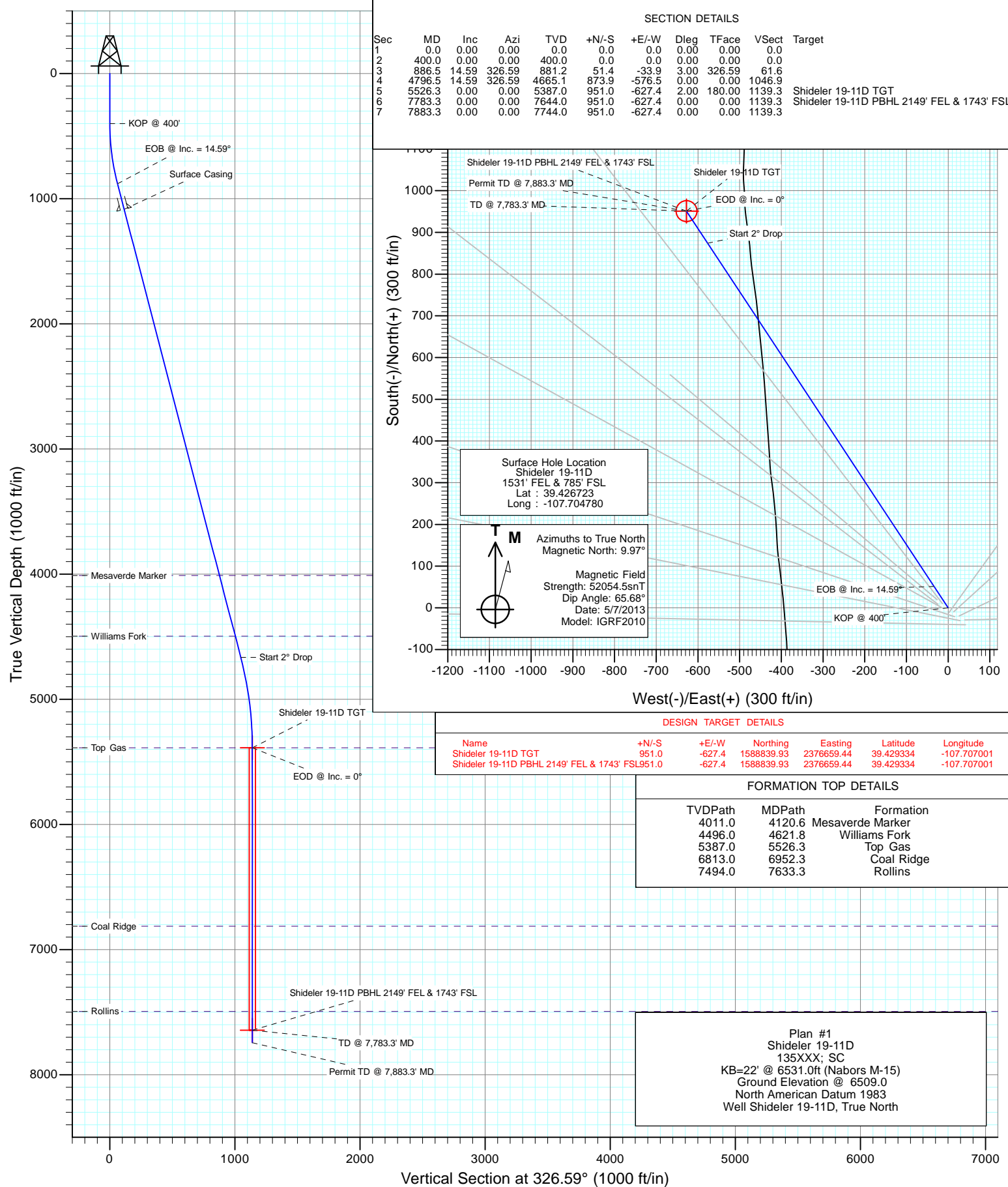
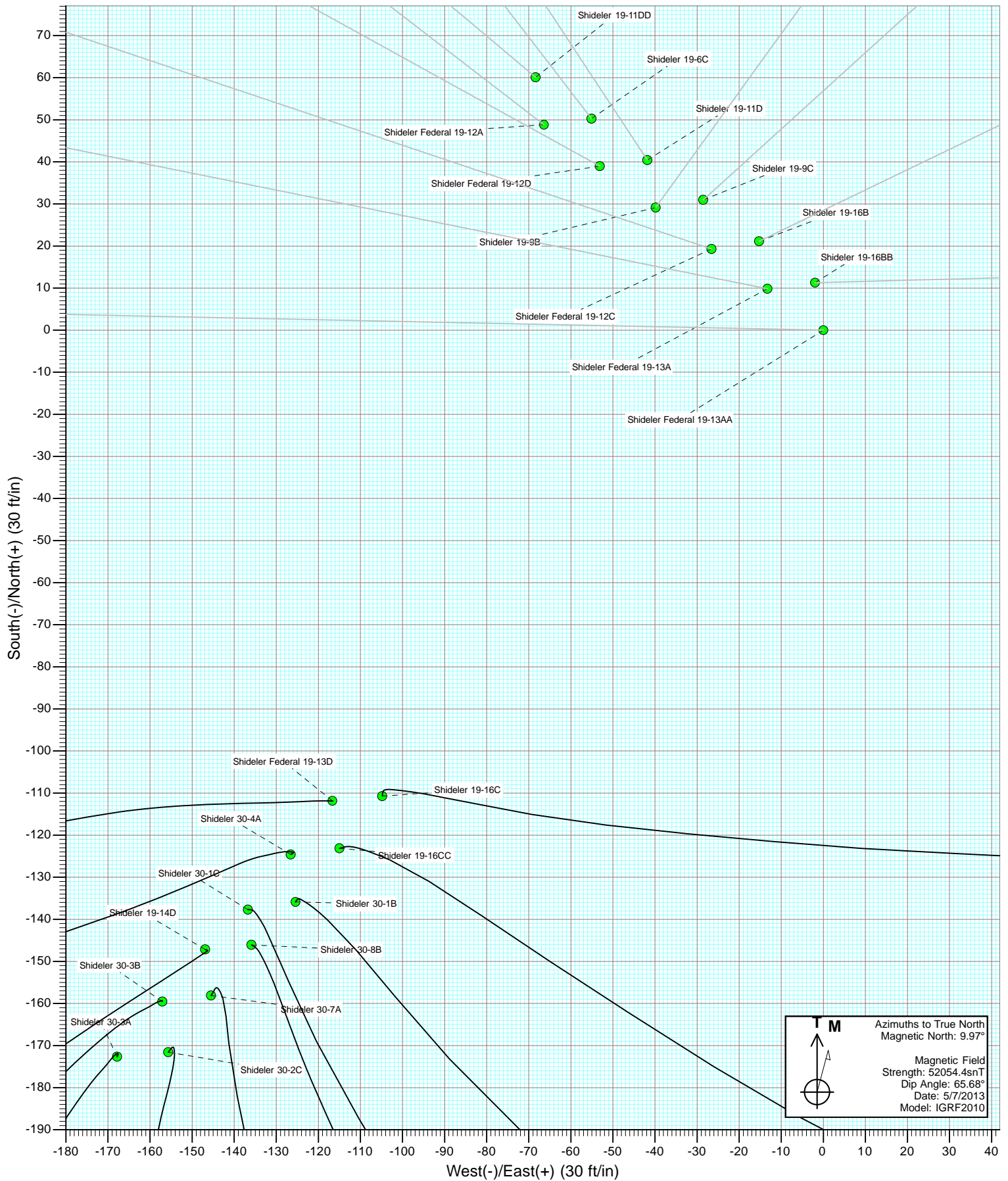
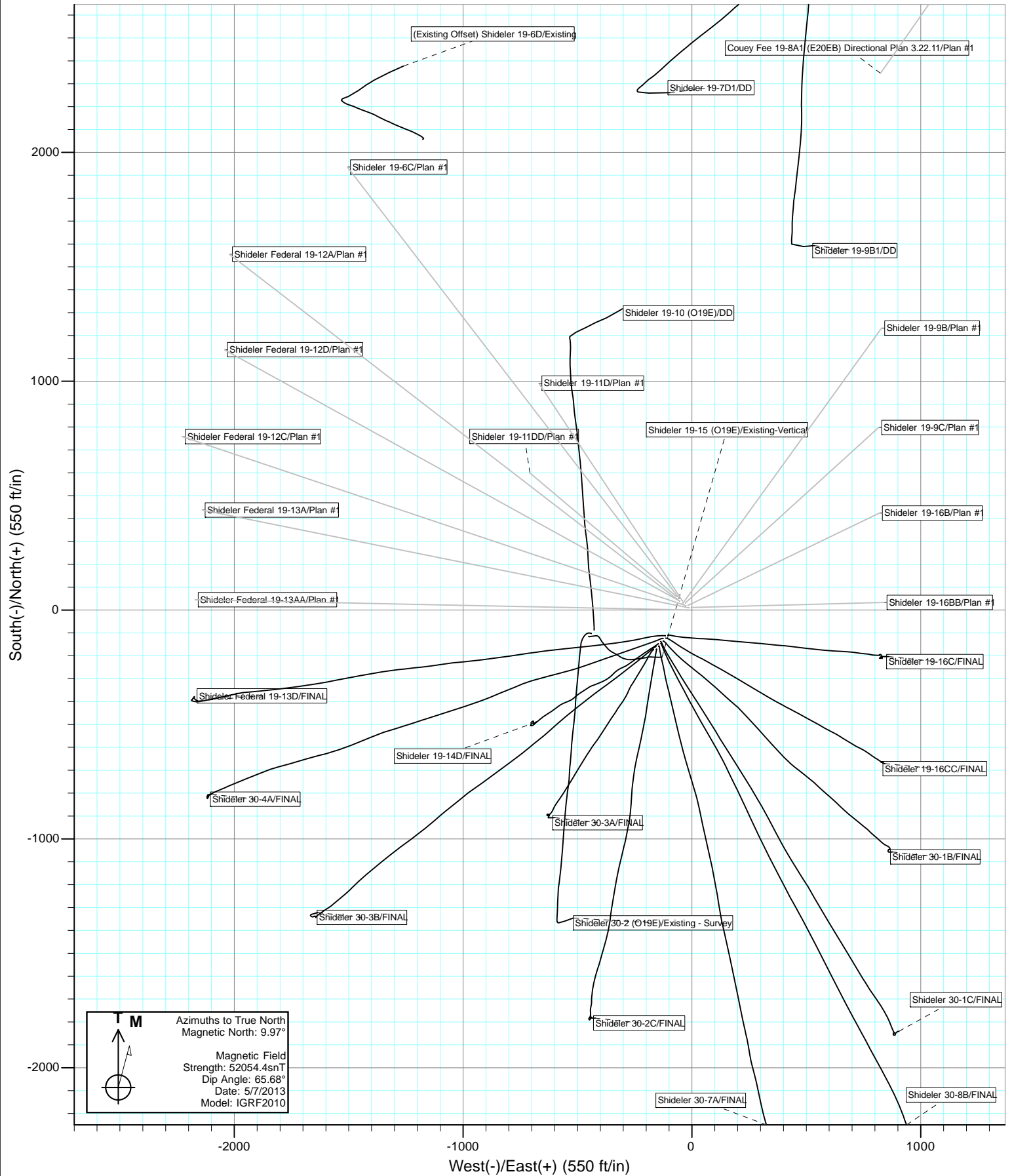




Project: Mamm Creek
Site: O19EB Pad (2nd Occupation)
Well: Shideler 19-11D
Wellbore: OH
Design: Plan #1

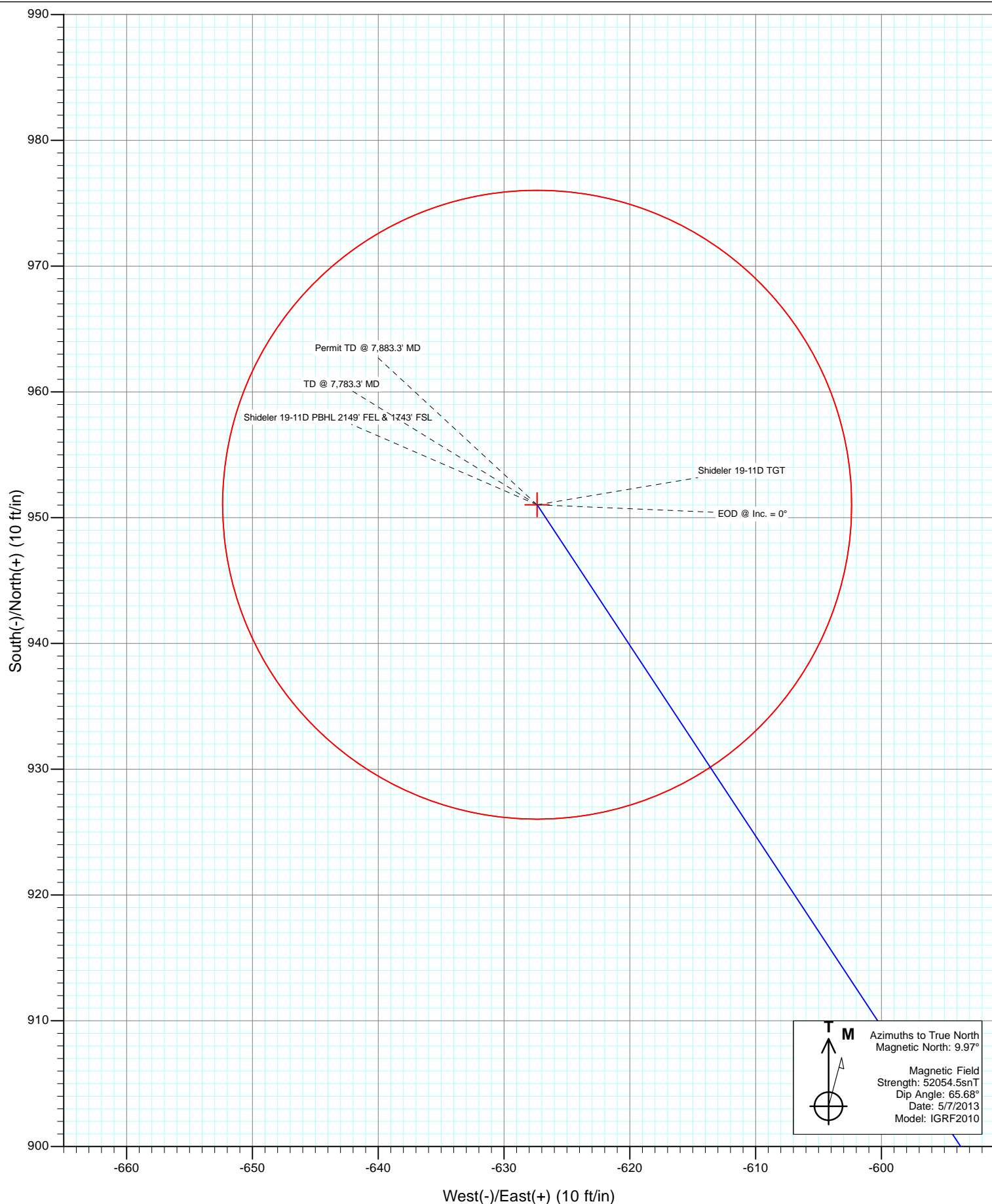








Project: Mamm Creek
Site: O19EB Pad (2nd Occupation)
Well: Shideler 19-11D
Wellbore: OH
Design: Plan #1



Cathedral Energy Services

Planning Report

| | | | |
|------------------|-----------------------------|-------------------------------------|---------------------------------|
| Database: | USA EDM 5000 Multi Users DB | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Company: | EnCana Oil & Gas (USA) Inc | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Project: | Mamm Creek | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site: | O19EB Pad (2nd Occupation) | North Reference: | True |
| Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | OH | | |
| Design: | Plan #1 | | |

| | | | |
|-------------|---------------------------|---------------|----------------|
| Project | Mamm Creek | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | |
| Map Zone: | Colorado Central Zone | | |

| Site | | O19EB Pad (2nd Occupation) | | | |
|-----------------------|----------|----------------------------|-----------------|-------------------|-------------|
| Site Position: | | Northing: | 1,587,894.27 ft | Latitude: | 39.426777 |
| From: | Lat/Long | Easting: | 2,377,237.48 ft | Longitude: | -107.704874 |
| Position Uncertainty: | 0.0 ft | Slot Radius: | 13.200 in | Grid Convergence: | -1.39 ° |

| | | | | | | |
|----------------------|-----------------|--------|---------------------|-----------------|---------------|-------------|
| Well | Shideler 19-11D | | | | | |
| Well Position | +N/-S | 0.0 ft | Northing: | 1,587,873.96 ft | Latitude: | 39.426723 |
| | +E/-W | 0.0 ft | Easting: | 2,377,263.54 ft | Longitude: | -107.704780 |
| Position Uncertainty | | 0.0 ft | Wellhead Elevation: | ft | Ground Level: | 6,509.0 ft |

| | | | | | |
|-----------|------------|-------------|--------------------|------------------|------------------------|
| Wellbore | OH | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 5/7/2013 | 9.97 | 65.68 | 52,054 |

| | | | | |
|-------------------|--------------------------|---------------|---------------|------------------|
| Design | Plan #1 | | | |
| Audit Notes: | | | | |
| Version: | Phase: | PLAN | Tie On Depth: | 0.0 |
| Vertical Section: | Depth From (TVD) (ft) | +N/-S (ft) | +E/-W (ft) | Direction (°) |
| | 0.0 | 0.0 | 0.0 | 326.59 |

| Plan Sections | | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|----------------------|---------------------|---------|----------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 400.0 | 0.00 | 0.00 | 400.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 886.5 | 14.59 | 326.59 | 881.2 | 51.4 | -33.9 | 3.00 | 3.00 | 0.00 | 326.59 | |
| 4,796.5 | 14.59 | 326.59 | 4,665.1 | 873.9 | -576.5 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5,526.3 | 0.00 | 0.00 | 5,387.0 | 951.0 | -627.4 | 2.00 | -2.00 | 0.00 | 180.00 | Shideler 19-11D TGT |
| 7,783.3 | 0.00 | 0.00 | 7,644.0 | 951.0 | -627.4 | 0.00 | 0.00 | 0.00 | 0.00 | Shideler 19-11D PBHI |
| 7,883.3 | 0.00 | 0.00 | 7,744.0 | 951.0 | -627.4 | 0.00 | 0.00 | 0.00 | 0.00 | |

Cathedral Energy Services

Planning Report

| | | | |
|------------------|-----------------------------|-------------------------------------|---------------------------------|
| Database: | USA EDM 5000 Multi Users DB | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Company: | EnCana Oil & Gas (USA) Inc | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Project: | Mamm Creek | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site: | O19EB Pad (2nd Occupation) | North Reference: | True |
| Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | OH | | |
| Design: | Plan #1 | | |

