

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_DECHANT 4-19 HZ PAD

DECHANT 4-19 HZ

DECHANT 4-19HZ

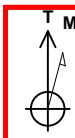
Plan: DECHANT 4-19HZ (wp08)

Standard Planning Report

17 November, 2010



Project: COLORADO NORTHERN STONE - 83
Site: WELD_DECHANT 4-19 HZ PAD
Well: DECHANT 4-19 HZ
Wellbore: DECHANT 4-19HZ
Section:
SHL:
Design: DECHANT 4-19HZ (wp08)
Latitude: 40.117747
Longitude: -104.601593
GL: 4981.00
KB: (17' RKB + 4981' GL) @ 4998.00ft



Azimuths to True North:
Magnetic North: 8.83°

Magnetic Field
Strength: 53060.0nT
Dip Angle: 66.87°
Date: 11/17/2010
Model: IGRF2010



Weatherford®

FORMATION TOP DETAILS

| TVDPATH | MDPATH | FORMATION |
|---------|---------|----------------|
| 741.00 | 741.00 | BASE FOX HILLS |
| 3626.00 | 3637.13 | PARKMAN |
| 4023.00 | 4036.20 | SUSSEX |
| 4696.00 | 4712.71 | SHANNON |
| 6925.00 | 7092.83 | NIOBARA A |
| 6984.00 | 7251.97 | NIOBARA B |

WELL DETAILS: DECHANT 4-19 HZ

| +N/-S | +E/-W | Northing | Ground Level: Easting | 4981.00 Latitude | Longitude | Slot |
|-------|-------|------------|--------------------------|---------------------|-------------|------|
| 0.00 | 0.00 | 1287012.04 | 3251253.09 | 40.117747 | -104.601593 | |

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

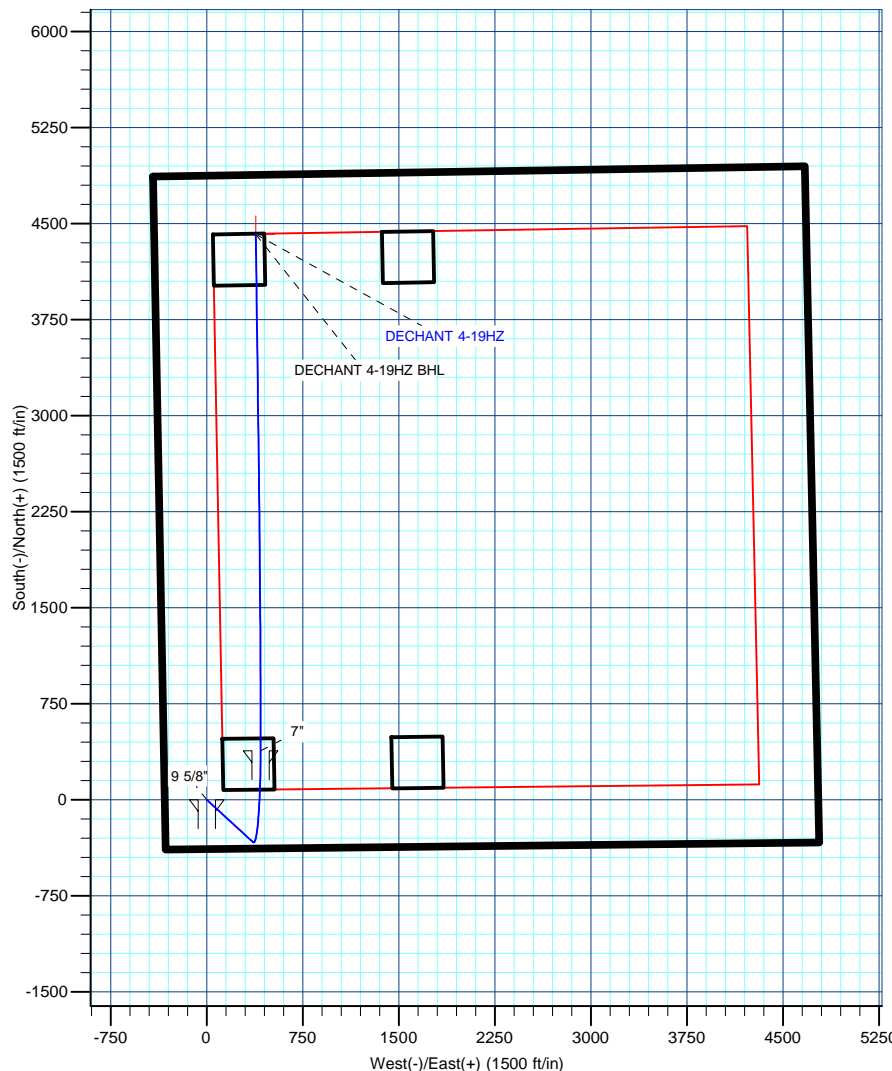
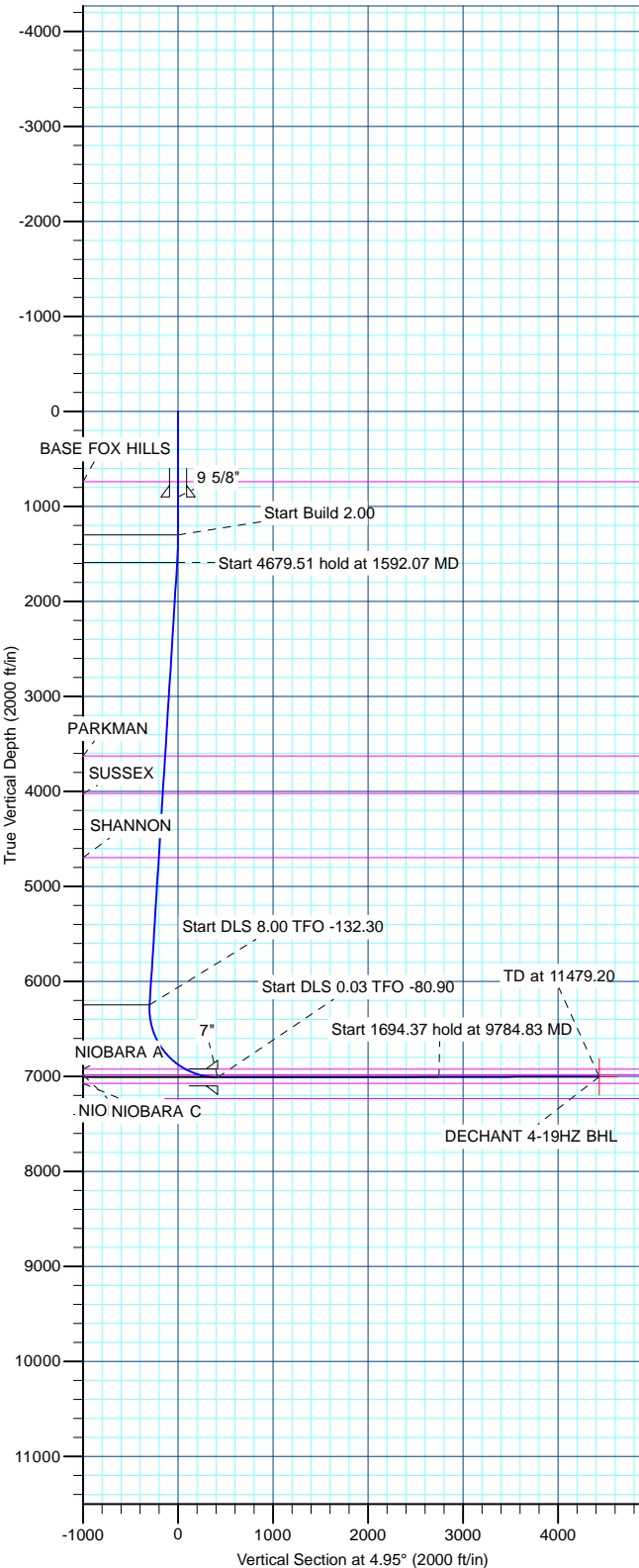
| Name | TVD | +N/-S | +E/-W | Latitude | Longitude | Point | Shape |
|--------------------|---------|---------|--------|-----------|-------------|-------|-------|
| DECHANT 4-19HZ BHL | 7010.00 | 4416.17 | 382.52 | 40.129870 | -104.600225 | | |

