



# **US ROCKIES REGION PLANNING**

**KERR MCGEE OIL & GAS ONSHORE LP**

**WELD\_VOGL 4 PAD**

**P\_VOGL 11-36**

**P\_VOGL 11-36**

**Plan: PLAN #1 09-16-09 RHS**

## **Standard Planning Report**

**16 September, 2009**





P\_VOGL 11-36  
KERR MCGEE OIL & GAS ONSHORE LP  
SECTION 36 T6N R68W  
722 FSL 729 FWL  
LAT: 40° 10' 37.704 N  
LONG: 104° 57' 29.016 W



Azimuths to True North  
Magnetic North: 9.15°  
Magnetic Field  
Strength: 53197.6nT  
Dip Angle: 66.90°  
Date: 9/10/2009  
Model: IGRF200510

WELL DETAILS: P\_VOGL 11-36

| +N/-S | +E/-W | Northing   | Easting    | Ground Level: | Latitude         | Longitude         | Slot |
|-------|-------|------------|------------|---------------|------------------|-------------------|------|
| 0.00  | 0.00  | 1307837.70 | 3151431.13 | 4817.00       | 40° 10' 37.704 N | 104° 57' 29.016 W |      |

FORMATION TOP DETAILS

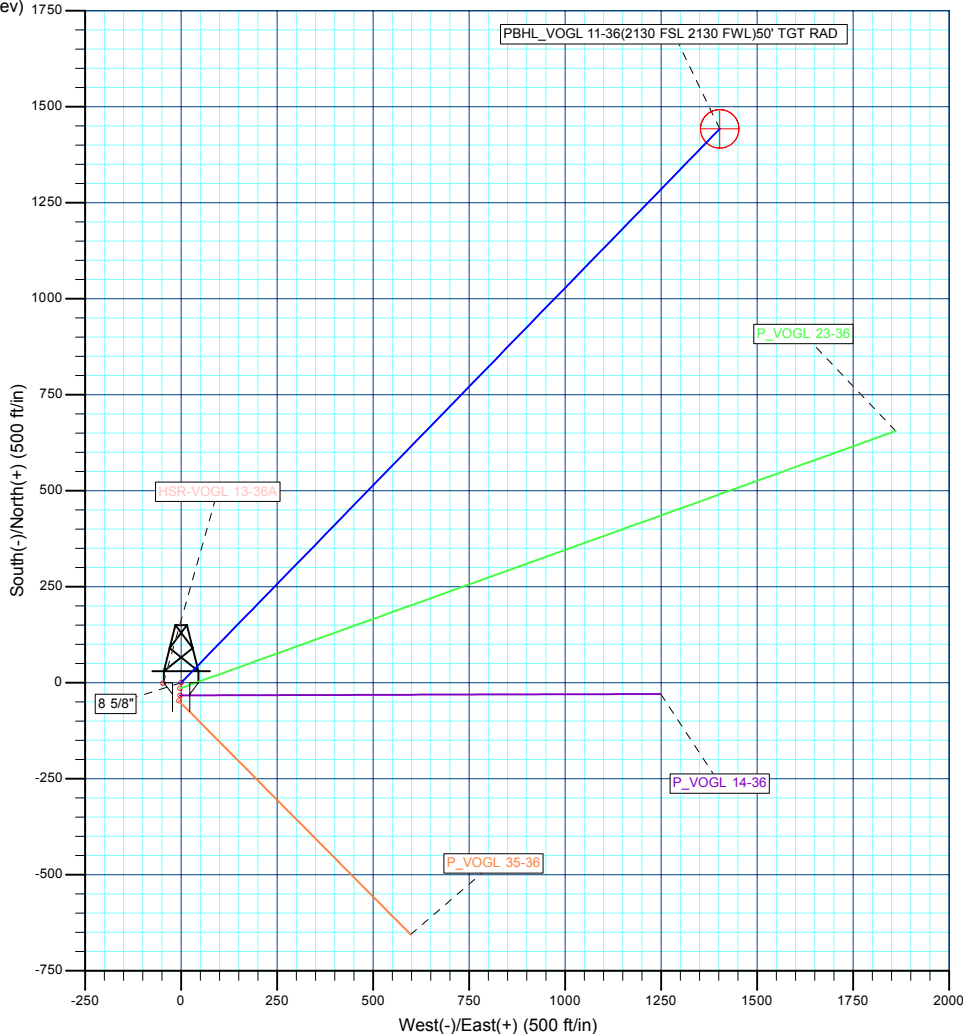
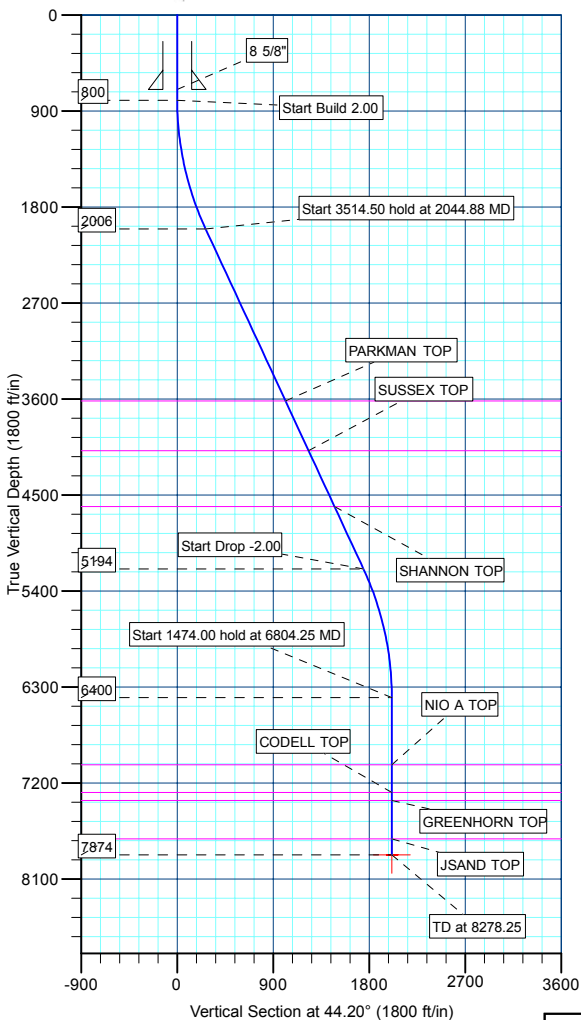
| TVDPath | MDPath  | Formation     |
|---------|---------|---------------|
| 3619.00 | 3823.07 | PARKMAN TOP   |
| 4085.00 | 4336.82 | SUSSEX TOP    |
| 4609.00 | 4914.51 | SHANNON TOP   |
| 7029.00 | 7433.25 | NIO A TOP     |
| 7289.00 | 7693.25 | CODELL TOP    |
| 7365.00 | 7769.25 | GREENHORN TOP |
| 7724.00 | 8128.25 | JSAND TOP     |

SECTION DETAILS

| MD      | Inc   | Azi   | TVD     | +N/-S   | +E/-W   | DLeg | TFace  | VSec    | Target  |
|---------|-------|-------|---------|---------|---------|------|--------|---------|---|
| 0.00    | 0.00  | 0.00  | 0.00    | 0.00    | 0.00    | 0.00 | 0.00   | 0.00    |   |
| 800.00  | 0.00  | 0.00  | 800.00  | 0.00    | 0.00    | 0.00 | 0.00   | 0.00    |   |
| 2044.88 | 24.90 | 44.20 | 2006.07 | 190.89  | 185.60  | 2.00 | 44.20  | 266.25  |   |
| 5559.37 | 24.90 | 44.20 | 5193.93 | 1251.71 | 1217.04 | 0.00 | 0.00   | 1745.84 |   |
| 6804.25 | 0.00  | 0.00  | 6400.00 | 1442.60 | 1402.64 | 2.00 | 180.00 | 2012.09 |   |
| 8278.25 | 0.00  | 0.00  | 7874.00 | 1442.60 | 1402.64 | 0.00 | 0.00   | 2012.09 | PBHL_VOGL 11-36(2130 FSL 2130 FWL)50' TGT RAD |



KB ELEV: WELL @ 4832.00ft (Original Well Elev) 1750  
GRD ELEV: 4817.00



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

| Name | TVD     | +N/-S   | +E/-W   | Northing   | Easting      | Latitude     | Longitude         | Shape                  |
|------|---------|---------|---------|------------|--------------|--------------|-------------------|------------------------|
| PBHL | 7874.00 | 1442.60 | 1402.64 | 1309288.84 | 3152824.9240 | 10° 51.960 N | 104° 57' 10.944 W | Circle (Radius: 50.00) |

Plan: PLAN #1 09-16-09 RHS (P\_VOGL 11-36/P\_VOGL 11-36)

Created By: Robert H. Scott



|                  |                                 |                                     |                                       |
|------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Database:</b> | EDM 2003.21 Single User Db      | <b>Local Co-ordinate Reference:</b> | Well P_VOGL 11-36                     |
| <b>Company:</b>  | US ROCKIES REGION PLANNING      | <b>TVD Reference:</b>               | WELL @ 4832.00ft (Original Well Elev) |
| <b>Project:</b>  | KERR MCGEE OIL & GAS ONSHORE LP | <b>MD Reference:</b>                | WELL @ 4832.00ft (Original Well Elev) |
| <b>Site:</b>     | WELD_VOGL 4 PAD                 | <b>North Reference:</b>             | True                                  |
| <b>Well:</b>     | P_VOGL 11-36                    | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Wellbore:</b> | P_VOGL 11-36                    |                                     |                                       |
| <b>Design:</b>   | PLAN #1 09-16-09 RHS            |                                     |                                       |

|                    |  |                      |                |
|--------------------|--|----------------------|----------------|
| <b>Project</b>     | KERR MCGEE OIL & GAS ONSHORE LP, KERR MCGEE OIL & GAS ONSHORE LP |                      |                |
| <b>Map System:</b> | US State Plane 1983  | <b>System Datum:</b> | Mean Sea Level |
| <b>Geo Datum:</b>  | North American Datum 1983  |                      |                |
| <b>Map Zone:</b>   | Colorado Northern Zone   |                      |                |

|                       |          |                                      |                 |                   |                   |
|-----------------------|----------|--------------------------------------|-----------------|-------------------|-------------------|
| Site                  |          | WELD_VOGL 4 PAD, SECTION 36 T6N R68W |                 |                   |                   |
| Site Position:        |          | Northing:                            | 1,307,837.70 ft | Latitude:         | 40° 10' 37.704 N  |
| From:                 | Lat/Long | Easting:                             | 3,151,431.13 ft | Longitude:        | 104° 57' 29.016 W |
| Position Uncertainty: | 0.00 ft  | Slot Radius:                         | in              | Grid Convergence: | 0.35 °            |

| Well                 | P_VOGL 11-36 |         |                     |                 |               |                   |
|----------------------|--------------|---------|---------------------|-----------------|---------------|-------------------|
| Well Position        | +N/-S        | 0.00 ft | Northing:           | 1,307,837.70 ft | Latitude:     | 40° 10' 37.704 N  |
|                      | +E/-W        | 0.00 ft | Easting:            | 3,151,431.13 ft | Longitude:    | 104° 57' 29.016 W |
| Position Uncertainty |              | 0.00 ft | Wellhead Elevation: | ft              | Ground Level: | 4,817.00 ft       |

|                  |                   |                    |                        |                      |                            |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | P_VOGL 11-36      |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | IGRF200510        | 9/10/2009          | 9.15                   | 66.91                | 53,198                     |

|                          |                              |                   |                      |                      |
|--------------------------|------------------------------|-------------------|----------------------|----------------------|
| <b>Design</b>            | PLAN #1 09-16-09 RHS         |                   |                      |                      |
| <b>Audit Notes:</b>      |                              |                   |                      |                      |
| <b>Version:</b>          | <b>Phase:</b>                | PLAN              | <b>Tie On Depth:</b> | 0.00                 |
| <b>Vertical Section:</b> | <b>Depth From (TVD) (ft)</b> | <b>+N/-S (ft)</b> | <b>+E/-W (ft)</b>    | <b>Direction (°)</b> |
|                          | 0.00                         | 0.00              | 0.00                 | 44.20                |

| <b>Plan Sections</b> |                 |             |                     |            |            |                       |                      |                     |         |                 |
|----------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|----------------------|---------------------|---------|-----------------|
| 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    |                 |
| 800.00               | 0.00            | 0.00        | 800.00              | 0.00       | 0.00       | 0.00                  | 0.00                 | 0.00                | 0.00    |                 |
| 2,044.88             | 24.90           | 44.20       | 2,006.07            | 190.89     | 185.60     | 2.00                  | 2.00                 | 0.00                | 44.20   |                 |
| 5,559.37             | 24.90           | 44.20       | 5,193.93            | 1,251.71   | 1,217.04   | 0.00                  | 0.00                 | 0.00                | 0.00    |                 |
| 6,804.25             | 0.00            | 0.00        | 6,400.00            | 1,442.60   | 1,402.64   | 2.00                  | -2.00                | 0.00                | 180.00  |                 |
| 8,278.25             | 0.00            | 0.00        | 7,874.00            | 1,442.60   | 1,402.64   | 0.00                  | 0.00                 | 0.00                | 0.00    | PBHL_VOGL 11-36 |



|                  |                                 |                                     |                                       |
|------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Database:</b> | EDM 2003.21 Single User Db      | <b>Local Co-ordinate Reference:</b> | Well P_VOGL 11-36                     |
| <b>Company:</b>  | US ROCKIES REGION PLANNING      | <b>TVD Reference:</b>               | WELL @ 4832.00ft (Original Well Elev) |
| <b>Project:</b>  | KERR MCGEE OIL & GAS ONSHORE LP | <b>MD Reference:</b>                | WELL @ 4832.00ft (Original Well Elev) |
| <b>Site:</b>     | WELD_VOGL 4 PAD                 | <b>North Reference:</b>             | True                                  |
| <b>Well:</b>     | P_VOGL 11-36                    | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Wellbore:</b> | P_VOGL 11-36                    |                                     |                                       |
| <b>Design:</b>   | PLAN #1 09-16-09 RHS            |                                     |                                       |