Planned Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Comments / Formations |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|-----------------------|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 100.0 | 0.00 | 0.00 | 100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 300.0 | 0.00 | 0.00 | 300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 400.0 | 0.00 | 0.00 | 400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | KOP @ 400' |
| 500.0 | 3.00 | 326.59 | 500.0 | 2.2 | -1.4 | 2.6 | 3.00 | 3.00 | |
| 600.0 | 6.00 | 326.59 | 599.6 | 8.7 | -5.8 | 10.5 | 3.00 | 3.00 | |
| 700.0 | 9.00 | 326.59 | 698.8 | 19.6 | -12.9 | 23.5 | 3.00 | 3.00 | |
| 800.0 | 12.00 | 326.59 | 797.1 | 34.8 | -23.0 | 41.7 | 3.00 | 3.00 | |
| 886.5 | 14.59 | 326.59 | 881.2 | 51.4 | -33.9 | 61.6 | 3.00 | 3.00 | EOB @ Inc. = 14.59° |
| 900.0 | 14.59 | 326.59 | 894.3 | 54.3 | -35.8 | 65.0 | 0.00 | 0.00 | |
| 1,000.0 | 14.59 | 326.59 | 991.1 | 75.3 | -49.7 | 90.2 | 0.00 | 0.00 | |
| 1,097.0 | 14.59 | 326.59 | 1,085.0 | 95.7 | -63.1 | 114.7 | 0.00 | 0.00 | Surface Casing |
| 1,100.0 | 14.59 | 326.59 | 1,087.9 | 96.4 | -63.6 | 115.4 | 0.00 | 0.00 | |
| 1,200.0 | 14.59 | 326.59 | 1,184.6 | 117.4 | -77.4 | 140.6 | 0.00 | 0.00 | |
| 1,300.0 | 14.59 | 326.59 | 1,281.4 | 138.4 | -91.3 | 165.8 | 0.00 | 0.00 | |
| 1,400.0 | 14.59 | 326.59 | 1,378.2 | 159.5 | -105.2 | 191.0 | 0.00 | 0.00 | |
| 1,500.0 | 14.59 | 326.59 | 1,475.0 | 180.5 | -119.1 | 216.2 | 0.00 | 0.00 | |
| 1,600.0 | 14.59 | 326.59 | 1,571.7 | 201.5 | -132.9 | 241.4 | 0.00 | 0.00 | |
| 1,700.0 | 14.59 | 326.59 | 1,668.5 | 222.6 | -146.8 | 266.6 | 0.00 | 0.00 | |
| 1,800.0 | 14.59 | 326.59 | 1,765.3 | 243.6 | -160.7 | 291.8 | 0.00 | 0.00 | |
| 1,900.0 | 14.59 | 326.59 | 1,862.1 | 264.6 | -174.6 | 317.0 | 0.00 | 0.00 | |
| 2,000.0 | 14.59 | 326.59 | 1,958.8 | 285.7 | -188.4 | 342.2 | 0.00 | 0.00 | |
| 2,100.0 | 14.59 | 326.59 | 2,055.6 | 306.7 | -202.3 | 367.4 | 0.00 | 0.00 | |
| 2,200.0 | 14.59 | 326.59 | 2,152.4 | 327.7 | -216.2 | 392.6 | 0.00 | 0.00 | |
| 2,300.0 | 14.59 | 326.59 | 2,249.1 | 348.8 | -230.1 | 417.8 | 0.00 | 0.00 | |
| 2,400.0 | 14.59 | 326.59 | 2,345.9 | 369.8 | -243.9 | 443.0 | 0.00 | 0.00 | |
| 2,500.0 | 14.59 | 326.59 | 2,442.7 | 390.8 | -257.8 | 468.2 | 0.00 | 0.00 | |
| 2,600.0 | 14.59 | 326.59 | 2,539.5 | 411.9 | -271.7 | 493.4 | 0.00 | 0.00 | |
| 2,700.0 | 14.59 | 326.59 | 2,636.2 | 432.9 | -285.6 | 518.6 | 0.00 | 0.00 | |
| 2,800.0 | 14.59 | 326.59 | 2,733.0 | 453.9 | -299.4 | 543.8 | 0.00 | 0.00 | |
| 2,900.0 | 14.59 | 326.59 | 2,829.8 | 475.0 | -313.3 | 569.0 | 0.00 | 0.00 | |
| 3,000.0 | 14.59 | 326.59 | 2,926.6 | 496.0 | -327.2 | 594.2 | 0.00 | 0.00 | |
| 3,100.0 | 14.59 | 326.59 | 3,023.3 | 517.0 | -341.1 | 619.4 | 0.00 | 0.00 | |
| 3,200.0 | 14.59 | 326.59 | 3,120.1 | 538.1 | -354.9 | 644.6 | 0.00 | 0.00 | |
| 3,300.0 | 14.59 | 326.59 | 3,216.9 | 559.1 | -368.8 | 669.8 | 0.00 | 0.00 | |
| 3,400.0 | 14.59 | 326.59 | 3,313.7 | 580.1 | -382.7 | 695.0 | 0.00 | 0.00 | |
| 3,500.0 | 14.59 | 326.59 | 3,410.4 | 601.2 | -396.6 | 720.2 | 0.00 | 0.00 | |
| 3,600.0 | 14.59 | 326.59 | 3,507.2 | 622.2 | -410.4 | 745.4 | 0.00 | 0.00 | |
| 3,700.0 | 14.59 | 326.59 | 3,604.0 | 643.2 | -424.3 | 770.6 | 0.00 | 0.00 | |
| 3,800.0 | 14.59 | 326.59 | 3,700.7 | 664.3 | -438.2 | 795.8 | 0.00 | 0.00 | |
| 3,900.0 | 14.59 | 326.59 | 3,797.5 | 685.3 | -452.1 | 821.0 | 0.00 | 0.00 | |
| 4,000.0 | 14.59 | 326.59 | 3,894.3 | 706.3 | -465.9 | 846.2 | 0.00 | 0.00 | |
| 4,100.0 | 14.59 | 326.59 | 3,991.1 | 727.4 | -479.8 | 871.4 | 0.00 | 0.00 | |
| 4,120.6 | 14.59 | 326.59 | 4,011.0 | 731.7 | -482.7 | 876.6 | 0.00 | 0.00 | Mesaverde Marker |
| 4,200.0 | 14.59 | 326.59 | 4,087.8 | 748.4 | -493.7 | 896.6 | 0.00 | 0.00 | |
| 4,300.0 | 14.59 | 326.59 | 4,184.6 | 769.4 | -507.6 | 921.8 | 0.00 | 0.00 | |
| 4,400.0 | 14.59 | 326.59 | 4,281.4 | 790.5 | -521.4 | 947.0 | 0.00 | 0.00 | |
| 4,500.0 | 14.59 | 326.59 | 4,378.2 | 811.5 | -535.3 | 972.2 | 0.00 | 0.00 | |
| 4,600.0 | 14.59 | 326.59 | 4,474.9 | 832.5 | -549.2 | 997.4 | 0.00 | 0.00 | |
| 4,621.8 | 14.59 | 326.59 | 4,496.0 | 837.1 | -552.2 | 1,002.8 | 0.00 | 0.00 | Williams Fork |
| 4,700.0 | 14.59 | 326.59 | 4,571.7 | 853.6 | -563.1 | 1,022.6 | 0.00 | 0.00 | |

Cathedral Energy Services

Planning Report

| | | | |
|------------------|-----------------------------|-------------------------------------|---------------------------------|
| Database: | USA EDM 5000 Multi Users DB | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Company: | EnCana Oil & Gas (USA) Inc | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Project: | Mamm Creek | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site: | O19EB Pad (2nd Occupation) | North Reference: | True |
| Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | OH | | |
| Design: | Plan #1 | | |

| Planned Survey | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Comments / Formations |
| 4,796.5 | 14.59 | 326.59 | 4,665.1 | 873.9 | -576.5 | 1,046.9 | 0.00 | 0.00 | Start 2° Drop |
| 4,800.0 | 14.53 | 326.59 | 4,668.5 | 874.6 | -576.9 | 1,047.7 | 2.00 | -2.00 | |
| 4,900.0 | 12.53 | 326.59 | 4,765.7 | 894.1 | -589.8 | 1,071.1 | 2.00 | -2.00 | |
| 5,000.0 | 10.53 | 326.59 | 4,863.7 | 910.8 | -600.8 | 1,091.1 | 2.00 | -2.00 | |
| 5,100.0 | 8.53 | 326.59 | 4,962.3 | 924.6 | -609.9 | 1,107.7 | 2.00 | -2.00 | |
| 5,200.0 | 6.53 | 326.59 | 5,061.4 | 935.5 | -617.1 | 1,120.8 | 2.00 | -2.00 | |
| 5,300.0 | 4.53 | 326.59 | 5,161.0 | 943.6 | -622.4 | 1,130.4 | 2.00 | -2.00 | |
| 5,400.0 | 2.53 | 326.59 | 5,260.8 | 948.7 | -625.8 | 1,136.5 | 2.00 | -2.00 | |
| 5,500.0 | 0.53 | 326.59 | 5,360.7 | 950.9 | -627.3 | 1,139.2 | 2.00 | -2.00 | |
| 5,526.3 | 0.00 | 0.00 | 5,387.0 | 951.0 | -627.4 | 1,139.3 | 2.00 | -2.00 | EOD @ Inc. = 0° - Top Gas |
| 5,600.0 | 0.00 | 0.00 | 5,460.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 5,700.0 | 0.00 | 0.00 | 5,560.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 5,800.0 | 0.00 | 0.00 | 5,660.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 5,900.0 | 0.00 | 0.00 | 5,760.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 6,000.0 | 0.00 | 0.00 | 5,860.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 6,100.0 | 0.00 | 0.00 | 5,960.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 6,200.0 | 0.00 | 0.00 | 6,060.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 6,300.0 | 0.00 | 0.00 | 6,160.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 6,400.0 | 0.00 | 0.00 | 6,260.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 6,500.0 | 0.00 | 0.00 | 6,360.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 6,600.0 | 0.00 | 0.00 | 6,460.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 6,700.0 | 0.00 | 0.00 | 6,560.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 6,800.0 | 0.00 | 0.00 | 6,660.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 6,900.0 | 0.00 | 0.00 | 6,760.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 6,952.3 | 0.00 | 0.00 | 6,813.0 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | Coal Ridge |
| 7,000.0 | 0.00 | 0.00 | 6,860.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 7,100.0 | 0.00 | 0.00 | 6,960.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 7,200.0 | 0.00 | 0.00 | 7,060.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 7,300.0 | 0.00 | 0.00 | 7,160.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 7,400.0 | 0.00 | 0.00 | 7,260.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 7,500.0 | 0.00 | 0.00 | 7,360.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 7,600.0 | 0.00 | 0.00 | 7,460.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 7,633.3 | 0.00 | 0.00 | 7,494.0 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | Rollins |
| 7,700.0 | 0.00 | 0.00 | 7,560.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 7,783.3 | 0.00 | 0.00 | 7,644.0 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | TD @ 7,783.3' MD |
| 7,800.0 | 0.00 | 0.00 | 7,660.7 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | |
| 7,883.3 | 0.00 | 0.00 | 7,744.0 | 951.0 | -627.4 | 1,139.3 | 0.00 | 0.00 | Permit TD @ 7,883.3' MD |

| Targets | | | | | | | | | |
|---------------------------|---------------|--------------|----------|------------|------------|---------------|--------------|-----------|-------------|
| Target Name | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | Latitude | Longitude |
| - hit/miss target | | | | | | | | | |
| - Shape | | | | | | | | | |
| Shideler 19-11D PBHL 2 | 0.00 | 0.00 | 7,644.0 | 951.0 | -627.4 | 1,588,839.93 | 2,376,659.44 | 39.429334 | -107.707001 |
| - plan hits target center | | | | | | | | | |
| - Circle (radius 25.0) | | | | | | | | | |
| Shideler 19-11D TGT | 0.00 | 0.00 | 5,387.0 | 951.0 | -627.4 | 1,588,839.93 | 2,376,659.44 | 39.429334 | -107.707001 |
| - plan hits target center | | | | | | | | | |
| - Point | | | | | | | | | |

Cathedral Energy Services

Planning Report

| | | | |
|------------------|-----------------------------|-------------------------------------|---------------------------------|
| Database: | USA EDM 5000 Multi Users DB | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Company: | EnCana Oil & Gas (USA) Inc | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Project: | Mamm Creek | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site: | O19EB Pad (2nd Occupation) | North Reference: | True |
| Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | OH | | |
| Design: | Plan #1 | | |

| Casing Points | | | | |
|---------------------|---------------------|----------------|----------------------|--------------------|
| Measured Depth (ft) | Vertical Depth (ft) | Name | Casing Diameter (in) | Hole Diameter (in) |
| 1,097.0 | 1,085.0 | Surface Casing | | |

| Formations | | | | |
|---------------------|---------------------|------------------|-----------|-------------------|
| Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip Direction (°) |
| 4,120.6 | 4,011.0 | Mesaverde Marker | | |
| 4,621.8 | 4,496.0 | Williams Fork | | |
| 5,526.3 | 5,387.0 | Top Gas | | |
| 6,952.3 | 6,813.0 | Coal Ridge | | |
| 7,633.3 | 7,494.0 | Rollins | | |

| Plan Annotations | | | | |
|---------------------|---------------------|-------------------|------------|-------------------------|
| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates | | Comment |
| | | +N/-S (ft) | +E/-W (ft) | |
| 400.0 | 400.0 | 0.0 | 0.0 | KOP @ 400' |
| 886.5 | 881.2 | 51.4 | -33.9 | EOB @ Inc. = 14.59° |
| 4,796.5 | 4,665.1 | 873.9 | -576.5 | Start 2° Drop |
| 5,526.3 | 5,387.0 | 951.0 | -627.4 | EOD @ Inc. = 0° |
| 7,783.3 | 7,644.0 | 951.0 | -627.4 | TD @ 7,783.3' MD |
| 7,883.3 | 7,744.0 | 951.0 | -627.4 | Permit TD @ 7,883.3' MD |

EnCana Oil & Gas (USA) Inc

Mamm Creek

O19EB Pad (2nd Occupation)

Shideler 19-11D

OH

Plan #1

Anticollision Report

09 May, 2013

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Reference | Plan #1 | | |
|------------------------------|---|----------------|---------------------|
| Filter type: | NO GLOBAL FILTER: Using user defined selection & filtering criteria | | |
| Interpolation Method: | MD Interval 100.0ft | Error Model: | Systematic Ellipse |
| Depth Range: | Unlimited | Scan Method: | Closest Approach 3D |
| Results Limited by: | Maximum center-center distance of 500.0ft | Error Surface: | Elliptical Conic |
| Warning Levels Evaluated at: | 2.00 Sigma | | |

| | | | | |
|----------------------------|----------------|--------------------------|------------------|--------------------|
| Survey Tool Program | Date | 5/8/2013 | | |
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description |
| 0.0 | 7,883.3 | Plan #1 (OH) | MWD | Geolink MWD |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

