Oilfield Services, Central U.S. Land
**Schlumberger Drilling and Measurements**
Drilling Group
Geo Market Area: South West Texas Basin
7220 W I-H 20
Midland, Texas 79706
Phone : (432) 742-5400 (Main)
Fax : (432) 742-5606 (Shared)

**Schlumberger**

30-015-45073

October 31, 2018

OXY USA INC.

NM OIL CONSERVATION
ARTESIA DISTRICT

DEC 20 2018

RECEIVED

Re:

28, 23S, 31E, Eddy NM
32.26930 103.78910

CLIENT: OXY USA INC.
WELL: Iridium MDP1 28-21 Fed Com 11H
FIELD: Ingle Wells Bone Spring

RIG: H&P 556
COUNTY: Eddy
API NO: 30-015-45073
JOB NO: 18MLD3522

Enclosed, please find the original copy of the survey performed on the referenced well by Drilling & Measurements, a division of Schlumberger Technology Corporation (P-5 No. 754900).
Other information required by your office is as follows.

| Name & Title of Surveyor | Drainhole Number | Surveyed Depths | | Dates Performed | | Type of Survey |
|---|---|---|---|---|---|---|
| Chris Heimann<br>FE | Iridium MDP1 28-21<br>Fed Com 11H<br>Original Hole | 596.00 Ft<br>10254.00 Ft | to | August 27, 2018<br>September 15, 2018 | to | SlimPulse<br>Third Party Corrected |

If any other information is required, please contact the undersigned at the above letterhead and phone number.
Sincerely,

Van Spinks
Field Service Manager

Oilfield Services, Central U.S. Land
**Schlumberger Drilling and Measurements**
Drilling Group
Geo Market Area: South West Texas Basin
7220 W I-H 20
Midland, Texas 79706
Phone : (432) 742-5400 (Main)
Fax : (432) 742-5606 (Shared)

**Schlumberger**

Well Reference:
28, 23S, 31E, Eddy NM
32.26930 103.78910

I, Chris Heimann certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of August 27, 2018 through September 15, 2018, conduct or supervise the taking of the SlimPulse & Third Party Corrected surveys from a depth of 596.00 feet to a depth of 10254.00 feet referenced to driller's depth; that the data is true, correct, complete and within the limitations of the tool as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I am authorized and qualified to make this report; that this survey was conducted at the request of OXY USA INC. for the Iridium MDP1 28-21 Fed Com 11H Well (Original Hole) API No. 30-015-45073 in New Mexico; and that I have reviewed this report and find that it conforms to the principals and procedures as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation.

By
Chris Heimann
FE

Subscribed and Sworn to before me this 31st day of October (month) 2018 (yr)

My Commission expires:

2-16-2022

D. Adams (signature)
Notary Public

Adams County Colorado
(County State)