**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) |
|---|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| <b>Start Build 2.00</b>                 |                 |             |                     |            |            |                       |                       |                      |                     |
| 800.00                                  | 0.00            | 0.00        | 800.00              | 0.00       | 0.00       | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 900.00                                  | 2.00            | 44.20       | 899.98              | 1.25       | 1.22       | 1.75                  | 2.00                  | 2.00                 | 0.00                |
| 1,000.00                                | 4.00            | 44.20       | 999.84              | 5.00       | 4.86       | 6.98                  | 2.00                  | 2.00                 | 0.00                |
| 1,100.00                                | 6.00            | 44.20       | 1,099.45            | 11.25      | 10.94      | 15.69                 | 2.00                  | 2.00                 | 0.00                |
| 1,200.00                                | 8.00            | 44.20       | 1,198.70            | 19.99      | 19.44      | 27.88                 | 2.00                  | 2.00                 | 0.00                |
| 1,300.00                                | 10.00           | 44.20       | 1,297.47            | 31.20      | 30.34      | 43.52                 | 2.00                  | 2.00                 | 0.00                |
| 1,400.00                                | 12.00           | 44.20       | 1,395.62            | 44.88      | 43.64      | 62.60                 | 2.00                  | 2.00                 | 0.00                |
| 1,500.00                                | 14.00           | 44.20       | 1,493.06            | 61.01      | 59.32      | 85.10                 | 2.00                  | 2.00                 | 0.00                |
| 1,600.00                                | 16.00           | 44.20       | 1,589.64            | 79.57      | 77.36      | 110.98                | 2.00                  | 2.00                 | 0.00                |
| 1,700.00                                | 18.00           | 44.20       | 1,685.27            | 100.53     | 97.74      | 140.21                | 2.00                  | 2.00                 | 0.00                |
| 1,800.00                                | 20.00           | 44.20       | 1,779.82            | 123.87     | 120.44     | 172.77                | 2.00                  | 2.00                 | 0.00                |
| 1,900.00                                | 22.00           | 44.20       | 1,873.17            | 149.56     | 145.42     | 208.60                | 2.00                  | 2.00                 | 0.00                |
| 2,000.00                                | 24.00           | 44.20       | 1,965.21            | 177.57     | 172.66     | 247.67                | 2.00                  | 2.00                 | 0.00                |
| <b>Start 3514.50 hold at 2044.88 MD</b> |                 |             |                     |            |            |                       |                       |                      |                     |
| 2,044.88                                | 24.90           | 44.20       | 2,006.07            | 190.89     | 185.60     | 266.25                | 2.00                  | 2.00                 | 0.00                |
| 2,100.00                                | 24.90           | 44.20       | 2,056.07            | 207.53     | 201.78     | 289.45                | 0.00                  | 0.00                 | 0.00                |
| 2,200.00                                | 24.90           | 44.20       | 2,146.77            | 237.71     | 231.13     | 331.55                | 0.00                  | 0.00                 | 0.00                |
| 2,300.00                                | 24.90           | 44.20       | 2,237.48            | 267.90     | 260.48     | 373.65                | 0.00                  | 0.00                 | 0.00                |
| 2,400.00                                | 24.90           | 44.20       | 2,328.19            | 298.08     | 289.82     | 415.75                | 0.00                  | 0.00                 | 0.00                |
| 2,500.00                                | 24.90           | 44.20       | 2,418.89            | 328.27     | 319.17     | 457.85                | 0.00                  | 0.00                 | 0.00                |
| 2,600.00                                | 24.90           | 44.20       | 2,509.60            | 358.45     | 348.52     | 499.95                | 0.00                  | 0.00                 | 0.00                |
| 2,700.00                                | 24.90           | 44.20       | 2,600.30            | 388.63     | 377.87     | 542.05                | 0.00                  | 0.00                 | 0.00                |
| 2,800.00                                | 24.90           | 44.20       | 2,691.01            | 418.82     | 407.22     | 584.15                | 0.00                  | 0.00                 | 0.00                |
| 2,900.00                                | 24.90           | 44.20       | 2,781.72            | 449.00     | 436.56     | 626.25                | 0.00                  | 0.00                 | 0.00                |
| 3,000.00                                | 24.90           | 44.20       | 2,872.42            | 479.19     | 465.91     | 668.35                | 0.00                  | 0.00                 | 0.00                |
| 3,100.00                                | 24.90           | 44.20       | 2,963.13            | 509.37     | 495.26     | 710.45                | 0.00                  | 0.00                 | 0.00                |
| 3,200.00                                | 24.90           | 44.20       | 3,053.84            | 539.55     | 524.61     | 752.55                | 0.00                  | 0.00                 | 0.00                |
| 3,300.00                                | 24.90           | 44.20       | 3,144.54            | 569.74     | 553.96     | 794.65                | 0.00                  | 0.00                 | 0.00                |
| 3,400.00                                | 24.90           | 44.20       | 3,235.25            | 599.92     | 583.30     | 836.75                | 0.00                  | 0.00                 | 0.00                |
| 3,500.00                                | 24.90           | 44.20       | 3,325.95            | 630.11     | 612.65     | 878.85                | 0.00                  | 0.00                 | 0.00                |
| 3,600.00                                | 24.90           | 44.20       | 3,416.66            | 660.29     | 642.00     | 920.95                | 0.00                  | 0.00                 | 0.00                |
| 3,700.00                                | 24.90           | 44.20       | 3,507.37            | 690.47     | 671.35     | 963.05                | 0.00                  | 0.00                 | 0.00                |
| 3,800.00                                | 24.90           | 44.20       | 3,598.07            | 720.66     | 700.70     | 1,005.15              | 0.00                  | 0.00                 | 0.00                |
| <b>PARKMAN TOP</b>                      |                 |             |                     |            |            |                       |                       |                      |                     |
| 3,823.07                                | 24.90           | 44.20       | 3,619.00            | 727.62     | 707.47     | 1,014.86              | 0.00                  | 0.00                 | 0.00                |
| 3,900.00                                | 24.90           | 44.20       | 3,688.78            | 750.84     | 730.04     | 1,047.25              | 0.00                  | 0.00                 | 0.00                |
| 4,000.00                                | 24.90           | 44.20       | 3,779.49            | 781.03     | 759.39     | 1,089.35              | 0.00                  | 0.00                 | 0.00                |
| 4,100.00                                | 24.90           | 44.20       | 3,870.19            | 811.21     | 788.74     | 1,131.45              | 0.00                  | 0.00                 | 0.00                |
| 4,200.00                                | 24.90           | 44.20       | 3,960.90            | 841.39     | 818.09     | 1,173.55              | 0.00                  | 0.00                 | 0.00                |
| 4,300.00                                | 24.90           | 44.20       | 4,051.60            | 871.58     | 847.44     | 1,215.65              | 0.00                  | 0.00                 | 0.00                |
| <b>SUSSEX TOP</b>                       |                 |             |                     |            |            |                       |                       |                      |                     |
| 4,336.82                                | 24.90           | 44.20       | 4,085.00            | 882.69     | 858.24     | 1,231.15              | 0.00                  | 0.00                 | 0.00                |
| 4,400.00                                | 24.90           | 44.20       | 4,142.31            | 901.76     | 876.78     | 1,257.75              | 0.00                  | 0.00                 | 0.00                |
| 4,500.00                                | 24.90           | 44.20       | 4,233.02            | 931.95     | 906.13     | 1,299.85              | 0.00                  | 0.00                 | 0.00                |
| 4,600.00                                | 24.90           | 44.20       | 4,323.72            | 962.13     | 935.48     | 1,341.95              | 0.00                  | 0.00                 | 0.00                |
| 4,700.00                                | 24.90           | 44.20       | 4,414.43            | 992.32     | 964.83     | 1,384.05              | 0.00                  | 0.00                 | 0.00                |
| 4,800.00                                | 24.90           | 44.20       | 4,505.14            | 1,022.50   | 994.18     | 1,426.15              | 0.00                  | 0.00                 | 0.00                |
| 4,900.00                                | 24.90           | 44.20       | 4,595.84            | 1,052.68   | 1,023.52   | 1,468.24              | 0.00                  | 0.00                 | 0.00                |
| <b>SHANNON TOP</b>                      |                 |             |                     |            |            |                       |                       |                      |                     |
| 4,914.51                                | 24.90           | 44.20       | 4,609.00            | 1,057.06   | 1,027.78   | 1,474.35              | 0.00                  | 0.00                 | 0.00                |
| 5,000.00                                | 24.90           | 44.20       | 4,686.55            | 1,082.87   | 1,052.87   | 1,510.34              | 0.00                  | 0.00                 | 0.00                |
| 5,100.00                                | 24.90           | 44.20       | 4,777.25            | 1,113.05   | 1,082.22   | 1,552.44              | 0.00                  | 0.00                 | 0.00                |



|                  |                                 |                                     |                                       |
|------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Database:</b> | EDM 2003.21 Single User Db      | <b>Local Co-ordinate Reference:</b> | Well P_VOGL 11-36                     |
| <b>Company:</b>  | US ROCKIES REGION PLANNING      | <b>TVD Reference:</b>               | WELL @ 4832.00ft (Original Well Elev) |
| <b>Project:</b>  | KERR MCGEE OIL & GAS ONSHORE LP | <b>MD Reference:</b>                | WELL @ 4832.00ft (Original Well Elev) |
| <b>Site:</b>     | WELD_VOGL 4 PAD                 | <b>North Reference:</b>             | True                                  |
| <b>Well:</b>     | P_VOGL 11-36                    | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Wellbore:</b> | P_VOGL 11-36                    |                                     |                                       |
| <b>Design:</b>   | PLAN #1 09-16-09 RHS            |                                     |                                       |

**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) |
|--|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| 5,200.00   | 24.90           | 44.20       | 4,867.96            | 1,143.24   | 1,111.57   | 1,594.54              | 0.00                  | 0.00                 | 0.00                |
| 5,300.00   | 24.90           | 44.20       | 4,958.67            | 1,173.42   | 1,140.92   | 1,636.64              | 0.00                  | 0.00                 | 0.00                |
| 5,400.00   | 24.90           | 44.20       | 5,049.37            | 1,203.60   | 1,170.26   | 1,678.74              | 0.00                  | 0.00                 | 0.00                |
| 5,500.00   | 24.90           | 44.20       | 5,140.08            | 1,233.79   | 1,199.61   | 1,720.84              | 0.00                  | 0.00                 | 0.00                |
| <b>Start Drop -2.00</b>                              |                 |             |                     |            |            |                       |                       |                      |                     |
| 5,559.37   | 24.90           | 44.20       | 5,193.93            | 1,251.71   | 1,217.04   | 1,745.84              | 0.00                  | 0.00                 | 0.00                |
| 5,600.00   | 24.08           | 44.20       | 5,230.90            | 1,263.78   | 1,228.78   | 1,762.68              | 2.00                  | -2.00                | 0.00                |
| 5,700.00   | 22.08           | 44.20       | 5,322.89            | 1,291.89   | 1,256.11   | 1,801.89              | 2.00                  | -2.00                | 0.00                |
| 5,800.00   | 20.08           | 44.20       | 5,416.19            | 1,317.69   | 1,281.19   | 1,837.86              | 2.00                  | -2.00                | 0.00                |
| 5,900.00   | 18.08           | 44.20       | 5,510.69            | 1,341.13   | 1,303.98   | 1,870.56              | 2.00                  | -2.00                | 0.00                |
| 6,000.00   | 16.08           | 44.20       | 5,606.27            | 1,362.19   | 1,324.46   | 1,899.93              | 2.00                  | -2.00                | 0.00                |
| 6,100.00   | 14.08           | 44.20       | 5,702.82            | 1,380.85   | 1,342.60   | 1,925.96              | 2.00                  | -2.00                | 0.00                |
| 6,200.00   | 12.08           | 44.20       | 5,800.22            | 1,397.08   | 1,358.38   | 1,948.60              | 2.00                  | -2.00                | 0.00                |
| 6,300.00   | 10.08           | 44.20       | 5,898.35            | 1,410.86   | 1,371.78   | 1,967.82              | 2.00                  | -2.00                | 0.00                |
| 6,400.00   | 8.08            | 44.20       | 5,997.09            | 1,422.18   | 1,382.79   | 1,983.61              | 2.00                  | -2.00                | 0.00                |
| 6,500.00   | 6.08            | 44.20       | 6,096.32            | 1,431.03   | 1,391.39   | 1,995.94              | 2.00                  | -2.00                | 0.00                |
| 6,600.00   | 4.08            | 44.20       | 6,195.92            | 1,437.38   | 1,397.57   | 2,004.81              | 2.00                  | -2.00                | 0.00                |
| 6,700.00   | 2.08            | 44.20       | 6,295.77            | 1,441.24   | 1,401.32   | 2,010.19              | 2.00                  | -2.00                | 0.00                |
| 6,800.00   | 0.08            | 44.20       | 6,395.75            | 1,442.60   | 1,402.64   | 2,012.08              | 2.00                  | -2.00                | 0.00                |
| <b>Start 1474.00 hold at 6804.25 MD</b>              |                 |             |                     |            |            |                       |                       |                      |                     |
| 6,804.25   | 0.00            | 0.00        | 6,400.00            | 1,442.60   | 1,402.64   | 2,012.09              | 2.00                  | -2.00                | -1,040.10           |
| 6,900.00   | 0.00            | 0.00        | 6,495.75            | 1,442.60   | 1,402.64   | 2,012.09              | 0.00                  | 0.00                 | 0.00                |
| 7,000.00   | 0.00            | 0.00        | 6,595.75            | 1,442.60   | 1,402.64   | 2,012.09              | 0.00                  | 0.00                 | 0.00                |
| 7,100.00   | 0.00            | 0.00        | 6,695.75            | 1,442.60   | 1,402.64   | 2,012.09              | 0.00                  | 0.00                 | 0.00                |
| 7,200.00   | 0.00            | 0.00        | 6,795.75            | 1,442.60   | 1,402.64   | 2,012.09              | 0.00                  | 0.00                 | 0.00                |
| 7,300.00   | 0.00            | 0.00        | 6,895.75            | 1,442.60   | 1,402.64   | 2,012.09              | 0.00                  | 0.00                 | 0.00                |
| 7,400.00   | 0.00            | 0.00        | 6,995.75            | 1,442.60   | 1,402.64   | 2,012.09              | 0.00                  | 0.00                 | 0.00                |
| <b>NIO A TOP</b>                                     |                 |             |                     |            |            |                       |                       |                      |                     |
| 7,433.25   | 0.00            | 0.00        | 7,029.00            | 1,442.60   | 1,402.64   | 2,012.09              | 0.00                  | 0.00                 | 0.00                |
| 7,500.00   | 0.00            | 0.00        | 7,095.75            | 1,442.60   | 1,402.64   | 2,012.09              | 0.00                  | 0.00                 | 0.00                |
| 7,600.00   | 0.00            | 0.00        | 7,195.75            | 1,442.60   | 1,402.64   | 2,012.09              | 0.00                  | 0.00                 | 0.00                |
| <b>CODELL TOP</b>                                    |                 |             |                     |            |            |                       |                       |                      |                     |
| 7,693.25   | 0.00            | 0.00        | 7,289.00            | 1,442.60   | 1,402.64   | 2,012.09              | 0.00                  | 0.00                 | 0.00                |
| 7,700.00   | 0.00            | 0.00        | 7,295.75            | 1,442.60   | 1,402.64   | 2,012.09              | 0.00                  | 0.00                 | 0.00                |
| <b>GREENHORN TOP</b>                                 |                 |             |                     |            |            |                       |                       |                      |                     |
| 7,769.25   | 0.00            | 0.00        | 7,365.00            | 1,442.60   | 1,402.64   | 2,012.09              | 0.00                  | 0.00                 | 0.00                |
| 7,800.00   | 0.00            | 0.00        | 7,395.75            | 1,442.60   | 1,402.64   | 2,012.09              | 0.00                  | 0.00                 | 0.00                |
| 7,900.00   | 0.00            | 0.00        | 7,495.75            | 1,442.60   | 1,402.64   | 2,012.09              | 0.00                  | 0.00                 | 0.00                |
| 8,000.00   | 0.00            | 0.00        | 7,595.75            | 1,442.60   | 1,402.64   | 2,012.09              | 0.00                  | 0.00                 | 0.00                |
| 8,100.00   | 0.00            | 0.00        | 7,695.75            | 1,442.60   | 1,402.64   | 2,012.09              | 0.00                  | 0.00                 | 0.00                |
| <b>JSAND TOP</b>                                     |                 |             |                     |            |            |                       |                       |                      |                     |
| 8,128.25   | 0.00            | 0.00        | 7,724.00            | 1,442.60   | 1,402.64   | 2,012.09              | 0.00                  | 0.00                 | 0.00                |
| 8,200.00   | 0.00            | 0.00        | 7,795.75            | 1,442.60   | 1,402.64   | 2,012.09              | 0.00                  | 0.00                 | 0.00                |
| <b>PBHL_VOGL 11-36(2130 FSL 2130 FWL)50' TGT RAD</b> |                 |             |                     |            |            |                       |                       |                      |                     |
| 8,278.25   | 0.00            | 0.00        | 7,874.00            | 1,442.60   | 1,402.64   | 2,012.09              | 0.00                  | 0.00                 | 0.00                |



|                  |                                 |                                     |                                       |
|------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Database:</b> | EDM 2003.21 Single User Db      | <b>Local Co-ordinate Reference:</b> | Well P_VOGL 11-36                     |
| <b>Company:</b>  | US ROCKIES REGION PLANNING      | <b>TVD Reference:</b>               | WELL @ 4832.00ft (Original Well Elev) |
| <b>Project:</b>  | KERR MCGEE OIL & GAS ONSHORE LP | <b>MD Reference:</b>                | WELL @ 4832.00ft (Original Well Elev) |
| <b>Site:</b>     | WELD_VOGL 4 PAD                 | <b>North Reference:</b>             | True                                  |
| <b>Well:</b>     | P_VOGL 11-36                    | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Wellbore:</b> | P_VOGL 11-36                    |                                     |                                       |
| <b>Design:</b>   | PLAN #1 09-16-09 RHS            |                                     |                                       |

| Design Targets  |           |          |          |          |          |              |              |                  |                   |
|---|-----------|----------|----------|----------|----------|--------------|--------------|------------------|-------------------|
| Target Name   |           |          |          |          |          |              |              |                  |                   |
| - hit/miss target   | Dip Angle | Dip Dir. | TVD      | +N/-S    | +E/-W    | Northing     | Easting      | Latitude         | Longitude         |
| - Shape   | (°)       | (°)      | (ft)     | (ft)     | (ft)     | (ft)         | (ft)         |                  |                   |
| PBHL_VOGL 11-36(2<br>- plan hits target center<br>- Circle (radius 50.00) | 0.00      | 0.00     | 7,874.00 | 1,442.60 | 1,402.64 | 1,309,288.84 | 3,152,824.92 | 40° 10' 51.960 N | 104° 57' 10.944 W |

| Casing Points  |                |        |                 |               |
|----------------|----------------|--------|-----------------|---------------|
| Measured Depth | Vertical Depth | Name   | Casing Diameter | Hole Diameter |
| (ft)           | (ft)           |        | (in)            | (in)          |
| 700.00         | 700.00         | 8 5/8" | 8.62            | 11.00         |

| Formations     |                |               |           |      |               |
|----------------|----------------|---------------|-----------|------|---------------|
| Measured Depth | Vertical Depth | Name          | Lithology | Dip  | Dip Direction |
| (ft)           | (ft)           |               |           | (°)  | (°)           |
| 3,823.07       | 3,619.00       | PARKMAN TOP   |           | 0.00 |               |
| 4,336.82       | 4,085.00       | SUSSEX TOP    |           |      |               |
| 4,914.51       | 4,609.00       | SHANNON TOP   |           |      |               |
| 7,433.25       | 7,029.00       | NIO A TOP     |           |      |               |
| 7,693.25       | 7,289.00       | CODELL TOP    |           |      |               |
| 7,769.25       | 7,365.00       | GREENHORN TOP |           |      |               |
| 8,128.25       | 7,724.00       | JSAND TOP     |           |      |               |

| Plan Annotations |                |                   |            |                                  |
|------------------|----------------|-------------------|------------|----------------------------------|
| Measured Depth   | Vertical Depth | Local Coordinates |            | Comment                          |
| (ft)             | (ft)           | +N/-S (ft)        | +E/-W (ft) |                                  |
| 800.00           | 800.00         | 0.00              | 0.00       | Start Build 2.00                 |
| 2,044.88         | 2,006.07       | 190.89            | 185.60     | Start 3514.50 hold at 2044.88 MD |
| 5,559.37         | 5,193.93       | 1,251.71          | 1,217.04   | Start Drop -2.00                 |
| 6,804.25         | 6,400.00       | 1,442.60          | 1,402.64   | Start 1474.00 hold at 6804.25 MD |
| 8,278.25         | 7,874.00       | 1,442.60          | 1,402.64   | TD at 8278.25                    |