Summary

| Site Name | Reference Measured Depth (ft) | Offset Measured Depth (ft) | Distance Between Centres (ft) | Between Ellipses (ft) | Separation Factor | Warning |
|---|--|-------------------------------------|--|-----------------------------|----------------------|--------------|
| Offset Well - Wellbore - Design | | | | | | |
| O19E Pad | | | | | | |
| Shideler 19-10 (O19E) - DD - DD | 2,876.4 | 2,901.5 | 183.2 | 167.5 | 11.656 | CC, ES |
| Shideler 19-10 (O19E) - DD - DD | 5,400.0 | 5,462.5 | 243.4 | 206.0 | 6.509 | SF |
| Shideler 19-15 (O19E) - Existing-Vertical - Existing-Vertic | 1,160.3 | 1,187.4 | 398.0 | 392.7 | 75.380 | CC, ES |
| Shideler 19-15 (O19E) - Existing-Vertical - Existing-Vertic | 1,900.0 | 1,874.2 | 482.9 | 473.6 | 52.188 | SF |
| Shideler 30-2 (O19E) - Existing - Survey - Existing - Surv | 0.0 | 25.9 | 422.9 | | | |
| Shideler 30-2 (O19E) - Existing - Survey - Existing - Surv | 100.0 | 125.5 | 422.9 | 422.6 | 1,256.830 | ES |
| Shideler 30-2 (O19E) - Existing - Survey - Existing - Surv | 1,000.0 | 935.3 | 497.0 | 492.7 | 117.165 | SF |
| O19EB Pad (1st Occupation) | | | | | | |
| (Existing Offset) Shideler 19-6D - Existing - Existing | | | | | | Out of range |
| Shideler 19-14D - OH - FINAL | 205.0 | 205.0 | 214.9 | 214.3 | 336.333 | CC, ES |
| Shideler 19-14D - OH - FINAL | 1,600.0 | 1,536.7 | 488.0 | 480.6 | 65.805 | SF |
| Shideler 19-16C - OH - FINAL | 447.8 | 450.8 | 159.5 | 158.0 | 103.269 | CC, ES |
| Shideler 19-16C - OH - FINAL | 800.0 | 791.6 | 198.4 | 195.1 | 60.035 | SF |
| Shideler 19-16CC - OH - FINAL | 406.0 | 406.4 | 177.2 | 175.8 | 130.683 | CC, ES |
| Shideler 19-16CC - OH - FINAL | 800.0 | 770.6 | 229.6 | 226.4 | 73.700 | SF |
| Shideler 30-1B - OH - FINAL | 315.5 | 315.5 | 194.0 | 193.0 | 189.395 | CC, ES |
| Shideler 30-1B - OH - FINAL | 900.0 | 846.0 | 290.2 | 286.7 | 83.185 | SF |
| Shideler 30-1C - OH - FINAL | 239.6 | 239.6 | 201.4 | 200.7 | 265.082 | CC, ES |
| Shideler 30-1C - OH - FINAL | 900.0 | 812.0 | 333.1 | 329.6 | 95.138 | SF |
| Shideler 30-2C - OH - FINAL | 237.5 | 237.5 | 239.0 | 238.3 | 317.683 | CC, ES |
| Shideler 30-2C - OH - FINAL | 1,000.0 | 858.6 | 422.3 | 418.6 | 115.709 | SF |
| Shideler 30-3A - OH - FINAL | 220.4 | 220.5 | 246.8 | 246.1 | 356.046 | CC, ES |
| Shideler 30-3A - OH - FINAL | 1,300.0 | 1,198.8 | 499.4 | 494.0 | 92.824 | SF |
| Shideler 30-3B - OH - FINAL | 212.1 | 212.1 | 230.6 | 229.9 | 347.502 | CC, ES |
| Shideler 30-3B - OH - FINAL | 1,200.0 | 1,032.0 | 491.2 | 485.9 | 92.738 | SF |
| Shideler 30-4A - OH - FINAL | 205.2 | 205.2 | 184.8 | 184.1 | 288.873 | CC, ES |
| Shideler 30-4A - OH - FINAL | 1,400.0 | 1,265.6 | 496.2 | 488.5 | 64.054 | SF |
| Shideler 30-7A - OH - FINAL | 261.5 | 261.5 | 221.7 | 220.8 | 265.016 | CC, ES |
| Shideler 30-7A - OH - FINAL | 900.0 | 802.9 | 349.1 | 345.8 | 105.143 | SF |
| Shideler 30-8B - OH - FINAL | 0.0 | 0.0 | 208.9 | | | |
| Shideler 30-8B - OH - FINAL | 200.0 | 199.2 | 209.0 | 208.3 | 336.565 | ES |
| Shideler 30-8B - OH - FINAL | 900.0 | 801.4 | 347.7 | 344.2 | 101.657 | SF |
| Shideler Federal 19-13D - OH - FINAL | 0.0 | 0.0 | 169.7 | | | |
| Shideler Federal 19-13D - OH - FINAL | 200.0 | 199.6 | 169.7 | 169.1 | 273.410 | ES |
| Shideler Federal 19-13D - OH - FINAL | 1,400.0 | 1,276.7 | 469.2 | 460.7 | 55.199 | SF |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Summary | | | | | | |
|---|-------------------------------|----------------------------|-------------------------------|--------------------------------|-------------------|------------|
| Site Name | Reference Measured Depth (ft) | Offset Measured Depth (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Separation Factor | Warning |
| Offset Well - Wellbore - Design | | | | | | |
| O19EB Pad (2nd Occupation) | | | | | | |
| Shideler 19-11DD - OH - Plan #1 | 200.0 | 200.0 | 33.0 | 32.4 | 53.178 | CC, ES |
| Shideler 19-11DD - OH - Plan #1 | 1,600.0 | 1,587.4 | 71.1 | 61.3 | 7.235 | SF |
| Shideler 19-16B - OH - Plan #1 | 300.0 | 300.0 | 32.8 | 31.9 | 33.830 | CC, ES |
| Shideler 19-16B - OH - Plan #1 | 500.0 | 497.6 | 41.0 | 39.3 | 24.260 | SF |
| Shideler 19-16BB - OH - Plan #1 | 400.0 | 400.0 | 49.4 | 48.0 | 37.402 | CC, ES |
| Shideler 19-16BB - OH - Plan #1 | 500.0 | 497.8 | 53.8 | 52.2 | 32.317 | SF |
| Shideler 19-6C - OH - Plan #1 | 333.4 | 333.4 | 16.5 | 15.4 | 15.199 | CC, ES |
| Shideler 19-6C - OH - Plan #1 | 900.0 | 893.5 | 30.4 | 27.3 | 9.558 | SF |
| Shideler 19-9B - OH - Plan #1 | 443.6 | 444.0 | 9.1 | 7.6 | 6.104 | CC, ES, SF |
| Shideler 19-9C - OH - Plan #1 | 200.0 | 200.0 | 16.3 | 15.7 | 26.251 | CC, ES |
| Shideler 19-9C - OH - Plan #1 | 400.0 | 398.9 | 21.1 | 19.8 | 15.421 | SF |
| Shideler Federal 19-12A - OH - Plan #1 | 200.0 | 200.0 | 26.0 | 25.3 | 41.788 | CC, ES |
| Shideler Federal 19-12A - OH - Plan #1 | 1,000.0 | 972.1 | 108.2 | 104.2 | 27.012 | SF |
| Shideler Federal 19-12C - OH - Plan #1 | 518.3 | 519.9 | 24.1 | 22.3 | 13.755 | CC, ES |
| Shideler Federal 19-12C - OH - Plan #1 | 700.0 | 702.1 | 30.6 | 28.0 | 11.771 | SF |
| Shideler Federal 19-12D - OH - Plan #1 | 300.0 | 300.0 | 11.4 | 10.4 | 11.740 | CC, ES |
| Shideler Federal 19-12D - OH - Plan #1 | 400.0 | 399.6 | 12.6 | 11.3 | 9.557 | SF |
| Shideler Federal 19-13A - OH - Plan #1 | 544.5 | 547.9 | 31.9 | 30.0 | 16.344 | CC, ES |
| Shideler Federal 19-13A - OH - Plan #1 | 700.0 | 702.3 | 41.2 | 38.3 | 14.255 | SF |
| Shideler Federal 19-13AA - OH - Plan #1 | 523.9 | 528.4 | 46.1 | 44.2 | 23.621 | CC, ES |
| Shideler Federal 19-13AA - OH - Plan #1 | 700.0 | 701.9 | 59.7 | 56.7 | 19.610 | SF |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19E Pad - Shideler 19-10 (O19E) - DD - DD | | | | | | | | | | | | | Offset Site Error: 0.0 ft | |
|--|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|-------------------|---------------------------|--|
| Survey Program: 154--MWD | | | | | | | | | | | | | Offset Well Error: 0.0 ft | |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | | |
| 0.0 | 0.0 | 26.0 | 26.0 | 0.0 | 0.0 | -108.34 | -127.7 | -385.4 | 406.1 | | | | | |
| 100.0 | 100.0 | 125.8 | 125.8 | 0.1 | 0.2 | -108.31 | -127.6 | -385.5 | 406.1 | 405.7 | 0.34 | 1,209.025 | | |
| 200.0 | 200.0 | 226.1 | 226.1 | 0.3 | 0.4 | -108.25 | -127.2 | -385.7 | 406.1 | 405.4 | 0.68 | 596.091 | | |
| 300.0 | 300.0 | 326.5 | 326.5 | 0.5 | 0.5 | -108.15 | -126.5 | -385.8 | 406.0 | 405.0 | 1.03 | 393.622 | | |
| 400.0 | 400.0 | 432.0 | 431.9 | 0.7 | 0.7 | -107.84 | -124.1 | -385.7 | 405.2 | 403.8 | 1.40 | 290.195 | | |
| 500.0 | 500.0 | 535.1 | 534.9 | 0.8 | 0.9 | -74.05 | -118.0 | -385.6 | 402.6 | 400.9 | 1.78 | 226.059 | | |
| 600.0 | 599.6 | 640.0 | 639.1 | 1.0 | 1.2 | -73.72 | -106.5 | -386.2 | 397.8 | 395.5 | 2.24 | 177.830 | | |
| 700.0 | 698.8 | 744.8 | 742.5 | 1.3 | 1.5 | -73.44 | -89.4 | -386.8 | 389.8 | 387.0 | 2.81 | 138.956 | | |
| 800.0 | 797.1 | 845.5 | 840.9 | 1.6 | 1.9 | -73.24 | -68.1 | -388.1 | 379.8 | 376.3 | 3.50 | 108.555 | | |
| 900.0 | 894.3 | 946.5 | 938.8 | 2.0 | 2.4 | -73.18 | -43.0 | -390.2 | 368.0 | 363.7 | 4.32 | 85.127 | | |
| 1,000.0 | 991.1 | 1,047.3 | 1,035.7 | 2.5 | 2.8 | -72.74 | -15.7 | -392.4 | 355.1 | 349.9 | 5.21 | 68.175 | | |
| 1,100.0 | 1,087.9 | 1,146.0 | 1,130.3 | 2.9 | 3.3 | -72.04 | 12.4 | -394.8 | 342.1 | 335.9 | 6.13 | 55.775 | | |
| 1,200.0 | 1,184.6 | 1,244.1 | 1,223.9 | 3.4 | 3.9 | -71.05 | 41.6 | -397.6 | 329.3 | 322.2 | 7.08 | 46.536 | | |
| 1,300.0 | 1,281.4 | 1,342.2 | 1,317.3 | 3.8 | 4.4 | -69.86 | 71.4 | -401.0 | 317.0 | 309.0 | 8.04 | 39.440 | | |
| 1,400.0 | 1,378.2 | 1,440.8 | 1,410.9 | 4.3 | 4.9 | -68.39 | 102.1 | -404.7 | 305.0 | 296.0 | 9.00 | 33.897 | | |
| 1,500.0 | 1,475.0 | 1,541.5 | 1,506.9 | 4.8 | 5.5 | -66.98 | 132.4 | -408.4 | 293.3 | 283.4 | 9.96 | 29.448 | | |
| 1,600.0 | 1,571.7 | 1,645.1 | 1,605.2 | 5.2 | 6.1 | -65.17 | 165.0 | -410.5 | 280.0 | 269.1 | 10.94 | 25.585 | | |
| 1,700.0 | 1,668.5 | 1,742.4 | 1,697.5 | 5.7 | 6.7 | -63.22 | 196.0 | -412.3 | 266.8 | 255.0 | 11.89 | 22.452 | | |
| 1,800.0 | 1,765.3 | 1,839.5 | 1,789.0 | 6.2 | 7.3 | -60.72 | 228.3 | -414.8 | 254.5 | 241.7 | 12.81 | 19.876 | | |
| 1,900.0 | 1,862.1 | 1,936.2 | 1,879.9 | 6.7 | 7.8 | -57.83 | 261.2 | -417.9 | 243.5 | 229.8 | 13.67 | 17.809 | | |
| 2,000.0 | 1,958.8 | 2,033.0 | 1,970.8 | 7.1 | 8.4 | -54.70 | 294.0 | -421.8 | 233.9 | 219.5 | 14.47 | 16.164 | | |
| 2,100.0 | 2,055.6 | 2,134.9 | 2,066.7 | 7.6 | 9.1 | -51.22 | 328.3 | -426.1 | 225.3 | 210.1 | 15.20 | 14.820 | | |
| 2,200.0 | 2,152.4 | 2,235.9 | 2,161.9 | 8.1 | 9.7 | -47.53 | 361.9 | -428.3 | 215.5 | 199.7 | 15.82 | 13.619 | | |
| 2,300.0 | 2,249.1 | 2,333.1 | 2,253.4 | 8.6 | 10.3 | -43.62 | 394.4 | -430.4 | 206.6 | 190.3 | 16.32 | 12.662 | | |
| 2,400.0 | 2,345.9 | 2,430.6 | 2,344.9 | 9.0 | 10.9 | -39.03 | 428.3 | -432.9 | 199.7 | 183.1 | 16.61 | 12.019 | | |
| 2,500.0 | 2,442.7 | 2,529.8 | 2,437.9 | 9.5 | 11.5 | -34.12 | 462.7 | -435.4 | 194.0 | 177.3 | 16.72 | 11.607 | | |
| 2,600.0 | 2,539.5 | 2,629.1 | 2,531.3 | 10.0 | 12.1 | -29.12 | 496.3 | -437.7 | 189.4 | 172.8 | 16.64 | 11.384 | | |
| 2,700.0 | 2,636.2 | 2,728.3 | 2,624.8 | 10.5 | 12.7 | -24.09 | 529.3 | -440.0 | 185.9 | 169.5 | 16.40 | 11.332 | | |
| 2,800.0 | 2,733.0 | 2,826.6 | 2,717.6 | 10.9 | 13.3 | -19.09 | 561.6 | -442.4 | 183.7 | 167.6 | 16.04 | 11.449 | | |
| 2,876.4 | 2,807.0 | 2,901.5 | 2,788.5 | 11.3 | 13.7 | -15.35 | 586.0 | -444.6 | 183.2 | 167.5 | 15.71 | 11.656 CC, ES | | |
| 2,900.0 | 2,829.8 | 2,924.8 | 2,810.5 | 11.4 | 13.9 | -14.20 | 593.6 | -445.4 | 183.2 | 167.6 | 15.61 | 11.739 | | |
| 3,000.0 | 2,926.6 | 3,023.7 | 2,904.0 | 11.9 | 14.4 | -9.40 | 625.6 | -448.7 | 184.2 | 169.0 | 15.15 | 12.157 | | |
| 3,100.0 | 3,023.3 | 3,123.8 | 2,998.7 | 12.4 | 15.0 | -4.68 | 657.6 | -452.0 | 186.1 | 171.4 | 14.72 | 12.644 | | |
| 3,200.0 | 3,120.1 | 3,224.1 | 3,093.9 | 12.8 | 15.6 | -0.13 | 689.0 | -455.0 | 188.4 | 174.1 | 14.37 | 13.117 | | |
| 3,300.0 | 3,216.9 | 3,323.6 | 3,188.7 | 13.3 | 16.2 | 4.08 | 719.3 | -458.2 | 191.3 | 177.1 | 14.16 | 13.504 | | |
| 3,400.0 | 3,313.7 | 3,422.2 | 3,282.5 | 13.8 | 16.7 | 8.04 | 749.3 | -461.6 | 195.2 | 181.1 | 14.10 | 13.843 | | |
| 3,500.0 | 3,410.4 | 3,522.0 | 3,377.6 | 14.3 | 17.3 | 11.63 | 779.3 | -465.9 | 200.0 | 185.8 | 14.20 | 14.087 | | |
| 3,600.0 | 3,507.2 | 3,623.1 | 3,474.1 | 14.7 | 17.8 | 15.03 | 809.0 | -470.1 | 204.8 | 190.4 | 14.44 | 14.185 | | |
| 3,700.0 | 3,604.0 | 3,724.3 | 3,571.1 | 15.2 | 18.3 | 18.49 | 838.0 | -473.4 | 209.3 | 194.5 | 14.84 | 14.109 | | |
| 3,800.0 | 3,700.7 | 3,825.4 | 3,668.1 | 15.7 | 18.9 | 22.06 | 866.3 | -475.4 | 213.7 | 198.3 | 15.42 | 13.861 | | |
| 3,900.0 | 3,797.5 | 3,927.6 | 3,766.5 | 16.2 | 19.4 | 25.08 | 893.6 | -479.0 | 217.6 | 201.5 | 16.14 | 13.485 | | |
| 4,000.0 | 3,894.3 | 4,029.9 | 3,865.4 | 16.6 | 19.8 | 28.00 | 919.4 | -482.5 | 220.7 | 203.7 | 17.02 | 12.968 | | |
| 4,100.0 | 3,991.1 | 4,132.6 | 3,965.0 | 17.1 | 20.3 | 30.93 | 944.1 | -485.5 | 223.0 | 204.9 | 18.07 | 12.341 | | |
| 4,200.0 | 4,087.8 | 4,234.8 | 4,064.6 | 17.6 | 20.7 | 34.04 | 967.2 | -487.6 | 224.4 | 205.0 | 19.33 | 11.609 | | |
| 4,300.0 | 4,184.6 | 4,336.0 | 4,163.4 | 18.1 | 21.1 | 37.37 | 988.9 | -488.5 | 225.3 | 204.5 | 20.80 | 10.832 | | |
| 4,400.0 | 4,281.4 | 4,437.9 | 4,263.2 | 18.5 | 21.5 | 40.73 | 1,009.9 | -489.5 | 226.1 | 203.6 | 22.46 | 10.068 | | |
| 4,500.0 | 4,378.2 | 4,540.4 | 4,363.8 | 19.0 | 21.9 | 44.06 | 1,029.5 | -490.7 | 226.1 | 201.9 | 24.22 | 9.338 | | |
| 4,558.6 | 4,434.8 | 4,598.9 | 4,421.3 | 19.3 | 22.1 | 46.11 | 1,040.1 | -491.0 | 226.1 | 200.7 | 25.33 | 8.927 | | |
| 4,600.0 | 4,474.9 | 4,640.4 | 4,462.2 | 19.5 | 22.3 | 47.59 | 1,047.6 | -491.0 | 226.1 | 200.0 | 26.14 | 8.649 | | |
| 4,700.0 | 4,571.7 | 4,740.8 | 4,561.0 | 20.0 | 22.6 | 51.37 | 1,064.9 | -490.6 | 226.4 | 198.2 | 28.22 | 8.022 | | |
| 4,800.0 | 4,668.5 | 4,840.7 | 4,659.5 | 20.4 | 22.9 | 55.31 | 1,081.4 | -489.6 | 227.2 | 196.8 | 30.41 | 7.471 | | |
| 4,900.0 | 4,765.7 | 4,940.6 | 4,758.1 | 20.9 | 23.2 | 58.87 | 1,097.5 | -488.7 | 229.6 | 197.2 | 32.37 | 7.091 | | |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19E Pad - Shideler 19-10 (O19E) - DD - DD | | | | | | | | | | | | | Offset Site Error: 0.0 ft | |
|--|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|-------------------|---------------------------|--|
| Survey Program: 154--MWD | | | | | | | | | | | | | Offset Well Error: 0.0 ft | |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | | |
| 5,000.0 | 4,863.7 | 5,043.1 | 4,859.3 | 21.2 | 23.6 | 61.53 | 1,113.6 | -488.8 | 233.7 | 199.7 | 33.95 | 6.884 | | |
| 5,100.0 | 4,962.3 | 5,150.0 | 4,965.2 | 21.5 | 23.8 | 63.54 | 1,127.9 | -489.6 | 237.4 | 202.2 | 35.21 | 6.742 | | |
| 5,200.0 | 5,061.4 | 5,256.7 | 5,071.4 | 21.8 | 24.1 | 65.04 | 1,138.9 | -490.7 | 240.0 | 203.8 | 36.19 | 6.632 | | |
| 5,300.0 | 5,161.0 | 5,361.1 | 5,175.5 | 22.0 | 24.2 | 66.07 | 1,146.2 | -491.9 | 241.3 | 204.4 | 36.92 | 6.537 | | |
| 5,400.0 | 5,260.8 | 5,462.5 | 5,276.7 | 22.1 | 24.4 | 66.65 | 1,152.0 | -492.2 | 243.4 | 206.0 | 37.40 | 6.509 SF | | |
| 5,500.0 | 5,360.7 | 5,560.0 | 5,374.2 | 22.2 | 24.5 | 67.11 | 1,155.4 | -490.8 | 246.2 | 208.4 | 37.75 | 6.521 | | |
| 5,600.0 | 5,460.7 | 5,661.8 | 5,475.9 | 22.3 | 24.6 | 33.80 | 1,158.7 | -488.3 | 250.2 | 212.3 | 37.90 | 6.601 | | |
| 5,700.0 | 5,560.7 | 5,760.4 | 5,574.4 | 22.4 | 24.7 | 34.03 | 1,162.0 | -485.0 | 254.8 | 216.7 | 38.11 | 6.686 | | |
| 5,800.0 | 5,660.7 | 5,859.0 | 5,672.9 | 22.5 | 24.8 | 34.40 | 1,165.1 | -480.7 | 259.9 | 221.5 | 38.37 | 6.772 | | |
| 5,900.0 | 5,760.7 | 5,957.5 | 5,771.2 | 22.5 | 24.9 | 34.92 | 1,168.3 | -475.6 | 265.5 | 226.8 | 38.70 | 6.861 | | |
| 6,000.0 | 5,860.7 | 6,055.9 | 5,869.3 | 22.6 | 25.1 | 35.58 | 1,171.5 | -469.7 | 271.6 | 232.5 | 39.07 | 6.952 | | |
| 6,100.0 | 5,960.7 | 6,154.3 | 5,967.5 | 22.7 | 25.2 | 36.35 | 1,174.6 | -462.8 | 278.3 | 238.8 | 39.47 | 7.050 | | |
| 6,200.0 | 6,060.7 | 6,253.1 | 6,065.9 | 22.8 | 25.3 | 37.13 | 1,177.9 | -455.6 | 285.4 | 245.5 | 39.86 | 7.159 | | |
| 6,300.0 | 6,160.7 | 6,351.8 | 6,164.3 | 22.9 | 25.4 | 37.89 | 1,181.5 | -448.0 | 292.9 | 252.6 | 40.25 | 7.276 | | |
| 6,400.0 | 6,260.7 | 6,450.4 | 6,262.5 | 22.9 | 25.6 | 38.62 | 1,185.2 | -440.3 | 300.7 | 260.1 | 40.64 | 7.400 | | |
| 6,500.0 | 6,360.7 | 6,549.0 | 6,360.7 | 23.0 | 25.7 | 39.33 | 1,189.2 | -432.3 | 308.9 | 267.9 | 41.02 | 7.531 | | |
| 6,600.0 | 6,460.7 | 6,647.5 | 6,458.8 | 23.1 | 25.9 | 40.01 | 1,193.3 | -424.0 | 317.6 | 276.2 | 41.41 | 7.669 | | |
| 6,700.0 | 6,560.7 | 6,747.0 | 6,557.8 | 23.2 | 26.0 | 40.66 | 1,197.6 | -415.5 | 326.4 | 284.7 | 41.73 | 7.821 | | |
| 6,800.0 | 6,660.7 | 6,846.5 | 6,656.8 | 23.3 | 26.2 | 41.29 | 1,202.0 | -407.0 | 335.3 | 293.2 | 42.10 | 7.964 | | |
| 6,900.0 | 6,760.7 | 6,946.0 | 6,755.9 | 23.4 | 26.3 | 41.88 | 1,206.3 | -398.5 | 344.2 | 301.7 | 42.51 | 8.097 | | |
| 7,000.0 | 6,860.7 | 7,045.6 | 6,855.0 | 23.5 | 26.5 | 42.44 | 1,210.6 | -390.0 | 353.2 | 310.3 | 42.87 | 8.239 | | |
| 7,100.0 | 6,960.7 | 7,145.1 | 6,954.1 | 23.6 | 26.6 | 42.97 | 1,215.0 | -381.5 | 362.2 | 319.0 | 43.15 | 8.394 | | |
| 7,200.0 | 7,060.7 | 7,245.0 | 7,053.5 | 23.7 | 26.7 | 43.48 | 1,219.3 | -373.0 | 371.2 | 327.8 | 43.43 | 8.547 | | |
| 7,300.0 | 7,160.7 | 7,345.2 | 7,153.3 | 23.7 | 26.9 | 44.00 | 1,223.4 | -364.4 | 380.1 | 336.3 | 43.75 | 8.688 | | |
| 7,400.0 | 7,260.7 | 7,445.5 | 7,253.1 | 23.8 | 27.0 | 44.52 | 1,227.2 | -355.8 | 388.8 | 344.7 | 44.06 | 8.824 | | |
| 7,500.0 | 7,360.7 | 7,545.7 | 7,352.9 | 23.9 | 27.1 | 45.05 | 1,230.7 | -347.2 | 397.4 | 353.0 | 44.36 | 8.957 | | |
| 7,600.0 | 7,460.7 | 7,646.0 | 7,452.7 | 24.0 | 27.3 | 45.59 | 1,234.0 | -338.5 | 405.8 | 361.2 | 44.66 | 9.086 | | |
| 7,700.0 | 7,560.7 | 7,745.0 | 7,551.4 | 24.1 | 27.4 | 46.12 | 1,237.1 | -329.9 | 414.2 | 369.2 | 44.97 | 9.209 | | |
| 7,800.0 | 7,660.7 | 7,841.7 | 7,647.6 | 24.2 | 27.6 | 46.59 | 1,240.5 | -321.3 | 423.1 | 377.8 | 45.31 | 9.338 | | |
| 7,883.3 | 7,744.0 | 7,922.1 | 7,727.6 | 24.3 | 27.8 | 46.94 | 1,243.9 | -314.0 | 431.0 | 385.4 | 45.57 | 9.459 | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19E Pad - Shideler 19-15 (O19E) - Existing-Vertical - Existing-Vertical | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---|---------------------------|---------------------------|---------------------------|-------------------|----------------|-----------------------------|---|---------------|------------------------------|----------------------|---------|-----------|--------------------|--------|
| Survey Program: 100-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | Highside Toolface (°) | Distance | | Total Uncertainty Axis | Separation Factor | Warning | | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | | | | | | |
| 0.0 | 0.0 | 26.5 | 26.5 | 0.0 | 0.0 | -110.92 | -156.3 | -408.7 | 437.6 | | | | | |
| 100.0 | 100.0 | 127.9 | 127.9 | 0.1 | 0.2 | -110.94 | -156.2 | -408.4 | 437.3 | 436.9 | 0.33 | 1,305.614 | | |
| 200.0 | 200.0 | 228.9 | 228.9 | 0.3 | 0.4 | -111.01 | -156.6 | -407.8 | 436.8 | 436.1 | 0.69 | 637.055 | | |
| 300.0 | 300.0 | 332.6 | 332.6 | 0.5 | 0.6 | -111.08 | -156.7 | -406.5 | 435.7 | 434.7 | 1.04 | 418.407 | | |
| 400.0 | 400.0 | 435.5 | 435.5 | 0.7 | 0.7 | -111.13 | -156.4 | -404.6 | 433.9 | 432.5 | 1.40 | 310.853 | | |
| 500.0 | 500.0 | 539.5 | 539.5 | 0.8 | 0.9 | -78.24 | -155.9 | -401.9 | 430.7 | 428.9 | 1.76 | 245.095 | | |
| 600.0 | 599.6 | 643.2 | 643.0 | 1.0 | 1.1 | -79.57 | -155.2 | -398.0 | 425.5 | 423.4 | 2.14 | 198.485 | | |
| 700.0 | 698.8 | 743.5 | 743.2 | 1.3 | 1.3 | -81.64 | -154.3 | -393.6 | 419.0 | 416.4 | 2.58 | 162.534 | | |
| 800.0 | 797.1 | 841.6 | 841.2 | 1.6 | 1.5 | -84.54 | -154.1 | -389.0 | 412.3 | 409.2 | 3.08 | 133.659 | | |
| 900.0 | 894.3 | 939.7 | 939.2 | 2.0 | 1.7 | -88.17 | -153.6 | -384.2 | 406.1 | 402.5 | 3.67 | 110.534 | | |
| 1,000.0 | 991.1 | 1,036.4 | 1,035.8 | 2.5 | 1.9 | -91.96 | -153.1 | -379.1 | 401.3 | 397.0 | 4.29 | 93.616 | | |
| 1,100.0 | 1,087.9 | 1,131.2 | 1,130.4 | 2.9 | 2.1 | -95.83 | -153.2 | -373.7 | 398.5 | 393.5 | 4.91 | 81.210 | | |
| 1,160.3 | 1,146.3 | 1,187.4 | 1,186.5 | 3.2 | 2.2 | -98.19 | -153.6 | -370.5 | 398.0 | 392.7 | 5.28 | 75.380 | CC, ES | |
| 1,200.0 | 1,184.6 | 1,221.7 | 1,220.8 | 3.4 | 2.2 | -99.64 | -154.1 | -368.6 | 398.3 | 392.7 | 5.52 | 72.145 | | |
| 1,300.0 | 1,281.4 | 1,304.8 | 1,303.8 | 3.8 | 2.4 | -103.24 | -157.0 | -364.8 | 402.6 | 396.5 | 6.11 | 65.864 | | |
| 1,400.0 | 1,378.2 | 1,393.9 | 1,392.6 | 4.3 | 2.6 | -107.05 | -161.8 | -361.7 | 411.3 | 404.6 | 6.70 | 61.405 | | |
| 1,500.0 | 1,475.0 | 1,490.6 | 1,489.2 | 4.8 | 2.7 | -111.01 | -167.5 | -358.7 | 422.7 | 415.4 | 7.27 | 58.150 | | |
| 1,600.0 | 1,571.7 | 1,587.5 | 1,585.8 | 5.2 | 2.9 | -114.78 | -172.8 | -355.4 | 435.6 | 427.8 | 7.81 | 55.772 | | |
| 1,700.0 | 1,668.5 | 1,682.7 | 1,680.8 | 5.7 | 3.1 | -118.27 | -177.8 | -352.0 | 450.1 | 441.7 | 8.32 | 54.096 | | |
| 1,800.0 | 1,765.3 | 1,781.2 | 1,779.1 | 6.2 | 3.3 | -121.68 | -182.7 | -348.2 | 465.9 | 457.1 | 8.80 | 52.925 | | |
| 1,900.0 | 1,862.1 | 1,874.2 | 1,872.0 | 6.7 | 3.5 | -124.72 | -187.2 | -344.2 | 482.9 | 473.6 | 9.25 | 52.188 | SF | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | | O19E Pad - Shideler 30-2 (O19E) - Existing - Survey - Existing - Survey | | Offset Site Error: | | 0.0 ft |
|-----------------|----------------|----------------|----------------|-----------------|--------|-------------------|------------------------|------------|-----------------|------------------|-------------------|------------|---|--|--------------------|--|--------|
| Survey Program: | | | | | | | | | | | | | 164-MWD2 | | Offset Well Error: | | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | | | | |
| Measured Depth | Vertical Depth | Measured Depth | Vertical Depth | Reference | Offset | Highside Toolface | Offset Wellbore Centre | | Between Centres | Between Ellipses | Total Uncertainty | Separation | | | Warning | | |
| (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (°) | +N/-S (ft) | +E/-W (ft) | (ft) | (ft) | Axis | Factor | | | | | |
| 0.0 | 0.0 | 25.9 | 25.9 | 0.0 | 0.0 | -109.75 | -142.9 | -398.0 | 422.9 | | | | | | | | |
| 100.0 | 100.0 | 125.5 | 125.5 | 0.1 | 0.2 | -109.74 | -142.8 | -398.1 | 422.9 | 422.6 | 0.34 | 1,256.830 | ES | | | | |
| 200.0 | 200.0 | 221.1 | 221.1 | 0.3 | 0.4 | -109.67 | -142.5 | -398.6 | 423.3 | 422.6 | 0.67 | 629.693 | | | | | |
| 300.0 | 300.0 | 308.4 | 308.4 | 0.5 | 0.5 | -109.46 | -141.7 | -401.2 | 425.9 | 424.9 | 1.00 | 426.190 | | | | | |
| 400.0 | 400.0 | 394.1 | 393.9 | 0.7 | 0.7 | -109.08 | -140.7 | -406.9 | 431.7 | 430.4 | 1.32 | 326.029 | | | | | |
| 500.0 | 500.0 | 483.9 | 483.3 | 0.8 | 0.9 | -75.55 | -141.9 | -414.7 | 439.7 | 438.0 | 1.67 | 263.467 | | | | | |
| 600.0 | 599.6 | 574.5 | 573.3 | 1.0 | 1.1 | -76.49 | -147.4 | -422.9 | 448.5 | 446.5 | 2.02 | 221.569 | | | | | |
| 700.0 | 698.8 | 664.7 | 662.6 | 1.3 | 1.4 | -78.43 | -157.2 | -431.3 | 458.5 | 456.0 | 2.44 | 187.786 | | | | | |
| 800.0 | 797.1 | 762.2 | 758.6 | 1.6 | 1.7 | -81.58 | -172.3 | -438.9 | 469.1 | 466.1 | 2.97 | 158.102 | | | | | |