SECTION DETAILS

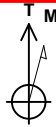
| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | Vsect | Target |
|-----|----------|-------|--------|---------|---------|--------|------|---------|---------|--------------------|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2 | 1300.00 | 0.00 | 0.00 | 1300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 | 1592.07 | 5.84 | 132.45 | 1591.57 | -10.04 | 10.98 | 2.00 | 132.45 | -9.06 | |
| 4 | 6271.58 | 5.84 | 132.45 | 6246.77 | -331.50 | 362.39 | 0.00 | 0.00 | -298.99 | |
| 5 | 7445.82 | 90.00 | 0.00 | 7010.00 | 383.00 | 420.00 | 8.00 | -132.30 | 417.82 | |
| 6 | 9784.83 | 90.12 | 359.25 | 7007.55 | 2721.95 | 404.69 | 0.03 | -80.90 | 2746.72 | |
| 7 | 11479.20 | 90.12 | 359.25 | 7004.00 | 4416.17 | 382.52 | 0.00 | 0.00 | 432.71 | DECHANT 4-19HZ BHL |

CASING DETAILS

| TVD | MD | Name | Size |
|---------|---------|--------|-------|
| 900.00 | 900.00 | 9 5/8" | 9-5/8 |
| 7010.00 | 7445.82 | 7" | 7 |



Project: COLORADO NORTHERN ZONE - 83
Site: WELD_DECHANT 4-19 HZ PAD
Well: DECHANT 4-19 HZ
Wellbore: DECHANT 4-19HZ
Section:
SHL:
Design: DECHANT 4-19HZ (wp08)
Latitude: 40.117747
Longitude: -104.601593
GL: 4981.00
KB: (17' RKB + 4981' GL) @ 4998.00ft



Azimuths to True North:
Magnetic North: 8.83°
Magnetic Field
Strength: 53060.0nT
Dip Angle: 66.87°
Date: 11/17/2010
Model: IGRF2010



Weatherford®

FORMATION TOP DETAILS

| TVDPath | MDPath | Formation |
|---------|---------|----------------|
| 741.00 | 741.00 | BASE FOX HILLS |
| 3626.00 | 3637.13 | PARKMAN |
| 4023.00 | 4036.20 | SUSSEX |
| 4696.00 | 4712.71 | SHANNON |
| 6925.00 | 7092.83 | NIOBARA A |
| 6984.00 | 7251.97 | NIOBARA B |

WELL DETAILS: DECHANT 4-19 HZ

| +N/-S | +E/-W | Northing | Ground Level: Easting | 4981.00 Latitude | Longitude | Slot |
|-------|-------|------------|--------------------------|---------------------|-------------|------|
| 0.00 | 0.00 | 1287012.04 | 3251253.09 | 40.117747 | -104.601593 | |

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

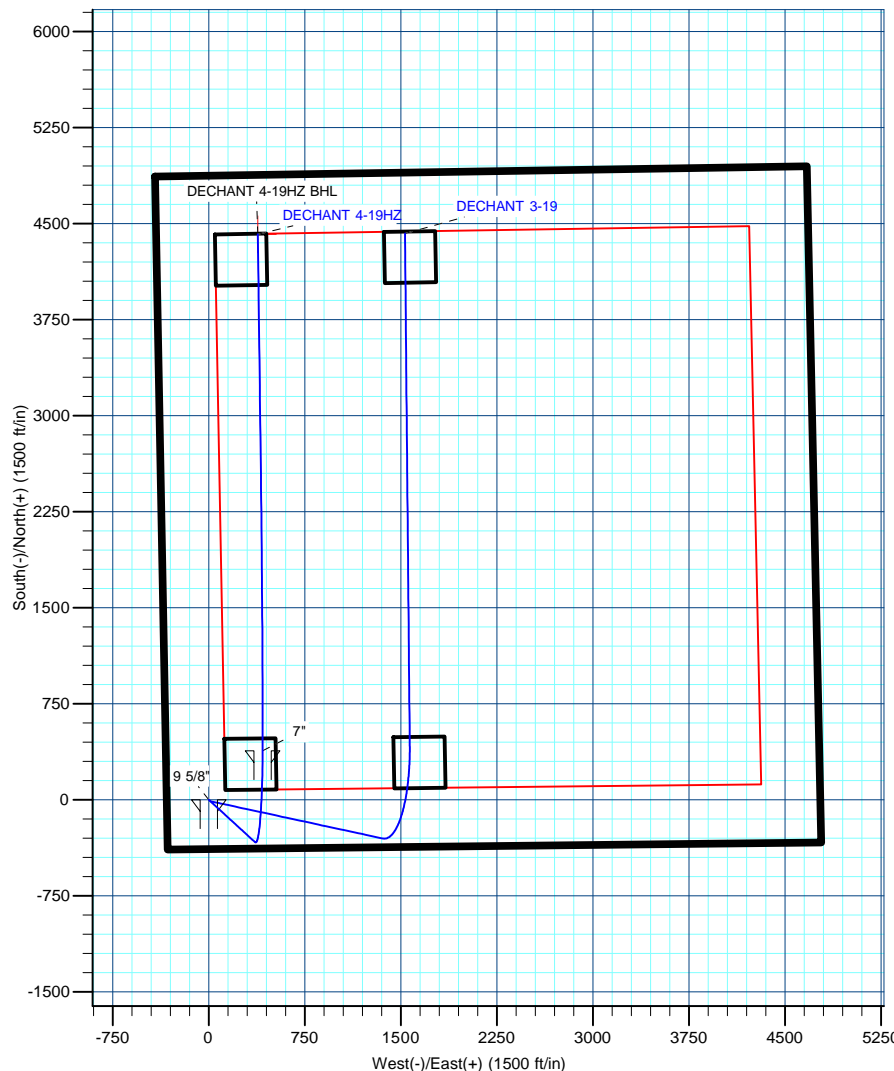
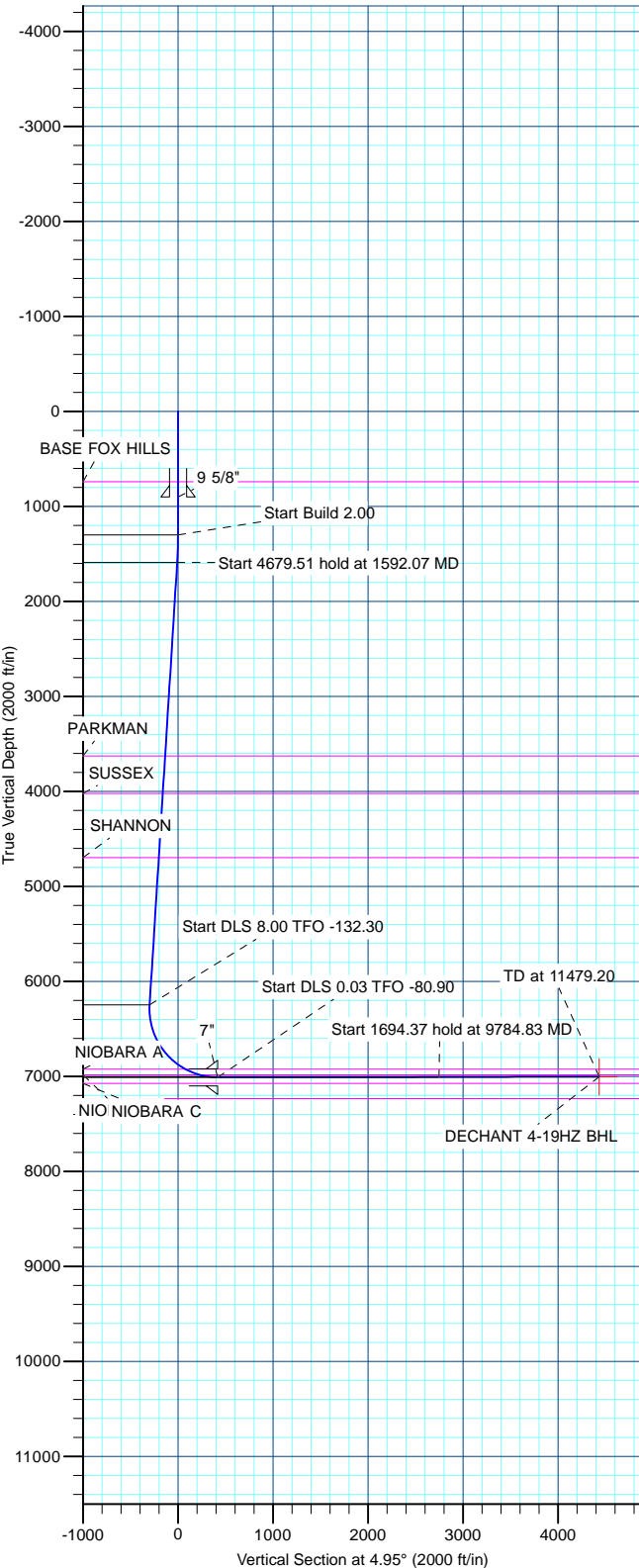
| Name | TVD | +N/-S | +E/-W | Latitude | Longitude | Point | Shape |
|--------------------|---------|---------|--------|-----------|-------------|-------|-------|
| DECHANT 4-19HZ BHL | 7010.00 | 4416.17 | 382.52 | 40.129870 | -104.600225 | | |

SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSec | Target |
|-----|----------|-------|--------|---------|---------|--------|------|---------|---------|--------------------|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2 | 1300.00 | 0.00 | 0.00 | 1300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 | 1592.07 | 5.84 | 132.45 | 1591.57 | -10.04 | 10.98 | 2.00 | 132.45 | -9.06 | |
| 4 | 6271.58 | 5.84 | 132.45 | 6246.77 | -331.50 | 362.39 | 0.00 | 0.00 | -298.99 | |
| 5 | 7445.82 | 90.00 | 0.00 | 7010.00 | 383.00 | 420.00 | 8.00 | -132.30 | 417.82 | |
| 6 | 9784.83 | 90.12 | 359.25 | 7007.55 | 2721.95 | 404.69 | 0.03 | -80.90 | 2746.72 | |
| 7 | 11479.20 | 90.12 | 359.25 | 7004.00 | 4416.17 | 382.52 | 0.00 | 0.00 | 432.71 | DECHANT 4-19HZ BHL |

CASING DETAILS

| TVD | MD | Name | Size |
|---------|---------|--------|-------|
| 900.00 | 900.00 | 9 5/8" | 9-5/8 |
| 7010.00 | 7445.82 | 7" | 7 |



| | | | |
|------------------|-----------------------------|-------------------------------------|----------------------------------|
| Database: | edm5000p | Local Co-ordinate Reference: | Well DECHANT 4-19 HZ |
| Company: | US ROCKIES REGION PLANNING | TVD Reference: | (17' RKB + 4981' GL) @ 4998.00ft |
| Project: | COLORADO NORTHERN ZONE - 83 | MD Reference: | (17' RKB + 4981' GL) @ 4998.00ft |
| Site: | WELD_DECHANT 4-19 HZ PAD | North Reference: | True |
| Well: | DECHANT 4-19 HZ | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | DECHANT 4-19HZ | | |
| Design: | DECHANT 4-19HZ (wp08) | | |

| | | | |
|--------------------|-----------------------------|----------------------|----------------|
| Project | COLORADO NORTHERN ZONE - 83 | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | |
| Map Zone: | Colorado Northern Zone | | |

| Site | | WELD_DECHANT 4-19 HZ PAD | | | |
|-----------------------|----------|--------------------------|-----------------|-------------------|-------------|
| Site Position: | | Northing: | 1,287,012.05 ft | Latitude: | 40.117747 |
| From: | Lat/Long | Easting: | 3,251,253.09 ft | Longitude: | -104.601593 |
| Position Uncertainty: | 0.00 ft | Slot Radius: | 0 " | Grid Convergence: | 0.58 |

| Well | DECHANT 4-19 HZ | | | | | |
|----------------------|-----------------|----------|---------------------|-----------------|---------------|-------------|
| Well Position | +N/-S | -0.01 ft | Northing: | 1,287,012.04 ft | Latitude: | 40.117747 |
| | +E/-W | 0.00 ft | Easting: | 3,251,253.09 ft | Longitude: | -104.601593 |
| Position Uncertainty | | 0.00 ft | Wellhead Elevation: | | Ground Level: | 4,981.00 ft |

| | | | | | |
|-----------------|----------------|--|--|--|--|
| Wellbore | DECHANT 4-19HZ | | | | |
|-----------------|----------------|--|--|--|--|

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|-----------|------------|-------------|-----------------|---------------|---------------------|
| | IGRF2010 | 11/17/2010 | 8.83 | 66.87 | 53,060 |

| | | | | | |
|---------------|-----------------------|--|--|--|--|
| Design | DECHANT 4-19HZ (wp08) | | | | |
|---------------|-----------------------|--|--|--|--|

| | | | | | |
|--------------------------|------------------------------|-------------------|-------------------|----------------------|------|
| Audit Notes: | | | | | |
| Version: | | Phase: | PLAN | Tie On Depth: | 0.00 |
| Vertical Section: | Depth From (TVD) (ft) | +N/-S (ft) | +E/-W (ft) | Direction (°) | |
| | 0.00 | 0.00 | 0.00 | 4.95 | |

| 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 |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,300.00 | 0.00 | 0.00 | 1,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,592.07 | 5.84 | 132.45 | 1,591.57 | -10.04 | 10.98 | 2.00 | 2.00 | 0.00 | 132.45 | |
| 6,271.58 | 5.84 | 132.45 | 6,246.77 | -331.50 | 362.39 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 7,445.82 | 90.00 | 0.00 | 7,010.00 | 383.00 | 420.00 | 8.00 | 7.17 | -11.28 | -132.30 | |
| 9,784.83 | 90.12 | 359.25 | 7,007.55 | 2,721.95 | 404.69 | 0.03 | 0.01 | -0.03 | -80.90 | |
| 11,479.20 | 90.12 | 359.25 | 7,004.00 | 4,416.17 | 382.52 | 0.00 | 0.00 | 0.00 | 0.00 | DECHANT 4-19HZ |

| | | | |
|-----------|-----------------------------|------------------------------|----------------------------------|
| Database: | edm5000p | Local Co-ordinate Reference: | Well DECHANT 4-19 HZ |
| Company: | US ROCKIES REGION PLANNING | TVD Reference: | (17' RKB + 4981' GL) @ 4998.00ft |
| Project: | COLORADO NORTHERN ZONE - 83 | MD Reference: | (17' RKB + 4981' GL) @ 4998.00ft |
| Site: | WELD_DECHANT 4-19 HZ PAD | North Reference: | True |
| Well: | DECHANT 4-19 HZ | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | DECHANT 4-19HZ | | |
| Design: | DECHANT 4-19HZ (wp08) | | |

