

ENSIGN

Directional

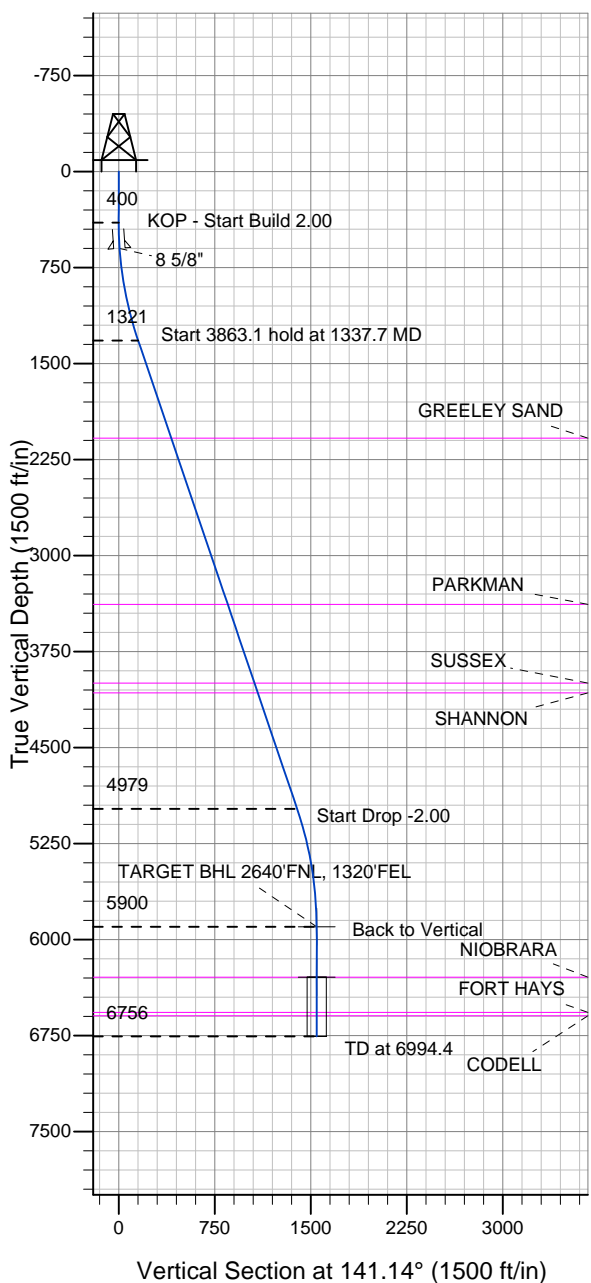
Well Name: Peterson CX GH 30-14D

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

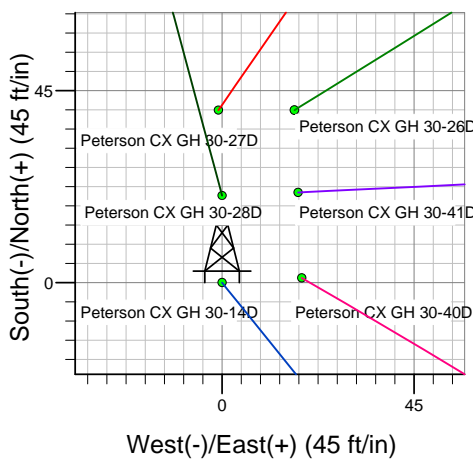
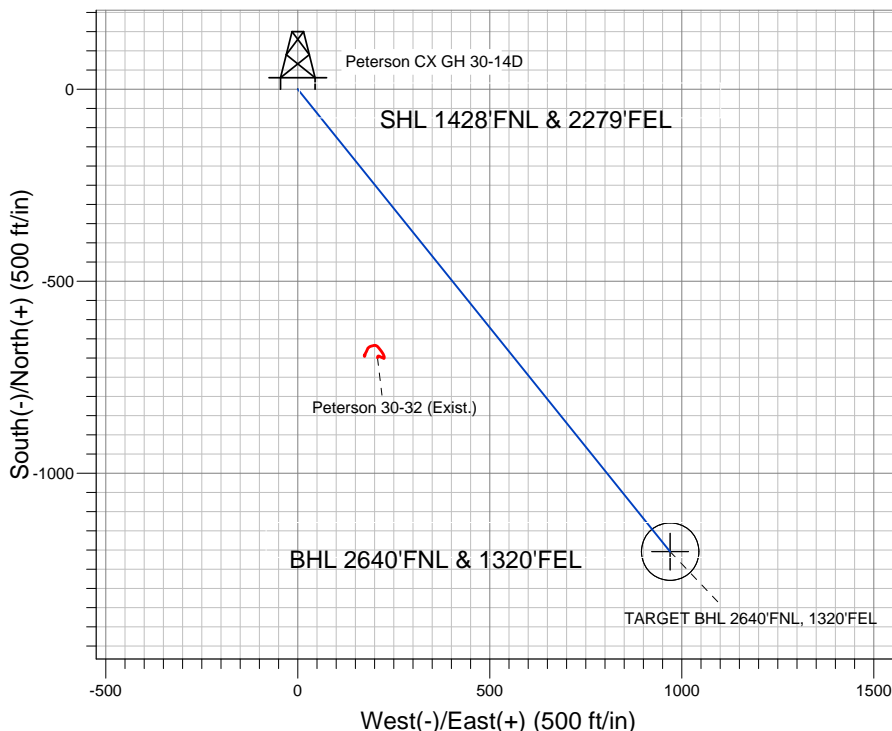
Ground Elevation: 4574.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1380633.74	3284772.48	40.373736	-104.477889	

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



Great Western



Peterson CX GH 30-41D Pad Sec.30-T5N-R63W
Peterson CX GH 30-14D
Plan #1 (7-25-12)
8:13, 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 BHL 2640'FNL, 1320'FEL	5900.0	-1204.0	970.0	40.370431	-104.474408	Point
TARGET CIRCLE 2640'FNL & 1320'FEL	6294.0	-1204.0	970.0	40.370431	-104.474408	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	1337.7	18.75	141.14	1321.0	-118.4	95.4	2.00	141.14	152.1	
4	5200.7	18.75	141.14	4979.0	-1085.6	874.5	0.00	0.00	1394.0	
5	6138.4	0.00	0.00	5900.0	-1204.0	970.0	2.00	180.00	1546.1	TARGET BHL 2640'FNL, 1320'FEL
6	6994.4	0.00	0.00	6756.0	-1204.0	970.0	0.00	0.00	1546.1	