| 900.0 | 894.3 | 854.2 | 848.6 | 2.0 | 2.0 | -85.53 | -190.9 | -443.4 | 481.1 | 477.5 | 3.60 | 133.684 | | | | | |
| 1,000.0 | 991.1 | 935.3 | 927.2 | 2.5 | 2.3 | -89.69 | -210.8 | -445.9 | 497.0 | 492.7 | 4.24 | 117.165 | SF | | | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (1st Occupation) - Shideler 19-14D - OH - FINAL | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|--|---------------------------|---------------------------|---------------------------|-------------------|----------------|-----------------------------|------------------------|---------------|----------------------------|-----------------------------|------------------------------|---------------------------|---------|
| Survey Program: 172-MWD, 1613-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | Highside Toolface (°) | Offset Wellbore Centre | | Distance | | Total Uncertainty Axis | Separation Factor | Warning |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | | +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -150.74 | -187.6 | -105.1 | 215.0 | | | | |
| 100.0 | 100.0 | 100.1 | 100.1 | 0.1 | 0.2 | -150.78 | -187.6 | -104.9 | 215.0 | 214.7 | 0.29 | 744.860 | |
| 200.0 | 200.0 | 200.1 | 200.1 | 0.3 | 0.3 | -150.89 | -187.8 | -104.5 | 214.9 | 214.3 | 0.62 | 345.698 | |
| 205.0 | 205.0 | 205.0 | 205.0 | 0.3 | 0.3 | -150.90 | -187.8 | -104.5 | 214.9 | 214.3 | 0.64 | 336.333 CC, ES | |
| 300.0 | 300.0 | 296.3 | 296.3 | 0.5 | 0.5 | -150.84 | -188.3 | -105.1 | 215.6 | 214.7 | 0.96 | 223.627 | |
| 400.0 | 400.0 | 386.0 | 385.9 | 0.7 | 0.6 | -150.42 | -190.2 | -108.0 | 219.2 | 217.9 | 1.30 | 169.210 | |
| 500.0 | 500.0 | 478.0 | 477.6 | 0.8 | 0.8 | -116.37 | -194.5 | -114.7 | 228.1 | 226.4 | 1.64 | 138.998 | |
| 600.0 | 599.6 | 572.6 | 571.5 | 1.0 | 1.1 | -116.31 | -200.9 | -124.4 | 242.5 | 240.5 | 2.02 | 120.141 | |
| 700.0 | 698.8 | 670.6 | 668.6 | 1.3 | 1.3 | -117.13 | -207.9 | -135.1 | 260.0 | 257.6 | 2.45 | 106.234 | |
| 800.0 | 797.1 | 767.3 | 764.4 | 1.6 | 1.6 | -118.65 | -215.1 | -145.7 | 280.4 | 277.4 | 2.93 | 95.559 | |
| 900.0 | 894.3 | 863.9 | 860.2 | 2.0 | 1.9 | -120.76 | -222.3 | -156.4 | 303.6 | 300.1 | 3.48 | 87.278 | |
| 1,000.0 | 991.1 | 958.9 | 954.3 | 2.5 | 2.1 | -123.27 | -229.4 | -167.0 | 328.6 | 324.6 | 4.04 | 81.336 | |
| 1,100.0 | 1,087.9 | 1,053.8 | 1,048.3 | 2.9 | 2.4 | -125.43 | -236.7 | -177.7 | 354.3 | 349.7 | 4.61 | 76.939 | |
| 1,200.0 | 1,184.6 | 1,148.8 | 1,142.4 | 3.4 | 2.7 | -127.28 | -244.3 | -188.7 | 380.8 | 375.6 | 5.17 | 73.619 | |
| 1,300.0 | 1,281.4 | 1,244.9 | 1,237.6 | 3.8 | 3.0 | -128.91 | -252.0 | -199.7 | 407.5 | 401.8 | 5.74 | 70.999 | |
| 1,400.0 | 1,378.2 | 1,341.1 | 1,332.8 | 4.3 | 3.3 | -130.36 | -259.7 | -210.6 | 434.5 | 428.2 | 6.30 | 68.937 | |
| 1,500.0 | 1,475.0 | 1,439.4 | 1,430.2 | 4.8 | 3.5 | -131.70 | -267.2 | -221.5 | 461.4 | 454.5 | 6.87 | 67.203 | |
| 1,600.0 | 1,571.7 | 1,536.7 | 1,526.7 | 5.2 | 3.8 | -132.94 | -274.3 | -231.6 | 488.0 | 480.6 | 7.42 | 65.805 SF | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (1st Occupation) - Shideler 19-16C - OH - FINAL | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|--------------------|---------|
| Survey Program: | | 173-MWD | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | Warning |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -157.38 | -151.2 | -63.0 | 163.8 | | | | |
| 100.0 | 100.0 | 100.8 | 100.8 | 0.1 | 0.2 | -157.35 | -150.9 | -63.0 | 163.5 | 163.2 | 0.29 | 563.810 | |
| 200.0 | 200.0 | 201.4 | 201.4 | 0.3 | 0.3 | -157.29 | -150.2 | -62.9 | 162.8 | 162.2 | 0.62 | 260.718 | |
| 300.0 | 300.0 | 302.0 | 302.0 | 0.5 | 0.5 | -157.71 | -149.6 | -61.3 | 161.7 | 160.7 | 0.97 | 165.968 | |
| 400.0 | 400.0 | 403.3 | 403.0 | 0.7 | 0.7 | -160.07 | -150.4 | -54.5 | 160.0 | 158.6 | 1.33 | 120.136 | |
| 447.8 | 447.8 | 450.8 | 450.3 | 0.7 | 0.8 | -128.65 | -151.2 | -49.5 | 159.5 | 158.0 | 1.54 | 103.269 | CC, ES |
| 500.0 | 500.0 | 502.2 | 501.2 | 0.8 | 0.9 | -131.59 | -152.6 | -42.8 | 160.2 | 158.4 | 1.77 | 90.394 | |
| 600.0 | 599.6 | 600.8 | 598.5 | 1.0 | 1.2 | -138.99 | -155.6 | -27.1 | 165.7 | 163.4 | 2.26 | 73.187 | |
| 700.0 | 698.8 | 697.6 | 693.5 | 1.3 | 1.6 | -147.53 | -158.1 | -8.6 | 177.9 | 175.1 | 2.80 | 63.566 | |
| 800.0 | 797.1 | 791.6 | 785.3 | 1.6 | 2.0 | -155.80 | -160.3 | 11.3 | 198.4 | 195.1 | 3.31 | 60.035 | SF |
| 900.0 | 894.3 | 883.4 | 874.9 | 2.0 | 2.4 | -162.98 | -162.0 | 31.5 | 227.4 | 223.6 | 3.76 | 60.434 | |
| 1,000.0 | 991.1 | 973.6 | 962.7 | 2.5 | 2.7 | -169.01 | -163.6 | 52.1 | 261.3 | 257.1 | 4.20 | 62.170 | |
| 1,100.0 | 1,087.9 | 1,067.3 | 1,053.9 | 2.9 | 3.2 | -173.92 | -164.8 | 73.6 | 296.9 | 292.3 | 4.63 | 64.136 | |
| 1,200.0 | 1,184.6 | 1,158.3 | 1,142.6 | 3.4 | 3.5 | -177.57 | -165.8 | 93.7 | 333.5 | 328.5 | 5.03 | 66.266 | |
| 1,300.0 | 1,281.4 | 1,249.0 | 1,231.1 | 3.8 | 3.9 | 179.57 | -167.1 | 113.3 | 371.2 | 365.7 | 5.44 | 68.211 | |
| 1,400.0 | 1,378.2 | 1,338.0 | 1,317.9 | 4.3 | 4.3 | 177.23 | -168.5 | 133.0 | 409.8 | 403.9 | 5.85 | 69.995 | |
| 1,500.0 | 1,475.0 | 1,429.8 | 1,407.4 | 4.8 | 4.7 | 175.22 | -170.1 | 153.4 | 449.1 | 442.8 | 6.27 | 71.576 | |
| 1,600.0 | 1,571.7 | 1,520.1 | 1,495.5 | 5.2 | 5.1 | 173.59 | -171.6 | 173.2 | 488.6 | 481.9 | 6.70 | 72.957 | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (1st Occupation) - Shideler 19-16CC - OH - FINAL | | | | | | | | | | | | Offset Site Error: 0.0 ft | |
|--|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|---------------------------|---------|
| Survey Program: 202-MWD | | | | | | | | | | | | Offset Well Error: 0.0 ft | |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | Warning |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -155.90 | -163.5 | -73.2 | 179.2 | | | | |
| 100.0 | 100.0 | 100.5 | 100.5 | 0.1 | 0.2 | -155.95 | -163.5 | -73.0 | 179.0 | 178.7 | 0.29 | 612.115 | |
| 200.0 | 200.0 | 201.0 | 201.0 | 0.3 | 0.3 | -156.12 | -163.3 | -72.3 | 178.6 | 178.0 | 0.62 | 286.550 | |
| 300.0 | 300.0 | 301.5 | 301.5 | 0.5 | 0.5 | -156.53 | -163.1 | -70.8 | 177.9 | 176.9 | 0.97 | 182.659 | |
| 400.0 | 400.0 | 400.6 | 400.5 | 0.7 | 0.7 | -157.86 | -164.1 | -66.8 | 177.2 | 175.8 | 1.33 | 133.569 | |
| 406.0 | 406.0 | 406.4 | 406.3 | 0.7 | 0.7 | -124.57 | -164.2 | -66.4 | 177.2 | 175.8 | 1.36 | 130.683 | CC, ES |
| 500.0 | 500.0 | 497.9 | 497.5 | 0.8 | 0.9 | -127.62 | -167.2 | -59.4 | 179.0 | 177.3 | 1.72 | 104.122 | |
| 600.0 | 599.6 | 591.6 | 590.4 | 1.0 | 1.1 | -132.80 | -173.1 | -49.1 | 187.2 | 185.0 | 2.15 | 86.960 | |
| 700.0 | 698.8 | 682.6 | 680.0 | 1.3 | 1.4 | -139.18 | -181.9 | -36.0 | 203.7 | 201.0 | 2.63 | 77.461 | |
| 800.0 | 797.1 | 770.6 | 765.9 | 1.6 | 1.8 | -145.85 | -192.6 | -19.9 | 229.6 | 226.4 | 3.11 | 73.700 | SF |
| 900.0 | 894.3 | 857.5 | 850.0 | 2.0 | 2.2 | -152.13 | -204.2 | -2.0 | 264.4 | 260.9 | 3.57 | 74.096 | |
| 1,000.0 | 991.1 | 943.2 | 932.8 | 2.5 | 2.6 | -157.75 | -216.2 | 17.0 | 304.7 | 300.7 | 3.98 | 76.518 | |
| 1,100.0 | 1,087.9 | 1,035.6 | 1,021.9 | 2.9 | 3.0 | -162.59 | -228.4 | 38.0 | 346.6 | 342.2 | 4.38 | 79.226 | |
| 1,200.0 | 1,184.6 | 1,122.6 | 1,105.9 | 3.4 | 3.5 | -166.31 | -239.1 | 58.3 | 389.5 | 384.8 | 4.74 | 82.087 | |
| 1,300.0 | 1,281.4 | 1,207.3 | 1,187.4 | 3.8 | 3.9 | -169.32 | -249.6 | 78.7 | 434.0 | 428.9 | 5.10 | 85.079 | |
| 1,400.0 | 1,378.2 | 1,293.2 | 1,269.9 | 4.3 | 4.3 | -171.87 | -260.6 | 99.8 | 479.8 | 474.3 | 5.44 | 88.208 | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (1st Occupation) - Shideler 30-1B - OH - FINAL | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---|------------------------|------------------------|------------------------|-------------------|----------------|-----------------------------|---|---------------|----------------------------|-----------------------------|------------------------------|---------------------------|---------|
| Survey Program: 202-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | Warning |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -154.63 | -176.3 | -83.6 | 195.1 | | | | |
| 100.0 | 100.0 | 100.5 | 100.5 | 0.1 | 0.2 | -154.63 | -176.2 | -83.5 | 195.0 | 194.7 | 0.29 | 666.716 | |
| 200.0 | 200.0 | 201.0 | 201.0 | 0.3 | 0.3 | -154.66 | -175.9 | -83.3 | 194.6 | 194.0 | 0.62 | 312.209 | |
| 300.0 | 300.0 | 300.6 | 300.6 | 0.5 | 0.5 | -154.77 | -175.5 | -82.7 | 194.0 | 193.1 | 0.97 | 199.750 | |
| 315.5 | 315.5 | 315.5 | 315.5 | 0.5 | 0.5 | -154.84 | -175.6 | -82.5 | 194.0 | 193.0 | 1.02 | 189.395 CC, ES | |
| 400.0 | 400.0 | 398.3 | 398.2 | 0.7 | 0.7 | -155.67 | -177.1 | -80.1 | 194.4 | 193.1 | 1.32 | 147.398 | |
| 500.0 | 500.0 | 493.4 | 493.1 | 0.8 | 0.8 | -124.63 | -181.5 | -75.0 | 198.0 | 196.3 | 1.69 | 117.437 | |
| 600.0 | 599.6 | 584.8 | 583.9 | 1.0 | 1.1 | -128.66 | -189.3 | -67.9 | 208.2 | 206.1 | 2.09 | 99.705 | |
| 700.0 | 698.8 | 673.8 | 671.7 | 1.3 | 1.4 | -133.80 | -200.6 | -58.4 | 226.5 | 224.0 | 2.53 | 89.409 | |
| 800.0 | 797.1 | 759.6 | 755.4 | 1.6 | 1.7 | -139.35 | -214.6 | -46.2 | 253.9 | 250.9 | 3.01 | 84.482 | |
| 900.0 | 894.3 | 846.0 | 838.8 | 2.0 | 2.1 | -145.21 | -230.5 | -30.3 | 290.2 | 286.7 | 3.49 | 83.185 SF | |
| 1,000.0 | 991.1 | 926.3 | 915.6 | 2.5 | 2.5 | -150.64 | -246.2 | -13.0 | 332.3 | 328.3 | 3.92 | 84.838 | |
| 1,100.0 | 1,087.9 | 1,007.9 | 993.3 | 2.9 | 3.0 | -155.24 | -262.6 | 5.7 | 377.6 | 373.3 | 4.31 | 87.588 | |
| 1,200.0 | 1,184.6 | 1,090.0 | 1,071.1 | 3.4 | 3.4 | -159.11 | -279.5 | 25.8 | 425.5 | 420.9 | 4.68 | 91.019 | |
| 1,300.0 | 1,281.4 | 1,172.3 | 1,148.9 | 3.8 | 3.9 | -162.37 | -296.5 | 46.5 | 475.1 | 470.1 | 5.02 | 94.555 | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (1st Occupation) - Shideler 30-1C - OH - FINAL | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|---------------------------|---------|
| Survey Program: 111-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | Distance | | | | | | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -151.95 | -178.1 | -94.9 | 201.8 | | | | |
| 100.0 | 100.0 | 100.2 | 100.2 | 0.1 | 0.1 | -151.97 | -178.1 | -94.8 | 201.8 | 201.5 | 0.28 | 730.136 | |
| 200.0 | 200.0 | 200.8 | 200.8 | 0.3 | 0.3 | -152.12 | -178.1 | -94.2 | 201.5 | 200.9 | 0.62 | 323.530 | |
| 239.6 | 239.6 | 239.6 | 239.6 | 0.4 | 0.4 | -152.24 | -178.2 | -93.8 | 201.4 | 200.7 | 0.76 | 265.082 | CC, ES |
| 300.0 | 300.0 | 296.3 | 296.3 | 0.5 | 0.5 | -152.63 | -179.3 | -92.8 | 202.0 | 201.0 | 0.97 | 209.009 | |
| 400.0 | 400.0 | 387.3 | 387.1 | 0.7 | 0.7 | -154.06 | -184.7 | -89.9 | 205.8 | 204.5 | 1.32 | 155.988 | |
| 500.0 | 500.0 | 478.0 | 477.1 | 0.8 | 0.9 | -123.21 | -194.9 | -85.4 | 215.5 | 213.8 | 1.69 | 127.725 | |
| 600.0 | 599.6 | 569.0 | 566.6 | 1.0 | 1.2 | -127.28 | -209.4 | -78.6 | 232.4 | 230.3 | 2.11 | 109.972 | |
| 700.0 | 698.8 | 656.4 | 651.7 | 1.3 | 1.6 | -132.15 | -226.8 | -69.1 | 257.1 | 254.5 | 2.58 | 99.799 | |
| 800.0 | 797.1 | 737.5 | 729.8 | 1.6 | 2.0 | -136.90 | -245.5 | -57.9 | 290.4 | 287.4 | 3.05 | 95.339 | |
| 900.0 | 894.3 | 812.0 | 800.7 | 2.0 | 2.4 | -141.18 | -265.3 | -45.9 | 333.1 | 329.6 | 3.50 | 95.138 | SF |
| 1,000.0 | 991.1 | 881.2 | 865.5 | 2.5 | 2.8 | -145.44 | -285.9 | -33.3 | 382.8 | 378.9 | 3.90 | 98.034 | |
| 1,100.0 | 1,087.9 | 938.0 | 917.9 | 2.9 | 3.2 | -148.48 | -304.5 | -21.9 | 437.4 | 433.1 | 4.26 | 102.740 | |
| 1,200.0 | 1,184.6 | 1,007.9 | 981.4 | 3.4 | 3.8 | -151.72 | -329.5 | -6.7 | 496.0 | 491.4 | 4.61 | 107.538 | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (1st Occupation) - Shideler 30-2C - OH - FINAL | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|--|----------------|----------------|----------------|-----------------|--------|-------------------|------------------------|------------|-----------------|------------------|------------------------|--------------------|---------|
| Survey Program: 172-MWD, 1616-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | Warning |
| Measured Depth | Vertical Depth | Measured Depth | Vertical Depth | Reference | Offset | Highside Toolface | Offset Wellbore Centre | | Between Centres | Between Ellipses | Total Uncertainty Axis | Separation Factor | |
| (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (°) | +N/-S (ft) | +E/-W (ft) | (ft) | (ft) | | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -151.76 | -212.0 | -113.8 | 240.6 | | | | |
| 100.0 | 100.0 | 101.7 | 101.7 | 0.1 | 0.2 | -151.78 | -211.7 | -113.6 | 240.3 | 240.0 | 0.29 | 825.192 | |
| 200.0 | 200.0 | 202.0 | 202.0 | 0.3 | 0.3 | -151.83 | -210.9 | -112.9 | 239.2 | 238.6 | 0.63 | 382.689 | |
| 237.5 | 237.5 | 237.5 | 237.5 | 0.4 | 0.4 | -151.88 | -210.8 | -112.7 | 239.0 | 238.3 | 0.75 | 317.683 | CC, ES |
| 300.0 | 300.0 | 294.0 | 294.0 | 0.5 | 0.5 | -152.02 | -211.6 | -112.4 | 239.7 | 238.7 | 0.96 | 249.674 | |
| 400.0 | 400.0 | 386.0 | 385.9 | 0.7 | 0.6 | -152.41 | -215.8 | -112.8 | 243.9 | 242.6 | 1.30 | 187.651 | |
| 500.0 | 500.0 | 470.1 | 469.6 | 0.8 | 0.8 | -119.62 | -223.6 | -114.6 | 254.3 | 252.7 | 1.63 | 156.470 | |
| 600.0 | 599.6 | 556.4 | 554.9 | 1.0 | 1.1 | -121.12 | -235.9 | -117.1 | 272.5 | 270.5 | 1.98 | 137.639 | |
| 700.0 | 698.8 | 638.1 | 635.0 | 1.3 | 1.4 | -123.14 | -251.6 | -119.6 | 298.3 | 295.9 | 2.36 | 126.398 | |
| 800.0 | 797.1 | 715.4 | 710.1 | 1.6 | 1.7 | -125.19 | -270.0 | -122.7 | 332.3 | 329.5 | 2.77 | 119.779 | |
| 900.0 | 894.3 | 788.1 | 779.8 | 2.0 | 2.1 | -127.21 | -290.4 | -126.2 | 374.3 | 371.1 | 3.22 | 116.285 | |
| 1,000.0 | 991.1 | 858.6 | 846.4 | 2.5 | 2.5 | -129.85 | -313.2 | -130.1 | 422.3 | 418.6 | 3.65 | 115.709 | SF |
| 1,100.0 | 1,087.9 | 938.0 | 920.7 | 2.9 | 3.0 | -132.28 | -340.6 | -134.8 | 473.2 | 469.1 | 4.08 | 115.963 | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (1st Occupation) - Shideler 30-3A - OH - FINAL | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|-------------------|--------------------|--------|
| Survey Program: 172-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -149.41 | -213.1 | -126.0 | 247.5 | | | | | |
| 100.0 | 100.0 | 101.0 | 101.0 | 0.1 | 0.2 | -149.40 | -212.9 | -125.9 | 247.3 | 247.0 | 0.29 | 852.760 | | |
| 200.0 | 200.0 | 200.9 | 200.9 | 0.3 | 0.3 | -149.36 | -212.3 | -125.8 | 246.8 | 246.2 | 0.62 | 396.013 | | |
| 220.4 | 220.4 | 220.5 | 220.5 | 0.3 | 0.3 | -149.34 | -212.3 | -125.8 | 246.8 | 246.1 | 0.69 | 356.046 | CC, ES | |
| 300.0 | 300.0 | 294.0 | 294.0 | 0.5 | 0.5 | -149.24 | -212.8 | -126.7 | 247.7 | 246.8 | 0.96 | 258.043 | | |
| 400.0 | 400.0 | 382.4 | 382.3 | 0.7 | 0.6 | -149.07 | -216.2 | -129.6 | 252.7 | 251.4 | 1.29 | 195.994 | | |
| 500.0 | 500.0 | 468.3 | 467.7 | 0.8 | 0.8 | -115.57 | -222.7 | -134.7 | 263.4 | 261.8 | 1.62 | 162.760 | | |
| 600.0 | 599.6 | 555.8 | 554.3 | 1.0 | 1.1 | -116.29 | -233.2 | -141.5 | 281.1 | 279.1 | 1.97 | 142.762 | | |
| 700.0 | 698.8 | 647.4 | 644.6 | 1.3 | 1.4 | -117.73 | -246.8 | -149.4 | 304.2 | 301.8 | 2.37 | 128.585 | | |
| 800.0 | 797.1 | 739.0 | 734.7 | 1.6 | 1.7 | -119.53 | -261.4 | -157.9 | 331.4 | 328.6 | 2.81 | 117.758 | | |
| 900.0 | 894.3 | 829.6 | 823.5 | 2.0 | 2.0 | -121.71 | -276.6 | -166.4 | 362.7 | 359.4 | 3.31 | 109.560 | | |
| 1,000.0 | 991.1 | 924.0 | 916.1 | 2.5 | 2.4 | -124.52 | -292.8 | -175.3 | 396.1 | 392.3 | 3.83 | 103.556 | | |
| 1,100.0 | 1,087.9 | 1,017.6 | 1,007.9 | 2.9 | 2.7 | -126.77 | -308.2 | -184.8 | 429.8 | 425.4 | 4.34 | 98.936 | | |
| 1,200.0 | 1,184.6 | 1,108.0 | 1,096.7 | 3.4 | 3.0 | -128.62 | -323.1 | -194.0 | 464.1 | 459.2 | 4.86 | 95.489 | | |
| 1,300.0 | 1,281.4 | 1,198.8 | 1,185.5 | 3.8 | 3.4 | -130.18 | -338.5 | -203.9 | 499.4 | 494.0 | 5.38 | 92.824 | SF | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | O19EB Pad (1st Occupation) - Shideler 30-3B - OH - FINAL | | Offset Site Error: | | 0.0 ft |
|---------------------------------|---------------------------|---------------------------|---------------------------|-------------------|----------------|-----------------------------|---|---------------|----------------------------|-----------------------------|------------------------------|--|--------|--------------------|--|--------|
| Survey Program: | | | | | | | | | | | | 160-MWD | | Offset Well Error: | | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | Warning | | |
| Measured Depth Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | | | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -150.04 | -200.0 | -115.3 | 230.8 | | | | | | | |
| 100.0 | 100.0 | 100.2 | 100.2 | 0.1 | 0.2 | -150.03 | -199.9 | -115.3 | 230.8 | 230.5 | 0.29 | 804.038 | | | | |
| 200.0 | 200.0 | 200.7 | 200.7 | 0.3 | 0.3 | -150.02 | -199.7 | -115.2 | 230.6 | 230.0 | 0.62 | 370.427 | | | | |
| 212.1 | 212.1 | 212.1 | 212.1 | 0.3 | 0.3 | -150.01 | -199.7 | -115.3 | 230.6 | 229.9 | 0.66 | 347.502 | CC, ES | | | |
| 300.0 | 300.0 | 294.0 | 294.0 | 0.5 | 0.5 | -149.80 | -200.1 | -116.5 | 231.6 | 230.7 | 0.96 | 241.280 | | | | |
| 400.0 | 400.0 | 384.4 | 384.3 | 0.7 | 0.6 | -149.20 | -202.4 | -120.7 | 236.2 | 234.9 | 1.29 | 182.769 | | | | |
| 500.0 | 500.0 | 471.5 | 470.9 | 0.8 | 0.8 | -115.12 | -207.4 | -127.9 | 246.5 | 244.9 | 1.63 | 150.834 | | | | |
| 600.0 | 599.6 | 557.1 | 555.5 | 1.0 | 1.1 | -115.15 | -215.9 | -137.5 | 264.1 | 262.1 | 1.99 | 132.525 | | | | |
| 700.0 | 698.8 | 643.4 | 640.1 | 1.3 | 1.4 | -115.55 | -227.2 | -150.1 | 288.4 | 286.0 | 2.41 | 119.782 | | | | |
| 800.0 | 797.1 | 725.8 | 720.1 | 1.6 | 1.8 | -115.93 | -239.6 | -165.5 | 318.6 | 315.7 | 2.89 | 110.429 | | | | |
| 900.0 | 894.3 | 803.4 | 794.5 | 2.0 | 2.2 | -116.43 | -253.4 | -182.7 | 355.3 | 351.9 | 3.43 | 103.497 | | | | |
| 1,000.0 | 991.1 | 877.3 | 864.1 | 2.5 | 2.7 | -117.48 | -268.7 | -202.0 | 397.1 | 393.0 | 4.02 | 98.756 | | | | |
| 1,100.0 | 1,087.9 | 949.4 | 930.8 | 2.9 | 3.2 | -118.07 | -285.4 | -223.8 | 442.8 | 438.2 | 4.63 | 95.588 | | | | |
| 1,200.0 | 1,184.6 | 1,032.0 | 1,006.1 | 3.4 | 3.8 | -118.48 | -306.3 | -250.6 | 491.2 | 485.9 | 5.30 | 92.738 | SF | | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (1st Occupation) - Shideler 30-4A - OH - FINAL | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|---------------------------|---------|
| Survey Program: 111-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | Distance | | | | | | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -152.82 | -165.0 | -84.7 | 185.5 | | | | |
| 100.0 | 100.0 | 100.9 | 100.9 | 0.1 | 0.1 | -152.88 | -164.9 | -84.5 | 185.2 | 185.0 | 0.28 | 667.855 | |
| 200.0 | 200.0 | 200.2 | 200.2 | 0.3 | 0.3 | -152.92 | -164.5 | -84.1 | 184.8 | 184.1 | 0.62 | 297.204 | |
| 205.2 | 205.2 | 205.2 | 205.2 | 0.3 | 0.3 | -152.91 | -164.5 | -84.1 | 184.8 | 184.1 | 0.64 | 288.873 | CC, ES |
| 300.0 | 300.0 | 295.4 | 295.4 | 0.5 | 0.5 | -152.29 | -164.4 | -86.3 | 185.7 | 184.7 | 0.96 | 192.803 | |
| 400.0 | 400.0 | 388.7 | 388.4 | 0.7 | 0.7 | -150.81 | -165.7 | -92.6 | 190.1 | 188.8 | 1.30 | 145.998 | |
| 500.0 | 500.0 | 478.0 | 477.2 | 0.8 | 0.9 | -115.88 | -169.4 | -102.0 | 200.2 | 198.5 | 1.67 | 119.927 | |
| 600.0 | 599.6 | 569.0 | 567.0 | 1.0 | 1.1 | -114.81 | -175.1 | -115.5 | 216.5 | 214.5 | 2.07 | 104.384 | |
| 700.0 | 698.8 | 661.0 | 657.0 | 1.3 | 1.5 | -114.02 | -181.5 | -133.0 | 238.0 | 235.4 | 2.56 | 92.987 | |
| 800.0 | 797.1 | 748.3 | 741.6 | 1.6 | 1.9 | -113.44 | -188.6 | -153.5 | 264.6 | 261.5 | 3.13 | 84.635 | |
| 900.0 | 894.3 | 831.6 | 821.1 | 2.0 | 2.4 | -113.10 | -196.7 | -176.8 | 297.0 | 293.2 | 3.79 | 78.381 | |
| 1,000.0 | 991.1 | 913.8 | 898.3 | 2.5 | 2.9 | -113.28 | -205.9 | -203.5 | 333.7 | 329.2 | 4.52 | 73.826 | |
| 1,100.0 | 1,087.9 | 998.9 | 977.1 | 2.9 | 3.5 | -113.08 | -216.5 | -233.9 | 373.0 | 367.7 | 5.29 | 70.497 | |
| 1,200.0 | 1,184.6 | 1,086.3 | 1,057.5 | 3.4 | 4.2 | -112.81 | -227.9 | -266.3 | 413.6 | 407.5 | 6.09 | 67.887 | |
| 1,300.0 | 1,281.4 | 1,175.9 | 1,139.5 | 3.8 | 4.9 | -112.49 | -239.8 | -300.3 | 454.8 | 447.9 | 6.92 | 65.758 | |
| 1,400.0 | 1,378.2 | 1,265.6 | 1,221.5 | 4.3 | 5.5 | -112.19 | -251.7 | -334.6 | 496.2 | 488.5 | 7.75 | 64.054 | SF |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| | | | | | | | | | | | | | |
|----------------------------|----------------------------|----------------------------|----------------------------|------------------------|--------------------|------------------------------|--|-------------------|-----------------------------|------------------------------|----------------|---------------------------|----------------|
| Offset Design | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
| Survey Program: 172-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | Distance | | Total | | Separation | Warning | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | | Uncertainty Axis | Factor |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -152.42 | -198.5 | -103.7 | 224.0 | | | | |
| 100.0 | 100.0 | 102.1 | 102.1 | 0.1 | 0.2 | -152.43 | -198.1 | -103.4 | 223.5 | 223.2 | | 0.29 | 765.445 |
| 200.0 | 200.0 | 203.1 | 203.1 | 0.3 | 0.3 | -152.45 | -197.0 | -102.7 | 222.2 | 221.5 | | 0.63 | 353.970 |
| 261.5 | 261.5 | 261.5 | 261.5 | 0.4 | 0.4 | -152.53 | -196.7 | -102.2 | 221.7 | 220.8 | | 0.84 | 265.016 CC, ES |
| 300.0 | 300.0 | 297.2 | 297.2 | 0.5 | 0.5 | -152.69 | -197.2 | -101.8 | 221.9 | 220.9 | | 0.97 | 229.797 |
