

ENSIGN

Directional

Well Name: Peterson CX GH 30-26D

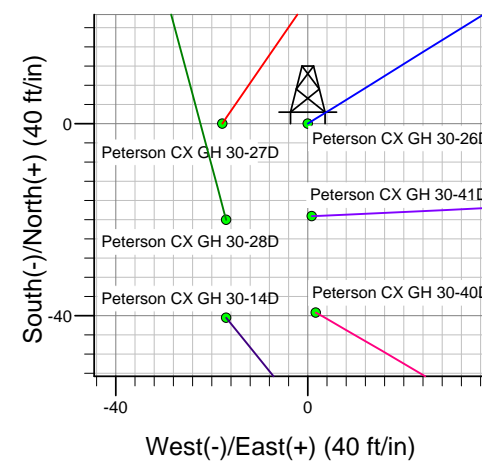
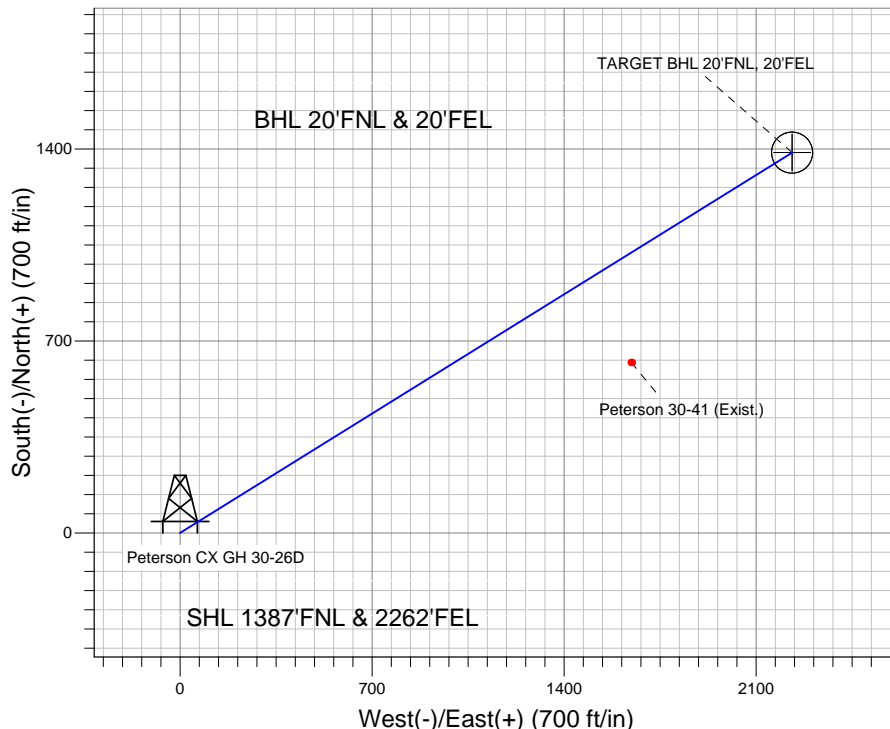
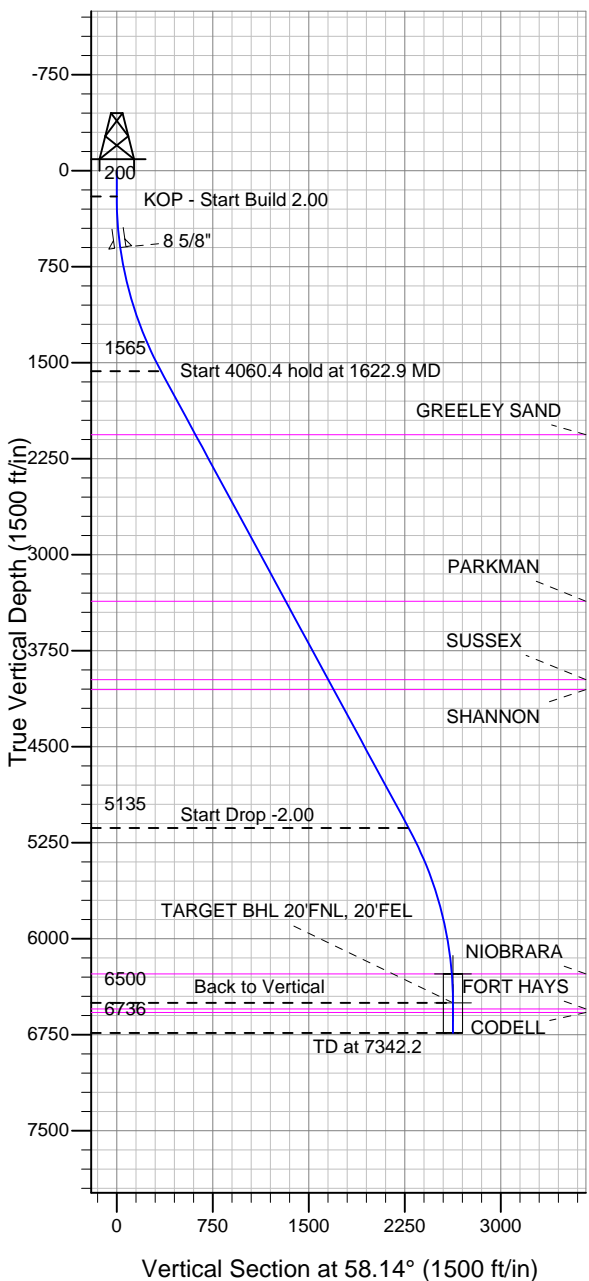
Surface Location: Peterson CX GH 30-41D Pad Sec.30-T5N-R63W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4574.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1380674.37	3284789.01	40.373847	-104.477828	

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

Great Western



Peterson CX GH 30-41D Pad Sec.30-T5N-R63W
Peterson CX GH 30-26D
Plan #1 (7-25-12)
8:42, July 31 2012



Azimuths to True North
Magnetic North: 8.56°

Magnetic Field
Strength: 53031.3snT
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 CIRCLE 20'FNL & 20'FEL	6274.0	1386.7	2231.4	40.377653	-104.469819	Circle (Radius: 75.0)
TARGET BHL 20'FNL, 20'FEL	6500.0	1386.7	2231.4	40.377653	-104.469819	Point

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	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1622.9	28.46	58.14	1565.1	182.7	294.0	2.00	58.14	346.2	
4	5683.3	28.46	58.14	5134.9	1204.0	1937.4	0.00	0.00	2281.0	
5	7106.2	0.00	0.00	6500.0	1386.7	2231.4	2.00	180.00	2627.2	TARGET BHL 20'FNL, 20'FEL
6	7342.2	0.00	0.00	6736.0	1386.7	2231.4	0.00	0.00	2627.2	