Directional

Great Western

SEC.30-T5N-R63W

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

Peterson CX GH 30-14D

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	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,337.7	18.75	141.14	1,321.0	-118.4	95.4	2.00	2.00	0.00	141.14	
5,200.7	18.75	141.14	4,979.0	-1,085.6	874.5	0.00	0.00	0.00	0.00	
6,138.4	0.00	0.00	5,900.0	-1,204.0	970.0	2.00	-2.00	0.00	180.00	TARGET BHL 2640
6,994.4	0.00	0.00	6,756.0	-1,204.0	970.0	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Peterson CX GH 30-14D
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 30-14D	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
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
KOP - Start Build 2.00									
440.0	0.80	141.14	440.0	-0.2	0.2	0.3	2.00	2.00	0.00
480.0	1.60	141.14	480.0	-0.9	0.7	1.1	2.00	2.00	0.00
520.0	2.40	141.14	520.0	-2.0	1.6	2.5	2.00	2.00	0.00
560.0	3.20	141.14	559.9	-3.5	2.8	4.5	2.00	2.00	0.00
600.0	4.00	141.14	599.8	-5.4	4.4	7.0	2.00	2.00	0.00
600.2	4.00	141.14	600.0	-5.4	4.4	7.0	0.00	0.00	0.00
8 5/8"									
640.0	4.80	141.14	639.7	-7.8	6.3	10.0	2.01	2.01	0.00
680.0	5.60	141.14	679.6	-10.6	8.6	13.7	2.00	2.00	0.00
720.0	6.40	141.14	719.3	-13.9	11.2	17.9	2.00	2.00	0.00
760.0	7.20	141.14	759.1	-17.6	14.2	22.6	2.00	2.00	0.00
800.0	8.00	141.14	798.7	-21.7	17.5	27.9	2.00	2.00	0.00
840.0	8.80	141.14	838.3	-26.3	21.2	33.7	2.00	2.00	0.00
880.0	9.60	141.14	877.8	-31.2	25.2	40.1	2.00	2.00	0.00
920.0	10.40	141.14	917.1	-36.7	29.5	47.1	2.00	2.00	0.00
960.0	11.20	141.14	956.4	-42.5	34.2	54.6	2.00	2.00	0.00
1,000.0	12.00	141.14	995.6	-48.8	39.3	62.6	2.00	2.00	0.00
1,040.0	12.80	141.14	1,034.7	-55.4	44.7	71.2	2.00	2.00	0.00
1,080.0	13.60	141.14	1,073.6	-62.6	50.4	80.3	2.00	2.00	0.00
1,120.0	14.40	141.14	1,112.4	-70.1	56.5	90.0	2.00	2.00	0.00
1,160.0	15.20	141.14	1,151.1	-78.0	62.9	100.2	2.00	2.00	0.00
1,200.0	16.00	141.14	1,189.6	-86.4	69.6	111.0	2.00	2.00	0.00
1,240.0	16.80	141.14	1,228.0	-95.2	76.7	122.3	2.00	2.00	0.00
1,280.0	17.60	141.14	1,266.2	-104.4	84.1	134.1	2.00	2.00	0.00
1,320.0	18.40	141.14	1,304.3	-114.1	91.9	146.5	2.00	2.00	0.00
1,337.7	18.75	141.14	1,321.0	-118.4	95.4	152.1	2.00	2.00	0.00
Start 3863.1 hold at 1337.7 MD									
1,360.0	18.75	141.14	1,342.2	-124.0	99.9	159.3	0.00	0.00	0.00
1,400.0	18.75	141.14	1,380.0	-134.0	108.0	172.1	0.00	0.00	0.00
1,440.0	18.75	141.14	1,417.9	-144.1	116.1	185.0	0.00	0.00	0.00
1,480.0	18.75	141.14	1,455.8	-154.1	124.1	197.8	0.00	0.00	0.00
1,520.0	18.75	141.14	1,493.7	-164.1	132.2	210.7	0.00	0.00	0.00
1,560.0	18.75	141.14	1,531.5	-174.1	140.3	223.6	0.00	0.00	0.00
1,600.0	18.75	141.14	1,569.4	-184.1	148.3	236.4	0.00	0.00	0.00
1,640.0	18.75	141.14	1,607.3	-194.1	156.4	249.3	0.00	0.00	0.00
1,680.0	18.75	141.14	1,645.2	-204.1	164.5	262.1	0.00	0.00	0.00
1,720.0	18.75	141.14	1,683.1	-214.2	172.5	275.0	0.00	0.00	0.00
1,760.0	18.75	141.14	1,720.9	-224.2	180.6	287.9	0.00	0.00	0.00
1,800.0	18.75	141.14	1,758.8	-234.2	188.7	300.7	0.00	0.00	0.00
1,840.0	18.75	141.14	1,796.7	-244.2	196.7	313.6	0.00	0.00	0.00
1,880.0	18.75	141.14	1,834.6	-254.2	204.8	326.4	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Peterson CX GH 30-14D
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 30-14D	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	18.75	141.14	1,872.4	-264.2	212.9	339.3	0.00	0.00	0.00
1,960.0	18.75	141.14	1,910.3	-274.2	220.9	352.2	0.00	0.00	0.00
2,000.0	18.75	141.14	1,948.2	-284.3	229.0	365.0	0.00	0.00	0.00
2,040.0	18.75	141.14	1,986.1	-294.3	237.1	377.9	0.00	0.00	0.00
2,080.0	18.75	141.14	2,023.9	-304.3	245.1	390.7	0.00	0.00	0.00
2,120.0	18.75	141.14	2,061.8	-314.3	253.2	403.6	0.00	0.00	0.00
2,141.3	18.75	141.14	2,082.0	-319.6	257.5	410.5	0.00	0.00	0.00
GREELEY SAND									
2,160.0	18.75	141.14	2,099.7	-324.3	261.3	416.5	0.00	0.00	0.00
2,200.0	18.75	141.14	2,137.6	-334.3	269.3	429.3	0.00	0.00	0.00
2,240.0	18.75	141.14	2,175.4	-344.3	277.4	442.2	0.00	0.00	0.00
2,280.0	18.75	141.14	2,213.3	-354.4	285.5	455.0	0.00	0.00	0.00
2,320.0	18.75	141.14	2,251.2	-364.4	293.5	467.9	0.00	0.00	0.00
2,360.0	18.75	141.14	2,289.1	-374.4	301.6	480.8	0.00	0.00	0.00
2,400.0	18.75	141.14	2,327.0	-384.4	309.7	493.6	0.00	0.00	0.00
2,440.0	18.75	141.14	2,364.8	-394.4	317.7	506.5	0.00	0.00	0.00
2,480.0	18.75	141.14	2,402.7	-404.4	325.8	519.3	0.00	0.00	0.00
2,520.0	18.75	141.14	2,440.6	-414.4	333.9	532.2	0.00	0.00	0.00
2,560.0	18.75	141.14	2,478.5	-424.5	341.9	545.1	0.00	0.00	0.00
2,600.0	18.75	141.14	2,516.3	-434.5	350.0	557.9	0.00	0.00	0.00
2,640.0	18.75	141.14	2,554.2	-444.5	358.1	570.8	0.00	0.00	0.00
2,680.0	18.75	141.14	2,592.1	-454.5	366.1	583.6	0.00	0.00	0.00
2,720.0	18.75	141.14	2,630.0	-464.5	374.2	596.5	0.00	0.00	0.00
2,760.0	18.75	141.14	2,667.8	-474.5	382.3	609.4	0.00	0.00	0.00
2,800.0	18.75	141.14	2,705.7	-484.5	390.3	622.2	0.00	0.00	0.00
2,840.0	18.75	141.14	2,743.6	-494.6	398.4	635.1	0.00	0.00	0.00
2,880.0	18.75	141.14	2,781.5	-504.6	406.5	647.9	0.00	0.00	0.00
2,920.0	18.75	141.14	2,819.3	-514.6	414.6	660.8	0.00	0.00	0.00
2,960.0	18.75	141.14	2,857.2	-524.6	422.6	673.7	0.00	0.00	0.00
3,000.0	18.75	141.14	2,895.1	-534.6	430.7	686.5	0.00	0.00	0.00
3,040.0	18.75	141.14	2,933.0	-544.6	438.8	699.4	0.00	0.00	0.00
3,080.0	18.75	141.14	2,970.9	-554.6	446.8	712.2	0.00	0.00	0.00
3,120.0	18.75	141.14	3,008.7	-564.7	454.9	725.1	0.00	0.00	0.00
3,160.0	18.75	141.14	3,046.6	-574.7	463.0	738.0	0.00	0.00	0.00
3,200.0	18.75	141.14	3,084.5	-584.7	471.0	750.8	0.00	0.00	0.00
3,240.0	18.75	141.14	3,122.4	-594.7	479.1	763.7	0.00	0.00	0.00
3,280.0	18.75	141.14	3,160.2	-604.7	487.2	776.5	0.00	0.00	0.00
3,320.0	18.75	141.14	3,198.1	-614.7	495.2	789.4	0.00	0.00	0.00
3,360.0	18.75	141.14	3,236.0	-624.7	503.3	802.2	0.00	0.00	0.00
3,400.0	18.75	141.14	3,273.9	-634.8	511.4	815.1	0.00	0.00	0.00
3,440.0	18.75	141.14	3,311.7	-644.8	519.4	828.0	0.00	0.00	0.00
3,480.0	18.75	141.14	3,349.6	-654.8	527.5	840.8	0.00	0.00	0.00
3,514.2	18.75	141.14	3,382.0	-663.3	534.4	851.8	0.00	0.00	0.00
PARKMAN									
3,520.0	18.75	141.14	3,387.5	-664.8	535.6	853.7	0.00	0.00	0.00
3,560.0	18.75	141.14	3,425.4	-674.8	543.6	866.5	0.00	0.00	0.00
3,600.0	18.75	141.14	3,463.2	-684.8	551.7	879.4	0.00	0.00	0.00
3,640.0	18.75	141.14	3,501.1	-694.8	559.8	892.3	0.00	0.00	0.00
3,680.0	18.75	141.14	3,539.0	-704.9	567.8	905.1	0.00	0.00	0.00
3,720.0	18.75	141.14	3,576.9	-714.9	575.9	918.0	0.00	0.00	0.00
3,760.0	18.75	141.14	3,614.8	-724.9	584.0	930.8	0.00	0.00	0.00
3,800.0	18.75	141.14	3,652.6	-734.9	592.0	943.7	0.00	0.00	0.00
3,840.0	18.75	141.14	3,690.5	-744.9	600.1	956.6	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Peterson CX GH 30-14D
