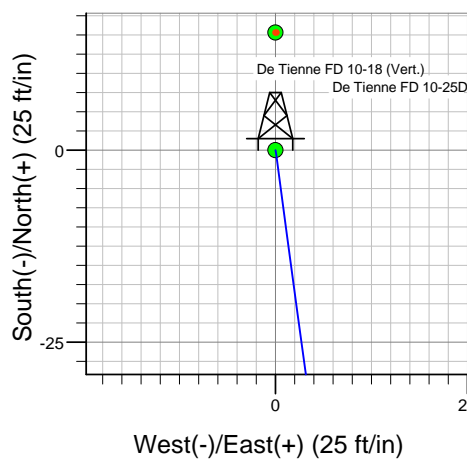
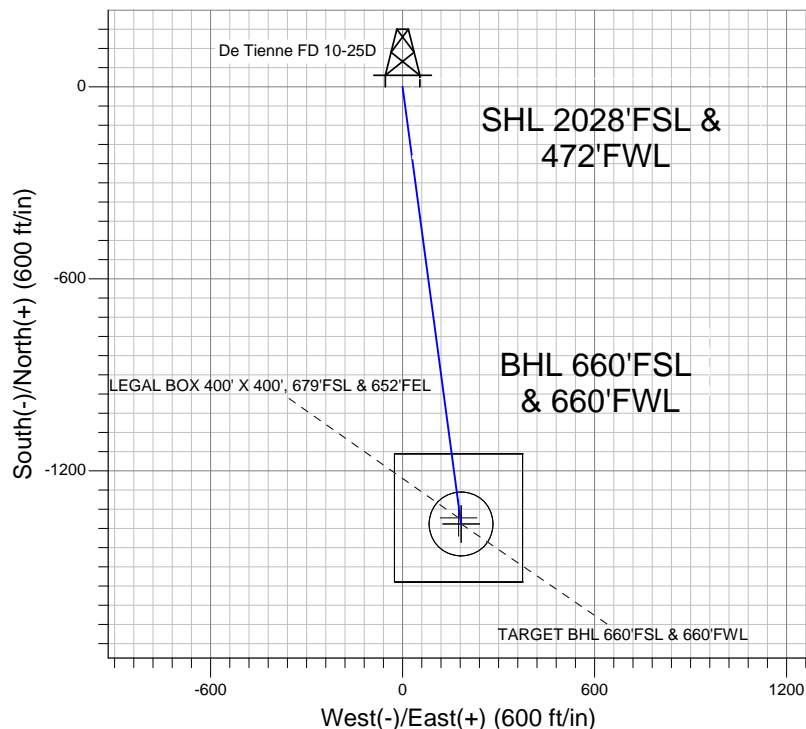
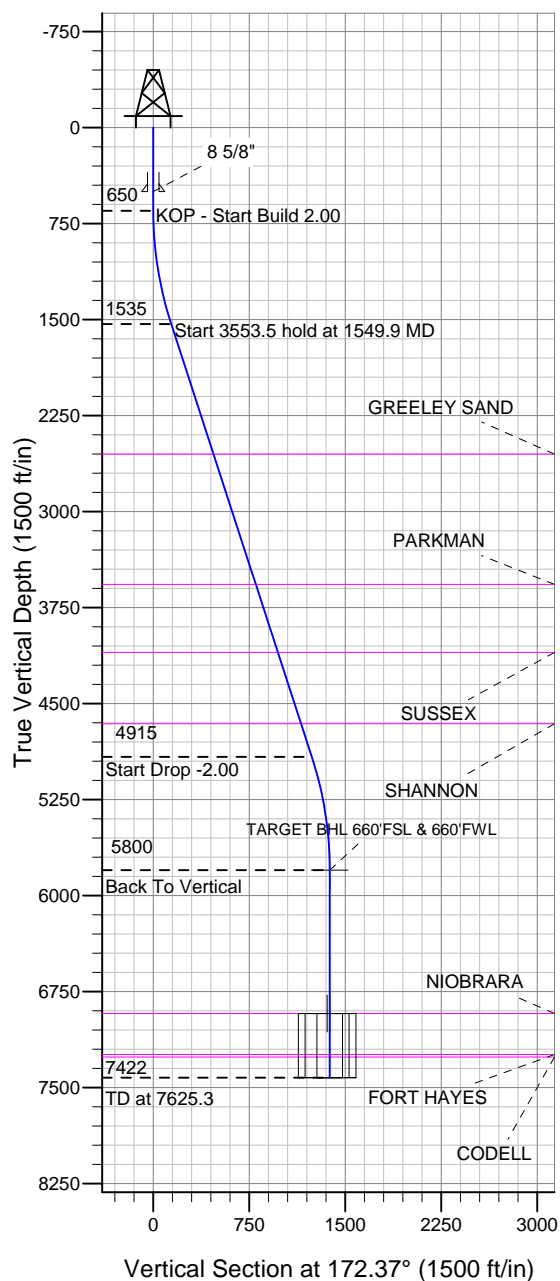


### Well Name: De Tienne FD 10-25D

Surface Location: De Tienne FD 10-25D Pad Sec.10-T6N-R67W  
 North American Datum 1983, US State Plane 1983 Colorado Northern Zone  
 Ground Elevation: 4839.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1425463.86	3170419.67	40.499683	-104.887197	
		Original Well Elev	WELL @ 4853.0ft	(Original Well Elev)		

## Great Western



De Tienne FD 10-25D Pad Sec.10-T6N-R67W  
 De Tienne FD 10-25D  
 Plan #1 (5-7-12)  
 10:42, May 09 2012



Azimuths to True North  
 Magnetic North: 8.82°  
 Magnetic Field  
 Strength: 53075.4snT  
 Dip Angle: 67.08°  
 Date: 5/9/2012  
 Model: IGRF2010

### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 660'FSL & 660'FWL	5800.0	-1366.2	183.0	40.495933	-104.886539	Point
LEGAL BOX 400' X 400', 679'FSL & 652'FEL	6921.0	-1347.2	175.0	40.495985	-104.886568	Rectangle (Sides: L400.0 W400.0)
TARGET CIRCLE 660'FSL & 660'FWL	6921.0	-1366.2	183.0	40.495933	-104.886539	Circle (Radius: 100.0)

