

# ENSIGN

## Directional

### Well Name: Peterson CX GH 30-41D

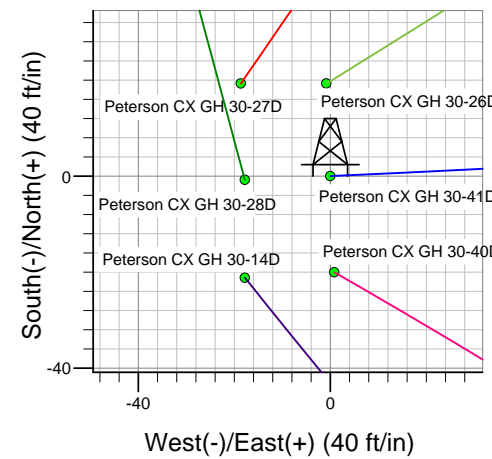
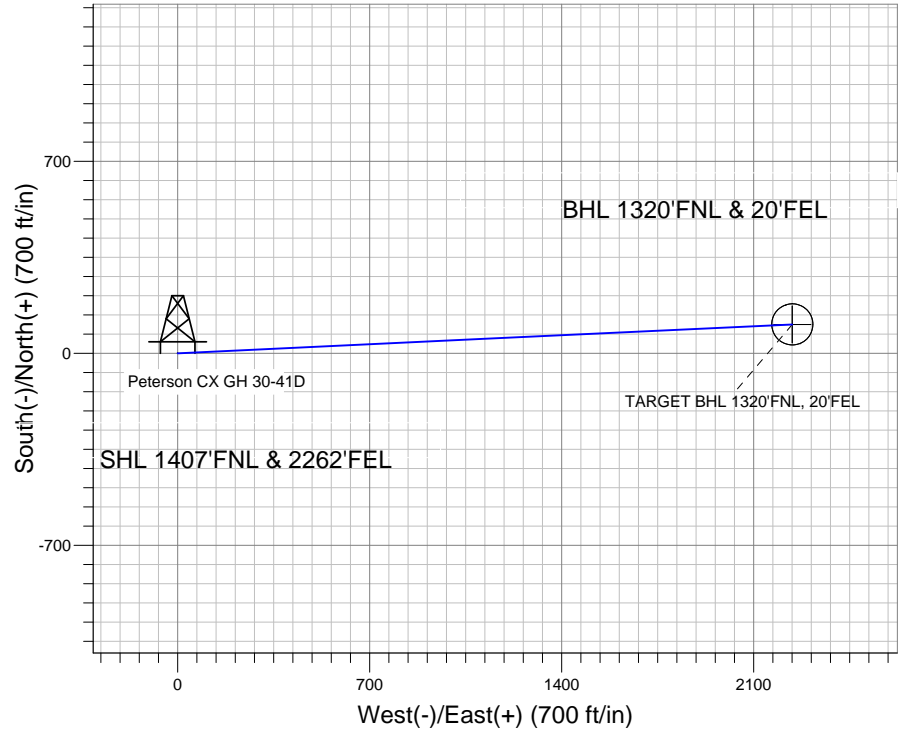
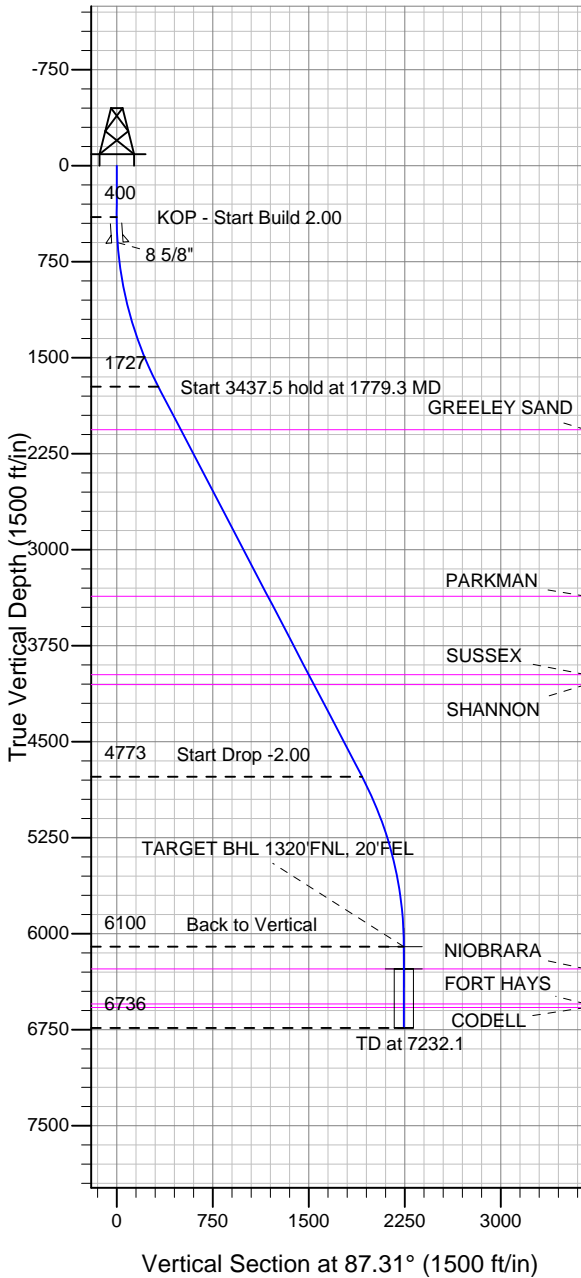
Surface Location: Peterson CX GH 30-41D Pad Sec.30-T5N-R63W  
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4574.0

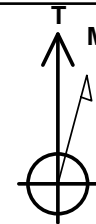
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1380655.09	3284790.06	40.373794	-104.477825	

Original Well Elev WELL @ 4588.0ft (Original Well Elev)

## Great Western



Peterson CX GH 30-41D Pad Sec.30-T5N-R63W  
 Peterson CX GH 30-41D  
 Plan #1 (7-25-12)  
 8:57, July 31 2012



Azimuths to True North  
 Magnetic North: 8.56°

Magnetic Field  
 Strength: 53031.3nT  
 Dip Angle: 67.04°  
 Date: 7/31/2012  
 Model: IGRF2010

### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1320'FNL, 20'FEL	6100.0	105.4	2240.7	40.374083	-104.469783	Point
TARGET CIRCLE 1320'FNL & 20'FEL	6274.0	105.4	2240.7	40.374083	-104.469783	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	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	1779.3	27.59	87.31	1726.6	15.3	325.3	2.00	87.31	325.7	
4	5216.8	27.59	87.31	4773.4	90.1	1915.4	0.00	0.00	1917.5	
5	6596.1	0.00	0.00	6100.0	105.4	2240.7	2.00	180.00	2243.2	TARGET BHL 1320'FNL, 20'FEL
6	7232.1	0.00	0.00	6736.0	105.4	2240.7	0.00	0.00	2243.2	



## **Directional**

### **Great Western**

**SEC.30-T5N-R63W**

**Peterson CX GH 30-41D Pad Sec.30-T5N-R63W**

**Peterson CX GH 30-41D**

**Wellbore #1**

**Plan: Plan #1 (7-25-12)**

### **Standard Planning Report**

**31 July, 2012**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Peterson CX GH 30-41D
<b>Company:</b>	Great Western	<b>TVD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Project:</b>	SEC.30-T5N-R63W	<b>MD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Site:</b>	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	<b>North Reference:</b>	True
<b>Well:</b>	Peterson CX GH 30-41D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (7-25-12)		

<b>Project</b>	SEC.30-T5N-R63W, Weld County, Colorado		
<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

Site						Peterson CX GH 30-41D Pad Sec.30-T5N-R63W											
Site Position:						Northing:			1,380,655.09ft			Latitude:			40.373794		
From:			Lat/Long			Easting:			3,284,790.06ft			Longitude:			-104.477825		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.66 °		

Well	Peterson CX GH 30-41D					
Well Position	+N-S	0.0 ft	Northing:	1,380,655.09 ft	Latitude:	40.373794
	+E-W	0.0 ft	Easting:	3,284,790.06 ft	Longitude:	-104.477825
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,574.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	7/31/2012	8.56	67.04	53,031

<b>Design</b>	Plan #1 (7-25-12)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	87.31

<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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,779.3	27.59	87.31	1,726.6	15.3	325.3	2.00	2.00	0.00	87.31	
5,216.8	27.59	87.31	4,773.4	90.1	1,915.4	0.00	0.00	0.00	0.00	
6,596.1	0.00	0.00	6,100.0	105.4	2,240.7	2.00	-2.00	0.00	180.00	TARGET BHL 132C
7,232.1	0.00	0.00	6,736.0	105.4	2,240.7	0.00	0.00	0.00	0.00	

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Peterson CX GH 30-41D
<b>Company:</b>	Great Western	<b>TVD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Project:</b>	SEC.30-T5N-R63W	<b>MD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Site:</b>	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	<b>North Reference:</b>	True
<b>Well:</b>	Peterson CX GH 30-41D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (7-25-12)		