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 30-14D	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	18.75	141.14	3,728.4	-754.9	608.2	969.4	0.00	0.00	0.00	
3,920.0	18.75	141.14	3,766.3	-764.9	616.2	982.3	0.00	0.00	0.00	
3,960.0	18.75	141.14	3,804.1	-775.0	624.3	995.1	0.00	0.00	0.00	
4,000.0	18.75	141.14	3,842.0	-785.0	632.4	1,008.0	0.00	0.00	0.00	
4,040.0	18.75	141.14	3,879.9	-795.0	640.4	1,020.9	0.00	0.00	0.00	
4,080.0	18.75	141.14	3,917.8	-805.0	648.5	1,033.7	0.00	0.00	0.00	
4,120.0	18.75	141.14	3,955.6	-815.0	656.6	1,046.6	0.00	0.00	0.00	
4,160.0	18.75	141.14	3,993.5	-825.0	664.6	1,059.4	0.00	0.00	0.00	
4,162.6	18.75	141.14	3,996.0	-825.7	665.2	1,060.3	0.00	0.00	0.00	
SUSSEX										
4,200.0	18.75	141.14	4,031.4	-835.0	672.7	1,072.3	0.00	0.00	0.00	
4,240.0	18.75	141.14	4,069.3	-845.1	680.8	1,085.2	0.00	0.00	0.00	
4,243.9	18.75	141.14	4,073.0	-846.0	681.6	1,086.4	0.00	0.00	0.00	
SHANNON										
4,280.0	18.75	141.14	4,107.1	-855.1	688.8	1,098.0	0.00	0.00	0.00	
4,320.0	18.75	141.14	4,145.0	-865.1	696.9	1,110.9	0.00	0.00	0.00	
4,360.0	18.75	141.14	4,182.9	-875.1	705.0	1,123.7	0.00	0.00	0.00	
4,400.0	18.75	141.14	4,220.8	-885.1	713.1	1,136.6	0.00	0.00	0.00	
4,440.0	18.75	141.14	4,258.7	-895.1	721.1	1,149.5	0.00	0.00	0.00	
4,480.0	18.75	141.14	4,296.5	-905.1	729.2	1,162.3	0.00	0.00	0.00	
4,520.0	18.75	141.14	4,334.4	-915.2	737.3	1,175.2	0.00	0.00	0.00	
4,560.0	18.75	141.14	4,372.3	-925.2	745.3	1,188.0	0.00	0.00	0.00	
4,600.0	18.75	141.14	4,410.2	-935.2	753.4	1,200.9	0.00	0.00	0.00	
4,640.0	18.75	141.14	4,448.0	-945.2	761.5	1,213.8	0.00	0.00	0.00	
4,680.0	18.75	141.14	4,485.9	-955.2	769.5	1,226.6	0.00	0.00	0.00	
4,720.0	18.75	141.14	4,523.8	-965.2	777.6	1,239.5	0.00	0.00	0.00	
4,760.0	18.75	141.14	4,561.7	-975.2	785.7	1,252.3	0.00	0.00	0.00	
4,800.0	18.75	141.14	4,599.5	-985.3	793.7	1,265.2	0.00	0.00	0.00	
4,840.0	18.75	141.14	4,637.4	-995.3	801.8	1,278.1	0.00	0.00	0.00	
4,880.0	18.75	141.14	4,675.3	-1,005.3	809.9	1,290.9	0.00	0.00	0.00	
4,920.0	18.75	141.14	4,713.2	-1,015.3	817.9	1,303.8	0.00	0.00	0.00	
4,960.0	18.75	141.14	4,751.0	-1,025.3	826.0	1,316.6	0.00	0.00	0.00	
5,000.0	18.75	141.14	4,788.9	-1,035.3	834.1	1,329.5	0.00	0.00	0.00	
5,040.0	18.75	141.14	4,826.8	-1,045.3	842.1	1,342.4	0.00	0.00	0.00	
5,080.0	18.75	141.14	4,864.7	-1,055.4	850.2	1,355.2	0.00	0.00	0.00	
5,120.0	18.75	141.14	4,902.6	-1,065.4	858.3	1,368.1	0.00	0.00	0.00	
5,160.0	18.75	141.14	4,940.4	-1,075.4	866.3	1,380.9	0.00	0.00	0.00	
5,200.0	18.75	141.14	4,978.3	-1,085.4	874.4	1,393.8	0.00	0.00	0.00	
5,200.7	18.75	141.14	4,979.0	-1,085.6	874.5	1,394.0	0.00	0.00	0.00	
Start Drop -2.00										
5,240.0	17.97	141.14	5,016.3	-1,095.2	882.3	1,406.4	2.00	-2.00	0.00	
5,280.0	17.17	141.14	5,054.4	-1,104.6	889.9	1,418.5	2.00	-2.00	0.00	
5,320.0	16.37	141.14	5,092.7	-1,113.6	897.1	1,430.0	2.00	-2.00	0.00	
5,360.0	15.57	141.14	5,131.2	-1,122.2	904.0	1,441.0	2.00	-2.00	0.00	
5,400.0	14.77	141.14	5,169.8	-1,130.3	910.6	1,451.5	2.00	-2.00	0.00	
5,440.0	13.97	141.14	5,208.5	-1,138.0	916.8	1,461.4	2.00	-2.00	0.00	
5,480.0	13.17	141.14	5,247.4	-1,145.4	922.7	1,470.8	2.00	-2.00	0.00	
5,520.0	12.37	141.14	5,286.4	-1,152.2	928.3	1,479.6	2.00	-2.00	0.00	
5,560.0	11.57	141.14	5,325.5	-1,158.7	933.5	1,487.9	2.00	-2.00	0.00	
5,600.0	10.77	141.14	5,364.8	-1,164.7	938.3	1,495.7	2.00	-2.00	0.00	
5,640.0	9.97	141.14	5,404.1	-1,170.3	942.8	1,502.9	2.00	-2.00	0.00	
5,680.0	9.17	141.14	5,443.6	-1,175.5	947.0	1,509.5	2.00	-2.00	0.00	
5,720.0	8.37	141.14	5,483.1	-1,180.3	950.8	1,515.6	2.00	-2.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Peterson CX GH 30-14D
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 30-14D	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	7.57	141.14	5,522.7	-1,184.6	954.3	1,521.2	2.00	-2.00	0.00
5,800.0	6.77	141.14	5,562.4	-1,188.5	957.4	1,526.2	2.00	-2.00	0.00
5,840.0	5.97	141.14	5,602.2	-1,191.9	960.2	1,530.6	2.00	-2.00	0.00
5,880.0	5.17	141.14	5,642.0	-1,194.9	962.7	1,534.5	2.00	-2.00	0.00
5,920.0	4.37	141.14	5,681.8	-1,197.5	964.7	1,537.8	2.00	-2.00	0.00
5,960.0	3.57	141.14	5,721.7	-1,199.7	966.5	1,540.6	2.00	-2.00	0.00
6,000.0	2.77	141.14	5,761.7	-1,201.4	967.9	1,542.8	2.00	-2.00	0.00
6,040.0	1.97	141.14	5,801.6	-1,202.7	968.9	1,544.4	2.00	-2.00	0.00
6,080.0	1.17	141.14	5,841.6	-1,203.5	969.6	1,545.5	2.00	-2.00	0.00
6,120.0	0.37	141.14	5,881.6	-1,204.0	969.9	1,546.1	2.00	-2.00	0.00
6,138.4	0.00	0.00	5,900.0	-1,204.0	970.0	1,546.1	2.00	-2.00	0.00
Back to Vertical									
6,160.0	0.00	0.00	5,921.6	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
6,200.0	0.00	0.00	5,961.6	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
6,240.0	0.00	0.00	6,001.6	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
6,280.0	0.00	0.00	6,041.6	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
6,320.0	0.00	0.00	6,081.6	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
6,360.0	0.00	0.00	6,121.6	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
6,400.0	0.00	0.00	6,161.6	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
6,440.0	0.00	0.00	6,201.6	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
6,480.0	0.00	0.00	6,241.6	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
6,520.0	0.00	0.00	6,281.6	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
6,532.4	0.00	0.00	6,294.0	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
NIOBRARA									
6,560.0	0.00	0.00	6,321.6	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
6,600.0	0.00	0.00	6,361.6	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
6,640.0	0.00	0.00	6,401.6	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
6,680.0	0.00	0.00	6,441.6	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
6,720.0	0.00	0.00	6,481.6	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
6,760.0	0.00	0.00	6,521.6	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
6,800.0	0.00	0.00	6,561.6	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
6,807.4	0.00	0.00	6,569.0	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
FORT HAYS									
6,834.4	0.00	0.00	6,596.0	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
CODELL									
6,840.0	0.00	0.00	6,601.6	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
6,880.0	0.00	0.00	6,641.6	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
6,920.0	0.00	0.00	6,681.6	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
6,960.0	0.00	0.00	6,721.6	-1,204.0	970.0	1,546.1	0.00	0.00	0.00
6,994.4	0.00	0.00	6,756.0	-1,204.0	970.0	1,546.1	0.00	0.00	0.00