# **US ROCKIES REGION PLANNING**

**KERR MCGEE OIL & GAS ONSHORE LP  
WELD\_VOGL 4 PAD  
P\_VOGL 11-36**

**P\_VOGL 11-36  
PLAN #1 09-16-09 RHS**

## **Anticollision Report**

**16 September, 2009**





|                           |                                 |                                     |                                       |
|---------------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Company:</b>           | US ROCKIES REGION PLANNING      | <b>Local Co-ordinate Reference:</b> | Well P_VOGL 11-36                     |
| <b>Project:</b>           | KERR MCGEE OIL & GAS ONSHORE LP | <b>TVD Reference:</b>               | WELL @ 4832.00ft (Original Well Elev) |
| <b>Reference Site:</b>    | WELD_VOGL 4 PAD                 | <b>MD Reference:</b>                | WELL @ 4832.00ft (Original Well Elev) |
| <b>Site Error:</b>        | 0.00ft                          | <b>North Reference:</b>             | True                                  |
| <b>Reference Well:</b>    | P_VOGL 11-36                    | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Well Error:</b>        | 0.00ft                          | <b>Output errors are at</b>         | 2.00 sigma                            |
| <b>Reference Wellbore</b> | P_VOGL 11-36                    | <b>Database:</b>                    | EDM 2003.21 Single User Db            |
| <b>Reference Design:</b>  | PLAN #1 09-16-09 RHS            | <b>Offset TVD Reference:</b>        | Offset Datum                          |

|                                     |   |                       |                     |
|-------------------------------------|---|-----------------------|---------------------|
| <b>Reference</b>                    | PLAN #1 09-16-09 RHS  |                       |                     |
| <b>Filter type:</b>                 | NO GLOBAL FILTER: Using user defined selection & filtering criteria |                       |                     |
| <b>Interpolation Method:</b>        | Stations  | <b>Error Model:</b>   | ISCWSA              |
| <b>Depth Range:</b>                 | 0.00 to 20,000.00ft   | <b>Scan Method:</b>   | Closest Approach 3D |
| <b>Results Limited by:</b>          | Maximum center-center distance of 10,000.00ft                       | <b>Error Surface:</b> | Elliptical Conic    |
| <b>Warning Levels Evaluated at:</b> | 2.00 Sigma  |                       |                     |

|                            |                       |                                     |                  |                    |
|----------------------------|-----------------------|-------------------------------------|------------------|--------------------|
| <b>Survey Tool Program</b> | <b>Date</b> 9/16/2009 |                                     |                  |                    |
| <b>From (ft)</b>           | <b>To (ft)</b>        | <b>Survey (Wellbore)</b>            | <b>Tool Name</b> | <b>Description</b> |
| 0.00                       | 8,278.25              | PLAN #1 09-16-09 RHS (P_VOGL 11-36) | MWD              | MWD - Standard     |

|   |                                      |                                   |                                      |                                       |                          |                 |
|---|--------------------------------------|-----------------------------------|--------------------------------------|---------------------------------------|--------------------------|-----------------|
| <b>Summary</b>  |                                      |                                   |                                      |                                       |                          |                 |
| <b>Site Name</b>  | <b>Reference Measured Depth (ft)</b> | <b>Offset Measured Depth (ft)</b> | <b>Distance Between Centres (ft)</b> | <b>Distance Between Ellipses (ft)</b> | <b>Separation Factor</b> | <b>Warning</b>  |
| <b>Offset Well - Wellbore - Design</b>                                |                                      |                                   |                                      |                                       |                          |                 |
| WELD_VOGL 4 PAD   |                                      |                                   |                                      |                                       |                          |                 |
| HSR-VOGL 13-36A - HSR-VOGL 13-36A EXISTING - HSR-VOGL 13-36A EXISTING | 800.00                               | 800.00                            | 47.02                                | 15.65                                 | 1.499                    | Level 3, CC     |
| HSR-VOGL 13-36A - HSR-VOGL 13-36A EXISTING - HSR-VOGL 13-36A EXISTING | 1,000.00                             | 999.84                            | 52.26                                | 12.51                                 | 1.315                    | Level 3, ES, SF |
| P_VOGL 14-36 - P_VOGL 14-36 - PLAN #1 09-16-09 RHS                    | 800.00                               | 800.00                            | 32.91                                | 29.57                                 | 9.861                    | CC, ES          |
| P_VOGL 14-36 - P_VOGL 14-36 - PLAN #1 09-16-09 RHS                    | 1,000.00                             | 1,000.06                          | 37.78                                | 33.59                                 | 9.006                    | SF              |
| P_VOGL 23-36 - P_VOGL 23-36 - PLAN #1 09-16-09 RHS                    | 800.00                               | 800.00                            | 14.84                                | 11.51                                 | 4.448                    | CC, ES          |
| P_VOGL 23-36 - P_VOGL 23-36 - PLAN #1 09-16-09 RHS                    | 900.00                               | 900.26                            | 15.42                                | 11.65                                 | 4.085                    | SF              |
| P_VOGL 35-36 - P_VOGL 35-36 - PLAN #1 09-10-09 RHS                    | 800.00                               | 800.00                            | 47.70                                | 44.36                                 | 14.290                   | CC, ES          |
| P_VOGL 35-36 - P_VOGL 35-36 - PLAN #1 09-10-09 RHS                    | 900.00                               | 898.91                            | 50.16                                | 46.40                                 | 13.350                   | SF              |

| Offset Design             |                     |                     |                     |                 |             |                       |                                   |            |                      |                       | WELD_VOGL 4 PAD - HSR-VOGL 13-36A - HSR-VOGL 13-36A EXISTING - HSR-VOGL 13-36A EXIS |                   | Offset Site Error: |  | 0.00 ft |  |
|---------------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|---|-------------------|--------------------|--|---------|--|
| Survey Program: 0-UNKNOWN |                     |                     |                     |                 |             |                       |                                   |            |                      |                       |   |                   | Offset Well Error: |  | 0.00 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) | Minimum Separation (ft)   | Separation Factor | Warning            |  |         |  |
| 0.00                      | 0.00                | 0.00                | 0.00                | 0.00            | 0.00        | -91.78                | -1.46                             | -46.99     | 47.02                |                       |   |                   |                    |  |         |  |
| 100.00                    | 100.00              | 100.00              | 100.00              | 0.10            | 1.70        | -91.78                | -1.46                             | -46.99     | 47.02                | 45.22                 | 1.80  | 26.185            |                    |  |         |  |
| 200.00                    | 200.00              | 200.00              | 200.00              | 0.32            | 5.70        | -91.78                | -1.46                             | -46.99     | 47.02                | 41.00                 | 6.02  | 7.810             |                    |  |         |  |
| 300.00                    | 300.00              | 300.00              | 300.00              | 0.55            | 9.70        | -91.78                | -1.46                             | -46.99     | 47.02                | 36.77                 | 10.25   | 4.589             |                    |  |         |  |
| 400.00                    | 400.00              | 400.00              | 400.00              | 0.77            | 13.70       | -91.78                | -1.46                             | -46.99     | 47.02                | 32.55                 | 14.47   | 3.249             |                    |  |         |  |
| 500.00                    | 500.00              | 500.00              | 500.00              | 0.99            | 17.70       | -91.78                | -1.46                             | -46.99     | 47.02                | 28.32                 | 18.69   | 2.515             |                    |  |         |  |
| 600.00                    | 600.00              | 600.00              | 600.00              | 1.22            | 21.70       | -91.78                | -1.46                             | -46.99     | 47.02                | 24.10                 | 22.92   | 2.051             |                    |  |         |  |
| 700.00                    | 700.00              | 700.00              | 700.00              | 1.44            | 25.70       | -91.78                | -1.46                             | -46.99     | 47.02                | 19.87                 | 27.14   | 1.732             |                    |  |         |  |
| 800.00                    | 800.00              | 800.00              | 800.00              | 1.67            | 29.70       | -91.78                | -1.46                             | -46.99     | 47.02                | 15.65                 | 31.37   | 1.499             | Level 3, CC        |  |         |  |
| 900.00                    | 899.98              | 899.98              | 899.98              | 1.89            | 33.70       | -137.40               | -1.46                             | -46.99     | 48.29                | 12.71                 | 35.58   | 1.357             | Level 3            |  |         |  |
| 1,000.00                  | 999.84              | 999.84              | 999.84              | 2.11            | 37.69       | -141.23               | -1.46                             | -46.99     | 52.26                | 12.51                 | 39.75   | 1.315             | Level 3, ES, SF    |  |         |  |
| 1,100.00                  | 1,099.45            | 1,099.45            | 1,099.45            | 2.34            | 41.68       | -146.43               | -1.46                             | -46.99     | 59.31                | 15.46                 | 43.85   | 1.353             | Level 3            |  |         |  |
| 1,200.00                  | 1,198.70            | 1,198.70            | 1,198.70            | 2.59            | 45.65       | -151.86               | -1.46                             | -46.99     | 69.81                | 21.95                 | 47.86   | 1.459             | Level 3            |  |         |  |
| 1,300.00                  | 1,297.47            | 1,297.47            | 1,297.47            | 2.87            | 49.60       | -156.78               | -1.46                             | -46.99     | 83.95                | 32.21                 | 51.74   | 1.622             |                    |  |         |  |
| 1,400.00                  | 1,395.62            | 1,395.62            | 1,395.62            | 3.19            | 53.52       | -160.89               | -1.46                             | -46.99     | 101.80               | 46.31                 | 55.49   | 1.834             |                    |  |         |  |
| 1,500.00                  | 1,493.06            | 1,493.06            | 1,493.06            | 3.56            | 57.42       | -164.19               | -1.46                             | -46.99     | 123.31               | 64.22                 | 59.09   | 2.087             |                    |  |         |  |
| 1,600.00                  | 1,589.64            | 1,589.64            | 1,589.64            | 3.98            | 61.29       | -166.79               | -1.46                             | -46.99     | 148.43               | 85.90                 | 62.52   | 2.374             |                    |  |         |  |
| 1,700.00                  | 1,685.27            | 1,685.27            | 1,685.27            | 4.47            | 65.11       | -168.83               | -1.46                             | -46.99     | 177.06               | 111.28                | 65.78   | 2.692             |                    |  |         |  |
| 1,800.00                  | 1,779.82            | 1,779.82            | 1,779.82            | 5.01            | 68.89       | -170.45               | -1.46                             | -46.99     | 209.14               | 140.30                | 68.84   | 3.038             |                    |  |         |  |
| 1,900.00                  | 1,873.17            | 1,873.17            | 1,873.17            | 5.63            | 72.63       | -171.73               | -1.46                             | -46.99     | 244.60               | 172.89                | 71.71   | 3.411             |                    |  |         |  |

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





# Weatherford International Ltd.

## Anticollision Report



|                           |                                 |                                     |                                       |
|---------------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Company:</b>           | US ROCKIES REGION PLANNING      | <b>Local Co-ordinate Reference:</b> | Well P_VOGL 11-36                     |
| <b>Project:</b>           | KERR MCGEE OIL & GAS ONSHORE LP | <b>TVD Reference:</b>               | WELL @ 4832.00ft (Original Well Elev) |
| <b>Reference Site:</b>    | WELD_VOGL 4 PAD                 | <b>MD Reference:</b>                | WELL @ 4832.00ft (Original Well Elev) |
| <b>Site Error:</b>        | 0.00ft                          | <b>North Reference:</b>             | True                                  |
| <b>Reference Well:</b>    | P_VOGL 11-36                    | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Well Error:</b>        | 0.00ft                          | <b>Output errors are at</b>         | 2.00 sigma                            |
| <b>Reference Wellbore</b> | P_VOGL 11-36                    | <b>Database:</b>                    | EDM 2003.21 Single User Db            |
| <b>Reference Design:</b>  | PLAN #1 09-16-09 RHS            | <b>Offset TVD Reference:</b>        | Offset Datum                          |

| Offset Design WELD_VOGL 4 PAD - HSR-VOGL 13-36A - HSR-VOGL 13-36A EXISTING - HSR-VOGL 13-36A EXIS |                     |                     |                     |                |             |                       |                                   |            |                      |                       |                         | Offset Site Error: | 0.00 ft |
|---|---------------------|---------------------|---------------------|----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|--------------------|---------|
| Survey Program: 0-UNKNOWN   |                     |                     |                     |                |             |                       |                                   |            |                      |                       |                         | Offset Well Error: | 0.00 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) | Minimum Separation (ft) | Separation Factor  |         |
| 2,000.00  | 1,965.21            | 1,965.21            | 1,965.21            | 6.31           | 76.31       | -172.76               | -1.46                             | -46.99     | 283.37               | 209.02                | 74.36                   | 3.811              |         |
| 2,044.88  | 2,006.07            | 2,006.07            | 2,006.07            | 6.64           | 77.94       | -173.15               | -1.46                             | -46.99     | 301.83               | 226.36                | 75.47                   | 3.999              |         |
| 2,100.00  | 2,056.07            | 2,056.07            | 2,056.07            | 7.06           | 79.94       | -173.64               | -1.46                             | -46.99     | 324.91               | 247.46                | 77.45                   | 4.195              |         |
| 2,200.00  | 2,146.77            | 2,146.77            | 2,146.77            | 7.82           | 83.57       | -174.37               | -1.46                             | -46.99     | 366.82               | 285.78                | 81.04                   | 4.526              |         |
| 2,300.00  | 2,237.48            | 2,237.48            | 2,237.48            | 8.61           | 87.20       | -174.95               | -1.46                             | -46.99     | 408.77               | 324.12                | 84.65                   | 4.829              |         |
| 2,400.00  | 2,328.19            | 2,328.19            | 2,328.19            | 9.40           | 90.83       | -175.42               | -1.46                             | -46.99     | 450.75               | 362.48                | 88.26                   | 5.107              |         |
| 2,500.00  | 2,418.89            | 2,418.89            | 2,418.89            | 10.20          | 94.46       | -175.81               | -1.46                             | -46.99     | 492.74               | 400.86                | 91.89                   | 5.363              |         |
| 2,600.00  | 2,509.60            | 2,509.60            | 2,509.60            | 11.00          | 98.08       | -176.14               | -1.46                             | -46.99     | 534.76               | 439.24                | 95.51                   | 5.599              |         |
| 2,700.00  | 2,600.30            | 2,600.30            | 2,600.30            | 11.81          | 101.71      | -176.42               | -1.46                             | -46.99     | 576.79               | 477.64                | 99.15                   | 5.817              |         |
| 2,800.00  | 2,691.01            | 2,691.01            | 2,691.01            | 12.63          | 105.34      | -176.66               | -1.46                             | -46.99     | 618.82               | 516.04                | 102.78                  | 6.021              |         |
| 2,900.00  | 2,781.72            | 2,781.72            | 2,781.72            | 13.45          | 108.97      | -176.88               | -1.46                             | -46.99     | 660.87               | 554.44                | 106.42                  | 6.210              |         |
| 3,000.00  | 2,872.42            | 2,872.42            | 2,872.42            | 14.27          | 112.60      | -177.06               | -1.46                             | -46.99     | 702.92               | 592.85                | 110.06                  | 6.386              |         |
| 3,100.00  | 2,963.13            | 2,963.13            | 2,963.13            | 15.09          | 116.23      | -177.23               | -1.46                             | -46.99     | 744.97               | 631.27                | 113.71                  | 6.552              |         |
| 3,200.00  | 3,053.84            | 3,053.84            | 3,053.84            | 15.92          | 119.85      | -177.38               | -1.46                             | -46.99     | 787.04               | 669.68                | 117.35                  | 6.707              |         |
| 3,300.00  | 3,144.54            | 3,144.54            | 3,144.54            | 16.74          | 123.48      | -177.51               | -1.46                             | -46.99     | 829.10               | 708.10                | 121.00                  | 6.852              |         |
| 3,400.00  | 3,235.25            | 3,235.25            | 3,235.25            | 17.57          | 127.11      | -177.63               | -1.46                             | -46.99     | 871.17               | 746.52                | 124.65                  | 6.989              |         |
| 3,500.00  | 3,325.95            | 3,325.95            | 3,325.95            | 18.40          | 130.74      | -177.74               | -1.46                             | -46.99     | 913.24               | 784.94                | 128.30                  | 7.118              |         |
| 3,600.00  | 3,416.66            | 3,416.66            | 3,416.66            | 19.23          | 134.37      | -177.84               | -1.46                             | -46.99     | 955.32               | 823.36                | 131.95                  | 7.240              |         |
| 3,700.00  | 3,507.37            | 3,507.37            | 3,507.37            | 20.06          | 137.99      | -177.93               | -1.46                             | -46.99     | 997.39               | 861.79                | 135.60                  | 7.355              |         |
| 3,800.00  | 3,598.07            | 3,598.07            | 3,598.07            | 20.89          | 141.62      | -178.01               | -1.46                             | -46.99     | 1,039.47             | 900.21                | 139.26                  | 7.464              |         |
| 3,900.00  | 3,688.78            | 3,688.78            | 3,688.78            | 21.73          | 145.25      | -178.09               | -1.46                             | -46.99     | 1,081.55             | 938.64                | 142.91                  | 7.568              |         |
| 4,000.00  | 3,779.49            | 3,779.49            | 3,779.49            | 22.56          | 148.88      | -178.16               | -1.46                             | -46.99     | 1,123.63             | 977.06                | 146.57                  | 7.666              |         |
| 4,100.00  | 3,870.19            | 3,870.19            | 3,870.19            | 23.39          | 152.51      | -178.23               | -1.46                             | -46.99     | 1,165.71             | 1,015.49              | 150.22                  | 7.760              |         |
| 4,200.00  | 3,960.90            | 3,960.90            | 3,960.90            | 24.23          | 156.14      | -178.29               | -1.46                             | -46.99     | 1,207.80             | 1,053.92              | 153.88                  | 7.849              |         |
| 4,300.00  | 4,051.60            | 4,051.60            | 4,051.60            | 25.06          | 159.76      | -178.35               | -1.46                             | -46.99     | 1,249.88             | 1,092.35              | 157.53                  | 7.934              |         |
| 4,400.00  | 4,142.31            | 4,142.31            | 4,142.31            | 25.90          | 163.39      | -178.40               | -1.46                             | -46.99     | 1,291.97             | 1,130.78              | 161.19                  | 8.015              |         |
| 4,500.00  | 4,233.02            | 4,233.02            | 4,233.02            | 26.73          | 167.02      | -178.45               | -1.46                             | -46.99     | 1,334.05             | 1,169.20              | 164.85                  | 8.093              |         |
| 4,600.00  | 4,323.72            | 4,323.72            | 4,323.72            | 27.57          | 170.65      | -178.50               | -1.46                             | -46.99     | 1,376.14             | 1,207.63              | 168.51                  | 8.167              |         |
| 4,700.00  | 4,414.43            | 4,414.43            | 4,414.43            | 28.41          | 174.28      | -178.54               | -1.46                             | -46.99     | 1,418.23             | 1,246.06              | 172.17                  | 8.238              |         |
| 4,800.00  | 4,505.14            | 4,505.14            | 4,505.14            | 29.24          | 177.91      | -178.59               | -1.46                             | -46.99     | 1,460.32             | 1,284.49              | 175.82                  | 8.306              |         |
| 4,900.00  | 4,595.84            | 4,595.84            | 4,595.84            | 30.08          | 181.53      | -178.63               | -1.46                             | -46.99     | 1,502.41             | 1,322.92              | 179.48                  | 8.371              |         |
| 5,000.00  | 4,686.55            | 4,686.55            | 4,686.55            | 30.92          | 185.16      | -178.66               | -1.46                             | -46.99     | 1,544.50             | 1,361.35              | 183.14                  | 8.433              |         |
| 5,100.00  | 4,777.25            | 4,777.25            | 4,777.25            | 31.75          | 188.79      | -178.70               | -1.46                             | -46.99     | 1,586.59             | 1,399.79              | 186.80                  | 8.493              |         |
| 5,200.00  | 4,867.96            | 4,867.96            | 4,867.96            | 32.59          | 192.42      | -178.73               | -1.46                             | -46.99     | 1,628.68             | 1,438.22              | 190.46                  | 8.551              |         |
| 5,300.00  | 4,958.67            | 4,958.67            | 4,958.67            | 33.43          | 196.05      | -178.76               | -1.46                             | -46.99     | 1,670.77             | 1,476.65              | 194.12                  | 8.607              |         |
| 5,400.00  | 5,049.37            | 5,049.37            | 5,049.37            | 34.27          | 199.67      | -178.79               | -1.46                             | -46.99     | 1,712.86             | 1,515.08              | 197.78                  | 8.660              |         |
| 5,500.00  | 5,140.08            | 5,140.08            | 5,140.08            | 35.11          | 203.30      | -178.82               | -1.46                             | -46.99     | 1,754.95             | 1,553.51              | 201.44                  | 8.712              |         |
| 5,559.37  | 5,193.93            | 5,193.93            | 5,193.93            | 35.60          | 205.46      | -178.84               | -1.46                             | -46.99     | 1,779.95             | 1,576.33              | 203.62                  | 8.742              |         |
| 5,600.00  | 5,230.90            | 5,230.90            | 5,230.90            | 35.90          | 206.94      | -178.86               | -1.46                             | -46.99     | 1,796.78             | 1,590.51              | 206.27                  | 8.711              |         |
| 5,700.00  | 5,322.89            | 5,322.89            | 5,322.89            | 36.52          | 210.62      | -178.90               | -1.46                             | -46.99     | 1,835.99             | 1,623.15              | 212.83                  | 8.626              |         |
| 5,800.00  | 5,416.19            | 5,416.19            | 5,416.19            | 37.10          | 214.35      | -178.94               | -1.46                             | -46.99     | 1,871.95             | 1,652.67              | 219.28                  | 8.537              |         |
| 5,900.00  | 5,510.69            | 5,510.69            | 5,510.69            | 37.62          | 218.13      | -178.97               | -1.46                             | -46.99     | 1,904.64             | 1,679.06              | 225.59                  | 8.443              |         |
| 6,000.00  | 5,606.27            | 5,606.27            | 5,606.27            | 38.11          | 221.95      | -178.99               | -1.46                             | -46.99     | 1,934.02             | 1,702.29              | 231.72                  | 8.346              |         |
| 6,100.00  | 5,702.82            | 5,702.82            | 5,702.82            | 38.54          | 225.81      | -179.02               | -1.46                             | -46.99     | 1,960.04             | 1,722.37              | 237.67                  | 8.247              |         |
| 6,200.00  | 5,800.22            | 5,800.22            | 5,800.22            | 38.93          | 229.71      | -179.03               | -1.46                             | -46.99     | 1,982.67             | 1,739.26              | 243.41                  | 8.145              |         |
| 6,300.00  | 5,898.35            | 5,898.35            | 5,898.35            | 39.26          | 233.63      | -179.05               | -1.46                             | -46.99     | 2,001.90             | 1,752.97              | 248.93                  | 8.042              |         |
| 6,400.00  | 5,997.09            | 5,997.09            | 5,997.09            | 39.55          | 237.58      | -179.06               | -1.46                             | -46.99     | 2,017.68             | 1,763.49              | 254.20                  | 7.937              |         |
| 6,500.00  | 6,096.32            | 6,096.32            | 6,096.32            | 39.79          | 241.55      | -179.07               | -1.46                             | -46.99     | 2,030.02             | 1,770.82              | 259.20                  | 7.832              |         |
| 6,600.00  | 6,195.92            | 6,195.92            | 6,195.92            | 39.98          | 245.54      | -179.08               | -1.46                             | -46.99     | 2,038.88             | 1,774.97              | 263.91                  | 7.726              |         |
| 6,700.00  | 6,295.77            | 6,295.77            | 6,295.77            | 40.12          | 249.53      | -179.08               | -1.46                             | -46.99     | 2,044.26             | 1,775.95              | 268.31                  | 7.619              |         |
| 6,804.25  | 6,400.00            | 6,400.00            | 6,400.00            | 40.22          | 253.70      | -134.89               | -1.46                             | -46.99     | 2,046.15             | 1,773.60              | 272.55                  | 7.507              |         |
| 6,900.00  | 6,495.75            | 6,495.75            | 6,495.75            | 40.29          | 257.53      | -134.89               | -1.46                             | -46.99     | 2,046.15             | 1,769.64              | 276.51                  | 7.400              |         |