Directional

Great Western

SEC.30-T5N-R63W

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

Peterson CX GH 30-26D

Wellbore #1

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

Standard Planning Report

31 July, 2012

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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,622.9	28.46	58.14	1,565.1	182.7	294.0	2.00	2.00	0.00	58.14	
5,683.3	28.46	58.14	5,134.9	1,204.0	1,937.4	0.00	0.00	0.00	0.00	
7,106.2	0.00	0.00	6,500.0	1,386.7	2,231.4	2.00	-2.00	0.00	180.00	TARGET BHL 20'FT
7,342.2	0.00	0.00	6,736.0	1,386.7	2,231.4	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Peterson CX GH 30-26D
Company:	Great Western	TVD Reference:	WELL @ 4588.0ft (Original Well Elev)
Project:	SEC.30-T5N-R63W	MD Reference:	WELL @ 4588.0ft (Original Well Elev)
Site:	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	North Reference:	True
Well:	Peterson CX GH 30-26D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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
KOP - Start Build 2.00									
240.0	0.80	58.14	240.0	0.1	0.2	0.3	2.00	2.00	0.00
280.0	1.60	58.14	280.0	0.6	0.9	1.1	2.00	2.00	0.00
320.0	2.40	58.14	320.0	1.3	2.1	2.5	2.00	2.00	0.00
360.0	3.20	58.14	359.9	2.4	3.8	4.5	2.00	2.00	0.00
400.0	4.00	58.14	399.8	3.7	5.9	7.0	2.00	2.00	0.00
440.0	4.80	58.14	439.7	5.3	8.5	10.0	2.00	2.00	0.00
480.0	5.60	58.14	479.6	7.2	11.6	13.7	2.00	2.00	0.00
520.0	6.40	58.14	519.3	9.4	15.2	17.9	2.00	2.00	0.00
560.0	7.20	58.14	559.1	11.9	19.2	22.6	2.00	2.00	0.00
600.0	8.00	58.14	598.7	14.7	23.7	27.9	2.00	2.00	0.00
601.3	8.03	58.14	600.0	14.8	23.8	28.1	2.00	2.00	0.00
8 5/8"									
640.0	8.80	58.14	638.3	17.8	28.6	33.7	2.00	2.00	0.00
680.0	9.60	58.14	677.8	21.2	34.1	40.1	2.00	2.00	0.00
720.0	10.40	58.14	717.1	24.8	40.0	47.1	2.00	2.00	0.00
760.0	11.20	58.14	756.4	28.8	46.3	54.6	2.00	2.00	0.00
800.0	12.00	58.14	795.6	33.0	53.2	62.6	2.00	2.00	0.00
840.0	12.80	58.14	834.7	37.6	60.5	71.2	2.00	2.00	0.00
880.0	13.60	58.14	873.6	42.4	68.2	80.3	2.00	2.00	0.00
920.0	14.40	58.14	912.4	47.5	76.4	90.0	2.00	2.00	0.00
960.0	15.20	58.14	951.1	52.9	85.1	100.2	2.00	2.00	0.00
1,000.0	16.00	58.14	989.6	58.6	94.3	111.0	2.00	2.00	0.00
1,040.0	16.80	58.14	1,028.0	64.5	103.9	122.3	2.00	2.00	0.00
1,080.0	17.60	58.14	1,066.2	70.8	113.9	134.1	2.00	2.00	0.00
1,120.0	18.40	58.14	1,104.3	77.3	124.4	146.5	2.00	2.00	0.00
1,160.0	19.20	58.14	1,142.1	84.1	135.3	159.3	2.00	2.00	0.00
1,200.0	20.00	58.14	1,179.8	91.2	146.7	172.8	2.00	2.00	0.00
1,240.0	20.80	58.14	1,217.3	98.5	158.6	186.7	2.00	2.00	0.00
1,280.0	21.60	58.14	1,254.6	106.2	170.9	201.2	2.00	2.00	0.00
1,320.0	22.40	58.14	1,291.7	114.1	183.6	216.2	2.00	2.00	0.00
1,360.0	23.20	58.14	1,328.6	122.3	196.8	231.7	2.00	2.00	0.00
1,400.0	24.00	58.14	1,365.2	130.7	210.4	247.7	2.00	2.00	0.00
1,440.0	24.80	58.14	1,401.6	139.4	224.4	264.2	2.00	2.00	0.00
1,480.0	25.60	58.14	1,437.8	148.4	238.9	281.2	2.00	2.00	0.00
1,520.0	26.40	58.14	1,473.8	157.7	253.8	298.8	2.00	2.00	0.00
1,560.0	27.20	58.14	1,509.5	167.2	269.1	316.8	2.00	2.00	0.00
1,600.0	28.00	58.14	1,544.9	177.0	284.8	335.3	2.00	2.00	0.00
1,622.9	28.46	58.14	1,565.1	182.7	294.0	346.2	2.00	2.00	0.00
Start 4060.4 hold at 1622.9 MD									
1,640.0	28.46	58.14	1,580.1	187.0	300.9	354.3	0.00	0.00	0.00
1,680.0	28.46	58.14	1,615.3	197.1	317.1	373.4	0.00	0.00	0.00
1,720.0	28.46	58.14	1,650.5	207.1	333.3	392.4	0.00	0.00	0.00
1,760.0	28.46	58.14	1,685.6	217.2	349.5	411.5	0.00	0.00	0.00
1,800.0	28.46	58.14	1,720.8	227.3	365.7	430.6	0.00	0.00	0.00
1,840.0	28.46	58.14	1,756.0	237.3	381.9	449.6	0.00	0.00	0.00
1,880.0	28.46	58.14	1,791.1	247.4	398.1	468.7	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Peterson CX GH 30-26D
Company:	Great Western	TVD Reference:	WELL @ 4588.0ft (Original Well Elev)
Project:	SEC.30-T5N-R63W	MD Reference:	WELL @ 4588.0ft (Original Well Elev)
Site:	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	North Reference:	True
Well:	Peterson CX GH 30-26D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	28.46	58.14	1,826.3	257.4	414.3	487.7	0.00	0.00	0.00
1,960.0	28.46	58.14	1,861.5	267.5	430.5	506.8	0.00	0.00	0.00
2,000.0	28.46	58.14	1,896.6	277.6	446.6	525.9	0.00	0.00	0.00
2,040.0	28.46	58.14	1,931.8	287.6	462.8	544.9	0.00	0.00	0.00
2,080.0	28.46	58.14	1,967.0	297.7	479.0	564.0	0.00	0.00	0.00
2,120.0	28.46	58.14	2,002.1	307.7	495.2	583.0	0.00	0.00	0.00
2,160.0	28.46	58.14	2,037.3	317.8	511.4	602.1	0.00	0.00	0.00
2,188.1	28.46	58.14	2,062.0	324.9	522.8	615.5	0.00	0.00	0.00
GREELEY SAND									
2,200.0	28.46	58.14	2,072.5	327.9	527.6	621.2	0.00	0.00	0.00
2,240.0	28.46	58.14	2,107.6	337.9	543.8	640.2	0.00	0.00	0.00
2,280.0	28.46	58.14	2,142.8	348.0	560.0	659.3	0.00	0.00	0.00
2,320.0	28.46	58.14	2,178.0	358.0	576.2	678.3	0.00	0.00	0.00
2,360.0	28.46	58.14	2,213.1	368.1	592.3	697.4	0.00	0.00	0.00
2,400.0	28.46	58.14	2,248.3	378.2	608.5	716.5	0.00	0.00	0.00
2,440.0	28.46	58.14	2,283.5	388.2	624.7	735.5	0.00	0.00	0.00
2,480.0	28.46	58.14	2,318.6	398.3	640.9	754.6	0.00	0.00	0.00
2,520.0	28.46	58.14	2,353.8	408.3	657.1	773.6	0.00	0.00	0.00
2,560.0	28.46	58.14	2,389.0	418.4	673.3	792.7	0.00	0.00	0.00
2,600.0	28.46	58.14	2,424.1	428.5	689.5	811.8	0.00	0.00	0.00
2,640.0	28.46	58.14	2,459.3	438.5	705.7	830.8	0.00	0.00	0.00
2,680.0	28.46	58.14	2,494.5	448.6	721.9	849.9	0.00	0.00	0.00
2,720.0	28.46	58.14	2,529.6	458.7	738.0	869.0	0.00	0.00	0.00
2,760.0	28.46	58.14	2,564.8	468.7	754.2	888.0	0.00	0.00	0.00
2,800.0	28.46	58.14	2,600.0	478.8	770.4	907.1	0.00	0.00	0.00
2,840.0	28.46	58.14	2,635.1	488.8	786.6	926.1	0.00	0.00	0.00
2,880.0	28.46	58.14	2,670.3	498.9	802.8	945.2	0.00	0.00	0.00
2,920.0	28.46	58.14	2,705.5	509.0	819.0	964.3	0.00	0.00	0.00
2,960.0	28.46	58.14	2,740.6	519.0	835.2	983.3	0.00	0.00	0.00
3,000.0	28.46	58.14	2,775.8	529.1	851.4	1,002.4	0.00	0.00	0.00
3,040.0	28.46	58.14	2,811.0	539.1	867.6	1,021.4	0.00	0.00	0.00
3,080.0	28.46	58.14	2,846.1	549.2	883.8	1,040.5	0.00	0.00	0.00
3,120.0	28.46	58.14	2,881.3	559.3	899.9	1,059.6	0.00	0.00	0.00
3,160.0	28.46	58.14	2,916.5	569.3	916.1	1,078.6	0.00	0.00	0.00
3,200.0	28.46	58.14	2,951.6	579.4	932.3	1,097.7	0.00	0.00	0.00
3,240.0	28.46	58.14	2,986.8	589.4	948.5	1,116.7	0.00	0.00	0.00
3,280.0	28.46	58.14	3,022.0	599.5	964.7	1,135.8	0.00	0.00	0.00
3,320.0	28.46	58.14	3,057.1	609.6	980.9	1,154.9	0.00	0.00	0.00
3,360.0	28.46	58.14	3,092.3	619.6	997.1	1,173.9	0.00	0.00	0.00
3,400.0	28.46	58.14	3,127.5	629.7	1,013.3	1,193.0	0.00	0.00	0.00
3,440.0	28.46	58.14	3,162.6	639.7	1,029.5	1,212.0	0.00	0.00	0.00
3,480.0	28.46	58.14	3,197.8	649.8	1,045.6	1,231.1	0.00	0.00	0.00
3,520.0	28.46	58.14	3,233.0	659.9	1,061.8	1,250.2	0.00	0.00	0.00
3,560.0	28.46	58.14	3,268.1	669.9	1,078.0	1,269.2	0.00	0.00	0.00
3,600.0	28.46	58.14	3,303.3	680.0	1,094.2	1,288.3	0.00	0.00	0.00
3,640.0	28.46	58.14	3,338.5	690.0	1,110.4	1,307.3	0.00	0.00	0.00
3,666.8	28.46	58.14	3,362.0	696.8	1,121.2	1,320.1	0.00	0.00	0.00
PARKMAN									
3,680.0	28.46	58.14	3,373.6	700.1	1,126.6	1,326.4	0.00	0.00	0.00
3,720.0	28.46	58.14	3,408.8	710.2	1,142.8	1,345.5	0.00	0.00	0.00
3,760.0	28.46	58.14	3,444.0	720.2	1,159.0	1,364.5	0.00	0.00	0.00
3,800.0	28.46	58.14	3,479.1	730.3	1,175.2	1,383.6	0.00	0.00	0.00
3,840.0	28.46	58.14	3,514.3	740.3	1,191.4	1,402.7	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Peterson CX GH 30-26D
Company:	Great Western	TVD Reference:	WELL @ 4588.0ft (Original Well Elev)
Project:	SEC.30-T5N-R63W	MD Reference:	WELL @ 4588.0ft (Original Well Elev)
Site:	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	North Reference:	True
Well:	Peterson CX GH 30-26D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	28.46	58.14	3,549.5	750.4	1,207.5	1,421.7	0.00	0.00	0.00
3,920.0	28.46	58.14	3,584.6	760.5	1,223.7	1,440.8	0.00	0.00	0.00
3,960.0	28.46	58.14	3,619.8	770.5	1,239.9	1,459.8	0.00	0.00	0.00
4,000.0	28.46	58.14	3,655.0	780.6	1,256.1	1,478.9	0.00	0.00	0.00
4,040.0	28.46	58.14	3,690.1	790.7	1,272.3	1,498.0	0.00	0.00	0.00
4,080.0	28.46	58.14	3,725.3	800.7	1,288.5	1,517.0	0.00	0.00	0.00
4,120.0	28.46	58.14	3,760.5	810.8	1,304.7	1,536.1	0.00	0.00	0.00
4,160.0	28.46	58.14	3,795.6	820.8	1,320.9	1,555.1	0.00	0.00	0.00
4,200.0	28.46	58.14	3,830.8	830.9	1,337.1	1,574.2	0.00	0.00	0.00
4,240.0	28.46	58.14	3,866.0	841.0	1,353.2	1,593.3	0.00	0.00	0.00
4,280.0	28.46	58.14	3,901.1	851.0	1,369.4	1,612.3	0.00	0.00	0.00
4,320.0	28.46	58.14	3,936.3	861.1	1,385.6	1,631.4	0.00	0.00	0.00
4,360.0	28.46	58.14	3,971.5	871.1	1,401.8	1,650.4	0.00	0.00	0.00
4,365.1	28.46	58.14	3,976.0	872.4	1,403.9	1,652.9	0.00	0.00	0.00
SUSSEX									
4,400.0	28.46	58.14	4,006.6	881.2	1,418.0	1,669.5	0.00	0.00	0.00
4,440.0	28.46	58.14	4,041.8	891.3	1,434.2	1,688.6	0.00	0.00	0.00
4,452.7	28.46	58.14	4,053.0	894.5	1,439.3	1,694.6	0.00	0.00	0.00
SHANNON									
4,480.0	28.46	58.14	4,077.0	901.3	1,450.4	1,707.6	0.00	0.00	0.00
4,520.0	28.46	58.14	4,112.1	911.4	1,466.6	1,726.7	0.00	0.00	0.00
4,560.0	28.46	58.14	4,147.3	921.4	1,482.8	1,745.7	0.00	0.00	0.00
4,600.0	28.46	58.14	4,182.5	931.5	1,498.9	1,764.8	0.00	0.00	0.00
4,640.0	28.46	58.14	4,217.6	941.6	1,515.1	1,783.9	0.00	0.00	0.00
4,680.0	28.46	58.14	4,252.8	951.6	1,531.3	1,802.9	0.00	0.00	0.00
4,720.0	28.46	58.14	4,288.0	961.7	1,547.5	1,822.0	0.00	0.00	0.00
4,760.0	28.46	58.14	4,323.1	971.7	1,563.7	1,841.1	0.00	0.00	0.00
4,800.0	28.46	58.14	4,358.3	981.8	1,579.9	1,860.1	0.00	0.00	0.00
4,840.0	28.46	58.14	4,393.5	991.9	1,596.1	1,879.2	0.00	0.00	0.00
4,880.0	28.46	58.14	4,428.6	1,001.9	1,612.3	1,898.2	0.00	0.00	0.00
4,920.0	28.46	58.14	4,463.8	1,012.0	1,628.5	1,917.3	0.00	0.00	0.00
4,960.0	28.46	58.14	4,499.0	1,022.0	1,644.7	1,936.4	0.00	0.00	0.00
5,000.0	28.46	58.14	4,534.1	1,032.1	1,660.8	1,955.4	0.00	0.00	0.00
5,040.0	28.46	58.14	4,569.3	1,042.2	1,677.0	1,974.5	0.00	0.00	0.00
5,080.0	28.46	58.14	4,604.5	1,052.2	1,693.2	1,993.5	0.00	0.00	0.00
5,120.0	28.46	58.14	4,639.6	1,062.3	1,709.4	2,012.6	0.00	0.00	0.00
5,160.0	28.46	58.14	4,674.8	1,072.4	1,725.6	2,031.7	0.00	0.00	0.00
5,200.0	28.46	58.14	4,710.0	1,082.4	1,741.8	2,050.7	0.00	0.00	0.00
5,240.0	28.46	58.14	4,745.1	1,092.5	1,758.0	2,069.8	0.00	0.00	0.00
5,280.0	28.46	58.14	4,780.3	1,102.5	1,774.2	2,088.8	0.00	0.00	0.00
5,320.0	28.46	58.14	4,815.5	1,112.6	1,790.4	2,107.9	0.00	0.00	0.00
5,360.0	28.46	58.14	4,850.6	1,122.7	1,806.5	2,127.0	0.00	0.00	0.00
5,400.0	28.46	58.14	4,885.8	1,132.7	1,822.7	2,146.0	0.00	0.00	0.00
5,440.0	28.46	58.14	4,921.0	1,142.8	1,838.9	2,165.1	0.00	0.00	0.00
5,480.0	28.46	58.14	4,956.1	1,152.8	1,855.1	2,184.1	0.00	0.00	0.00
5,520.0	28.46	58.14	4,991.3	1,162.9	1,871.3	2,203.2	0.00	0.00	0.00
5,560.0	28.46	58.14	5,026.5	1,173.0	1,887.5	2,222.3	0.00	0.00	0.00
5,600.0	28.46	58.14	5,061.6	1,183.0	1,903.7	2,241.3	0.00	0.00	0.00
5,640.0	28.46	58.14	5,096.8	1,193.1	1,919.9	2,260.4	0.00	0.00	0.00
5,680.0	28.46	58.14	5,132.0	1,203.1	1,936.1	2,279.4	0.00	0.00	0.00
5,683.3	28.46	58.14	5,134.9	1,204.0	1,937.4	2,281.0	0.00	0.00	0.00
Start Drop -2.00									
5,720.0	27.72	58.14	5,167.2	1,213.1	1,952.1	2,298.3	2.00	-2.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Peterson CX GH 30-26D
Company:	Great Western	TVD Reference:	WELL @ 4588.0ft (Original Well Elev)
Project:	SEC.30-T5N-R63W	MD Reference:	WELL @ 4588.0ft (Original Well Elev)
Site:	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	North Reference:	True
Well:	Peterson CX GH 30-26D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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	26.92	58.14	5,202.8	1,222.8	1,967.7	2,316.7	2.00	-2.00	0.00
5,800.0	26.12	58.14	5,238.6	1,232.2	1,982.8	2,334.5	2.00	-2.00	0.00
5,840.0	25.32	58.14	5,274.6	1,241.4	1,997.6	2,351.9	2.00	-2.00	0.00
5,880.0	24.52	58.14	5,310.9	1,250.3	2,011.9	2,368.7	2.00	-2.00	0.00
5,920.0	23.72	58.14	5,347.4	1,258.9	2,025.8	2,385.1	2.00	-2.00	0.00
5,960.0	22.92	58.14	5,384.1	1,267.3	2,039.2	2,400.9	2.00	-2.00	0.00
6,000.0	22.12	58.14	5,421.1	1,275.3	2,052.3	2,416.3	2.00	-2.00	0.00
6,040.0	21.32	58.14	5,458.2	1,283.2	2,064.8	2,431.1	2.00	-2.00	0.00
6,080.0	20.52	58.14	5,495.6	1,290.7	2,077.0	2,445.3	2.00	-2.00	0.00
6,120.0	19.72	58.14	5,533.1	1,298.0	2,088.7	2,459.1	2.00	-2.00	0.00
6,160.0	18.92	58.14	5,570.9	1,305.0	2,099.9	2,472.3	2.00	-2.00	0.00
6,200.0	18.12	58.14	5,608.8	1,311.7	2,110.7	2,485.1	2.00	-2.00	0.00
6,240.0	17.32	58.14	5,646.9	1,318.1	2,121.0	2,497.2	2.00	-2.00	0.00
6,280.0	16.52	58.14	5,685.2	1,324.2	2,130.9	2,508.9	2.00	-2.00	0.00
6,320.0	15.72	58.14	5,723.6	1,330.1	2,140.4	2,520.0	2.00	-2.00	0.00
6,360.0	14.92	58.14	5,762.2	1,335.7	2,149.3	2,530.6	2.00	-2.00	0.00
6,400.0	14.12	58.14	5,800.9	1,341.0	2,157.9	2,540.6	2.00	-2.00	0.00
6,440.0	13.32	58.14	5,839.8	1,346.0	2,165.9	2,550.1	2.00	-2.00	0.00
6,480.0	12.52	58.14	5,878.8	1,350.7	2,173.5	2,559.0	2.00	-2.00	0.00
6,520.0	11.72	58.14	5,917.9	1,355.1	2,180.7	2,567.4	2.00	-2.00	0.00
6,560.0	10.92	58.14	5,957.1	1,359.3	2,187.3	2,575.3	2.00	-2.00	0.00
6,600.0	10.12	58.14	5,996.4	1,363.1	2,193.5	2,582.6	2.00	-2.00	0.00
6,640.0	9.32	58.14	6,035.8	1,366.7	2,199.3	2,589.3	2.00	-2.00	0.00
6,680.0	8.52	58.14	6,075.4	1,370.0	2,204.5	2,595.5	2.00	-2.00	0.00
6,720.0	7.72	58.14	6,115.0	1,373.0	2,209.3	2,601.2	2.00	-2.00	0.00
6,760.0	6.92	58.14	6,154.6	1,375.7	2,213.7	2,606.3	2.00	-2.00	0.00
6,800.0	6.12	58.14	6,194.4	1,378.1	2,217.5	2,610.8	2.00	-2.00	0.00
6,840.0	5.32	58.14	6,234.2	1,380.2	2,220.9	2,614.8	2.00	-2.00	0.00
6,880.0	4.52	58.14	6,274.0	1,382.0	2,223.8	2,618.3	2.00	-2.00	0.00
NIORARA									
6,920.0	3.72	58.14	6,313.9	1,383.5	2,226.3	2,621.1	2.00	-2.00	0.00
6,960.0	2.92	58.14	6,353.8	1,384.7	2,228.3	2,623.5	2.00	-2.00	0.00
7,000.0	2.12	58.14	6,393.8	1,385.6	2,229.7	2,625.2	2.00	-2.00	0.00
7,040.0	1.32	58.14	6,433.8	1,386.3	2,230.8	2,626.4	2.00	-2.00	0.00
7,080.0	0.52	58.14	6,473.8	1,386.6	2,231.3	2,627.1	2.00	-2.00	0.00
7,106.2	0.00	0.00	6,500.0	1,386.7	2,231.4	2,627.2	2.00	-2.00	-221.77
Back to Vertical									
7,120.0	0.00	0.00	6,513.8	1,386.7	2,231.4	2,627.2	0.00	0.00	0.00
7,155.2	0.00	0.00	6,549.0	1,386.7	2,231.4	2,627.2	0.00	0.00	0.00
FORT HAYS									
7,160.0	0.00	0.00	6,553.8	1,386.7	2,231.4	2,627.2	0.00	0.00	0.00
7,182.2	0.00	0.00	6,576.0	1,386.7	2,231.4	2,627.2	0.00	0.00	0.00
CODELL									
7,200.0	0.00	0.00	6,593.8	1,386.7	2,231.4	2,627.2	0.00	0.00	0.00
7,240.0	0.00	0.00	6,633.8	1,386.7	2,231.4	2,627.2	0.00	0.00	0.00
7,280.0	0.00	0.00	6,673.8	1,386.7	2,231.4	2,627.2	0.00	0.00	0.00
7,320.0	0.00	0.00	6,713.8	1,386.7	2,231.4	2,627.2	0.00	0.00	0.00
7,342.2	0.00	0.00	6,736.0	1,386.7	2,231.4	2,627.2	0.00	0.00	0.00
TD at 7342.2									