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
<b>KOP - Start Build 2.00</b>									
440.0	0.80	87.31	440.0	0.0	0.3	0.3	2.00	2.00	0.00
480.0	1.60	87.31	480.0	0.1	1.1	1.1	2.00	2.00	0.00
520.0	2.40	87.31	520.0	0.1	2.5	2.5	2.00	2.00	0.00
560.0	3.20	87.31	559.9	0.2	4.5	4.5	2.00	2.00	0.00
600.0	4.00	87.31	599.8	0.3	7.0	7.0	2.00	2.00	0.00
600.2	4.00	87.31	600.0	0.3	7.0	7.0	0.00	0.00	0.00
<b>8 5/8"</b>									
640.0	4.80	87.31	639.7	0.5	10.0	10.0	2.01	2.01	0.00
680.0	5.60	87.31	679.6	0.6	13.7	13.7	2.00	2.00	0.00
720.0	6.40	87.31	719.3	0.8	17.8	17.9	2.00	2.00	0.00
760.0	7.20	87.31	759.1	1.1	22.6	22.6	2.00	2.00	0.00
800.0	8.00	87.31	798.7	1.3	27.8	27.9	2.00	2.00	0.00
840.0	8.80	87.31	838.3	1.6	33.7	33.7	2.00	2.00	0.00
880.0	9.60	87.31	877.8	1.9	40.1	40.1	2.00	2.00	0.00
920.0	10.40	87.31	917.1	2.2	47.0	47.1	2.00	2.00	0.00
960.0	11.20	87.31	956.4	2.6	54.5	54.6	2.00	2.00	0.00
1,000.0	12.00	87.31	995.6	2.9	62.5	62.6	2.00	2.00	0.00
1,040.0	12.80	87.31	1,034.7	3.3	71.1	71.2	2.00	2.00	0.00
1,080.0	13.60	87.31	1,073.6	3.8	80.2	80.3	2.00	2.00	0.00
1,120.0	14.40	87.31	1,112.4	4.2	89.9	90.0	2.00	2.00	0.00
1,160.0	15.20	87.31	1,151.1	4.7	100.1	100.2	2.00	2.00	0.00
1,200.0	16.00	87.31	1,189.6	5.2	110.9	111.0	2.00	2.00	0.00
1,240.0	16.80	87.31	1,228.0	5.7	122.1	122.3	2.00	2.00	0.00
1,280.0	17.60	87.31	1,266.2	6.3	134.0	134.1	2.00	2.00	0.00
1,320.0	18.40	87.31	1,304.3	6.9	146.3	146.5	2.00	2.00	0.00
1,360.0	19.20	87.31	1,342.1	7.5	159.2	159.3	2.00	2.00	0.00
1,400.0	20.00	87.31	1,379.8	8.1	172.6	172.8	2.00	2.00	0.00
1,440.0	20.80	87.31	1,417.3	8.8	186.5	186.7	2.00	2.00	0.00
1,480.0	21.60	87.31	1,454.6	9.5	201.0	201.2	2.00	2.00	0.00
1,520.0	22.40	87.31	1,491.7	10.2	215.9	216.2	2.00	2.00	0.00
1,560.0	23.20	87.31	1,528.6	10.9	231.4	231.7	2.00	2.00	0.00
1,600.0	24.00	87.31	1,565.2	11.6	247.4	247.7	2.00	2.00	0.00
1,640.0	24.80	87.31	1,601.6	12.4	263.9	264.2	2.00	2.00	0.00
1,680.0	25.60	87.31	1,637.8	13.2	280.9	281.2	2.00	2.00	0.00
1,720.0	26.40	87.31	1,673.8	14.0	298.4	298.8	2.00	2.00	0.00
1,760.0	27.20	87.31	1,709.5	14.9	316.4	316.8	2.00	2.00	0.00
1,779.3	27.59	87.31	1,726.6	15.3	325.3	325.7	2.00	2.00	0.00
<b>Start 3437.5 hold at 1779.3 MD</b>									
1,800.0	27.59	87.31	1,745.0	15.8	334.9	335.3	0.00	0.00	0.00
1,840.0	27.59	87.31	1,780.4	16.6	353.4	353.8	0.00	0.00	0.00
1,880.0	27.59	87.31	1,815.9	17.5	371.9	372.3	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Peterson CX GH 30-41D
<b>Company:</b>	Great Western	<b>TVD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Project:</b>	SEC.30-T5N-R63W	<b>MD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Site:</b>	Peterson CX GH 30-41D Pad	<b>North Reference:</b>	True
	Sec.30-T5N-R63W		
<b>Well:</b>	Peterson CX GH 30-41D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (7-25-12)		

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)
1,920.0	27.59	87.31	1,851.3	18.4	390.4	390.8	0.00	0.00	0.00
1,960.0	27.59	87.31	1,886.8	19.2	408.9	409.4	0.00	0.00	0.00
2,000.0	27.59	87.31	1,922.2	20.1	427.4	427.9	0.00	0.00	0.00
2,040.0	27.59	87.31	1,957.7	21.0	445.9	446.4	0.00	0.00	0.00
2,080.0	27.59	87.31	1,993.1	21.8	464.4	464.9	0.00	0.00	0.00
2,120.0	27.59	87.31	2,028.6	22.7	482.9	483.4	0.00	0.00	0.00
2,157.7	27.59	87.31	2,062.0	23.5	500.4	500.9	0.00	0.00	0.00
<b>GREELEY SAND</b>									
2,160.0	27.59	87.31	2,064.0	23.6	501.4	502.0	0.00	0.00	0.00
2,200.0	27.59	87.31	2,099.5	24.5	519.9	520.5	0.00	0.00	0.00
2,240.0	27.59	87.31	2,135.0	25.3	538.4	539.0	0.00	0.00	0.00
2,280.0	27.59	87.31	2,170.4	26.2	556.9	557.5	0.00	0.00	0.00
2,320.0	27.59	87.31	2,205.9	27.1	575.4	576.1	0.00	0.00	0.00
2,360.0	27.59	87.31	2,241.3	27.9	593.9	594.6	0.00	0.00	0.00
2,400.0	27.59	87.31	2,276.8	28.8	612.4	613.1	0.00	0.00	0.00
2,440.0	27.59	87.31	2,312.2	29.7	630.9	631.6	0.00	0.00	0.00
2,480.0	27.59	87.31	2,347.7	30.5	649.4	650.2	0.00	0.00	0.00
2,520.0	27.59	87.31	2,383.1	31.4	667.9	668.7	0.00	0.00	0.00
2,560.0	27.59	87.31	2,418.6	32.3	686.4	687.2	0.00	0.00	0.00
2,600.0	27.59	87.31	2,454.0	33.2	704.9	705.7	0.00	0.00	0.00
2,640.0	27.59	87.31	2,489.5	34.0	723.5	724.3	0.00	0.00	0.00
2,680.0	27.59	87.31	2,524.9	34.9	742.0	742.8	0.00	0.00	0.00
2,720.0	27.59	87.31	2,560.4	35.8	760.5	761.3	0.00	0.00	0.00
2,760.0	27.59	87.31	2,595.8	36.6	779.0	779.8	0.00	0.00	0.00
2,800.0	27.59	87.31	2,631.3	37.5	797.5	798.3	0.00	0.00	0.00
2,840.0	27.59	87.31	2,666.7	38.4	816.0	816.9	0.00	0.00	0.00
2,880.0	27.59	87.31	2,702.2	39.2	834.5	835.4	0.00	0.00	0.00
2,920.0	27.59	87.31	2,737.6	40.1	853.0	853.9	0.00	0.00	0.00
2,960.0	27.59	87.31	2,773.1	41.0	871.5	872.4	0.00	0.00	0.00
3,000.0	27.59	87.31	2,808.6	41.9	890.0	891.0	0.00	0.00	0.00
3,040.0	27.59	87.31	2,844.0	42.7	908.5	909.5	0.00	0.00	0.00
3,080.0	27.59	87.31	2,879.5	43.6	927.0	928.0	0.00	0.00	0.00
3,120.0	27.59	87.31	2,914.9	44.5	945.5	946.5	0.00	0.00	0.00
3,160.0	27.59	87.31	2,950.4	45.3	964.0	965.1	0.00	0.00	0.00
3,200.0	27.59	87.31	2,985.8	46.2	982.5	983.6	0.00	0.00	0.00
3,240.0	27.59	87.31	3,021.3	47.1	1,001.0	1,002.1	0.00	0.00	0.00
3,280.0	27.59	87.31	3,056.7	48.0	1,019.5	1,020.6	0.00	0.00	0.00
3,320.0	27.59	87.31	3,092.2	48.8	1,038.0	1,039.1	0.00	0.00	0.00
3,360.0	27.59	87.31	3,127.6	49.7	1,056.5	1,057.7	0.00	0.00	0.00
3,400.0	27.59	87.31	3,163.1	50.6	1,075.0	1,076.2	0.00	0.00	0.00
3,440.0	27.59	87.31	3,198.5	51.4	1,093.5	1,094.7	0.00	0.00	0.00
3,480.0	27.59	87.31	3,234.0	52.3	1,112.0	1,113.2	0.00	0.00	0.00
3,520.0	27.59	87.31	3,269.4	53.2	1,130.5	1,131.8	0.00	0.00	0.00
3,560.0	27.59	87.31	3,304.9	54.0	1,149.0	1,150.3	0.00	0.00	0.00
3,600.0	27.59	87.31	3,340.3	54.9	1,167.5	1,168.8	0.00	0.00	0.00
3,624.4	27.59	87.31	3,362.0	55.4	1,178.8	1,180.1	0.00	0.00	0.00
<b>PARKMAN</b>									
3,640.0	27.59	87.31	3,375.8	55.8	1,186.0	1,187.3	0.00	0.00	0.00
3,680.0	27.59	87.31	3,411.2	56.7	1,204.5	1,205.9	0.00	0.00	0.00
3,720.0	27.59	87.31	3,446.7	57.5	1,223.0	1,224.4	0.00	0.00	0.00
3,760.0	27.59	87.31	3,482.2	58.4	1,241.5	1,242.9	0.00	0.00	0.00
3,800.0	27.59	87.31	3,517.6	59.3	1,260.0	1,261.4	0.00	0.00	0.00
3,840.0	27.59	87.31	3,553.1	60.1	1,278.5	1,279.9	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Peterson CX GH 30-41D
<b>Company:</b>	Great Western	<b>TVD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Project:</b>	SEC.30-T5N-R63W	<b>MD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Site:</b>	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	<b>North Reference:</b>	True
<b>Well:</b>	Peterson CX GH 30-41D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (7-25-12)		