| 400.0 | 400.0 | 387.1 | 386.9 | 0.7 | 0.6 | -153.48 | -201.2 | -100.4 | 225.3 | 224.0 | | 1.30 | 172.822 |
| 500.0 | 500.0 | 478.0 | 477.4 | 0.8 | 0.8 | -121.49 | -209.8 | -99.5 | 234.6 | 233.0 | | 1.65 | 142.054 |
| 600.0 | 599.6 | 569.0 | 567.5 | 1.0 | 1.1 | -124.17 | -222.5 | -97.5 | 250.9 | 248.8 | | 2.04 | 123.266 |
| 700.0 | 698.8 | 650.0 | 647.0 | 1.3 | 1.4 | -127.31 | -237.7 | -94.4 | 274.8 | 272.4 | | 2.44 | 112.687 |
| 800.0 | 797.1 | 729.2 | 724.0 | 1.6 | 1.7 | -130.70 | -256.2 | -90.3 | 307.5 | 304.6 | | 2.88 | 106.906 |
| 900.0 | 894.3 | 802.9 | 794.6 | 2.0 | 2.1 | -133.92 | -276.6 | -85.7 | 349.1 | 345.8 | | 3.32 | 105.143 SF |
| 1,000.0 | 991.1 | 873.0 | 861.0 | 2.5 | 2.5 | -137.37 | -298.6 | -81.4 | 397.2 | 393.5 | | 3.73 | 106.498 |
| 1,100.0 | 1,087.9 | 938.0 | 921.7 | 2.9 | 2.9 | -140.10 | -321.3 | -76.9 | 449.7 | 445.6 | | 4.11 | 109.335 |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (1st Occupation) - Shideler 30-8B - OH - FINAL | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|--|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|-------------------|--------------------|--------|
| Survey Program: 142-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -153.23 | -186.5 | -94.1 | 208.9 | | | | | |
| 100.0 | 100.0 | 99.9 | 99.9 | 0.1 | 0.1 | -153.30 | -186.6 | -93.9 | 208.9 | 208.6 | 0.28 | 736.214 | | |
| 146.9 | 146.9 | 146.8 | 146.8 | 0.2 | 0.2 | -153.38 | -186.8 | -93.6 | 208.9 | 208.5 | 0.44 | 479.058 | | |
| 200.0 | 200.0 | 199.2 | 199.1 | 0.3 | 0.3 | -153.54 | -187.1 | -93.1 | 209.0 | 208.3 | 0.62 | 336.565 ES | | |
| 300.0 | 300.0 | 294.0 | 293.9 | 0.5 | 0.5 | -154.25 | -189.6 | -91.4 | 210.6 | 209.6 | 0.97 | 217.590 | | |
| 400.0 | 400.0 | 386.0 | 385.7 | 0.7 | 0.7 | -155.60 | -195.6 | -88.7 | 215.3 | 213.9 | 1.33 | 161.899 | | |
| 500.0 | 500.0 | 476.5 | 475.5 | 0.8 | 0.9 | -124.42 | -205.9 | -84.9 | 225.5 | 223.8 | 1.69 | 133.665 | | |
| 600.0 | 599.6 | 565.9 | 563.6 | 1.0 | 1.2 | -127.92 | -220.0 | -79.3 | 243.0 | 240.9 | 2.09 | 116.366 | | |
| 700.0 | 698.8 | 649.9 | 645.5 | 1.3 | 1.5 | -131.98 | -237.1 | -71.7 | 268.7 | 266.2 | 2.52 | 106.684 | | |
| 800.0 | 797.1 | 728.8 | 721.5 | 1.6 | 1.9 | -136.05 | -256.4 | -62.6 | 303.5 | 300.5 | 2.97 | 102.101 | | |
| 900.0 | 894.3 | 801.4 | 790.3 | 2.0 | 2.3 | -139.78 | -277.0 | -52.7 | 347.7 | 344.2 | 3.42 | 101.657 SF | | |
| 1,000.0 | 991.1 | 870.4 | 854.9 | 2.5 | 2.8 | -143.72 | -299.1 | -42.0 | 398.5 | 394.7 | 3.82 | 104.221 | | |
| 1,100.0 | 1,087.9 | 938.0 | 917.1 | 2.9 | 3.3 | -147.11 | -322.5 | -29.9 | 453.5 | 449.3 | 4.20 | 108.010 | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (1st Occupation) - Shideler Federal 19-13D - OH - FINAL | | | | | | | | | | | | Offset Site Error: 0.0 ft | | |
|---|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|---------------------------|--|---------|
| Survey Program: 111-MWD | | | | | | | | | | | | Offset Well Error: 0.0 ft | | |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | Warning |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -153.82 | -152.3 | -74.9 | 169.7 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -153.84 | -152.3 | -74.8 | 169.7 | 169.4 | 0.28 | 614.621 | | |
| 152.7 | 152.7 | 152.7 | 152.7 | 0.2 | 0.2 | -153.86 | -152.3 | -74.8 | 169.7 | 169.2 | 0.46 | 371.943 | | |
| 200.0 | 200.0 | 199.6 | 199.6 | 0.3 | 0.3 | -153.83 | -152.3 | -74.8 | 169.7 | 169.1 | 0.62 | 273.410 ES | | |
| 300.0 | 300.0 | 296.4 | 296.4 | 0.5 | 0.5 | -153.11 | -152.3 | -77.2 | 170.8 | 169.8 | 0.96 | 176.965 | | |
| 400.0 | 400.0 | 390.9 | 390.6 | 0.7 | 0.7 | -151.10 | -152.5 | -84.2 | 174.5 | 173.2 | 1.31 | 133.247 | | |
| 500.0 | 500.0 | 484.7 | 483.5 | 0.8 | 0.9 | -114.73 | -152.9 | -96.8 | 182.8 | 181.0 | 1.74 | 105.307 | | |
| 600.0 | 599.6 | 576.9 | 574.1 | 1.0 | 1.3 | -112.08 | -153.7 | -114.0 | 196.8 | 194.6 | 2.20 | 89.375 | | |
| 700.0 | 698.8 | 665.7 | 660.5 | 1.3 | 1.6 | -110.30 | -156.3 | -134.0 | 216.9 | 214.2 | 2.72 | 79.611 | | |
| 800.0 | 797.1 | 754.0 | 745.6 | 1.6 | 2.1 | -109.21 | -160.8 | -157.4 | 242.9 | 239.6 | 3.34 | 72.691 | | |
| 900.0 | 894.3 | 837.6 | 824.8 | 2.0 | 2.6 | -108.56 | -166.4 | -183.3 | 274.4 | 270.3 | 4.06 | 67.626 | | |
| 1,000.0 | 991.1 | 923.4 | 904.7 | 2.5 | 3.2 | -108.36 | -172.5 | -214.1 | 309.7 | 304.8 | 4.87 | 63.544 | | |
| 1,100.0 | 1,087.9 | 1,006.7 | 980.7 | 2.9 | 3.9 | -107.56 | -178.0 | -247.8 | 347.4 | 341.7 | 5.73 | 60.606 | | |
| 1,200.0 | 1,184.6 | 1,091.7 | 1,056.8 | 3.4 | 4.6 | -106.45 | -183.6 | -285.3 | 387.5 | 380.9 | 6.62 | 58.552 | | |
| 1,300.0 | 1,281.4 | 1,183.9 | 1,138.5 | 3.8 | 5.4 | -105.27 | -189.5 | -327.4 | 428.6 | 421.0 | 7.56 | 56.717 | | |
| 1,400.0 | 1,378.2 | 1,276.7 | 1,220.7 | 4.3 | 6.3 | -104.13 | -194.2 | -370.3 | 469.2 | 460.7 | 8.50 | 55.199 SF | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (2nd Occupation) - Shideler 19-11DD - OH - Plan #1 | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|--|---------------------------|---------------------------|---------------------------|-------------------|----------------|-----------------------------|---|---------------|----------------------------|-----------------------------|------------------------------|----------------------|--------------------|--------|
| Survey Program: O-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | Total Uncertainty Axis | Separation Factor | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | | | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -53.48 | 19.7 | -26.6 | 33.0 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -53.48 | 19.7 | -26.6 | 33.0 | 32.8 | 0.27 | 121.355 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -53.48 | 19.7 | -26.6 | 33.0 | 32.4 | 0.62 | 53.178 CC, ES | | |
| 300.0 | 300.0 | 298.7 | 298.7 | 0.5 | 0.5 | -53.33 | 20.6 | -27.6 | 34.5 | 33.5 | 0.97 | 35.596 | | |
| 400.0 | 400.0 | 396.6 | 396.3 | 0.7 | 0.7 | -52.80 | 24.6 | -32.4 | 40.9 | 39.6 | 1.32 | 30.933 | | |
| 500.0 | 500.0 | 493.8 | 493.0 | 0.8 | 0.9 | -19.62 | 31.8 | -41.0 | 49.9 | 48.3 | 1.66 | 30.099 | | |
| 600.0 | 599.6 | 591.7 | 589.5 | 1.0 | 1.2 | -21.19 | 42.1 | -53.2 | 58.8 | 56.8 | 2.01 | 29.301 | | |
| 700.0 | 698.8 | 691.5 | 687.8 | 1.3 | 1.6 | -24.07 | 53.2 | -66.4 | 64.0 | 61.7 | 2.38 | 26.958 | | |
| 800.0 | 797.1 | 791.3 | 786.1 | 1.6 | 1.9 | -28.61 | 64.3 | -79.6 | 64.8 | 62.0 | 2.79 | 23.214 | | |
| 900.0 | 894.3 | 891.0 | 884.3 | 2.0 | 2.2 | -35.69 | 75.4 | -92.8 | 61.6 | 58.3 | 3.33 | 18.517 | | |
| 1,000.0 | 991.1 | 990.5 | 982.3 | 2.5 | 2.6 | -44.67 | 86.5 | -105.9 | 58.0 | 54.0 | 4.05 | 14.331 | | |
| 1,100.0 | 1,087.9 | 1,090.0 | 1,080.3 | 2.9 | 2.9 | -54.52 | 97.6 | -119.1 | 56.1 | 51.1 | 4.95 | 11.321 | | |
| 1,160.6 | 1,146.5 | 1,150.3 | 1,139.7 | 3.2 | 3.1 | -60.72 | 104.3 | -127.1 | 55.8 | 50.2 | 5.57 | 10.009 | | |
| 1,200.0 | 1,184.6 | 1,189.5 | 1,178.2 | 3.4 | 3.3 | -64.76 | 108.7 | -132.3 | 55.9 | 49.9 | 5.99 | 9.338 | | |
| 1,300.0 | 1,281.4 | 1,289.0 | 1,276.2 | 3.8 | 3.6 | -74.75 | 119.8 | -145.5 | 57.5 | 50.4 | 7.05 | 8.151 | | |
| 1,400.0 | 1,378.2 | 1,388.5 | 1,374.2 | 4.3 | 4.0 | -83.94 | 130.9 | -158.6 | 60.7 | 52.6 | 8.07 | 7.522 | | |
| 1,500.0 | 1,475.0 | 1,487.9 | 1,472.2 | 4.8 | 4.3 | -92.03 | 142.0 | -171.8 | 65.3 | 56.3 | 9.00 | 7.262 | | |
| 1,600.0 | 1,571.7 | 1,587.4 | 1,570.2 | 5.2 | 4.7 | -98.94 | 153.1 | -185.0 | 71.1 | 61.3 | 9.83 | 7.235 SF | | |
| 1,700.0 | 1,668.5 | 1,686.9 | 1,668.2 | 5.7 | 5.0 | -104.75 | 164.2 | -198.1 | 77.7 | 67.2 | 10.57 | 7.352 | | |
| 1,800.0 | 1,765.3 | 1,786.4 | 1,766.2 | 6.2 | 5.4 | -109.61 | 175.3 | -211.3 | 85.0 | 73.8 | 11.26 | 7.554 | | |
| 1,900.0 | 1,862.1 | 1,885.9 | 1,864.2 | 6.7 | 5.7 | -113.68 | 186.4 | -224.5 | 92.8 | 81.0 | 11.89 | 7.806 | | |
| 2,000.0 | 1,958.8 | 1,985.4 | 1,962.2 | 7.1 | 6.1 | -117.10 | 197.4 | -237.6 | 101.1 | 88.6 | 12.50 | 8.084 | | |
| 2,100.0 | 2,055.6 | 2,084.9 | 2,060.2 | 7.6 | 6.4 | -120.01 | 208.5 | -250.8 | 109.6 | 96.5 | 13.09 | 8.374 | | |
| 2,200.0 | 2,152.4 | 2,184.4 | 2,158.2 | 8.1 | 6.7 | -122.49 | 219.6 | -264.0 | 118.3 | 104.7 | 13.66 | 8.665 | | |
| 2,300.0 | 2,249.1 | 2,283.9 | 2,266.2 | 8.6 | 7.1 | -124.63 | 230.7 | -277.2 | 127.3 | 113.1 | 14.22 | 8.952 | | |
| 2,400.0 | 2,345.9 | 2,383.4 | 2,354.2 | 9.0 | 7.4 | -126.48 | 241.8 | -290.3 | 136.4 | 121.6 | 14.77 | 9.232 | | |
| 2,500.0 | 2,442.7 | 2,482.9 | 2,452.2 | 9.5 | 7.8 | -128.10 | 252.9 | -303.5 | 145.6 | 130.3 | 15.32 | 9.503 | | |
| 2,600.0 | 2,539.5 | 2,582.4 | 2,550.2 | 10.0 | 8.1 | -129.53 | 264.0 | -316.7 | 154.9 | 139.0 | 15.87 | 9.763 | | |
| 2,700.0 | 2,636.2 | 2,681.9 | 2,648.2 | 10.5 | 8.5 | -130.79 | 275.1 | -329.8 | 164.3 | 147.9 | 16.41 | 10.012 | | |
| 2,800.0 | 2,733.0 | 2,781.4 | 2,746.1 | 10.9 | 8.8 | -131.92 | 286.2 | -343.0 | 173.8 | 156.8 | 16.96 | 10.249 | | |
| 2,900.0 | 2,829.8 | 2,880.9 | 2,844.1 | 11.4 | 9.2 | -132.93 | 297.3 | -356.2 | 183.3 | 165.8 | 17.50 | 10.476 | | |
| 3,000.0 | 2,926.6 | 2,980.4 | 2,942.1 | 11.9 | 9.5 | -133.84 | 308.4 | -369.3 | 192.9 | 174.9 | 18.04 | 10.692 | | |
| 3,100.0 | 3,023.3 | 3,079.9 | 3,040.1 | 12.4 | 9.9 | -134.67 | 319.5 | -382.5 | 202.6 | 184.0 | 18.59 | 10.897 | | |
| 3,200.0 | 3,120.1 | 3,179.4 | 3,138.1 | 12.8 | 10.2 | -135.42 | 330.5 | -395.7 | 212.2 | 193.1 | 19.13 | 11.093 | | |
| 3,300.0 | 3,216.9 | 3,278.8 | 3,236.1 | 13.3 | 10.6 | -136.10 | 341.6 | -408.9 | 221.9 | 202.3 | 19.68 | 11.280 | | |
| 3,400.0 | 3,313.7 | 3,378.3 | 3,334.1 | 13.8 | 10.9 | -136.73 | 352.7 | -422.0 | 231.7 | 211.5 | 20.22 | 11.458 | | |
| 3,500.0 | 3,410.4 | 3,477.8 | 3,432.1 | 14.3 | 11.3 | -137.30 | 363.8 | -435.2 | 241.4 | 220.7 | 20.76 | 11.627 | | |
| 3,600.0 | 3,507.2 | 3,577.3 | 3,530.1 | 14.7 | 11.6 | -137.84 | 374.9 | -448.4 | 251.2 | 229.9 | 21.31 | 11.789 | | |
| 3,700.0 | 3,604.0 | 3,676.8 | 3,628.1 | 15.2 | 12.0 | -138.33 | 386.0 | -461.5 | 261.0 | 239.2 | 21.85 | 11.943 | | |
| 3,800.0 | 3,700.7 | 3,776.3 | 3,726.1 | 15.7 | 12.3 | -138.78 | 397.1 | -474.7 | 270.8 | 248.4 | 22.40 | 12.091 | | |
| 3,900.0 | 3,797.5 | 3,875.8 | 3,824.1 | 16.2 | 12.7 | -139.21 | 408.2 | -487.9 | 280.7 | 257.7 | 22.95 | 12.232 | | |
| 4,000.0 | 3,894.3 | 3,975.3 | 3,922.1 | 16.6 | 13.0 | -139.60 | 419.3 | -501.0 | 290.5 | 267.0 | 23.49 | 12.366 | | |
| 4,100.0 | 3,991.1 | 4,074.8 | 4,020.1 | 17.1 | 13.4 | -139.97 | 430.4 | -514.2 | 300.4 | 276.3 | 24.04 | 12.495 | | |
| 4,200.0 | 4,087.8 | 4,174.3 | 4,118.1 | 17.6 | 13.7 | -140.32 | 441.5 | -527.4 | 310.2 | 285.7 | 24.59 | 12.619 | | |
| 4,300.0 | 4,184.6 | 4,273.8 | 4,216.0 | 18.1 | 14.1 | -140.64 | 452.6 | -540.5 | 320.1 | 295.0 | 25.13 | 12.737 | | |
| 4,400.0 | 4,281.4 | 4,373.3 | 4,314.0 | 18.5 | 14.4 | -140.95 | 463.7 | -553.7 | 330.0 | 304.3 | 25.68 | 12.851 | | |
| 4,500.0 | 4,378.2 | 4,472.8 | 4,412.0 | 19.0 | 14.8 | -141.23 | 474.7 | -566.9 | 339.9 | 313.7 | 26.23 | 12.960 | | |
| 4,600.0 | 4,474.9 | 4,572.3 | 4,510.0 | 19.5 | 15.1 | -141.51 | 485.8 | -580.1 | 349.8 | 323.1 | 26.78 | 13.064 | | |
| 4,700.0 | 4,571.7 | 4,671.8 | 4,608.0 | 20.0 | 15.5 | -141.76 | 496.9 | -593.2 | 359.7 | 332.4 | 27.33 | 13.165 | | |
| 4,800.0 | 4,668.5 | 4,771.3 | 4,706.0 | 20.4 | 15.8 | -142.01 | 508.0 | -606.4 | 369.7 | 341.8 | 27.88 | 13.262 | | |
| 4,900.0 | 4,765.7 | 4,870.9 | 4,804.1 | 20.9 | 16.2 | -142.17 | 519.1 | -619.6 | 378.1 | 349.7 | 28.45 | 13.293 | | |
| 5,000.0 | 4,863.7 | 4,970.7 | 4,902.5 | 21.2 | 16.5 | -141.97 | 530.3 | -632.8 | 383.8 | 354.7 | 29.10 | 13.193 | | |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (2nd Occupation) - Shideler 19-11DD - OH - Plan #1 | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|--|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------|-------------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | Total | | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Uncertainty Axis | Separation Factor | | |
| 5,100.0 | 4,962.3 | 5,063.8 | 4,994.3 | 21.5 | 16.8 | -141.64 | 539.8 | -644.1 | 387.7 | 358.0 | 29.70 | 13.053 | | |
| 5,200.0 | 5,061.4 | 5,156.5 | 5,086.3 | 21.8 | 17.0 | -141.37 | 547.4 | -653.1 | 390.6 | 360.4 | 30.21 | 12.930 | | |
| 5,300.0 | 5,161.0 | 5,249.2 | 5,178.6 | 22.0 | 17.2 | -141.16 | 553.0 | -659.8 | 392.7 | 362.1 | 30.63 | 12.821 | | |
| 5,400.0 | 5,260.8 | 5,341.9 | 5,271.1 | 22.1 | 17.4 | -141.00 | 556.8 | -664.3 | 394.0 | 363.0 | 30.96 | 12.724 | | |
| 5,500.0 | 5,360.7 | 5,434.7 | 5,363.8 | 22.2 | 17.5 | -140.90 | 558.6 | -666.4 | 394.3 | 363.1 | 31.21 | 12.635 | | |
| 5,600.0 | 5,460.7 | 5,531.6 | 5,460.7 | 22.3 | 17.6 | -174.28 | 558.8 | -666.6 | 394.2 | 362.8 | 31.42 | 12.548 | | |
| 5,700.0 | 5,560.7 | 5,631.6 | 5,560.7 | 22.4 | 17.7 | -174.28 | 558.8 | -666.6 | 394.2 | 362.6 | 31.64 | 12.462 | | |
| 5,800.0 | 5,660.7 | 5,731.6 | 5,660.7 | 22.5 | 17.8 | -174.28 | 558.8 | -666.6 | 394.2 | 362.4 | 31.85 | 12.376 | | |
| 5,900.0 | 5,760.7 | 5,831.6 | 5,760.7 | 22.5 | 17.9 | -174.28 | 558.8 | -666.6 | 394.2 | 362.2 | 32.08 | 12.291 | | |
| 6,000.0 | 5,860.7 | 5,931.6 | 5,860.7 | 22.6 | 18.0 | -174.28 | 558.8 | -666.6 | 394.2 | 361.9 | 32.30 | 12.206 | | |
| 6,100.0 | 5,960.7 | 6,031.6 | 5,960.7 | 22.7 | 18.1 | -174.28 | 558.8 | -666.6 | 394.2 | 361.7 | 32.52 | 12.122 | | |
| 6,200.0 | 6,060.7 | 6,131.6 | 6,060.7 | 22.8 | 18.2 | -174.28 | 558.8 | -666.6 | 394.2 | 361.5 | 32.75 | 12.037 | | |
| 6,300.0 | 6,160.7 | 6,231.6 | 6,160.7 | 22.9 | 18.3 | -174.28 | 558.8 | -666.6 | 394.2 | 361.3 | 32.98 | 11.954 | | |
| 6,400.0 | 6,260.7 | 6,331.6 | 6,260.7 | 22.9 | 18.4 | -174.28 | 558.8 | -666.6 | 394.2 | 361.0 | 33.21 | 11.870 | | |
| 6,500.0 | 6,360.7 | 6,431.6 | 6,360.7 | 23.0 | 18.5 | -174.28 | 558.8 | -666.6 | 394.2 | 360.8 | 33.45 | 11.787 | | |
| 6,600.0 | 6,460.7 | 6,531.6 | 6,460.7 | 23.1 | 18.6 | -174.28 | 558.8 | -666.6 | 394.2 | 360.6 | 33.68 | 11.705 | | |
| 6,700.0 | 6,560.7 | 6,631.6 | 6,560.7 | 23.2 | 18.7 | -174.28 | 558.8 | -666.6 | 394.2 | 360.3 | 33.92 | 11.623 | | |
| 6,800.0 | 6,660.7 | 6,731.6 | 6,660.7 | 23.3 | 18.8 | -174.28 | 558.8 | -666.6 | 394.2 | 360.1 | 34.16 | 11.541 | | |
| 6,900.0 | 6,760.7 | 6,831.6 | 6,760.7 | 23.4 | 18.9 | -174.28 | 558.8 | -666.6 | 394.2 | 359.8 | 34.40 | 11.460 | | |
| 7,000.0 | 6,860.7 | 6,931.6 | 6,860.7 | 23.5 | 19.0 | -174.28 | 558.8 | -666.6 | 394.2 | 359.6 | 34.64 | 11.380 | | |
| 7,100.0 | 6,960.7 | 7,031.6 | 6,960.7 | 23.6 | 19.1 | -174.28 | 558.8 | -666.6 | 394.2 | 359.4 | 34.89 | 11.300 | | |
| 7,200.0 | 7,060.7 | 7,131.6 | 7,060.7 | 23.7 | 19.3 | -174.28 | 558.8 | -666.6 | 394.2 | 359.1 | 35.14 | 11.220 | | |
| 7,300.0 | 7,160.7 | 7,231.6 | 7,160.7 | 23.7 | 19.4 | -174.28 | 558.8 | -666.6 | 394.2 | 358.9 | 35.38 | 11.141 | | |
| 7,400.0 | 7,260.7 | 7,331.6 | 7,260.7 | 23.8 | 19.5 | -174.28 | 558.8 | -666.6 | 394.2 | 358.6 | 35.64 | 11.063 | | |
| 7,500.0 | 7,360.7 | 7,431.6 | 7,360.7 | 23.9 | 19.6 | -174.28 | 558.8 | -666.6 | 394.2 | 358.4 | 35.89 | 10.986 | | |
| 7,600.0 | 7,460.7 | 7,531.6 | 7,460.7 | 24.0 | 19.7 | -174.28 | 558.8 | -666.6 | 394.2 | 358.1 | 36.14 | 10.908 | | |
| 7,700.0 | 7,560.7 | 7,631.6 | 7,560.7 | 24.1 | 19.8 | -174.28 | 558.8 | -666.6 | 394.2 | 357.8 | 36.40 | 10.832 | | |
| 7,800.0 | 7,660.7 | 7,731.6 | 7,660.7 | 24.2 | 19.9 | -174.28 | 558.8 | -666.6 | 394.2 | 357.6 | 36.65 | 10.756 | | |
| 7,883.3 | 7,744.0 | 7,814.9 | 7,744.0 | 24.3 | 20.0 | -174.28 | 558.8 | -666.6 | 394.2 | 357.4 | 36.87 | 10.693 | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (2nd Occupation) - Shideler 19-16B - OH - Plan #1 | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---|----------------|----------------|----------------|-----------------|--------|-------------------|------------------------|------------|-----------------|------------------|------------------------|-------------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | Warning | |
| Measured Depth | Vertical Depth | Measured Depth | Vertical Depth | Reference | Offset | Highside Toolface | Offset Wellbore Centre | | Between Centres | Between Ellipses | Total Uncertainty Axis | Separation Factor | | |
| (ft) | (ft) | (ft) | (ft) | (ft) | (ft) | (°) | +N/-S (ft) | +E/-W (ft) | (ft) | (ft) | | | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 126.02 | -19.3 | 26.6 | 32.8 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 126.02 | -19.3 | 26.6 | 32.8 | 32.6 | 0.27 | 120.573 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 126.02 | -19.3 | 26.6 | 32.8 | 32.2 | 0.62 | 52.835 | | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | 126.02 | -19.3 | 26.6 | 32.8 | 31.9 | 0.97 | 33.830 CC, ES | | |
| 400.0 | 400.0 | 399.1 | 399.1 | 0.7 | 0.7 | 122.21 | -18.2 | 28.9 | 34.1 | 32.8 | 1.32 | 25.777 | | |
| 500.0 | 500.0 | 497.6 | 497.2 | 0.8 | 0.9 | 147.90 | -14.9 | 35.8 | 41.0 | 39.3 | 1.69 | 24.260 SF | | |
| 600.0 | 599.6 | 594.6 | 593.5 | 1.0 | 1.1 | 141.86 | -9.4 | 47.0 | 56.1 | 54.0 | 2.08 | 26.928 | | |
| 700.0 | 698.8 | 689.4 | 686.7 | 1.3 | 1.5 | 138.27 | -2.1 | 62.2 | 79.1 | 76.6 | 2.52 | 31.399 | | |
| 800.0 | 797.1 | 785.0 | 780.3 | 1.6 | 1.8 | 136.95 | 6.4 | 79.8 | 108.0 | 104.9 | 3.00 | 35.939 | | |
| 900.0 | 894.3 | 879.6 | 872.9 | 2.0 | 2.2 | 137.47 | 14.8 | 97.2 | 140.4 | 136.9 | 3.53 | 39.734 | | |
| 1,000.0 | 991.1 | 973.6 | 964.9 | 2.5 | 2.5 | 138.62 | 23.2 | 114.6 | 174.3 | 170.2 | 4.10 | 42.547 | | |
| 1,100.0 | 1,087.9 | 1,067.7 | 1,057.0 | 2.9 | 2.9 | 139.40 | 31.6 | 131.9 | 208.2 | 203.6 | 4.67 | 44.593 | | |
| 1,200.0 | 1,184.6 | 1,161.7 | 1,149.0 | 3.4 | 3.3 | 139.96 | 39.9 | 149.2 | 242.2 | 236.9 | 5.25 | 46.138 | | |
| 1,300.0 | 1,281.4 | 1,255.7 | 1,241.0 | 3.8 | 3.6 | 140.38 | 48.3 | 166.6 | 276.1 | 270.3 | 5.83 | 47.341 | | |
| 1,400.0 | 1,378.2 | 1,349.8 | 1,333.1 | 4.3 | 4.0 | 140.71 | 56.7 | 183.9 | 310.1 | 303.7 | 6.42 | 48.302 | | |
| 1,500.0 | 1,475.0 | 1,443.8 | 1,425.1 | 4.8 | 4.4 | 140.97 | 65.0 | 201.2 | 344.1 | 337.1 | 7.01 | 49.086 | | |
| 1,600.0 | 1,571.7 | 1,537.8 | 1,517.2 | 5.2 | 4.8 | 141.19 | 73.4 | 218.6 | 378.1 | 370.5 | 7.60 | 49.736 | | |
| 1,700.0 | 1,668.5 | 1,631.9 | 1,609.2 | 5.7 | 5.1 | 141.37 | 81.8 | 235.9 | 412.1 | 403.9 | 8.19 | 50.284 | | |
| 1,800.0 | 1,765.3 | 1,725.9 | 1,701.3 | 6.2 | 5.5 | 141.52 | 90.1 | 253.2 | 446.1 | 437.3 | 8.79 | 50.752 | | |
| 1,900.0 | 1,862.1 | 1,820.0 | 1,793.3 | 6.7 | 5.9 | 141.65 | 98.5 | 270.6 | 480.1 | 470.7 | 9.38 | 51.155 | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (2nd Occupation) - Shideler 19-16BB - OH - Plan #1 | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|--|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------|---------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | Distance | | Total | | Separation | | Warning | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Uncertainty Axis | Factor | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 126.19 | -29.1 | 39.8 | 49.4 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 126.19 | -29.1 | 39.8 | 49.4 | 49.1 | 0.27 | 181.254 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 126.19 | -29.1 | 39.8 | 49.4 | 48.7 | 0.62 | 79.426 | | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | 126.19 | -29.1 | 39.8 | 49.4 | 48.4 | 0.97 | 50.855 | | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.7 | 0.7 | 126.19 | -29.1 | 39.8 | 49.4 | 48.0 | 1.32 | 37.402 CC, ES | | |
| 500.0 | 500.0 | 497.8 | 497.8 | 0.8 | 0.8 | 158.87 | -29.1 | 42.3 | 53.8 | 52.2 | 1.67 | 32.317 SF | | |
| 600.0 | 599.6 | 594.4 | 594.1 | 1.0 | 1.0 | 157.25 | -28.9 | 49.7 | 67.3 | 65.2 | 2.02 | 33.310 | | |
| 700.0 | 698.8 | 688.7 | 687.6 | 1.3 | 1.3 | 155.56 | -28.6 | 61.6 | 89.5 | 87.1 | 2.39 | 37.473 | | |
| 800.0 | 797.1 | 780.5 | 778.0 | 1.6 | 1.6 | 154.16 | -28.2 | 77.5 | 120.1 | 117.4 | 2.78 | 43.281 | | |
| 900.0 | 894.3 | 873.7 | 869.5 | 2.0 | 1.9 | 153.68 | -27.7 | 95.2 | 156.5 | 153.3 | 3.19 | 49.042 | | |
| 1,000.0 | 991.1 | 966.1 | 960.3 | 2.5 | 2.2 | 153.93 | -27.2 | 112.7 | 194.5 | 190.9 | 3.63 | 53.530 | | |
| 1,100.0 | 1,087.9 | 1,058.6 | 1,051.1 | 2.9 | 2.5 | 154.10 | -26.8 | 130.2 | 232.5 | 228.4 | 4.08 | 56.922 | | |
| 1,200.0 | 1,184.6 | 1,151.1 | 1,141.9 | 3.4 | 2.9 | 154.22 | -26.3 | 147.7 | 270.5 | 266.0 | 4.54 | 59.559 | | |
| 1,300.0 | 1,281.4 | 1,243.6 | 1,232.8 | 3.8 | 3.2 | 154.31 | -25.9 | 165.2 | 308.5 | 303.5 | 5.00 | 61.660 | | |
| 1,400.0 | 1,378.2 | 1,336.1 | 1,323.6 | 4.3 | 3.5 | 154.39 | -25.4 | 182.8 | 346.5 | 341.0 | 5.47 | 63.368 | | |
| 1,500.0 | 1,475.0 | 1,428.6 | 1,414.4 | 4.8 | 3.9 | 154.44 | -25.0 | 200.3 | 384.5 | 378.6 | 5.94 | 64.781 | | |
| 1,600.0 | 1,571.7 | 1,521.1 | 1,505.2 | 5.2 | 4.2 | 154.49 | -24.5 | 217.8 | 422.5 | 416.1 | 6.41 | 65.967 | | |
| 1,700.0 | 1,668.5 | 1,613.6 | 1,596.0 | 5.7 | 4.6 | 154.53 | -24.1 | 235.3 | 460.5 | 453.7 | 6.88 | 66.976 | | |