DONNA ADAMS
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20184007893
MY COMMISSION EXPIRES FEBRUARY 16, 2022

Schlumberger

# Oxy Iridium MDP1 28-21 Federal Com 11H Gyro+MWD 0-10370' MD Survey
## Geodetic Report
(Def Survey)

| | | | |
|---|---|---|---|
| **Report Date:** | October 10, 2018 - 11:31 AM | **Survey / DLS Computation:** | Minimum Curvature / Lubinski |
| **Client:** | OXY | **Vertical Section Azimuth:** | 358.125 ° (Grid North) |
| **Field:** | NM Eddy County (NAD 83) | **Vertical Section Origin:** | 0.000 ft, 0.000 ft |
| **Structure / Slot:** | Oxy Iridium MDP1 28-21 Federal Com 11H / Iridium MDP1 28-21 Federal Com 11H | **TVD Reference Datum:** | RKB=30' |
| **Well:** | Iridium MDP1 28-21 Federal Com 11H | **TVD Reference Elevation:** | 3400.300 ft above MSL |
| **Borehole:** | Pilot Hole | **Seabed / Ground Elevation:** | 3370.300 ft above MSL |
| **UWI / API#:** | Unknown / 30-015-45073 | **Magnetic Declination:** | 6.896 ° |
| **Survey Name:** | Oxy Iridium MDP1 28-21 Federal Com 11H Gyro+MWD 0-10370' MD | **Total Gravity Field Strength:** | 998.4510mgn (9.80665 Based) |
| **Survey Date:** | September 07, 2018 | **Gravity Model:** | GARM |
| **Tort / AHD / DDI / ERD Ratio:** | 65.471 ° / 404.059 ft / 4.423 / 0.039 | **Total Magnetic Field Strength:** | 48014.949 nT |
| **Coordinate Reference System:** | NAD83 New Mexico State Plane, Eastern Zone, US Feet | **Magnetic Dip Angle:** | 60.012 ° |
| **Location Lat / Long:** | N 32° 16' 9.70272", W 103° 47' 21.10569" | **Declination Date:** | September 07, 2018 |
| **Location Grid N/E Y/X:** | N 462153.250 ftUS, E 709519.680 ftUS | **Magnetic Declination Model:** | HDGM 2018 |
| **CRS Grid Convergence Angle:** | 0.2905 ° | **North Reference:** | Grid North |
| **Grid Scale Factor:** | 0.99994149 | **Grid Convergence Used:** | 0.2905 ° |
| **Version / Patch:** | 2.10.740.0 | **Total Corr Mag North->Grid North:** | 6.6051 ° |
| | | **Local Coord Referenced To:** | Well Head |