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	27.59	87.31	3,588.5	61.0	1,297.0	1,298.5	0.00	0.00	0.00
3,920.0	27.59	87.31	3,624.0	61.9	1,315.5	1,317.0	0.00	0.00	0.00
3,960.0	27.59	87.31	3,659.4	62.7	1,334.0	1,335.5	0.00	0.00	0.00
4,000.0	27.59	87.31	3,694.9	63.6	1,352.5	1,354.0	0.00	0.00	0.00
4,040.0	27.59	87.31	3,730.3	64.5	1,371.0	1,372.6	0.00	0.00	0.00
4,080.0	27.59	87.31	3,765.8	65.4	1,389.5	1,391.1	0.00	0.00	0.00
4,120.0	27.59	87.31	3,801.2	66.2	1,408.1	1,409.6	0.00	0.00	0.00
4,160.0	27.59	87.31	3,836.7	67.1	1,426.6	1,428.1	0.00	0.00	0.00
4,200.0	27.59	87.31	3,872.1	68.0	1,445.1	1,446.7	0.00	0.00	0.00
4,240.0	27.59	87.31	3,907.6	68.8	1,463.6	1,465.2	0.00	0.00	0.00
4,280.0	27.59	87.31	3,943.0	69.7	1,482.1	1,483.7	0.00	0.00	0.00
4,317.2	27.59	87.31	3,976.0	70.5	1,499.3	1,500.9	0.00	0.00	0.00
<b>SUSSEX</b>									
4,320.0	27.59	87.31	3,978.5	70.6	1,500.6	1,502.2	0.00	0.00	0.00
4,360.0	27.59	87.31	4,013.9	71.4	1,519.1	1,520.7	0.00	0.00	0.00
4,400.0	27.59	87.31	4,049.4	72.3	1,537.6	1,539.3	0.00	0.00	0.00
4,404.1	27.59	87.31	4,053.0	72.4	1,539.5	1,541.2	0.00	0.00	0.00
<b>SHANNON</b>									
4,440.0	27.59	87.31	4,084.8	73.2	1,556.1	1,557.8	0.00	0.00	0.00
4,480.0	27.59	87.31	4,120.3	74.1	1,574.6	1,576.3	0.00	0.00	0.00
4,520.0	27.59	87.31	4,155.8	74.9	1,593.1	1,594.8	0.00	0.00	0.00
4,560.0	27.59	87.31	4,191.2	75.8	1,611.6	1,613.4	0.00	0.00	0.00
4,600.0	27.59	87.31	4,226.7	76.7	1,630.1	1,631.9	0.00	0.00	0.00
4,640.0	27.59	87.31	4,262.1	77.5	1,648.6	1,650.4	0.00	0.00	0.00
4,680.0	27.59	87.31	4,297.6	78.4	1,667.1	1,668.9	0.00	0.00	0.00
4,720.0	27.59	87.31	4,333.0	79.3	1,685.6	1,687.5	0.00	0.00	0.00
4,760.0	27.59	87.31	4,368.5	80.2	1,704.1	1,706.0	0.00	0.00	0.00
4,800.0	27.59	87.31	4,403.9	81.0	1,722.6	1,724.5	0.00	0.00	0.00
4,840.0	27.59	87.31	4,439.4	81.9	1,741.1	1,743.0	0.00	0.00	0.00
4,880.0	27.59	87.31	4,474.8	82.8	1,759.6	1,761.5	0.00	0.00	0.00
4,920.0	27.59	87.31	4,510.3	83.6	1,778.1	1,780.1	0.00	0.00	0.00
4,960.0	27.59	87.31	4,545.7	84.5	1,796.6	1,798.6	0.00	0.00	0.00
5,000.0	27.59	87.31	4,581.2	85.4	1,815.1	1,817.1	0.00	0.00	0.00
5,040.0	27.59	87.31	4,616.6	86.2	1,833.6	1,835.6	0.00	0.00	0.00
5,080.0	27.59	87.31	4,652.1	87.1	1,852.1	1,854.2	0.00	0.00	0.00
5,120.0	27.59	87.31	4,687.5	88.0	1,870.6	1,872.7	0.00	0.00	0.00
5,160.0	27.59	87.31	4,723.0	88.9	1,889.1	1,891.2	0.00	0.00	0.00
5,200.0	27.59	87.31	4,758.4	89.7	1,907.6	1,909.7	0.00	0.00	0.00
5,216.8	27.59	87.31	4,773.4	90.1	1,915.4	1,917.5	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
5,240.0	27.12	87.31	4,793.9	90.6	1,926.0	1,928.2	2.00	-2.00	0.00
5,280.0	26.32	87.31	4,829.7	91.4	1,944.0	1,946.2	2.00	-2.00	0.00
5,320.0	25.52	87.31	4,865.6	92.3	1,961.5	1,963.6	2.00	-2.00	0.00
5,360.0	24.72	87.31	4,901.9	93.1	1,978.4	1,980.6	2.00	-2.00	0.00
5,400.0	23.92	87.31	4,938.3	93.8	1,994.9	1,997.1	2.00	-2.00	0.00
5,440.0	23.12	87.31	4,975.0	94.6	2,010.8	2,013.1	2.00	-2.00	0.00
5,480.0	22.32	87.31	5,011.9	95.3	2,026.3	2,028.5	2.00	-2.00	0.00
5,520.0	21.52	87.31	5,049.0	96.0	2,041.2	2,043.5	2.00	-2.00	0.00
5,560.0	20.72	87.31	5,086.3	96.7	2,055.6	2,057.9	2.00	-2.00	0.00
5,600.0	19.92	87.31	5,123.8	97.3	2,069.5	2,071.8	2.00	-2.00	0.00
5,640.0	19.12	87.31	5,161.5	98.0	2,082.8	2,085.1	2.00	-2.00	0.00
5,680.0	18.32	87.31	5,199.4	98.6	2,095.6	2,098.0	2.00	-2.00	0.00
5,720.0	17.52	87.31	5,237.5	99.1	2,107.9	2,110.3	2.00	-2.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Peterson CX GH 30-41D
<b>Company:</b>	Great Western	<b>TVD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Project:</b>	SEC.30-T5N-R63W	<b>MD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Site:</b>	Peterson CX GH 30-41D Pad	<b>North Reference:</b>	True
	Sec.30-T5N-R63W		
<b>Well:</b>	Peterson CX GH 30-41D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (7-25-12)		