### 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	650.0	0.00	0.00	650.0	0.0	0.0	0.00	0.00	0.0	
3	1549.9	18.00	172.37	1535.2	-138.9	18.6	2.00	172.37	140.2	
4	5103.4	18.00	172.37	4914.8	-1227.2	164.4	0.00	0.00	1238.2	
5	6003.3	0.00	0.00	5800.0	-1366.2	183.0	2.00	180.00	1378.4	TARGET BHL 660'FSL & 660'FWL
6	7625.3	0.00	0.00	7422.0	-1366.2	183.0	0.00	0.00	1378.4	



## **Great Western**

**SEC.10-T6N-R67W**

**De Tienne FD 10-25D Pad Sec.10-T6N-R67W**

**De Tienne FD 10-25D**

**Wellbore #1**

**Plan: Plan #1 (5-7-12)**

## **Standard Planning Report**

**09 May, 2012**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well De Tienne FD 10-25D
<b>Company:</b>	Great Western	<b>TVD Reference:</b>	WELL @ 4853.0ft (Original Well Elev)
<b>Project:</b>	SEC.10-T6N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (Original Well Elev)
<b>Site:</b>	De Tienne FD 10-25D Pad Sec.10-T6N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	De Tienne FD 10-25D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-7-12)		

<b>Project</b>	SEC.10-T6N-R67W, Weld County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

De Tienne FD 10-25D Pad Sec.10-T6N-R67W					
<b>Site Position:</b>		<b>Northing:</b>		<b>Latitude:</b>	
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,425,463.87 ft	<b>Longitude:</b>	40.499683
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	3,170,419.67 ft		-104.887197
			"	<b>Grid Convergence:</b>	0.40 °

Well	De Tienne FD 10-25D					
Well Position	+N-S	0.0 ft	Northing:	1,425,463.86 ft	Latitude:	40.499683
	+E-W	0.0 ft	Easting:	3,170,419.67 ft	Longitude:	-104.887197
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,839.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/9/2012	8.82	67.08	53,075

Design	Plan #1 (5-7-12)			
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	172.37

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	
650.0	0.00	0.00	650.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,549.9	18.00	172.37	1,535.2	-138.9	18.6	2.00	2.00	0.00	172.37	
5,103.4	18.00	172.37	4,914.8	-1,227.2	164.4	0.00	0.00	0.00	0.00	
6,003.3	0.00	0.00	5,800.0	-1,366.2	183.0	2.00	-2.00	0.00	180.00	TARGET BHL 660°
7,625.3	0.00	0.00	7,422.0	-1,366.2	183.0	0.00	0.00	0.00	0.00	

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well De Tienne FD 10-25D
<b>Company:</b>	Great Western	<b>TVD Reference:</b>	WELL @ 4853.0ft (Original Well Elev)
<b>Project:</b>	SEC.10-T6N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (Original Well Elev)
<b>Site:</b>	De Tienne FD 10-25D Pad Sec.10-T6N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	De Tienne FD 10-25D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-7-12)		

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
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
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
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
650.0	0.00	0.00	650.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 2.00									
680.0	0.60	172.37	680.0	-0.2	0.0	0.2	2.00	2.00	0.00
720.0	1.40	172.37	720.0	-0.8	0.1	0.9	2.00	2.00	0.00
760.0	2.20	172.37	760.0	-2.1	0.3	2.1	2.00	2.00	0.00
800.0	3.00	172.37	799.9	-3.9	0.5	3.9	2.00	2.00	0.00
840.0	3.80	172.37	839.9	-6.2	0.8	6.3	2.00	2.00	0.00
880.0	4.60	172.37	879.8	-9.1	1.2	9.2	2.00	2.00	0.00
920.0	5.40	172.37	919.6	-12.6	1.7	12.7	2.00	2.00	0.00
960.0	6.20	172.37	959.4	-16.6	2.2	16.8	2.00	2.00	0.00
1,000.0	7.00	172.37	999.1	-21.2	2.8	21.4	2.00	2.00	0.00
1,040.0	7.80	172.37	1,038.8	-26.3	3.5	26.5	2.00	2.00	0.00
1,080.0	8.60	172.37	1,078.4	-31.9	4.3	32.2	2.00	2.00	0.00
1,120.0	9.40	172.37	1,117.9	-38.1	5.1	38.5	2.00	2.00	0.00
1,160.0	10.20	172.37	1,157.3	-44.9	6.0	45.3	2.00	2.00	0.00
1,200.0	11.00	172.37	1,196.6	-52.2	7.0	52.6	2.00	2.00	0.00
1,240.0	11.80	172.37	1,235.8	-60.0	8.0	60.5	2.00	2.00	0.00
1,280.0	12.60	172.37	1,274.9	-68.4	9.2	69.0	2.00	2.00	0.00
1,320.0	13.40	172.37	1,313.9	-77.3	10.4	78.0	2.00	2.00	0.00
1,360.0	14.20	172.37	1,352.8	-86.8	11.6	87.5	2.00	2.00	0.00
1,400.0	15.00	172.37	1,391.5	-96.8	13.0	97.6	2.00	2.00	0.00
1,440.0	15.80	172.37	1,430.0	-107.3	14.4	108.2	2.00	2.00	0.00
1,480.0	16.60	172.37	1,468.4	-118.3	15.9	119.4	2.00	2.00	0.00
1,520.0	17.40	172.37	1,506.7	-129.9	17.4	131.1	2.00	2.00	0.00
1,549.9	18.00	172.37	1,535.2	-138.9	18.6	140.2	2.00	2.00	0.00
Start 3553.5 hold at 1549.9 MD									
1,560.0	18.00	172.37	1,544.8	-142.0	19.0	143.3	0.00	0.00	0.00
1,600.0	18.00	172.37	1,582.8	-154.3	20.7	155.7	0.00	0.00	0.00
1,640.0	18.00	172.37	1,620.9	-166.5	22.3	168.0	0.00	0.00	0.00
1,680.0	18.00	172.37	1,658.9	-178.8	23.9	180.4	0.00	0.00	0.00
1,720.0	18.00	172.37	1,696.9	-191.0	25.6	192.7	0.00	0.00	0.00
1,760.0	18.00	172.37	1,735.0	-203.3	27.2	205.1	0.00	0.00	0.00
1,800.0	18.00	172.37	1,773.0	-215.5	28.9	217.5	0.00	0.00	0.00
1,840.0	18.00	172.37	1,811.1	-227.8	30.5	229.8	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well De Tienne FD 10-25D
<b>Company:</b>	Great Western	<b>TVD Reference:</b>	WELL @ 4853.0ft (Original Well Elev)
<b>Project:</b>	SEC.10-T6N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (Original Well Elev)
<b>Site:</b>	De Tienne FD 10-25D Pad Sec.10-T6N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	De Tienne FD 10-25D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-7-12)		