Database:	Landmark	Local Co-ordinate Reference:	Well Peterson CX GH 30-26D
Company:	Great Western	TVD Reference:	WELL @ 4588.0ft (Original Well Elev)
Project:	SEC.30-T5N-R63W	MD Reference:	WELL @ 4588.0ft (Original Well Elev)
Site:	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	North Reference:	True
Well:	Peterson CX GH 30-26D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-25-12)		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
601.3	600.0	8 5/8"	8-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,188.1	2,062.0	GREELEY SAND		0.00	
3,666.8	3,362.0	PARKMAN		0.00	
4,365.1	3,976.0	SUSSEX		0.00	
4,452.7	4,053.0	SHANNON		0.00	
6,880.0	6,274.0	NIOBRARA		0.00	
7,155.2	6,549.0	FORT HAYS		0.00	
7,182.2	6,576.0	CODELL		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP - Start Build 2.00
1,622.9	1,565.1	182.7	294.0	Start 4060.4 hold at 1622.9 MD
5,683.3	5,134.9	1,204.0	1,937.4	Start Drop -2.00
7,106.2	6,500.0	1,386.7	2,231.4	Back to Vertical
7,342.2	6,736.0	1,386.7	2,231.4	TD at 7342.2



Directional

Great Western

SEC.30-T5N-R63W

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

Peterson CX GH 30-26D

Wellbore #1

Plan #1 (7-25-12)

Anticollision Report

31 July, 2012

Company:	Great Western	Local Co-ordinate Reference:	Well Peterson CX GH 30-26D
Project:	SEC.30-T5N-R63W	TVD Reference:	WELL @ 4588.0ft (Original Well Elev)
Reference Site:	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	MD Reference:	WELL @ 4588.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson CX GH 30-26D	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 (7-25-12)	Offset TVD Reference:	Offset Datum