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

Database:	Landmark	Local Co-ordinate Reference:	Well Peterson CX GH 30-14D
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 30-14D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-25-12)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,141.3	2,082.0	GREELEY SAND		0.00		
3,514.2	3,382.0	PARKMAN		0.00		
4,162.6	3,996.0	SUSSEX		0.00		
4,243.9	4,073.0	SHANNON		0.00		
6,532.4	6,294.0	NIOBRARA		0.00		
6,807.4	6,569.0	FORT HAYS		0.00		
6,834.4	6,596.0	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	
1,337.7	1,321.0	-118.4	95.4	Start 3863.1 hold at 1337.7 MD	
5,200.7	4,979.0	-1,085.6	874.5	Start Drop -2.00	
6,138.4	5,900.0	-1,204.0	970.0	Back to Vertical	
6,994.4	6,756.0	-1,204.0	970.0	TD at 6994.4	



Directional

Great Western

SEC.30-T5N-R63W

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

Peterson CX GH 30-14D

Wellbore #1

Plan #1 (7-25-12)

Anticollision Report

31 July, 2012

Company:	Great Western	Local Co-ordinate Reference:	Well Peterson CX GH 30-14D
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 30-14D	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 30-32 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 200-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
1,700.0	1,664.1	1,674.7	1,674.5	6.4	3.3	39.22	-678.9	180.1	470.1	461.7	8.33	56.458	
1,800.0	1,758.8	1,769.1	1,768.9	7.0	3.5	41.67	-676.8	181.1	442.8	433.7	9.11	48.609	
1,900.0	1,853.5	1,862.8	1,862.6	7.7	3.7	44.36	-674.8	182.3	416.5	406.5	9.94	41.899	
2,000.0	1,948.2	1,956.5	1,956.2	8.4	3.9	47.29	-672.9	184.1	391.3	380.5	10.82	36.177	
2,100.0	2,042.9	2,050.2	2,049.8	9.0	4.1	50.51	-671.4	186.4	367.6	355.8	11.74	31.303	
2,200.0	2,137.6	2,143.5	2,143.2	9.7	4.3	54.15	-670.1	188.4	345.4	332.7	12.72	27.156	
2,300.0	2,232.3	2,237.3	2,237.0	10.4	4.5	58.28	-669.1	190.2	325.3	311.6	13.76	23.647	
2,400.0	2,327.0	2,331.9	2,331.5	11.0	4.7	62.85	-668.5	192.3	307.4	292.5	14.84	20.708	
2,500.0	2,421.6	2,426.8	2,426.3	11.7	4.9	67.82	-668.0	194.9	291.7	275.8	15.96	18.285	
2,600.0	2,516.3	2,521.4	2,520.9	12.4	5.1	73.28	-667.6	197.2	278.8	261.7	17.08	16.326	
2,700.0	2,611.0	2,615.7	2,615.2	13.1	5.3	79.24	-667.1	199.1	269.0	250.9	18.17	14.807	
2,800.0	2,705.7	2,710.2	2,709.7	13.7	5.5	85.49	-666.9	200.9	262.9	243.7	19.19	13.700	
2,900.0	2,800.4	2,804.8	2,804.3	14.4	5.7	91.86	-667.0	203.0	260.6	240.5	20.10	12.961	
2,911.5	2,811.3	2,815.6	2,815.1	14.5	5.7	92.58	-667.1	203.2	260.5	240.3	20.20	12.897 CC, ES	
3,000.0	2,895.1	2,898.6	2,898.1	15.1	5.9	98.11	-667.7	204.9	262.1	241.2	20.88	12.551	
3,100.0	2,989.8	2,992.6	2,992.0	15.8	6.1	104.16	-668.9	206.5	267.6	246.1	21.53	12.432 SF	
3,200.0	3,084.5	3,088.9	3,088.3	16.5	6.3	109.94	-670.8	208.3	276.5	254.4	22.05	12.540	
3,300.0	3,179.2	3,186.0	3,185.3	17.1	6.5	115.17	-673.6	210.9	287.6	265.1	22.47	12.799	
3,400.0	3,273.9	3,282.3	3,281.5	17.8	6.7	119.83	-677.0	213.8	300.6	277.8	22.82	13.171	
3,500.0	3,368.6	3,378.4	3,377.5	18.5	6.9	124.04	-680.7	216.8	315.6	292.4	23.13	13.644	
3,600.0	3,463.2	3,473.1	3,472.1	19.2	7.1	127.80	-684.4	219.6	332.3	308.9	23.40	14.198	
3,700.0	3,557.9	3,567.2	3,566.1	19.8	7.3	131.22	-687.9	221.8	350.8	327.2	23.65	14.836	
3,800.0	3,652.6	3,661.0	3,659.8	20.5	7.5	134.30	-691.3	223.5	371.2	347.3	23.88	15.540	
3,900.0	3,747.3	3,754.4	3,753.1	21.2	7.7	137.09	-694.4	224.7	393.1	369.0	24.12	16.298	
4,000.0	3,842.0	3,847.4	3,846.1	21.9	7.9	139.61	-697.2	225.3	416.4	392.1	24.36	17.098	
4,100.0	3,936.7	3,939.8	3,938.5	22.6	8.1	141.94	-699.2	225.5	441.2	416.6	24.59	17.940	
4,200.0	4,031.4	4,032.3	4,030.9	23.2	8.3	144.11	-700.5	225.3	467.2	442.4	24.83	18.818	
4,300.0	4,126.1	4,125.2	4,123.9	23.9	8.5	146.14	-701.1	224.8	494.3	469.3	25.07	19.720	
4,400.0	4,220.8	4,218.1	4,216.7	24.6	8.7	148.03	-701.0	224.2	522.4	497.0	25.31	20.636	
4,500.0	4,315.5	4,311.8	4,310.5	25.3	8.9	149.77	-700.6	223.5	551.1	525.5	25.57	21.552	
4,600.0	4,410.2	4,400.0	4,398.7	26.0	9.0	151.27	-700.2	222.8	580.4	554.6	25.86	22.449	
4,700.0	4,504.8	4,494.4	4,493.1	26.6	9.2	152.72	-699.5	221.6	610.6	584.4	26.15	23.350	
4,800.0	4,599.5	4,583.1	4,581.8	27.3	9.4	153.95	-698.6	219.7	641.9	615.4	26.47	24.250	
4,900.0	4,694.2	4,677.0	4,675.6	28.0	9.6	155.13	-697.5	217.2	673.9	647.1	26.80	25.147	
5,000.0	4,788.9	4,772.2	4,770.8	28.7	9.8	156.23	-696.4	214.9	706.0	678.9	27.14	26.012	
5,100.0	4,883.6	4,869.8	4,868.4	29.4	10.0	157.25	-695.4	212.9	738.1	710.6	27.50	26.843	
5,200.7	4,979.0	4,969.5	4,968.0	30.0	10.2	158.22	-694.6	211.3	770.0	742.1	27.86	27.632	
5,300.0	5,073.5	5,067.9	5,066.4	30.6	10.4	159.26	-694.2	210.2	799.4	771.2	28.23	28.318	
5,400.0	5,169.8	5,168.3	5,166.8	31.0	10.6	160.09	-694.5	209.3	825.7	797.1	28.58	28.889	
5,500.0	5,266.9	5,268.1	5,266.6	31.4	10.8	160.73	-695.4	208.6	848.3	819.4	28.94	29.318	
5,600.0	5,364.8	5,368.0	5,366.5	31.8	11.0	161.26	-696.0	208.3	867.6	838.3	29.28	29.634	
5,700.0	5,463.3	5,466.9	5,465.4	32.1	11.3	161.69	-696.5	208.3	883.4	853.8	29.60	29.849	
5,800.0	5,562.4	5,565.6	5,564.1	32.3	11.5	162.02	-696.8	208.3	896.1	866.2	29.90	29.971	
5,900.0	5,661.9	5,664.1	5,662.6	32.5	11.7	162.26	-697.1	208.3	905.5	875.3	30.18	30.008	
6,000.0	5,761.7	5,762.7	5,761.2	32.7	11.9	162.41	-697.2	208.2	911.7	881.3	30.43	29.962	
6,100.0	5,861.6	5,863.8	5,862.3	32.8	12.1	162.47	-697.4	208.0	914.7	884.0	30.66	29.830	
6,138.4	5,900.0	5,903.2	5,901.7	32.8	12.2	-56.39	-697.6	208.0	914.9	884.2	30.75	29.748	
6,200.0	5,961.6	5,966.5	5,965.0	32.8	12.3	-56.41	-697.9	208.0	914.7	883.8	30.97	29.533	
6,300.0	6,061.6	6,065.3	6,063.7	32.9	12.5	-56.45	-698.7	207.9	914.4	883.1	31.31	29.202	
6,311.8	6,073.4	6,076.7	6,075.2	32.9	12.5	-56.45	-698.7	207.9	914.3	883.0	31.35	29.165	
6,400.0	6,161.6	6,087.0	6,085.5	33.0	12.6	-56.46	-698.8	207.9	917.5	886.0	31.48	29.141	