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)
1,880.0	18.00	172.37	1,849.1	-240.0	32.2	242.2	0.00	0.00	0.00
1,920.0	18.00	172.37	1,887.2	-252.3	33.8	254.5	0.00	0.00	0.00
1,960.0	18.00	172.37	1,925.2	-264.5	35.4	266.9	0.00	0.00	0.00
2,000.0	18.00	172.37	1,963.2	-276.8	37.1	279.3	0.00	0.00	0.00
2,040.0	18.00	172.37	2,001.3	-289.0	38.7	291.6	0.00	0.00	0.00
2,080.0	18.00	172.37	2,039.3	-301.3	40.4	304.0	0.00	0.00	0.00
2,120.0	18.00	172.37	2,077.4	-313.5	42.0	316.3	0.00	0.00	0.00
2,160.0	18.00	172.37	2,115.4	-325.8	43.6	328.7	0.00	0.00	0.00
2,200.0	18.00	172.37	2,153.5	-338.0	45.3	341.1	0.00	0.00	0.00
2,240.0	18.00	172.37	2,191.5	-350.3	46.9	353.4	0.00	0.00	0.00
2,280.0	18.00	172.37	2,229.5	-362.5	48.6	365.8	0.00	0.00	0.00
2,320.0	18.00	172.37	2,267.6	-374.8	50.2	378.1	0.00	0.00	0.00
2,360.0	18.00	172.37	2,305.6	-387.0	51.8	390.5	0.00	0.00	0.00
2,400.0	18.00	172.37	2,343.7	-399.3	53.5	402.9	0.00	0.00	0.00
2,440.0	18.00	172.37	2,381.7	-411.5	55.1	415.2	0.00	0.00	0.00
2,480.0	18.00	172.37	2,419.8	-423.8	56.8	427.6	0.00	0.00	0.00
2,520.0	18.00	172.37	2,457.8	-436.0	58.4	439.9	0.00	0.00	0.00
2,560.0	18.00	172.37	2,495.8	-448.3	60.1	452.3	0.00	0.00	0.00
2,600.0	18.00	172.37	2,533.9	-460.5	61.7	464.7	0.00	0.00	0.00
2,618.0	18.00	172.37	2,551.0	-466.1	62.4	470.2	0.00	0.00	0.00
GREELEY SAND									
2,640.0	18.00	172.37	2,571.9	-472.8	63.3	477.0	0.00	0.00	0.00
2,680.0	18.00	172.37	2,610.0	-485.0	65.0	489.4	0.00	0.00	0.00
2,720.0	18.00	172.37	2,648.0	-497.3	66.6	501.7	0.00	0.00	0.00
2,760.0	18.00	172.37	2,686.1	-509.5	68.3	514.1	0.00	0.00	0.00
2,800.0	18.00	172.37	2,724.1	-521.8	69.9	526.5	0.00	0.00	0.00
2,840.0	18.00	172.37	2,762.1	-534.0	71.5	538.8	0.00	0.00	0.00
2,880.0	18.00	172.37	2,800.2	-546.3	73.2	551.2	0.00	0.00	0.00
2,920.0	18.00	172.37	2,838.2	-558.5	74.8	563.5	0.00	0.00	0.00
2,960.0	18.00	172.37	2,876.3	-570.8	76.5	575.9	0.00	0.00	0.00
3,000.0	18.00	172.37	2,914.3	-583.0	78.1	588.3	0.00	0.00	0.00
3,040.0	18.00	172.37	2,952.4	-595.3	79.7	600.6	0.00	0.00	0.00
3,080.0	18.00	172.37	2,990.4	-607.5	81.4	613.0	0.00	0.00	0.00
3,120.0	18.00	172.37	3,028.4	-619.8	83.0	625.3	0.00	0.00	0.00
3,160.0	18.00	172.37	3,066.5	-632.0	84.7	637.7	0.00	0.00	0.00
3,200.0	18.00	172.37	3,104.5	-644.3	86.3	650.1	0.00	0.00	0.00
3,240.0	18.00	172.37	3,142.6	-656.5	87.9	662.4	0.00	0.00	0.00
3,280.0	18.00	172.37	3,180.6	-668.8	89.6	674.8	0.00	0.00	0.00
3,320.0	18.00	172.37	3,218.7	-681.0	91.2	687.1	0.00	0.00	0.00
3,360.0	18.00	172.37	3,256.7	-693.3	92.9	699.5	0.00	0.00	0.00
3,400.0	18.00	172.37	3,294.7	-705.5	94.5	711.8	0.00	0.00	0.00
3,440.0	18.00	172.37	3,332.8	-717.8	96.2	724.2	0.00	0.00	0.00
3,480.0	18.00	172.37	3,370.8	-730.0	97.8	736.6	0.00	0.00	0.00
3,520.0	18.00	172.37	3,408.9	-742.3	99.4	748.9	0.00	0.00	0.00
3,560.0	18.00	172.37	3,446.9	-754.5	101.1	761.3	0.00	0.00	0.00
3,600.0	18.00	172.37	3,485.0	-766.8	102.7	773.6	0.00	0.00	0.00
3,640.0	18.00	172.37	3,523.0	-779.0	104.4	786.0	0.00	0.00	0.00
3,680.0	18.00	172.37	3,561.0	-791.3	106.0	798.4	0.00	0.00	0.00
3,688.4	18.00	172.37	3,569.0	-793.9	106.3	801.0	0.00	0.00	0.00
PARKMAN									
3,720.0	18.00	172.37	3,599.1	-803.5	107.6	810.7	0.00	0.00	0.00
3,760.0	18.00	172.37	3,637.1	-815.8	109.3	823.1	0.00	0.00	0.00
3,800.0	18.00	172.37	3,675.2	-828.0	110.9	835.4	0.00	0.00	0.00
3,840.0	18.00	172.37	3,713.2	-840.3	112.6	847.8	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well De Tienne FD 10-25D
<b>Company:</b>	Great Western	<b>TVD Reference:</b>	WELL @ 4853.0ft (Original Well Elev)
<b>Project:</b>	SEC.10-T6N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (Original Well Elev)
<b>Site:</b>	De Tienne FD 10-25D Pad Sec.10-T6N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	De Tienne FD 10-25D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-7-12)		

