ENSIGN Directional

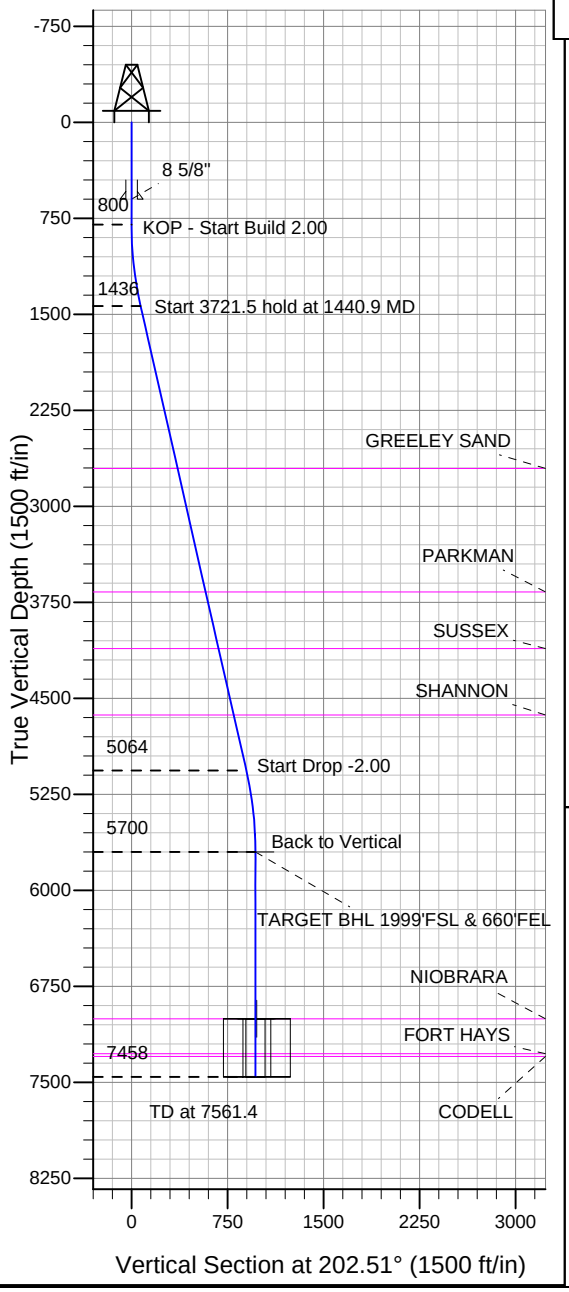
Well Name: Postle IC 11-15D

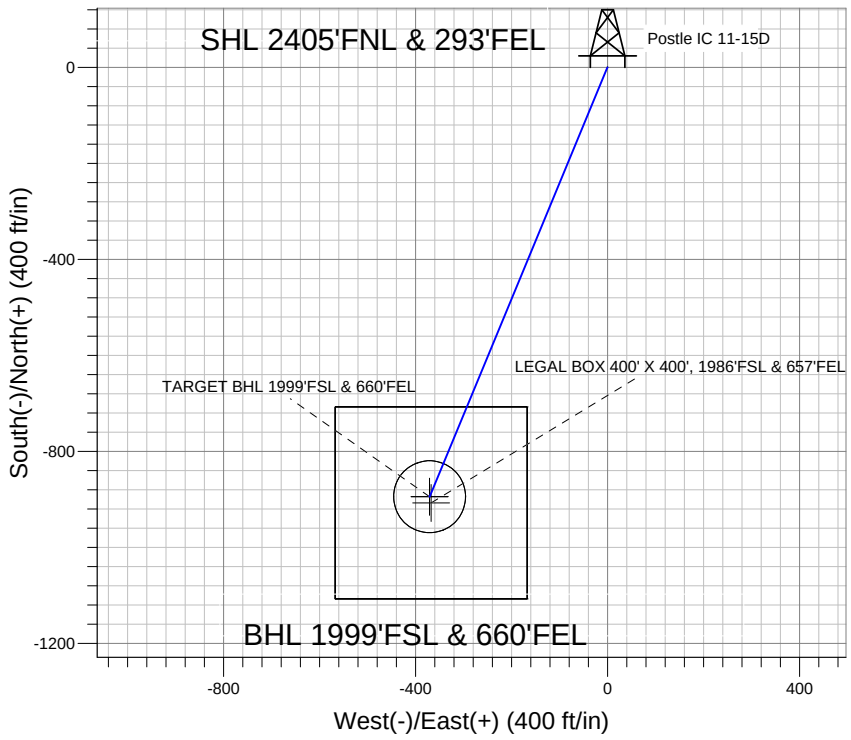
Surface Location: Postle IC 11-16D Pad Sec.11-T3N-R68W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4950.0

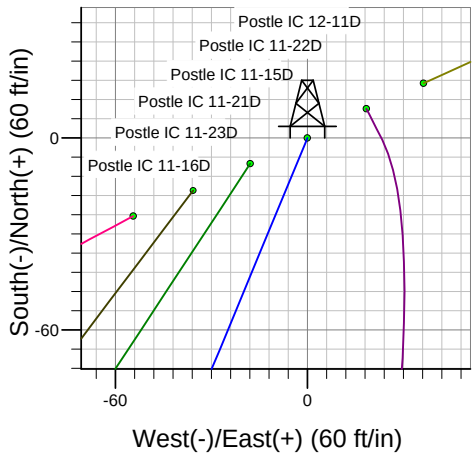
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1331249.81	3150217.72	40.241428	-104.961894	

Original Well Elev WELL @ 4964.0ft (Original Well Elev)

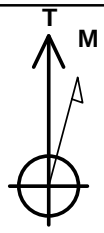
Great Western







Postle IC 11-16D Pad Sec.11-T3N-R68W
Postle IC 11-15D
Plan #1 (9-18-12)
11:53, September 20 2012



Azimuths to True North
Magnetic North: 8.79°

Magnetic Field
Strength: 52892.9snT
Dip Angle: 66.85°
Date: 9/18/2012
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1999'FSL & 660'FEL	5700.0	-894.7	-370.8	40.238972	-104.963222	Point
LEGAL BOX 400' X 400', 1986'FSL & 657'FEL	7004.0	-907.7	-367.8	40.238936	-104.963211	Rectangle (Sides: L400.0 W400.0)
TARGET CIRCLE 1999'FSL & 660'FEL	7004.0	-894.7	-370.8	40.238972	-104.963222	Circle (Radius: 75.0)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	1440.9	12.82	202.51	1435.6	-66.0	-27.3	2.00	202.51	71.4	
4	5162.5	12.82	202.51	5064.4	-828.8	-343.4	0.00	0.00	897.1	
5	5803.4	0.00	0.00	5700.0	-894.7	-370.8	2.00	180.00	968.5	TARGET BHL 1999'FSL & 660'FEL
6	7561.4	0.00	0.00	7458.0	-894.7	-370.8	0.00	0.00	968.5	

Great Western

SEC.11-T3N-R68W
Postle IC 11-16D Pad Sec.11-T3N-R68W
Postle IC 11-15D

Wellbore #1

Plan: Plan #1 (9-18-12)

Standard Planning Report

20 September, 2012

Database:	Landmark	**Local Co-ordinate Reference:**	Well Postle IC 11-15D
Company:	Great Western	**TVD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Project:	SEC.11-T3N-R68W	**MD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Site:	Postle IC 11-16D Pad Sec.11-T3N-R68W	**North Reference:**	True
Well:	Postle IC 11-15D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-18-12)		

Project SEC.11-T3N-R68W, Weld County, CO

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site Postle IC 11-16D Pad Sec.11-T3N-R68W

Site Position:		**Northing:**	1,331,225.08 ft	**Latitude:**	40.241361
From:	Lat/Long	**Easting:**	3,150,163.43 ft	**Longitude:**	-104.962089
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.35 °

Well Postle IC 11-15D

Well Position	**+N/-S**	24.4 ft	**Northing:**	1,331,249.81 ft	**Latitude:**	40.241428
	+E/-W	54.4 ft	**Easting:**	3,150,217.72 ft	**Longitude:**	-104.961894
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,950.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/18/2012	8.79	66.85	52,893