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) | Turn Rate (°/100ft) |
|---|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 100.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 200.00 | 0.00 | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 300.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 400.00 | 0.00 | 0.00 | 400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 500.00 | 0.00 | 0.00 | 500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 600.00 | 0.00 | 0.00 | 600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 700.00 | 0.00 | 0.00 | 700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 741.00 | 0.00 | 0.00 | 741.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| BASE FOX HILLS | | | | | | | | | |
| 800.00 | 0.00 | 0.00 | 800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 900.00 | 0.00 | 0.00 | 900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9 5/8" | | | | | | | | | |
| 1,000.00 | 0.00 | 0.00 | 1,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,100.00 | 0.00 | 0.00 | 1,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,200.00 | 0.00 | 0.00 | 1,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,300.00 | 0.00 | 0.00 | 1,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Start Build 2.00 | | | | | | | | | |
| 1,400.00 | 2.00 | 132.45 | 1,399.98 | -1.18 | 1.29 | -1.06 | 2.00 | 2.00 | 0.00 |
| 1,500.00 | 4.00 | 132.45 | 1,499.84 | -4.71 | 5.15 | -4.25 | 2.00 | 2.00 | 0.00 |
| 1,592.07 | 5.84 | 132.45 | 1,591.57 | -10.04 | 10.98 | -9.06 | 2.00 | 2.00 | 0.00 |
| Start 4679.51 hold at 1592.07 MD | | | | | | | | | |
| 1,600.00 | 5.84 | 132.45 | 1,599.45 | -10.59 | 11.57 | -9.55 | 0.00 | 0.00 | 0.00 |
| 1,700.00 | 5.84 | 132.45 | 1,698.93 | -17.45 | 19.08 | -15.74 | 0.00 | 0.00 | 0.00 |
| 1,800.00 | 5.84 | 132.45 | 1,798.41 | -24.32 | 26.59 | -21.94 | 0.00 | 0.00 | 0.00 |
| 1,900.00 | 5.84 | 132.45 | 1,897.90 | -31.19 | 34.10 | -28.13 | 0.00 | 0.00 | 0.00 |
| 2,000.00 | 5.84 | 132.45 | 1,997.38 | -38.06 | 41.61 | -34.33 | 0.00 | 0.00 | 0.00 |
| 2,100.00 | 5.84 | 132.45 | 2,096.86 | -44.93 | 49.12 | -40.53 | 0.00 | 0.00 | 0.00 |
| 2,200.00 | 5.84 | 132.45 | 2,196.34 | -51.80 | 56.63 | -46.72 | 0.00 | 0.00 | 0.00 |
| 2,300.00 | 5.84 | 132.45 | 2,295.82 | -58.67 | 64.14 | -52.92 | 0.00 | 0.00 | 0.00 |
| 2,400.00 | 5.84 | 132.45 | 2,395.30 | -65.54 | 71.65 | -59.11 | 0.00 | 0.00 | 0.00 |
| 2,500.00 | 5.84 | 132.45 | 2,494.78 | -72.41 | 79.16 | -65.31 | 0.00 | 0.00 | 0.00 |
| 2,600.00 | 5.84 | 132.45 | 2,594.26 | -79.28 | 86.67 | -71.51 | 0.00 | 0.00 | 0.00 |
| 2,700.00 | 5.84 | 132.45 | 2,693.74 | -86.15 | 94.18 | -77.70 | 0.00 | 0.00 | 0.00 |
| 2,800.00 | 5.84 | 132.45 | 2,793.22 | -93.02 | 101.69 | -83.90 | 0.00 | 0.00 | 0.00 |
| 2,900.00 | 5.84 | 132.45 | 2,892.70 | -99.89 | 109.20 | -90.09 | 0.00 | 0.00 | 0.00 |
| 3,000.00 | 5.84 | 132.45 | 2,992.18 | -106.76 | 116.71 | -96.29 | 0.00 | 0.00 | 0.00 |
| 3,100.00 | 5.84 | 132.45 | 3,091.66 | -113.63 | 124.21 | -102.49 | 0.00 | 0.00 | 0.00 |
| 3,200.00 | 5.84 | 132.45 | 3,191.14 | -120.50 | 131.72 | -108.68 | 0.00 | 0.00 | 0.00 |
| 3,300.00 | 5.84 | 132.45 | 3,290.63 | -127.37 | 139.23 | -114.88 | 0.00 | 0.00 | 0.00 |
| 3,400.00 | 5.84 | 132.45 | 3,390.11 | -134.24 | 146.74 | -121.07 | 0.00 | 0.00 | 0.00 |
| 3,500.00 | 5.84 | 132.45 | 3,489.59 | -141.11 | 154.25 | -127.27 | 0.00 | 0.00 | 0.00 |
| 3,600.00 | 5.84 | 132.45 | 3,589.07 | -147.98 | 161.76 | -133.46 | 0.00 | 0.00 | 0.00 |
| 3,637.13 | 5.84 | 132.45 | 3,626.00 | -150.53 | 164.55 | -135.76 | 0.00 | 0.00 | 0.00 |
| PARKMAN | | | | | | | | | |
| 3,700.00 | 5.84 | 132.45 | 3,688.55 | -154.85 | 169.27 | -139.66 | 0.00 | 0.00 | 0.00 |
| 3,800.00 | 5.84 | 132.45 | 3,788.03 | -161.72 | 176.78 | -145.86 | 0.00 | 0.00 | 0.00 |
| 3,900.00 | 5.84 | 132.45 | 3,887.51 | -168.58 | 184.29 | -152.05 | 0.00 | 0.00 | 0.00 |
| 4,000.00 | 5.84 | 132.45 | 3,986.99 | -175.45 | 191.80 | -158.25 | 0.00 | 0.00 | 0.00 |
| 4,036.20 | 5.84 | 132.45 | 4,023.00 | -177.94 | 194.52 | -160.49 | 0.00 | 0.00 | 0.00 |
| SUSSEX | | | | | | | | | |
| 4,100.00 | 5.84 | 132.45 | 4,086.47 | -182.32 | 199.31 | -164.44 | 0.00 | 0.00 | 0.00 |
| 4,200.00 | 5.84 | 132.45 | 4,185.95 | -189.19 | 206.82 | -170.64 | 0.00 | 0.00 | 0.00 |