## 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	16.72	87.31	5,275.7	99.7	2,119.7	2,122.1	2.00	-2.00	0.00
5,800.0	15.92	87.31	5,314.1	100.2	2,130.9	2,133.3	2.00	-2.00	0.00
5,840.0	15.12	87.31	5,352.6	100.7	2,141.6	2,144.0	2.00	-2.00	0.00
5,880.0	14.32	87.31	5,391.3	101.2	2,151.8	2,154.2	2.00	-2.00	0.00
5,920.0	13.52	87.31	5,430.1	101.7	2,161.4	2,163.8	2.00	-2.00	0.00
5,960.0	12.72	87.31	5,469.1	102.1	2,170.5	2,172.9	2.00	-2.00	0.00
6,000.0	11.92	87.31	5,508.2	102.5	2,179.0	2,181.4	2.00	-2.00	0.00
6,040.0	11.12	87.31	5,547.3	102.9	2,187.0	2,189.4	2.00	-2.00	0.00
6,080.0	10.32	87.31	5,586.6	103.2	2,194.4	2,196.8	2.00	-2.00	0.00
6,120.0	9.52	87.31	5,626.0	103.5	2,201.3	2,203.7	2.00	-2.00	0.00
6,160.0	8.72	87.31	5,665.5	103.8	2,207.6	2,210.1	2.00	-2.00	0.00
6,200.0	7.92	87.31	5,705.1	104.1	2,213.4	2,215.9	2.00	-2.00	0.00
6,240.0	7.12	87.31	5,744.8	104.4	2,218.6	2,221.1	2.00	-2.00	0.00
6,280.0	6.32	87.31	5,784.5	104.6	2,223.3	2,225.8	2.00	-2.00	0.00
6,320.0	5.52	87.31	5,824.3	104.8	2,227.4	2,229.9	2.00	-2.00	0.00
6,360.0	4.72	87.31	5,864.1	104.9	2,231.0	2,233.5	2.00	-2.00	0.00
6,400.0	3.92	87.31	5,904.0	105.1	2,234.0	2,236.5	2.00	-2.00	0.00
6,440.0	3.12	87.31	5,943.9	105.2	2,236.5	2,239.0	2.00	-2.00	0.00
6,480.0	2.32	87.31	5,983.9	105.3	2,238.4	2,240.9	2.00	-2.00	0.00
6,520.0	1.52	87.31	6,023.9	105.3	2,239.7	2,242.2	2.00	-2.00	0.00
6,560.0	0.72	87.31	6,063.9	105.4	2,240.5	2,243.0	2.00	-2.00	0.00
6,596.1	0.00	0.00	6,100.0	105.4	2,240.7	2,243.2	2.00	-2.00	0.00
<b>Back to Vertical</b>									
6,600.0	0.00	0.00	6,103.9	105.4	2,240.7	2,243.2	0.00	0.00	0.00
6,640.0	0.00	0.00	6,143.9	105.4	2,240.7	2,243.2	0.00	0.00	0.00
6,680.0	0.00	0.00	6,183.9	105.4	2,240.7	2,243.2	0.00	0.00	0.00
6,720.0	0.00	0.00	6,223.9	105.4	2,240.7	2,243.2	0.00	0.00	0.00
6,760.0	0.00	0.00	6,263.9	105.4	2,240.7	2,243.2	0.00	0.00	0.00
6,770.1	0.00	0.00	6,274.0	105.4	2,240.7	2,243.2	0.00	0.00	0.00
<b>NIOBRARA</b>									
6,800.0	0.00	0.00	6,303.9	105.4	2,240.7	2,243.2	0.00	0.00	0.00
6,840.0	0.00	0.00	6,343.9	105.4	2,240.7	2,243.2	0.00	0.00	0.00
6,880.0	0.00	0.00	6,383.9	105.4	2,240.7	2,243.2	0.00	0.00	0.00
6,920.0	0.00	0.00	6,423.9	105.4	2,240.7	2,243.2	0.00	0.00	0.00
6,960.0	0.00	0.00	6,463.9	105.4	2,240.7	2,243.2	0.00	0.00	0.00
7,000.0	0.00	0.00	6,503.9	105.4	2,240.7	2,243.2	0.00	0.00	0.00
7,040.0	0.00	0.00	6,543.9	105.4	2,240.7	2,243.2	0.00	0.00	0.00
7,045.1	0.00	0.00	6,549.0	105.4	2,240.7	2,243.2	0.00	0.00	0.00
<b>FORT HAYS</b>									
7,072.1	0.00	0.00	6,576.0	105.4	2,240.7	2,243.2	0.00	0.00	0.00
<b>CODELL</b>									
7,080.0	0.00	0.00	6,583.9	105.4	2,240.7	2,243.2	0.00	0.00	0.00
7,120.0	0.00	0.00	6,623.9	105.4	2,240.7	2,243.2	0.00	0.00	0.00
7,160.0	0.00	0.00	6,663.9	105.4	2,240.7	2,243.2	0.00	0.00	0.00
7,200.0	0.00	0.00	6,703.9	105.4	2,240.7	2,243.2	0.00	0.00	0.00
7,232.1	0.00	0.00	6,736.0	105.4	2,240.7	2,243.2	0.00	0.00	0.00
<b>TD at 7232.1</b>									

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Peterson CX GH 30-41D
<b>Company:</b>	Great Western	<b>TVD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Project:</b>	SEC.30-T5N-R63W	<b>MD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Site:</b>	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	<b>North Reference:</b>	True
<b>Well:</b>	Peterson CX GH 30-41D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (7-25-12)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
600.2	600.0	8 5/8"	8-5/8	12-1/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,157.7	2,062.0	GREELEY SAND		0.00		
3,624.4	3,362.0	PARKMAN		0.00		
4,317.2	3,976.0	SUSSEX		0.00		
4,404.1	4,053.0	SHANNON		0.00		
6,770.1	6,274.0	NIOBRARA		0.00		
7,045.1	6,549.0	FORT HAYS		0.00		
7,072.1	6,576.0	CODELL		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
400.0	400.0	0.0	0.0	KOP - Start Build 2.00	
1,779.3	1,726.6	15.3	325.3	Start 3437.5 hold at 1779.3 MD	
5,216.8	4,773.4	90.1	1,915.4	Start Drop -2.00	
6,596.1	6,100.0	105.4	2,240.7	Back to Vertical	
7,232.1	6,736.0	105.4	2,240.7	TD at 7232.1	