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



# Weatherford International Ltd.

## Anticollision Report



|                           |                                 |                                     |                                       |
|---------------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Company:</b>           | US ROCKIES REGION PLANNING      | <b>Local Co-ordinate Reference:</b> | Well P_VOGL 11-36                     |
| <b>Project:</b>           | KERR MCGEE OIL & GAS ONSHORE LP | <b>TVD Reference:</b>               | WELL @ 4832.00ft (Original Well Elev) |
| <b>Reference Site:</b>    | WELD_VOGL 4 PAD                 | <b>MD Reference:</b>                | WELL @ 4832.00ft (Original Well Elev) |
| <b>Site Error:</b>        | 0.00ft                          | <b>North Reference:</b>             | True                                  |
| <b>Reference Well:</b>    | P_VOGL 11-36                    | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Well Error:</b>        | 0.00ft                          | <b>Output errors are at</b>         | 2.00 sigma                            |
| <b>Reference Wellbore</b> | P_VOGL 11-36                    | <b>Database:</b>                    | EDM 2003.21 Single User Db            |
| <b>Reference Design:</b>  | PLAN #1 09-16-09 RHS            | <b>Offset TVD Reference:</b>        | Offset Datum                          |

| <b>Offset Design</b> WELD_VOGL 4 PAD - HSR-VOGL 13-36A - HSR-VOGL 13-36A EXISTING - HSR-VOGL 13-36A EXIS |                     |                     |                     |                 |             |                       |                                   |            |                      |                       |                         | <b>Offset Site Error:</b> | 0.00 ft |
|--|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|---------------------------|---------|
| Survey Program: 0-UNKNOWN  |                     |                     |                     |                 |             |                       |                                   |            |                      |                       |                         | <b>Offset Well Error:</b> | 0.00 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) | Minimum Separation (ft) | Separation Factor         | Warning |
| 7,000.00   | 6,595.75            | 6,595.75            | 6,595.75            | 40.36           | 261.53      | -134.89               | -1.46                             | -46.99     | 2,046.15             | 1,765.49              | 280.67                  | 7.290                     |         |
| 7,100.00   | 6,695.75            | 6,695.75            | 6,695.75            | 40.44           | 265.53      | -134.89               | -1.46                             | -46.99     | 2,046.15             | 1,761.34              | 284.82                  | 7.184                     |         |
| 7,200.00   | 6,795.75            | 6,795.75            | 6,795.75            | 40.51           | 269.53      | -134.89               | -1.46                             | -46.99     | 2,046.15             | 1,757.18              | 288.97                  | 7.081                     |         |
| 7,300.00   | 6,895.75            | 6,895.75            | 6,895.75            | 40.59           | 273.53      | -134.89               | -1.46                             | -46.99     | 2,046.15             | 1,753.03              | 293.13                  | 6.980                     |         |
| 7,400.00   | 6,995.75            | 6,995.75            | 6,995.75            | 40.67           | 277.53      | -134.89               | -1.46                             | -46.99     | 2,046.15             | 1,748.87              | 297.28                  | 6.883                     |         |
| 7,500.00   | 7,095.75            | 7,095.75            | 7,095.75            | 40.75           | 281.53      | -134.89               | -1.46                             | -46.99     | 2,046.15             | 1,744.71              | 301.44                  | 6.788                     |         |
| 7,600.00   | 7,195.75            | 7,195.75            | 7,195.75            | 40.83           | 285.53      | -134.89               | -1.46                             | -46.99     | 2,046.15             | 1,740.55              | 305.60                  | 6.696                     |         |
| 7,700.00   | 7,295.75            | 7,295.75            | 7,295.75            | 40.91           | 289.53      | -134.89               | -1.46                             | -46.99     | 2,046.15             | 1,736.39              | 309.76                  | 6.606                     |         |
| 7,800.00   | 7,395.75            | 7,395.75            | 7,395.75            | 41.00           | 293.53      | -134.89               | -1.46                             | -46.99     | 2,046.15             | 1,732.23              | 313.92                  | 6.518                     |         |
| 7,900.00   | 7,495.75            | 7,495.75            | 7,495.75            | 41.08           | 297.53      | -134.89               | -1.46                             | -46.99     | 2,046.15             | 1,728.07              | 318.08                  | 6.433                     |         |
| 8,000.00   | 7,595.75            | 7,595.75            | 7,595.75            | 41.17           | 301.53      | -134.89               | -1.46                             | -46.99     | 2,046.15             | 1,723.91              | 322.25                  | 6.350                     |         |
| 8,100.00   | 7,695.75            | 7,695.75            | 7,695.75            | 41.25           | 305.53      | -134.89               | -1.46                             | -46.99     | 2,046.15             | 1,719.74              | 326.41                  | 6.269                     |         |
| 8,200.00   | 7,795.75            | 7,795.75            | 7,795.75            | 41.34           | 309.53      | -134.89               | -1.46                             | -46.99     | 2,046.15             | 1,715.58              | 330.58                  | 6.190                     |         |
| 8,278.25   | 7,874.00            | 7,874.00            | 7,874.00            | 41.41           | 312.66      | -134.89               | -1.46                             | -46.99     | 2,046.15             | 1,712.32              | 333.84                  | 6.129                     |         |



# Weatherford International Ltd.

## Anticollision Report



|                           |                                 |                                     |                                       |
|---------------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Company:</b>           | US ROCKIES REGION PLANNING      | <b>Local Co-ordinate Reference:</b> | Well P_VOGL 11-36                     |
| <b>Project:</b>           | KERR MCGEE OIL & GAS ONSHORE LP | <b>TVD Reference:</b>               | WELL @ 4832.00ft (Original Well Elev) |
| <b>Reference Site:</b>    | WELD_VOGL 4 PAD                 | <b>MD Reference:</b>                | WELL @ 4832.00ft (Original Well Elev) |
| <b>Site Error:</b>        | 0.00ft                          | <b>North Reference:</b>             | True                                  |
| <b>Reference Well:</b>    | P_VOGL 11-36                    | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Well Error:</b>        | 0.00ft                          | <b>Output errors are at</b>         | 2.00 sigma                            |
| <b>Reference Wellbore</b> | P_VOGL 11-36                    | <b>Database:</b>                    | EDM 2003.21 Single User Db            |
| <b>Reference Design:</b>  | PLAN #1 09-16-09 RHS            | <b>Offset TVD Reference:</b>        | Offset Datum                          |

| Offset Design WELD_VOGL 4 PAD - P_VOGL 14-36 - P_VOGL 14-36 - PLAN #1 09-16-09 RHS |                     |                     |                     |                |             |  |                                      |            |                      |                       |                         | Offset Site Error: | 0.00 ft |
|--|---------------------|---------------------|---------------------|----------------|-------------|--|--------------------------------------|------------|----------------------|-----------------------|-------------------------|--------------------|---------|
| Survey Program: 0-MWMD   |                     |                     |                     |                |             |  |                                      |            |                      |                       |                         | Offset Well Error: | 0.00 ft |
| Measured Depth (ft)  | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Semi Major Axis<br>Highside Toolface (°) | Offset Wellbore Centre<br>+N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor  | Warning |
| 0.00   | 0.00                | 0.00                | 0.00                | 0.00           | 0.00        | -175.13                                  | -32.79                               | -2.79      | 32.91                |                       |                         |                    |         |
| 100.00   | 100.00              | 100.00              | 100.00              | 0.10           | 0.10        | -175.13                                  | -32.79                               | -2.79      | 32.91                | 32.72                 | 0.19                    | 172.271            |         |
| 200.00   | 200.00              | 200.00              | 200.00              | 0.32           | 0.32        | -175.13                                  | -32.79                               | -2.79      | 32.91                | 32.27                 | 0.64                    | 51.379             |         |
| 300.00   | 300.00              | 300.00              | 300.00              | 0.55           | 0.55        | -175.13                                  | -32.79                               | -2.79      | 32.91                | 31.82                 | 1.09                    | 30.192             |         |
| 400.00   | 400.00              | 400.00              | 400.00              | 0.77           | 0.77        | -175.13                                  | -32.79                               | -2.79      | 32.91                | 31.37                 | 1.54                    | 21.377             |         |
| 500.00   | 500.00              | 500.00              | 500.00              | 0.99           | 0.99        | -175.13                                  | -32.79                               | -2.79      | 32.91                | 30.92                 | 1.99                    | 16.546             |         |
| 600.00   | 600.00              | 600.00              | 600.00              | 1.22           | 1.22        | -175.13                                  | -32.79                               | -2.79      | 32.91                | 30.47                 | 2.44                    | 13.496             |         |
| 700.00   | 700.00              | 700.00              | 700.00              | 1.44           | 1.44        | -175.13                                  | -32.79                               | -2.79      | 32.91                | 30.02                 | 2.89                    | 11.395             |         |
| 800.00   | 800.00              | 800.00              | 800.00              | 1.67           | 1.67        | -175.13                                  | -32.79                               | -2.79      | 32.91                | 29.57                 | 3.34                    | 9.861 CC, ES       |         |
| 900.00   | 899.98              | 900.08              | 900.06              | 1.89           | 1.88        | -139.59                                  | -32.79                               | -1.05      | 34.12                | 30.34                 | 3.77                    | 9.048              |         |
| 1,000.00   | 999.84              | 1,000.06            | 999.89              | 2.11           | 2.09        | 136.77                                   | -32.77                               | 4.19       | 37.78                | 33.59                 | 4.20                    | 9.006 SF           |         |
| 1,100.00   | 1,099.45            | 1,099.81            | 1,099.26            | 2.34           | 2.31        | 133.11                                   | -32.75                               | 12.88      | 44.04                | 39.40                 | 4.64                    | 9.488              |         |
| 1,200.00   | 1,198.70            | 1,199.24            | 1,197.95            | 2.59           | 2.56        | 129.44                                   | -32.71                               | 24.98      | 53.00                | 47.87                 | 5.12                    | 10.342             |         |
| 1,300.00   | 1,297.47            | 1,298.23            | 1,295.73            | 2.87           | 2.84        | 126.20                                   | -32.67                               | 40.42      | 64.69                | 59.03                 | 5.66                    | 11.429             |         |
| 1,400.00   | 1,395.62            | 1,396.70            | 1,392.40            | 3.19           | 3.16        | 123.51                                   | -32.61                               | 59.12      | 79.09                | 72.83                 | 6.26                    | 12.629             |         |
| 1,500.00   | 1,493.06            | 1,494.55            | 1,487.76            | 3.56           | 3.53        | 121.33                                   | -32.55                               | 80.99      | 96.18                | 89.23                 | 6.95                    | 13.841             |         |
| 1,600.00   | 1,589.64            | 1,591.74            | 1,581.70            | 3.98           | 3.95        | 119.56                                   | -32.47                               | 105.91     | 115.89               | 108.17                | 7.73                    | 14.999             |         |
| 1,700.00   | 1,685.27            | 1,689.33            | 1,675.64            | 4.47           | 4.41        | 118.85                                   | -32.40                               | 132.35     | 137.69               | 129.10                | 8.59                    | 16.027             |         |
| 1,800.00   | 1,779.82            | 1,786.51            | 1,769.18            | 5.01           | 4.89        | 119.32                                   | -32.32                               | 158.67     | 161.15               | 151.64                | 9.52                    | 16.936             |         |
| 1,900.00   | 1,873.17            | 1,883.16            | 1,862.22            | 5.63           | 5.38        | 120.49                                   | -32.24                               | 184.86     | 186.35               | 175.86                | 10.49                   | 17.765             |         |
| 2,000.00   | 1,965.21            | 1,979.16            | 1,954.63            | 6.31           | 5.89        | 122.06                                   | -32.17                               | 210.87     | 213.45               | 201.95                | 11.50                   | 18.556             |         |
| 2,044.88   | 2,006.07            | 2,022.00            | 1,995.88            | 6.64           | 6.11        | 122.85                                   | -32.13                               | 222.47     | 226.28               | 214.31                | 11.97                   | 18.907             |         |
| 2,100.00   | 2,056.07            | 2,074.53            | 2,046.44            | 7.06           | 6.39        | 124.03                                   | -32.09                               | 236.70     | 242.34               | 229.78                | 12.56                   | 19.297             |         |
| 2,200.00   | 2,146.77            | 2,169.82            | 2,138.16            | 7.82           | 6.90        | 125.82                                   | -32.01                               | 262.52     | 271.68               | 258.05                | 13.64                   | 19.921             |         |
| 2,300.00   | 2,237.48            | 2,265.11            | 2,229.89            | 8.61           | 7.42        | 127.26                                   | -31.94                               | 288.33     | 301.22               | 286.50                | 14.73                   | 20.456             |         |
| 2,400.00   | 2,328.19            | 2,360.40            | 2,321.61            | 9.40           | 7.94        | 128.44                                   | -31.86                               | 314.14     | 330.90               | 315.08                | 15.82                   | 20.917             |         |
| 2,500.00   | 2,418.89            | 2,455.69            | 2,413.34            | 10.20          | 8.46        | 129.43                                   | -31.79                               | 339.96     | 360.69               | 343.77                | 16.92                   | 21.319             |         |
| 2,600.00   | 2,509.60            | 2,550.97            | 2,505.07            | 11.00          | 8.99        | 130.27                                   | -31.71                               | 365.77     | 390.57               | 372.54                | 18.02                   | 21.672             |         |
| 2,700.00   | 2,600.30            | 2,646.26            | 2,596.79            | 11.81          | 9.52        | 130.99                                   | -31.63                               | 391.59     | 420.51               | 401.38                | 19.13                   | 21.983             |         |
| 2,800.00   | 2,691.01            | 2,741.55            | 2,688.52            | 12.63          | 10.05       | 131.62                                   | -31.56                               | 417.40     | 450.50               | 430.26                | 20.24                   | 22.260             |         |
| 2,900.00   | 2,781.72            | 2,836.84            | 2,780.24            | 13.45          | 10.58       | 132.16                                   | -31.48                               | 443.22     | 480.53               | 459.18                | 21.35                   | 22.507             |         |
| 3,000.00   | 2,872.42            | 2,932.13            | 2,871.97            | 14.27          | 11.11       | 132.65                                   | -31.41                               | 469.03     | 510.60               | 488.14                | 22.46                   | 22.730             |         |
| 3,100.00   | 2,963.13            | 3,027.42            | 2,963.69            | 15.09          | 11.65       | 133.08                                   | -31.33                               | 494.84     | 540.70               | 517.12                | 23.58                   | 22.931             |         |
| 3,200.00   | 3,053.84            | 3,122.71            | 3,055.42            | 15.92          | 12.18       | 133.46                                   | -31.25                               | 520.66     | 570.82               | 546.13                | 24.70                   | 23.113             |         |
| 3,300.00   | 3,144.54            | 3,218.00            | 3,147.15            | 16.74          | 12.72       | 133.80                                   | -31.18                               | 546.47     | 600.97               | 575.15                | 25.82                   | 23.280             |         |
| 3,400.00   | 3,235.25            | 3,313.29            | 3,238.87            | 17.57          | 13.26       | 134.12                                   | -31.10                               | 572.29     | 631.13               | 604.20                | 26.93                   | 23.432             |         |
| 3,500.00   | 3,325.95            | 3,408.57            | 3,330.60            | 18.40          | 13.80       | 134.40                                   | -31.03                               | 598.10     | 661.31               | 633.25                | 28.06                   | 23.571             |         |
| 3,600.00   | 3,416.66            | 3,503.86            | 3,422.32            | 19.23          | 14.33       | 134.66                                   | -30.95                               | 623.92     | 691.50               | 662.32                | 29.18                   | 23.700             |         |
| 3,700.00   | 3,507.37            | 3,599.15            | 3,514.05            | 20.06          | 14.87       | 134.90                                   | -30.87                               | 649.73     | 721.70               | 691.40                | 30.30                   | 23.819             |         |
| 3,800.00   | 3,598.07            | 3,694.44            | 3,605.77            | 20.89          | 15.41       | 135.11                                   | -30.80                               | 675.54     | 751.92               | 720.49                | 31.42                   | 23.929             |         |
| 3,900.00   | 3,688.78            | 3,789.73            | 3,697.50            | 21.73          | 15.95       | 135.32                                   | -30.72                               | 701.36     | 782.14               | 749.59                | 32.55                   | 24.031             |         |
| 4,000.00   | 3,779.49            | 3,885.02            | 3,789.22            | 22.56          | 16.50       | 135.50                                   | -30.65                               | 727.17     | 812.37               | 778.70                | 33.67                   | 24.127             |         |
| 4,100.00   | 3,870.19            | 3,980.31            | 3,880.95            | 23.39          | 17.04       | 135.68                                   | -30.57                               | 752.99     | 842.61               | 807.81                | 34.80                   | 24.216             |         |
| 4,200.00   | 3,960.90            | 4,075.60            | 3,972.68            | 24.23          | 17.58       | 135.84                                   | -30.49                               | 778.80     | 872.85               | 836.93                | 35.92                   | 24.299             |         |
| 4,300.00   | 4,051.60            | 4,170.89            | 4,064.40            | 25.06          | 18.12       | 135.99                                   | -30.42                               | 804.62     | 903.10               | 866.06                | 37.05                   | 24.377             |         |
| 4,400.00   | 4,142.31            | 4,266.17            | 4,156.13            | 25.90          | 18.66       | 136.13                                   | -30.34                               | 830.43     | 933.36               | 895.19                | 38.17                   | 24.451             |         |
| 4,500.00   | 4,233.02            | 4,361.46            | 4,247.85            | 26.73          | 19.20       | 136.26                                   | -30.27                               | 856.24     | 963.62               | 924.32                | 39.30                   | 24.520             |         |
| 4,600.00   | 4,323.72            | 4,456.75            | 4,339.58            | 27.57          | 19.75       | 136.38                                   | -30.19                               | 882.06     | 993.88               | 953.46                | 40.43                   | 24.585             |         |
| 4,700.00   | 4,414.43            | 4,552.04            | 4,431.30            | 28.41          | 20.29       | 136.50                                   | -30.11                               | 907.87     | 1,024.15             | 982.60                | 41.55                   | 24.646             |         |
| 4,800.00   | 4,505.14            | 4,647.33            | 4,523.03            | 29.24          | 20.83       | 136.61                                   | -30.04                               | 933.69     | 1,054.43             | 1,011.74              | 42.68                   | 24.705             |         |
| 4,900.00   | 4,595.84            | 4,742.62            | 4,614.76            | 30.08          | 21.37       | 136.71                                   | -29.96                               | 959.50     | 1,084.70             | 1,040.89              | 43.81                   | 24.760             |         |
| 5,000.00   | 4,686.55            | 4,837.91            | 4,706.48            | 30.92          | 21.92       | 136.81                                   | -29.89                               | 985.32     | 1,114.98             | 1,070.04              | 44.94                   | 24.812             |         |

