

**STATE OF KANSAS - CORPORATION COMMISSION
MULTIPOINT BACK PRESSURE TEST**

FORM CG-1 Rev.

TYPE TEST: Initial Annual Special **TEST DATE:** 10-12-11

COMPANY O'BRIEN ENERGY RESOURCES CORP. **LEASE** VAIL **WELL NO.** 2-30

COUNTY MEAD **LOCATION** N/2 NW **SECTION** 30 **TWP** 33S **RNG (E/W)** 29W **ACRES**

API WELL NUMBER 15 - 119-21287 - CCCC **RESERVOIR** MORROW **PIPELINE CONNECTION** DCP

COMPLETION DATE 6-10-11 **PLUG BACK TOTAL DEPTH** **PACKER SET AT** 5740

CASING SIZE 4.5 **WT.** 10.5 **ID.** 4.090 **SET AT** 6378 **PERF.** TO 5824-5858

TUBING SIZE 2.375 **WT.** 4.7 **ID.** 1.995 **SET AT** 5750 **PERF.** TO

TYPE COMPLETION (Describe) SINGLE GAS **TYPE FLUID PRODUCTION** COND.

PRODUCING THRU Tubing **RESERVOIR TEMPERATURE F** 139 **BAR PRESS - Pa** 14.4 Psia

GAS GRAVITY - Gg .682 **% CARBON DIOXIDE** 0.144 **% NITROGEN** 4.813 **API GRAVITY OF LIQUID**

VERTICAL DEPTH (ft) 5841 **TYPE METER CONN.** Flange **METER RUN SIZE** 3.068"

REMARKS

OBSERVED DATA

DURATION OF SHUT-IN 72.0 HR.

| RATE No. | ORIFICE SIZE in. | METER PRESSURE psig | DIFF. (h _w) | FLOWING TEMP. t | WELL-HEAD TEMP. t | CASING WELLHEAD PRESS. | | TUBING WELLHEAD PRESS. | | DUR-ATION HOURS | LIQUID PROD. Bbls. |
|----------|------------------|---------------------|-------------------------|-----------------|-------------------|------------------------|------|------------------------|--|-----------------|--------------------|
| | | | | | | psig | psia | psig | (P _t) (P _c) psia | | |
| SHUT IN | | | | | | | | | | | |
| 1 | 1.750 | 84.0 | 10.1 | 92 | 75 | | | 1,154.00 | 1,168.40 | 72.0 | |
| 2 | 1.750 | 96.1 | 59.0 | 76 | 75 | | | 1,138.30 | 1,152.70 | 1.0 | 0 |
| 3 | 1.750 | 124.7 | 188.7 | 59 | 75 | | | 1,102.60 | 1,117.00 | 1.0 | 0 |
| 4 | 1.750 | 326.3 | 190.6 | 70 | 75 | | | 981.00 | 995.40 | 1.0 | 0 |
| 5 | | | | | | | | 720.50 | 734.90 | 1.0 | 0 |

RATE OF FLOW CALCULATIONS

| RATE No. | COEFFICIENT F _b Mcfd | METER PRESSURE psia | EXTENSION $\sqrt{P_m \cdot h_w}$ | GRAVITY FACTOR F _g | FLOWING TEMP FACTOR F _t | DEVIATION FACTOR F _{pv} | RATE OF FLOW Q Mcfd | GOR (ft ³ /Bbl) | G _m |
|----------|---------------------------------|---------------------|----------------------------------|-------------------------------|------------------------------------|----------------------------------|---------------------|----------------------------|----------------|
| 1 | 16.0088 | 98.40 | 31.53 | 1.2109 | 0.9706 | 1.0078 | 597.7 | None | 0.682 |
| 2 | 16.0088 | 110.50 | 80.74 | 1.2109 | 0.9850 | 1.0096 | 1,556.5 | None | 0.682 |
| 3 | 16.0088 | 139.10 | 162.01 | 1.2109 | 1.0010 | 1.0136 | 3,186.4 | None | 0.682 |
| 4 | 16.0088 | 340.70 | 254.83 | 1.2109 | 0.9905 | 1.0317 | 5,048.2 | None | 0.682 |
| 5 | | | | | | | | | |