Design Plan #1 (9-18-12)

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	202.51

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,440.9	12.82	202.51	1,435.6	-66.0	-27.3	2.00	2.00	0.00	202.51	
5,162.5	12.82	202.51	5,064.4	-828.8	-343.4	0.00	0.00	0.00	0.00	
5,803.4	0.00	0.00	5,700.0	-894.7	-370.8	2.00	-2.00	0.00	180.00	TARGET BHL 1999
7,561.4	0.00	0.00	7,458.0	-894.7	-370.8	0.00	0.00	0.00	0.00	

Database:	Landmark	**Local Co-ordinate Reference:**	Well Postle IC 11-15D
Company:	Great Western	**TVD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Project:	SEC.11-T3N-R68W	**MD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Site:	Postle IC 11-16D Pad Sec.11-T3N-R68W	**North Reference:**	True
Well:	Postle IC 11-15D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-18-12)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 2.00									
840.0	0.80	202.51	840.0	-0.3	-0.1	0.3	2.00	2.00	0.00
880.0	1.60	202.51	880.0	-1.0	-0.4	1.1	2.00	2.00	0.00
920.0	2.40	202.51	920.0	-2.3	-1.0	2.5	2.00	2.00	0.00
960.0	3.20	202.51	959.9	-4.1	-1.7	4.5	2.00	2.00	0.00
1,000.0	4.00	202.51	999.8	-6.4	-2.7	7.0	2.00	2.00	0.00
1,040.0	4.80	202.51	1,039.7	-9.3	-3.8	10.0	2.00	2.00	0.00
1,080.0	5.60	202.51	1,079.6	-12.6	-5.2	13.7	2.00	2.00	0.00
1,120.0	6.40	202.51	1,119.3	-16.5	-6.8	17.9	2.00	2.00	0.00
1,160.0	7.20	202.51	1,159.1	-20.9	-8.6	22.6	2.00	2.00	0.00
1,200.0	8.00	202.51	1,198.7	-25.8	-10.7	27.9	2.00	2.00	0.00
1,240.0	8.80	202.51	1,238.3	-31.2	-12.9	33.7	2.00	2.00	0.00
1,280.0	9.60	202.51	1,277.8	-37.1	-15.4	40.1	2.00	2.00	0.00
1,320.0	10.40	202.51	1,317.1	-43.5	-18.0	47.1	2.00	2.00	0.00
1,360.0	11.20	202.51	1,356.4	-50.4	-20.9	54.6	2.00	2.00	0.00
1,400.0	12.00	202.51	1,395.6	-57.8	-24.0	62.6	2.00	2.00	0.00
1,440.0	12.80	202.51	1,434.7	-65.8	-27.3	71.2	2.00	2.00	0.00
1,440.9	12.82	202.51	1,435.6	-66.0	-27.3	71.4	2.00	2.00	0.00
Start 3721.5 hold at 1440.9 MD									
1,480.0	12.82	202.51	1,473.7	-74.0	-30.7	80.1	0.00	0.00	0.00
1,520.0	12.82	202.51	1,512.7	-82.2	-34.0	88.9	0.00	0.00	0.00
1,560.0	12.82	202.51	1,551.7	-90.4	-37.4	97.8	0.00	0.00	0.00
1,600.0	12.82	202.51	1,590.7	-98.6	-40.8	106.7	0.00	0.00	0.00
1,640.0	12.82	202.51	1,629.7	-106.8	-44.2	115.6	0.00	0.00	0.00
1,680.0	12.82	202.51	1,668.7	-115.0	-47.6	124.4	0.00	0.00	0.00
1,720.0	12.82	202.51	1,707.7	-123.2	-51.0	133.3	0.00	0.00	0.00
1,760.0	12.82	202.51	1,746.7	-131.4	-54.4	142.2	0.00	0.00	0.00
1,800.0	12.82	202.51	1,785.7	-139.6	-57.8	151.1	0.00	0.00	0.00
1,840.0	12.82	202.51	1,824.7	-147.8	-61.2	159.9	0.00	0.00	0.00
1,880.0	12.82	202.51	1,863.7	-156.0	-64.6	168.8	0.00	0.00	0.00
1,920.0	12.82	202.51	1,902.7	-164.2	-68.0	177.7	0.00	0.00	0.00

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Site:	Postle IC 11-16D Pad Sec.11-T3N-R68W	**North Reference:**	True
Well:	Postle IC 11-15D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-18-12)		

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)
1,960.0	12.82	202.51	1,941.7	-172.4	-71.4	186.6	0.00	0.00	0.00
2,000.0	12.82	202.51	1,980.7	-180.5	-74.8	195.4	0.00	0.00	0.00
2,040.0	12.82	202.51	2,019.7	-188.7	-78.2	204.3	0.00	0.00	0.00
2,080.0	12.82	202.51	2,058.7	-196.9	-81.6	213.2	0.00	0.00	0.00
2,120.0	12.82	202.51	2,097.7	-205.1	-85.0	222.1	0.00	0.00	0.00
2,160.0	12.82	202.51	2,136.7	-213.3	-88.4	230.9	0.00	0.00	0.00
2,200.0	12.82	202.51	2,175.7	-221.5	-91.8	239.8	0.00	0.00	0.00
2,240.0	12.82	202.51	2,214.8	-229.7	-95.2	248.7	0.00	0.00	0.00
2,280.0	12.82	202.51	2,253.8	-237.9	-98.6	257.6	0.00	0.00	0.00
2,320.0	12.82	202.51	2,292.8	-246.1	-102.0	266.4	0.00	0.00	0.00
2,360.0	12.82	202.51	2,331.8	-254.3	-105.4	275.3	0.00	0.00	0.00
2,400.0	12.82	202.51	2,370.8	-262.5	-108.8	284.2	0.00	0.00	0.00
2,440.0	12.82	202.51	2,409.8	-270.7	-112.2	293.1	0.00	0.00	0.00
2,480.0	12.82	202.51	2,448.8	-278.9	-115.6	301.9	0.00	0.00	0.00
2,520.0	12.82	202.51	2,487.8	-287.1	-119.0	310.8	0.00	0.00	0.00
2,560.0	12.82	202.51	2,526.8	-295.3	-122.4	319.7	0.00	0.00	0.00
2,600.0	12.82	202.51	2,565.8	-303.5	-125.8	328.6	0.00	0.00	0.00
2,640.0	12.82	202.51	2,604.8	-311.7	-129.2	337.4	0.00	0.00	0.00
2,680.0	12.82	202.51	2,643.8	-319.9	-132.6	346.3	0.00	0.00	0.00
2,720.0	12.82	202.51	2,682.8	-328.1	-136.0	355.2	0.00	0.00	0.00
2,742.8	12.82	202.51	2,705.0	-332.8	-137.9	360.2	0.00	0.00	0.00
GREELEY SAND									
2,760.0	12.82	202.51	2,721.8	-336.3	-139.4	364.1	0.00	0.00	0.00
2,800.0	12.82	202.51	2,760.8	-344.5	-142.8	372.9	0.00	0.00	0.00
2,840.0	12.82	202.51	2,799.8	-352.7	-146.2	381.8	0.00	0.00	0.00
2,880.0	12.82	202.51	2,838.8	-360.9	-149.6	390.7	0.00	0.00	0.00
2,920.0	12.82	202.51	2,877.8	-369.1	-153.0	399.6	0.00	0.00	0.00
2,960.0	12.82	202.51	2,916.8	-377.3	-156.4	408.4	0.00	0.00	0.00
3,000.0	12.82	202.51	2,955.8	-385.5	-159.8	417.3	0.00	0.00	0.00
3,040.0	12.82	202.51	2,994.8	-393.7	-163.2	426.2	0.00	0.00	0.00
3,080.0	12.82	202.51	3,033.8	-401.9	-166.5	435.1	0.00	0.00	0.00
3,120.0	12.82	202.51	3,072.8	-410.1	-169.9	443.9	0.00	0.00	0.00
3,160.0	12.82	202.51	3,111.8	-418.3	-173.3	452.8	0.00	0.00	0.00
3,200.0	12.82	202.51	3,150.8	-426.5	-176.7	461.7	0.00	0.00	0.00
3,240.0	12.82	202.51	3,189.8	-434.7	-180.1	470.6	0.00	0.00	0.00
3,280.0	12.82	202.51	3,228.8	-442.9	-183.5	479.4	0.00	0.00	0.00
3,320.0	12.82	202.51	3,267.8	-451.1	-186.9	488.3	0.00	0.00	0.00
3,360.0	12.82	202.51	3,306.8	-459.3	-190.3	497.2	0.00	0.00	0.00
3,400.0	12.82	202.51	3,345.8	-467.5	-193.7	506.1	0.00	0.00	0.00
3,440.0	12.82	202.51	3,384.8	-475.7	-197.1	514.9	0.00	0.00	0.00
3,480.0	12.82	202.51	3,423.8	-483.9	-200.5	523.8	0.00	0.00	0.00
3,520.0	12.82	202.51	3,462.8	-492.1	-203.9	532.7	0.00	0.00	0.00
3,560.0	12.82	202.51	3,501.9	-500.3	-207.3	541.5	0.00	0.00	0.00
3,600.0	12.82	202.51	3,540.9	-508.5	-210.7	550.4	0.00	0.00	0.00
3,640.0	12.82	202.51	3,579.9	-516.7	-214.1	559.3	0.00	0.00	0.00
3,680.0	12.82	202.51	3,618.9	-524.9	-217.5	568.2	0.00	0.00	0.00
3,720.0	12.82	202.51	3,657.9	-533.1	-220.9	577.0	0.00	0.00	0.00
3,731.4	12.82	202.51	3,669.0	-535.4	-221.9	579.6	0.00	0.00	0.00
PARKMAN									
3,760.0	12.82	202.51	3,696.9	-541.3	-224.3	585.9	0.00	0.00	0.00
3,800.0	12.82	202.51	3,735.9	-549.5	-227.7	594.8	0.00	0.00	0.00
3,840.0	12.82	202.51	3,774.9	-557.7	-231.1	603.7	0.00	0.00	0.00
3,880.0	12.82	202.51	3,813.9	-565.9	-234.5	612.5	0.00	0.00	0.00
3,920.0	12.82	202.51	3,852.9	-574.1	-237.9	621.4	0.00	0.00	0.00