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



# Weatherford International Ltd.

## Anticollision Report



|                           |                                 |                                     |                                       |
|---------------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Company:</b>           | US ROCKIES REGION PLANNING      | <b>Local Co-ordinate Reference:</b> | Well P_VOGL 11-36                     |
| <b>Project:</b>           | KERR MCGEE OIL & GAS ONSHORE LP | <b>TVD Reference:</b>               | WELL @ 4832.00ft (Original Well Elev) |
| <b>Reference Site:</b>    | WELD_VOGL 4 PAD                 | <b>MD Reference:</b>                | WELL @ 4832.00ft (Original Well Elev) |
| <b>Site Error:</b>        | 0.00ft                          | <b>North Reference:</b>             | True                                  |
| <b>Reference Well:</b>    | P_VOGL 11-36                    | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Well Error:</b>        | 0.00ft                          | <b>Output errors are at</b>         | 2.00 sigma                            |
| <b>Reference Wellbore</b> | P_VOGL 11-36                    | <b>Database:</b>                    | EDM 2003.21 Single User Db            |
| <b>Reference Design:</b>  | PLAN #1 09-16-09 RHS            | <b>Offset TVD Reference:</b>        | Offset Datum                          |

| Offset Design WELD_VOGL 4 PAD - P_VOGL 14-36 - P_VOGL 14-36 - PLAN #1 09-16-09 RHS |                     |                     |                     |                |             |  |                                      |            |                      |                       |                         | Offset Site Error: | 0.00 ft |
|--|---------------------|---------------------|---------------------|----------------|-------------|--|--------------------------------------|------------|----------------------|-----------------------|-------------------------|--------------------|---------|
| Survey Program: 0-MWD  |                     |                     |                     |                |             |  |                                      |            |                      |                       |                         | Offset Well Error: | 0.00 ft |
| Measured Depth (ft)  | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Semi Major Axis<br>Highside Toolface (°) | Offset Wellbore Centre<br>+N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor  | Warning |
| 5,100.00   | 4,777.25            | 4,933.20            | 4,798.21            | 31.75          | 22.46       | 136.90                                   | -29.81                               | 1,011.13   | 1,145.26             | 1,099.20              | 46.07                   | 24.862             |         |
| 5,200.00   | 4,867.96            | 5,028.49            | 4,889.93            | 32.59          | 23.00       | 136.99                                   | -29.73                               | 1,036.94   | 1,175.55             | 1,128.35              | 47.19                   | 24.909             |         |
| 5,300.00   | 4,958.67            | 5,123.77            | 4,981.66            | 33.43          | 23.55       | 137.08                                   | -29.66                               | 1,062.76   | 1,205.83             | 1,157.51              | 48.32                   | 24.954             |         |
| 5,400.00   | 5,049.37            | 5,219.06            | 5,073.38            | 34.27          | 24.09       | 137.16                                   | -29.58                               | 1,088.57   | 1,236.12             | 1,186.67              | 49.45                   | 24.997             |         |
| 5,500.00   | 5,140.08            | 5,314.35            | 5,165.11            | 35.11          | 24.64       | 137.23                                   | -29.51                               | 1,114.39   | 1,266.41             | 1,215.83              | 50.58                   | 25.038             |         |
| 5,559.37   | 5,193.93            | 5,370.93            | 5,219.57            | 35.60          | 24.96       | 137.27                                   | -29.46                               | 1,129.71   | 1,284.40             | 1,233.15              | 51.25                   | 25.061             |         |
| 5,600.00   | 5,230.90            | 5,409.71            | 5,256.90            | 35.90          | 25.18       | 137.47                                   | -29.43                               | 1,140.22   | 1,296.50             | 1,244.80              | 51.71                   | 25.073             |         |
| 5,700.00   | 5,322.89            | 5,502.70            | 5,346.76            | 36.52          | 25.63       | 137.89                                   | -29.36                               | 1,164.14   | 1,324.67             | 1,272.01              | 52.66                   | 25.154             |         |
| 5,800.00   | 5,416.19            | 5,596.01            | 5,437.65            | 37.10          | 25.98       | 138.32                                   | -29.30                               | 1,185.21   | 1,350.57             | 1,297.10              | 53.47                   | 25.260             |         |
| 5,900.00   | 5,510.69            | 5,689.74            | 5,529.60            | 37.62          | 26.30       | 138.73                                   | -29.25                               | 1,203.38   | 1,374.19             | 1,320.01              | 54.18                   | 25.364             |         |
| 6,000.00   | 5,606.27            | 5,783.82            | 5,622.43            | 38.11          | 26.57       | 139.15                                   | -29.20                               | 1,218.59   | 1,395.51             | 1,340.71              | 54.80                   | 25.466             |         |
| 6,100.00   | 5,702.82            | 5,878.16            | 5,715.98            | 38.54          | 26.81       | 139.56                                   | -29.16                               | 1,230.77   | 1,414.50             | 1,359.18              | 55.32                   | 25.570             |         |
| 6,200.00   | 5,800.22            | 5,972.68            | 5,810.06            | 38.93          | 27.00       | 139.98                                   | -29.14                               | 1,239.88   | 1,431.17             | 1,375.42              | 55.74                   | 25.675             |         |
| 6,300.00   | 5,898.35            | 6,067.28            | 5,904.47            | 39.26          | 27.16       | 140.39                                   | -29.12                               | 1,245.88   | 1,445.49             | 1,389.43              | 56.06                   | 25.784             |         |
| 6,400.00   | 5,997.09            | 6,161.88            | 5,999.02            | 39.55          | 27.27       | 140.81                                   | -29.11                               | 1,248.76   | 1,457.47             | 1,401.19              | 56.28                   | 25.897             |         |
| 6,500.00   | 6,096.32            | 6,259.19            | 6,096.32            | 39.79          | 27.37       | 141.21                                   | -29.11                               | 1,249.04   | 1,467.06             | 1,410.64              | 56.42                   | 26.003             |         |
| 6,600.00   | 6,195.92            | 6,358.79            | 6,195.92            | 39.98          | 27.48       | 141.52                                   | -29.11                               | 1,249.04   | 1,473.99             | 1,417.46              | 56.54                   | 26.071             |         |
| 6,700.00   | 6,295.77            | 6,458.64            | 6,295.77            | 40.12          | 27.58       | 141.70                                   | -29.11                               | 1,249.04   | 1,478.21             | 1,421.57              | 56.65                   | 26.096             |         |
| 6,804.25   | 6,400.00            | 6,562.86            | 6,400.00            | 40.22          | 27.69       | -174.04                                  | -29.11                               | 1,249.04   | 1,479.70             | 1,422.96              | 56.74                   | 26.078             |         |
| 6,900.00   | 6,495.75            | 6,658.61            | 6,495.75            | 40.29          | 27.80       | -174.04                                  | -29.11                               | 1,249.04   | 1,479.70             | 1,422.77              | 56.94                   | 25.989             |         |
| 7,000.00   | 6,595.75            | 6,758.61            | 6,595.75            | 40.36          | 27.91       | -174.04                                  | -29.11                               | 1,249.04   | 1,479.70             | 1,422.55              | 57.15                   | 25.892             |         |
| 7,100.00   | 6,695.75            | 6,858.61            | 6,695.75            | 40.44          | 28.02       | -174.04                                  | -29.11                               | 1,249.04   | 1,479.70             | 1,422.34              | 57.37                   | 25.794             |         |
| 7,200.00   | 6,795.75            | 6,958.61            | 6,795.75            | 40.51          | 28.13       | -174.04                                  | -29.11                               | 1,249.04   | 1,479.70             | 1,422.12              | 57.59                   | 25.695             |         |
| 7,300.00   | 6,895.75            | 7,058.61            | 6,895.75            | 40.59          | 28.25       | -174.04                                  | -29.11                               | 1,249.04   | 1,479.70             | 1,421.90              | 57.81                   | 25.597             |         |
| 7,400.00   | 6,995.75            | 7,158.61            | 6,995.75            | 40.67          | 28.37       | -174.04                                  | -29.11                               | 1,249.04   | 1,479.70             | 1,421.67              | 58.03                   | 25.497             |         |
| 7,500.00   | 7,095.75            | 7,258.61            | 7,095.75            | 40.75          | 28.48       | -174.04                                  | -29.11                               | 1,249.04   | 1,479.70             | 1,421.44              | 58.26                   | 25.398             |         |
| 7,600.00   | 7,195.75            | 7,358.61            | 7,195.75            | 40.83          | 28.60       | -174.04                                  | -29.11                               | 1,249.04   | 1,479.70             | 1,421.21              | 58.49                   | 25.298             |         |
| 7,700.00   | 7,295.75            | 7,458.61            | 7,295.75            | 40.91          | 28.72       | -174.04                                  | -29.11                               | 1,249.04   | 1,479.70             | 1,420.98              | 58.72                   | 25.198             |         |
| 7,800.00   | 7,395.75            | 7,558.61            | 7,395.75            | 41.00          | 28.84       | -174.04                                  | -29.11                               | 1,249.04   | 1,479.70             | 1,420.75              | 58.96                   | 25.097             |         |
| 7,900.00   | 7,495.75            | 7,658.61            | 7,495.75            | 41.08          | 28.96       | -174.04                                  | -29.11                               | 1,249.04   | 1,479.70             | 1,420.51              | 59.20                   | 24.996             |         |
| 8,000.00   | 7,595.75            | 7,758.61            | 7,595.75            | 41.17          | 29.09       | -174.04                                  | -29.11                               | 1,249.04   | 1,479.70             | 1,420.27              | 59.44                   | 24.895             |         |
| 8,100.00   | 7,695.75            | 7,858.61            | 7,695.75            | 41.25          | 29.21       | -174.04                                  | -29.11                               | 1,249.04   | 1,479.70             | 1,420.03              | 59.68                   | 24.794             |         |
| 8,200.00   | 7,795.75            | 7,958.61            | 7,795.75            | 41.34          | 29.34       | -174.04                                  | -29.11                               | 1,249.04   | 1,479.70             | 1,419.78              | 59.92                   | 24.693             |         |
| 8,278.25   | 7,874.00            | 8,036.86            | 7,874.00            | 41.41          | 29.44       | -174.04                                  | -29.11                               | 1,249.04   | 1,479.70             | 1,419.59              | 60.12                   | 24.614             |         |