PRESSURE CALCULATIONS

| RATE No. | P _t psia | P _c psia | P _w psia | (P _c) ² THOUSANDS | (P _w) ² THOUSANDS | PLOTING POINTS | | % SHUT-IN 100 $\left[\frac{P_w - P_a}{P_c - P_a} \right]$ |
|----------|---------------------|---------------------|---------------------|--|--|---|---------|--|
| | | | | | | (P _c) ² - (P _w) ² THOUSANDS | Q Mcfd | |
| 1 | 1,152.7 | 1,168.4 | 1,155.7 | 1,365.2 | 1,335.6 | 29.52 | 597.7 | 98.90 |
| 2 | 1,117.0 | 1,168.4 | 1,137.9 | 1,365.2 | 1,294.8 | 70.33 | 1,556.5 | 97.36 |
| 3 | 995.4 | 1,168.4 | 1,091.2 | 1,365.2 | 1,190.8 | 174.38 | 3,186.4 | 93.31 |
| 4 | 734.9 | 1,168.4 | 1,026.8 | 1,365.2 | 1,054.4 | 310.75 | 5,048.2 | 87.73 |
| 5 | | | | | | | | |

INDICATED WELLHEAD OPEN FLOW 15,900

Mcfd @ 14.65 psia

n* = 0.789

The undersigned authority, on behalf of the Company, states that he is duly authorized to make the above report and that he has knowledge of the facts stated therein, and that said report is true and correct. Executed this the 12 day of October, 2011

**RECEIVED
OCT 19 2011**

COPY TO KCC WICHITA
Witness (if any)

COPY TO KCC DODGE CITY:
For Commission

KCC WICHITA
PRECISION WIRELINE AND TESTING
For Company

MARK BROCK

Checked by

(Rev. 10/96)