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Site:	Postle IC 11-16D Pad Sec.11-T3N-R68W	**North Reference:**	True
Well:	Postle IC 11-15D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-18-12)		

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)
3,960.0	12.82	202.51	3,891.9	-582.3	-241.3	630.3	0.00	0.00	0.00
4,000.0	12.82	202.51	3,930.9	-590.5	-244.7	639.2	0.00	0.00	0.00
4,040.0	12.82	202.51	3,969.9	-598.7	-248.1	648.0	0.00	0.00	0.00
4,080.0	12.82	202.51	4,008.9	-606.9	-251.5	656.9	0.00	0.00	0.00
4,120.0	12.82	202.51	4,047.9	-615.1	-254.9	665.8	0.00	0.00	0.00
4,160.0	12.82	202.51	4,086.9	-623.3	-258.3	674.7	0.00	0.00	0.00
4,185.7	12.82	202.51	4,112.0	-628.6	-260.5	680.4	0.00	0.00	0.00
SUSSEX									
4,200.0	12.82	202.51	4,125.9	-631.5	-261.7	683.5	0.00	0.00	0.00
4,240.0	12.82	202.51	4,164.9	-639.7	-265.1	692.4	0.00	0.00	0.00
4,280.0	12.82	202.51	4,203.9	-647.9	-268.5	701.3	0.00	0.00	0.00
4,320.0	12.82	202.51	4,242.9	-656.1	-271.9	710.2	0.00	0.00	0.00
4,360.0	12.82	202.51	4,281.9	-664.3	-275.3	719.0	0.00	0.00	0.00
4,400.0	12.82	202.51	4,320.9	-672.5	-278.7	727.9	0.00	0.00	0.00
4,440.0	12.82	202.51	4,359.9	-680.7	-282.1	736.8	0.00	0.00	0.00
4,480.0	12.82	202.51	4,398.9	-688.9	-285.5	745.7	0.00	0.00	0.00
4,520.0	12.82	202.51	4,437.9	-697.1	-288.9	754.5	0.00	0.00	0.00
4,560.0	12.82	202.51	4,476.9	-705.3	-292.3	763.4	0.00	0.00	0.00
4,600.0	12.82	202.51	4,515.9	-713.5	-295.6	772.3	0.00	0.00	0.00
4,640.0	12.82	202.51	4,554.9	-721.7	-299.0	781.2	0.00	0.00	0.00
4,680.0	12.82	202.51	4,593.9	-729.9	-302.4	790.0	0.00	0.00	0.00
4,717.0	12.82	202.51	4,630.0	-737.4	-305.6	798.2	0.00	0.00	0.00
SHANNON									
4,720.0	12.82	202.51	4,632.9	-738.1	-305.8	798.9	0.00	0.00	0.00
4,760.0	12.82	202.51	4,671.9	-746.3	-309.2	807.8	0.00	0.00	0.00
4,800.0	12.82	202.51	4,710.9	-754.5	-312.6	816.7	0.00	0.00	0.00
4,840.0	12.82	202.51	4,750.0	-762.7	-316.0	825.5	0.00	0.00	0.00
4,880.0	12.82	202.51	4,789.0	-770.9	-319.4	834.4	0.00	0.00	0.00
4,920.0	12.82	202.51	4,828.0	-779.0	-322.8	843.3	0.00	0.00	0.00
4,960.0	12.82	202.51	4,867.0	-787.2	-326.2	852.2	0.00	0.00	0.00
5,000.0	12.82	202.51	4,906.0	-795.4	-329.6	861.0	0.00	0.00	0.00
5,040.0	12.82	202.51	4,945.0	-803.6	-333.0	869.9	0.00	0.00	0.00
5,080.0	12.82	202.51	4,984.0	-811.8	-336.4	878.8	0.00	0.00	0.00
5,120.0	12.82	202.51	5,023.0	-820.0	-339.8	887.7	0.00	0.00	0.00
5,160.0	12.82	202.51	5,062.0	-828.2	-343.2	896.5	0.00	0.00	0.00
5,162.5	12.82	202.51	5,064.4	-828.8	-343.4	897.1	0.00	0.00	0.00
Start Drop -2.00									
5,200.0	12.07	202.51	5,101.0	-836.2	-346.5	905.2	2.00	-2.00	0.00
5,240.0	11.27	202.51	5,140.2	-843.7	-349.6	913.3	2.00	-2.00	0.00
5,280.0	10.47	202.51	5,179.5	-850.7	-352.5	920.8	2.00	-2.00	0.00
5,320.0	9.67	202.51	5,218.9	-857.1	-355.2	927.8	2.00	-2.00	0.00
5,360.0	8.87	202.51	5,258.3	-863.1	-357.6	934.2	2.00	-2.00	0.00
5,400.0	8.07	202.51	5,297.9	-868.5	-359.9	940.1	2.00	-2.00	0.00
5,440.0	7.27	202.51	5,337.6	-873.4	-361.9	945.5	2.00	-2.00	0.00
5,480.0	6.47	202.51	5,377.3	-877.9	-363.8	950.3	2.00	-2.00	0.00
5,520.0	5.67	202.51	5,417.0	-881.8	-365.4	954.5	2.00	-2.00	0.00
5,560.0	4.87	202.51	5,456.9	-885.2	-366.8	958.2	2.00	-2.00	0.00
5,600.0	4.07	202.51	5,496.8	-888.0	-368.0	961.3	2.00	-2.00	0.00
5,640.0	3.27	202.51	5,536.7	-890.4	-369.0	963.8	2.00	-2.00	0.00
5,680.0	2.47	202.51	5,576.6	-892.3	-369.7	965.8	2.00	-2.00	0.00
5,720.0	1.67	202.51	5,616.6	-893.6	-370.3	967.3	2.00	-2.00	0.00
5,760.0	0.87	202.51	5,656.6	-894.4	-370.6	968.2	2.00	-2.00	0.00
5,800.0	0.07	202.51	5,696.6	-894.7	-370.8	968.5	2.00	-2.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Postle IC 11-15D
Company:	Great Western	**TVD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Project:	SEC.11-T3N-R68W	**MD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Site:	Postle IC 11-16D Pad Sec.11-T3N-R68W	**North Reference:**	True
Well:	Postle IC 11-15D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-18-12)		