# Weatherford International Ltd.

## Anticollision Report



|                           |                                 |                                     |                                       |
|---------------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Company:</b>           | US ROCKIES REGION PLANNING      | <b>Local Co-ordinate Reference:</b> | Well P_VOGL 11-36                     |
| <b>Project:</b>           | KERR MCGEE OIL & GAS ONSHORE LP | <b>TVD Reference:</b>               | WELL @ 4832.00ft (Original Well Elev) |
| <b>Reference Site:</b>    | WELD_VOGL 4 PAD                 | <b>MD Reference:</b>                | WELL @ 4832.00ft (Original Well Elev) |
| <b>Site Error:</b>        | 0.00ft                          | <b>North Reference:</b>             | True                                  |
| <b>Reference Well:</b>    | P_VOGL 11-36                    | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Well Error:</b>        | 0.00ft                          | <b>Output errors are at</b>         | 2.00 sigma                            |
| <b>Reference Wellbore</b> | P_VOGL 11-36                    | <b>Database:</b>                    | EDM 2003.21 Single User Db            |
| <b>Reference Design:</b>  | PLAN #1 09-16-09 RHS            | <b>Offset TVD Reference:</b>        | Offset Datum                          |

| Offset Design WELD_VOGL 4 PAD - P_VOGL 23-36 - P_VOGL 23-36 - PLAN #1 09-16-09 RHS |                     |                     |                     |                 |             |                       |                                   |            |                      |                       |                         | Offset Site Error: | 0.00 ft |
|--|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|--------------------|---------|
| Survey Program: 0-MWD  |                     |                     |                     |                 |             |                       |                                   |            |                      |                       |                         | Offset Well Error: | 0.00 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) | Minimum Separation (ft) | Separation Factor  |         |
| 0.00   | 0.00                | 0.00                | 0.00                | 0.00            | 0.00        | -169.15               | -14.58                            | -2.79      | 14.84                |                       |                         |                    |         |
| 100.00   | 100.00              | 100.00              | 100.00              | 0.10            | 0.10        | -169.15               | -14.58                            | -2.79      | 14.84                | 14.65                 | 0.19                    | 77.702             |         |
| 200.00   | 200.00              | 200.00              | 200.00              | 0.32            | 0.32        | -169.15               | -14.58                            | -2.79      | 14.84                | 14.20                 | 0.64                    | 23.174             |         |
| 300.00   | 300.00              | 300.00              | 300.00              | 0.55            | 0.55        | -169.15               | -14.58                            | -2.79      | 14.84                | 13.75                 | 1.09                    | 13.618             |         |
| 400.00   | 400.00              | 400.00              | 400.00              | 0.77            | 0.77        | -169.15               | -14.58                            | -2.79      | 14.84                | 13.31                 | 1.54                    | 9.642              |         |
| 500.00   | 500.00              | 500.00              | 500.00              | 0.99            | 0.99        | -169.15               | -14.58                            | -2.79      | 14.84                | 12.86                 | 1.99                    | 7.463              |         |
| 600.00   | 600.00              | 600.00              | 600.00              | 1.22            | 1.22        | -169.15               | -14.58                            | -2.79      | 14.84                | 12.41                 | 2.44                    | 6.087              |         |
| 700.00   | 700.00              | 700.00              | 700.00              | 1.44            | 1.44        | -169.15               | -14.58                            | -2.79      | 14.84                | 11.96                 | 2.89                    | 5.140              |         |
| 800.00   | 800.00              | 800.00              | 800.00              | 1.67            | 1.67        | -169.15               | -14.58                            | -2.79      | 14.84                | 11.51                 | 3.34                    | 4.448 CC, ES       |         |
| 900.00   | 899.98              | 900.26              | 900.24              | 1.89            | 1.89        | -144.61               | -13.99                            | -1.14      | 15.42                | 11.65                 | 3.77                    | 4.085 SF           |         |
| 1,000.00   | 999.84              | 1,000.48            | 1,000.32            | 2.11            | 2.10        | 139.34                | -12.21                            | 3.80       | 17.25                | 13.04                 | 4.21                    | 4.100              |         |
| 1,100.00   | 1,099.45            | 1,100.63            | 1,100.07            | 2.34            | 2.33        | 132.72                | -9.25                             | 12.03      | 20.54                | 15.88                 | 4.66                    | 4.406              |         |
| 1,200.00   | 1,198.70            | 1,200.66            | 1,199.36            | 2.59            | 2.58        | 126.44                | -5.11                             | 23.53      | 25.44                | 20.29                 | 5.15                    | 4.936              |         |
| 1,300.00   | 1,297.47            | 1,300.55            | 1,298.00            | 2.87            | 2.86        | 121.26                | 0.18                              | 38.25      | 32.02                | 26.31                 | 5.71                    | 5.612              |         |
| 1,400.00   | 1,395.62            | 1,400.25            | 1,395.87            | 3.19            | 3.19        | 117.23                | 6.63                              | 56.16      | 40.26                | 33.92                 | 6.33                    | 6.355              |         |
| 1,500.00   | 1,493.06            | 1,499.74            | 1,492.81            | 3.56            | 3.56        | 114.16                | 14.20                             | 77.22      | 50.12                | 43.06                 | 7.06                    | 7.101              |         |
| 1,600.00   | 1,589.64            | 1,598.99            | 1,588.67            | 3.98            | 3.99        | 111.82                | 22.89                             | 101.37     | 61.56                | 53.67                 | 7.89                    | 7.805              |         |
| 1,700.00   | 1,685.27            | 1,697.95            | 1,683.32            | 4.47            | 4.48        | 109.99                | 32.66                             | 128.55     | 74.55                | 65.72                 | 8.83                    | 8.439              |         |
| 1,800.00   | 1,779.82            | 1,796.61            | 1,776.63            | 5.01            | 5.03        | 108.55                | 43.50                             | 158.69     | 89.06                | 79.16                 | 9.90                    | 8.992              |         |
| 1,900.00   | 1,873.17            | 1,894.93            | 1,868.47            | 5.63            | 5.66        | 107.37                | 55.38                             | 191.72     | 105.05               | 93.95                 | 11.10                   | 9.462              |         |
| 2,000.00   | 1,965.21            | 1,992.90            | 1,958.73            | 6.31            | 6.35        | 106.39                | 68.27                             | 227.55     | 122.48               | 110.06                | 12.43                   | 9.855              |         |
| 2,044.88   | 2,006.07            | 2,036.75            | 1,998.69            | 6.64            | 6.68        | 106.00                | 74.38                             | 244.53     | 130.77               | 117.71                | 13.06                   | 10.010             |         |
| 2,100.00   | 2,056.07            | 2,090.87            | 2,047.83            | 7.06            | 7.10        | 105.74                | 82.06                             | 265.87     | 141.13               | 127.26                | 13.88                   | 10.170             |         |
| 2,200.00   | 2,146.77            | 2,189.09            | 2,137.01            | 7.82            | 7.88        | 105.36                | 95.98                             | 304.60     | 159.94               | 144.56                | 15.38                   | 10.398             |         |
| 2,300.00   | 2,237.48            | 2,287.30            | 2,226.18            | 8.61            | 8.67        | 105.06                | 109.91                            | 343.32     | 178.74               | 161.83                | 16.91                   | 10.569             |         |
| 2,400.00   | 2,328.19            | 2,385.51            | 2,315.35            | 9.40            | 9.47        | 104.81                | 123.84                            | 382.05     | 197.56               | 179.09                | 18.46                   | 10.699             |         |
| 2,500.00   | 2,418.89            | 2,483.72            | 2,404.53            | 10.20           | 10.29       | 104.61                | 137.77                            | 420.77     | 216.37               | 196.34                | 20.03                   | 10.801             |         |
| 2,600.00   | 2,509.60            | 2,581.93            | 2,493.70            | 11.00           | 11.10       | 104.44                | 151.70                            | 459.50     | 235.19               | 213.58                | 21.61                   | 10.882             |         |
| 2,700.00   | 2,600.30            | 2,680.14            | 2,582.87            | 11.81           | 11.93       | 104.29                | 165.63                            | 498.22     | 254.01               | 230.80                | 23.20                   | 10.947             |         |
| 2,800.00   | 2,691.01            | 2,778.35            | 2,672.05            | 12.63           | 12.76       | 104.17                | 179.56                            | 536.95     | 272.83               | 248.03                | 24.80                   | 11.001             |         |
| 2,900.00   | 2,781.72            | 2,876.57            | 2,761.22            | 13.45           | 13.59       | 104.06                | 193.49                            | 575.67     | 291.65               | 265.24                | 26.40                   | 11.045             |         |
| 3,000.00   | 2,872.42            | 2,974.78            | 2,850.39            | 14.27           | 14.42       | 103.96                | 207.42                            | 614.40     | 310.47               | 282.46                | 28.01                   | 11.082             |         |
| 3,100.00   | 2,963.13            | 3,072.99            | 2,939.57            | 15.09           | 15.26       | 103.88                | 221.34                            | 653.12     | 329.29               | 299.66                | 29.63                   | 11.114             |         |
| 3,200.00   | 3,053.84            | 3,171.20            | 3,028.74            | 15.92           | 16.09       | 103.80                | 235.27                            | 691.85     | 348.12               | 316.87                | 31.25                   | 11.141             |         |
| 3,300.00   | 3,144.54            | 3,269.41            | 3,117.91            | 16.74           | 16.93       | 103.74                | 249.20                            | 730.57     | 366.94               | 334.07                | 32.87                   | 11.164             |         |
| 3,400.00   | 3,235.25            | 3,367.62            | 3,207.09            | 17.57           | 17.78       | 103.67                | 263.13                            | 769.30     | 385.76               | 351.27                | 34.49                   | 11.184             |         |
| 3,500.00   | 3,325.95            | 3,465.83            | 3,296.26            | 18.40           | 18.62       | 103.62                | 277.06                            | 808.02     | 404.59               | 368.47                | 36.12                   | 11.201             |         |
| 3,600.00   | 3,416.66            | 3,564.05            | 3,385.43            | 19.23           | 19.46       | 103.57                | 290.99                            | 846.74     | 423.41               | 385.66                | 37.75                   | 11.217             |         |
| 3,700.00   | 3,507.37            | 3,662.26            | 3,474.60            | 20.06           | 20.30       | 103.52                | 304.92                            | 885.47     | 442.24               | 402.86                | 39.38                   | 11.230             |         |
| 3,800.00   | 3,598.07            | 3,760.47            | 3,563.78            | 20.89           | 21.15       | 103.48                | 318.85                            | 924.19     | 461.06               | 420.05                | 41.01                   | 11.242             |         |
| 3,900.00   | 3,688.78            | 3,858.68            | 3,652.95            | 21.73           | 22.00       | 103.44                | 332.78                            | 962.92     | 479.89               | 437.24                | 42.65                   | 11.253             |         |
| 4,000.00   | 3,779.49            | 3,956.89            | 3,742.12            | 22.56           | 22.84       | 103.40                | 346.70                            | 1,001.64   | 498.72               | 454.43                | 44.28                   | 11.262             |         |
| 4,100.00   | 3,870.19            | 4,055.10            | 3,831.30            | 23.39           | 23.69       | 103.37                | 360.63                            | 1,040.37   | 517.54               | 471.62                | 45.92                   | 11.271             |         |
| 4,200.00   | 3,960.90            | 4,153.31            | 3,920.47            | 24.23           | 24.54       | 103.34                | 374.56                            | 1,079.09   | 536.37               | 488.81                | 47.55                   | 11.279             |         |
| 4,300.00   | 4,051.60            | 4,251.53            | 4,009.64            | 25.06           | 25.38       | 103.31                | 388.49                            | 1,117.82   | 555.20               | 506.00                | 49.19                   | 11.286             |         |
| 4,400.00   | 4,142.31            | 4,349.74            | 4,098.82            | 25.90           | 26.23       | 103.28                | 402.42                            | 1,156.54   | 574.02               | 523.19                | 50.83                   | 11.292             |         |
| 4,500.00   | 4,233.02            | 4,447.95            | 4,187.99            | 26.73           | 27.08       | 103.26                | 416.35                            | 1,195.27   | 592.85               | 540.38                | 52.47                   | 11.298             |         |
| 4,600.00   | 4,323.72            | 4,546.16            | 4,277.16            | 27.57           | 27.93       | 103.23                | 430.28                            | 1,233.99   | 611.68               | 557.56                | 54.11                   | 11.304             |         |
| 4,700.00   | 4,414.43            | 4,644.37            | 4,366.34            | 28.41           | 28.78       | 103.21                | 444.21                            | 1,272.72   | 630.50               | 574.75                | 55.75                   | 11.309             |         |
| 4,800.00   | 4,505.14            | 4,742.58            | 4,455.51            | 29.24           | 29.63       | 103.19                | 458.14                            | 1,311.44   | 649.33               | 591.93                | 57.40                   | 11.313             |         |
| 4,900.00   | 4,595.84            | 4,840.79            | 4,544.68            | 30.08           | 30.48       | 103.17                | 472.06                            | 1,350.17   | 668.16               | 609.12                | 59.04                   | 11.317             |         |
| 5,000.00   | 4,686.55            | 4,939.01            | 4,633.86            | 30.92           | 31.33       | 103.15                | 485.99                            | 1,388.89   | 686.98               | 626.30                | 60.68                   | 11.321             |         |

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



# Weatherford International Ltd.

## Anticollision Report



|                           |                                 |                                     |                                       |
|---------------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Company:</b>           | US ROCKIES REGION PLANNING      | <b>Local Co-ordinate Reference:</b> | Well P_VOGL 11-36                     |
| <b>Project:</b>           | KERR MCGEE OIL & GAS ONSHORE LP | <b>TVD Reference:</b>               | WELL @ 4832.00ft (Original Well Elev) |
| <b>Reference Site:</b>    | WELD_VOGL 4 PAD                 | <b>MD Reference:</b>                | WELL @ 4832.00ft (Original Well Elev) |
| <b>Site Error:</b>        | 0.00ft                          | <b>North Reference:</b>             | True                                  |
| <b>Reference Well:</b>    | P_VOGL 11-36                    | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Well Error:</b>        | 0.00ft                          | <b>Output errors are at</b>         | 2.00 sigma                            |
| <b>Reference Wellbore</b> | P_VOGL 11-36                    | <b>Database:</b>                    | EDM 2003.21 Single User Db            |
| <b>Reference Design:</b>  | PLAN #1 09-16-09 RHS            | <b>Offset TVD Reference:</b>        | Offset Datum                          |

| Offset Design WELD_VOGL 4 PAD - P_VOGL 23-36 - P_VOGL 23-36 - PLAN #1 09-16-09 RHS |                     |                     |                     |                |             |                       |                                   |            |                      |                       |                         | Offset Site Error: | 0.00 ft |
|--|---------------------|---------------------|---------------------|----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|--------------------|---------|
| Survey Program: 0-MWD  |                     |                     |                     |                |             |                       |                                   |            |                      |                       |                         | Offset Well Error: | 0.00 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) | Minimum Separation (ft) | Separation Factor  | Warning |
| 5,100.00   | 4,777.25            | 5,037.22            | 4,723.03            | 31.75          | 32.18       | 103.13                | 499.92                            | 1,427.62   | 705.81               | 643.49                | 62.32                   | 11.325             |         |
| 5,200.00   | 4,867.96            | 5,135.43            | 4,812.20            | 32.59          | 33.03       | 103.12                | 513.85                            | 1,466.34   | 724.64               | 660.67                | 63.97                   | 11.328             |         |
| 5,300.00   | 4,958.67            | 5,233.64            | 4,901.38            | 33.43          | 33.88       | 103.10                | 527.78                            | 1,505.07   | 743.47               | 677.85                | 65.61                   | 11.331             |         |
| 5,400.00   | 5,049.37            | 5,331.85            | 4,990.55            | 34.27          | 34.73       | 103.09                | 541.71                            | 1,543.79   | 762.29               | 695.04                | 67.26                   | 11.334             |         |
| 5,500.00   | 5,140.08            | 5,430.06            | 5,079.72            | 35.11          | 35.58       | 103.07                | 555.64                            | 1,582.52   | 781.12               | 712.22                | 68.90                   | 11.337             |         |
| 5,559.37   | 5,193.93            | 5,488.37            | 5,132.67            | 35.60          | 36.09       | 103.06                | 563.91                            | 1,605.51   | 792.30               | 722.42                | 69.88                   | 11.339             |         |
| 5,600.00   | 5,230.90            | 5,529.45            | 5,169.99            | 35.90          | 36.42       | 103.19                | 569.71                            | 1,621.63   | 799.87               | 729.36                | 70.51                   | 11.344             |         |
| 5,700.00   | 5,322.89            | 5,633.31            | 5,265.39            | 36.52          | 37.16       | 103.48                | 583.60                            | 1,660.26   | 817.51               | 745.63                | 71.88                   | 11.373             |         |
| 5,800.00   | 5,416.19            | 5,737.58            | 5,362.60            | 37.10          | 37.79       | 103.76                | 596.37                            | 1,695.75   | 833.69               | 760.59                | 73.10                   | 11.404             |         |
| 5,900.00   | 5,510.69            | 5,842.24            | 5,461.48            | 37.62          | 38.36       | 104.01                | 607.96                            | 1,728.00   | 848.38               | 774.15                | 74.22                   | 11.430             |         |
| 6,000.00   | 5,606.27            | 5,947.23            | 5,561.87            | 38.11          | 38.88       | 104.25                | 618.36                            | 1,756.91   | 861.55               | 786.31                | 75.24                   | 11.450             |         |
| 6,100.00   | 5,702.82            | 6,052.53            | 5,663.61            | 38.54          | 39.34       | 104.47                | 627.54                            | 1,782.41   | 873.19               | 797.03                | 76.15                   | 11.466             |         |
| 6,200.00   | 5,800.22            | 6,158.08            | 5,766.53            | 38.93          | 39.74       | 104.68                | 635.46                            | 1,804.43   | 883.27               | 806.31                | 76.96                   | 11.477             |         |
| 6,300.00   | 5,898.35            | 6,263.84            | 5,870.46            | 39.26          | 40.08       | 104.87                | 642.10                            | 1,822.90   | 891.79               | 814.13                | 77.65                   | 11.484             |         |
| 6,400.00   | 5,997.09            | 6,369.78            | 5,975.20            | 39.55          | 40.37       | 105.05                | 647.44                            | 1,837.76   | 898.72               | 820.48                | 78.24                   | 11.487             |         |
| 6,500.00   | 6,096.32            | 6,475.83            | 6,080.57            | 39.79          | 40.61       | 105.21                | 651.48                            | 1,848.98   | 904.06               | 825.35                | 78.72                   | 11.485             |         |
| 6,600.00   | 6,195.92            | 6,581.95            | 6,186.38            | 39.98          | 40.78       | 105.35                | 654.20                            | 1,856.53   | 907.81               | 828.72                | 79.09                   | 11.478             |         |
| 6,700.00   | 6,295.77            | 6,688.09            | 6,292.44            | 40.12          | 40.91       | 105.49                | 655.58                            | 1,860.39   | 909.95               | 830.60                | 79.35                   | 11.467             |         |
| 6,804.25   | 6,400.00            | 6,795.66            | 6,400.00            | 40.22          | 40.99       | 149.78                | 655.78                            | 1,860.93   | 910.56               | 831.03                | 79.53                   | 11.450             |         |
| 6,900.00   | 6,495.75            | 6,891.41            | 6,495.75            | 40.29          | 41.06       | 149.78                | 655.78                            | 1,860.93   | 910.56               | 830.89                | 79.67                   | 11.430             |         |
| 7,000.00   | 6,595.75            | 6,991.41            | 6,595.75            | 40.36          | 41.14       | 149.78                | 655.78                            | 1,860.93   | 910.56               | 830.74                | 79.82                   | 11.408             |         |
| 7,100.00   | 6,695.75            | 7,091.41            | 6,695.75            | 40.44          | 41.21       | 149.78                | 655.78                            | 1,860.93   | 910.56               | 830.58                | 79.97                   | 11.386             |         |
| 7,200.00   | 6,795.75            | 7,191.41            | 6,795.75            | 40.51          | 41.29       | 149.78                | 655.78                            | 1,860.93   | 910.56               | 830.43                | 80.13                   | 11.363             |         |
| 7,300.00   | 6,895.75            | 7,291.41            | 6,895.75            | 40.59          | 41.37       | 149.78                | 655.78                            | 1,860.93   | 910.56               | 830.27                | 80.29                   | 11.340             |         |
| 7,400.00   | 6,995.75            | 7,391.41            | 6,995.75            | 40.67          | 41.45       | 149.78                | 655.78                            | 1,860.93   | 910.56               | 830.10                | 80.46                   | 11.318             |         |
| 7,500.00   | 7,095.75            | 7,491.41            | 7,095.75            | 40.75          | 41.53       | 149.78                | 655.78                            | 1,860.93   | 910.56               | 829.94                | 80.62                   | 11.294             |         |
| 7,600.00   | 7,195.75            | 7,591.41            | 7,195.75            | 40.83          | 41.61       | 149.78                | 655.78                            | 1,860.93   | 910.56               | 829.77                | 80.79                   | 11.271             |         |
| 7,700.00   | 7,295.75            | 7,691.41            | 7,295.75            | 40.91          | 41.70       | 149.78                | 655.78                            | 1,860.93   | 910.56               | 829.60                | 80.96                   | 11.248             |         |
| 7,800.00   | 7,395.75            | 7,791.41            | 7,395.75            | 41.00          | 41.78       | 149.78                | 655.78                            | 1,860.93   | 910.56               | 829.43                | 81.13                   | 11.224             |         |
| 7,900.00   | 7,495.75            | 7,891.41            | 7,495.75            | 41.08          | 41.87       | 149.78                | 655.78                            | 1,860.93   | 910.56               | 829.26                | 81.30                   | 11.200             |         |
| 8,000.00   | 7,595.75            | 7,991.41            | 7,595.75            | 41.17          | 41.95       | 149.78                | 655.78                            | 1,860.93   | 910.56               | 829.08                | 81.48                   | 11.176             |         |
| 8,100.00   | 7,695.75            | 8,091.41            | 7,695.75            | 41.25          | 42.04       | 149.78                | 655.78                            | 1,860.93   | 910.56               | 828.91                | 81.65                   | 11.152             |         |
| 8,200.00   | 7,795.75            | 8,191.41            | 7,795.75            | 41.34          | 42.13       | 149.78                | 655.78                            | 1,860.93   | 910.56               | 828.73                | 81.83                   | 11.127             |         |
| 8,278.25   | 7,874.00            | 8,269.66            | 7,874.00            | 41.41          | 42.20       | 149.78                | 655.78                            | 1,860.93   | 910.56               | 828.58                | 81.97                   | 11.108             |         |