| Comments | MD (ft) | Incl (°) | Azim Grid (°) | TVD (ft) | VSEC (ft) | NS (ft) | EW (ft) | DLS (°/100ft) | Northing (ftUS) | Easting (ftUS) | Latitude (N/S ° ' ") | Longitude (E/W ° ' ") |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RKB | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | N/A | 462153.25 | 709519.68 | N 32 16 9.70 | W 103 47 21.11 |
| SHL | 30.00 | 0.00 | 0.00 | 30.00 | 0.00 | 0.00 | 0.00 | 0.00 | 462153.25 | 709519.68 | N 32 16 9.70 | W 103 47 21.11 |
| | 100.00 | 0.32 | 51.20 | 100.00 | 0.12 | 0.12 | 0.15 | 0.46 | 462153.37 | 709519.83 | N 32 16 9.70 | W 103 47 21.10 |
| | 156.00 | 0.38 | 62.40 | 156.00 | 0.29 | 0.31 | 0.44 | 0.16 | 462153.56 | 709520.12 | N 32 16 9.71 | W 103 47 21.10 |
| | 241.00 | 0.27 | 93.88 | 241.00 | 0.39 | 0.42 | 0.89 | 0.24 | 462153.67 | 709520.57 | N 32 16 9.71 | W 103 47 21.10 |
| | 334.00 | 0.40 | 103.26 | 334.00 | 0.29 | 0.33 | 1.42 | 0.15 | 462153.58 | 709521.10 | N 32 16 9.71 | W 103 47 21.09 |
| | 429.00 | 0.51 | 109.05 | 428.99 | 0.05 | 0.12 | 2.15 | 0.13 | 462153.37 | 709521.83 | N 32 16 9.70 | W 103 47 21.08 |
| | 523.62 | 0.47 | 129.27 | 523.61 | -0.36 | -0.26 | 2.84 | 0.19 | 462152.99 | 709522.52 | N 32 16 9.70 | W 103 47 21.07 |
| Last Gyro | 596.00 | 0.44 | 137.09 | 595.99 | -0.76 | -0.65 | 3.26 | 0.10 | 462152.60 | 709522.94 | N 32 16 9.70 | W 103 47 21.07 |
| | 665.00 | 0.10 | 154.31 | 664.99 | -1.02 | -0.90 | 3.47 | 0.50 | 462152.35 | 709523.15 | N 32 16 9.69 | W 103 47 21.07 |
| | 757.00 | 0.03 | 70.82 | 756.99 | -1.08 | -0.97 | 3.53 | 0.11 | 462152.28 | 709523.21 | N 32 16 9.69 | W 103 47 21.06 |
| | 848.00 | 0.03 | 89.05 | 847.99 | -1.08 | -0.96 | 3.57 | 0.01 | 462152.29 | 709523.25 | N 32 16 9.69 | W 103 47 21.06 |
| | 940.00 | 0.03 | 153.89 | 939.99 | -1.10 | -0.98 | 3.61 | 0.03 | 462152.27 | 709523.29 | N 32 16 9.69 | W 103 47 21.06 |
| | 1031.00 | 0.03 | 17.85 | 1030.99 | -1.10 | -0.98 | 3.63 | 0.06 | 462152.27 | 709523.31 | N 32 16 9.69 | W 103 47 21.06 |
| | 1120.00 | 0.03 | 105.89 | 1119.99 | -1.08 | -0.96 | 3.66 | 0.05 | 462152.29 | 709523.34 | N 32 16 9.69 | W 103 47 21.06 |
| | 1302.00 | 0.07 | 118.80 | 1301.99 | -1.15 | -1.03 | 3.80 | 0.02 | 462152.22 | 709523.48 | N 32 16 9.69 | W 103 47 21.06 |
| | 1393.00 | 0.08 | 184.42 | 1392.99 | -1.24 | -1.12 | 3.84 | 0.09 | 462152.13 | 709523.52 | N 32 16 9.69 | W 103 47 21.06 |
| | 1487.00 | 0.07 | 226.70 | 1486.99 | -1.35 | -1.22 | 3.80 | 0.06 | 462152.03 | 709523.48 | N 32 16 9.69 | W 103 47 21.06 |
| | 1582.00 | 0.03 | 2.88 | 1581.99 | -1.36 | -1.24 | 3.75 | 0.10 | 462152.01 | 709523.43 | N 32 16 9.69 | W 103 47 21.06 |
| | 1676.00 | 0.03 | 199.30 | 1675.99 | -1.36 | -1.24 | 3.75 | 0.06 | 462152.01 | 709523.43 | N 32 16 9.69 | W 103 47 21.06 |
| | 1771.00 | 0.03 | 344.17 | 1770.99 | -1.36 | -1.24 | 3.73 | 0.06 | 462152.01 | 709523.41 | N 32 16 9.69 | W 103 47 21.06 |
| | 1865.00 | 0.03 | 303.02 | 1864.99 | -1.32 | -1.20 | 3.71 | 0.02 | 462152.05 | 709523.39 | N 32 16 9.69 | W 103 47 21.06 |
| | 2054.00 | 0.03 | 32.20 | 2053.99 | -1.25 | -1.13 | 3.69 | 0.02 | 462152.12 | 709523.37 | N 32 16 9.69 | W 103 47 21.06 |
| | 2149.00 | 0.03 | 340.65 | 2148.99 | -1.21 | -1.09 | 3.70 | 0.03 | 462152.16 | 709523.38 | N 32 16 9.69 | W 103 47 21.06 |
| | 2244.00 | 0.03 | 150.18 | 2243.99 | -1.21 | -1.09 | 3.70 | 0.06 | 462152.16 | 709523.38 | N 32 16 9.69 | W 103 47 21.06 |