| | | | |
|-----------|-----------------------------|------------------------------|----------------------------------|
| Database: | edm5000p | Local Co-ordinate Reference: | Well DECHANT 4-19 HZ |
| Company: | US ROCKIES REGION PLANNING | TVD Reference: | (17' RKB + 4981' GL) @ 4998.00ft |
| Project: | COLORADO NORTHERN ZONE - 83 | MD Reference: | (17' RKB + 4981' GL) @ 4998.00ft |
| Site: | WELD_DECHANT 4-19 HZ PAD | North Reference: | True |
| Well: | DECHANT 4-19 HZ | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | DECHANT 4-19HZ | | |
| Design: | DECHANT 4-19HZ (wp08) | | |

| 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) | Turn Rate (°/100ft) |
| 4,300.00 | 5.84 | 132.45 | 4,285.43 | -196.06 | 214.33 | -176.84 | 0.00 | 0.00 | 0.00 |
| 4,400.00 | 5.84 | 132.45 | 4,384.91 | -202.93 | 221.84 | -183.03 | 0.00 | 0.00 | 0.00 |
| 4,500.00 | 5.84 | 132.45 | 4,484.39 | -209.80 | 229.35 | -189.23 | 0.00 | 0.00 | 0.00 |
| 4,600.00 | 5.84 | 132.45 | 4,583.88 | -216.67 | 236.86 | -195.42 | 0.00 | 0.00 | 0.00 |
| 4,700.00 | 5.84 | 132.45 | 4,683.36 | -223.54 | 244.37 | -201.62 | 0.00 | 0.00 | 0.00 |
| 4,712.71 | 5.84 | 132.45 | 4,696.00 | -224.41 | 245.32 | -202.41 | 0.00 | 0.00 | 0.00 |
| SHANNON | | | | | | | | | |
| 4,800.00 | 5.84 | 132.45 | 4,782.84 | -230.41 | 251.88 | -207.82 | 0.00 | 0.00 | 0.00 |
| 4,900.00 | 5.84 | 132.45 | 4,882.32 | -237.28 | 259.39 | -214.01 | 0.00 | 0.00 | 0.00 |
| 5,000.00 | 5.84 | 132.45 | 4,981.80 | -244.15 | 266.90 | -220.21 | 0.00 | 0.00 | 0.00 |
| 5,100.00 | 5.84 | 132.45 | 5,081.28 | -251.02 | 274.41 | -226.40 | 0.00 | 0.00 | 0.00 |
| 5,200.00 | 5.84 | 132.45 | 5,180.76 | -257.89 | 281.92 | -232.60 | 0.00 | 0.00 | 0.00 |
| 5,300.00 | 5.84 | 132.45 | 5,280.24 | -264.76 | 289.42 | -238.79 | 0.00 | 0.00 | 0.00 |
| 5,400.00 | 5.84 | 132.45 | 5,379.72 | -271.63 | 296.93 | -244.99 | 0.00 | 0.00 | 0.00 |
| 5,500.00 | 5.84 | 132.45 | 5,479.20 | -278.50 | 304.44 | -251.19 | 0.00 | 0.00 | 0.00 |
| 5,600.00 | 5.84 | 132.45 | 5,578.68 | -285.37 | 311.95 | -257.38 | 0.00 | 0.00 | 0.00 |
| 5,700.00 | 5.84 | 132.45 | 5,678.16 | -292.24 | 319.46 | -263.58 | 0.00 | 0.00 | 0.00 |
| 5,800.00 | 5.84 | 132.45 | 5,777.64 | -299.11 | 326.97 | -269.77 | 0.00 | 0.00 | 0.00 |
| 5,900.00 | 5.84 | 132.45 | 5,877.12 | -305.98 | 334.48 | -275.97 | 0.00 | 0.00 | 0.00 |
| 6,000.00 | 5.84 | 132.45 | 5,976.61 | -312.84 | 341.99 | -282.17 | 0.00 | 0.00 | 0.00 |
| 6,100.00 | 5.84 | 132.45 | 6,076.09 | -319.71 | 349.50 | -288.36 | 0.00 | 0.00 | 0.00 |
| 6,200.00 | 5.84 | 132.45 | 6,175.57 | -326.58 | 357.01 | -294.56 | 0.00 | 0.00 | 0.00 |
| 6,271.58 | 5.84 | 132.45 | 6,246.77 | -331.50 | 362.39 | -298.99 | 0.00 | 0.00 | 0.00 |
| Start DLS 8.00 TFO -132.30 | | | | | | | | | |
| 6,300.00 | 4.63 | 111.12 | 6,275.08 | -332.89 | 364.52 | -300.19 | 8.00 | -4.28 | -75.06 |
| 6,400.00 | 7.66 | 34.14 | 6,374.63 | -328.82 | 372.04 | -295.49 | 8.00 | 3.03 | -76.98 |
| 6,500.00 | 14.96 | 16.41 | 6,472.65 | -310.90 | 379.44 | -276.99 | 8.00 | 7.30 | -17.73 |
| 6,600.00 | 22.73 | 10.38 | 6,567.23 | -279.46 | 386.58 | -245.06 | 8.00 | 7.77 | -6.03 |
| 6,700.00 | 30.61 | 7.33 | 6,656.52 | -235.14 | 393.32 | -200.32 | 8.00 | 7.88 | -3.05 |
| 6,800.00 | 38.54 | 5.44 | 6,738.80 | -178.78 | 399.53 | -143.64 | 8.00 | 7.93 | -1.89 |
| 6,900.00 | 46.49 | 4.11 | 6,812.45 | -111.49 | 405.09 | -76.12 | 8.00 | 7.95 | -1.33 |
| 7,000.00 | 54.45 | 3.09 | 6,876.05 | -34.58 | 409.89 | 0.92 | 8.00 | 7.96 | -1.02 |
| 7,092.83 | 61.85 | 2.32 | 6,925.00 | 44.13 | 413.58 | 79.66 | 8.00 | 7.97 | -0.84 |
| NIOBARA A | | | | | | | | | |
| 7,100.00 | 62.42 | 2.26 | 6,928.35 | 50.47 | 413.84 | 85.99 | 8.00 | 7.97 | -0.77 |
| 7,155.38 | 66.84 | 1.85 | 6,952.08 | 100.47 | 415.63 | 135.96 | 8.00 | 7.97 | -0.74 |
| DECHANT 4-19HZ HEEL | | | | | | | | | |
| 7,200.00 | 70.39 | 1.54 | 6,968.35 | 141.98 | 416.86 | 177.43 | 8.00 | 7.97 | -0.69 |
| 7,251.97 | 74.54 | 1.20 | 6,984.00 | 191.51 | 418.04 | 226.87 | 8.00 | 7.98 | -0.66 |
| NIOBARA B | | | | | | | | | |
| 7,300.00 | 78.37 | 0.89 | 6,995.25 | 238.19 | 418.89 | 273.45 | 8.00 | 7.98 | -0.64 |
| 7,400.00 | 86.34 | 0.28 | 7,008.54 | 337.22 | 419.89 | 372.19 | 8.00 | 7.98 | -0.61 |
| 7,445.82 | 90.00 | 0.00 | 7,010.00 | 383.01 | 420.00 | 417.82 | 8.00 | 7.98 | -0.60 |
| Start DLS 0.03 TFO -80.90 - 7" | | | | | | | | | |
| 7,500.00 | 90.00 | 359.98 | 7,010.00 | 437.19 | 419.99 | 471.80 | 0.03 | 0.01 | -0.03 |
| 7,600.00 | 90.01 | 359.95 | 7,009.99 | 537.19 | 419.93 | 571.42 | 0.03 | 0.01 | -0.03 |
| 7,700.00 | 90.01 | 359.92 | 7,009.97 | 637.19 | 419.82 | 671.04 | 0.03 | 0.01 | -0.03 |
| 7,800.00 | 90.02 | 359.89 | 7,009.94 | 737.19 | 419.65 | 770.65 | 0.03 | 0.01 | -0.03 |
| 7,900.00 | 90.02 | 359.85 | 7,009.91 | 837.19 | 419.42 | 870.26 | 0.03 | 0.01 | -0.03 |
| 8,000.00 | 90.03 | 359.82 | 7,009.86 | 937.19 | 419.14 | 969.86 | 0.03 | 0.01 | -0.03 |
| 8,100.00 | 90.03 | 359.79 | 7,009.81 | 1,037.18 | 418.80 | 1,069.46 | 0.03 | 0.01 | -0.03 |
| 8,200.00 | 90.04 | 359.76 | 7,009.75 | 1,137.18 | 418.41 | 1,169.05 | 0.03 | 0.01 | -0.03 |
| 8,300.00 | 90.04 | 359.73 | 7,009.67 | 1,237.18 | 417.96 | 1,268.64 | 0.03 | 0.01 | -0.03 |

| | | | |
|------------------|-----------------------------|-------------------------------------|----------------------------------|
| Database: | edm5000p | Local Co-ordinate Reference: | Well DECHANT 4-19 HZ |
| Company: | US ROCKIES REGION PLANNING | TVD Reference: | (17' RKB + 4981' GL) @ 4998.00ft |
| Project: | COLORADO NORTHERN ZONE - 83 | MD Reference: | (17' RKB + 4981' GL) @ 4998.00ft |
| Site: | WELD_DECHANT 4-19 HZ PAD | North Reference: | True |
| Well: | DECHANT 4-19 HZ | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | DECHANT 4-19HZ | | |
| Design: | DECHANT 4-19HZ (wp08) | | |

| 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) | Turn Rate (°/100ft) |
| 8,400.00 | 90.05 | 359.69 | 7,009.59 | 1,337.18 | 417.45 | 1,368.22 | 0.03 | 0.01 | -0.03 |
| 8,500.00 | 90.05 | 359.66 | 7,009.50 | 1,437.18 | 416.89 | 1,467.79 | 0.03 | 0.01 | -0.03 |
| 8,600.00 | 90.06 | 359.63 | 7,009.40 | 1,537.18 | 416.27 | 1,567.37 | 0.03 | 0.01 | -0.03 |
| 8,700.00 | 90.06 | 359.60 | 7,009.30 | 1,637.18 | 415.60 | 1,666.93 | 0.03 | 0.01 | -0.03 |
| 8,800.00 | 90.07 | 359.57 | 7,009.18 | 1,737.17 | 414.87 | 1,766.49 | 0.03 | 0.01 | -0.03 |
| 8,900.00 | 90.07 | 359.53 | 7,009.05 | 1,837.17 | 414.08 | 1,866.05 | 0.03 | 0.01 | -0.03 |
| 9,000.00 | 90.08 | 359.50 | 7,008.92 | 1,937.17 | 413.24 | 1,965.60 | 0.03 | 0.01 | -0.03 |
| 9,100.00 | 90.08 | 359.47 | 7,008.77 | 2,037.16 | 412.34 | 2,065.15 | 0.03 | 0.01 | -0.03 |
| 9,200.00 | 90.09 | 359.44 | 7,008.62 | 2,137.16 | 411.39 | 2,164.69 | 0.03 | 0.01 | -0.03 |
| 9,300.00 | 90.10 | 359.41 | 7,008.46 | 2,237.15 | 410.38 | 2,264.22 | 0.03 | 0.01 | -0.03 |
| 9,400.00 | 90.10 | 359.37 | 7,008.29 | 2,337.15 | 409.32 | 2,363.75 | 0.03 | 0.01 | -0.03 |
| 9,500.00 | 90.11 | 359.34 | 7,008.11 | 2,437.14 | 408.20 | 2,463.27 | 0.03 | 0.01 | -0.03 |
| 9,600.00 | 90.11 | 359.31 | 7,007.92 | 2,537.13 | 407.02 | 2,562.79 | 0.03 | 0.01 | -0.03 |
| 9,700.00 | 90.12 | 359.28 | 7,007.72 | 2,637.13 | 405.78 | 2,662.30 | 0.03 | 0.01 | -0.03 |
| 9,784.83 | 90.12 | 359.25 | 7,007.55 | 2,721.95 | 404.69 | 2,746.72 | 0.03 | 0.01 | -0.03 |
| Start 1694.37 hold at 9784.83 MD | | | | | | | | | |
| 9,800.00 | 90.12 | 359.25 | 7,007.52 | 2,737.12 | 404.50 | 2,761.81 | 0.00 | 0.00 | 0.00 |
| 9,900.00 | 90.12 | 359.25 | 7,007.31 | 2,837.11 | 403.19 | 2,861.32 | 0.00 | 0.00 | 0.00 |
| 10,000.00 | 90.12 | 359.25 | 7,007.10 | 2,937.10 | 401.88 | 2,960.82 | 0.00 | 0.00 | 0.00 |
| 10,100.00 | 90.12 | 359.25 | 7,006.89 | 3,037.09 | 400.57 | 3,060.33 | 0.00 | 0.00 | 0.00 |
| 10,200.00 | 90.12 | 359.25 | 7,006.68 | 3,137.08 | 399.26 | 3,159.83 | 0.00 | 0.00 | 0.00 |
| 10,300.00 | 90.12 | 359.25 | 7,006.47 | 3,237.07 | 397.95 | 3,259.34 | 0.00 | 0.00 | 0.00 |
| 10,400.00 | 90.12 | 359.25 | 7,006.26 | 3,337.06 | 396.64 | 3,358.84 | 0.00 | 0.00 | 0.00 |
| 10,500.00 | 90.12 | 359.25 | 7,006.05 | 3,437.06 | 395.34 | 3,458.35 | 0.00 | 0.00 | 0.00 |
| 10,600.00 | 90.12 | 359.25 | 7,005.84 | 3,537.05 | 394.03 | 3,557.85 | 0.00 | 0.00 | 0.00 |
| 10,700.00 | 90.12 | 359.25 | 7,005.63 | 3,637.04 | 392.72 | 3,657.36 | 0.00 | 0.00 | 0.00 |
| 10,800.00 | 90.12 | 359.25 | 7,005.42 | 3,737.03 | 391.41 | 3,756.86 | 0.00 | 0.00 | 0.00 |
| 10,900.00 | 90.12 | 359.25 | 7,005.21 | 3,837.02 | 390.10 | 3,856.37 | 0.00 | 0.00 | 0.00 |
| 11,000.00 | 90.12 | 359.25 | 7,005.00 | 3,937.01 | 388.79 | 3,955.88 | 0.00 | 0.00 | 0.00 |
| 11,100.00 | 90.12 | 359.25 | 7,004.79 | 4,037.00 | 387.48 | 4,055.38 | 0.00 | 0.00 | 0.00 |
| 11,200.00 | 90.12 | 359.25 | 7,004.59 | 4,136.99 | 386.17 | 4,154.89 | 0.00 | 0.00 | 0.00 |
| 11,300.00 | 90.12 | 359.25 | 7,004.38 | 4,236.98 | 384.87 | 4,254.39 | 0.00 | 0.00 | 0.00 |
| 11,400.00 | 90.12 | 359.25 | 7,004.17 | 4,336.98 | 383.56 | 4,353.90 | 0.00 | 0.00 | 0.00 |
| 11,479.20 | 90.12 | 359.25 | 7,004.00 | 4,416.17 | 382.52 | 4,432.71 | 0.00 | 0.00 | 0.00 |
| TD at 11479.20 - DECHANT 4-19HZ BHL | | | | | | | | | |

| Design Targets | | | | | | | | | |
|---------------------------|---------------|--------------|----------|------------|------------|---------------|--------------|-----------|-------------|
| Target Name | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | Latitude | Longitude |
| DECHANT 4-19HZ BHL | 0.00 | 0.00 | 7,004.00 | 4,416.17 | 382.52 | 1,291,431.86 | 3,251,590.85 | 40.129870 | -104.600225 |
| - hit/miss target | | | | | | | | | |
| - Shape | | | | | | | | | |
| - plan hits target center | | | | | | | | | |
| - Point | | | | | | | | | |

| | | | |
|------------------|-----------------------------|-------------------------------------|----------------------------------|
| Database: | edm5000p | Local Co-ordinate Reference: | Well DECHANT 4-19 HZ |
| Company: | US ROCKIES REGION PLANNING | TVD Reference: | (17' RKB + 4981' GL) @ 4998.00ft |
| Project: | COLORADO NORTHERN ZONE - 83 | MD Reference: | (17' RKB + 4981' GL) @ 4998.00ft |
| Site: | WELD_DECHANT 4-19 HZ PAD | North Reference: | True |
| Well: | DECHANT 4-19 HZ | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | DECHANT 4-19HZ | | |
| Design: | DECHANT 4-19HZ (wp08) | | |

Casing Points

| Measured Depth (ft) | Vertical Depth (ft) | Name | Casing Diameter (") | Hole Diameter (") |
|---------------------|---------------------|--------|---------------------|-------------------|
| 900.00 | 900.00 | 9 5/8" | 9-5/8 | 12-1/4 |
| 7,445.82 | 7,010.00 | 7" | 7 | 8-3/4 |

Formations

| Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---------------------|---------------------|----------------|-----------|---------|-------------------|
| 741.00 | 741.00 | BASE FOX HILLS | | 0.00 | |
| 3,637.13 | 3,626.00 | PARKMAN | | 0.00 | |
| 4,036.20 | 4,023.00 | SUSSEX | | 0.00 | |
| 4,712.71 | 4,696.00 | SHANNON | | 0.00 | |
| 7,092.83 | 6,925.00 | NIOBARA A | | 0.00 | |
| 7,251.97 | 6,984.00 | NIOBARA B | | 0.00 | |

Plan Annotations

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates | | Comment |
|---------------------|---------------------|-------------------|------------|----------------------------------|
| | | +N/-S (ft) | +E/-W (ft) | |
| 1,300.00 | 1,300.00 | 0.00 | 0.00 | Start Build 2.00 |
| 1,592.07 | 1,591.57 | -10.04 | 10.98 | Start 4679.51 hold at 1592.07 MD |
| 6,271.58 | 6,246.77 | -331.50 | 362.39 | Start DLS 8.00 TFO -132.30 |
| 7,445.82 | 7,010.00 | 383.00 | 420.00 | Start DLS 0.03 TFO -80.90 |
| 9,784.83 | 7,007.55 | 2,721.95 | 404.69 | Start 1694.37 hold at 9784.83 MD |
| 11,479.20 | 7,004.00 | 4,416.17 | 382.52 | TD at 11479.20 |

US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
WELD_DECHANT 4-19 HZ PAD
DECHANT 4-19 HZ**

**DECHANT 4-19HZ
DECHANT 4-19HZ (wp08)**

Anticollision Summary Report

17 November, 2010



APC

Anticollision Summary Report



| | | | |
|---------------------------|-----------------------------|-------------------------------------|----------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well DECHANT 4-19 HZ |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | (17' RKB + 4981' GL) @ 4998.00ft |
| Reference Site: | WELD_DECHANT 4-19 HZ PAD | MD Reference: | (17' RKB + 4981' GL) @ 4998.00ft |
| Site Error: | 0.00 ft | North Reference: | True |
| Reference Well: | DECHANT 4-19 HZ | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00 ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | DECHANT 4-19HZ | Database: | edm5000p |
| Reference Design: | DECHANT 4-19HZ (wp08) | Offset TVD Reference: | Offset Datum |

| | | | |
|-------------------------------------|---|-----------------------|---------------------|
| Reference | DECHANT 4-19HZ (wp08) | | |
| Filter type: | NO GLOBAL FILTER: Using user defined selection & filtering criteria | | |
| Interpolation Method: | MD + Stations Interval 100.00ft | Error Model: | ISCWSA |
| Depth Range: | Unlimited | Scan Method: | Closest Approach 3D |
| Results Limited by: | Maximum center-center distance of 1,000.00 ft | Error Surface: | Elliptical Conic |
| Warning Levels Evaluated at: | 2.00 Sigma | | |

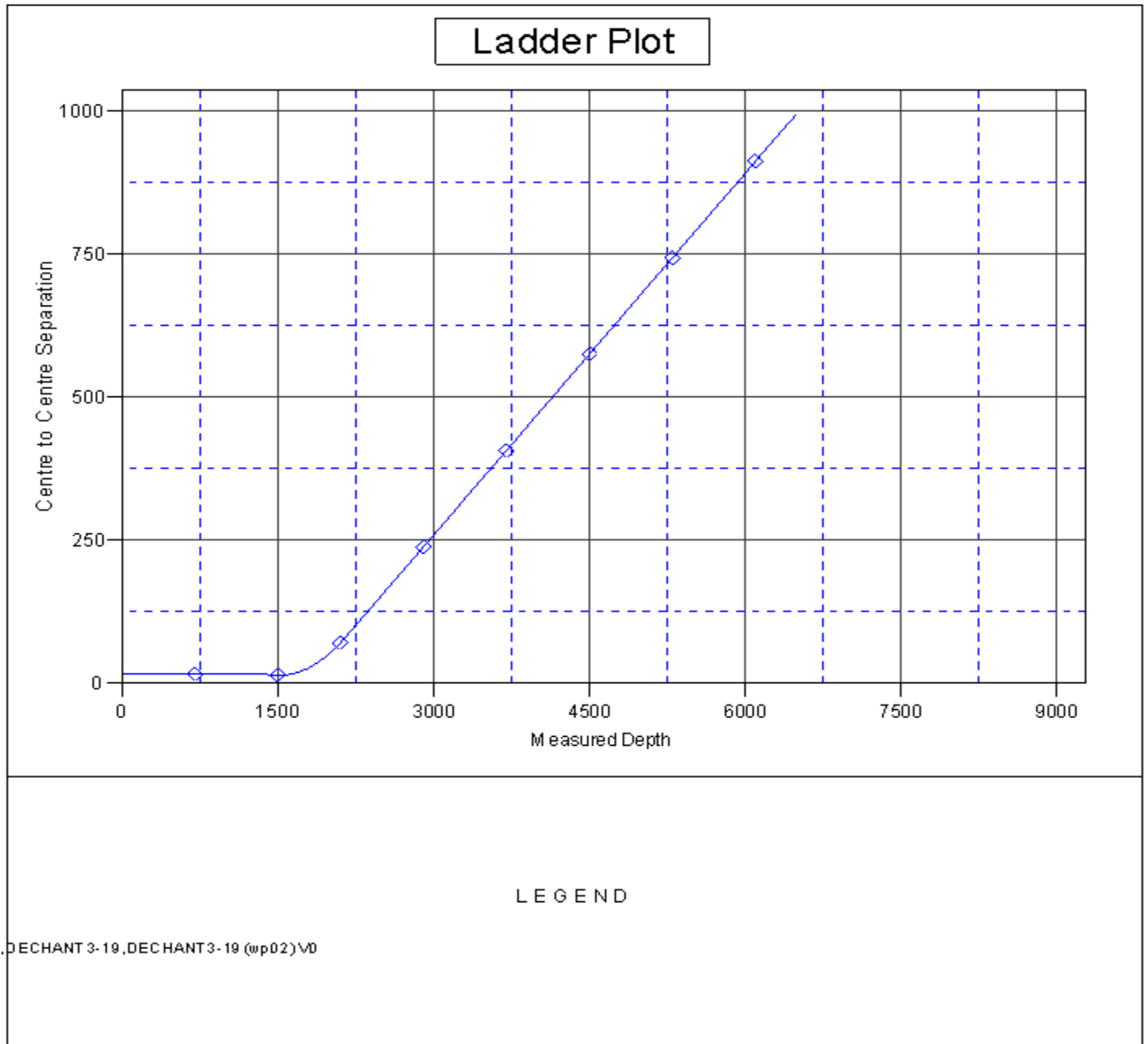
| | | | | |
|----------------------------|------------------------|------------------------------------|------------------|--------------------|
| Survey Tool Program | Date 11/17/2010 | | | |
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description |
| 0.00 | 11,479.20 | DECHANT 4-19HZ (wp08) (DECHANT 4-1 | MWD | MWD - Standard |

| | | | | | | |
|---|--------------------------------------|-----------------------------------|--------------------------------------|---------------------------------------|--------------------------|----------------|
| 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 | | | | | | |
| WELD_DECHANT 4-19 HZ PAD | | | | | | |
| DECHANT 3-19 - DECHANT 3-19 - DECHANT 3-19 (wp08) | 1,525.18 | 1,524.03 | 15.16 | 8.72 | 2.353 | CC, ES |
| DECHANT 3-19 - DECHANT 3-19 - DECHANT 3-19 (wp08) | 1,592.07 | 1,590.50 | 15.48 | 8.79 | 2.313 | SF |

| | | | |
|---------------------------|-----------------------------|-------------------------------------|----------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well DECHANT 4-19 HZ |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | (17' RKB + 4981' GL) @ 4998.00ft |
| Reference Site: | WELD_DECHANT 4-19 HZ PAD | MD Reference: | (17' RKB + 4981' GL) @ 4998.00ft |
| Site Error: | 0.00 ft | North Reference: | True |
| Reference Well: | DECHANT 4-19 HZ | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00 ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | DECHANT 4-19HZ | Database: | edm5000p |
| Reference Design: | DECHANT 4-19HZ (wp08) | Offset TVD Reference: | Offset Datum |

Reference Depths are relative to (17' RKB + 4981' GL) @ 4998.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: DECHANT 4-19 HZ
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.58°

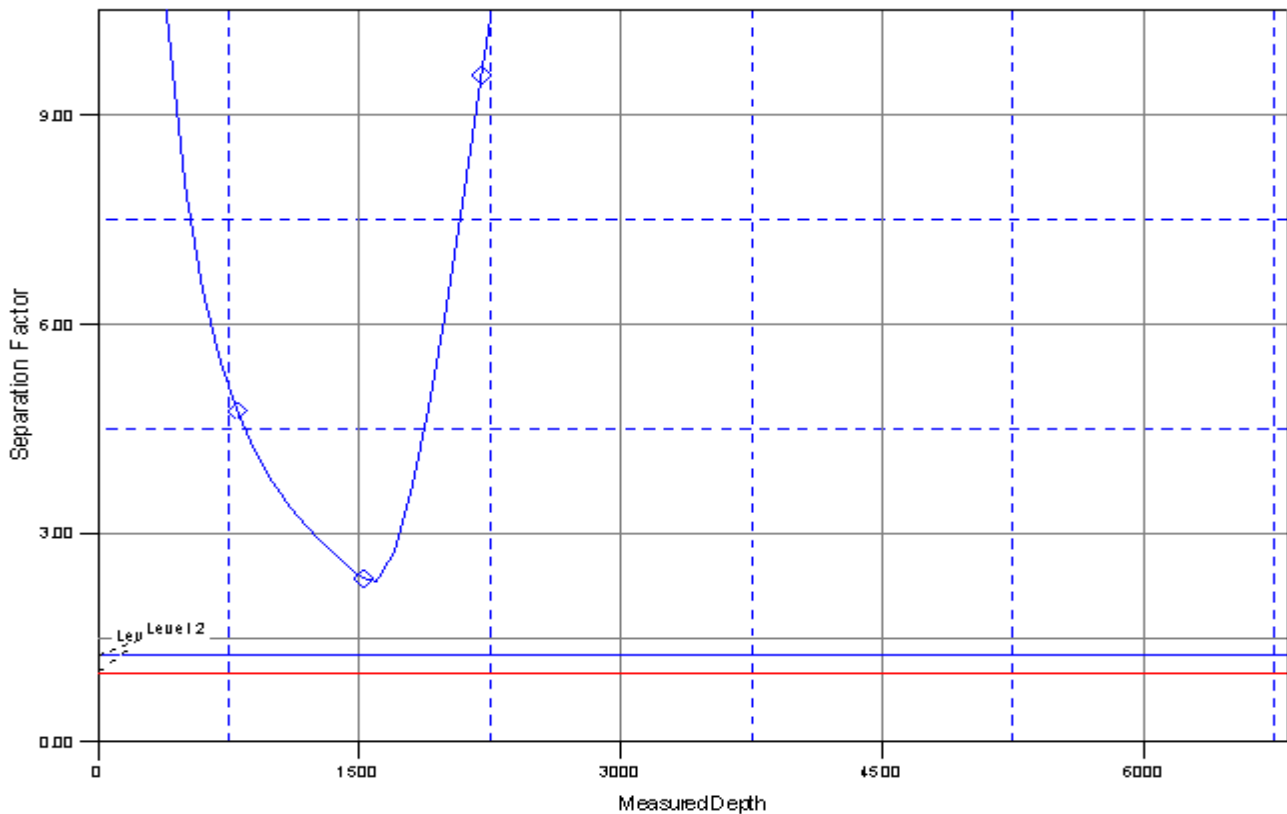


| | | | |
|---------------------------|-----------------------------|-------------------------------------|----------------------------------|
| Company: | US ROCKIES REGION PLANNING | Local Co-ordinate Reference: | Well DECHANT 4-19 HZ |
| Project: | COLORADO NORTHERN ZONE - 83 | TVD Reference: | (17' RKB + 4981' GL) @ 4998.00ft |
| Reference Site: | WELD_DECHANT 4-19 HZ PAD | MD Reference: | (17' RKB + 4981' GL) @ 4998.00ft |
| Site Error: | 0.00 ft | North Reference: | True |
| Reference Well: | DECHANT 4-19 HZ | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00 ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | DECHANT 4-19HZ | Database: | edm5000p |
| Reference Design: | DECHANT 4-19HZ (wp08) | Offset TVD Reference: | Offset Datum |

Reference Depths are relative to (17' RKB + 4981' GL) @ 4998.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: DECHANT 4-19 HZ
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.58°

Separation Factor Plot



LEGEND

9, DECHANT 3-19, DECHANT 3-19 (wp02) \V0