BACK PRESSURE CURVE

OPERATOR: O'BRIEN ENERGY RESOURCES CORP

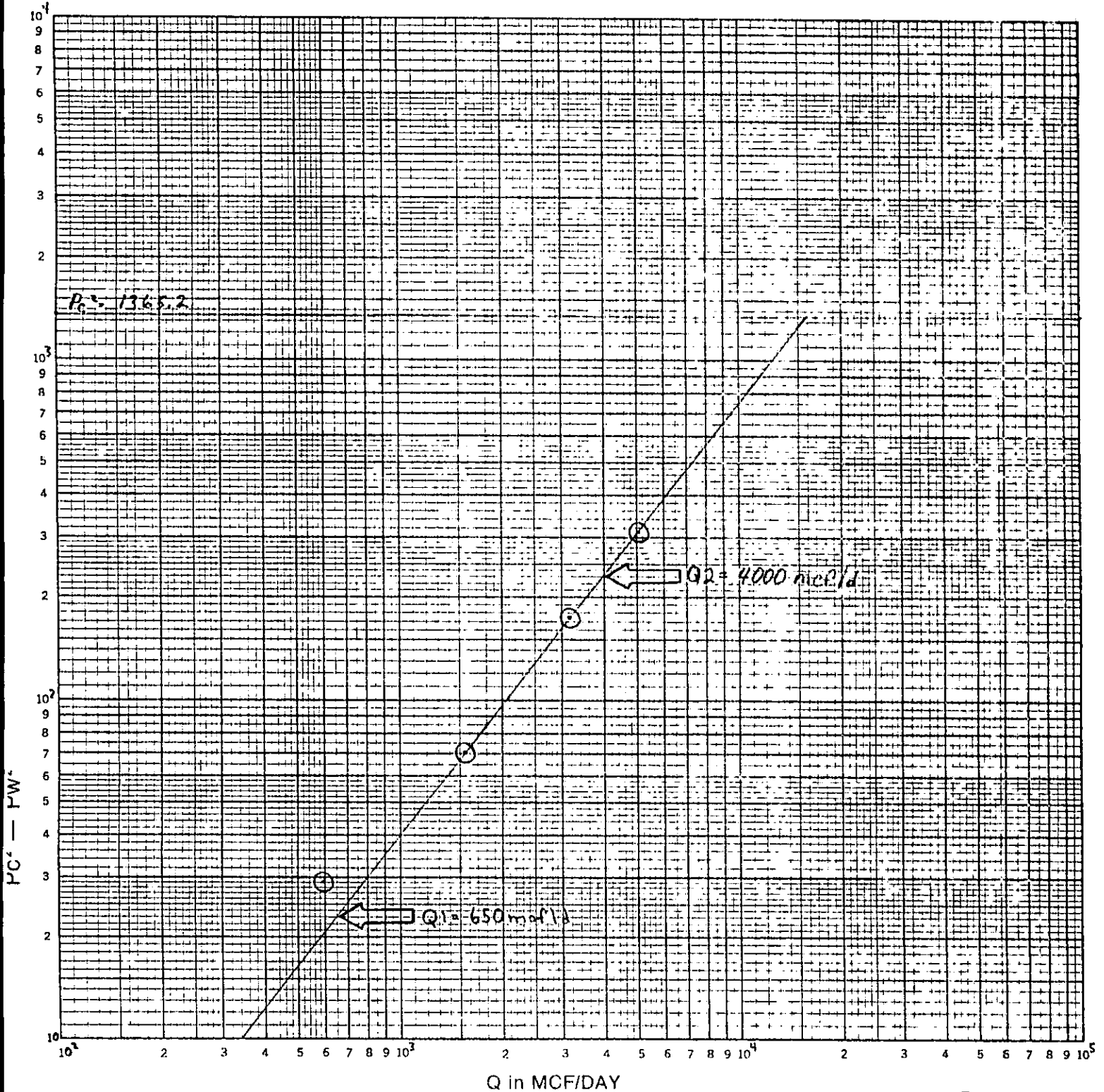
DATE OF TEST: 10-12-11

WELL NAME: VAIL 2-30

TYPE OF PLOT: _____

LOCATION: N/2 NW 30-33S-29W

COUNTY: MEAD STATE: KS



LOG Q-2 = 3.6021

LOG Q-1 = 2.8129

'n' = 0.7892

RECEIVED

OCT 19 2011

KCC WICHITA

PRECISION WIRELINE & TESTING
P.O. BOX 560
LIBERAL, KS 67905-0560
620-624-4505

PRODUCER O'BRIEN ENERGY RESOURCES
WELL NAME VAIL 2-30
LOCATION N/2 NW 30-33S-29W
COUNTY MEAD STATE KS

CSG 4.5 WT 10.5 SET @ 6378 TD 6290 PBD GL
TBG 2.375 WT 4.7 SET @ 5750 SN _____ PKR 5740 KB _____
PERFS 5824 TO 5858, _____ TO _____, _____ TO _____
PROVER _____ METER 3" TAPS FLANGE ORIFICE 1.750 PCR _____ TCR _____
GG .682 API _____ @ _____ GM _____ RESERVOIR MORROW