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)
3,880.0	18.00	172.37	3,751.2	-852.6	114.2	860.2	0.00	0.00	0.00
3,920.0	18.00	172.37	3,789.3	-864.8	115.8	872.5	0.00	0.00	0.00
3,960.0	18.00	172.37	3,827.3	-877.1	117.5	884.9	0.00	0.00	0.00
4,000.0	18.00	172.37	3,865.4	-889.3	119.1	897.2	0.00	0.00	0.00
4,040.0	18.00	172.37	3,903.4	-901.6	120.8	909.6	0.00	0.00	0.00
4,080.0	18.00	172.37	3,941.5	-913.8	122.4	922.0	0.00	0.00	0.00
4,120.0	18.00	172.37	3,979.5	-926.1	124.0	934.3	0.00	0.00	0.00
4,160.0	18.00	172.37	4,017.5	-938.3	125.7	946.7	0.00	0.00	0.00
4,200.0	18.00	172.37	4,055.6	-950.6	127.3	959.0	0.00	0.00	0.00
4,240.0	18.00	172.37	4,093.6	-962.8	129.0	971.4	0.00	0.00	0.00
4,245.6	18.00	172.37	4,099.0	-964.5	129.2	973.1	0.00	0.00	0.00
<b>SUSSEX</b>									
4,280.0	18.00	172.37	4,131.7	-975.1	130.6	983.8	0.00	0.00	0.00
4,320.0	18.00	172.37	4,169.7	-987.3	132.3	996.1	0.00	0.00	0.00
4,360.0	18.00	172.37	4,207.8	-999.6	133.9	1,008.5	0.00	0.00	0.00
4,400.0	18.00	172.37	4,245.8	-1,011.8	135.5	1,020.8	0.00	0.00	0.00
4,440.0	18.00	172.37	4,283.8	-1,024.1	137.2	1,033.2	0.00	0.00	0.00
4,480.0	18.00	172.37	4,321.9	-1,036.3	138.8	1,045.6	0.00	0.00	0.00
4,520.0	18.00	172.37	4,359.9	-1,048.6	140.5	1,057.9	0.00	0.00	0.00
4,560.0	18.00	172.37	4,398.0	-1,060.8	142.1	1,070.3	0.00	0.00	0.00
4,600.0	18.00	172.37	4,436.0	-1,073.1	143.7	1,082.6	0.00	0.00	0.00
4,640.0	18.00	172.37	4,474.1	-1,085.3	145.4	1,095.0	0.00	0.00	0.00
4,680.0	18.00	172.37	4,512.1	-1,097.6	147.0	1,107.4	0.00	0.00	0.00
4,720.0	18.00	172.37	4,550.1	-1,109.8	148.7	1,119.7	0.00	0.00	0.00
4,760.0	18.00	172.37	4,588.2	-1,122.1	150.3	1,132.1	0.00	0.00	0.00
4,800.0	18.00	172.37	4,626.2	-1,134.3	151.9	1,144.4	0.00	0.00	0.00
4,832.4	18.00	172.37	4,657.0	-1,144.2	153.3	1,154.4	0.00	0.00	0.00
<b>SHANNON</b>									
4,840.0	18.00	172.37	4,664.3	-1,146.6	153.6	1,156.8	0.00	0.00	0.00
4,880.0	18.00	172.37	4,702.3	-1,158.8	155.2	1,169.2	0.00	0.00	0.00
4,920.0	18.00	172.37	4,740.4	-1,171.1	156.9	1,181.5	0.00	0.00	0.00
4,960.0	18.00	172.37	4,778.4	-1,183.3	158.5	1,193.9	0.00	0.00	0.00
5,000.0	18.00	172.37	4,816.4	-1,195.6	160.2	1,206.2	0.00	0.00	0.00
5,040.0	18.00	172.37	4,854.5	-1,207.8	161.8	1,218.6	0.00	0.00	0.00
5,080.0	18.00	172.37	4,892.5	-1,220.1	163.4	1,231.0	0.00	0.00	0.00
5,103.4	18.00	172.37	4,914.8	-1,227.2	164.4	1,238.2	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
5,120.0	17.67	172.37	4,930.6	-1,232.3	165.1	1,243.3	2.00	-2.00	0.00
5,160.0	16.87	172.37	4,968.8	-1,244.0	166.6	1,255.1	2.00	-2.00	0.00
5,200.0	16.07	172.37	5,007.1	-1,255.3	168.1	1,266.5	2.00	-2.00	0.00
5,240.0	15.27	172.37	5,045.7	-1,266.0	169.6	1,277.3	2.00	-2.00	0.00
5,280.0	14.47	172.37	5,084.3	-1,276.1	170.9	1,287.5	2.00	-2.00	0.00
5,320.0	13.67	172.37	5,123.1	-1,285.8	172.2	1,297.3	2.00	-2.00	0.00
5,360.0	12.87	172.37	5,162.0	-1,294.9	173.5	1,306.4	2.00	-2.00	0.00
5,400.0	12.07	172.37	5,201.1	-1,303.4	174.6	1,315.1	2.00	-2.00	0.00
5,440.0	11.27	172.37	5,240.3	-1,311.5	175.7	1,323.2	2.00	-2.00	0.00
5,480.0	10.47	172.37	5,279.6	-1,318.9	176.7	1,330.7	2.00	-2.00	0.00
5,520.0	9.67	172.37	5,318.9	-1,325.9	177.6	1,337.7	2.00	-2.00	0.00
5,560.0	8.87	172.37	5,358.4	-1,332.2	178.5	1,344.1	2.00	-2.00	0.00
5,600.0	8.07	172.37	5,398.0	-1,338.1	179.2	1,350.0	2.00	-2.00	0.00
5,640.0	7.27	172.37	5,437.6	-1,343.4	180.0	1,355.4	2.00	-2.00	0.00
5,680.0	6.47	172.37	5,477.3	-1,348.1	180.6	1,360.2	2.00	-2.00	0.00
5,720.0	5.67	172.37	5,517.1	-1,352.3	181.1	1,364.4	2.00	-2.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well De Tienne FD 10-25D
<b>Company:</b>	Great Western	<b>TVD Reference:</b>	WELL @ 4853.0ft (Original Well Elev)
<b>Project:</b>	SEC.10-T6N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (Original Well Elev)
<b>Site:</b>	De Tienne FD 10-25D Pad Sec.10-T6N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	De Tienne FD 10-25D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-7-12)		