# Weatherford International Ltd.

## Anticollision Report



|                           |                                 |                                     |                                       |
|---------------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Company:</b>           | US ROCKIES REGION PLANNING      | <b>Local Co-ordinate Reference:</b> | Well P_VOGL 11-36                     |
| <b>Project:</b>           | KERR MCGEE OIL & GAS ONSHORE LP | <b>TVD Reference:</b>               | WELL @ 4832.00ft (Original Well Elev) |
| <b>Reference Site:</b>    | WELD_VOGL 4 PAD                 | <b>MD Reference:</b>                | WELL @ 4832.00ft (Original Well Elev) |
| <b>Site Error:</b>        | 0.00ft                          | <b>North Reference:</b>             | True                                  |
| <b>Reference Well:</b>    | P_VOGL 11-36                    | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Well Error:</b>        | 0.00ft                          | <b>Output errors are at</b>         | 2.00 sigma                            |
| <b>Reference Wellbore</b> | P_VOGL 11-36                    | <b>Database:</b>                    | EDM 2003.21 Single User Db            |
| <b>Reference Design:</b>  | PLAN #1 09-16-09 RHS            | <b>Offset TVD Reference:</b>        | Offset Datum                          |

| Offset Design WELD_VOGL 4 PAD - P_VOGL 35-36 - P_VOGL 35-36 - PLAN #1 09-10-09 RHS |                     |                     |                     |                |             |  |                                      |            |                      |                       |                         | Offset Site Error: | 0.00 ft |
|--|---------------------|---------------------|---------------------|----------------|-------------|--|--------------------------------------|------------|----------------------|-----------------------|-------------------------|--------------------|---------|
| Survey Program: 0-MWMD   |                     |                     |                     |                |             |  |                                      |            |                      |                       |                         | Offset Well Error: | 0.00 ft |
| Measured Depth (ft)  | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Semi Major Axis<br>Highside Toolface (°) | Offset Wellbore Centre<br>+N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Minimum Separation (ft) | Separation Factor  | Warning |
| 0.00   | 0.00                | 0.00                | 0.00                | 0.00           | 0.00        | -173.27                                  | -47.37                               | -5.59      | 47.70                |                       |                         |                    |         |
| 100.00   | 100.00              | 100.00              | 100.00              | 0.10           | 0.10        | -173.27                                  | -47.37                               | -5.59      | 47.70                | 47.51                 | 0.19                    | 249.659            |         |
| 200.00   | 200.00              | 200.00              | 200.00              | 0.32           | 0.32        | -173.27                                  | -47.37                               | -5.59      | 47.70                | 47.06                 | 0.64                    | 74.460             |         |
| 300.00   | 300.00              | 300.00              | 300.00              | 0.55           | 0.55        | -173.27                                  | -47.37                               | -5.59      | 47.70                | 46.61                 | 1.09                    | 43.755             |         |
| 400.00   | 400.00              | 400.00              | 400.00              | 0.77           | 0.77        | -173.27                                  | -47.37                               | -5.59      | 47.70                | 46.16                 | 1.54                    | 30.980             |         |
| 500.00   | 500.00              | 500.00              | 500.00              | 0.99           | 0.99        | -173.27                                  | -47.37                               | -5.59      | 47.70                | 45.71                 | 1.99                    | 23.979             |         |
| 600.00   | 600.00              | 600.00              | 600.00              | 1.22           | 1.22        | -173.27                                  | -47.37                               | -5.59      | 47.70                | 45.26                 | 2.44                    | 19.559             |         |
| 700.00   | 700.00              | 700.00              | 700.00              | 1.44           | 1.44        | -173.27                                  | -47.37                               | -5.59      | 47.70                | 44.81                 | 2.89                    | 16.514             |         |
| 800.00   | 800.00              | 800.00              | 800.00              | 1.67           | 1.67        | -173.27                                  | -47.37                               | -5.59      | 47.70                | 44.36                 | 3.34                    | 14.290 CC, ES      |         |
| 900.00   | 899.98              | 898.91              | 898.89              | 1.89           | 1.87        | 142.18                                   | -48.58                               | -4.39      | 50.16                | 46.40                 | 3.76                    | 13.350 SF          |         |
| 1,000.00   | 999.84              | 997.47              | 997.31              | 2.11           | 2.05        | 141.28                                   | -52.20                               | -0.80      | 57.54                | 53.38                 | 4.16                    | 13.835             |         |
| 1,100.00   | 1,099.45            | 1,095.30            | 1,094.78            | 2.34           | 2.26        | 140.18                                   | -58.16                               | 5.12       | 69.82                | 65.24                 | 4.58                    | 15.257             |         |
| 1,200.00   | 1,198.70            | 1,192.08            | 1,190.85            | 2.59           | 2.48        | 139.13                                   | -66.39                               | 13.28      | 86.95                | 81.93                 | 5.02                    | 17.336             |         |
| 1,300.00   | 1,297.47            | 1,287.47            | 1,285.12            | 2.87           | 2.74        | 138.21                                   | -76.74                               | 23.55      | 108.86               | 103.37                | 5.48                    | 19.849             |         |
| 1,400.00   | 1,395.62            | 1,381.18            | 1,377.20            | 3.19           | 3.04        | 137.41                                   | -89.07                               | 35.79      | 135.45               | 129.46                | 5.99                    | 22.610             |         |
| 1,500.00   | 1,493.06            | 1,472.93            | 1,466.76            | 3.56           | 3.37        | 136.71                                   | -103.22                              | 49.82      | 166.59               | 160.05                | 6.54                    | 25.473             |         |
| 1,600.00   | 1,589.64            | 1,562.48            | 1,553.51            | 3.98           | 3.75        | 136.08                                   | -118.97                              | 65.46      | 202.15               | 195.02                | 7.14                    | 28.326             |         |
| 1,700.00   | 1,685.27            | 1,652.75            | 1,640.38            | 4.47           | 4.17        | 135.59                                   | -136.40                              | 82.75      | 241.61               | 233.82                | 7.79                    | 31.015             |         |
| 1,800.00   | 1,779.82            | 1,743.52            | 1,727.68            | 5.01           | 4.62        | 135.53                                   | -154.05                              | 100.26     | 283.49               | 275.00                | 8.49                    | 33.387             |         |
| 1,900.00   | 1,873.17            | 1,833.13            | 1,813.86            | 5.63           | 5.08        | 135.75                                   | -171.47                              | 117.55     | 327.66               | 318.43                | 9.23                    | 35.506             |         |
| 2,000.00   | 1,965.21            | 1,921.46            | 1,898.81            | 6.31           | 5.54        | 136.12                                   | -188.65                              | 134.59     | 374.14               | 364.14                | 10.00                   | 37.420             |         |
| 2,044.88   | 2,006.07            | 1,960.66            | 1,936.51            | 6.64           | 5.75        | 136.32                                   | -196.27                              | 142.15     | 395.75               | 385.40                | 10.35                   | 38.222             |         |
| 2,100.00   | 2,056.07            | 2,008.63            | 1,982.65            | 7.06           | 6.01        | 136.95                                   | -205.60                              | 151.41     | 422.61               | 411.79                | 10.83                   | 39.027             |         |
| 2,200.00   | 2,146.77            | 2,095.66            | 2,066.35            | 7.82           | 6.48        | 137.91                                   | -222.52                              | 168.19     | 471.43               | 459.72                | 11.70                   | 40.281             |         |
| 2,300.00   | 2,237.48            | 2,182.69            | 2,150.05            | 8.61           | 6.96        | 138.69                                   | -239.44                              | 184.98     | 520.32               | 507.73                | 12.59                   | 41.322             |         |
| 2,400.00   | 2,328.19            | 2,269.72            | 2,233.76            | 9.40           | 7.44        | 139.34                                   | -256.37                              | 201.77     | 569.28               | 555.79                | 13.49                   | 42.199             |         |
| 2,500.00   | 2,418.89            | 2,356.75            | 2,317.46            | 10.20          | 7.92        | 139.89                                   | -273.29                              | 218.56     | 618.29               | 603.89                | 14.40                   | 42.946             |         |
| 2,600.00   | 2,509.60            | 2,443.78            | 2,401.16            | 11.00          | 8.41        | 140.35                                   | -290.21                              | 235.35     | 667.33               | 652.02                | 15.31                   | 43.587             |         |
| 2,700.00   | 2,600.30            | 2,530.81            | 2,484.86            | 11.81          | 8.90        | 140.75                                   | -307.13                              | 252.14     | 716.40               | 700.17                | 16.23                   | 44.143             |         |
| 2,800.00   | 2,691.01            | 2,617.84            | 2,568.56            | 12.63          | 9.39        | 141.10                                   | -324.05                              | 268.93     | 765.49               | 748.34                | 17.15                   | 44.629             |         |
| 2,900.00   | 2,781.72            | 2,704.87            | 2,652.27            | 13.45          | 9.88        | 141.41                                   | -340.98                              | 285.52     | 814.60               | 796.52                | 18.08                   | 45.056             |         |
| 3,000.00   | 2,872.42            | 2,791.90            | 2,735.97            | 14.27          | 10.38       | 141.69                                   | -357.90                              | 302.51     | 863.73               | 844.72                | 19.01                   | 45.435             |         |
| 3,100.00   | 2,963.13            | 2,878.94            | 2,819.67            | 15.09          | 10.87       | 141.93                                   | -374.82                              | 319.30     | 912.87               | 892.93                | 19.94                   | 45.772             |         |
| 3,200.00   | 3,053.84            | 2,965.97            | 2,903.37            | 15.92          | 11.37       | 142.15                                   | -391.74                              | 336.09     | 962.02               | 941.14                | 20.88                   | 46.074             |         |
| 3,300.00   | 3,144.54            | 3,053.00            | 2,987.07            | 16.74          | 11.87       | 142.35                                   | -408.66                              | 352.88     | 1,011.19             | 989.37                | 21.82                   | 46.347             |         |
| 3,400.00   | 3,235.25            | 3,140.03            | 3,070.77            | 17.57          | 12.37       | 142.53                                   | -425.58                              | 369.67     | 1,060.36             | 1,037.60              | 22.76                   | 46.594             |         |
| 3,500.00   | 3,325.95            | 3,227.06            | 3,154.48            | 18.40          | 12.87       | 142.69                                   | -442.51                              | 386.46     | 1,109.53             | 1,085.83              | 23.70                   | 46.818             |         |
| 3,600.00   | 3,416.66            | 3,314.09            | 3,238.18            | 19.23          | 13.37       | 142.84                                   | -459.43                              | 403.25     | 1,158.72             | 1,134.08              | 24.64                   | 47.023             |         |
| 3,700.00   | 3,507.37            | 3,401.12            | 3,321.88            | 20.06          | 13.87       | 142.98                                   | -476.35                              | 420.04     | 1,207.91             | 1,182.32              | 25.59                   | 47.210             |         |
| 3,800.00   | 3,598.07            | 3,488.15            | 3,405.58            | 20.89          | 14.37       | 143.10                                   | -493.27                              | 436.83     | 1,257.10             | 1,230.57              | 26.53                   | 47.382             |         |
| 3,900.00   | 3,688.78            | 3,575.18            | 3,489.28            | 21.73          | 14.87       | 143.22                                   | -510.19                              | 453.62     | 1,306.30             | 1,278.82              | 27.48                   | 47.541             |         |
| 4,000.00   | 3,779.49            | 3,662.21            | 3,572.99            | 22.56          | 15.38       | 143.33                                   | -527.12                              | 470.41     | 1,355.50             | 1,327.08              | 28.42                   | 47.688             |         |
| 4,100.00   | 3,870.19            | 3,749.24            | 3,656.69            | 23.39          | 15.88       | 143.43                                   | -544.04                              | 487.20     | 1,404.71             | 1,375.34              | 29.37                   | 47.824             |         |
| 4,200.00   | 3,960.90            | 3,836.27            | 3,740.39            | 24.23          | 16.38       | 143.53                                   | -560.96                              | 503.99     | 1,453.92             | 1,423.60              | 30.32                   | 47.950             |         |
| 4,300.00   | 4,051.60            | 3,923.30            | 3,824.09            | 25.06          | 16.89       | 143.61                                   | -577.88                              | 520.78     | 1,503.13             | 1,471.86              | 31.27                   | 48.068             |         |
| 4,400.00   | 4,142.31            | 4,047.25            | 3,943.99            | 25.90          | 17.44       | 143.82                                   | -600.15                              | 542.87     | 1,551.31             | 1,519.05              | 32.26                   | 48.091             |         |
| 4,500.00   | 4,233.02            | 4,174.01            | 4,067.91            | 26.73          | 17.89       | 144.21                                   | -619.10                              | 561.67     | 1,597.39             | 1,564.24              | 33.15                   | 48.183             |         |
| 4,600.00   | 4,323.72            | 4,303.06            | 4,195.14            | 27.57          | 18.28       | 144.75                                   | -634.37                              | 576.82     | 1,641.33             | 1,607.36              | 33.98                   | 48.304             |         |
| 4,700.00   | 4,414.43            | 4,433.94            | 4,325.04            | 28.41          | 18.60       | 145.45                                   | -645.69                              | 588.05     | 1,683.15             | 1,648.43              | 34.72                   | 48.475             |         |
| 4,800.00   | 4,505.14            | 4,566.12            | 4,456.82            | 29.24          | 18.85       | 146.29                                   | -652.83                              | 595.14     | 1,722.87             | 1,687.49              | 35.38                   | 48.692             |         |
| 4,900.00   | 4,595.84            | 4,699.06            | 4,589.69            | 30.08          | 19.03       | 147.26                                   | -655.66                              | 597.94     | 1,760.56             | 1,724.61              | 35.96                   | 48.964             |         |
| 5,000.00   | 4,686.55            | 4,795.92            | 4,686.55            | 30.92          | 19.13       | 148.01                                   | -655.70                              | 597.99     | 1,797.09             | 1,760.61              | 36.48                   | 49.262             |         |

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



# Weatherford International Ltd.

## Anticollision Report



|                           |                                 |                                     |                                       |
|---------------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Company:</b>           | US ROCKIES REGION PLANNING      | <b>Local Co-ordinate Reference:</b> | Well P_VOGL 11-36                     |
| <b>Project:</b>           | KERR MCGEE OIL & GAS ONSHORE LP | <b>TVD Reference:</b>               | WELL @ 4832.00ft (Original Well Elev) |
| <b>Reference Site:</b>    | WELD_VOGL 4 PAD                 | <b>MD Reference:</b>                | WELL @ 4832.00ft (Original Well Elev) |
| <b>Site Error:</b>        | 0.00ft                          | <b>North Reference:</b>             | True                                  |
| <b>Reference Well:</b>    | P_VOGL 11-36                    | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Well Error:</b>        | 0.00ft                          | <b>Output errors are at</b>         | 2.00 sigma                            |
| <b>Reference Wellbore</b> | P_VOGL 11-36                    | <b>Database:</b>                    | EDM 2003.21 Single User Db            |
| <b>Reference Design:</b>  | PLAN #1 09-16-09 RHS            | <b>Offset TVD Reference:</b>        | Offset Datum                          |