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KCC WICHITA

| DATE TIME OF READING | ELAP TIME HOUR | WELLHEAD PRESSURE DATA | | | | | | MEASUREMENT DATA | | | | LIQUIDS | | TYPE TEST | | | |
|----------------------|----------------|------------------------|---------|----------|---------|----------|---------|------------------|-------|------|---------|-----------|------------|-----------|--------|---------|--|
| | | CSG PSIG | Δ P CSG | TBG PSIG | Δ P TBG | BHP PSIA | Δ P BHP | PRESS. PSIG | DIFF. | TEMP | Q MCF/D | COND BBL. | WATER BBL. | INITIAL | ANNUAL | SPECIAL | RETEST |
| WEDNESDAY | | | | | | | | | | | | | | | | | |
| 10/12/2011 | | | | | | | | | | | | | | | | | REMARKS PERTINENT TO TEST DATA QUALITY |
| 1500 | 72.0 | PKR | | 1154.0 | | | | | | | | | | | | | 200" 500# 0-200deg |
| 1515 | | | | 1147.8 | -6.2 | | | 83.5 | 8.3 | 86 | 541 | | | | | | 1ST RATE OF MULTI-PT. TEST THROUGH METER RUN 8/64 |
| 1530 | 0.5 | | | 1143.2 | -4.6 | | | 83.7 | 9.3 | 90 | 573 | | | | | | |
| 1545 | | | | 1140.4 | -2.8 | | | 84.0 | 10.2 | 91 | 601 | | | | | | |
| 1600 | 1.0 | PKR | | 1138.3 | -2.1 | | | 84.0 | 10.1 | 92 | 598 | 0.0 | 0.0 | | | | |
| 1600 | | | | | | | | | | | | | | | | | 2ND RATE MULTI-PT. TEST THROUGH METER RUN 14/64 |
| 1615 | | | | 1104.7 | -33.6 | | | 95.0 | 63.3 | 77 | 1604 | | | | | | |
| 1630 | 1.5 | | | 1103.6 | -1.1 | | | 95.7 | 62.5 | 77 | 1599 | | | | | | |
| 1645 | | | | 1103.0 | -0.6 | | | 96.1 | 60.9 | 77 | 1581 | | | | | | |
| 1700 | 2.0 | PKR | | 1102.6 | -0.4 | | | 96.1 | 59.0 | 76 | 1557 | 0.0 | 0.0 | | | | |
| 1700 | | | | | | | | | | | | | | | | | 3RD RATE MULTI-PT. TEST THROUGH METER RUN 25/64 |
| 1715 | | | | 992.9 | -109.7 | | | 122.4 | 191.6 | 58 | 3184 | | | | | | |
| 1730 | 2.5 | | | 985.6 | -7.3 | | | 123.5 | 189.5 | 59 | 3179 | | | | | | |
| 1745 | | | | 983.0 | -2.6 | | | 124.3 | 188.0 | 59 | 3176 | | | | | | |
| 1800 | 3.0 | PKR | | 981.0 | -2.0 | | | 124.7 | 188.7 | 59 | 3186 | 0.0 | 0.0 | | | | |
| 1800 | | | | | | | | | | | | | | | | | 4TH RATE MULTI-PT. TEST THROUGH METER RUN 38/64 |
| 1815 | | | | 732.0 | -249.0 | | | 318.7 | 186.4 | 67 | 4936 | | | | | | PINCH DOWN STREAM SIDE OF METER RUN TO INCREASE |
| 1830 | 3.5 | | | 728.4 | -3.6 | | | 327.1 | 191.6 | 70 | 5067 | | | | | | LINE PRESSURE NOT TO OVER RANGE DIFF. AND INCREASE |
| 1845 | | | | 724.7 | -3.7 | | | 326.8 | 191.0 | 70 | 5057 | | | | | | HIGH LOW TO 420# (410# ON SEPARATOR) |
| 1900 | 4.0 | PKR | | 720.5 | -4.2 | | | 326.3 | 190.6 | 70 | 5048 | 0.0 | 0.0 | | | | OBTAIN GAS SAMPLE. |
| | | | | | | | | | | | | | | | | | WELL ON 1PT. TEST 20/64 CHOKE |
| THURSDAY | | | | | | | | | | | | | | | | | |
| 10/13/2011 | | | | | | | | | | | | | | | | | |
| 1500 | 24.0 | PKR | | 1031.3 | | | | 112.3 | 133.1 | 66 | 2533 | 8.0 | 0.0 | | | | SPOT 20/64 CHOKE |