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 30-14D
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 30-14D	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 30-32 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 200-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
6,500.0	6,261.6	6,087.0	6,085.5	33.1	12.6	-56.46	-698.8	207.9	931.1	899.5	31.61	29.456	
6,600.0	6,361.6	6,087.0	6,085.5	33.1	12.6	-56.46	-698.8	207.9	955.1	923.4	31.74	30.092	
6,700.0	6,461.6	6,087.0	6,085.5	33.2	12.6	-56.46	-698.8	207.9	988.7	956.8	31.87	31.022	
6,800.0	6,561.6	6,087.0	6,085.5	33.3	12.6	-56.46	-698.8	207.9	1,030.9	998.9	32.00	32.213	
6,900.0	6,661.6	6,087.0	6,085.5	33.4	12.6	-56.46	-698.8	207.9	1,080.7	1,048.6	32.14	33.629	
6,994.4	6,756.0	6,087.0	6,085.5	33.5	12.6	-56.46	-698.8	207.9	1,133.8	1,101.6	32.26	35.143	

Company:	Great Western	Local Co-ordinate Reference:	Well Peterson CX GH 30-14D
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 30-14D	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)	+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	0.00	0.00	20.4	0.0	20.4				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	0.00	20.4	0.0	20.4	20.2	0.22	90.785	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	0.00	20.4	0.0	20.4	19.7	0.67	30.262	
300.0	300.0	300.0	300.0	0.6	0.6	0.00	0.00	20.4	0.0	20.4	19.3	1.12	18.157	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	0.00	20.4	0.0	20.4	18.8	1.57	12.969 CC, ES	
500.0	500.0	500.0	500.0	1.0	1.0	-144.01		20.4	0.0	21.8	19.8	2.00	10.884	
600.0	599.8	599.8	599.8	1.2	1.2	-150.70		20.4	0.0	26.2	23.8	2.42	10.812 SF	
700.0	699.5	699.5	699.5	1.4	1.5	-157.83		20.4	0.0	34.1	31.2	2.86	11.925	
800.0	798.7	798.7	798.7	1.7	1.7	-163.55		20.4	0.0	45.6	42.3	3.30	13.832	
900.0	897.5	895.4	895.4	2.0	1.9	-167.29		21.9	-0.4	62.4	58.6	3.74	16.669	
1,000.0	995.6	990.2	990.1	2.4	2.1	-169.30		26.5	-1.6	85.8	81.6	4.20	20.454	
1,100.0	1,093.1	1,082.5	1,082.0	2.8	2.3	-170.29		33.8	-3.6	115.7	111.1	4.65	24.870	
1,200.0	1,189.6	1,171.7	1,170.7	3.3	2.5	-170.72		43.7	-6.2	151.8	146.7	5.11	29.704	
1,300.0	1,285.3	1,257.5	1,255.6	3.8	2.8	-170.85		55.6	-9.4	193.7	188.2	5.57	34.803	
1,337.7	1,321.0	1,288.8	1,286.5	4.1	2.9	-170.86		60.6	-10.8	211.0	205.3	5.74	36.773	
1,400.0	1,380.0	1,339.8	1,336.6	4.4	3.0	-170.91		69.4	-13.1	240.7	234.7	6.04	39.882	
1,500.0	1,474.7	1,419.5	1,414.7	5.1	3.3	-170.85		84.9	-17.3	290.3	283.8	6.52	44.552	
1,600.0	1,569.4	1,500.0	1,493.1	5.7	3.6	-170.70		102.6	-22.0	342.1	335.1	7.01	48.836	
1,700.0	1,664.1	1,571.6	1,562.3	6.4	3.9	-170.50		120.2	-26.8	396.1	388.7	7.49	52.923	
1,800.0	1,758.8	1,644.0	1,631.9	7.0	4.2	-170.28		139.6	-32.0	452.3	444.3	7.97	56.723	
1,900.0	1,853.5	1,714.1	1,698.6	7.7	4.5	-170.04		160.1	-37.5	510.3	501.9	8.46	60.305	
2,000.0	1,948.2	1,786.7	1,767.4	8.4	4.9	-169.79		182.8	-43.6	570.2	561.2	8.97	63.581	
2,100.0	2,042.9	1,866.5	1,842.8	9.0	5.4	-169.55		208.0	-50.3	630.3	620.9	9.48	66.489	
2,200.0	2,137.6	1,946.4	1,918.2	9.7	5.9	-169.35		233.3	-57.1	690.5	680.5	9.99	69.111	
2,300.0	2,232.3	2,026.2	1,993.7	10.4	6.3	-169.19		258.5	-63.9	750.7	740.2	10.51	71.434	
2,400.0	2,327.0	2,106.0	2,069.1	11.0	6.8	-169.05		283.8	-70.7	810.9	799.9	11.03	73.509	
2,500.0	2,421.6	2,185.9	2,144.5	11.7	7.3	-168.93		309.0	-77.4	871.1	859.6	11.56	75.364	
2,600.0	2,516.3	2,265.7	2,220.0	12.4	7.8	-168.82		334.3	-84.2	931.3	919.2	12.09	77.035	
2,700.0	2,611.0	2,345.6	2,295.4	13.1	8.3	-168.73		359.5	-91.0	991.5	978.9	12.62	78.549	
2,800.0	2,705.7	2,425.4	2,370.8	13.7	8.8	-168.65		384.8	-97.8	1,051.7	1,038.6	13.16	79.925	
2,900.0	2,800.4	2,505.2	2,446.3	14.4	9.3	-168.58		410.0	-104.5	1,111.9	1,098.2	13.70	81.181	
3,000.0	2,895.1	2,585.1	2,521.7	15.1	9.8	-168.51		435.3	-111.3	1,172.1	1,157.9	14.24	82.325	
3,100.0	2,989.8	2,664.9	2,597.1	15.8	10.3	-168.45		460.6	-118.1	1,232.3	1,217.6	14.78	83.375	
3,200.0	3,084.5	2,744.8	2,672.6	16.5	10.8	-168.40		485.8	-124.9	1,292.6	1,277.2	15.33	84.342	
3,300.0	3,179.2	2,824.6	2,748.0	17.1	11.3	-168.35		511.1	-131.6	1,352.8	1,336.9	15.87	85.235	
3,400.0	3,273.9	2,904.4	2,823.4	17.8	11.8	-168.30		536.3	-138.4	1,413.0	1,396.6	16.42	86.060	
3,500.0	3,368.6	2,984.3	2,898.9	18.5	12.3	-168.26		561.6	-145.2	1,473.2	1,456.2	16.97	86.824	
3,600.0	3,463.2	3,064.1	2,974.3	19.2	12.8	-168.23		586.8	-152.0	1,533.4	1,515.9	17.52	87.534	
3,700.0	3,557.9	3,143.9	3,049.8	19.8	13.4	-168.19		612.1	-158.7	1,593.6	1,575.5	18.07	88.196	
3,800.0	3,652.6	3,223.8	3,125.2	20.5	13.9	-168.16		637.3	-165.5	1,653.8	1,635.2	18.62	88.814	
3,900.0	3,747.3	3,303.6	3,200.6	21.2	14.4	-168.13		662.6	-172.3	1,714.0	1,694.8	19.17	89.391	
4,000.0	3,842.0	3,383.5	3,276.1	21.9	14.9	-168.10		687.8	-179.1	1,774.2	1,754.5	19.73	89.931	
4,100.0	3,936.7	3,463.3	3,351.5	22.6	15.4	-168.07		713.1	-185.8	1,834.4	1,814.2	20.28	90.438	
4,200.0	4,031.4	3,543.1	3,426.9	23.2	15.9	-168.05		738.4	-192.6	1,894.7	1,873.8	20.84	90.915	
4,300.0	4,126.1	3,623.0	3,502.4	23.9	16.5	-168.03		763.6	-199.4	1,954.9	1,933.5	21.40	91.363	
4,400.0	4,220.8	3,702.8	3,577.8	24.6	17.0	-168.01		788.9	-206.2	2,015.1	1,993.1	21.95	91.786	
4,500.0	4,315.5	3,782.6	3,653.2	25.3	17.5	-167.98		814.1	-212.9	2,075.3	2,052.8	22.51	92.185	
4,600.0	4,410.2	3,862.5	3,728.7	26.0	18.0	-167.97		839.4	-219.7	2,135.5	2,112.4	23.07	92.562	
4,700.0	4,504.8	3,942.3	3,804.1	26.6	18.5	-167.95		864.6	-226.5	2,195.7	2,172.1	23.63	92.918	
4,800.0	4,599.5	4,022.2	3,879.5	27.3	19.0	-167.93		889.9	-233.3	2,255.9	2,231.7	24.19	93.256	
4,900.0	4,694.2	4,102.0	3,955.0	28.0	19.6	-167.91		915.1	-240.0	2,316.1	2,291.4	24.75	93.577	