| | 2338.00 | 0.03 | 216.50 | 2337.99 | -1.25 | -1.13 | 3.70 | 0.03 | 462152.12 | 709523.38 | N 32 16 9.69 | W 103 47 21.06 |
| | 2433.00 | 0.03 | 198.73 | 2432.99 | -1.29 | -1.17 | 3.67 | 0.01 | 462152.08 | 709523.35 | N 32 16 9.69 | W 103 47 21.06 |
| | 2622.00 | 0.03 | 149.82 | 2621.99 | -1.38 | -1.26 | 3.68 | 0.01 | 462151.99 | 709523.36 | N 32 16 9.69 | W 103 47 21.06 |
| | 2717.00 | 0.03 | 78.56 | 2716.99 | -1.40 | -1.28 | 3.72 | 0.04 | 462151.97 | 709523.40 | N 32 16 9.69 | W 103 47 21.06 |
| | 2812.00 | 0.08 | 173.11 | 2811.99 | -1.46 | -1.34 | 3.75 | 0.09 | 462151.91 | 709523.43 | N 32 16 9.69 | W 103 47 21.06 |
| | 2906.00 | 0.03 | 313.08 | 2905.99 | -1.51 | -1.39 | 3.74 | 0.11 | 462151.86 | 709523.42 | N 32 16 9.69 | W 103 47 21.06 |
| | 3096.00 | 0.03 | 206.07 | 3095.99 | -1.52 | -1.40 | 3.68 | 0.03 | 462151.85 | 709523.36 | N 32 16 9.69 | W 103 47 21.06 |
| | 3191.00 | 0.14 | 315.78 | 3190.99 | -1.45 | -1.34 | 3.59 | 0.16 | 462151.91 | 709523.27 | N 32 16 9.69 | W 103 47 21.06 |
| | 3285.00 | 0.33 | 293.06 | 3284.98 | -1.25 | -1.15 | 3.26 | 0.22 | 462152.10 | 709522.94 | N 32 16 9.69 | W 103 47 21.07 |
| | 3380.00 | 0.11 | 175.39 | 3379.98 | -1.23 | -1.13 | 3.02 | 0.41 | 462152.12 | 709522.70 | N 32 16 9.69 | W 103 47 21.07 |
| | 3569.00 | 1.60 | 147.00 | 3568.96 | -3.67 | -3.52 | 4.47 | 0.80 | 462149.73 | 709524.15 | N 32 16 9.67 | W 103 47 21.05 |
| | 3664.00 | 1.86 | 147.64 | 3663.91 | -6.13 | -5.94 | 6.02 | 0.27 | 462147.31 | 709525.70 | N 32 16 9.64 | W 103 47 21.04 |
| | 3759.00 | 2.46 | 152.21 | 3758.85 | -9.30 | -9.05 | 7.79 | 0.66 | 462144.21 | 709527.47 | N 32 16 9.61 | W 103 47 21.02 |
| | 3948.00 | 3.47 | 155.12 | 3947.59 | -18.21 | -17.82 | 12.09 | 0.54 | 462135.43 | 709531.77 | N 32 16 9.53 | W 103 47 20.97 |
| | 4042.00 | 3.04 | 155.63 | 4041.44 | -23.13 | -22.67 | 14.32 | 0.46 | 462130.58 | 709534.00 | N 32 16 9.48 | W 103 47 20.94 |
| | 4161.00 | 2.54 | 161.41 | 4160.30 | -28.57 | -28.05 | 16.48 | 0.48 | 462125.20 | 709536.14 | N 32 16 9.42 | W 103 47 20.92 |
| | 4338.00 | 3.05 | 166.51 | 4337.09 | -36.94 | -36.34 | 18.81 | 0.32 | 462116.91 | 709538.49 | N 32 16 9.34 | W 103 47 20.89 |
| | 4527.00 | 4.96 | 183.52 | 4525.62 | -50.00 | -49.39 | 19.48 | 1.18 | 462103.86 | 709539.16 | N 32 16 9.21 | W 103 47 20.88 |
| | 4622.00 | 5.98 | 188.63 | 4620.19 | -58.96 | -58.38 | 18.48 | 1.19 | 462094.87 | 709538.18 | N 32 16 9.12 | W 103 47 20.89 |
| | 4716.00 | 6.29 | 185.94 | 4713.65 | -68.87 | -68.34 | 17.22 | 0.45 | 462084.91 | 709536.90 | N 32 16 9.03 | W 103 47 20.91 |
| | 4811.00 | 6.95 | 182.05 | 4808.02 | -79.76 | -79.27 | 16.47 | 0.84 | 462073.99 | 709536.15 | N 32 16 8.92 | W 103 47 20.92 |
| | 4906.00 | 7.32 | 177.23 | 4902.28 | -91.55 | -91.05 | 16.56 | 0.74 | 462062.20 | 709536.24 | N 32 16 8.80 | W 103 47 20.92 |
| | 5000.00 | 7.02 | 177.25 | 4995.55 | -103.28 | -102.77 | 17.12 | 0.32 | 462050.48 | 709536.80 | N 32 16 8.68 | W 103 47 20.91 |
| | 5095.00 | 6.41 | 180.51 | 5089.90 | -114.38 | -113.87 | 17.36 | 0.76 | 462039.38 | 709537.04 | N 32 16 8.58 | W 103 47 20.91 |
| | 5189.00 | 6.22 | 180.57 | 5183.33 | -124.71 | -124.21 | 17.26 | 0.20 | 462029.04 | 709536.94 | N 32 16 8.47 | W 103 47 20.91 |
| | 5284.00 | 5.92 | 184.23 | 5277.79 | -134.72 | -134.25 | 16.85 | 0.52 | 462019.01 | 709536.53 | N 32 16 8.37 | W 103 47 20.92 |