# **Directional**

## **Great Western**

**SEC.30-T5N-R63W**

**Peterson CX GH 30-41D Pad Sec.30-T5N-R63W**

**Peterson CX GH 30-41D**

**Wellbore #1**

**Plan #1 (7-25-12)**

## **Anticollision Report**

**31 July, 2012**



<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well Peterson CX GH 30-41D
<b>Project:</b>	SEC.30-T5N-R63W	<b>TVD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Reference Site:</b>	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	<b>MD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peterson CX GH 30-41D	<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 (7-25-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Peterson CX GH 30-41D Pad Sec.30-T5N-R63W - Peterson CX GH 30-26D - Wellbore #1 - Plan #1 (7-													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	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	Warning	
2,000.0	1,922.2	1,945.4	1,848.7	9.7	10.7	-80.98	283.1	423.7	273.1	254.3	18.83	14.506		
2,100.0	2,010.9	2,042.6	1,934.1	10.7	11.7	-82.41	307.6	463.1	295.6	274.9	20.73	14.259		
2,200.0	2,099.5	2,139.8	2,019.6	11.7	12.6	-83.65	332.0	502.4	318.3	295.6	22.64	14.056		
2,300.0	2,188.1	2,237.0	2,105.0	12.7	13.6	-84.72	356.5	541.7	341.0	316.5	24.56	13.886		
2,400.0	2,276.8	2,334.2	2,190.5	13.7	14.6	-85.65	380.9	581.1	363.9	337.4	26.48	13.743		
2,500.0	2,365.4	2,431.4	2,275.9	14.7	15.5	-86.48	405.4	620.4	386.8	358.4	28.40	13.620		
2,600.0	2,454.0	2,528.6	2,361.4	15.7	16.5	-87.21	429.8	659.7	409.8	379.5	30.32	13.515		
2,700.0	2,542.7	2,625.8	2,446.8	16.7	17.5	-87.87	454.2	699.1	432.9	400.6	32.25	13.424		
2,800.0	2,631.3	2,723.0	2,532.3	17.7	18.4	-88.46	478.7	738.4	456.0	421.8	34.17	13.344		
2,900.0	2,719.9	2,820.2	2,617.7	18.7	19.4	-88.99	503.1	777.8	479.2	443.1	36.10	13.273		
3,000.0	2,808.6	2,917.4	2,703.1	19.7	20.4	-89.47	527.6	817.1	502.3	464.3	38.03	13.210		
3,100.0	2,897.2	3,014.5	2,788.6	20.7	21.3	-89.91	552.0	856.4	525.6	485.6	39.95	13.155		
3,200.0	2,985.8	3,111.7	2,874.0	21.8	22.3	-90.32	576.5	895.8	548.8	506.9	41.88	13.104		
3,300.0	3,074.4	3,208.9	2,959.5	22.8	23.3	-90.69	600.9	935.1	572.1	528.3	43.81	13.059		
3,400.0	3,163.1	3,306.1	3,044.9	23.8	24.2	-91.03	625.4	974.4	595.4	549.6	45.73	13.018		
3,500.0	3,251.7	3,403.3	3,130.4	24.8	25.2	-91.34	649.8	1,013.8	618.7	571.0	47.66	12.981		
3,600.0	3,340.3	3,500.5	3,215.8	25.8	26.2	-91.64	674.2	1,053.1	642.0	592.4	49.59	12.947		
3,700.0	3,429.0	3,597.7	3,301.3	26.8	27.2	-91.91	698.7	1,092.4	665.3	613.8	51.52	12.915		
3,800.0	3,517.6	3,694.9	3,386.7	27.8	28.1	-92.16	723.1	1,131.8	688.7	635.3	53.44	12.887		
3,900.0	3,606.2	3,792.1	3,472.2	28.9	29.1	-92.40	747.6	1,171.1	712.1	656.7	55.37	12.860		
4,000.0	3,694.9	3,889.3	3,557.6	29.9	30.1	-92.62	772.0	1,210.5	735.4	678.1	57.30	12.836		
4,100.0	3,783.5	3,986.5	3,643.1	30.9	31.0	-92.83	796.5	1,249.8	758.8	699.6	59.22	12.813		
4,200.0	3,872.1	4,083.6	3,728.5	31.9	32.0	-93.03	820.9	1,289.1	782.2	721.1	61.15	12.792		
4,300.0	3,960.8	4,180.8	3,814.0	32.9	33.0	-93.21	845.4	1,328.5	805.6	742.6	63.08	12.772		
4,400.0	4,049.4	4,278.0	3,899.4	33.9	34.0	-93.39	869.8	1,367.8	829.0	764.0	65.01	12.753		
4,500.0	4,138.0	4,375.2	3,984.8	35.0	34.9	-93.55	894.3	1,407.1	852.5	785.5	66.93	12.736		
4,600.0	4,226.7	4,472.4	4,070.3	36.0	35.9	-93.71	918.7	1,446.5	875.9	807.0	68.86	12.720		
4,700.0	4,315.3	4,569.6	4,155.7	37.0	36.9	-93.86	943.1	1,485.8	899.3	828.5	70.79	12.705		
4,800.0	4,403.9	4,666.8	4,241.2	38.0	37.9	-94.00	967.6	1,525.1	922.8	850.0	72.71	12.690		
4,900.0	4,492.6	4,764.0	4,326.6	39.0	38.8	-94.13	992.0	1,564.5	946.2	871.6	74.64	12.677		
5,000.0	4,581.2	4,861.2	4,412.1	40.1	39.8	-94.26	1,016.5	1,603.8	969.6	893.1	76.57	12.664		
5,100.0	4,669.8	4,958.4	4,497.5	41.1	40.8	-94.38	1,040.9	1,643.2	993.1	914.6	78.49	12.652		
5,200.0	4,758.4	5,055.5	4,583.0	42.1	41.7	-94.49	1,065.4	1,682.5	1,016.5	936.1	80.42	12.641		
5,216.8	4,773.4	5,071.9	4,597.4	42.3	41.9	-94.51	1,069.5	1,689.1	1,020.5	939.8	80.74	12.639		
5,300.0	4,847.6	5,152.8	4,668.5	43.0	42.7	-94.93	1,089.8	1,721.8	1,039.9	957.6	82.32	12.632 SF		
5,400.0	4,938.3	5,250.0	4,754.0	43.8	43.7	-95.26	1,114.3	1,761.2	1,063.0	978.9	84.05	12.646		
5,500.0	5,030.4	5,347.2	4,839.4	44.5	44.7	-95.39	1,138.7	1,800.5	1,085.8	1,000.1	85.70	12.670		
5,600.0	5,123.8	5,444.2	4,924.6	45.1	45.6	-95.35	1,163.1	1,839.8	1,108.3	1,021.0	87.25	12.703		
5,700.0	5,218.4	5,540.8	5,009.6	45.7	46.6	-95.15	1,187.4	1,878.9	1,130.6	1,041.9	88.70	12.747		
5,800.0	5,314.1	5,637.1	5,094.2	46.2	47.6	-94.80	1,211.6	1,917.8	1,152.8	1,062.8	90.05	12.802		
5,900.0	5,410.7	5,742.8	5,187.5	46.6	48.5	-94.25	1,237.9	1,960.2	1,174.8	1,083.5	91.27	12.871		
6,000.0	5,508.2	5,859.3	5,292.1	47.0	49.4	-93.58	1,265.0	2,003.7	1,195.3	1,103.0	92.32	12.948		
6,100.0	5,606.3	5,977.5	5,400.2	47.3	50.2	-92.92	1,290.1	2,044.1	1,214.3	1,121.0	93.23	13.024		
6,200.0	5,705.1	6,097.4	5,511.9	47.6	50.9	-92.26	1,313.2	2,081.3	1,231.5	1,137.5	94.01	13.100		
6,300.0	5,804.4	6,218.9	5,626.8	47.8	51.6	-91.59	1,334.0	2,114.8	1,247.0	1,152.4	94.64	13.177		
6,400.0	5,904.0	6,342.1	5,744.9	48.0	52.2	-90.91	1,352.5	2,144.5	1,260.7	1,165.6	95.13	13.253		
6,500.0	6,003.9	6,466.7	5,865.8	48.1	52.7	-90.22	1,368.5	2,170.2	1,272.5	1,177.1	95.48	13.327		
6,596.1	6,100.0	6,588.0	5,984.6	48.2	53.1	-2.24	1,381.3	2,190.9	1,282.1	1,186.4	95.69	13.398		
6,600.0	6,103.9	6,592.9	5,989.4	48.2	53.2	-2.20	1,381.8	2,191.6	1,282.4	1,186.7	95.70	13.401		
6,700.0	6,203.9	6,720.6	6,115.6	48.3	53.5	-1.43	1,392.3	2,208.6	1,290.3	1,194.6	95.78	13.472		
6,800.0	6,303.9	6,850.0	6,244.1	48.3	53.8	-0.88	1,399.9	2,220.9	1,296.1	1,200.2	95.87	13.519		

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 Peterson CX GH 30-41D
<b>Project:</b>	SEC.30-T5N-R63W	<b>TVD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Reference Site:</b>	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	<b>MD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peterson CX GH 30-41D	<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 (7-25-12)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Peterson CX GH 30-41D Pad Sec.30-T5N-R63W - Peterson CX GH 30-26D - Wellbore #1 - Plan #1 (7-													<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		
6,900.0	6,403.9	6,980.4	6,374.2	48.4	54.0	-0.55	1,404.5	2,228.2	1,299.5	1,203.6	95.97	13.540		
7,000.0	6,503.9	7,110.1	6,503.9	48.4	54.1	-0.45	1,406.0	2,230.6	1,300.6	1,204.5	96.10	13.534		
7,100.0	6,603.9	7,210.1	6,603.9	48.5	54.1	-0.45	1,406.0	2,230.6	1,300.6	1,204.4	96.22	13.517		
7,200.0	6,703.9	7,310.1	6,703.9	48.6	54.2	-0.45	1,406.0	2,230.6	1,300.6	1,204.3	96.35	13.498		
7,232.1	6,736.0	7,342.2	6,736.0	48.6	54.2	-0.45	1,406.0	2,230.6	1,300.6	1,204.2	96.40	13.492		

Peterson CX GH 30-41D Pad Sec.30-T5N-R63W - Peterson CX GH 30-28D - Wellbore #1 - Plan #1 (7-0-MWD)													Offset Site Error: 0.0 ft	
Survey Program: Reference				Offset			Semi Major Axis			Distance			Offset Well Error: 0.0 ft	
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	
0.0	0.0	0.0	0.0	0.0	0.0	-92.37	-0.7	-17.8	17.8	17.8	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	-92.37	-0.7	-17.8	17.8	17.6	0.22	79.405		
200.0	200.0	200.0	200.0	0.3	0.3	-92.37	-0.7	-17.8	17.8	17.2	0.67	26.468		
300.0	300.0	300.0	300.0	0.6	0.6	-92.37	-0.7	-17.8	17.8	16.7	1.12	15.881		
400.0	400.0	400.0	400.0	0.8	0.8	-92.37	-0.7	-17.8	17.8	16.3	1.57	11.344 CC, ES		
500.0	500.0	500.0	500.0	1.0	1.0	-179.70	-0.7	-17.8	19.6	17.6	2.01	9.729 SF		
600.0	599.8	599.8	599.8	1.2	1.2	-179.76	-0.7	-17.8	24.8	22.4	2.45	10.129		
700.0	699.5	699.5	699.5	1.5	1.5	-179.83	-0.7	-17.8	33.5	30.6	2.89	11.594		
800.0	798.7	798.7	798.7	1.7	1.7	-179.87	-0.7	-17.8	45.7	42.4	3.34	13.702		
900.0	897.5	897.0	897.0	2.0	1.9	-178.39	0.8	-18.3	61.7	58.0	3.78	16.325		
1,000.0	995.6	994.2	994.0	2.4	2.1	-175.32	5.6	-19.5	82.1	77.9	4.23	19.407		
1,100.0	1,093.1	1,089.8	1,089.3	2.8	2.3	-171.96	13.4	-21.6	107.1	102.4	4.69	22.821		
1,200.0	1,189.6	1,183.6	1,182.5	3.3	2.6	-168.81	24.0	-24.5	136.8	131.6	5.18	26.429		
1,300.0	1,285.3	1,275.2	1,273.0	3.9	2.8	-166.00	37.2	-28.0	171.3	165.6	5.69	30.098		
1,400.0	1,379.8	1,364.3	1,360.6	4.5	3.1	-163.55	52.8	-32.2	210.4	204.2	6.24	33.712		
1,500.0	1,473.2	1,450.6	1,445.0	5.2	3.4	-161.41	70.3	-36.9	254.2	247.3	6.84	37.183		
1,600.0	1,565.2	1,533.9	1,525.9	6.0	3.7	-159.52	89.6	-42.1	302.3	294.9	7.47	40.453		
1,700.0	1,655.8	1,614.0	1,603.1	6.8	4.1	-157.82	110.2	-47.6	354.7	346.6	8.16	43.487		
1,779.3	1,726.6	1,675.2	1,661.6	7.6	4.4	-156.58	127.4	-52.2	399.1	390.4	8.74	45.691		
1,800.0	1,745.0	1,690.8	1,676.6	7.8	4.4	-156.39	132.0	-53.4	411.1	402.2	8.90	46.201		
1,900.0	1,833.6	1,766.3	1,748.1	8.7	4.8	-155.42	155.2	-59.7	469.5	459.8	9.72	48.319		
2,000.0	1,922.2	1,846.8	1,824.1	9.7	5.3	-154.52	180.6	-66.5	528.5	517.9	10.59	49.902		
2,100.0	2,010.9	1,927.3	1,900.2	10.7	5.7	-153.80	206.1	-73.3	587.6	576.1	11.47	51.221		
2,200.0	2,099.5	2,007.8	1,976.3	11.7	6.2	-153.21	231.6	-80.1	646.7	634.3	12.37	52.282		
2,300.0	2,188.1	2,088.3	2,052.3	12.7	6.7	-152.72	257.0	-87.0	705.8	692.5	13.28	53.146		
2,400.0	2,276.8	2,168.8	2,128.4	13.7	7.2	-152.31	282.5	-93.8	765.0	750.7	14.20	53.862		
2,500.0	2,365.4	2,249.3	2,204.5	14.7	7.7	-151.95	308.0	-100.6	824.1	809.0	15.13	54.465		
2,600.0	2,454.0	2,329.8	2,280.5	15.7	8.2	-151.64	333.4	-107.5	883.3	867.3	16.07	54.977		
2,700.0	2,542.7	2,410.3	2,356.6	16.7	8.7	-151.37	358.9	-114.3	942.6	925.5	17.01	55.414		
2,800.0	2,631.3	2,490.8	2,432.7	17.7	9.2	-151.14	384.3	-121.1	1,001.8	983.8	17.96	55.790		
2,900.0	2,719.9	2,571.3	2,508.7	18.7	9.7	-150.93	409.8	-128.0	1,061.0	1,042.1	18.91	56.115		
3,000.0	2,808.6	2,651.9	2,584.8	19.7	10.2	-150.74	435.3	-134.8	1,120.3	1,100.4	19.86	56.400		
3,100.0	2,897.2	2,732.4	2,660.9	20.7	10.7	-150.57	460.7	-141.6	1,179.5	1,158.7	20.82	56.651		
3,200.0	2,985.8	2,812.9	2,736.9	21.8	11.2	-150.41	486.2	-148.5	1,238.8	1,217.0	21.78	56.873		
3,300.0	3,074.4	2,893.4	2,813.0	22.8	11.7	-150.27	511.7	-155.3	1,298.1	1,275.3	22.75	57.069		
3,400.0	3,163.1	2,973.9	2,889.1	23.8	12.3	-150.15	537.1	-162.1	1,357.3	1,333.6	23.71	57.245		
3,500.0	3,251.7	3,054.4	2,965.1	24.8	12.8	-150.03	562.6	-169.0	1,416.6	1,391.9	24.68	57.402		
3,600.0	3,340.3	3,134.9	3,041.2	25.8	13.3	-149.92	588.1	-175.8	1,475.9	1,450.2	25.65	57.544		
3,700.0	3,429.0	3,215.4	3,117.3	26.8	13.8	-149.82	613.5	-182.6	1,535.2	1,508.5	26.62	57.672		
3,800.0	3,517.6	3,295.9	3,193.3	27.8	14.3	-149.73	639.0	-189.5	1,594.4	1,566.9	27.59	57.789		
3,900.0	3,606.2	3,376.4	3,269.4	28.9	14.9	-149.65	664.5	-196.3	1,653.7	1,625.2	28.56	57.894		
4,000.0	3,694.9	3,456.9	3,345.5	29.9	15.4	-149.57	689.9	-203.1	1,713.0	1,683.5	29.54	57.991		
4,100.0	3,783.5	3,537.4	3,421.5	30.9	15.9	-149.49	715.4	-210.0	1,772.3	1,741.8	30.52	58.079		
4,200.0	3,872.1	3,617.9	3,497.6	31.9	16.4	-149.42	740.9	-216.8	1,831.6	1,800.1	31.49	58.161		
4,300.0	3,960.8	3,698.4	3,573.7	32.9	16.9	-149.36	766.3	-223.6	1,890.9	1,858.4	32.47	58.236		
4,400.0	4,049.4	3,778.9	3,649.7	33.9	17.5	-149.30	791.8	-230.4	1,950.2	1,916.8	33.45	58.304		
4,500.0	4,138.0	3,859.4	3,725.8	35.0	18.0	-149.24	817.3	-237.3	2,009.5	1,975.1	34.43	58.368		
4,600.0	4,226.7	3,940.0	3,801.9	36.0	18.5	-149.19	842.7	-244.1	2,068.8	2,033.4	35.41	58.427		
4,700.0	4,315.3	4,020.5	3,877.9	37.0	19.0	-149.14	868.2	-250.9	2,128.1	2,091.7	36.39	58.482		
4,800.0	4,403.9	4,101.0	3,954.0	38.0	19.6	-149.09	893.7	-257.8	2,187.4	2,150.0	37.37	58.533		
4,900.0	4,492.6	4,181.5	4,030.1	39.0	20.1	-149.04	919.1	-264.6	2,246.7	2,208.3	38.35	58.580		

COMPASS 2003.21 Build 46

<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well Peterson CX GH 30-41D
<b>Project:</b>	SEC.30-T5N-R63W	<b>TVD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Reference Site:</b>	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	<b>MD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peterson CX GH 30-41D	<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 (7-25-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Peterson CX GH 30-41D Pad Sec.30-T5N-R63W - Peterson CX GH 30-28D - Wellbore #1 - Plan #1 (7-													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,000.0	4,581.2	4,262.0	4,106.1	40.1	20.6	-149.00	944.6	-271.4	2,306.0	2,266.7	39.34	58.624		
5,100.0	4,669.8	4,342.5	4,182.2	41.1	21.1	-148.96	970.1	-278.3	2,365.3	2,325.0	40.32	58.666		
5,200.0	4,758.4	4,423.0	4,258.3	42.1	21.7	-148.92	995.5	-285.1	2,424.6	2,383.3	41.30	58.704		
5,216.8	4,773.4	4,436.5	4,271.1	42.3	21.8	-148.91	999.8	-286.3	2,434.6	2,393.1	41.47	58.710		
5,300.0	4,847.6	4,504.1	4,334.9	43.0	22.2	-149.48	1,021.2	-292.0	2,483.1	2,440.7	42.33	58.657		
5,400.0	4,938.3	4,586.8	4,413.1	43.8	22.7	-150.06	1,047.4	-299.0	2,539.1	2,495.8	43.33	58.605		
5,500.0	5,030.4	4,671.1	4,492.7	44.5	23.3	-150.54	1,074.0	-306.2	2,592.6	2,548.3	44.31	58.516		
5,600.0	5,123.8	4,756.9	4,573.7	45.1	23.8	-150.94	1,101.1	-313.4	2,643.6	2,598.3	45.27	58.400		
5,700.0	5,218.4	4,844.0	4,656.0	45.7	24.4	-151.26	1,128.7	-320.8	2,691.9	2,645.7	46.20	58.261		
5,800.0	5,314.1	4,932.3	4,739.5	46.2	25.0	-151.51	1,156.6	-328.3	2,737.5	2,690.4	47.11	58.105		
5,900.0	5,410.7	5,021.8	4,824.1	46.6	25.6	-151.68	1,185.0	-335.9	2,780.5	2,732.5	47.99	57.936		
6,000.0	5,508.2	5,112.4	4,909.6	47.0	26.2	-151.80	1,213.6	-343.6	2,820.7	2,771.9	48.84	57.757		
6,100.0	5,606.3	5,271.2	5,060.3	47.3	27.1	-151.63	1,262.1	-356.6	2,857.7	2,807.8	49.94	57.218		
6,200.0	5,705.1	5,546.5	5,327.0	47.6	28.2	-151.27	1,327.7	-374.2	2,887.2	2,836.0	51.27	56.312		
6,300.0	5,804.4	5,836.7	5,613.7	47.8	29.0	-151.14	1,369.8	-385.5	2,907.6	2,855.3	52.25	55.642		
6,400.0	5,904.0	6,127.4	5,904.0	48.0	29.4	-151.27	1,383.7	-389.2	2,918.3	2,865.4	52.82	55.254		
6,500.0	6,003.9	6,227.3	6,003.9	48.1	29.5	-151.36	1,383.7	-389.2	2,922.7	2,869.7	52.99	55.154		
6,596.1	6,100.0	6,323.4	6,100.0	48.2	29.6	-64.08	1,383.7	-389.2	2,924.1	2,871.0	53.12	55.046		
6,600.0	6,103.9	6,327.3	6,103.9	48.2	29.6	-64.08	1,383.7	-389.2	2,924.1	2,871.0	53.13	55.038		
6,700.0	6,203.9	6,427.3	6,203.9	48.3	29.7	-64.08	1,383.7	-389.2	2,924.1	2,870.8	53.33	54.828		
6,800.0	6,303.9	6,527.3	6,303.9	48.3	29.8	-64.08	1,383.7	-389.2	2,924.1	2,870.6	53.54	54.617		
6,900.0	6,403.9	6,627.3	6,403.9	48.4	29.9	-64.08	1,383.7	-389.2	2,924.1	2,870.4	53.75	54.405		
7,000.0	6,503.9	6,727.3	6,503.9	48.4	30.0	-64.08	1,383.7	-389.2	2,924.1	2,870.2	53.96	54.191		
7,100.0	6,603.9	6,827.3	6,603.9	48.5	30.1	-64.08	1,383.7	-389.2	2,924.1	2,870.0	54.18	53.976		
7,200.0	6,703.9	6,927.3	6,703.9	48.6	30.2	-64.08	1,383.7	-389.2	2,924.1	2,869.8	54.39	53.760		
7,232.1	6,736.0	6,959.4	6,736.0	48.6	30.2	-64.08	1,383.7	-389.2	2,924.1	2,869.7	54.46	53.690		