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 30-14D
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 30-14D	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	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	4,788.9	4,181.8	4,030.4	28.7	20.1	-167.90	940.4	-246.8	2,376.4	2,351.0	25.31	93.881		
5,100.0	4,883.6	4,261.7	4,105.8	29.4	20.6	-167.88	965.6	-253.6	2,436.6	2,410.7	25.87	94.170		
5,200.7	4,979.0	4,342.1	4,181.8	30.0	21.1	-167.87	991.1	-260.4	2,497.2	2,470.8	26.44	94.447		
5,300.0	5,073.5	4,422.3	4,257.6	30.6	21.7	-168.15	1,016.5	-267.2	2,555.6	2,528.5	27.17	94.074		
5,400.0	5,169.8	4,505.1	4,335.9	31.0	22.2	-168.38	1,042.7	-274.2	2,611.7	2,583.9	27.85	93.764		
5,500.0	5,266.9	4,589.8	4,415.8	31.4	22.8	-168.57	1,069.4	-281.4	2,664.9	2,636.4	28.51	93.456		
5,600.0	5,364.8	4,676.2	4,497.5	31.8	23.3	-168.73	1,096.8	-288.8	2,715.2	2,686.0	29.15	93.156		
5,700.0	5,463.3	4,764.2	4,580.6	32.1	23.9	-168.85	1,124.6	-296.2	2,762.5	2,732.7	29.75	92.866		
5,800.0	5,562.4	4,853.7	4,665.3	32.3	24.5	-168.94	1,152.9	-303.8	2,806.7	2,776.4	30.31	92.591		
5,900.0	5,661.9	4,944.7	4,751.2	32.5	25.1	-169.01	1,181.7	-311.5	2,847.9	2,817.1	30.84	92.332		
6,000.0	5,761.7	5,037.0	4,838.4	32.7	25.7	-169.04	1,210.9	-319.4	2,885.9	2,854.6	31.34	92.090		
6,100.0	5,861.6	5,130.6	4,926.8	32.8	26.3	-169.05	1,240.5	-327.3	2,920.8	2,889.0	31.79	91.867		
6,138.4	5,900.0	5,166.7	4,961.0	32.8	26.5	-27.90	1,251.9	-330.4	2,933.3	2,901.4	31.96	91.777		
6,200.0	5,961.6	5,185.1	5,961.6	32.8	29.5	-27.21	1,404.8	-371.4	2,933.4	2,899.3	34.19	85.789		
6,300.0	6,061.6	6,285.1	6,061.6	32.9	29.6	-27.21	1,404.8	-371.4	2,933.4	2,899.0	34.49	85.046		
6,400.0	6,161.6	6,385.1	6,161.6	33.0	29.7	-27.21	1,404.8	-371.4	2,933.4	2,898.6	34.80	84.304		
6,500.0	6,261.6	6,485.1	6,261.6	33.1	29.8	-27.21	1,404.8	-371.4	2,933.4	2,898.3	35.10	83.567		
6,600.0	6,361.6	6,585.1	6,361.6	33.1	29.9	-27.21	1,404.8	-371.4	2,933.4	2,898.0	35.41	82.836		
6,700.0	6,461.6	6,685.1	6,461.6	33.2	30.0	-27.21	1,404.8	-371.4	2,933.4	2,897.7	35.73	82.110		
6,800.0	6,561.6	6,785.1	6,561.6	33.3	30.1	-27.21	1,404.8	-371.4	2,933.4	2,897.4	36.04	81.391		
6,900.0	6,661.6	6,885.1	6,661.6	33.4	30.2	-27.21	1,404.8	-371.4	2,933.4	2,897.1	36.36	80.678		
6,959.2	6,720.8	6,944.2	6,720.8	33.4	30.2	-27.21	1,404.8	-371.4	2,933.4	2,896.9	36.55	80.259		
6,994.4	6,756.0	6,969.4	6,746.0	33.5	30.2	-27.21	1,404.8	-371.4	2,933.5	2,896.8	36.65	80.050		