| | 5378.00 | 5.97 | 183.42 | 5371.29 | -144.41 | -143.96 | 16.20 | 0.10 | 462009.30 | 709535.88 | N 32 16 8.28 | W 103 47 20.93 |
| | 5473.00 | 6.11 | 183.01 | 5465.76 | -154.37 | -153.94 | 15.64 | 0.15 | 461999.32 | 709535.32 | N 32 16 8.18 | W 103 47 20.93 |
| | 5567.00 | 5.84 | 183.57 | 5559.25 | -164.11 | -163.71 | 15.08 | 0.29 | 461989.55 | 709534.76 | N 32 16 8.08 | W 103 47 20.94 |
| | 5661.00 | 2.51 | 167.99 | 5652.99 | -170.90 | -170.50 | 15.21 | 3.71 | 461982.76 | 709534.89 | N 32 16 8.01 | W 103 47 20.94 |
| | 5851.00 | 0.07 | 144.88 | 5842.93 | -175.10 | -174.66 | 16.14 | 1.29 | 461978.60 | 709535.82 | N 32 16 7.97 | W 103 47 20.93 |
| | 5945.00 | 0.14 | 222.67 | 5936.93 | -175.23 | -174.79 | 16.09 | 0.15 | 461978.47 | 709535.77 | N 32 16 7.97 | W 103 47 20.93 |
| | 6134.00 | 0.14 | 19.30 | 6125.93 | -175.18 | -174.75 | 16.01 | 0.15 | 461978.52 | 709535.69 | N 32 16 7.97 | W 103 47 20.93 |
| | 6324.00 | 0.25 | 239.13 | 6315.93 | -175.16 | -174.74 | 15.74 | 0.19 | 461978.52 | 709535.41 | N 32 16 7.97 | W 103 47 20.93 |
| | 6418.00 | 0.43 | 87.98 | 6409.93 | -175.26 | -174.83 | 15.91 | 0.70 | 461978.43 | 709535.59 | N 32 16 7.97 | W 103 47 20.93 |
| | 6608.00 | 0.17 | 173.96 | 6599.92 | -175.54 | -175.09 | 16.65 | 0.24 | 461978.17 | 709536.33 | N 32 16 7.97 | W 103 47 20.92 |
| | 6703.00 | 0.12 | 236.42 | 6694.92 | -175.73 | -175.28 | 16.59 | 0.16 | 461977.98 | 709536.27 | N 32 16 7.97 | W 103 47 20.92 |
| | 6892.00 | 0.15 | 107.83 | 6883.92 | -175.92 | -175.47 | 16.66 | 0.13 | 461977.79 | 709536.34 | N 32 16 7.97 | W 103 47 20.92 |
| | 7081.00 | 0.11 | 238.27 | 7072.92 | -176.10 | -175.64 | 16.74 | 0.12 | 461977.62 | 709536.42 | N 32 16 7.98 | W 103 47 20.92 |
| | 7176.00 | 0.14 | 99.25 | 7167.92 | -176.17 | -175.71 | 16.78 | 0.25 | 461977.55 | 709536.46 | N 32 16 7.98 | W 103 47 20.92 |
| | 7270.00 | 0.24 | 356.49 | 7261.92 | -175.99 | -175.53 | 16.88 | 0.32 | 461977.73 | 709536.56 | N 32 16 7.98 | W 103 47 20.92 |
| | 7365.00 | 0.52 | 310.02 | 7356.92 | -175.51 | -175.06 | 16.54 | 0.42 | 461978.20 | 709536.22 | N 32 16 7.97 | W 103 47 20.92 |
| | 7459.00 | 0.46 | 197.83 | 7450.92 | -175.58 | -175.14 | 16.10 | 0.87 | 461978.12 | 709535.78 | N 32 16 7.97 | W 103 47 20.93 |
| | 7554.00 | 0.32 | 135.84 | 7545.92 | -176.13 | -175.70 | 16.16 | 0.44 | 461977.56 | 709535.84 | N 32 16 7.96 | W 103 47 20.93 |
| | 7743.00 | 0.25 | 212.88 | 7734.92 | -176.86 | -176.42 | 16.31 | 0.19 | 461976.84 | 709535.99 | N 32 16 7.96 | W 103 47 20.93 |
| | 7837.00 | 0.37 | 176.37 | 7828.91 | -177.33 | -176.90 | 16.22 | 0.24 | 461976.36 | 709535.90 | N 32 16 7.95 | W 103 47 20.93 |
| | 7928.00 | 0.35 | 212.60 | 7919.91 | -177.86 | -177.42 | 16.09 | 0.25 | 461975.84 | 709535.76 | N 32 16 7.95 | W 103 47 20.93 |
| | 8082.00 | 0.19 | 275.74 | 8073.91 | -178.21 | -177.80 | 15.58 | 0.20 | 461975.47 | 709535.26 | N 32 16 7.94 | W 103 47 20.93 |
| | 8176.00 | 0.51 | 304.50 | 8167.91 | -177.94 | -177.54 | 15.08 | 0.38 | 461975.72 | 709534.76 | N 32 16 7.95 | W 103 47 20.94 |
| | 8271.00 | 0.47 | 160.46 | 8262.91 | -178.08 | -177.69 | 14.73 | 0.91 | 461975.57 | 709534.41 | N 32 16 7.94 | W 103 47 20.94 |
| | 8461.00 | 2.48 | 248.83 | 8452.84 | -180.22 | -179.96 | 10.89 | 1.24 | 461973.30 | 709530.57 | N 32 16 7.92 | W 103 47 20.99 |
| | 8555.00 | 2.79 | 224.86 | 8546.75 | -182.46 | -182.31 | 7.38 | 1.21 | 461970.95 | 709527.06 | N 32 16 7.90 | W 103 47 21.03 |