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)
5,760.0	4.87	172.37	5,556.9	-1,355.9	181.6	1,368.1	2.00	-2.00	0.00
5,800.0	4.07	172.37	5,596.8	-1,359.0	182.0	1,371.2	2.00	-2.00	0.00
5,840.0	3.27	172.37	5,636.7	-1,361.6	182.4	1,373.7	2.00	-2.00	0.00
5,880.0	2.47	172.37	5,676.7	-1,363.5	182.7	1,375.7	2.00	-2.00	0.00
5,920.0	1.67	172.37	5,716.7	-1,365.0	182.8	1,377.2	2.00	-2.00	0.00
5,960.0	0.87	172.37	5,756.7	-1,365.9	183.0	1,378.1	2.00	-2.00	0.00
6,000.0	0.07	172.37	5,796.7	-1,366.2	183.0	1,378.4	2.00	-2.00	0.00
6,003.3	0.00	0.00	5,800.0	-1,366.2	183.0	1,378.4	2.00	-2.00	-5,148.37
Back To Vertical - TARGET BHL 660'FSL & 660'FWL									
6,040.0	0.00	0.00	5,836.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,080.0	0.00	0.00	5,876.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,120.0	0.00	0.00	5,916.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,160.0	0.00	0.00	5,956.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,200.0	0.00	0.00	5,996.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,240.0	0.00	0.00	6,036.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,280.0	0.00	0.00	6,076.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,320.0	0.00	0.00	6,116.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,360.0	0.00	0.00	6,156.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,400.0	0.00	0.00	6,196.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,440.0	0.00	0.00	6,236.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,480.0	0.00	0.00	6,276.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,520.0	0.00	0.00	6,316.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,560.0	0.00	0.00	6,356.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,600.0	0.00	0.00	6,396.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,640.0	0.00	0.00	6,436.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,680.0	0.00	0.00	6,476.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,720.0	0.00	0.00	6,516.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,760.0	0.00	0.00	6,556.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,800.0	0.00	0.00	6,596.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,840.0	0.00	0.00	6,636.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,880.0	0.00	0.00	6,676.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,920.0	0.00	0.00	6,716.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
6,960.0	0.00	0.00	6,756.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
7,000.0	0.00	0.00	6,796.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
7,040.0	0.00	0.00	6,836.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
7,080.0	0.00	0.00	6,876.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
7,120.0	0.00	0.00	6,916.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
7,124.3	0.00	0.00	6,921.0	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
NIOBRARA - LEGAL BOX 400' X 400', 679'FSL & 652'FEL - TARGET CIRCLE 660'FSL & 660'FWL									
7,160.0	0.00	0.00	6,956.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
7,200.0	0.00	0.00	6,996.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
7,240.0	0.00	0.00	7,036.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
7,280.0	0.00	0.00	7,076.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
7,320.0	0.00	0.00	7,116.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
7,360.0	0.00	0.00	7,156.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
7,400.0	0.00	0.00	7,196.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
7,440.0	0.00	0.00	7,236.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
7,443.3	0.00	0.00	7,240.0	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
FORT HAYES									
7,465.3	0.00	0.00	7,262.0	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
CODELL									
7,480.0	0.00	0.00	7,276.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
7,520.0	0.00	0.00	7,316.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well De Tienne FD 10-25D
<b>Company:</b>	Great Western	<b>TVD Reference:</b>	WELL @ 4853.0ft (Original Well Elev)
<b>Project:</b>	SEC.10-T6N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (Original Well Elev)
<b>Site:</b>	De Tienne FD 10-25D Pad Sec.10-T6N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	De Tienne FD 10-25D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-7-12)		

## 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)
7,560.0	0.00	0.00	7,356.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
7,600.0	0.00	0.00	7,396.7	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
7,625.3	0.00	0.00	7,422.0	-1,366.2	183.0	1,378.4	0.00	0.00	0.00
TD at 7625.3									

## Targets

Target Name	- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting		
- Shape		(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	Latitude	Longitude
LEGAL BOX 400' X 40'	- plan misses target center by 20.6ft at 7124.3ft MD (6921.0 TVD, -1366.2 N, 183.0 E) - Rectangle (sides W400.0 H400.0 D501.0)	0.00	0.00	6,921.0	-1,347.2	175.0	1,424,117.95	3,170,603.97	40.495985	-104.886568
TARGET BHL 660'FS	- plan hits target center - Point	0.00	0.00	5,800.0	-1,366.2	183.0	1,424,099.03	3,170,612.10	40.495933	-104.886539
TARGET CIRCLE 660'FS	- plan hits target center - Circle (radius 100.0)	0.00	0.00	6,921.0	-1,366.2	183.0	1,424,099.03	3,170,612.10	40.495933	-104.886539

## Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
500.0	500.0	8 5/8"	8-5/8	12-1/4

## Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,618.0	2,551.0	GREELEY SAND		0.00	
3,688.4	3,569.0	PARKMAN		0.00	
4,245.6	4,099.0	SUSSEX		0.00	
4,832.4	4,657.0	SHANNON		0.00	
7,124.3	6,921.0	NIOBRARA		0.00	
7,443.3	7,240.0	FORT HAYES		0.00	
7,465.3	7,262.0	CODELL		0.00	

## Plan Annotations

	Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
			+N/-S (ft)	+E/-W (ft)	
	650.0	650.0	0.0	0.0	KOP - Start Build 2.00
	1,549.9	1,535.2	-138.9	18.6	Start 3553.5 hold at 1549.9 MD
	5,103.4	4,914.8	-1,227.2	164.4	Start Drop -2.00
	6,003.3	5,800.0	-1,366.2	183.0	Back To Vertical
	7,625.3	7,422.0	-1,366.2	183.0	TD at 7625.3





## **Great Western**

**SEC.10-T6N-R67W**

**De Tienne FD 10-25D Pad Sec.10-T6N-R67W**

**De Tienne FD 10-25D**

**Wellbore #1**

**Plan #1 (5-7-12)**

## **Anticollision Report**

**09 May, 2012**

<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well De Tienne FD 10-25D
<b>Project:</b>	SEC.10-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (Original Well Elev)
<b>Reference Site:</b>	De Tienne FD 10-25D Pad Sec.10-T6N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	De Tienne FD 10-25D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-7-12)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #1 (5-7-12)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD Interval 100.0ft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 10,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b> 5/9/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	7,625.3	Plan #1 (5-7-12) (Wellbore #1)	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>						
De Tienne FD 10-25D Pad Sec.10-T6N-R67W						
De Tienne FD 10-18 (Vert.) - Wellbore #1 - Plan #1 (5-8-	600.0	600.0	15.3	12.8	6.190	CC
De Tienne FD 10-18 (Vert.) - Wellbore #1 - Plan #1 (5-8-	627.8	627.8	15.4	12.8	5.927	ES
De Tienne FD 10-18 (Vert.) - Wellbore #1 - Plan #1 (5-8-	700.0	700.0	15.7	12.8	5.412	SF

Offset Design													Offset Site Error:	0.0 ft
De Tienne FD 10-25D Pad Sec.10-T6N-R67W - De Tienne FD 10-18 (Vert.) - Wellbore #1 - Plan #1 (5-8													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
0.0	0.0	0.0	0.0	0.0	0.0	0.00	15.3	0.0	15.3	15.3	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	0.00	15.3	0.0	15.3	15.1	0.22	68.095		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	15.3	0.0	15.3	14.6	0.67	22.698		
300.0	300.0	300.0	300.0	0.6	0.6	0.00	15.3	0.0	15.3	14.2	1.12	13.619		
400.0	400.0	400.0	400.0	0.8	0.8	0.00	15.3	0.0	15.3	13.7	1.57	9.728		
500.0	500.0	500.0	500.0	1.0	1.0	0.00	15.3	0.0	15.3	13.3	2.02	7.566		
600.0	600.0	600.0	600.0	1.2	1.2	0.00	15.3	0.0	15.3	12.8	2.47	6.190	CC	
627.8	627.8	627.8	627.8	1.3	1.3	-172.40	15.3	0.0	15.4	12.8	2.59	5.927	ES	
700.0	700.0	700.0	700.0	1.4	1.5	-172.58	15.3	0.0	15.7	12.8	2.91	5.412	SF	
800.0	799.9	799.9	799.9	1.6	1.7	-173.92	15.3	0.0	19.2	15.9	3.31	5.800		
900.0	899.7	899.7	899.7	1.8	1.9	-175.53	15.3	0.0	26.2	22.4	3.72	7.024		
1,000.0	999.1	999.1	999.1	2.0	2.1	-176.79	15.3	0.0	36.6	32.4	4.14	8.835		
1,100.0	1,098.2	1,098.2	1,098.2	2.3	2.4	-177.66	15.3	0.0	50.5	45.9	4.56	11.068		
1,200.0	1,196.6	1,196.6	1,196.6	2.6	2.6	-178.25	15.3	0.0	67.8	62.9	4.98	13.611		
1,300.0	1,294.4	1,294.4	1,294.4	3.0	2.8	-178.65	15.3	0.0	88.6	83.2	5.41	16.386		
1,400.0	1,391.5	1,391.5	1,391.5	3.4	3.0	-178.93	15.3	0.0	112.8	107.0	5.83	19.336		
1,500.0	1,487.6	1,487.6	1,487.6	3.9	3.2	-179.13	15.3	0.0	140.4	134.1	6.26	22.419		
1,600.0	1,582.8	1,582.8	1,582.8	4.4	3.4	-179.28	15.3	0.0	170.8	164.1	6.71	25.466		
1,700.0	1,677.9	1,677.9	1,677.9	5.0	3.7	-179.39	15.3	0.0	201.7	194.6	7.18	28.087		
1,800.0	1,773.0	1,773.0	1,773.0	5.5	3.9	-179.47	15.3	0.0	232.6	225.0	7.66	30.357		
1,900.0	1,868.1	1,868.1	1,868.1	6.1	4.1	-179.54	15.3	0.0	263.5	255.4	8.15	32.339		
2,000.0	1,963.2	1,963.2	1,963.2	6.7	4.3	-179.58	15.3	0.0	294.4	285.8	8.64	34.081		
2,100.0	2,058.4	2,058.4	2,058.4	7.3	4.5	-179.62	15.3	0.0	325.3	316.2	9.13	35.622		
2,200.0	2,153.5	2,153.5	2,153.5	8.0	4.7	-179.66	15.3	0.0	356.2	346.6	9.63	36.994		