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)
5,803.4	0.00	0.00	5,700.0	-894.7	-370.8	968.5	2.00	-2.00	4,605.59
Back to Vertical - TARGET BHL 1999'FSL & 660'FEL									
5,840.0	0.00	0.00	5,736.6	-894.7	-370.8	968.5	0.00	0.00	0.00
5,880.0	0.00	0.00	5,776.6	-894.7	-370.8	968.5	0.00	0.00	0.00
5,920.0	0.00	0.00	5,816.6	-894.7	-370.8	968.5	0.00	0.00	0.00
5,960.0	0.00	0.00	5,856.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,000.0	0.00	0.00	5,896.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,040.0	0.00	0.00	5,936.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,080.0	0.00	0.00	5,976.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,120.0	0.00	0.00	6,016.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,160.0	0.00	0.00	6,056.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,200.0	0.00	0.00	6,096.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,240.0	0.00	0.00	6,136.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,280.0	0.00	0.00	6,176.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,320.0	0.00	0.00	6,216.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,360.0	0.00	0.00	6,256.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,400.0	0.00	0.00	6,296.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,440.0	0.00	0.00	6,336.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,480.0	0.00	0.00	6,376.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,520.0	0.00	0.00	6,416.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,560.0	0.00	0.00	6,456.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,600.0	0.00	0.00	6,496.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,640.0	0.00	0.00	6,536.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,680.0	0.00	0.00	6,576.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,720.0	0.00	0.00	6,616.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,760.0	0.00	0.00	6,656.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,800.0	0.00	0.00	6,696.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,840.0	0.00	0.00	6,736.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,880.0	0.00	0.00	6,776.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,920.0	0.00	0.00	6,816.6	-894.7	-370.8	968.5	0.00	0.00	0.00
6,960.0	0.00	0.00	6,856.6	-894.7	-370.8	968.5	0.00	0.00	0.00
7,000.0	0.00	0.00	6,896.6	-894.7	-370.8	968.5	0.00	0.00	0.00
7,040.0	0.00	0.00	6,936.6	-894.7	-370.8	968.5	0.00	0.00	0.00
7,080.0	0.00	0.00	6,976.6	-894.7	-370.8	968.5	0.00	0.00	0.00
7,107.4	0.00	0.00	7,004.0	-894.7	-370.8	968.5	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 1999'FSL & 660'FEL - LEGAL BOX 400' X 400', 1986'FSL & 657'FEL									
7,120.0	0.00	0.00	7,016.6	-894.7	-370.8	968.5	0.00	0.00	0.00
7,160.0	0.00	0.00	7,056.6	-894.7	-370.8	968.5	0.00	0.00	0.00
7,200.0	0.00	0.00	7,096.6	-894.7	-370.8	968.5	0.00	0.00	0.00
7,240.0	0.00	0.00	7,136.6	-894.7	-370.8	968.5	0.00	0.00	0.00
7,280.0	0.00	0.00	7,176.6	-894.7	-370.8	968.5	0.00	0.00	0.00
7,320.0	0.00	0.00	7,216.6	-894.7	-370.8	968.5	0.00	0.00	0.00
7,360.0	0.00	0.00	7,256.6	-894.7	-370.8	968.5	0.00	0.00	0.00
7,379.4	0.00	0.00	7,276.0	-894.7	-370.8	968.5	0.00	0.00	0.00
FORT HAYS									
7,400.0	0.00	0.00	7,296.6	-894.7	-370.8	968.5	0.00	0.00	0.00
7,401.4	0.00	0.00	7,298.0	-894.7	-370.8	968.5	0.00	0.00	0.00
CODELL									
7,440.0	0.00	0.00	7,336.6	-894.7	-370.8	968.5	0.00	0.00	0.00
7,480.0	0.00	0.00	7,376.6	-894.7	-370.8	968.5	0.00	0.00	0.00
7,520.0	0.00	0.00	7,416.6	-894.7	-370.8	968.5	0.00	0.00	0.00
7,560.0	0.00	0.00	7,456.6	-894.7	-370.8	968.5	0.00	0.00	0.00
7,561.4	0.00	0.00	7,458.0	-894.7	-370.8	968.5	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Postle IC 11-15D
Company:	Great Western	**TVD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Project:	SEC.11-T3N-R68W	**MD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Site:	Postle IC 11-16D Pad Sec.11-T3N-R68W	**North Reference:**	True
Well:	Postle IC 11-15D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-18-12)		

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)
TD at 7561.4									

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
TARGET BHL 1999'F - plan hits target center - Point	0.00	0.00	5,700.0	-894.7	-370.8	1,330,352.90	3,149,852.41	40.238972	-104.963222
TARGET CIRCLE 19 - plan hits target center - Circle (radius 75.0)	0.00	0.00	7,004.0	-894.7	-370.8	1,330,352.90	3,149,852.41	40.238972	-104.963222
LEGAL BOX 400' X 4 - plan misses target center by 13.3ft at 7107.4ft MD (7004.0 TVD, -894.7 N, -370.8 E) - Rectangle (sides W400.0 H400.0 D454.0)	0.00	0.00	7,004.0	-907.7	-367.8	1,330,339.94	3,149,855.45	40.238936	-104.963211

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
600.0	600.0	8 5/8"	8-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,742.8	2,705.0	GREELEY SAND		0.00	
3,731.4	3,669.0	PARKMAN		0.00	
4,185.7	4,112.0	SUSSEX		0.00	
4,717.0	4,630.0	SHANNON		0.00	
7,107.4	7,004.0	NIOBRARA		0.00	
7,379.4	7,276.0	FORT HAYS		0.00	
7,401.4	7,298.0	CODELL		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
800.0	800.0	0.0	0.0	KOP - Start Build 2.00
1,440.9	1,435.6	-66.0	-27.3	Start 3721.5 hold at 1440.9 MD
5,162.5	5,064.4	-828.8	-343.4	Start Drop -2.00
5,803.4	5,700.0	-894.7	-370.8	Back to Vertical
7,561.4	7,458.0	-894.7	-370.8	TD at 7561.4

ENSIGN Directional

Great Western

SEC.11-T3N-R68W
Postle IC 11-16D Pad Sec.11-T3N-R68W
Postle IC 11-15D

Wellbore #1
Plan #1 (9-18-12)

Anticollision Report

20 September, 2012

Company:	Great Western	**Local Co-ordinate Reference:**	Well Postle IC 11-15D
Project:	SEC.11-T3N-R68W	**TVD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Reference Site:	Postle IC 11-16D Pad Sec.11-T3N-R68W	**MD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Postle IC 11-15D	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (9-18-12)	**Offset TVD Reference:**	Offset Datum

Reference Plan #1 (9-18-12)

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0ft	**Error Surface:**	Elliptical Conic

Warning Levels Evaluated at: 2.00 **Sigma**

Survey Tool Program **Date** 9/20/2012

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	7,561.4	Plan #1 (9-18-12) (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Postle IC 11-16D Pad Sec.11-T3N-R68W						
Postle IC 11-21D - Wellbore #1 - Plan #1 (9-18-12)	400.0	400.0	19.6	18.0	12.446	CC, ES
Postle IC 11-21D - Wellbore #1 - Plan #1 (9-18-12)	500.0	499.4	21.1	19.1	10.540	SF
Postle IC 11-22D - Wellbore #1 - Plan #1 (9-18-12)	200.0	200.0	20.6	19.9	30.481	CC
Postle IC 11-22D - Wellbore #1 - Plan #1 (9-18-12)	300.0	300.0	20.6	19.5	18.738	ES
Postle IC 11-22D - Wellbore #1 - Plan #1 (9-18-12)	500.0	499.2	25.7	23.7	12.841	SF