Offset Design		Peterson CX GH 30-41D Pad Sec.30-T5N-R63W - Peterson 30-41 (Exist.) - Wellbore #1 - Wellbore #1										Offset Site Error:		0.0 ft		
Survey Program: 7000-UNKNOWN														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
1,700.0	1,632.9	1,632.9	1,632.9	8.3	32.7	16.07	621.9	1,645.2	1,385.2	1,351.4	33.79	40.989				
1,800.0	1,720.8	1,720.8	1,720.8	9.3	34.4	16.63	621.9	1,645.2	1,339.0	1,303.2	35.86	37.346				
1,900.0	1,808.7	1,808.7	1,808.7	10.3	36.2	17.23	621.9	1,645.2	1,293.0	1,255.1	37.94	34.082				
2,000.0	1,896.6	1,896.6	1,896.6	11.3	37.9	17.87	621.9	1,645.2	1,247.1	1,207.0	40.04	31.143				
2,100.0	1,984.6	1,984.6	1,984.6	12.2	39.7	18.56	621.9	1,645.2	1,201.3	1,159.1	42.18	28.483				
2,200.0	2,072.5	2,072.5	2,072.5	13.2	41.4	19.30	621.9	1,645.2	1,155.7	1,111.4	44.34	26.066				
2,300.0	2,160.4	2,160.4	2,160.4	14.2	43.2	20.11	621.9	1,645.2	1,110.2	1,063.7	46.53	23.861				
2,400.0	2,248.3	2,248.3	2,248.3	15.2	45.0	20.97	621.9	1,645.2	1,065.0	1,016.2	48.76	21.842				
2,500.0	2,336.2	2,336.2	2,336.2	16.2	46.7	21.92	621.9	1,645.2	1,019.9	968.9	51.03	19.988				
2,600.0	2,424.1	2,424.1	2,424.1	17.2	48.5	22.94	621.9	1,645.2	975.1	921.8	53.35	18.280				
2,700.0	2,512.1	2,512.1	2,512.1	18.2	50.2	24.07	621.9	1,645.2	930.6	874.9	55.72	16.702				
2,800.0	2,600.0	2,600.0	2,600.0	19.2	52.0	25.30	621.9	1,645.2	886.5	828.3	58.16	15.243				
2,900.0	2,687.9	2,687.9	2,687.9	20.2	53.8	26.65	621.9	1,645.2	842.6	782.0	60.67	13.889				
3,000.0	2,775.8	2,775.8	2,775.8	21.2	55.5	28.14	621.9	1,645.2	799.3	736.0	63.27	12.634				
3,100.0	2,863.7	2,863.7	2,863.7	22.2	57.3	29.80	621.9	1,645.2	756.4	690.5	65.97	11.467				
3,200.0	2,951.6	2,951.6	2,951.6	23.2	59.0	31.64	621.9	1,645.2	714.2	645.4	68.78	10.383				
3,300.0	3,039.6	3,039.6	3,039.6	24.2	60.8	33.69	621.9	1,645.2	672.7	600.9	71.74	9.377				
3,400.0	3,127.5	3,127.5	3,127.5	25.2	62.5	35.99	621.9	1,645.2	632.0	557.2	74.85	8.444				
3,500.0	3,215.4	3,215.4	3,215.4	26.2	64.3	38.58	621.9	1,645.2	592.4	514.3	78.14	7.582				
3,600.0	3,303.3	3,303.3	3,303.3	27.2	66.1	41.49	621.9	1,645.2	554.1	472.4	81.62	6.788				
3,700.0	3,391.2	3,391.2	3,391.2	28.2	67.8	44.79	621.9	1,645.2	517.3	432.0	85.33	6.062				
3,800.0	3,479.1	3,479.1	3,479.1	29.2	69.6	48.52	621.9	1,645.2	482.4	393.1	89.27	5.404				
3,900.0	3,567.1	3,567.1	3,567.1	30.2	71.3	52.73	621.9	1,645.2	449.9	356.4	93.43	4.815				
4,000.0	3,655.0	3,655.0	3,655.0	31.2	73.1	57.47	621.9	1,645.2	420.2	322.5	97.77	4.298				
4,100.0	3,742.9	3,742.9	3,742.9	32.2	74.9	62.77	621.9	1,645.2	394.1	291.9	102.23	3.855				
4,200.0	3,830.8	3,830.8	3,830.8	33.2	76.6	68.62	621.9	1,645.2	372.3	265.7	106.67	3.491				
4,300.0	3,918.7	3,918.7	3,918.7	34.2	78.4	74.98	621.9	1,645.2	355.6	244.7	110.92	3.206				
4,400.0	4,006.6	4,006.6	4,006.6	35.2	80.1	81.74	621.9	1,645.2	344.7	230.0	114.78	3.004				
4,500.0	4,094.6	4,094.6	4,094.6	36.2	81.9	88.74	621.9	1,645.2	340.2	222.2	118.05	2.882				
4,517.9	4,110.3	4,110.3	4,110.3	36.4	82.2	90.00	621.9	1,645.2	340.1	221.6	118.57	2.869 CC, ES				
4,600.0	4,182.5	4,182.5	4,182.5	37.2	83.6	95.78	621.9	1,645.2	342.4	221.8	120.62	2.839 SF				
4,700.0	4,270.4	4,270.4	4,270.4	38.2	85.4	102.64	621.9	1,645.2	351.0	228.6	122.45	2.867				
4,800.0	4,358.3	4,358.3	4,358.3	39.2	87.2	109.16	621.9	1,645.2	365.7	242.1	123.64	2.958				
4,900.0	4,446.2	4,446.2	4,446.2	40.2	88.9	115.20	621.9	1,645.2	385.8	261.5	124.32	3.103				
5,000.0	4,534.1	4,534.1	4,534.1	41.2	90.7	120.70	621.9	1,645.2	410.5	285.8	124.68	3.292				
5,100.0	4,622.1	4,622.1	4,622.1	42.2	92.4	125.64	621.9	1,645.2	438.9	314.0	124.88	3.515				
5,200.0	4,710.0	4,710.0	4,710.0	43.2	94.2	130.04	621.9	1,645.2	470.5	345.5	125.03	3.763				
5,300.0	4,797.9	4,797.9	4,797.9	44.2	96.0	133.93	621.9	1,645.2	504.6	379.4	125.22	4.030				
5,400.0	4,885.8	4,885.8	4,885.8	45.2	97.7	137.37	621.9	1,645.2	540.7	415.2	125.50	4.309				
5,500.0	4,973.7	4,973.7	4,973.7	46.2	99.5	140.42	621.9	1,645.2	578.6	452.7	125.90	4.595				
5,600.0	5,061.6	5,061.6	5,061.6	47.2	101.2	143.12	621.9	1,645.2	617.7	491.3	126.42	4.886				
5,683.3	5,134.9	5,134.9	5,134.9	48.0	102.7	145.14	621.9	1,645.2	651.2	524.3	126.96	5.129				
5,700.0	5,149.6	5,149.6	5,149.6	48.2	103.0	145.60	621.9	1,645.2	658.0	530.8	127.20	5.173				
5,800.0	5,238.6	5,238.6	5,238.6	49.0	104.8	148.11	621.9	1,645.2	697.4	568.6	128.79	5.415				
5,900.0	5,329.1	5,329.1	5,329.1	49.7	106.6	150.22	621.9	1,645.2	734.8	604.1	130.68	5.623				
6,000.0	5,421.1	5,421.1	5,421.1	50.4	108.4	152.00	621.9	1,645.2	769.8	637.0	132.80	5.797				
6,100.0	5,514.3	5,514.3	5,514.3	51.0	110.3	153.50	621.9	1,645.2	802.3	667.2	135.08	5.939				
6,200.0	5,608.8	5,608.8	5,608.8	51.5	112.2	154.77	621.9	1,645.2	832.1	694.6	137.47	6.053				
6,300.0	5,704.4	5,704.4	5,704.4	52.0	114.1	155.83	621.9	1,645.2	859.0	719.1	139.91	6.140				
6,400.0	5,800.9	5,800.9	5,800.9	52.5	116.0	156.71	621.9	1,645.2	883.1	740.7	142.37	6.202				
6,500.0	5,898.3	5,898.3	5,898.3	52.8	118.0	157.44	621.9	1,645.2	904.0	759.2	144.82	6.243				

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

Company:	Great Western	Local Co-ordinate Reference:	Well Peterson CX GH 30-26D
Project:	SEC.30-T5N-R63W	TVD Reference:	WELL @ 4588.0ft (Original Well Elev)
Reference Site:	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	MD Reference:	WELL @ 4588.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson CX GH 30-26D	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 (7-25-12)	Offset TVD Reference:	Offset Datum

Offset Design										Peterson CX GH 30-41D Pad Sec.30-T5N-R63W - Peterson 30-41 (Exist.) - Wellbore #1 - Wellbore #1			Offset Site Error:		0.0 ft	
Survey Program: 7000-UNKNOWN													Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
6,600.0	5,996.4	5,996.4	5,996.4	53.2	119.9	158.04	621.9	1,645.2	922.0	774.7	147.23	6.262				
6,700.0	6,095.1	6,095.1	6,095.1	53.5	121.9	158.51	621.9	1,645.2	936.7	787.1	149.57	6.263				
6,800.0	6,194.4	6,194.4	6,194.4	53.7	123.9	158.87	621.9	1,645.2	948.3	796.4	151.84	6.245				
6,900.0	6,294.0	6,294.0	6,294.0	53.9	125.9	159.12	621.9	1,645.2	956.6	802.6	154.00	6.212				
7,000.0	6,393.8	6,393.8	6,393.8	54.0	127.9	159.27	621.9	1,645.2	961.7	805.6	156.06	6.162				
7,106.2	6,500.0	6,500.0	6,500.0	54.1	130.0	-142.53	621.9	1,645.2	963.6	805.4	158.12	6.094				
7,200.0	6,593.8	6,593.8	6,593.8	54.1	131.9	-142.53	621.9	1,645.2	963.6	803.5	160.08	6.019				
7,300.0	6,693.8	6,693.8	6,693.8	54.2	133.9	-142.53	621.9	1,645.2	963.6	801.4	162.18	5.941				
7,342.2	6,736.0	6,736.0	6,736.0	54.2	134.7	-142.53	621.9	1,645.2	963.6	800.5	163.07	5.909				

Company:	Great Western	Local Co-ordinate Reference:	Well Peterson CX GH 30-26D
Project:	SEC.30-T5N-R63W	TVD Reference:	WELL @ 4588.0ft (Original Well Elev)
Reference Site:	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	MD Reference:	WELL @ 4588.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson CX GH 30-26D	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 (7-25-12)	Offset TVD Reference:	Offset Datum