| Comments | MD (ft) | Incl (°) | Azim Grid (°) | TVD (ft) | VSEC (ft) | NS (ft) | EW (ft) | DLS (°/100ft) | Northing (ftUS) | Easting (ftUS) | Latitude (N/S ° ' ") | Longitude (E/W ° ' ") |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 8650.00 | 2.21 | 219.86 | 8641.65 | -185.41 | -185.36 | 4.57 | 0.65 | 461967.90 | 709524.25 | N 32 16 7.87 | W 103 47 21.06 |
| | 8745.00 | 2.89 | 240.46 | 8736.56 | -187.89 | -187.95 | 1.31 | 1.19 | 461965.32 | 709520.99 | N 32 16 7.84 | W 103 47 21.10 |
| | 8934.00 | 5.88 | 198.11 | 8925.03 | -199.20 | -199.50 | -5.84 | 2.23 | 461953.76 | 709513.84 | N 32 16 7.73 | W 103 47 21.19 |
| | 9029.00 | 7.78 | 194.71 | 9019.35 | -209.94 | -210.35 | -8.99 | 2.04 | 461942.92 | 709510.69 | N 32 16 7.62 | W 103 47 21.22 |
| | 9123.00 | 10.48 | 199.86 | 9112.15 | -223.98 | -224.54 | -13.51 | 3.00 | 461928.72 | 709506.17 | N 32 16 7.48 | W 103 47 21.28 |
| | 9218.00 | 11.36 | 208.34 | 9205.44 | -240.09 | -240.91 | -20.89 | 1.93 | 461912.36 | 709498.79 | N 32 16 7.32 | W 103 47 21.36 |
| | 9312.00 | 10.33 | 210.58 | 9297.76 | -255.21 | -256.31 | -29.57 | 1.18 | 461896.96 | 709490.11 | N 32 16 7.17 | W 103 47 21.47 |
| | 9406.00 | 10.37 | 219.67 | 9390.24 | -268.65 | -270.08 | -39.26 | 1.74 | 461883.19 | 709480.42 | N 32 16 7.03 | W 103 47 21.58 |
| | 9501.00 | 9.62 | 238.99 | 9483.82 | -278.92 | -280.75 | -51.52 | 3.60 | 461872.51 | 709468.16 | N 32 16 6.93 | W 103 47 21.72 |
| | 9595.00 | 9.53 | 237.88 | 9576.51 | -288.65 | -288.93 | -64.85 | 0.20 | 461864.34 | 709454.83 | N 32 16 6.85 | W 103 47 21.88 |
| | 9689.00 | 7.54 | 236.72 | 9669.46 | -293.77 | -296.44 | -76.61 | 2.13 | 461856.83 | 709443.08 | N 32 16 6.77 | W 103 47 22.02 |
| | 9783.00 | 9.49 | 229.49 | 9762.43 | -301.82 | -304.86 | -87.66 | 2.36 | 461848.41 | 709432.03 | N 32 16 6.69 | W 103 47 22.14 |
| | 9877.00 | 8.35 | 226.91 | 9855.29 | -311.16 | -314.55 | -98.53 | 1.28 | 461838.72 | 709421.15 | N 32 16 6.60 | W 103 47 22.27 |
| | 9972.00 | 7.25 | 219.43 | 9949.41 | -320.21 | -323.89 | -107.38 | 1.57 | 461829.37 | 709412.31 | N 32 16 6.50 | W 103 47 22.38 |
| | 10066.00 | 2.71 | 203.48 | 10043.03 | -326.68 | -330.52 | -112.03 | 5.00 | 461822.75 | 709407.65 | N 32 16 6.44 | W 103 47 22.43 |
| | 10160.00 | 1.69 | 175.46 | 10136.97 | -330.07 | -333.94 | -112.81 | 1.55 | 461819.33 | 709406.88 | N 32 16 6.40 | W 103 47 22.44 |
| Final MWD Surveys | 10254.00 | 0.64 | 143.82 | 10230.95 | -331.89 | -335.74 | -112.39 | 1.27 | 461817.53 | 709407.30 | N 32 16 6.39 | W 103 47 22.43 |
| Proj to Bit | 10370.00 | 0.64 | 144.39 | 10346.94 | -332.96 | -336.79 | -111.63 | 0.01 | 461816.48 | 709408.06 | N 32 16 6.38 | W 103 47 22.43 |