Offset Design Postle IC 11-16D Pad Sec.11-T3N-R68W - Postle IC 11-21D - Wellbore #1 - Plan #1 (9-18-12)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD **Offset Well Error:** 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-114.16	-8.0	-17.9	19.6	19.6	0.00	N/A	
100.0	100.0	100.0	100.0	0.1	0.1	-114.16	-8.0	-17.9	19.6	19.4	0.22	87.123	
200.0	200.0	200.0	200.0	0.3	0.3	-114.16	-8.0	-17.9	19.6	18.9	0.67	29.041	
300.0	300.0	300.0	300.0	0.6	0.6	-114.16	-8.0	-17.9	19.6	18.5	1.12	17.425	
400.0	400.0	400.0	400.0	0.8	0.8	-114.16	-8.0	-17.9	19.6	18.0	1.57	12.446	CC, ES
500.0	500.0	499.4	499.4	1.0	1.0	-116.68	-9.5	-18.8	21.1	19.1	2.00	10.540	SF
600.0	600.0	598.5	598.4	1.2	1.2	-122.45	-13.8	-21.6	25.7	23.3	2.42	10.626	
700.0	700.0	697.2	696.7	1.5	1.4	-128.43	-20.9	-26.3	33.8	30.9	2.85	11.838	
800.0	800.0	795.2	793.9	1.7	1.7	-133.15	-30.8	-32.8	45.4	42.1	3.30	13.764	
900.0	900.0	892.5	890.1	1.9	2.0	21.47	-43.3	-41.1	58.9	55.2	3.71	15.868	
1,000.0	999.8	989.4	985.2	2.1	2.3	20.15	-58.5	-51.0	72.5	68.4	4.11	17.633	
1,100.0	1,099.5	1,085.8	1,079.2	2.3	2.7	19.66	-76.3	-62.7	86.3	81.7	4.54	19.021	
1,200.0	1,198.7	1,181.7	1,172.1	2.5	3.2	19.64	-96.6	-76.1	100.0	95.1	4.98	20.096	
1,300.0	1,297.5	1,277.3	1,263.6	2.8	3.7	19.92	-119.4	-91.1	113.8	108.4	5.44	20.905	
1,400.0	1,395.6	1,372.4	1,353.8	3.1	4.2	20.41	-144.6	-107.6	127.6	121.6	5.94	21.484	
1,440.9	1,435.6	1,411.2	1,390.3	3.2	4.5	20.65	-155.6	-114.8	133.2	127.1	6.15	21.659	
1,500.0	1,493.2	1,466.9	1,442.4	3.4	4.8	21.00	-172.1	-125.7	141.9	135.4	6.48	21.895	
1,600.0	1,590.7	1,562.4	1,530.8	3.8	5.5	21.35	-202.2	-145.5	159.0	152.0	7.06	22.530	
1,700.0	1,688.2	1,660.8	1,621.7	4.2	6.2	21.61	-233.8	-166.2	176.8	169.1	7.66	23.075	
1,800.0	1,785.7	1,759.2	1,712.6	4.7	7.0	21.81	-265.4	-187.0	194.5	186.3	8.28	23.504	
1,900.0	1,883.2	1,857.6	1,803.5	5.1	7.7	21.98	-296.9	-207.7	212.3	203.4	8.90	23.843	
2,000.0	1,980.7	1,956.0	1,894.3	5.5	8.5	22.13	-328.5	-228.4	230.1	220.5	9.54	24.113	

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

Company:	Great Western	**Local Co-ordinate Reference:**	Well Postle IC 11-15D
Project:	SEC.11-T3N-R68W	**TVD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Reference Site:	Postle IC 11-16D Pad Sec.11-T3N-R68W	**MD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Postle IC 11-15D	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (9-18-12)	**Offset TVD Reference:**	Offset Datum

Offset Design Postle IC 11-16D Pad Sec.11-T3N-R68W - Postle IC 11-21D - Wellbore #1 - Plan #1 (9-18-12)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,100.0	2,078.2	2,054.4	1,985.2	6.0	9.2	22.25	-360.0	-249.1	247.8	237.7	10.19	24.332	
2,200.0	2,175.7	2,152.8	2,076.1	6.4	10.0	22.36	-391.6	-269.9	265.6	254.8	10.84	24.510	
2,300.0	2,273.3	2,251.2	2,167.0	6.9	10.7	22.45	-423.1	-290.6	283.4	271.9	11.49	24.656	
2,400.0	2,370.8	2,349.6	2,257.8	7.3	11.5	22.53	-454.7	-311.3	301.1	289.0	12.15	24.777	
2,500.0	2,468.3	2,448.1	2,348.7	7.8	12.2	22.61	-486.2	-332.1	318.9	306.1	12.82	24.879	
2,600.0	2,565.8	2,546.5	2,439.6	8.3	13.0	22.67	-517.8	-352.8	336.7	323.2	13.49	24.964	
2,700.0	2,663.3	2,644.9	2,530.5	8.7	13.7	22.73	-549.3	-373.5	354.5	340.3	14.16	25.036	
2,800.0	2,760.8	2,743.3	2,621.4	9.2	14.5	22.79	-580.9	-394.3	372.2	357.4	14.83	25.098	
2,900.0	2,858.3	2,841.7	2,712.2	9.7	15.3	22.83	-612.4	-415.0	390.0	374.5	15.51	25.151	
3,000.0	2,955.8	2,940.1	2,803.1	10.1	16.0	22.88	-644.0	-435.7	407.8	391.6	16.18	25.197	
3,100.0	3,053.3	3,038.5	2,894.0	10.6	16.8	22.92	-675.5	-456.5	425.6	408.7	16.86	25.236	
3,200.0	3,150.8	3,136.9	2,984.9	11.1	17.5	22.96	-707.1	-477.2	443.3	425.8	17.54	25.270	
3,300.0	3,248.3	3,235.3	3,075.7	11.6	18.3	22.99	-738.6	-497.9	461.1	442.9	18.23	25.300	
3,400.0	3,345.8	3,333.7	3,166.6	12.0	19.1	23.02	-770.2	-518.7	478.9	460.0	18.91	25.327	
3,500.0	3,443.3	3,432.1	3,257.5	12.5	19.8	23.05	-801.7	-539.4	496.6	477.1	19.59	25.350	
3,600.0	3,540.9	3,530.5	3,348.4	13.0	20.6	23.08	-833.3	-560.1	514.4	494.1	20.28	25.370	
3,700.0	3,638.4	3,628.9	3,439.3	13.5	21.4	23.11	-864.8	-580.9	532.2	511.2	20.96	25.388	
3,800.0	3,735.9	3,727.3	3,530.1	13.9	22.1	23.13	-896.4	-601.6	550.0	528.3	21.65	25.404	
3,900.0	3,833.4	3,825.8	3,621.0	14.4	22.9	23.15	-927.9	-622.3	567.7	545.4	22.34	25.418	
4,000.0	3,930.9	3,924.2	3,711.9	14.9	23.7	23.17	-959.5	-643.1	585.5	562.5	23.02	25.431	
4,100.0	4,028.4	4,022.6	3,802.8	15.4	24.4	23.19	-991.1	-663.8	603.3	579.6	23.71	25.442	
4,200.0	4,125.9	4,121.0	3,893.6	15.8	25.2	23.21	-1,022.6	-684.5	621.1	596.7	24.40	25.452	
4,300.0	4,223.4	4,219.4	3,984.5	16.3	25.9	23.23	-1,054.2	-705.2	638.8	613.7	25.09	25.461	
4,400.0	4,320.9	4,317.8	4,075.4	16.8	26.7	23.25	-1,085.7	-726.0	656.6	630.8	25.78	25.469	
4,500.0	4,418.4	4,416.2	4,166.3	17.3	27.5	23.26	-1,117.3	-746.7	674.4	647.9	26.47	25.476	
4,600.0	4,515.9	4,514.6	4,257.2	17.8	28.2	23.28	-1,148.8	-767.4	692.2	665.0	27.16	25.483	
4,700.0	4,613.4	4,613.0	4,348.0	18.2	29.0	23.29	-1,180.4	-788.2	709.9	682.1	27.85	25.489	
4,800.0	4,710.9	4,711.4	4,438.9	18.7	29.8	23.31	-1,211.9	-808.9	727.7	699.2	28.54	25.494	
4,900.0	4,808.5	4,809.8	4,529.8	19.2	30.5	23.32	-1,243.5	-829.6	745.5	716.2	29.24	25.499	
5,000.0	4,906.0	4,908.2	4,620.7	19.7	31.3	23.33	-1,275.0	-850.4	763.3	733.3	29.93	25.503	
5,100.0	5,003.5	5,006.6	4,711.5	20.2	32.1	23.34	-1,306.6	-871.1	781.0	750.4	30.62	25.507	
5,162.5	5,064.4	5,068.1	4,768.3	20.5	32.5	23.35	-1,326.3	-884.1	792.1	761.1	31.05	25.509	
5,200.0	5,101.0	5,105.0	4,802.4	20.6	32.8	23.40	-1,338.1	-891.8	799.0	767.7	31.29	25.536	
5,300.0	5,199.2	5,202.9	4,892.7	20.9	33.6	23.50	-1,369.5	-912.4	819.6	787.7	31.84	25.736	
5,400.0	5,297.9	5,335.5	5,016.2	21.2	34.4	23.49	-1,409.9	-939.0	841.3	808.9	32.40	25.967	
5,500.0	5,397.1	5,473.3	5,146.7	21.4	35.1	23.43	-1,446.9	-963.3	861.7	828.9	32.86	26.225	
5,600.0	5,496.8	5,612.9	5,281.0	21.6	35.7	23.35	-1,478.9	-984.3	880.6	847.4	33.24	26.496	
5,700.0	5,596.6	5,754.2	5,418.5	21.8	36.2	23.22	-1,505.7	-1,001.9	898.0	864.5	33.53	26.785	
5,803.4	5,700.0	5,902.0	5,563.9	21.9	36.6	-134.43	-1,527.6	-1,016.4	914.3	880.5	33.75	27.087	
5,900.0	5,796.6	6,041.6	5,702.5	22.0	36.9	-134.67	-1,542.6	-1,026.2	926.4	892.3	34.09	27.173	
6,000.0	5,896.6	6,187.8	5,848.1	22.1	37.2	-134.82	-1,552.2	-1,032.5	934.1	899.6	34.43	27.130	
6,100.0	5,996.6	6,334.7	5,995.0	22.2	37.3	-134.87	-1,555.5	-1,034.7	936.7	902.0	34.76	26.946	
6,200.0	6,096.6	6,436.3	6,096.6	22.3	37.4	-134.87	-1,555.5	-1,034.7	936.7	901.7	35.05	26.730	
6,300.0	6,196.6	6,536.3	6,196.6	22.4	37.5	-134.87	-1,555.5	-1,034.7	936.7	901.4	35.32	26.521	
6,400.0	6,296.6	6,636.3	6,296.6	22.6	37.5	-134.87	-1,555.5	-1,034.7	936.7	901.1	35.60	26.314	
6,500.0	6,396.6	6,736.3	6,396.6	22.7	37.6	-134.87	-1,555.5	-1,034.7	936.7	900.9	35.88	26.107	
6,600.0	6,496.6	6,836.3	6,496.6	22.8	37.7	-134.87	-1,555.5	-1,034.7	936.7	900.6	36.17	25.900	
6,700.0	6,596.6	6,936.3	6,596.6	22.9	37.7	-134.87	-1,555.5	-1,034.7	936.7	900.3	36.46	25.695	
6,800.0	6,696.6	7,036.3	6,696.6	23.0	37.8	-134.87	-1,555.5	-1,034.7	936.7	900.0	36.75	25.491	
6,900.0	6,796.6	7,136.3	6,796.6	23.1	37.9	-134.87	-1,555.5	-1,034.7	936.7	899.7	37.04	25.288	
7,000.0	6,896.6	7,236.3	6,896.6	23.2	37.9	-134.87	-1,555.5	-1,034.7	936.7	899.4	37.34	25.086	
7,100.0	6,996.6	7,336.3	6,996.6	23.4	38.0	-134.87	-1,555.5	-1,034.7	936.7	899.1	37.64	24.885	

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

Company:	Great Western	**Local Co-ordinate Reference:**	Well Postle IC 11-15D
Project:	SEC.11-T3N-R68W	**TVD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Reference Site:	Postle IC 11-16D Pad Sec.11-T3N-R68W	**MD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Postle IC 11-15D	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (9-18-12)	**Offset TVD Reference:**	Offset Datum

Offset Design Postle IC 11-16D Pad Sec.11-T3N-R68W - Postle IC 11-21D - Wellbore #1 - Plan #1 (9-18-12)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,200.0	7,096.6	7,436.3	7,096.6	23.5	38.1	-134.87	-1,555.5	-1,034.7	936.7	898.8	37.95	24.686	
7,300.0	7,196.6	7,536.3	7,196.6	23.6	38.2	-134.87	-1,555.5	-1,034.7	936.7	898.5	38.25	24.488	
7,400.0	7,296.6	7,636.3	7,296.6	23.7	38.2	-134.87	-1,555.5	-1,034.7	936.7	898.2	38.56	24.291	
7,500.0	7,396.6	7,736.3	7,396.6	23.9	38.3	-134.87	-1,555.5	-1,034.7	936.7	897.9	38.88	24.096	
7,561.4	7,458.0	7,797.7	7,458.0	23.9	38.4	-134.87	-1,555.5	-1,034.7	936.7	897.7	39.07	23.977	

Company:	Great Western	**Local Co-ordinate Reference:**	Well Postle IC 11-15D
Project:	SEC.11-T3N-R68W	**TVD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Reference Site:	Postle IC 11-16D Pad Sec.11-T3N-R68W	**MD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Postle IC 11-15D	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (9-18-12)	**Offset TVD Reference:**	Offset Datum

Offset Design Postle IC 11-16D Pad Sec.11-T3N-R68W - Postle IC 11-22D - Wellbore #1 - Plan #1 (9-18-12) — **Offset Site Error:** 0.0 ft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	63.70	9.1	18.4	20.6				
100.0	100.0	100.0	100.0	0.1	0.1	63.70	9.1	18.4	20.6	20.3	0.22	91.444	
200.0	200.0	200.0	200.0	0.3	0.3	63.70	9.1	18.4	20.6	19.9	0.67	30.481	CC
218.0	218.0	218.0	218.0	0.4	0.4	63.85	9.1	18.5	20.6	19.8	0.75	27.359	
300.0	300.0	300.0	299.9	0.6	0.5	68.54	7.6	19.2	20.6	19.5	1.10	18.738	ES
400.0	400.0	399.7	399.5	0.8	0.8	82.32	2.9	21.6	21.8	20.2	1.54	14.190	
500.0	500.0	499.2	498.7	1.0	1.0	100.85	-4.8	25.2	25.7	23.7	2.00	12.841	SF
600.0	600.0	598.5	597.3	1.2	1.3	119.38	-15.8	28.0	32.3	29.8	2.48	13.000	
700.0	700.0	697.1	694.9	1.5	1.6	135.11	-29.8	29.7	42.4	39.4	2.97	14.262	
800.0	800.0	794.6	790.9	1.7	1.9	147.10	-46.9	30.3	56.6	53.1	3.47	16.278	
900.0	900.0	891.3	885.5	1.9	2.3	-47.32	-66.8	29.9	73.4	69.6	3.83	19.191	
1,000.0	999.8	987.4	978.8	2.1	2.8	-42.40	-89.6	28.3	91.2	86.9	4.26	21.418	
1,100.0	1,099.5	1,082.9	1,070.8	2.3	3.3	-39.18	-115.1	25.8	109.4	104.7	4.71	23.197	
1,200.0	1,198.7	1,177.9	1,161.4	2.5	3.8	-36.95	-143.4	22.3	127.8	122.6	5.20	24.560	
1,300.0	1,297.5	1,272.3	1,250.5	2.8	4.4	-35.35	-174.3	17.8	146.2	140.5	5.72	25.557	
1,400.0	1,395.6	1,366.2	1,338.1	3.1	5.0	-34.17	-207.8	12.3	164.7	158.4	6.27	26.263	
1,440.9	1,435.6	1,404.5	1,373.5	3.2	5.3	-33.77	-222.2	9.8	172.2	165.7	6.51	26.450	
1,500.0	1,493.2	1,459.5	1,424.0	3.4	5.7	-33.29	-243.7	5.9	183.6	176.7	6.87	26.701	
1,600.0	1,590.7	1,552.9	1,508.7	3.8	6.4	-32.27	-282.2	-1.5	204.9	197.4	7.50	27.316	
1,700.0	1,688.2	1,650.3	1,596.7	4.2	7.2	-31.27	-323.2	-9.5	227.3	219.1	8.15	27.891	
1,800.0	1,785.7	1,747.7	1,684.7	4.7	8.0	-30.45	-364.2	-17.5	249.6	240.8	8.80	28.361	
1,900.0	1,883.2	1,845.1	1,772.7	5.1	8.8	-29.77	-405.2	-25.5	272.0	262.6	9.46	28.753	
2,000.0	1,980.7	1,942.5	1,860.7	5.5	9.6	-29.19	-446.2	-33.4	294.5	284.4	10.13	29.080	
2,100.0	2,078.2	2,039.9	1,948.7	6.0	10.4	-28.69	-487.3	-41.4	317.0	306.2	10.80	29.359	
2,200.0	2,175.7	2,137.3	2,036.7	6.4	11.2	-28.26	-528.3	-49.4	339.4	328.0	11.47	29.597	
2,300.0	2,273.3	2,234.7	2,124.7	6.9	12.1	-27.88	-569.3	-57.4	361.9	349.8	12.14	29.804	
2,400.0	2,370.8	2,332.2	2,212.7	7.3	12.9	-27.55	-610.3	-65.4	384.5	371.6	12.82	29.984	
2,500.0	2,468.3	2,429.6	2,300.6	7.8	13.7	-27.25	-651.3	-73.4	407.0	393.5	13.50	30.142	
2,600.0	2,565.8	2,527.0	2,388.6	8.3	14.5	-26.98	-692.3	-81.4	429.5	415.3	14.18	30.283	
2,700.0	2,663.3	2,624.4	2,476.6	8.7	15.3	-26.74	-733.3	-89.3	452.1	437.2	14.87	30.407	
2,800.0	2,760.8	2,721.8	2,564.6	9.2	16.1	-26.53	-774.3	-97.3	474.6	459.1	15.55	30.519	
2,900.0	2,858.3	2,819.2	2,652.6	9.7	16.9	-26.33	-815.3	-105.3	497.2	480.9	16.24	30.620	
3,000.0	2,955.8	2,916.6	2,740.6	10.1	17.8	-26.15	-856.3	-113.3	519.7	502.8	16.92	30.711	
3,100.0	3,053.3	3,014.0	2,828.6	10.6	18.6	-25.98	-897.3	-121.3	542.3	524.7	17.61	30.794	
3,200.0	3,150.8	3,111.4	2,916.6	11.1	19.4	-25.83	-938.3	-129.3	564.9	546.6	18.30	30.869	
3,300.0	3,248.3	3,208.8	3,004.6	11.6	20.2	-25.69	-979.3	-137.3	587.4	568.4	18.99	30.938	
3,400.0	3,345.8	3,306.2	3,092.6	12.0	21.0	-25.56	-1,020.3	-145.2	610.0	590.3	19.68	31.001	
3,500.0	3,443.3	3,403.7	3,180.6	12.5	21.8	-25.44	-1,061.4	-153.2	632.6	612.2	20.37	31.060	
3,600.0	3,540.9	3,501.1	3,268.6	13.0	22.7	-25.33	-1,102.4	-161.2	655.2	634.1	21.06	31.114	
3,700.0	3,638.4	3,598.5	3,356.6	13.5	23.5	-25.23	-1,143.4	-169.2	677.8	656.0	21.75	31.163	
3,800.0	3,735.9	3,695.9	3,444.6	13.9	24.3	-25.13	-1,184.4	-177.2	700.3	677.9	22.44	31.210	
3,900.0	3,833.4	3,793.3	3,532.6	14.4	25.1	-25.04	-1,225.4	-185.2	722.9	699.8	23.13	31.253	
4,000.0	3,930.9	3,890.7	3,620.6	14.9	25.9	-24.95	-1,266.4	-193.2	745.5	721.7	23.82	31.293	
4,100.0	4,028.4	3,988.1	3,708.6	15.4	26.8	-24.87	-1,307.4	-201.2	768.1	743.6	24.52	31.331	
4,200.0	4,125.9	4,085.5	3,796.6	15.8	27.6	-24.79	-1,348.4	-209.1	790.7	765.5	25.21	31.366	
4,300.0	4,223.4	4,182.9	3,884.6	16.3	28.4	-24.72	-1,389.4	-217.1	813.3	787.4	25.90	31.399	
4,400.0	4,320.9	4,280.3	3,972.6	16.8	29.2	-24.65	-1,430.4	-225.1	835.9	809.3	26.60	31.430	
4,500.0	4,418.4	4,377.7	4,060.6	17.3	30.0	-24.59	-1,471.4	-233.1	858.5	831.2	27.29	31.459	
4,600.0	4,515.9	4,475.2	4,148.6	17.8	30.9	-24.53	-1,512.4	-241.1	881.1	853.1	27.98	31.487	
4,700.0	4,613.4	4,572.6	4,236.5	18.2	31.7	-24.47	-1,553.4	-249.1	903.7	875.0	28.68	31.513	
4,800.0	4,710.9	4,670.0	4,324.5	18.7	32.5	-24.41	-1,594.4	-257.1	926.3	896.9	29.37	31.538	
4,900.0	4,808.5	4,767.4	4,412.5	19.2	33.3	-24.36	-1,635.5	-265.0	948.9	918.8	30.06	31.561	

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

Company:	Great Western	**Local Co-ordinate Reference:**	Well Postle IC 11-15D
Project:	SEC.11-T3N-R68W	**TVD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Reference Site:	Postle IC 11-16D Pad Sec.11-T3N-R68W	**MD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Postle IC 11-15D	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (9-18-12)	**Offset TVD Reference:**	Offset Datum

Offset Design Postle IC 11-16D Pad Sec.11-T3N-R68W - Postle IC 11-22D - Wellbore #1 - Plan #1 (9-18-12)