Company:	Great Western	Local Co-ordinate Reference:	Well Peterson CX GH 30-14D
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 30-14D	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 30-40D - 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 (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	
0.0	0.0	0.0	0.0	0.0	0.0	86.64	1.1	18.7	18.7	18.7	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	86.64	1.1	18.7	18.7	18.5	0.22	83.200		
200.0	200.0	200.0	200.0	0.3	0.3	86.64	1.1	18.7	18.7	18.0	0.67	27.733 CC, ES		
300.0	300.0	299.4	299.4	0.6	0.5	89.33	0.2	20.2	20.2	19.1	1.11	18.213		
400.0	400.0	398.6	398.4	0.8	0.8	95.44	-2.3	24.6	24.8	23.2	1.55	16.022		
500.0	500.0	497.5	496.9	1.0	1.0	-41.36	-6.6	32.0	31.5	29.6	1.97	15.991		
600.0	599.8	596.1	594.8	1.2	1.3	-40.01	-12.7	42.3	38.9	36.5	2.39	16.263		
700.0	699.5	694.4	691.9	1.4	1.6	-40.28	-20.6	55.3	46.8	44.0	2.85	16.427		
800.0	798.7	792.4	788.2	1.7	2.0	-41.44	-30.2	71.1	55.3	51.9	3.35	16.487		
900.0	897.5	890.1	883.5	2.0	2.4	-43.10	-41.5	89.6	64.3	60.4	3.91	16.424		
1,000.0	995.6	987.5	977.6	2.4	2.9	-45.04	-54.5	110.7	73.9	69.3	4.55	16.232		
1,100.0	1,093.1	1,084.6	1,070.6	2.8	3.5	-47.09	-69.2	134.5	84.2	78.9	5.29	15.918		
1,200.0	1,189.6	1,181.3	1,162.2	3.3	4.1	-49.18	-85.5	160.8	95.2	89.0	6.14	15.504		
1,300.0	1,285.3	1,277.6	1,252.4	3.8	4.8	-51.25	-103.4	189.5	106.9	99.8	7.12	15.016		
1,337.7	1,321.0	1,313.8	1,286.0	4.1	5.1	-52.01	-110.5	201.0	111.5	104.0	7.52	14.836		
1,400.0	1,380.0	1,373.6	1,341.1	4.4	5.6	-53.12	-122.8	220.7	119.8	111.6	8.22	14.581		
1,500.0	1,474.7	1,469.0	1,427.9	5.1	6.4	-53.94	-143.6	254.2	135.3	126.0	9.35	14.477 SF		
1,600.0	1,569.4	1,563.5	1,512.6	5.7	7.2	-53.86	-165.8	289.7	153.5	143.0	10.46	14.667		
1,700.0	1,664.1	1,661.0	1,599.1	6.4	8.2	-53.41	-189.7	327.9	173.2	161.6	11.59	14.946		
1,800.0	1,758.8	1,759.0	1,686.1	7.0	9.2	-53.04	-213.7	366.3	193.0	180.3	12.73	15.165		
1,900.0	1,853.5	1,857.0	1,773.0	7.7	10.1	-52.73	-237.7	404.7	212.8	198.9	13.87	15.340		
2,000.0	1,948.2	1,955.1	1,859.9	8.4	11.1	-52.48	-261.7	443.0	232.6	217.6	15.02	15.483		
2,100.0	2,042.9	2,053.1	1,946.9	9.0	12.1	-52.27	-285.6	481.4	252.4	236.2	16.18	15.601		
2,200.0	2,137.6	2,149.3	2,032.2	9.7	13.0	-52.14	-309.0	519.2	272.4	255.0	17.31	15.729		
2,300.0	2,232.3	2,242.5	2,114.9	10.4	13.9	-52.44	-329.5	557.0	293.7	275.2	18.46	15.905		
2,400.0	2,327.0	2,340.0	2,201.4	11.0	14.8	-52.92	-349.7	597.2	315.7	296.0	19.69	16.030		
2,500.0	2,421.6	2,437.5	2,287.9	11.7	15.8	-53.34	-370.0	637.4	337.7	316.8	20.95	16.124		
2,600.0	2,516.3	2,535.0	2,374.4	12.4	16.8	-53.71	-390.3	677.6	359.8	337.6	22.20	16.207		
2,700.0	2,611.0	2,632.5	2,460.9	13.1	17.7	-54.04	-410.6	717.9	381.9	358.4	23.46	16.279		
2,800.0	2,705.7	2,730.1	2,547.4	13.7	18.7	-54.33	-430.8	758.1	403.9	379.2	24.71	16.344		
2,900.0	2,800.4	2,827.6	2,633.9	14.4	19.7	-54.59	-451.1	798.3	426.0	400.1	25.97	16.402		
3,000.0	2,895.1	2,925.1	2,720.4	15.1	20.7	-54.82	-471.4	838.5	448.1	420.9	27.24	16.454		
3,100.0	2,989.8	3,022.6	2,806.9	15.8	21.7	-55.03	-491.7	878.7	470.2	441.7	28.50	16.501		
3,200.0	3,084.5	3,120.1	2,893.3	16.5	22.7	-55.23	-511.9	918.9	492.3	462.6	29.76	16.543		
3,300.0	3,179.2	3,217.6	2,979.8	17.1	23.7	-55.40	-532.2	959.1	514.5	483.4	31.02	16.582		
3,400.0	3,273.9	3,315.1	3,066.3	17.8	24.7	-55.56	-552.5	999.3	536.6	504.3	32.29	16.618		
3,500.0	3,368.6	3,412.6	3,152.8	18.5	25.6	-55.71	-572.8	1,039.5	558.7	525.1	33.55	16.651		
3,600.0	3,463.2	3,510.1	3,239.3	19.2	26.6	-55.85	-593.0	1,079.7	580.8	546.0	34.82	16.681		
3,700.0	3,557.9	3,607.7	3,325.8	19.8	27.6	-55.98	-613.3	1,119.9	603.0	566.9	36.09	16.708		
3,800.0	3,652.6	3,705.2	3,412.3	20.5	28.6	-56.10	-633.6	1,160.1	625.1	587.7	37.35	16.734		
3,900.0	3,747.3	3,802.7	3,498.8	21.2	29.6	-56.21	-653.8	1,200.3	647.2	608.6	38.62	16.758		
4,000.0	3,842.0	3,900.2	3,585.3	21.9	30.6	-56.31	-674.1	1,240.5	669.4	629.5	39.89	16.780		
4,100.0	3,936.7	3,997.7	3,671.8	22.6	31.6	-56.41	-694.4	1,280.7	691.5	650.3	41.16	16.801		
4,200.0	4,031.4	4,095.2	3,758.3	23.2	32.6	-56.50	-714.7	1,320.9	713.6	671.2	42.43	16.821		
4,300.0	4,126.1	4,192.7	3,844.8	23.9	33.6	-56.58	-734.9	1,361.2	735.8	692.1	43.70	16.839		
4,400.0	4,220.8	4,290.2	3,931.3	24.6	34.6	-56.66	-755.2	1,401.4	757.9	713.0	44.96	16.856		
4,500.0	4,315.5	4,387.8	4,017.8	25.3	35.6	-56.74	-775.5	1,441.6	780.1	733.8	46.23	16.872		
4,600.0	4,410.2	4,485.3	4,104.2	26.0	36.5	-56.81	-795.8	1,481.8	802.2	754.7	47.50	16.888		
4,700.0	4,504.8	4,582.8	4,190.7	26.6	37.5	-56.88	-816.0	1,522.0	824.4	775.6	48.77	16.902		
4,800.0	4,599.5	4,680.3	4,277.2	27.3	38.5	-56.94	-836.3	1,562.2	846.5	796.5	50.04	16.916		
4,900.0	4,694.2	4,777.8	4,363.7	28.0	39.5	-57.00	-856.6	1,602.4	868.7	817.4	51.31	16.929		