**Survey Type:** Def Survey

**Survey Error Model:** ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

**Survey Program:**

| Description | Part | MD From (ft) | MD To (ft) | EOU Freq (ft) | Hole Size Casing Diameter (in) | (in) | Survey Tool Type | Borehole / Survey |
|---|---|---|---|---|---|---|---|---|
| | 1 | 0.000 | 30.000 | 1/98.425 | 30.000 | 30.000 | NAL_NSG+MSHOT-Depth Only | Pilot Hole / Oxy Iridium MDP1 28-21 Federal Com 11H Gyro+MWD 0-10370' MD |
| | 1 | 30.000 | 30.000 | Act Stns | 30.000 | 30.000 | NAL_NSG+MSHOT-Depth Only | Pilot Hole / Oxy Iridium MDP1 28-21 Federal Com 11H Gyro+MWD 0-10370' MD |
| | 1 | 30.000 | 596.000 | Act Stns | 30.000 | 30.000 | NAL_NSG+MSHOT | Pilot Hole / Oxy Iridium MDP1 28-21 Federal Com 11H Gyro+MWD |
| | 1 | 596.000 | 10370.000 | Act Stns | 30.000 | 30.000 | NAL_MWD_IFR1+MS | Pilot Hole / Oxy Iridium MDP1 28-21 Federal Com 11H Gyro+MWD |