| 1,800.0 | 1,765.3 | 1,706.1 | 1,686.9 | 6.2 | 4.9 | 154.56 | -23.6 | 252.8 | 498.5 | 491.2 | 7.35 | 67.844 | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (2nd Occupation) - Shideler 19-6C - OH - Plan #1 | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|--|---------------------------|---------------------------|---------------------------|-------------------|----------------|-----------------------------|---|---------------|----------------------------|-----------------------------|------------------------------|----------------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | Total Uncertainty Axis | Separation Factor | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | | | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -53.47 | 9.8 | -13.3 | 16.5 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -53.47 | 9.8 | -13.3 | 16.5 | 16.2 | 0.27 | 60.682 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -53.47 | 9.8 | -13.3 | 16.5 | 15.9 | 0.62 | 26.591 | | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | -53.47 | 9.8 | -13.3 | 16.5 | 15.6 | 0.97 | 17.026 | | |
| 333.4 | 333.4 | 333.4 | 333.4 | 0.5 | 0.5 | -53.47 | 9.8 | -13.3 | 16.5 | 15.4 | 1.09 | 15.199 CC, ES | | |
| 400.0 | 400.0 | 399.6 | 399.6 | 0.7 | 0.7 | -52.88 | 10.3 | -13.7 | 17.1 | 15.8 | 1.32 | 13.002 | | |
| 500.0 | 500.0 | 498.6 | 498.5 | 0.8 | 0.8 | -18.01 | 14.4 | -16.8 | 19.7 | 18.0 | 1.67 | 11.815 | | |
| 600.0 | 599.6 | 597.5 | 596.8 | 1.0 | 1.1 | -17.84 | 22.5 | -23.0 | 22.3 | 20.3 | 2.02 | 11.052 | | |
| 700.0 | 698.8 | 696.3 | 694.4 | 1.3 | 1.4 | -18.56 | 34.7 | -32.4 | 24.9 | 22.6 | 2.38 | 10.493 | | |
| 800.0 | 797.1 | 795.0 | 790.9 | 1.6 | 1.7 | -19.91 | 50.7 | -44.7 | 27.6 | 24.9 | 2.76 | 10.017 | | |
| 900.0 | 894.3 | 893.5 | 886.2 | 2.0 | 2.2 | -21.67 | 70.7 | -60.1 | 30.4 | 27.3 | 3.18 | 9.558 SF | | |
| 1,000.0 | 991.1 | 991.7 | 979.7 | 2.5 | 2.7 | -21.72 | 94.5 | -78.4 | 36.3 | 32.7 | 3.63 | 10.009 | | |
| 1,100.0 | 1,087.9 | 1,089.1 | 1,070.8 | 2.9 | 3.4 | -19.89 | 121.8 | -99.4 | 47.1 | 43.1 | 4.04 | 11.682 | | |
| 1,200.0 | 1,184.6 | 1,185.1 | 1,158.8 | 3.4 | 4.1 | -17.60 | 152.3 | -122.8 | 62.8 | 58.4 | 4.40 | 14.278 | | |
| 1,300.0 | 1,281.4 | 1,279.4 | 1,243.2 | 3.8 | 4.9 | -15.53 | 185.6 | -148.5 | 83.4 | 78.6 | 4.74 | 17.574 | | |
| 1,400.0 | 1,378.2 | 1,371.6 | 1,323.6 | 4.3 | 5.7 | -13.85 | 221.3 | -175.9 | 108.7 | 103.6 | 5.08 | 21.400 | | |
| 1,500.0 | 1,475.0 | 1,461.3 | 1,399.6 | 4.8 | 6.6 | -12.52 | 259.0 | -204.9 | 138.6 | 133.2 | 5.40 | 25.637 | | |
| 1,600.0 | 1,571.7 | 1,554.9 | 1,477.5 | 5.2 | 7.6 | -11.48 | 300.1 | -236.5 | 171.2 | 165.5 | 5.74 | 29.823 | | |
| 1,700.0 | 1,668.5 | 1,649.3 | 1,556.1 | 5.7 | 8.5 | -10.76 | 341.6 | -268.5 | 204.0 | 197.9 | 6.09 | 33.514 | | |
| 1,800.0 | 1,765.3 | 1,743.8 | 1,634.7 | 6.2 | 9.5 | -10.25 | 383.2 | -300.4 | 236.8 | 230.3 | 6.44 | 36.788 | | |
| 1,900.0 | 1,862.1 | 1,838.3 | 1,713.3 | 6.7 | 10.4 | -9.86 | 424.7 | -332.4 | 269.5 | 262.7 | 6.79 | 39.712 | | |
| 2,000.0 | 1,958.8 | 1,932.7 | 1,791.9 | 7.1 | 11.4 | -9.55 | 466.2 | -364.3 | 302.3 | 295.2 | 7.14 | 42.341 | | |
| 2,100.0 | 2,055.6 | 2,027.2 | 1,870.5 | 7.6 | 12.4 | -9.30 | 507.8 | -396.3 | 335.1 | 327.6 | 7.49 | 44.716 | | |
| 2,200.0 | 2,152.4 | 2,121.7 | 1,949.1 | 8.1 | 13.4 | -9.10 | 549.3 | -428.2 | 367.9 | 360.1 | 7.85 | 46.874 | | |
| 2,300.0 | 2,249.1 | 2,216.1 | 2,027.7 | 8.6 | 14.3 | -8.93 | 590.8 | -460.2 | 400.7 | 392.5 | 8.20 | 48.842 | | |
| 2,400.0 | 2,345.9 | 2,310.6 | 2,106.3 | 9.0 | 15.3 | -8.79 | 632.4 | -492.1 | 433.5 | 425.0 | 8.56 | 50.646 | | |
| 2,500.0 | 2,442.7 | 2,405.0 | 2,184.9 | 9.5 | 16.3 | -8.66 | 673.9 | -524.1 | 466.3 | 457.4 | 8.92 | 52.304 | | |
| 2,600.0 | 2,539.5 | 2,499.5 | 2,263.5 | 10.0 | 17.3 | -8.56 | 715.4 | -556.0 | 499.2 | 489.9 | 9.27 | 53.834 | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (2nd Occupation) - Shideler 19-9B - OH - Plan #1 | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|--|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------|------------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | Distance | | Total | | Separation | | Warning | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Uncertainty Axis | Factor | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 170.07 | -11.3 | 2.0 | 11.5 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 170.07 | -11.3 | 2.0 | 11.5 | 11.2 | 0.27 | 42.102 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 170.07 | -11.3 | 2.0 | 11.5 | 10.8 | 0.62 | 18.449 | | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | 170.07 | -11.3 | 2.0 | 11.5 | 10.5 | 0.97 | 11.813 | | |
| 400.0 | 400.0 | 400.3 | 400.3 | 0.7 | 0.7 | 158.97 | -9.2 | 3.5 | 9.8 | 8.5 | 1.32 | 7.428 | | |
| 443.6 | 443.6 | 444.0 | 443.8 | 0.7 | 0.8 | 176.83 | -6.9 | 5.2 | 9.1 | 7.6 | 1.49 | 6.104 CC, ES, SF | | |
| 500.0 | 500.0 | 500.2 | 499.8 | 0.8 | 0.9 | 150.89 | -2.8 | 8.1 | 10.8 | 9.1 | 1.71 | 6.294 | | |
| 600.0 | 599.6 | 599.0 | 597.8 | 1.0 | 1.1 | 125.75 | 7.6 | 15.7 | 21.5 | 19.4 | 2.13 | 10.081 | | |
| 700.0 | 698.8 | 696.4 | 693.6 | 1.3 | 1.5 | 118.65 | 21.9 | 26.0 | 39.3 | 36.7 | 2.63 | 14.950 | | |
| 800.0 | 797.1 | 791.9 | 786.5 | 1.6 | 1.9 | 116.48 | 39.8 | 38.9 | 62.9 | 59.7 | 3.23 | 19.473 | | |
| 900.0 | 894.3 | 885.1 | 876.0 | 2.0 | 2.4 | 115.80 | 60.8 | 54.0 | 91.9 | 88.0 | 3.94 | 23.314 | | |
| 1,000.0 | 991.1 | 976.5 | 962.5 | 2.5 | 2.9 | 115.03 | 84.8 | 71.4 | 124.8 | 120.1 | 4.71 | 26.486 | | |
| 1,100.0 | 1,087.9 | 1,070.5 | 1,050.8 | 2.9 | 3.5 | 114.06 | 110.9 | 90.2 | 158.8 | 153.3 | 5.51 | 28.817 | | |
| 1,200.0 | 1,184.6 | 1,164.5 | 1,139.1 | 3.4 | 4.1 | 113.43 | 136.9 | 109.0 | 192.9 | 186.6 | 6.33 | 30.497 | | |
| 1,300.0 | 1,281.4 | 1,258.5 | 1,227.5 | 3.8 | 4.6 | 112.99 | 163.0 | 127.8 | 227.0 | 219.9 | 7.15 | 31.754 | | |
| 1,400.0 | 1,378.2 | 1,352.5 | 1,315.8 | 4.3 | 5.2 | 112.66 | 189.0 | 146.7 | 261.1 | 253.2 | 7.98 | 32.725 | | |
| 1,500.0 | 1,475.0 | 1,446.5 | 1,404.1 | 4.8 | 5.8 | 112.41 | 215.1 | 165.5 | 295.3 | 286.4 | 8.81 | 33.496 | | |
| 1,600.0 | 1,571.7 | 1,540.5 | 1,492.5 | 5.2 | 6.4 | 112.21 | 241.2 | 184.3 | 329.4 | 319.7 | 9.65 | 34.122 | | |
| 1,700.0 | 1,668.5 | 1,634.5 | 1,580.8 | 5.7 | 7.0 | 112.05 | 267.2 | 203.1 | 363.5 | 353.0 | 10.49 | 34.639 | | |
| 1,800.0 | 1,765.3 | 1,728.5 | 1,669.1 | 6.2 | 7.6 | 111.92 | 293.3 | 221.9 | 397.6 | 386.3 | 11.34 | 35.074 | | |
| 1,900.0 | 1,862.1 | 1,822.5 | 1,757.4 | 6.7 | 8.2 | 111.81 | 319.3 | 240.7 | 431.8 | 419.6 | 12.18 | 35.443 | | |
| 2,000.0 | 1,958.8 | 1,916.5 | 1,845.8 | 7.1 | 8.7 | 111.71 | 345.4 | 259.6 | 465.9 | 452.9 | 13.03 | 35.761 | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (2nd Occupation) - Shideler 19-9C - OH - Plan #1 | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|--|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|-------------------|--------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | Warning |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 125.51 | -9.5 | 13.3 | 16.3 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 125.51 | -9.5 | 13.3 | 16.3 | 16.0 | 0.27 | 59.905 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 125.51 | -9.5 | 13.3 | 16.3 | 15.7 | 0.62 | 26.251 | CC, ES | |
| 300.0 | 300.0 | 299.7 | 299.7 | 0.5 | 0.5 | 116.93 | -7.7 | 15.2 | 17.1 | 16.1 | 0.98 | 17.440 | | |
| 400.0 | 400.0 | 398.9 | 398.6 | 0.7 | 0.7 | 96.86 | -2.5 | 20.9 | 21.1 | 19.8 | 1.37 | 15.421 | SF | |
| 500.0 | 500.0 | 497.1 | 495.9 | 0.8 | 1.0 | 116.16 | 6.0 | 30.3 | 32.3 | 30.6 | 1.72 | 18.736 | | |
| 600.0 | 599.6 | 593.6 | 590.8 | 1.0 | 1.3 | 111.95 | 17.7 | 43.2 | 50.6 | 48.4 | 2.13 | 23.678 | | |
| 700.0 | 698.8 | 688.1 | 682.8 | 1.3 | 1.7 | 111.44 | 32.2 | 59.2 | 75.0 | 72.3 | 2.62 | 28.651 | | |
| 800.0 | 797.1 | 784.0 | 775.6 | 1.6 | 2.2 | 112.89 | 48.3 | 77.0 | 103.1 | 99.9 | 3.19 | 32.317 | | |
| 900.0 | 894.3 | 879.0 | 867.6 | 2.0 | 2.6 | 115.54 | 64.3 | 94.6 | 133.5 | 129.6 | 3.85 | 34.638 | | |
| 1,000.0 | 991.1 | 973.7 | 959.3 | 2.5 | 3.1 | 118.32 | 80.2 | 112.1 | 165.0 | 160.4 | 4.56 | 36.203 | | |
| 1,100.0 | 1,087.9 | 1,068.3 | 1,050.9 | 2.9 | 3.5 | 120.20 | 96.1 | 129.6 | 196.7 | 191.4 | 5.27 | 37.334 | | |
| 1,200.0 | 1,184.6 | 1,163.0 | 1,142.6 | 3.4 | 4.0 | 121.57 | 112.1 | 147.2 | 228.6 | 222.6 | 5.99 | 38.189 | | |
| 1,300.0 | 1,281.4 | 1,257.6 | 1,234.2 | 3.8 | 4.4 | 122.60 | 128.0 | 164.7 | 260.5 | 253.8 | 6.71 | 38.856 | | |
| 1,400.0 | 1,378.2 | 1,352.3 | 1,325.9 | 4.3 | 4.8 | 123.40 | 143.9 | 182.3 | 292.6 | 285.1 | 7.43 | 39.391 | | |
| 1,500.0 | 1,475.0 | 1,447.0 | 1,417.5 | 4.8 | 5.3 | 124.05 | 159.8 | 199.8 | 324.6 | 316.5 | 8.15 | 39.829 | | |
| 1,600.0 | 1,571.7 | 1,541.6 | 1,509.2 | 5.2 | 5.7 | 124.58 | 175.7 | 217.3 | 356.7 | 347.9 | 8.88 | 40.195 | | |
| 1,700.0 | 1,668.5 | 1,636.3 | 1,600.8 | 5.7 | 6.2 | 125.02 | 191.6 | 234.9 | 388.9 | 379.3 | 9.60 | 40.504 | | |
| 1,800.0 | 1,765.3 | 1,731.0 | 1,692.5 | 6.2 | 6.6 | 125.39 | 207.6 | 252.4 | 421.0 | 410.7 | 10.33 | 40.769 | | |
| 1,900.0 | 1,862.1 | 1,825.6 | 1,784.1 | 6.7 | 7.1 | 125.71 | 223.5 | 269.9 | 453.1 | 442.1 | 11.05 | 40.999 | | |
| 2,000.0 | 1,958.8 | 1,920.3 | 1,875.8 | 7.1 | 7.5 | 125.99 | 239.4 | 287.5 | 485.3 | 473.5 | 11.78 | 41.200 | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (2nd Occupation) - Shideler Federal 19-12A - OH - Plan #1 | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|-------------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -71.18 | 8.4 | -24.6 | 26.0 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -71.18 | 8.4 | -24.6 | 26.0 | 25.7 | 0.27 | 95.362 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -71.18 | 8.4 | -24.6 | 26.0 | 25.3 | 0.62 | 41.788 CC, ES | | |
| 300.0 | 300.0 | 298.6 | 298.6 | 0.5 | 0.5 | -69.52 | 9.9 | -26.6 | 28.4 | 27.5 | 0.97 | 29.338 | | |
| 400.0 | 400.0 | 396.8 | 396.4 | 0.7 | 0.7 | -65.94 | 14.6 | -32.6 | 35.9 | 34.6 | 1.32 | 27.173 | | |
| 500.0 | 500.0 | 494.2 | 493.0 | 0.8 | 1.0 | -30.42 | 22.2 | -42.5 | 46.2 | 44.5 | 1.67 | 27.707 | | |
| 600.0 | 599.6 | 591.0 | 588.3 | 1.0 | 1.3 | -30.66 | 32.7 | -56.2 | 57.0 | 54.9 | 2.03 | 28.102 | | |
| 700.0 | 698.8 | 687.3 | 682.0 | 1.3 | 1.8 | -32.10 | 46.1 | -73.6 | 68.2 | 65.8 | 2.42 | 28.236 | | |
| 800.0 | 797.1 | 783.0 | 774.0 | 1.6 | 2.3 | -34.17 | 62.3 | -94.5 | 80.0 | 77.2 | 2.86 | 27.953 | | |
| 900.0 | 894.3 | 878.0 | 863.9 | 2.0 | 2.9 | -36.59 | 81.1 | -118.9 | 92.5 | 89.1 | 3.40 | 27.191 | | |
| 1,000.0 | 991.1 | 972.1 | 951.2 | 2.5 | 3.5 | -38.32 | 102.3 | -146.5 | 108.2 | 104.2 | 4.00 | 27.012 SF | | |
| 1,100.0 | 1,087.9 | 1,064.6 | 1,035.4 | 2.9 | 4.3 | -38.84 | 125.8 | -177.0 | 128.4 | 123.8 | 4.61 | 27.826 | | |
| 1,200.0 | 1,184.6 | 1,155.3 | 1,116.0 | 3.4 | 5.1 | -38.61 | 151.2 | -209.9 | 153.0 | 147.8 | 5.21 | 29.376 | | |
| 1,300.0 | 1,281.4 | 1,243.8 | 1,192.6 | 3.8 | 5.9 | -37.96 | 178.2 | -245.0 | 181.9 | 176.1 | 5.78 | 31.488 | | |
| 1,400.0 | 1,378.2 | 1,334.8 | 1,269.6 | 4.3 | 6.8 | -37.13 | 207.8 | -283.4 | 214.2 | 207.9 | 6.33 | 33.861 | | |
| 1,500.0 | 1,475.0 | 1,429.2 | 1,349.2 | 4.8 | 7.8 | -36.45 | 238.7 | -323.6 | 247.0 | 240.1 | 6.89 | 35.876 | | |
| 1,600.0 | 1,571.7 | 1,523.6 | 1,428.9 | 5.2 | 8.8 | -35.94 | 269.7 | -363.7 | 279.9 | 272.4 | 7.45 | 37.579 | | |
| 1,700.0 | 1,668.5 | 1,618.1 | 1,508.5 | 5.7 | 9.7 | -35.53 | 300.6 | -403.9 | 312.7 | 304.7 | 8.01 | 39.036 | | |
| 1,800.0 | 1,765.3 | 1,712.5 | 1,588.2 | 6.2 | 10.7 | -35.20 | 331.5 | -444.1 | 345.6 | 337.0 | 8.58 | 40.295 | | |
| 1,900.0 | 1,862.1 | 1,806.9 | 1,667.9 | 6.7 | 11.7 | -34.93 | 362.5 | -484.3 | 378.4 | 369.3 | 9.14 | 41.395 | | |
| 2,000.0 | 1,958.8 | 1,901.4 | 1,747.5 | 7.1 | 12.6 | -34.70 | 393.4 | -524.4 | 411.3 | 401.6 | 9.71 | 42.364 | | |
| 2,100.0 | 2,055.6 | 1,995.8 | 1,827.2 | 7.6 | 13.6 | -34.50 | 424.4 | -564.6 | 444.2 | 433.9 | 10.28 | 43.222 | | |
| 2,200.0 | 2,152.4 | 2,090.2 | 1,906.8 | 8.1 | 14.6 | -34.33 | 455.3 | -604.8 | 477.0 | 466.2 | 10.84 | 43.989 | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (2nd Occupation) - Shideler Federal 19-12C - OH - Plan #1 | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---|------------------------|------------------------|------------------------|-------------------|----------------|-----------------------------|---|---------------|----------------------------|-----------------------------|---------------------|---------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | Total | Separation | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Uncertainty Axis | Factor | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 144.17 | -21.1 | 15.3 | 26.1 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 144.17 | -21.1 | 15.3 | 26.1 | 25.8 | 0.27 | 95.715 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 144.17 | -21.1 | 15.3 | 26.1 | 25.4 | 0.62 | 41.943 | | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | 144.17 | -21.1 | 15.3 | 26.1 | 25.1 | 0.97 | 26.855 | | |
| 400.0 | 400.0 | 400.5 | 400.5 | 0.7 | 0.7 | 145.05 | -20.9 | 14.6 | 25.5 | 24.2 | 1.32 | 19.325 | | |
| 500.0 | 500.0 | 501.5 | 501.3 | 0.8 | 0.9 | -173.80 | -19.2 | 9.6 | 24.1 | 22.4 | 1.68 | 14.367 | | |
| 518.3 | 518.2 | 519.9 | 519.7 | 0.9 | 0.9 | -171.50 | -18.7 | 8.1 | 24.1 | 22.3 | 1.75 | 13.755 CC, ES | | |
| 600.0 | 599.6 | 602.1 | 601.3 | 1.0 | 1.1 | -158.73 | -15.8 | -0.5 | 25.2 | 23.1 | 2.08 | 12.129 | | |
| 700.0 | 698.8 | 702.1 | 700.1 | 1.3 | 1.4 | -141.83 | -10.8 | -15.4 | 30.6 | 28.0 | 2.60 | 11.771 SF | | |
| 800.0 | 797.1 | 801.5 | 797.3 | 1.6 | 1.8 | -128.78 | -4.2 | -35.1 | 40.9 | 37.6 | 3.29 | 12.435 | | |
| 900.0 | 894.3 | 900.0 | 892.4 | 2.0 | 2.2 | -120.33 | 3.9 | -59.3 | 55.6 | 51.5 | 4.14 | 13.439 | | |
| 1,000.0 | 991.1 | 997.6 | 985.3 | 2.5 | 2.8 | -113.13 | 13.5 | -87.8 | 72.9 | 67.8 | 5.11 | 14.278 | | |
| 1,100.0 | 1,087.9 | 1,093.8 | 1,075.2 | 2.9 | 3.5 | -105.84 | 24.4 | -120.3 | 92.6 | 86.4 | 6.13 | 15.107 | | |
| 1,200.0 | 1,184.6 | 1,188.3 | 1,161.6 | 3.4 | 4.2 | -99.01 | 36.5 | -156.4 | 115.4 | 108.2 | 7.14 | 16.154 | | |
| 1,300.0 | 1,281.4 | 1,280.5 | 1,244.1 | 3.8 | 5.0 | -92.91 | 49.6 | -195.4 | 141.9 | 133.8 | 8.11 | 17.483 | | |
| 1,400.0 | 1,378.2 | 1,370.2 | 1,322.3 | 4.3 | 5.9 | -87.61 | 63.5 | -237.0 | 172.3 | 163.3 | 9.02 | 19.112 | | |
| 1,500.0 | 1,475.0 | 1,463.2 | 1,402.4 | 4.8 | 6.8 | -83.21 | 78.6 | -282.1 | 205.5 | 195.6 | 9.88 | 20.807 | | |
| 1,600.0 | 1,571.7 | 1,556.6 | 1,482.6 | 5.2 | 7.7 | -80.01 | 93.8 | -327.3 | 239.4 | 228.7 | 10.71 | 22.346 | | |
| 1,700.0 | 1,668.5 | 1,649.9 | 1,562.8 | 5.7 | 8.6 | -77.61 | 109.0 | -372.5 | 273.9 | 262.3 | 11.54 | 23.723 | | |
| 1,800.0 | 1,765.3 | 1,743.2 | 1,643.0 | 6.2 | 9.5 | -75.73 | 124.1 | -417.7 | 308.7 | 296.3 | 12.37 | 24.950 | | |
| 1,900.0 | 1,862.1 | 1,836.6 | 1,723.2 | 6.7 | 10.5 | -74.24 | 139.3 | -462.9 | 343.7 | 330.5 | 13.20 | 26.045 | | |
| 2,000.0 | 1,958.8 | 1,929.9 | 1,803.5 | 7.1 | 11.4 | -73.02 | 154.5 | -508.1 | 378.9 | 364.8 | 14.02 | 27.024 | | |
| 2,100.0 | 2,055.6 | 2,023.2 | 1,883.7 | 7.6 | 12.3 | -72.01 | 169.6 | -553.3 | 414.2 | 399.3 | 14.84 | 27.903 | | |
| 2,200.0 | 2,152.4 | 2,116.5 | 1,963.9 | 8.1 | 13.2 | -71.15 | 184.8 | -598.5 | 449.6 | 433.9 | 15.67 | 28.695 | | |
| 2,300.0 | 2,249.1 | 2,209.9 | 2,044.1 | 8.6 | 14.2 | -70.42 | 200.0 | -643.7 | 485.1 | 468.6 | 16.49 | 29.411 | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (2nd Occupation) - Shideler Federal 19-12D - OH - Plan #1 | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------|---------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | Total | Separation | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Uncertainty Axis | Factor | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -97.35 | -1.5 | -11.3 | 11.4 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -97.35 | -1.5 | -11.3 | 11.4 | 11.1 | 0.27 | 41.843 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -97.35 | -1.5 | -11.3 | 11.4 | 10.8 | 0.62 | 18.336 | | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | -97.35 | -1.5 | -11.3 | 11.4 | 10.4 | 0.97 | 11.740 CC, ES | | |
| 400.0 | 400.0 | 399.6 | 399.6 | 0.7 | 0.7 | -93.43 | -0.8 | -12.6 | 12.6 | 11.3 | 1.32 | 9.557 SF | | |
| 500.0 | 500.0 | 498.8 | 498.6 | 0.8 | 0.9 | -55.81 | 2.4 | -18.2 | 16.8 | 15.2 | 1.68 | 10.047 | | |
| 600.0 | 599.6 | 597.8 | 596.8 | 1.0 | 1.1 | -58.11 | 7.9 | -28.3 | 22.7 | 20.7 | 2.07 | 11.010 | | |
| 700.0 | 698.8 | 696.3 | 694.0 | 1.3 | 1.4 | -62.65 | 15.9 | -42.8 | 30.5 | 27.9 | 2.54 | 11.984 | | |
| 800.0 | 797.1 | 794.4 | 789.7 | 1.6 | 1.8 | -67.45 | 26.3 | -61.5 | 40.2 | 37.0 | 3.16 | 12.723 | | |
| 900.0 | 894.3 | 891.9 | 883.6 | 2.0 | 2.3 | -71.74 | 38.9 | -84.4 | 52.1 | 48.1 | 3.95 | 13.198 | | |
| 1,000.0 | 991.1 | 988.6 | 975.4 | 2.5 | 2.9 | -73.03 | 53.7 | -111.2 | 67.1 | 62.3 | 4.80 | 13.973 | | |
| 1,100.0 | 1,087.9 | 1,084.2 | 1,064.4 | 2.9 | 3.5 | -71.43 | 70.5 | -141.7 | 85.6 | 79.9 | 5.64 | 15.158 | | |
| 1,200.0 | 1,184.6 | 1,178.2 | 1,150.1 | 3.4 | 4.3 | -68.63 | 89.1 | -175.4 | 107.6 | 101.2 | 6.45 | 16.682 | | |
| 1,300.0 | 1,281.4 | 1,270.2 | 1,232.0 | 3.8 | 5.1 | -65.51 | 109.3 | -211.9 | 133.5 | 126.3 | 7.21 | 18.516 | | |
| 1,400.0 | 1,378.2 | 1,361.5 | 1,311.4 | 4.3 | 5.9 | -62.45 | 131.1 | -251.4 | 163.2 | 155.3 | 7.91 | 20.634 | | |
| 1,500.0 | 1,475.0 | 1,456.3 | 1,393.3 | 4.8 | 6.8 | -60.04 | 154.2 | -293.3 | 194.2 | 185.6 | 8.61 | 22.555 | | |
| 1,600.0 | 1,571.7 | 1,551.1 | 1,475.2 | 5.2 | 7.8 | -58.29 | 177.3 | -335.1 | 225.4 | 216.0 | 9.31 | 24.201 | | |
| 1,700.0 | 1,668.5 | 1,645.9 | 1,557.1 | 5.7 | 8.7 | -56.96 | 200.4 | -377.0 | 256.7 | 246.7 | 10.02 | 25.619 | | |
| 1,800.0 | 1,765.3 | 1,740.7 | 1,638.9 | 6.2 | 9.6 | -55.93 | 223.5 | -418.8 | 288.1 | 277.4 | 10.73 | 26.850 | | |
| 1,900.0 | 1,862.1 | 1,835.6 | 1,720.8 | 6.7 | 10.5 | -55.10 | 246.7 | -460.7 | 319.6 | 308.2 | 11.44 | 27.928 | | |
| 2,000.0 | 1,958.8 | 1,930.4 | 1,802.7 | 7.1 | 11.4 | -54.41 | 269.8 | -502.6 | 351.2 | 339.0 | 12.16 | 28.878 | | |
| 2,100.0 | 2,055.6 | 2,025.2 | 1,884.6 | 7.6 | 12.3 | -53.84 | 292.9 | -544.4 | 382.8 | 369.9 | 12.88 | 29.721 | | |
| 2,200.0 | 2,152.4 | 2,120.0 | 1,966.4 | 8.1 | 13.3 | -53.36 | 316.0 | -586.3 | 414.4 | 400.8 | 13.60 | 30.474 | | |
| 2,300.0 | 2,249.1 | 2,214.8 | 2,048.3 | 8.6 | 14.2 | -52.94 | 339.1 | -628.2 | 446.0 | 431.7 | 14.32 | 31.151 | | |
| 2,400.0 | 2,345.9 | 2,309.6 | 2,130.2 | 9.0 | 15.1 | -52.58 | 362.2 | -670.0 | 477.7 | 462.6 | 15.04 | 31.761 | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (2nd Occupation) - Shideler Federal 19-13A - OH - Plan #1 | | | | | | | | | | | | | Offset Site Error: 0.0 ft | |
|---|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|-------------------|---------------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: 0.0 ft | |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | Warning |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 137.00 | -30.6 | 28.5 | 41.8 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 137.00 | -30.6 | 28.5 | 41.8 | 41.6 | 0.27 | 153.648 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 137.00 | -30.6 | 28.5 | 41.8 | 41.2 | 0.62 | 67.329 | | |
| 300.0 | 300.0 | 300.9 | 300.9 | 0.5 | 0.5 | 137.55 | -30.5 | 27.9 | 41.3 | 40.3 | 0.97 | 42.458 | | |
| 400.0 | 400.0 | 402.4 | 402.2 | 0.7 | 0.7 | 142.48 | -29.4 | 22.6 | 37.1 | 35.8 | 1.34 | 27.649 | | |
| 500.0 | 500.0 | 503.2 | 502.5 | 0.8 | 0.9 | -171.27 | -27.3 | 12.1 | 32.5 | 30.8 | 1.73 | 18.765 | | |
| 544.5 | 544.4 | 547.9 | 546.7 | 0.9 | 1.1 | -162.69 | -26.0 | 5.8 | 31.9 | 30.0 | 1.95 | 16.344 | CC, ES | |
| 600.0 | 599.6 | 603.3 | 601.3 | 1.0 | 1.2 | -150.68 | -24.2 | -3.4 | 33.0 | 30.8 | 2.25 | 14.712 | | |
| 700.0 | 698.8 | 702.3 | 698.1 | 1.3 | 1.6 | -130.93 | -20.1 | -23.7 | 41.2 | 38.3 | 2.89 | 14.255 | SF | |
| 800.0 | 797.1 | 800.0 | 792.4 | 1.6 | 2.1 | -118.04 | -15.1 | -48.6 | 56.3 | 52.7 | 3.64 | 15.480 | | |
| 900.0 | 894.3 | 896.5 | 884.3 | 2.0 | 2.7 | -110.70 | -9.3 | -77.7 | 76.8 | 72.3 | 4.51 | 17.034 | | |
| 1,000.0 | 991.1 | 991.4 | 972.9 | 2.5 | 3.4 | -105.37 | -2.6 | -110.8 | 100.7 | 95.2 | 5.45 | 18.490 | | |
| 1,100.0 | 1,087.9 | 1,084.2 | 1,058.0 | 2.9 | 4.1 | -100.30 | 4.7 | -147.3 | 127.7 | 121.3 | 6.40 | 19.952 | | |
| 1,200.0 | 1,184.6 | 1,175.2 | 1,139.5 | 3.4 | 4.9 | -95.70 | 12.7 | -186.9 | 158.1 | 150.8 | 7.33 | 21.577 | | |
| 1,300.0 | 1,281.4 | 1,269.2 | 1,222.8 | 3.8 | 5.7 | -92.00 | 21.2 | -229.5 | 190.4 | 182.2 | 8.24 | 23.103 | | |
| 1,400.0 | 1,378.2 | 1,363.3 | 1,306.2 | 4.3 | 6.5 | -89.37 | 29.8 | -272.1 | 223.3 | 214.1 | 9.15 | 24.405 | | |
| 1,500.0 | 1,475.0 | 1,457.3 | 1,389.6 | 4.8 | 7.4 | -87.41 | 38.3 | -314.7 | 256.4 | 246.4 | 10.05 | 25.513 | | |
| 1,600.0 | 1,571.7 | 1,551.3 | 1,473.0 | 5.2 | 8.2 | -85.90 | 46.9 | -357.3 | 289.8 | 278.9 | 10.95 | 26.462 | | |
| 1,700.0 | 1,668.5 | 1,645.3 | 1,556.4 | 5.7 | 9.0 | -84.70 | 55.4 | -399.9 | 323.3 | 311.5 | 11.85 | 27.280 | | |
| 1,800.0 | 1,765.3 | 1,739.4 | 1,639.8 | 6.2 | 9.9 | -83.73 | 64.0 | -442.5 | 356.9 | 344.2 | 12.75 | 27.991 | | |
| 1,900.0 | 1,862.1 | 1,833.4 | 1,723.2 | 6.7 | 10.7 | -82.92 | 72.5 | -485.1 | 390.6 | 377.0 | 13.65 | 28.614 | | |
| 2,000.0 | 1,958.8 | 1,927.4 | 1,806.5 | 7.1 | 11.6 | -82.25 | 81.1 | -527.7 | 424.4 | 409.8 | 14.55 | 29.164 | | |
| 2,100.0 | 2,055.6 | 2,021.4 | 1,889.9 | 7.6 | 12.4 | -81.67 | 89.7 | -570.2 | 458.2 | 442.7 | 15.45 | 29.653 | | |
| 2,200.0 | 2,152.4 | 2,115.4 | 1,973.3 | 8.1 | 13.3 | -81.17 | 98.2 | -612.8 | 492.0 | 475.7 | 16.35 | 30.089 | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