Offset Design Peterson CX GH 30-41D Pad Sec.30-T5N-R63W - Peterson CX GH 30-27D - 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	
0.0	0.0	0.0	0.0	0.0	0.0	-89.97	0.0	-17.8	17.8	17.8	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	-89.97	0.0	-17.8	17.8	17.6	0.22	79.337		
200.0	200.0	200.0	200.0	0.3	0.3	-89.97	0.0	-17.8	17.8	17.2	0.67	26.446 CC, ES		
300.0	300.0	300.0	300.0	0.6	0.6	-150.83	0.0	-17.8	19.3	18.2	1.12	17.201		
400.0	399.8	399.8	399.8	0.8	0.8	-156.88	0.0	-17.8	24.0	22.5	1.58	15.230 SF		
500.0	499.5	500.3	500.2	1.0	1.0	-160.85	1.5	-16.8	30.9	28.9	2.03	15.233		
600.0	598.7	600.9	600.7	1.3	1.2	-161.47	5.8	-13.8	38.6	36.1	2.48	15.542		
700.0	697.5	701.6	701.1	1.7	1.5	-160.33	13.1	-8.8	47.0	44.0	2.96	15.897		
800.0	795.6	802.5	801.2	2.0	1.8	-158.26	23.2	-1.8	56.1	52.7	3.46	16.214		
900.0	893.1	903.5	900.9	2.5	2.1	-155.70	36.3	7.2	66.1	62.1	4.02	16.436		
1,000.0	989.6	1,004.5	1,000.0	3.0	2.4	-152.94	52.3	18.3	77.0	72.3	4.66	16.526		
1,100.0	1,085.3	1,105.5	1,098.4	3.5	2.8	-150.11	71.2	31.3	88.9	83.5	5.39	16.474		
1,200.0	1,179.8	1,206.5	1,195.9	4.2	3.3	-147.33	92.8	46.2	101.8	95.6	6.25	16.291		
1,300.0	1,273.2	1,307.6	1,292.5	4.9	3.8	-144.64	117.3	63.1	115.9	108.7	7.24	16.008		
1,400.0	1,365.2	1,408.5	1,387.8	5.6	4.4	-142.08	144.6	81.9	131.1	122.8	8.37	15.665		
1,500.0	1,455.8	1,507.4	1,480.4	6.5	5.1	-140.09	173.1	101.6	148.1	138.5	9.60	15.432		
1,600.0	1,544.9	1,605.4	1,572.2	7.4	5.7	-139.22	201.4	121.1	167.7	156.9	10.83	15.486		
1,622.9	1,565.1	1,627.8	1,593.2	7.6	5.9	-139.14	207.9	125.6	172.6	161.5	11.11	15.531		
1,700.0	1,632.9	1,703.1	1,663.7	8.3	6.4	-139.17	229.6	140.6	189.2	177.1	12.08	15.665		
1,800.0	1,720.8	1,800.7	1,755.1	9.3	7.0	-139.20	257.8	160.0	210.7	197.4	13.34	15.795		
1,900.0	1,808.7	1,898.4	1,846.6	10.3	7.7	-139.22	286.0	179.5	232.3	217.7	14.62	15.891		
2,000.0	1,896.6	1,996.0	1,938.0	11.3	8.4	-139.24	314.1	198.9	253.8	237.9	15.90	15.964		
2,100.0	1,984.6	2,093.7	2,029.5	12.2	9.0	-139.25	342.3	218.4	275.3	258.2	17.19	16.019		
2,200.0	2,072.5	2,191.3	2,121.0	13.2	9.7	-139.27	370.5	237.8	296.9	278.4	18.48	16.063		
2,300.0	2,160.4	2,289.0	2,212.4	14.2	10.4	-139.28	398.7	257.3	318.4	298.6	19.78	16.097		
2,400.0	2,248.3	2,386.7	2,303.9	15.2	11.0	-139.29	426.9	276.7	339.9	318.9	21.08	16.125		
2,500.0	2,336.2	2,484.3	2,395.3	16.2	11.7	-139.30	455.1	296.2	361.5	339.1	22.39	16.148		
2,600.0	2,424.1	2,582.0	2,486.8	17.2	12.4	-139.31	483.3	315.6	383.0	359.3	23.69	16.167		
2,700.0	2,512.1	2,679.6	2,578.2	18.2	13.1	-139.31	511.4	335.1	404.6	379.6	25.00	16.182		
2,800.0	2,600.0	2,777.3	2,669.7	19.2	13.8	-139.32	539.6	354.5	426.1	399.8	26.31	16.195		
2,900.0	2,687.9	2,874.9	2,761.1	20.2	14.4	-139.33	567.8	374.0	447.6	420.0	27.62	16.206		
3,000.0	2,775.8	2,972.6	2,852.6	21.2	15.1	-139.33	596.0	393.4	469.2	440.2	28.93	16.215		
3,100.0	2,863.7	3,070.2	2,944.0	22.2	15.8	-139.34	624.2	412.8	490.7	460.5	30.25	16.223		
3,200.0	2,951.6	3,167.9	3,035.5	23.2	16.5	-139.34	652.4	432.3	512.2	480.7	31.56	16.230		
3,300.0	3,039.6	3,265.5	3,126.9	24.2	17.2	-139.35	680.5	451.7	533.8	500.9	32.88	16.236		
3,400.0	3,127.5	3,363.2	3,218.4	25.2	17.8	-139.35	708.7	471.2	555.3	521.1	34.19	16.241		
3,500.0	3,215.4	3,460.8	3,309.8	26.2	18.5	-139.35	736.9	490.6	576.8	541.3	35.51	16.245		
3,600.0	3,303.3	3,558.5	3,401.3	27.2	19.2	-139.36	765.1	510.1	598.4	561.5	36.83	16.249		
3,700.0	3,391.2	3,656.1	3,492.7	28.2	19.9	-139.36	793.3	529.5	619.9	581.8	38.14	16.252		
3,800.0	3,479.1	3,753.8	3,584.2	29.2	20.6	-139.36	821.5	549.0	641.4	602.0	39.46	16.255		
3,900.0	3,567.1	3,851.5	3,675.7	30.2	21.3	-139.36	849.7	568.4	663.0	622.2	40.78	16.258		
4,000.0	3,655.0	3,949.1	3,767.1	31.2	21.9	-139.37	877.8	587.9	684.5	642.4	42.10	16.260		
4,100.0	3,742.9	4,046.8	3,858.6	32.2	22.6	-139.37	906.0	607.3	706.1	662.6	43.42	16.262		
4,200.0	3,830.8	4,144.4	3,950.0	33.2	23.3	-139.37	934.2	626.8	727.6	682.9	44.74	16.264		
4,300.0	3,918.7	4,242.1	4,041.5	34.2	24.0	-139.37	962.4	646.2	749.1	703.1	46.06	16.265		
4,400.0	4,006.6	4,339.7	4,132.9	35.2	24.7	-139.38	990.6	665.7	770.7	723.3	47.38	16.266		
4,500.0	4,094.6	4,437.4	4,224.4	36.2	25.4	-139.38	1,018.8	685.1	792.2	743.5	48.70	16.268		
4,600.0	4,182.5	4,535.0	4,315.8	37.2	26.0	-139.38	1,047.0	704.6	813.7	763.7	50.02	16.269		
4,700.0	4,270.4	4,632.7	4,407.3	38.2	26.7	-139.38	1,075.1	724.0	835.3	783.9	51.34	16.270		
4,800.0	4,358.3	4,730.3	4,498.7	39.2	27.4	-139.38	1,103.3	743.5	856.8	804.1	52.66	16.270		
4,900.0	4,446.2	4,828.0	4,590.2	40.2	28.1	-139.38	1,131.5	762.9	878.3	824.4	53.98	16.271		

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

Company:	Great Western	Local Co-ordinate Reference:	Well Peterson CX GH 30-26D
Project:	SEC.30-T5N-R63W	TVD Reference:	WELL @ 4588.0ft (Original Well Elev)
Reference Site:	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	MD Reference:	WELL @ 4588.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson CX GH 30-26D	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 (7-25-12)	Offset TVD Reference:	Offset Datum

Offset Design Peterson CX GH 30-41D Pad Sec.30-T5N-R63W - Peterson CX GH 30-27D - 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	
5,000.0	4,534.1	4,925.6	4,681.6	41.2	28.8	-139.38	1,159.7	782.4	899.9	844.6	55.30	16.272		
5,100.0	4,622.1	5,023.3	4,773.1	42.2	29.5	-139.39	1,187.9	801.8	921.4	864.8	56.62	16.272		
5,200.0	4,710.0	5,120.9	4,864.5	43.2	30.2	-139.39	1,216.1	821.2	942.9	885.0	57.95	16.273		
5,300.0	4,797.9	5,209.8	4,947.9	44.2	30.7	-139.42	1,241.3	838.7	964.8	905.6	59.15	16.312		
5,400.0	4,885.8	5,300.0	5,033.5	45.2	31.2	-139.59	1,264.9	854.9	987.9	927.7	60.17	16.420		
5,500.0	4,973.7	5,376.8	5,106.9	46.2	31.5	-139.84	1,283.2	867.5	1,012.3	951.3	61.04	16.585		
5,600.0	5,061.6	5,459.0	5,186.3	47.2	31.9	-140.21	1,301.0	879.8	1,038.1	976.3	61.82	16.793		
5,683.3	5,134.9	5,526.7	5,252.1	48.0	32.1	-140.60	1,314.2	889.0	1,060.7	998.3	62.40	16.999		
5,700.0	5,149.6	5,540.2	5,265.2	48.2	32.2	-140.74	1,316.7	890.7	1,065.3	1,002.8	62.48	17.049		
5,800.0	5,238.6	5,621.0	5,344.2	49.0	32.5	-141.57	1,330.5	900.2	1,092.2	1,029.3	62.92	17.360		
5,900.0	5,329.1	5,700.0	5,421.9	49.7	32.7	-142.36	1,342.2	908.3	1,117.9	1,054.6	63.28	17.666		
6,000.0	5,421.1	5,781.6	5,502.6	50.4	33.0	-143.13	1,352.5	915.4	1,142.4	1,078.8	63.56	17.974		
6,100.0	5,514.3	5,861.6	5,582.0	51.0	33.2	-143.86	1,360.7	921.1	1,165.7	1,101.9	63.77	18.280		
6,200.0	5,608.8	5,941.3	5,661.3	51.5	33.3	-144.56	1,367.1	925.5	1,187.7	1,123.8	63.90	18.588		
6,300.0	5,704.4	6,020.8	5,740.6	52.0	33.5	-145.24	1,371.7	928.6	1,208.5	1,144.5	63.95	18.897		
6,400.0	5,800.9	6,100.0	5,819.7	52.5	33.6	-145.89	1,374.4	930.5	1,228.0	1,164.0	63.92	19.210		
6,500.0	5,898.3	6,180.3	5,900.0	52.8	33.6	-146.53	1,375.3	931.1	1,246.2	1,182.4	63.81	19.530		
6,600.0	5,996.4	6,276.7	5,996.4	53.2	33.7	-147.18	1,375.3	931.1	1,262.5	1,198.8	63.63	19.842		
6,700.0	6,095.1	6,375.5	6,095.1	53.5	33.8	-147.71	1,375.3	931.1	1,275.9	1,212.4	63.47	20.103		
6,800.0	6,194.4	6,474.7	6,194.4	53.7	33.9	-148.12	1,375.3	931.1	1,286.4	1,223.1	63.34	20.309		
6,900.0	6,294.0	6,574.3	6,294.0	53.9	34.0	-148.41	1,375.3	931.1	1,294.0	1,230.8	63.24	20.461		
7,000.0	6,393.8	6,674.1	6,393.8	54.0	34.0	-148.58	1,375.3	931.1	1,298.7	1,235.5	63.18	20.556		
7,106.2	6,500.0	6,780.3	6,500.0	54.1	34.1	-90.50	1,375.3	931.1	1,300.3	1,237.2	63.14	20.594		
7,200.0	6,593.8	6,874.1	6,593.8	54.1	34.2	-90.50	1,375.3	931.1	1,300.3	1,237.0	63.31	20.540		
7,300.0	6,693.8	6,974.1	6,693.8	54.2	34.3	-90.50	1,375.3	931.1	1,300.3	1,236.9	63.49	20.481		
7,342.2	6,736.0	7,016.3	6,736.0	54.2	34.3	-90.50	1,375.3	931.1	1,300.3	1,236.8	63.57	20.456		

Company:	Great Western	Local Co-ordinate Reference:	Well Peterson CX GH 30-26D
Project:	SEC.30-T5N-R63W	TVD Reference:	WELL @ 4588.0ft (Original Well Elev)
Reference Site:	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	MD Reference:	WELL @ 4588.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson CX GH 30-26D	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 (7-25-12)	Offset TVD Reference:	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	Offset	Semi Major Axis	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
0.0	0.0	0.0	0.0	0.0	0.0	-139.68	-139.68	-20.0	-17.0	26.3				
100.0	100.0	100.0	100.0	0.1	0.1	-139.68	-139.68	-20.0	-17.0	26.3	26.0	0.22	116.870	
200.0	200.0	200.0	200.0	0.3	0.3	-139.68	-139.68	-20.0	-17.0	26.3	25.6	0.67	38.957 CC, ES	
300.0	300.0	300.0	300.0	0.6	0.6	163.26	163.26	-20.0	-17.0	27.9	26.8	1.13	24.810	
400.0	399.8	399.8	399.8	0.8	0.8	165.86	165.86	-20.0	-17.0	33.0	31.4	1.58	20.846	
500.0	499.5	499.5	499.5	1.0	1.0	168.77	168.77	-20.0	-17.0	41.5	39.4	2.04	20.319 SF	
600.0	598.7	598.7	598.7	1.3	1.2	171.27	171.27	-20.0	-17.0	53.5	51.0	2.50	21.371	
700.0	697.5	697.5	697.5	1.7	1.5	173.21	173.21	-20.0	-17.0	69.0	66.0	2.97	23.266	
800.0	795.6	795.6	795.6	2.0	1.7	174.64	174.64	-20.0	-17.0	88.0	84.5	3.43	25.653	
900.0	893.1	894.3	894.3	2.5	1.9	176.48	176.48	-18.5	-17.4	109.9	106.0	3.89	28.225	
1,000.0	989.6	992.5	992.4	3.0	2.1	179.18	179.18	-13.8	-18.7	134.2	129.8	4.35	30.813	
1,100.0	1,085.3	1,089.9	1,089.4	3.5	2.3	-177.78	-177.78	-5.9	-20.8	161.1	156.3	4.83	33.373	
1,200.0	1,179.8	1,186.3	1,185.1	4.2	2.6	-174.67	-174.67	5.1	-23.7	191.1	185.7	5.33	35.837	
1,300.0	1,273.2	1,281.4	1,279.1	4.9	2.8	-171.64	-171.64	18.9	-27.5	224.1	218.2	5.88	38.120	
1,400.0	1,365.2	1,375.0	1,371.2	5.6	3.1	-168.75	-168.75	35.5	-31.9	260.4	253.9	6.49	40.147	
1,500.0	1,455.8	1,467.0	1,461.0	6.5	3.5	-166.04	-166.04	54.6	-37.0	299.9	292.8	7.16	41.868	
1,600.0	1,544.9	1,557.1	1,548.4	7.4	3.8	-163.50	-163.50	76.0	-42.8	342.8	334.9	7.92	43.273	
1,622.9	1,565.1	1,577.5	1,568.0	7.6	3.9	-162.95	-162.95	81.3	-44.2	353.1	345.0	8.11	43.562	
1,700.0	1,632.9	1,645.7	1,633.5	8.3	4.2	-161.34	-161.34	99.7	-49.1	388.1	379.3	8.80	44.094	
1,800.0	1,720.8	1,733.5	1,717.1	9.3	4.7	-159.29	-159.29	125.6	-56.1	433.9	424.1	9.77	44.390	
1,900.0	1,808.7	1,821.0	1,799.8	10.3	5.1	-157.37	-157.37	153.2	-63.5	480.1	469.3	10.82	44.354	
2,000.0	1,896.6	1,908.6	1,882.5	11.3	5.6	-155.77	-155.77	180.9	-70.9	526.7	514.8	11.91	44.234	
2,100.0	1,984.6	1,996.2	1,965.3	12.2	6.1	-154.43	-154.43	208.6	-78.3	573.5	560.5	13.01	44.076	
2,200.0	2,072.5	2,083.8	2,048.0	13.2	6.7	-153.29	-153.29	236.3	-85.8	620.6	606.5	14.14	43.903	
2,300.0	2,160.4	2,171.4	2,130.8	14.2	7.2	-152.31	-152.31	264.0	-93.2	667.9	652.6	15.27	43.731	
2,400.0	2,248.3	2,258.9	2,213.6	15.2	7.7	-151.46	-151.46	291.7	-100.6	715.3	698.8	16.42	43.565	
2,500.0	2,336.2	2,346.5	2,296.3	16.2	8.3	-150.71	-150.71	319.4	-108.1	762.7	745.2	17.57	43.408	
2,600.0	2,424.1	2,434.1	2,379.1	17.2	8.8	-150.05	-150.05	347.1	-115.5	810.3	791.6	18.73	43.260	
2,700.0	2,512.1	2,521.7	2,461.8	18.2	9.4	-149.46	-149.46	374.8	-122.9	858.0	838.1	19.90	43.122	
2,800.0	2,600.0	2,609.3	2,544.6	19.2	9.9	-148.93	-148.93	402.5	-130.4	905.7	884.6	21.07	42.994	
2,900.0	2,687.9	2,696.9	2,627.4	20.2	10.5	-148.46	-148.46	430.2	-137.8	953.5	931.2	22.24	42.875	
3,000.0	2,775.8	2,784.5	2,710.1	21.2	11.0	-148.03	-148.03	457.9	-145.2	1,001.3	977.9	23.41	42.763	
3,100.0	2,863.7	2,872.1	2,792.9	22.2	11.6	-147.64	-147.64	485.6	-152.7	1,049.1	1,024.6	24.59	42.660	
3,200.0	2,951.6	2,959.7	2,875.6	23.2	12.2	-147.28	-147.28	513.4	-160.1	1,097.0	1,071.3	25.77	42.565	
3,300.0	3,039.6	3,047.3	2,958.4	24.2	12.7	-146.95	-146.95	541.1	-167.5	1,145.0	1,118.0	26.96	42.475	
3,400.0	3,127.5	3,134.8	3,041.2	25.2	13.3	-146.65	-146.65	568.8	-175.0	1,192.9	1,164.8	28.14	42.392	
3,500.0	3,215.4	3,222.4	3,123.9	26.2	13.9	-146.37	-146.37	596.5	-182.4	1,240.9	1,211.6	29.32	42.315	
3,600.0	3,303.3	3,310.0	3,206.7	27.2	14.4	-146.12	-146.12	624.2	-189.8	1,288.9	1,258.4	30.51	42.242	
3,700.0	3,391.2	3,397.6	3,289.4	28.2	15.0	-145.88	-145.88	651.9	-197.3	1,336.9	1,305.2	31.70	42.174	
3,800.0	3,479.1	3,485.2	3,372.2	29.2	15.6	-145.66	-145.66	679.6	-204.7	1,384.9	1,352.0	32.89	42.110	
3,900.0	3,567.1	3,572.8	3,454.9	30.2	16.1	-145.45	-145.45	707.3	-212.1	1,433.0	1,398.9	34.08	42.050	
4,000.0	3,655.0	3,660.4	3,537.7	31.2	16.7	-145.26	-145.26	735.0	-219.6	1,481.0	1,445.7	35.27	41.994	
4,100.0	3,742.9	3,748.0	3,620.5	32.2	17.3	-145.07	-145.07	762.7	-227.0	1,529.1	1,492.6	36.46	41.940	
4,200.0	3,830.8	3,835.6	3,703.2	33.2	17.8	-144.90	-144.90	790.4	-234.4	1,577.2	1,539.5	37.65	41.890	
4,300.0	3,918.7	3,923.1	3,786.0	34.2	18.4	-144.74	-144.74	818.1	-241.8	1,625.3	1,586.4	38.84	41.842	
4,400.0	4,006.6	4,010.7	3,868.7	35.2	19.0	-144.59	-144.59	845.8	-249.3	1,673.4	1,633.3	40.04	41.797	
4,500.0	4,094.6	4,098.3	3,951.5	36.2	19.5	-144.45	-144.45	873.5	-256.7	1,721.5	1,680.2	41.23	41.754	
4,600.0	4,182.5	4,185.9	4,034.3	37.2	20.1	-144.31	-144.31	901.2	-264.1	1,769.6	1,727.2	42.42	41.713	
4,700.0	4,270.4	4,273.5	4,117.0	38.2	20.7	-144.19	-144.19	929.0	-271.6	1,817.7	1,774.1	43.62	41.675	
4,800.0	4,358.3	4,361.1	4,199.8	39.2	21.3	-144.06	-144.06	956.7	-279.0	1,865.8	1,821.0	44.81	41.638	
4,900.0	4,446.2	4,448.7	4,282.5	40.2	21.8	-143.95	-143.95	984.4	-286.4	1,914.0	1,868.0	46.01	41.602	