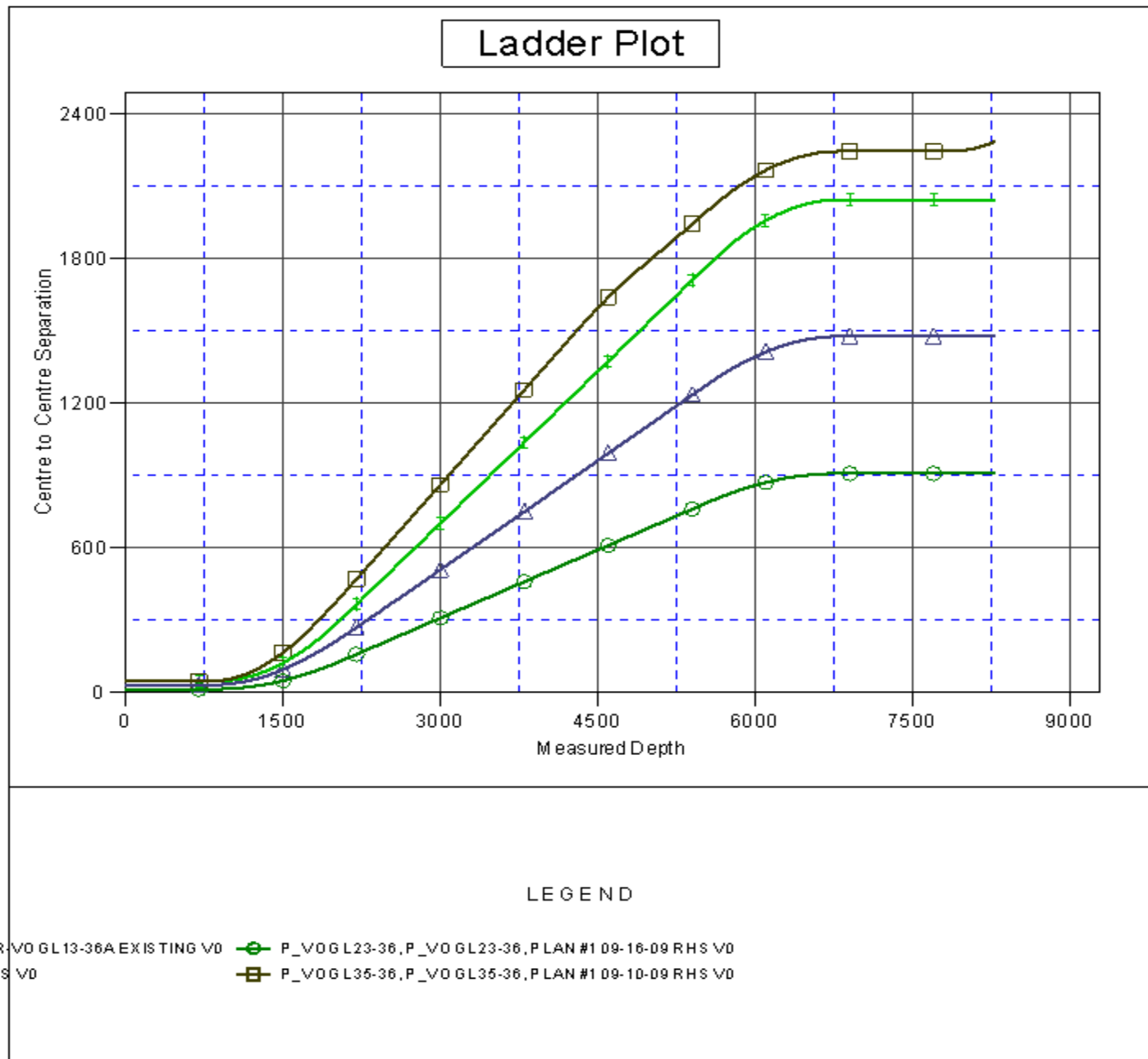
| Offset Design WELD_VOGL 4 PAD - P_VOGL 35-36 - P_VOGL 35-36 - PLAN #1 09-10-09 RHS |                     |                     |                     |                |             |                       |                                   |            |                      |                       |                         | Offset Site Error: | 0.00 ft |
|--|---------------------|---------------------|---------------------|----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|--------------------|---------|
| Survey Program: 0-MWD  |                     |                     |                     |                |             |                       |                                   |            |                      |                       |                         | Offset Well Error: | 0.00 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) | Minimum Separation (ft) | Separation Factor  | Warning |
| 5,100.00   | 4,777.25            | 4,886.63            | 4,777.25            | 31.75          | 19.22       | 148.69                | -655.70                           | 597.99     | 1,833.84             | 1,796.84              | 37.00                   | 49.562             |         |
| 5,200.00   | 4,867.96            | 4,977.33            | 4,867.96            | 32.59          | 19.32       | 149.35                | -655.70                           | 597.99     | 1,870.81             | 1,833.30              | 37.52                   | 49.867             |         |
| 5,300.00   | 4,958.67            | 5,068.04            | 4,958.67            | 33.43          | 19.42       | 149.98                | -655.70                           | 597.99     | 1,908.00             | 1,869.97              | 38.03                   | 50.177             |         |
| 5,400.00   | 5,049.37            | 5,158.75            | 5,049.37            | 34.27          | 19.52       | 150.58                | -655.70                           | 597.99     | 1,945.38             | 1,906.85              | 38.53                   | 50.489             |         |
| 5,500.00   | 5,140.08            | 5,249.45            | 5,140.08            | 35.11          | 19.62       | 151.17                | -655.70                           | 597.99     | 1,982.96             | 1,943.92              | 39.03                   | 50.803             |         |
| 5,559.37   | 5,193.93            | 5,303.31            | 5,193.93            | 35.60          | 19.68       | 151.51                | -655.70                           | 597.99     | 2,005.35             | 1,966.02              | 39.33                   | 50.990             |         |
| 5,600.00   | 5,230.90            | 5,340.28            | 5,230.90            | 35.90          | 19.72       | 151.88                | -655.70                           | 597.99     | 2,020.47             | 1,980.89              | 39.58                   | 51.042             |         |
| 5,700.00   | 5,322.89            | 5,432.27            | 5,322.89            | 36.52          | 19.83       | 152.74                | -655.70                           | 597.99     | 2,055.78             | 2,015.64              | 40.15                   | 51.207             |         |
| 5,800.00   | 5,416.19            | 5,525.57            | 5,416.19            | 37.10          | 19.94       | 153.49                | -655.70                           | 597.99     | 2,088.30             | 2,047.63              | 40.68                   | 51.337             |         |
| 5,900.00   | 5,510.69            | 5,620.06            | 5,510.69            | 37.62          | 20.05       | 154.16                | -655.70                           | 597.99     | 2,117.96             | 2,076.78              | 41.18                   | 51.436             |         |
| 6,000.00   | 5,606.27            | 5,715.65            | 5,606.27            | 38.11          | 20.17       | 154.73                | -655.70                           | 597.99     | 2,144.68             | 2,103.04              | 41.64                   | 51.507             |         |
| 6,100.00   | 5,702.82            | 5,812.20            | 5,702.82            | 38.54          | 20.29       | 155.23                | -655.70                           | 597.99     | 2,168.41             | 2,126.34              | 42.06                   | 51.552             |         |
| 6,200.00   | 5,800.22            | 5,909.59            | 5,800.22            | 38.93          | 20.41       | 155.65                | -655.70                           | 597.99     | 2,189.09             | 2,146.64              | 42.45                   | 51.574             |         |
| 6,300.00   | 5,898.35            | 6,007.72            | 5,898.35            | 39.26          | 20.53       | 156.00                | -655.70                           | 597.99     | 2,206.68             | 2,163.90              | 42.79                   | 51.573             |         |
| 6,400.00   | 5,997.09            | 6,106.46            | 5,997.09            | 39.55          | 20.66       | 156.29                | -655.70                           | 597.99     | 2,221.15             | 2,178.07              | 43.09                   | 51.551             |         |
| 6,500.00   | 6,096.32            | 6,205.70            | 6,096.32            | 39.79          | 20.78       | 156.50                | -655.70                           | 597.99     | 2,232.47             | 2,189.13              | 43.34                   | 51.508             |         |
| 6,600.00   | 6,195.92            | 6,305.30            | 6,195.92            | 39.98          | 20.91       | 156.66                | -655.70                           | 597.99     | 2,240.61             | 2,197.05              | 43.55                   | 51.445             |         |
| 6,700.00   | 6,295.77            | 6,405.15            | 6,295.77            | 40.12          | 21.05       | 156.75                | -655.70                           | 597.99     | 2,245.55             | 2,201.83              | 43.72                   | 51.361             |         |
| 6,804.25   | 6,400.00            | 6,509.37            | 6,400.00            | 40.22          | 21.19       | -159.02               | -655.70                           | 597.99     | 2,247.29             | 2,203.44              | 43.85                   | 51.250             |         |
| 6,900.00   | 6,495.75            | 6,605.12            | 6,495.75            | 40.29          | 21.32       | -159.02               | -655.70                           | 597.99     | 2,247.29             | 2,203.20              | 44.09                   | 50.966             |         |
| 7,000.00   | 6,595.75            | 6,705.12            | 6,595.75            | 40.36          | 21.45       | -159.02               | -655.70                           | 597.99     | 2,247.29             | 2,202.93              | 44.36                   | 50.656             |         |
| 7,100.00   | 6,695.75            | 6,805.12            | 6,695.75            | 40.44          | 21.59       | -159.02               | -655.70                           | 597.99     | 2,247.29             | 2,202.66              | 44.64                   | 50.347             |         |
| 7,200.00   | 6,795.75            | 6,905.12            | 6,795.75            | 40.51          | 21.73       | -159.02               | -655.70                           | 597.99     | 2,247.29             | 2,202.38              | 44.91                   | 50.038             |         |
| 7,300.00   | 6,895.75            | 7,005.12            | 6,895.75            | 40.59          | 21.87       | -159.02               | -655.70                           | 597.99     | 2,247.29             | 2,202.10              | 45.19                   | 49.730             |         |
| 7,400.00   | 6,995.75            | 7,105.12            | 6,995.75            | 40.67          | 22.02       | -159.02               | -655.70                           | 597.99     | 2,247.29             | 2,201.82              | 45.47                   | 49.423             |         |
| 7,500.00   | 7,095.75            | 7,205.12            | 7,095.75            | 40.75          | 22.16       | -159.02               | -655.70                           | 597.99     | 2,247.29             | 2,201.54              | 45.75                   | 49.117             |         |
| 7,600.00   | 7,195.75            | 7,305.12            | 7,195.75            | 40.83          | 22.30       | -159.02               | -655.70                           | 597.99     | 2,247.29             | 2,201.25              | 46.04                   | 48.812             |         |
| 7,700.00   | 7,295.75            | 7,405.12            | 7,295.75            | 40.91          | 22.45       | -159.02               | -655.70                           | 597.99     | 2,247.29             | 2,200.96              | 46.33                   | 48.508             |         |
| 7,800.00   | 7,395.75            | 7,505.12            | 7,395.75            | 41.00          | 22.60       | -159.02               | -655.70                           | 597.99     | 2,247.29             | 2,200.67              | 46.62                   | 48.205             |         |
| 7,837.40   | 7,433.15            | 7,542.52            | 7,433.15            | 41.03          | 22.65       | -159.02               | -655.70                           | 597.99     | 2,247.29             | 2,200.56              | 46.73                   | 48.092             |         |
| 7,900.00   | 7,495.75            | 7,558.37            | 7,449.00            | 41.08          | 22.68       | -159.02               | -655.70                           | 597.99     | 2,247.78             | 2,200.94              | 46.84                   | 47.988             |         |
| 8,000.00   | 7,595.75            | 7,558.37            | 7,449.00            | 41.17          | 22.68       | -159.02               | -655.70                           | 597.99     | 2,252.08             | 2,205.10              | 46.98                   | 47.939             |         |
| 8,100.00   | 7,695.75            | 7,558.37            | 7,449.00            | 41.25          | 22.68       | -159.02               | -655.70                           | 597.99     | 2,260.80             | 2,213.68              | 47.12                   | 47.982             |         |
| 8,200.00   | 7,795.75            | 7,558.37            | 7,449.00            | 41.34          | 22.68       | -159.02               | -655.70                           | 597.99     | 2,273.89             | 2,226.63              | 47.26                   | 48.116             |         |
| 8,278.25   | 7,874.00            | 7,558.37            | 7,449.00            | 41.41          | 22.68       | -159.02               | -655.70                           | 597.99     | 2,287.13             | 2,239.76              | 47.37                   | 48.282             |         |





|                           |                                 |                                     |                                       |
|---------------------------|---------------------------------|-------------------------------------|---------------------------------------|
| <b>Company:</b>           | US ROCKIES REGION PLANNING      | <b>Local Co-ordinate Reference:</b> | Well P_VOGL 11-36                     |
| <b>Project:</b>           | KERR MCGEE OIL & GAS ONSHORE LP | <b>TVD Reference:</b>               | WELL @ 4832.00ft (Original Well Elev) |
| <b>Reference Site:</b>    | WELD_VOGL 4 PAD                 | <b>MD Reference:</b>                | WELL @ 4832.00ft (Original Well Elev) |
| <b>Site Error:</b>        | 0.00ft                          | <b>North Reference:</b>             | True                                  |
| <b>Reference Well:</b>    | P_VOGL 11-36                    | <b>Survey Calculation Method:</b>   | Minimum Curvature                     |
| <b>Well Error:</b>        | 0.00ft                          | <b>Output errors are at</b>         | 2.00 sigma                            |
| <b>Reference Wellbore</b> | P_VOGL 11-36                    | <b>Database:</b>                    | EDM 2003.21 Single User Db            |
| <b>Reference Design:</b>  | PLAN #1 09-16-09 RHS            | <b>Offset TVD Reference:</b>        | Offset Datum                          |

Reference Depths are relative to WELL @ 4832.00ft (Original Well Elev)Coordinates are relative to: P\_VOGL 11-36  
Offset Depths are relative to Offset Datum  
Central Meridian is 105° 30' 0.000 W °  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.35°

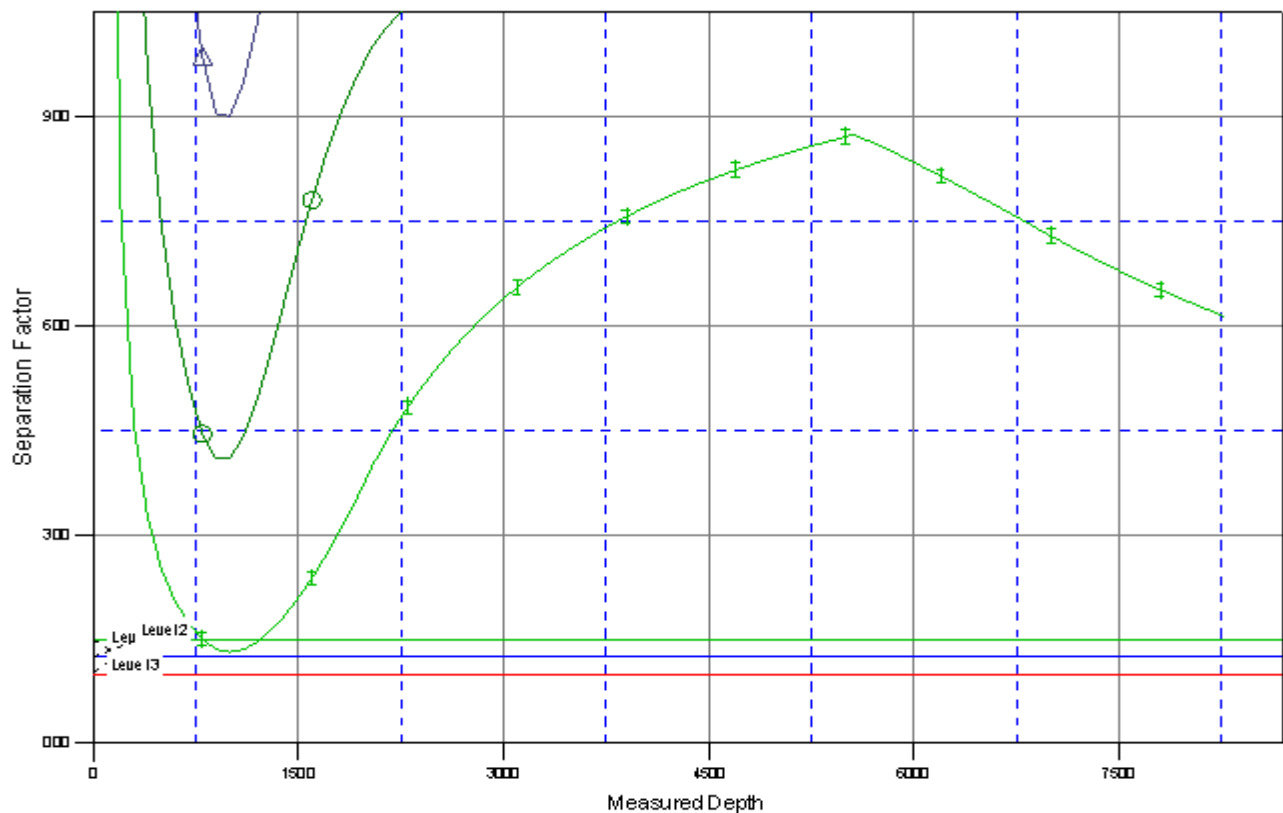




|                    |                                 |                              |                                       |
|--------------------|---------------------------------|------------------------------|---------------------------------------|
| Company:           | US ROCKIES REGION PLANNING      | Local Co-ordinate Reference: | Well P_VOGL 11-36                     |
| Project:           | KERR MCGEE OIL & GAS ONSHORE LP | TVD Reference:               | WELL @ 4832.00ft (Original Well Elev) |
| Reference Site:    | WELD_VOGL 4 PAD                 | MD Reference:                | WELL @ 4832.00ft (Original Well Elev) |
| Site Error:        | 0.00ft                          | North Reference:             | True                                  |
| Reference Well:    | P_VOGL 11-36                    | Survey Calculation Method:   | Minimum Curvature                     |
| Well Error:        | 0.00ft                          | Output errors are at         | 2.00 sigma                            |
| Reference Wellbore | P_VOGL 11-36                    | Database:                    | EDM 2003.21 Single User Db            |
| Reference Design:  | PLAN #1 09-16-09 RHS            | Offset TVD Reference:        | Offset Datum                          |

Reference Depths are relative to WELL @ 4832.00ft (Original Well Elev)Coordinates are relative to: P\_VOGL 11-36  
Offset Depths are relative to Offset Datum  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Central Meridian is 105° 30' 0.000 W °  
Grid Convergence at Surface is: 0.35°

## Separation Factor Plot



## LEGEND

R\_VOGL13-36, AEXISTING VO  
HS VO  
P\_VOGL23-36, P\_VOGL35-36, PLAN #1 09-16-09 RHS VO  
P\_VOGL13-36, P\_VOGL23-36, PLAN #1 09-10-09 RHS VO