| Offset Design O19EB Pad (2nd Occupation) - Shideler Federal 19-13AA - OH - Plan #1 | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|--|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|-------------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 134.04 | -40.4 | 41.8 | 58.2 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 134.04 | -40.4 | 41.8 | 58.2 | 57.9 | 0.27 | 213.604 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 134.04 | -40.4 | 41.8 | 58.2 | 57.5 | 0.62 | 93.602 | | |
| 300.0 | 300.0 | 302.2 | 302.1 | 0.5 | 0.5 | 135.94 | -40.4 | 39.1 | 56.2 | 55.2 | 0.98 | 57.176 | | |
| 400.0 | 400.0 | 403.8 | 403.4 | 0.7 | 0.7 | 142.41 | -40.2 | 30.9 | 50.9 | 49.5 | 1.38 | 36.722 | | |
| 500.0 | 500.0 | 504.4 | 503.2 | 0.8 | 1.0 | -170.94 | -39.9 | 17.6 | 46.3 | 44.5 | 1.82 | 25.466 | | |
| 523.9 | 523.9 | 528.4 | 526.8 | 0.9 | 1.1 | -166.78 | -39.8 | 13.7 | 46.1 | 44.2 | 1.95 | 23.621 CC, ES | | |
| 600.0 | 599.6 | 603.9 | 600.9 | 1.0 | 1.4 | -152.47 | -39.6 | -0.7 | 48.6 | 46.2 | 2.39 | 20.325 | | |
| 700.0 | 698.8 | 701.9 | 696.2 | 1.3 | 1.8 | -135.52 | -39.1 | -23.8 | 59.7 | 56.7 | 3.05 | 19.610 SF | | |
| 800.0 | 797.1 | 798.2 | 788.5 | 1.6 | 2.4 | -123.93 | -38.5 | -51.1 | 79.0 | 75.2 | 3.79 | 20.875 | | |
| 900.0 | 894.3 | 892.5 | 877.4 | 2.0 | 3.0 | -116.87 | -37.9 | -82.3 | 104.6 | 100.0 | 4.63 | 22.594 | | |
| 1,000.0 | 991.1 | 984.6 | 962.8 | 2.5 | 3.7 | -112.02 | -37.1 | -117.1 | 134.1 | 128.6 | 5.54 | 24.196 | | |
| 1,100.0 | 1,087.9 | 1,074.5 | 1,044.2 | 2.9 | 4.4 | -107.67 | -36.4 | -154.9 | 166.9 | 160.4 | 6.48 | 25.776 | | |
| 1,200.0 | 1,184.6 | 1,166.2 | 1,126.1 | 3.4 | 5.2 | -103.93 | -35.5 | -196.2 | 202.3 | 194.9 | 7.40 | 27.342 | | |
| 1,300.0 | 1,281.4 | 1,259.0 | 1,208.9 | 3.8 | 6.0 | -101.24 | -34.6 | -238.1 | 238.3 | 229.9 | 8.32 | 28.640 | | |
| 1,400.0 | 1,378.2 | 1,351.8 | 1,291.7 | 4.3 | 6.8 | -99.25 | -33.8 | -280.0 | 274.6 | 265.3 | 9.24 | 29.724 | | |
| 1,500.0 | 1,475.0 | 1,444.6 | 1,374.5 | 4.8 | 7.6 | -97.73 | -32.9 | -322.0 | 311.1 | 301.0 | 10.16 | 30.637 | | |
| 1,600.0 | 1,571.7 | 1,537.4 | 1,457.2 | 5.2 | 8.4 | -96.52 | -32.0 | -363.9 | 347.8 | 336.8 | 11.07 | 31.414 | | |
| 1,700.0 | 1,668.5 | 1,630.2 | 1,540.0 | 5.7 | 9.2 | -95.55 | -31.2 | -405.8 | 384.7 | 372.7 | 11.99 | 32.081 | | |
| 1,800.0 | 1,765.3 | 1,723.0 | 1,622.8 | 6.2 | 10.1 | -94.74 | -30.3 | -447.7 | 421.5 | 408.6 | 12.91 | 32.660 | | |
| 1,900.0 | 1,862.1 | 1,815.8 | 1,705.6 | 6.7 | 10.9 | -94.07 | -29.4 | -489.6 | 458.5 | 444.7 | 13.82 | 33.166 | | |
| 2,000.0 | 1,958.8 | 1,908.6 | 1,788.4 | 7.1 | 11.7 | -93.49 | -28.6 | -531.6 | 495.5 | 480.8 | 14.74 | 33.612 | | |