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

Company:	Great Western	Local Co-ordinate Reference:	Well Peterson CX GH 30-26D
Project:	SEC.30-T5N-R63W	TVD Reference:	WELL @ 4588.0ft (Original Well Elev)
Reference Site:	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	MD Reference:	WELL @ 4588.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson CX GH 30-26D	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 (7-25-12)	Offset TVD Reference:	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
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		
5,000.0	4,534.1	4,536.3	4,365.3	41.2	22.4	-143.84	1,012.1	-293.9	1,962.1	1,914.9	47.20	41.569		
5,100.0	4,622.1	4,623.9	4,448.0	42.2	23.0	-143.74	1,039.8	-301.3	2,010.3	1,961.9	48.40	41.537		
5,200.0	4,710.0	4,711.4	4,530.8	43.2	23.5	-143.64	1,067.5	-308.7	2,058.4	2,008.8	49.59	41.506		
5,300.0	4,797.9	4,799.0	4,613.6	44.2	24.1	-143.54	1,095.2	-316.2	2,106.6	2,055.8	50.79	41.476		
5,400.0	4,885.8	4,886.6	4,696.3	45.2	24.7	-143.45	1,122.9	-323.6	2,154.7	2,102.7	51.99	41.448		
5,500.0	4,973.7	4,974.2	4,779.1	46.2	25.3	-143.36	1,150.6	-331.0	2,202.9	2,149.7	53.18	41.421		
5,600.0	5,061.6	5,061.8	4,861.8	47.2	25.8	-143.28	1,178.3	-338.5	2,251.1	2,196.7	54.38	41.395		
5,683.3	5,134.9	5,134.8	4,930.8	48.0	26.3	-143.21	1,201.4	-344.7	2,291.2	2,235.8	55.38	41.374		
5,700.0	5,149.6	5,149.4	4,944.6	48.2	26.4	-143.31	1,206.0	-345.9	2,299.2	2,243.6	55.58	41.366		
5,800.0	5,238.6	5,258.1	5,047.8	49.0	27.0	-143.82	1,239.1	-354.8	2,345.4	2,288.7	56.76	41.323		
5,900.0	5,329.1	5,374.9	5,160.0	49.7	27.5	-144.32	1,270.5	-363.2	2,388.1	2,330.3	57.84	41.289		
6,000.0	5,421.1	5,494.5	5,276.1	50.4	28.0	-144.81	1,298.0	-370.6	2,427.3	2,368.4	58.83	41.261		
6,100.0	5,514.3	5,616.6	5,395.8	51.0	28.4	-145.30	1,321.2	-376.8	2,462.7	2,403.0	59.70	41.251		
6,200.0	5,608.8	5,740.7	5,518.4	51.5	28.8	-145.79	1,339.7	-381.8	2,494.3	2,433.8	60.45	41.263		
6,300.0	5,704.4	5,866.5	5,643.4	52.0	29.1	-146.28	1,353.2	-385.4	2,522.0	2,460.9	61.07	41.299		
6,400.0	5,800.9	5,993.5	5,770.1	52.5	29.3	-146.78	1,361.5	-387.6	2,545.8	2,484.2	61.55	41.363		
6,500.0	5,898.3	6,121.2	5,897.8	52.8	29.4	-147.30	1,364.4	-388.4	2,565.6	2,503.7	61.88	41.463		
6,600.0	5,996.4	6,219.8	5,996.4	53.2	29.5	-147.71	1,364.4	-388.4	2,581.9	2,519.8	62.12	41.564		
6,700.0	6,095.1	6,318.6	6,095.1	53.5	29.6	-148.04	1,364.4	-388.4	2,595.4	2,533.1	62.33	41.642		
6,800.0	6,194.4	6,417.8	6,194.4	53.7	29.7	-148.30	1,364.4	-388.4	2,606.0	2,543.5	62.50	41.698		
6,900.0	6,294.0	6,517.4	6,294.0	53.9	29.8	-148.48	1,364.4	-388.4	2,613.6	2,550.9	62.63	41.730		
7,000.0	6,393.8	6,617.2	6,393.8	54.0	29.9	-148.59	1,364.4	-388.4	2,618.2	2,555.5	62.73	41.739		
7,106.2	6,500.0	6,723.4	6,500.0	54.1	30.0	-90.49	1,364.4	-388.4	2,619.9	2,557.1	62.80	41.719		
7,200.0	6,593.8	6,817.2	6,593.8	54.1	30.1	-90.49	1,364.4	-388.4	2,619.9	2,556.9	62.97	41.606		
7,300.0	6,693.8	6,917.2	6,693.8	54.2	30.2	-90.49	1,364.4	-388.4	2,619.9	2,556.8	63.15	41.485		
7,342.2	6,736.0	6,959.4	6,736.0	54.2	30.2	-90.49	1,364.4	-388.4	2,619.9	2,556.7	63.23	41.433		

Company:	Great Western	Local Co-ordinate Reference:	Well Peterson CX GH 30-26D
Project:	SEC.30-T5N-R63W	TVD Reference:	WELL @ 4588.0ft (Original Well Elev)
Reference Site:	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	MD Reference:	WELL @ 4588.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson CX GH 30-26D	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 (7-25-12)	Offset TVD Reference:	Offset Datum

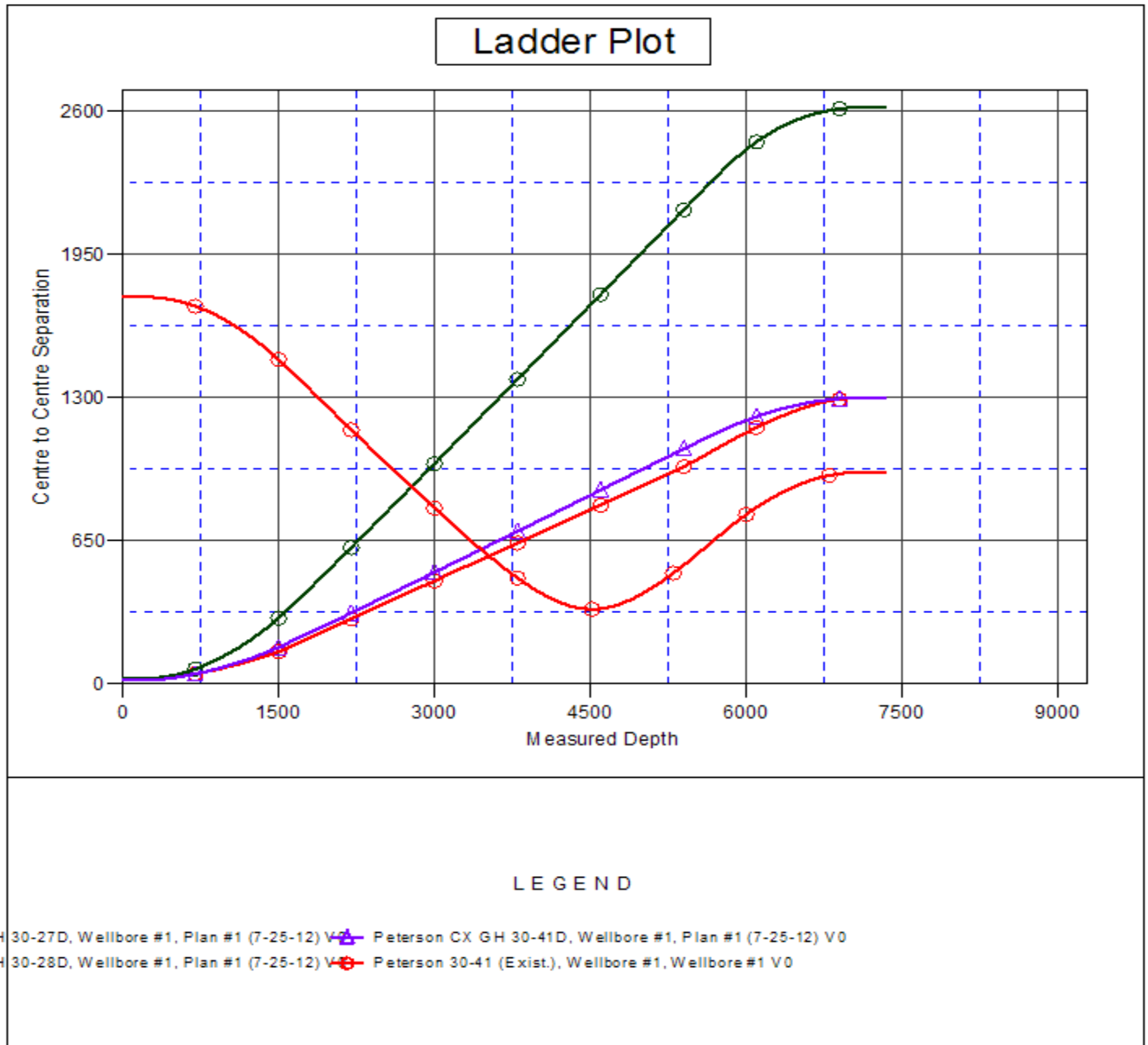
Offset Design Peterson CX GH 30-41D Pad Sec.30-T5N-R63W - Peterson CX GH 30-41D - Wellbore #1 - Plan #1 (7-													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	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	
0.0	0.0	0.0	0.0	0.0	0.0	177.52	-19.3	0.8	19.3	19.3	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	177.52	-19.3	0.8	19.3	19.1	0.22	85.912		
200.0	200.0	200.0	200.0	0.3	0.3	177.52	-19.3	0.8	19.3	18.6	0.67	28.637 CC, ES		
300.0	300.0	300.0	300.0	0.6	0.6	123.67	-19.3	0.8	20.2	19.1	1.12	18.026		
400.0	399.8	399.8	399.8	0.8	0.8	134.28	-19.3	0.8	23.5	22.0	1.58	14.907		
500.0	499.5	499.9	499.9	1.0	1.0	143.12	-19.2	2.6	29.5	27.5	2.03	14.515		
600.0	598.7	600.1	599.9	1.3	1.2	146.97	-19.0	7.8	37.3	34.8	2.50	14.924		
700.0	697.5	700.4	699.8	1.7	1.5	147.92	-18.6	16.6	46.3	43.3	2.99	15.481		
800.0	795.6	800.7	799.4	2.0	1.7	147.27	-18.0	28.8	56.7	53.1	3.54	15.998		
900.0	893.1	901.0	898.5	2.5	2.0	145.77	-17.2	44.5	68.3	64.1	4.17	16.397		
1,000.0	989.6	1,001.3	996.9	3.0	2.4	143.86	-16.3	63.6	81.3	76.4	4.88	16.645		
1,100.0	1,085.3	1,101.5	1,094.5	3.5	2.8	141.78	-15.3	86.2	95.6	89.9	5.71	16.746		
1,200.0	1,179.8	1,201.6	1,191.2	4.2	3.3	139.65	-14.1	112.1	111.4	104.7	6.66	16.721		
1,300.0	1,273.2	1,301.5	1,286.7	4.9	3.9	137.56	-12.7	141.4	128.6	120.9	7.75	16.603		
1,400.0	1,365.2	1,401.2	1,380.9	5.6	4.5	135.54	-11.2	173.8	147.4	138.4	8.97	16.420		
1,500.0	1,455.8	1,500.7	1,473.8	6.5	5.2	133.63	-9.5	209.5	167.6	157.2	10.35	16.200		
1,600.0	1,544.9	1,599.9	1,565.1	7.4	6.0	131.81	-7.7	248.2	189.3	177.5	11.86	15.959		
1,622.9	1,565.1	1,622.6	1,585.8	7.6	6.2	131.41	-7.2	257.5	194.5	182.3	12.24	15.894		
1,700.0	1,632.9	1,698.9	1,654.8	8.3	6.8	130.16	-5.7	290.0	211.9	198.4	13.54	15.646		
1,800.0	1,720.8	1,797.5	1,742.7	9.3	7.7	128.09	-3.6	334.6	234.0	218.6	15.38	15.212		
1,900.0	1,808.7	1,894.7	1,828.9	10.3	8.7	126.16	-1.5	379.5	256.1	238.8	17.27	14.829		
2,000.0	1,896.6	1,991.9	1,915.0	11.3	9.6	124.53	0.6	424.5	278.4	259.2	19.17	14.523		
2,100.0	1,984.6	2,089.0	2,001.2	12.2	10.6	123.15	2.7	469.4	300.9	279.9	21.08	14.276		
2,200.0	2,072.5	2,186.2	2,087.3	13.2	11.5	121.96	4.9	514.4	323.6	300.6	23.00	14.072		
2,300.0	2,160.4	2,283.4	2,173.4	14.2	12.5	120.92	7.0	559.3	346.4	321.5	24.92	13.902		
2,400.0	2,248.3	2,380.6	2,259.6	15.2	13.5	120.01	9.1	604.3	369.3	342.4	26.84	13.759		
2,500.0	2,336.2	2,477.8	2,345.7	16.2	14.5	119.21	11.2	649.3	392.2	363.5	28.76	13.637		
2,600.0	2,424.1	2,575.0	2,431.9	17.2	15.4	118.50	13.3	694.2	415.2	384.6	30.69	13.532		
2,700.0	2,512.1	2,672.2	2,518.0	18.2	16.4	117.86	15.4	739.2	438.3	405.7	32.61	13.440		
2,800.0	2,600.0	2,769.4	2,604.1	19.2	17.4	117.28	17.5	784.1	461.4	426.9	34.54	13.360		
2,900.0	2,687.9	2,866.6	2,690.3	20.2	18.4	116.76	19.7	829.1	484.6	448.1	36.46	13.290		
3,000.0	2,775.8	2,963.8	2,776.4	21.2	19.4	116.29	21.8	874.0	507.8	469.4	38.39	13.227		
3,100.0	2,863.7	3,060.9	2,862.6	22.2	20.3	115.86	23.9	919.0	531.0	490.7	40.32	13.171		
3,200.0	2,951.6	3,158.1	2,948.7	23.2	21.3	115.46	26.0	964.0	554.3	512.0	42.24	13.121		
3,300.0	3,039.6	3,255.3	3,034.9	24.2	22.3	115.10	28.1	1,008.9	577.6	533.4	44.17	13.075		
3,400.0	3,127.5	3,352.5	3,121.0	25.2	23.3	114.76	30.2	1,053.9	600.9	554.8	46.10	13.034		
3,500.0	3,215.4	3,449.7	3,207.1	26.2	24.3	114.45	32.4	1,098.8	624.2	576.1	48.02	12.997		
3,600.0	3,303.3	3,546.9	3,293.3	27.2	25.3	114.17	34.5	1,143.8	647.5	597.5	49.95	12.963		
3,700.0	3,391.2	3,644.1	3,379.4	28.2	26.3	113.90	36.6	1,188.7	670.8	619.0	51.88	12.931		
3,800.0	3,479.1	3,741.3	3,465.6	29.2	27.2	113.65	38.7	1,233.7	694.2	640.4	53.80	12.903		
3,900.0	3,567.1	3,838.5	3,551.7	30.2	28.2	113.41	40.8	1,278.7	717.6	661.8	55.73	12.876		
4,000.0	3,655.0	3,935.7	3,637.8	31.2	29.2	113.19	42.9	1,323.6	740.9	683.3	57.65	12.851		
4,100.0	3,742.9	4,032.9	3,724.0	32.2	30.2	112.99	45.0	1,368.6	764.3	704.8	59.58	12.829		
4,200.0	3,830.8	4,130.0	3,810.1	33.2	31.2	112.80	47.2	1,413.5	787.7	726.2	61.51	12.807		
4,300.0	3,918.7	4,227.2	3,896.3	34.2	32.2	112.61	49.3	1,458.5	811.1	747.7	63.43	12.788		
4,400.0	4,006.6	4,324.4	3,982.4	35.2	33.2	112.44	51.4	1,503.4	834.6	769.2	65.36	12.769		
4,500.0	4,094.6	4,421.6	4,068.6	36.2	34.2	112.28	53.5	1,548.4	858.0	790.7	67.28	12.752		
4,600.0	4,182.5	4,518.8	4,154.7	37.2	35.2	112.12	55.6	1,593.4	881.4	812.2	69.21	12.735		
4,700.0	4,270.4	4,616.0	4,240.8	38.2	36.1	111.98	57.7	1,638.3	904.8	833.7	71.13	12.720		
4,800.0	4,358.3	4,713.2	4,327.0	39.2	37.1	111.84	59.8	1,683.3	928.3	855.2	73.06	12.706		
4,900.0	4,446.2	4,810.4	4,413.1	40.2	38.1	111.71	62.0	1,728.2	951.7	876.7	74.98	12.692		

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

Offset Design										Peterson CX GH 30-41D Pad Sec.30-T5N-R63W - Peterson CX GH 30-41D - Wellbore #1 - Plan #1 (7-				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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor				
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
5,000.0	4,534.1	4,907.6	4,499.3	41.2	39.1	111.58	64.1	1,773.2	975.2	898.2	76.91	12.679				
5,100.0	4,622.1	5,004.8	4,585.4	42.2	40.1	111.46	66.2	1,818.2	998.6	919.8	78.83	12.667				
5,200.0	4,710.0	5,102.0	4,671.5	43.2	41.1	111.35	68.3	1,863.1	1,022.1	941.3	80.76	12.656				
5,300.0	4,797.9	5,199.1	4,757.7	44.2	42.1	111.24	70.4	1,908.1	1,045.5	962.8	82.68	12.645				
5,400.0	4,885.8	5,298.9	4,846.6	45.2	43.0	111.20	72.5	1,953.2	1,068.9	984.4	84.53	12.645 SF				
5,500.0	4,973.7	5,399.3	4,937.7	46.2	43.8	111.34	74.5	1,995.5	1,092.0	1,005.8	86.20	12.668				
5,600.0	5,061.6	5,499.5	5,030.0	47.2	44.5	111.66	76.4	2,034.5	1,114.8	1,027.0	87.76	12.702				
5,683.3	5,134.9	5,582.7	5,107.6	48.0	45.0	112.06	77.8	2,064.4	1,133.7	1,044.7	88.99	12.740				
5,700.0	5,149.6	5,599.3	5,123.2	48.2	45.1	112.22	78.0	2,070.1	1,137.4	1,048.2	89.22	12.748				
5,800.0	5,238.6	5,699.0	5,217.4	49.0	45.7	113.16	79.6	2,102.4	1,159.0	1,068.6	90.44	12.815				
5,900.0	5,329.1	5,798.6	5,312.8	49.7	46.2	114.06	80.9	2,131.4	1,179.2	1,087.7	91.54	12.882				
6,000.0	5,421.1	5,898.2	5,409.0	50.4	46.6	114.91	82.1	2,157.1	1,197.9	1,105.4	92.50	12.949				
6,100.0	5,514.3	5,997.8	5,506.0	51.0	47.0	115.73	83.2	2,179.4	1,215.1	1,121.7	93.35	13.017				
6,200.0	5,608.8	6,097.2	5,603.6	51.5	47.3	116.52	84.1	2,198.3	1,230.7	1,136.7	94.07	13.084				
6,300.0	5,704.4	6,196.5	5,701.6	52.0	47.6	117.28	84.8	2,213.8	1,244.9	1,150.2	94.66	13.151				
6,400.0	5,800.9	6,295.6	5,800.0	52.5	47.8	118.01	85.4	2,225.8	1,257.4	1,162.3	95.13	13.218				
6,500.0	5,898.3	6,394.4	5,898.5	52.8	48.0	118.72	85.8	2,234.5	1,268.5	1,173.0	95.49	13.284				
6,600.0	5,996.4	6,493.0	5,996.9	53.2	48.1	119.40	86.0	2,239.7	1,278.0	1,182.2	95.72	13.350				
6,700.0	6,095.1	6,591.3	6,095.2	53.5	48.2	120.07	86.1	2,241.6	1,285.9	1,190.0	95.85	13.416				
6,800.0	6,194.4	6,690.5	6,194.4	53.7	48.2	120.65	86.1	2,241.6	1,292.2	1,196.3	95.91	13.473				
6,900.0	6,294.0	6,790.1	6,294.0	53.9	48.3	121.07	86.1	2,241.6	1,296.8	1,200.8	95.97	13.513				
7,000.0	6,393.8	6,889.9	6,393.8	54.0	48.4	121.32	86.1	2,241.6	1,299.6	1,203.6	96.03	13.534				
7,106.2	6,500.0	6,996.1	6,500.0	54.1	48.4	179.55	86.1	2,241.6	1,300.6	1,204.5	96.09	13.535				
7,200.0	6,593.8	7,089.9	6,593.8	54.1	48.5	179.55	86.1	2,241.6	1,300.6	1,204.4	96.21	13.519				
7,300.0	6,693.8	7,189.9	6,693.8	54.2	48.6	179.55	86.1	2,241.6	1,300.6	1,204.3	96.34	13.500				
7,342.2	6,736.0	7,232.1	6,736.0	54.2	48.6	179.55	86.1	2,241.6	1,300.6	1,204.2	96.40	13.492				

Company:	Great Western	Local Co-ordinate Reference:	Well Peterson CX GH 30-26D
Project:	SEC.30-T5N-R63W	TVD Reference:	WELL @ 4588.0ft (Original Well Elev)
Reference Site:	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	MD Reference:	WELL @ 4588.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson CX GH 30-26D	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 (7-25-12)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4588.0ft (Original Well Elev) Coordinates are relative to: Peterson CX GH 30-26D
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: 0.66°



Company:	Great Western	Local Co-ordinate Reference:	Well Peterson CX GH 30-26D
Project:	SEC.30-T5N-R63W	TVD Reference:	WELL @ 4588.0ft (Original Well Elev)
Reference Site:	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	MD Reference:	WELL @ 4588.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peterson CX GH 30-26D	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 (7-25-12)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4588.0ft (Original Well Elev) Coordinates are relative to: Peterson CX GH 30-26D
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°

