time Defl. .000" | PSIG Temp. Corr. | Time Defl. .000" | $\text{Log} \frac{t + \theta}{\theta}$ | PSIG Temp. Corr. | Time Defl. .000" | PSIG Temp. Corr. | Time Defl. .000" | $\text{Log} \frac{t + \theta}{\theta}$ | PSIG Temp. Corr. |
| 0 | .0000 | 6.5 | .0000 | | 6.5 | .0000 | 30.2 | .0000 | | 32.8 | | | | | |
| 1 | .1880 | 6.5 | .0329* | | 9.2 | .3960 | 32.8 | .0659** | | 72.3 | | | | | |
| 2 | | | .0723 | | 25.0 | | | .1253 | | 122.3 | | | | | |
| 3 | | | .1118 | | 43.4 | | | .1846 | | 173.6 | | | | | |
| 4 | | | .1512 | | 61.8 | | | .2440 | | 227.6 | | | | | |
| 5 | | | .1907 | | 85.5 | | | .3033 | | 275.0 | | | | | |
| 6 | | | .2301 | | 119.7 | | | .3626 | | 317.1 | | | | | |
| 7 | | | .2696 | | 164.4 | | | .4220 | | 355.2 | | | | | |
| 8 | | | .3090 | | 202.6 | | | .4813 | | 390.7 | | | | | |
| 9 | | | .3485 | | 269.7 | | | .5407 | | 426.3 | | | | | |
| 10 | | | .3880 | | 314.4 | | | .6000 | | 459.2 | | | | | |
| 11 | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | |

| Gauge No. 534 | | | Depth 3375' | | | Clock No. 1876 | | | 12 hour | | | | | | | | |
|---------------|-------|------|-------------|--|-------|----------------|------|---------|---------|-------|--|--|--|--|--|--|--|
| 0 | .0000 | 34.5 | .0000 | | 37.2 | .0000 | 59.8 | .0000 | | 62.5 | | | | | | | |
| 1 | .1920 | 37.2 | .0336* | | 38.5 | .4040 | 62.5 | .0670** | | 103.7 | | | | | | | |
| 2 | | | .0740 | | 53.1 | | | .1274 | | 150.2 | | | | | | | |
| 3 | | | .1144 | | 71.8 | | | .1877 | | 203.4 | | | | | | | |
| 4 | | | .1548 | | 90.4 | | | .2480 | | 255.3 | | | | | | | |
| 5 | | | .1951 | | 115.6 | | | .3083 | | 305.8 | | | | | | | |
| 6 | | | .2355 | | 151.5 | | | .3686 | | 349.7 | | | | | | | |
| 7 | | | .2759 | | 194.1 | | | .4290 | | 386.9 | | | | | | | |
| 8 | | | .3162 | | 232.7 | | | .4893 | | 421.5 | | | | | | | |
| 9 | | | .3566 | | 295.2 | | | .5496 | | 456.1 | | | | | | | |
| 10 | | | .3970 | | 343.0 | | | .6100 | | 488.0 | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | |

COLO. OIL & GAS CONS. COMM.

MAY 4 1979

| | | | |
|------------------|----------------------|--------------------------|---------|
| Reading Interval | 6 | 9 | Minutes |
| REMARKS: | INTERVAL = 5 MINUTES | ** INTERVAL = 10 MINUTES | |
| | | | |
| | | | |

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TICKET NO. 624976

MAY 4 1979



| | O. D. | I. D. | LENGTH | DEPTH |
|--------------------------------------------|-------|--------|--------|-------|
| Drill Pipe or Tubing | | | | |
| Reversing Sub . COLO. OIL & GAS CONS. COMB | 5.75" | 2.75" | 1.00' | |
| Water Cushion Valve | | | | |
| Drill Pipe | 5.00" | 4.276" | 3030' | |
| Drill Collars | 6.00" | 2.25" | 272' | |
| Handling Sub & Choke Assembly | 5.87" | 3.00' | 5.00' | |
| Dual CIP Valve | | | | |
| Dual CIP Sampler | 5.00" | .87" | 7.00' | 3322' |
| Hydro-Spring Tester | 5.00" | .75" | 5.00' | 3326' |
| Multiple CIP Sampler | | | | |
| Extension Joint | | | | |
| AP Running Case | 5.00" | 3.06" | 4.00' | 3328' |
| Hydraulic Jar | 5.03" | 1.75" | 5.00' | |
| VR Safety Joint | 5.00" | 1.00" | 3.00' | |
| Pressure Equalizing Crossover | 5.00" | .87" | 1.00' | |
| Packer Assembly | 6.75" | 1.53" | 6.00' | 3340' |
| Distributor | | | | |
| Packer Assembly | | | | |
| Flush Joint Anchor | | | | |
| Pressure Equalizing Tube | 1.06" | .75" | 34' | |
| Blanked-Off B.T. Running Case | 5.00" | 3.06" | 4.00' | 3375' |
| Drill Collars | | | | |
| Anchor Pipe Safety Joint | | | | |
| Packer Assembly | 6.75" | 1.53" | 6.00' | 3388' |
| Distributor | | | | |
| Packer Assembly | | | | |
| Anchor Pipe Safety Joint | | | | |
| Side Wall Anchor | 6.75" | 1.62" | 5.00' | 3394' |
| Drill Collars | | | | |
| Flush Joint Anchor | | | | |
| Blanked-Off B.T. Running Case | | | | |
| Total Depth | | | | 3910' |

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NOMENCLATURE

| | | |
|----------|------------------------------------------------------------------------|--------------------|
| b | = Approximate Radius of Investigation | Feet |
| b_1 | = Approximate Radius of Investigation (Net Pay Zone h_1) | Feet |
| D.R. | = Damage Ratio | — |
| E_l | = Elevation | Feet |
| GD | = B.T. Gauge Depth (From Surface Reference) | Feet |
| h | = Interval Tested | Feet |
| h_1 | = Net Pay Thickness | Feet |
| K | = Permeability | md |
| K_1 | = Permeability (From Net Pay Zone h_1) | md |
| m | = Slope Extrapolated Pressure Plot ($\text{Psi}^2/\text{cycle Gas}$) | psi/cycle |
| OF_1 | = Maximum Indicated Flow Rate | MCF/D |
| OF_2 | = Minimum Indicated Flow Rate | MCF/D |
| OF_3 | = Theoretical Open Flow Potential with/Damage Removed Max. | MCF/D |
| OF_4 | = Theoretical Open Flow Potential with/Damage Removed Min. | MCF/D |
| P_s | = Extrapolated Static Pressure | Psig. |
| P_f | = Final Flow Pressure | Psig. |
| P_{ot} | = Potentiometric Surface (Fresh Water *) | Feet |
| Q | = Average Adjusted Production Rate During Test | bbls/day |
| Q_1 | = Theoretical Production w/Damage Removed | bbls/day |
| Q_g | = Measured Gas Production Rate | MCF/D |
| R | = Corrected Recovery | bbls |
| r_w | = Radius of Well Bore | Feet |
| t | = Flow Time | Minutes |
| t_o | = Total Flow Time | Minutes |
| T | = Temperature Rankine | $^{\circ}\text{R}$ |
| Z | = Compressibility Factor | — |
| μ | = Viscosity Gas or Liquid | CP |
| Log | = Common Log | |

* Potentiometric Surface Reference to Rotary Table When Elevation Not Given, Fresh Water Corrected to 100°F .