Offset Site Error: 0.0 ft

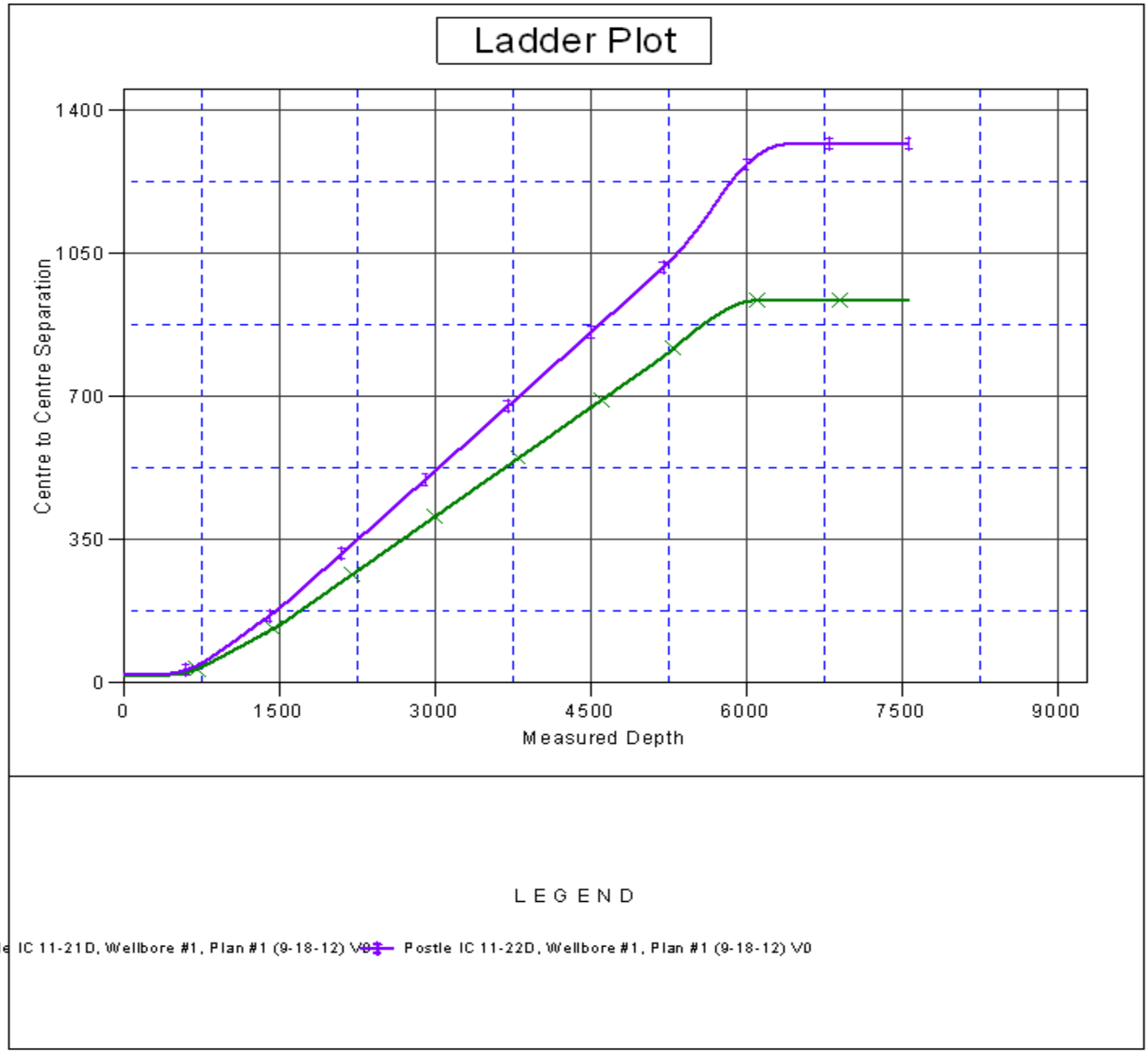
Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,906.0	4,864.8	4,500.5	19.7	34.1	-24.31	-1,676.5	-273.0	971.5	940.7	30.76	31.583	
5,100.0	5,003.5	4,962.2	4,588.5	20.2	35.0	-24.26	-1,717.5	-281.0	994.1	962.6	31.45	31.604	
5,162.5	5,064.4	5,023.1	4,643.5	20.5	35.5	-24.23	-1,743.1	-286.0	1,008.2	976.3	31.89	31.617	
5,200.0	5,101.0	5,059.6	4,676.5	20.6	35.8	-24.28	-1,758.5	-289.0	1,016.9	984.8	32.12	31.658	
5,300.0	5,199.2	5,156.3	4,763.9	20.9	36.6	-24.38	-1,799.2	-296.9	1,042.2	1,009.5	32.67	31.899	
5,400.0	5,297.9	5,252.1	4,850.4	21.2	37.4	-24.44	-1,839.5	-304.8	1,070.6	1,037.4	33.16	32.284	
5,500.0	5,397.1	5,346.9	4,936.1	21.4	38.2	-24.45	-1,879.4	-312.6	1,102.0	1,068.4	33.59	32.809	
5,600.0	5,496.8	5,440.6	5,020.7	21.6	39.0	-24.44	-1,918.9	-320.2	1,136.4	1,102.5	33.95	33.469	
5,700.0	5,596.6	5,557.4	5,126.5	21.8	39.8	-24.30	-1,967.5	-329.7	1,173.5	1,139.2	34.29	34.227	
5,803.4	5,700.0	5,719.7	5,276.3	21.9	40.7	178.53	-2,028.6	-341.6	1,210.8	1,176.2	34.61	34.984	
5,900.0	5,796.6	5,876.7	5,424.4	22.0	41.5	179.07	-2,079.7	-351.6	1,242.2	1,207.1	35.03	35.462	
6,000.0	5,896.6	6,045.2	5,586.3	22.1	42.2	179.52	-2,125.6	-360.5	1,269.4	1,233.9	35.47	35.788	
6,100.0	5,996.6	6,219.0	5,755.8	22.2	42.8	179.87	-2,163.0	-367.8	1,291.0	1,255.0	35.92	35.942	
6,200.0	6,096.6	6,397.0	5,931.5	22.3	43.2	-179.89	-2,190.9	-373.2	1,306.6	1,270.3	36.36	35.940	
6,300.0	6,196.6	6,577.9	6,111.5	22.4	43.6	-179.75	-2,208.1	-376.6	1,316.2	1,279.4	36.77	35.797	
6,400.0	6,296.6	6,760.3	6,293.8	22.6	43.8	-179.70	-2,214.2	-377.8	1,319.5	1,282.4	37.16	35.511	
6,500.0	6,396.6	6,863.1	6,396.6	22.7	43.8	-179.70	-2,214.2	-377.8	1,319.5	1,282.1	37.44	35.245	
6,600.0	6,496.6	6,963.1	6,496.6	22.8	43.9	-179.70	-2,214.2	-377.8	1,319.5	1,281.8	37.72	34.986	
6,700.0	6,596.6	7,063.1	6,596.6	22.9	43.9	-179.70	-2,214.2	-377.8	1,319.5	1,281.5	38.00	34.728	
6,800.0	6,696.6	7,163.1	6,696.6	23.0	44.0	-179.70	-2,214.2	-377.8	1,319.5	1,281.2	38.28	34.471	
6,900.0	6,796.6	7,263.1	6,796.6	23.1	44.0	-179.70	-2,214.2	-377.8	1,319.5	1,281.0	38.56	34.216	
7,000.0	6,896.6	7,363.1	6,896.6	23.2	44.1	-179.70	-2,214.2	-377.8	1,319.5	1,280.7	38.85	33.961	
7,100.0	6,996.6	7,463.1	6,996.6	23.4	44.2	-179.70	-2,214.2	-377.8	1,319.5	1,280.4	39.15	33.707	
7,200.0	7,096.6	7,563.1	7,096.6	23.5	44.2	-179.70	-2,214.2	-377.8	1,319.5	1,280.1	39.44	33.455	
7,300.0	7,196.6	7,663.1	7,196.6	23.6	44.3	-179.70	-2,214.2	-377.8	1,319.5	1,279.8	39.74	33.205	
7,400.0	7,296.6	7,763.1	7,296.6	23.7	44.3	-179.70	-2,214.2	-377.8	1,319.5	1,279.5	40.04	32.955	
7,500.0	7,396.6	7,863.1	7,396.6	23.9	44.4	-179.70	-2,214.2	-377.8	1,319.5	1,279.2	40.34	32.708	
7,561.4	7,458.0	7,924.5	7,458.0	23.9	44.4	-179.70	-2,214.2	-377.8	1,319.5	1,279.0	40.53	32.557	

Company:	Great Western	**Local Co-ordinate Reference:**	Well Postle IC 11-15D
Project:	SEC.11-T3N-R68W	**TVD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Reference Site:	Postle IC 11-16D Pad Sec.11-T3N-R68W	**MD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Postle IC 11-15D	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (9-18-12)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4964.0ft (Original Well Elev) Coordinates are relative to: Postle IC 11-15D
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.35°



Company:	Great Western	**Local Co-ordinate Reference:**	Well Postle IC 11-15D
Project:	SEC.11-T3N-R68W	**TVD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Reference Site:	Postle IC 11-16D Pad Sec.11-T3N-R68W	**MD Reference:**	WELL @ 4964.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Postle IC 11-15D	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (9-18-12)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4964.0ft (Original Well Elev)	Coordinates are relative to: Postle IC 11-15D
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 °	Grid Convergence at Surface is: 0.35°