<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well Peterson CX GH 30-41D
<b>Project:</b>	SEC.30-T5N-R63W	<b>TVD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Reference Site:</b>	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	<b>MD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peterson CX GH 30-41D	<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 (7-25-12)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Peterson CX GH 30-41D Pad Sec.30-T5N-R63W - Peterson CX GH 30-40D - Wellbore #1 - Plan #1 (7-												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	177.61	-20.0	0.8	20.1				
100.0	100.0	100.0	100.0	0.1	0.1	177.61	-20.0	0.8	20.1	19.8	0.22	89.260	
200.0	200.0	200.0	200.0	0.3	0.3	177.61	-20.0	0.8	20.1	19.4	0.67	29.753 CC, ES	
300.0	300.0	299.6	299.6	0.6	0.5	173.63	-20.9	2.3	21.0	19.9	1.11	19.007	
400.0	400.0	398.9	398.8	0.8	0.8	163.83	-23.5	6.8	24.5	22.9	1.55	15.836	
500.0	500.0	497.9	497.4	1.0	1.0	68.42	-27.8	14.2	30.7	28.7	1.99	15.396	
600.0	599.8	596.6	595.3	1.2	1.3	65.20	-33.9	24.5	38.7	36.3	2.44	15.849	
700.0	699.5	694.8	692.4	1.5	1.6	64.79	-41.7	37.5	48.3	45.4	2.93	16.469	
800.0	798.7	792.6	788.4	1.7	2.0	65.82	-51.3	53.3	59.4	55.9	3.48	17.072	
900.0	897.5	889.9	883.3	2.0	2.4	67.55	-62.6	71.7	72.0	67.9	4.10	17.566	
1,000.0	995.6	986.6	976.8	2.4	2.9	69.54	-75.5	92.7	86.1	81.3	4.81	17.909	
1,100.0	1,093.1	1,082.8	1,068.9	2.8	3.5	71.58	-90.0	116.2	102.0	96.3	5.63	18.101	
1,200.0	1,189.6	1,178.3	1,159.4	3.3	4.1	73.53	-106.1	142.1	119.5	112.9	6.58	18.163	
1,300.0	1,285.3	1,273.1	1,248.2	3.9	4.8	75.35	-123.6	170.3	138.7	131.1	7.65	18.125	
1,400.0	1,379.8	1,367.1	1,335.1	4.5	5.5	77.00	-142.5	200.7	159.7	150.8	8.86	18.022	
1,500.0	1,473.2	1,460.5	1,420.2	5.2	6.3	78.48	-162.8	233.3	182.3	172.1	10.20	17.874	
1,600.0	1,565.2	1,553.0	1,503.3	6.0	7.1	79.80	-184.4	267.8	206.6	195.0	11.67	17.705	
1,700.0	1,655.8	1,648.4	1,587.9	6.8	8.1	81.20	-207.7	305.1	232.1	218.8	13.31	17.438	
1,779.3	1,726.6	1,724.7	1,655.6	7.6	8.8	82.61	-226.4	335.0	252.1	237.4	14.72	17.132	
1,800.0	1,745.0	1,744.6	1,673.3	7.8	9.0	83.10	-231.3	342.8	257.4	242.3	15.10	17.041	
1,900.0	1,833.6	1,840.8	1,758.6	8.7	10.0	85.22	-254.8	380.5	282.9	265.9	16.98	16.661	
2,000.0	1,922.2	1,937.0	1,844.0	9.7	10.9	87.00	-278.4	418.1	308.7	289.9	18.87	16.362	
2,100.0	2,010.9	2,033.2	1,929.3	10.7	11.9	88.50	-301.9	455.8	334.8	314.0	20.77	16.123	
2,200.0	2,099.5	2,131.5	2,016.4	11.7	12.8	89.80	-325.9	494.3	361.0	338.3	22.68	15.919	
2,300.0	2,188.1	2,240.1	2,112.8	12.7	13.8	90.85	-350.1	538.2	385.2	360.6	24.62	15.646	
2,400.0	2,276.8	2,337.4	2,199.1	13.7	14.8	91.56	-370.3	578.3	408.1	381.5	26.52	15.387	
2,500.0	2,365.4	2,434.6	2,285.3	14.7	15.7	92.20	-390.6	618.4	431.0	402.5	28.45	15.146	
2,600.0	2,454.0	2,531.8	2,371.6	15.7	16.7	92.78	-410.8	658.5	453.9	423.5	30.39	14.935	
2,700.0	2,542.7	2,629.1	2,457.8	16.7	17.7	93.30	-431.0	698.6	476.9	444.6	32.33	14.750	
2,800.0	2,631.3	2,726.3	2,544.1	17.7	18.7	93.77	-451.2	738.7	499.9	465.6	34.27	14.586	
2,900.0	2,719.9	2,823.6	2,630.3	18.7	19.7	94.20	-471.4	778.8	522.9	486.7	36.21	14.440	
3,000.0	2,808.6	2,920.8	2,716.6	19.7	20.7	94.60	-491.6	818.9	546.0	507.9	38.16	14.310	
3,100.0	2,897.2	3,018.0	2,802.8	20.7	21.6	94.96	-511.9	859.0	569.1	529.0	40.10	14.192	
3,200.0	2,985.8	3,115.3	2,889.1	21.8	22.6	95.29	-532.1	899.1	592.2	550.2	42.04	14.086	
3,300.0	3,074.4	3,212.5	2,975.3	22.8	23.6	95.60	-552.3	939.1	615.4	571.4	43.99	13.989	
3,400.0	3,163.1	3,309.7	3,061.5	23.8	24.6	95.89	-572.5	979.2	638.5	592.6	45.93	13.901	
3,500.0	3,251.7	3,407.0	3,147.8	24.8	25.6	96.15	-592.7	1,019.3	661.7	613.8	47.88	13.820	
3,600.0	3,340.3	3,504.2	3,234.0	25.8	26.6	96.40	-612.9	1,059.4	684.8	635.0	49.82	13.746	
3,700.0	3,429.0	3,601.4	3,320.3	26.8	27.6	96.63	-633.2	1,099.5	708.0	656.3	51.76	13.678	
3,800.0	3,517.6	3,698.7	3,406.5	27.8	28.5	96.85	-653.4	1,139.6	731.2	677.5	53.71	13.614	
3,900.0	3,606.2	3,795.9	3,492.8	28.9	29.5	97.06	-673.6	1,179.7	754.4	698.8	55.65	13.556	
4,000.0	3,694.9	3,893.2	3,579.0	29.9	30.5	97.25	-693.8	1,219.8	777.6	720.0	57.60	13.501	
4,100.0	3,783.5	3,990.4	3,665.3	30.9	31.5	97.43	-714.0	1,259.9	800.9	741.3	59.54	13.450	
4,200.0	3,872.1	4,087.6	3,751.5	31.9	32.5	97.60	-734.2	1,300.0	824.1	762.6	61.49	13.402	
4,300.0	3,960.8	4,184.9	3,837.8	32.9	33.5	97.76	-754.4	1,340.1	847.3	783.9	63.43	13.358	
4,400.0	4,049.4	4,282.1	3,924.0	33.9	34.5	97.91	-774.7	1,380.2	870.6	805.2	65.38	13.316	
4,500.0	4,138.0	4,379.3	4,010.3	35.0	35.5	98.06	-794.9	1,420.3	893.8	826.5	67.32	13.277	
4,600.0	4,226.7	4,476.6	4,096.5	36.0	36.5	98.20	-815.1	1,460.4	917.1	847.8	69.26	13.240	
4,700.0	4,315.3	4,573.8	4,182.8	37.0	37.4	98.33	-835.3	1,500.4	940.3	869.1	71.21	13.205	
4,800.0	4,403.9	4,671.0	4,269.0	38.0	38.4	98.45	-855.5	1,540.5	963.6	890.4	73.15	13.172	
4,900.0	4,492.6	4,768.3	4,355.3	39.0	39.4	98.57	-875.7	1,580.6	986.8	911.7	75.10	13.141	