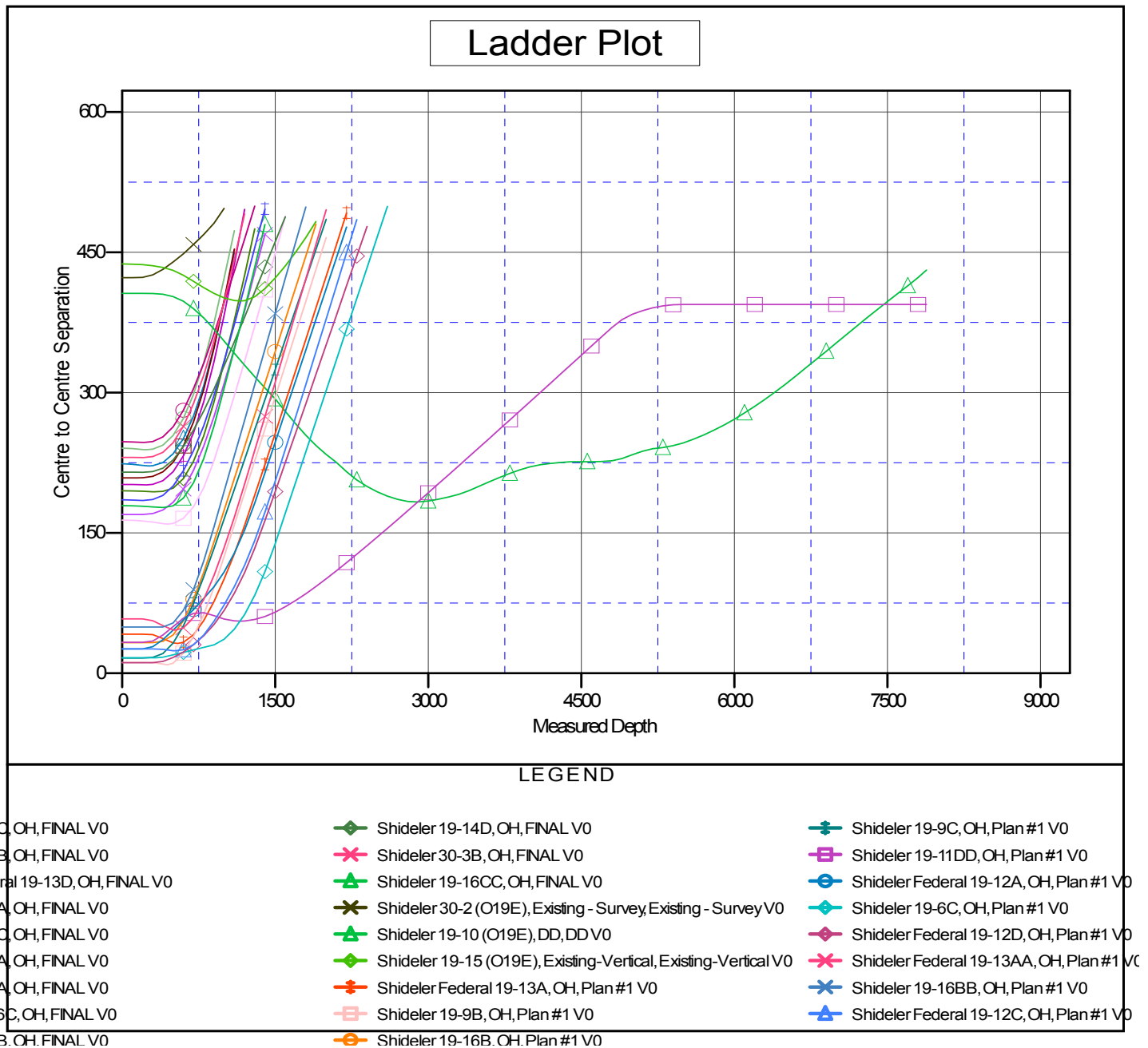
Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Shideler 19-11D |
| Project: | Mamm Creek | TVD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Reference Site: | O19EB Pad (2nd Occupation) | MD Reference: | KB=22' @ 6531.0ft (Nabors M-15) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Shideler 19-11D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | OH | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #1 | Offset TVD Reference: | Offset Datum |

Reference Depths are relative to KB=22' @ 6531.0ft (Nabors M-15)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Shideler 19-11D
Coordinate System is US State Plane 1983, Colorado Central Zone
Grid Convergence at Surface is: -1.39°



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation