

30-015-42470

# A Gyrodata Directional Survey

FINAL DEFINITIVE COPY

for

**BOPCO, L.P.**

Lease: POKER LAKE FIELD Well: 455-H, 4 1/2 INCH DRILLPIPE  
Location: MCVAY DRILLING RIG #5, EDDY COUNTY, NEW MEXICO

Job Number: MD1014GDM1001

Run Date: 15 Oct 2014

Report Generated: 27 Oct 2014 01:33

Azimuth Correction:  
Gyro: -0.25000 deg to Grid North

Depth Reference: Rotary Table

Surveyor: Jase Rister

Air Gap (RKB to Ground / RKB to MSL): 17.50

Calculation Method: MINIMUM CURVATURE

Vertical Section Calculated from Well Head Location

Survey surface coordinates obtained from: Well Plan/Plot

Closure Calculated from Well Head Location

Survey Latitude: 32.113561 deg. N Longitude: 103.865314 deg. W

Horizontal Coordinates Calculated from Well Head Location

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| MEASURED DEPTH                                                                                    | INCL | AZIMUTH | DOGLEG SEVERITY | VERTICAL DEPTH | CLOSURE DIST. | AZIMUTH | HORIZONTAL COORDINATES |
|---------------------------------------------------------------------------------------------------|------|---------|-----------------|----------------|---------------|---------|------------------------|
| feet                                                                                              | deg. | deg.    | deg./100 ft.    | feet           | feet          | deg.    | feet                   |
| 0.00                                                                                              | 0.00 | 0.00    | 0.00            | 0.00           | 0.0           | 0.0     | 0.00 E                 |
| 0 - 1320 FT. RATE GYROSCOPIC MULTISHOT SURVEY RUN INSIDE 4 1/2 INCH DRILLPIPE                     |      |         |                 |                |               |         |                        |
| ALL MEASURED DEPTHS AND COORDINATES REFERENCED TO MCVAY DRILLING RIG #5 R.K.B. HEIGHT OF 17.5 FT. |      |         |                 |                |               |         |                        |
| 100.00                                                                                            | 0.51 | 83.21   | 0.51            | 100.00         | 0.4           | 83.2    | 0.44 E                 |
| 200.00                                                                                            | 0.46 | 88.41   | 0.07            | 200.00         | 1.3           | 84.8    | 1.29 E                 |
| 300.00                                                                                            | 0.44 | 93.18   | 0.04            | 299.99         | 2.1           | 87.1    | 2.07 E                 |
| 400.00                                                                                            | 0.44 | 100.59  | 0.06            | 399.99         | 2.8           | 89.7    | 2.83 E                 |
| 500.00                                                                                            | 0.37 | 140.18  | 0.28            | 499.99         | 3.4           | 95.1    | 3.41 E                 |
| 600.00                                                                                            | 0.46 | 209.59  | 0.48            | 599.98         | 3.5           | 104.7   | 3.42 E                 |
| 700.00                                                                                            | 0.54 | 207.26  | 0.08            | 699.98         | 3.4           | 119.0   | 3.01 E                 |
| 800.00                                                                                            | 0.69 | 221.26  | 0.21            | 799.98         | 3.5           | 136.7   | 2.40 E                 |
| 900.00                                                                                            | 0.91 | 223.79  | 0.22            | 899.97         | 3.9           | 157.9   | 1.45 E                 |
| 1000.00                                                                                           | 1.05 | 225.39  | 0.14            | 999.95         | 4.8           | 177.0   | 0.25 E                 |
| 1100.00                                                                                           | 1.40 | 228.61  | 0.36            | 1099.93        | 6.4           | 192.0   | 1.32 W                 |
| 1200.00                                                                                           | 1.52 | 233.20  | 0.17            | 1199.90        | 8.5           | 202.8   | 3.30 W                 |
| 1300.00                                                                                           | 1.33 | 266.70  | 0.84            | 1299.87        | 10.3          | 212.4   | 5.52 W                 |

Final Station Closure: Distance: 10.30 ft Az: 212.40 deg.