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

<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well De Tienne FD 10-25D
<b>Project:</b>	SEC.10-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (Original Well Elev)
<b>Reference Site:</b>	De Tienne FD 10-25D Pad Sec.10-T6N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	De Tienne FD 10-25D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-7-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design De Tienne FD 10-25D Pad Sec.10-T6N-R67W - De Tienne FD 10-18 (Vert.) - Wellbore #1 - Plan #1 (5-8													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,300.0	2,248.6	2,248.6	2,248.6	8.6	4.9	-179.68	15.3	0.0	387.1	377.0	10.13	38.222		
2,400.0	2,343.7	2,343.7	2,343.7	9.2	5.2	-179.71	15.3	0.0	418.0	407.4	10.63	39.327		
2,500.0	2,438.8	2,438.8	2,438.8	9.8	5.4	-179.73	15.3	0.0	448.9	437.8	11.13	40.325		
2,600.0	2,533.9	2,533.9	2,533.9	10.4	5.6	-179.74	15.3	0.0	479.8	468.2	11.64	41.232		
2,700.0	2,629.0	2,629.0	2,629.0	11.0	5.8	-179.76	15.3	0.0	510.7	498.6	12.14	42.059		
2,800.0	2,724.1	2,724.1	2,724.1	11.7	6.0	-179.77	15.3	0.0	541.6	529.0	12.65	42.816		
2,900.0	2,819.2	2,819.2	2,819.2	12.3	6.2	-179.79	15.3	0.0	572.5	559.4	13.16	43.511		
3,000.0	2,914.3	2,914.3	2,914.3	12.9	6.4	-179.80	15.3	0.0	603.4	589.8	13.67	44.151		
3,100.0	3,009.4	3,009.4	3,009.4	13.6	6.7	-179.81	15.3	0.0	634.3	620.1	14.18	44.743		
3,200.0	3,104.5	3,104.5	3,104.5	14.2	6.9	-179.82	15.3	0.0	665.2	650.5	14.69	45.291		
3,300.0	3,199.6	3,199.6	3,199.6	14.8	7.1	-179.82	15.3	0.0	696.1	680.9	15.20	45.800		
3,400.0	3,294.7	3,294.7	3,294.7	15.4	7.3	-179.83	15.3	0.0	727.0	711.3	15.71	46.274		
3,500.0	3,389.8	3,389.8	3,389.8	16.1	7.5	-179.84	15.3	0.0	757.9	741.7	16.22	46.717		
3,600.0	3,485.0	3,485.0	3,485.0	16.7	7.7	-179.84	15.3	0.0	788.8	772.1	16.74	47.131		
3,700.0	3,580.1	3,580.1	3,580.1	17.3	7.9	-179.85	15.3	0.0	819.7	802.5	17.25	47.520		
3,800.0	3,675.2	3,675.2	3,675.2	18.0	8.1	-179.86	15.3	0.0	850.6	832.9	17.76	47.884		
3,900.0	3,770.3	3,770.3	3,770.3	18.6	8.4	-179.86	15.3	0.0	881.5	863.2	18.28	48.227		
4,000.0	3,865.4	3,865.4	3,865.4	19.2	8.6	-179.87	15.3	0.0	912.4	893.6	18.79	48.550		
4,100.0	3,960.5	3,960.5	3,960.5	19.9	8.8	-179.87	15.3	0.0	943.3	924.0	19.31	48.855		
4,200.0	4,055.6	4,055.6	4,055.6	20.5	9.0	-179.87	15.3	0.0	974.2	954.4	19.82	49.144		
4,300.0	4,150.7	4,150.7	4,150.7	21.1	9.2	-179.88	15.3	0.0	1,005.1	984.8	20.34	49.417		
4,400.0	4,245.8	4,245.8	4,245.8	21.7	9.4	-179.88	15.3	0.0	1,036.0	1,015.2	20.86	49.675		
4,500.0	4,340.9	4,340.9	4,340.9	22.4	9.6	-179.89	15.3	0.0	1,066.9	1,045.5	21.37	49.921		
4,600.0	4,436.0	4,436.0	4,436.0	23.0	9.9	-179.89	15.3	0.0	1,097.8	1,075.9	21.89	50.154		
4,700.0	4,531.1	4,531.1	4,531.1	23.6	10.1	-179.89	15.3	0.0	1,128.7	1,106.3	22.41	50.376		
4,800.0	4,626.2	4,626.2	4,626.2	24.3	10.3	-179.89	15.3	0.0	1,159.6	1,136.7	22.92	50.587		
4,900.0	4,721.3	4,721.3	4,721.3	24.9	10.5	-179.90	15.3	0.0	1,190.5	1,167.1	23.44	50.789		
5,000.0	4,816.4	4,816.4	4,816.4	25.5	10.7	-179.90	15.3	0.0	1,221.4	1,197.5	23.96	50.981		
5,100.0	4,911.5	4,911.5	4,911.5	26.2	10.9	-179.90	15.3	0.0	1,252.3	1,227.8	24.48	51.165		
5,200.0	5,007.1	5,007.1	5,007.1	26.7	11.1	-179.91	15.3	0.0	1,281.7	1,256.6	25.07	51.119		
5,300.0	5,103.7	5,103.7	5,103.7	27.1	11.4	-179.91	15.3	0.0	1,307.6	1,282.0	25.62	51.040		
5,400.0	5,201.1	5,201.1	5,201.1	27.4	11.6	-179.91	15.3	0.0	1,330.3	1,304.1	26.13	50.907		
5,500.0	5,299.2	5,299.2	5,299.2	27.8	11.8	-179.91	15.3	0.0	1,349.4	1,322.8	26.60	50.722		
5,600.0	5,398.0	5,398.0	5,398.0	28.0	12.0	-179.91	15.3	0.0	1,365.2	1,338.2	27.04	50.491		
5,700.0	5,497.2	5,497.2	5,497.2	28.3	12.2	-179.92	15.3	0.0	1,377.5	1,350.1	27.43	50.215		
5,800.0	5,596.8	5,596.8	5,596.8	28.4	12.5	-179.92	15.3	0.0	1,386.3	1,358.6	27.78	49.896		
5,900.0	5,696.7	5,696.7	5,696.7	28.6	12.7	-179.92	15.3	0.0	1,391.7	1,363.6	28.10	49.535		
6,000.0	5,796.7	5,796.7	5,796.7	28.7	12.9	-179.92	15.3	0.0	1,393.6	1,365.2	28.37	49.114		
6,100.0	5,896.7	5,896.7	5,896.7	28.8	13.1	-7.55	15.3	0.0	1,393.6	1,364.8	28.75	48.466		
6,200.0	5,996.7	5,996.7	5,996.7	28.9	13.4	-7.55	15.3	0.0	1,393.6	1,364.4	29.13	47.846		
6,300.0	6,096.7	6,096.7	6,096.7	28.9	13.6	-7.55	15.3	0.0	1,393.6	1,364.1	29.50	47.238		
6,400.0	6,196.7	6,196.7	6,196.7	29.0	13.8	-7.55	15.3	0.0	1,393.6	1,363.7	29.88	46.643		
6,500.0	6,296.7	6,296.7	6,296.7	29.1	14.0	-7.55	15.3	0.0	1,393.6	1,363.3	30.26	46.060		
6,600.0	6,396.7	6,396.7	6,396.7	29.2	14.3	-7.55	15.3	0.0	1,393.6	1,362.9	30.63	45.489		
6,700.0	6,496.7	6,496.7	6,496.7	29.3	14.5	-7.55	15.3	0.0	1,393.6	1,362.5	31.02	44.930		
6,800.0	6,596.7	6,596.7	6,596.7	29.4	14.7	-7.55	15.3	0.0	1,393.6	1,362.2	31.40	44.382		
6,900.0	6,696.7	6,696.7	6,696.7	29.4	14.9	-7.55	15.3	0.0	1,393.6	1,361.8	31.78	43.845		
7,000.0	6,796.7	6,796.7	6,796.7	29.5	15.2	-7.55	15.3	0.0	1,393.6	1,361.4	32.17	43.319		
7,100.0	6,896.7	6,896.7	6,896.7	29.6	15.4	-7.55	15.3	0.0	1,393.6	1,361.0	32.56	42.804		
7,200.0	6,996.7	6,996.7	6,996.7	29.7	15.6	-7.55	15.3	0.0	1,393.6	1,360.6	32.95	42.298		
7,300.0	7,096.7	7,096.7	7,096.7	29.8	15.8	-7.55	15.3	0.0	1,393.6	1,360.2	33.34	41.803		
7,400.0	7,196.7	7,196.7	7,196.7	29.9	16.1	-7.55	15.3	0.0	1,393.6	1,359.8	33.73	41.318		