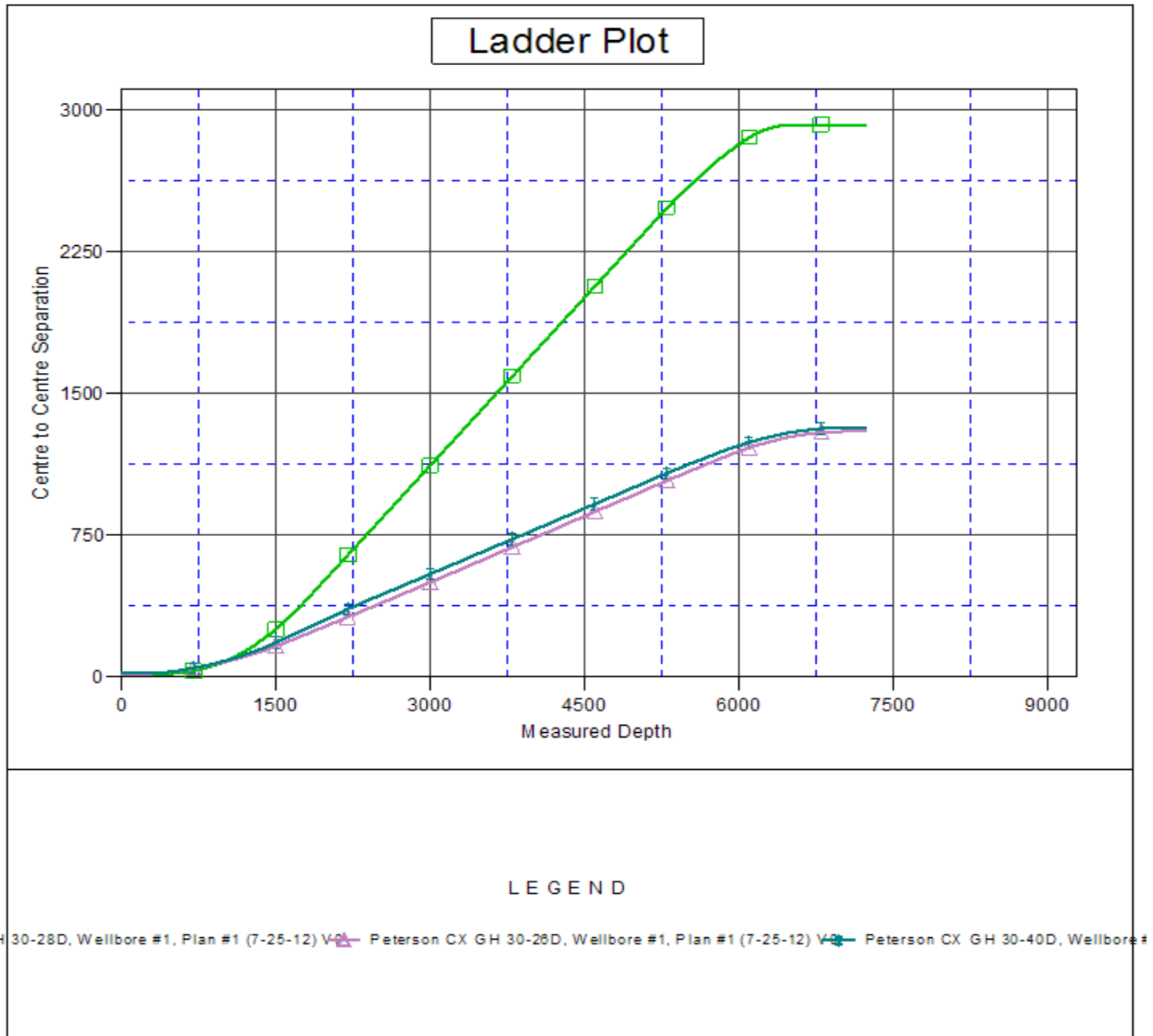
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Peterson CX GH 30-41D Pad Sec.30-T5N-R63W - Peterson CX GH 30-40D - Wellbore #1 - Plan #1 (7-0-MWD)													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													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)			
5,000.0	4,581.2	4,865.5	4,441.5	40.1	40.4	98.68	-896.0	1,620.7	1,010.1	933.1	77.04	13.111		
5,100.0	4,669.8	4,962.8	4,527.8	41.1	41.4	98.79	-916.2	1,660.8	1,033.4	954.4	78.99	13.083		
5,200.0	4,758.4	5,060.0	4,614.0	42.1	42.4	98.89	-936.4	1,700.9	1,056.7	975.7	80.93	13.057		
5,216.8	4,773.4	5,076.4	4,628.5	42.3	42.6	98.91	-939.8	1,707.7	1,060.6	979.3	81.26	13.052		
5,300.0	4,847.6	5,157.3	4,700.3	43.0	43.4	99.32	-956.6	1,741.0	1,079.7	996.9	82.86	13.031		
5,400.0	4,938.3	5,254.7	4,786.7	43.8	44.4	99.62	-976.9	1,781.2	1,102.3	1,017.7	84.62	13.026 SF		
5,500.0	5,030.4	5,352.0	4,873.0	44.5	45.4	99.75	-997.1	1,821.3	1,124.3	1,038.0	86.31	13.027		
5,600.0	5,123.8	5,449.2	4,959.3	45.1	46.4	99.70	-1,017.3	1,861.4	1,145.8	1,057.9	87.90	13.035		
5,700.0	5,218.4	5,546.2	5,045.3	45.7	47.3	99.49	-1,037.5	1,901.4	1,166.8	1,077.4	89.41	13.050		
5,800.0	5,314.1	5,642.7	5,130.9	46.2	48.3	99.13	-1,057.6	1,941.2	1,187.4	1,096.6	90.82	13.075		
5,900.0	5,410.7	5,746.3	5,223.0	46.6	49.3	98.57	-1,078.9	1,983.5	1,207.6	1,115.5	92.10	13.113		
6,000.0	5,508.2	5,859.9	5,325.7	47.0	50.1	97.92	-1,100.8	2,026.9	1,226.5	1,133.3	93.21	13.158		
6,100.0	5,606.3	5,975.1	5,431.7	47.3	50.9	97.27	-1,121.1	2,067.2	1,243.8	1,149.6	94.18	13.206		
6,200.0	5,705.1	6,091.8	5,540.8	47.6	51.7	96.61	-1,139.7	2,104.1	1,259.4	1,164.3	95.01	13.255		
6,300.0	5,804.4	6,210.0	5,653.0	47.8	52.3	95.95	-1,156.5	2,137.4	1,273.3	1,177.6	95.69	13.306		
6,400.0	5,904.0	6,329.7	5,768.0	48.0	52.9	95.28	-1,171.3	2,166.8	1,285.4	1,189.2	96.22	13.358		
6,500.0	6,003.9	6,450.7	5,885.6	48.1	53.4	94.60	-1,184.1	2,192.2	1,295.7	1,199.1	96.61	13.411		
6,596.1	6,100.0	6,568.2	6,000.9	48.2	53.8	-178.76	-1,194.4	2,212.6	1,303.9	1,207.0	96.86	13.462		
6,600.0	6,103.9	6,573.0	6,005.6	48.2	53.8	-178.79	-1,194.8	2,213.3	1,304.2	1,207.3	96.86	13.464		
6,700.0	6,203.9	6,696.8	6,127.9	48.3	54.1	-179.53	-1,203.2	2,230.1	1,310.9	1,213.9	97.00	13.514		
6,800.0	6,303.9	6,822.0	6,252.4	48.3	54.4	179.94	-1,209.3	2,242.1	1,315.7	1,218.6	97.12	13.548		
6,900.0	6,403.9	6,948.2	6,378.3	48.4	54.5	179.62	-1,213.0	2,249.4	1,318.6	1,221.4	97.23	13.562		
7,000.0	6,503.9	7,073.8	6,503.9	48.4	54.6	179.52	-1,214.1	2,251.7	1,319.6	1,222.2	97.36	13.553		
7,100.0	6,603.9	7,173.8	6,603.9	48.5	54.7	179.52	-1,214.1	2,251.7	1,319.6	1,222.1	97.49	13.536		
7,200.0	6,703.9	7,273.8	6,703.9	48.6	54.7	179.52	-1,214.1	2,251.7	1,319.6	1,222.0	97.61	13.518		
7,232.1	6,736.0	7,305.9	6,736.0	48.6	54.7	179.52	-1,214.1	2,251.7	1,319.6	1,221.9	97.66	13.513		



<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well Peterson CX GH 30-41D
<b>Project:</b>	SEC.30-T5N-R63W	<b>TVD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Reference Site:</b>	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	<b>MD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peterson CX GH 30-41D	<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 (7-25-12)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4588.0ft (Original Well Elev) Coordinates are relative to: Peterson CX GH 30-41D  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.66°



<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well Peterson CX GH 30-41D
<b>Project:</b>	SEC.30-T5N-R63W	<b>TVD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Reference Site:</b>	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	<b>MD Reference:</b>	WELL @ 4588.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Peterson CX GH 30-41D	<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 (7-25-12)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4588.0ft (Original Well Elev) Coordinates are relative to: Peterson CX GH 30-41D  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 ° Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.66°