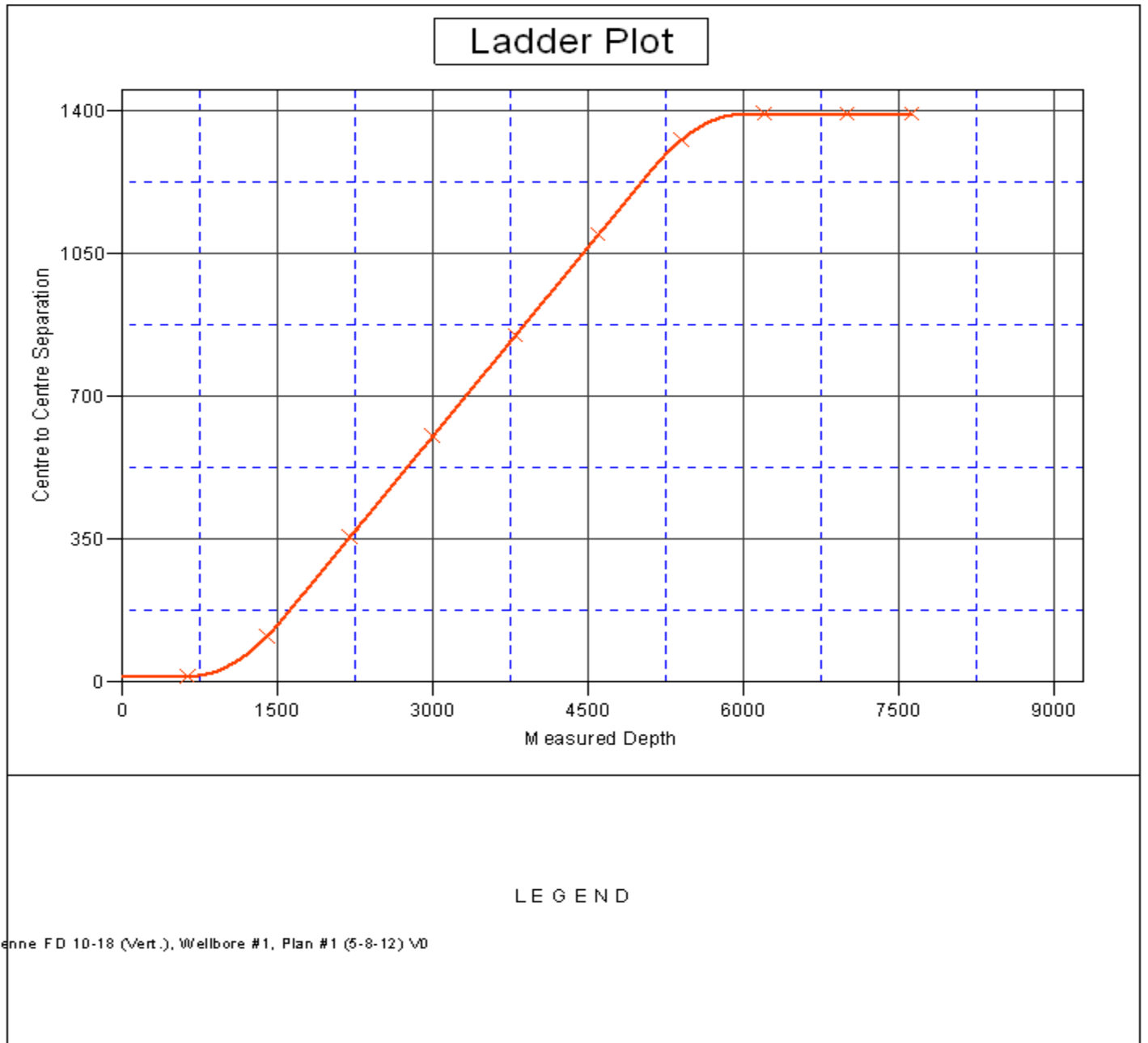
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well De Tienne FD 10-25D
<b>Project:</b>	SEC.10-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (Original Well Elev)
<b>Reference Site:</b>	De Tienne FD 10-25D Pad Sec.10-T6N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	De Tienne FD 10-25D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-7-12)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> De Tienne FD 10-25D Pad Sec.10-T6N-R67W - De Tienne FD 10-18 (Vert.) - Wellbore #1 - Plan #1 (5-8)													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD													<b>Offset Well Error:</b>	0.0 ft
Reference	Offset	Semi Major Axis			Distance									Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,500.0	7,296.7	7,296.7	7,296.7	30.0	16.3	-7.55	15.3	0.0	1,393.6	1,359.4	34.12	40.843		
7,600.0	7,396.7	7,396.7	7,396.7	30.1	16.5	-7.55	15.3	0.0	1,393.6	1,359.0	34.51	40.377		
7,606.4	7,403.0	7,403.0	7,403.0	30.1	16.5	-7.55	15.3	0.0	1,393.6	1,359.0	34.54	40.347		
7,625.3	7,422.0	7,412.0	7,412.0	30.1	16.5	-7.55	15.3	0.0	1,393.6	1,359.0	34.59	40.287		

<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well De Tienne FD 10-25D
<b>Project:</b>	SEC.10-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (Original Well Elev)
<b>Reference Site:</b>	De Tienne FD 10-25D Pad Sec.10-T6N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	De Tienne FD 10-25D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-7-12)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4853.0ft (Original Well Elev) Coordinates are relative to: De Tienne FD 10-25D  
 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: 0.40°



Reference Depths are relative to WELL @ 4853.0ft (Original Well Elev) Coordinates are relative to: De Tienne FD 10-25D  
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: 0.40°