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 30-14D
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 30-14D	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 30-40D - 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	
5,000.0	4,788.9	4,875.3	4,450.2	28.7	40.5	-57.06	-876.9	1,642.6	890.8	838.2	52.58	16.941		
5,100.0	4,883.6	4,972.8	4,536.7	29.4	41.5	-57.12	-897.1	1,682.8	913.0	859.1	53.85	16.953		
5,200.7	4,979.0	5,071.1	4,623.8	30.0	42.5	-57.17	-917.6	1,723.3	935.3	880.1	55.13	16.964		
5,300.0	5,073.5	5,167.6	4,709.5	30.6	43.5	-57.53	-937.6	1,763.1	958.2	901.8	56.39	16.992		
5,400.0	5,169.8	5,264.4	4,795.4	31.0	44.5	-57.75	-957.8	1,803.0	983.1	925.6	57.45	17.112		
5,500.0	5,266.9	5,360.6	4,880.6	31.4	45.5	-57.84	-977.8	1,842.7	1,009.8	951.4	58.38	17.296		
5,600.0	5,364.8	5,456.0	4,965.3	31.8	46.4	-57.82	-997.6	1,882.0	1,038.3	979.1	59.19	17.542		
5,700.0	5,463.3	5,550.5	5,049.1	32.1	47.4	-57.71	-1,017.2	1,921.0	1,068.8	1,008.9	59.88	17.847		
5,800.0	5,562.4	5,644.1	5,132.1	32.3	48.3	-57.51	-1,036.7	1,959.6	1,101.1	1,040.7	60.47	18.211		
5,900.0	5,661.9	5,757.9	5,233.4	32.5	49.4	-57.05	-1,060.1	2,006.0	1,135.1	1,074.2	60.85	18.652		
6,000.0	5,761.7	5,900.0	5,362.3	32.7	50.4	-56.33	-1,086.9	2,059.2	1,167.7	1,106.7	61.03	19.135		
6,100.0	5,861.6	6,045.8	5,497.6	32.8	51.4	-55.58	-1,111.5	2,107.8	1,198.4	1,137.4	61.06	19.628		
6,138.4	5,900.0	6,102.8	5,551.2	32.8	51.7	85.85	-1,120.2	2,125.2	1,209.6	1,148.6	61.04	19.817		
6,200.0	5,961.6	6,195.8	5,639.4	32.8	52.2	86.58	-1,133.4	2,151.4	1,226.6	1,165.8	60.85	20.159		
6,300.0	6,061.6	6,350.7	5,788.3	32.9	53.0	87.58	-1,152.6	2,189.4	1,250.7	1,190.1	60.60	20.638		
6,400.0	6,161.6	6,510.0	5,943.7	33.0	53.6	88.37	-1,168.4	2,220.9	1,270.2	1,209.8	60.46	21.009		
6,500.0	6,261.6	6,672.9	6,104.3	33.1	54.1	88.95	-1,180.6	2,245.0	1,285.0	1,224.5	60.41	21.269		
6,600.0	6,361.6	6,838.5	6,268.8	33.1	54.4	89.32	-1,188.8	2,261.2	1,294.7	1,234.2	60.46	21.415		
6,700.0	6,461.6	7,005.6	6,435.7	33.2	54.6	89.50	-1,192.7	2,268.9	1,299.3	1,238.7	60.59	21.443		
6,800.0	6,561.6	7,131.5	6,561.6	33.3	54.7	89.51	-1,193.0	2,269.6	1,299.6	1,238.9	60.78	21.384		
6,900.0	6,661.6	7,231.5	6,661.6	33.4	54.7	89.51	-1,193.0	2,269.6	1,299.6	1,238.7	60.95	21.324		
6,954.5	6,716.1	7,286.0	6,716.1	33.4	54.7	89.51	-1,193.0	2,269.6	1,299.6	1,238.6	61.04	21.291		
6,994.4	6,756.0	7,305.9	6,736.0	33.5	54.7	89.51	-1,193.0	2,269.6	1,299.8	1,238.7	61.10	21.275		

Company:	Great Western	Local Co-ordinate Reference:	Well Peterson CX GH 30-14D
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 30-14D	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 (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	40.15	21.1	17.8	27.7					
100.0	100.0	100.0	100.0	0.1	0.1	40.15	21.1	17.8	27.7	27.4	0.22	123.054		
200.0	200.0	200.0	200.0	0.3	0.3	40.15	21.1	17.8	27.7	27.0	0.67	41.018		
300.0	300.0	300.0	300.0	0.6	0.6	40.15	21.1	17.8	27.7	26.5	1.12	24.611		
400.0	400.0	400.0	400.0	0.8	0.8	40.15	21.1	17.8	27.7	26.1	1.57	17.579 CC, ES		
500.0	500.0	499.3	499.3	1.0	1.0	-101.83	21.2	19.6	29.2	27.2	1.99	14.673		
600.0	599.8	598.5	598.3	1.2	1.2	-103.87	21.5	24.7	33.7	31.3	2.40	14.055 SF		
700.0	699.5	697.4	696.9	1.4	1.4	-106.24	21.9	33.2	41.4	38.6	2.86	14.484		
800.0	798.7	795.8	794.6	1.7	1.7	-108.34	22.4	45.1	52.2	48.9	3.38	15.469		
900.0	897.5	893.7	891.3	2.0	2.0	-109.98	23.1	60.2	66.1	62.2	3.96	16.688		
1,000.0	995.6	990.9	986.7	2.4	2.4	-111.17	24.0	78.5	83.1	78.5	4.63	17.945		
1,100.0	1,093.1	1,087.2	1,080.7	2.8	2.8	-112.00	25.0	99.8	103.1	97.7	5.39	19.126		
1,200.0	1,189.6	1,182.7	1,173.0	3.3	3.2	-112.55	26.1	124.0	126.1	119.8	6.25	20.175		
1,300.0	1,285.3	1,277.0	1,263.4	3.8	3.7	-112.89	27.4	150.9	152.0	144.8	7.21	21.082		
1,337.7	1,321.0	1,312.3	1,296.9	4.1	3.9	-112.97	27.9	161.7	162.5	154.9	7.59	21.393		
1,400.0	1,380.0	1,370.3	1,351.9	4.4	4.3	-113.21	28.8	180.4	180.4	172.2	8.27	21.824		
1,500.0	1,474.7	1,462.7	1,438.5	5.1	4.9	-112.90	30.3	212.5	210.4	201.0	9.40	22.398		
1,600.0	1,569.4	1,554.1	1,523.1	5.7	5.6	-112.02	31.9	246.9	241.9	231.4	10.58	22.867		
1,700.0	1,664.1	1,644.3	1,605.5	6.4	6.3	-110.79	33.6	283.5	275.0	263.2	11.81	23.284		
1,800.0	1,758.8	1,733.1	1,685.5	7.0	7.1	-109.37	35.5	322.1	309.7	296.6	13.07	23.686		
1,900.0	1,853.5	1,823.2	1,765.5	7.7	8.0	-107.83	37.4	363.4	345.9	331.5	14.38	24.051		
2,000.0	1,948.2	1,915.9	1,847.7	8.4	8.9	-106.49	39.4	406.3	382.5	366.8	15.71	24.343		
2,100.0	2,042.9	2,008.6	1,929.9	9.0	9.8	-105.39	41.4	449.2	419.3	402.2	17.05	24.596		
2,200.0	2,137.6	2,101.3	2,012.0	9.7	10.7	-104.46	43.4	492.1	456.2	437.8	18.38	24.817		
2,300.0	2,232.3	2,194.0	2,094.2	10.4	11.6	-103.67	45.5	535.0	493.2	473.4	19.72	25.011		
2,400.0	2,327.0	2,286.7	2,176.4	11.0	12.5	-103.00	47.5	577.9	530.2	509.2	21.05	25.183		
2,500.0	2,421.6	2,379.4	2,258.5	11.7	13.5	-102.41	49.5	620.8	567.3	544.9	22.39	25.336		
2,600.0	2,516.3	2,472.2	2,340.7	12.4	14.4	-101.89	51.5	663.6	604.5	580.7	23.73	25.474		
2,700.0	2,611.0	2,564.9	2,422.9	13.1	15.3	-101.43	53.5	706.5	641.7	616.6	25.07	25.597		
2,800.0	2,705.7	2,657.6	2,505.1	13.7	16.3	-101.02	55.6	749.4	678.9	652.5	26.41	25.710		
2,900.0	2,800.4	2,750.3	2,587.2	14.4	17.2	-100.66	57.6	792.3	716.1	688.4	27.74	25.812		
3,000.0	2,895.1	2,843.0	2,669.4	15.1	18.1	-100.33	59.6	835.2	753.4	724.3	29.08	25.905		
3,100.0	2,989.8	2,935.7	2,751.6	15.8	19.1	-100.03	61.6	878.1	790.7	760.3	30.42	25.990		
3,200.0	3,084.5	3,028.4	2,833.7	16.5	20.0	-99.76	63.6	921.0	828.0	796.2	31.76	26.069		
3,300.0	3,179.2	3,121.1	2,915.9	17.1	21.0	-99.51	65.6	963.8	865.3	832.2	33.10	26.142		
3,400.0	3,273.9	3,213.8	2,998.1	17.8	21.9	-99.28	67.7	1,006.7	902.7	868.2	34.44	26.209		
3,500.0	3,368.6	3,306.6	3,080.3	18.5	22.8	-99.07	69.7	1,049.6	940.0	904.2	35.78	26.271		
3,600.0	3,463.2	3,399.3	3,162.4	19.2	23.8	-98.88	71.7	1,092.5	977.4	940.3	37.12	26.329		
3,700.0	3,557.9	3,492.0	3,244.6	19.8	24.7	-98.70	73.7	1,135.4	1,014.7	976.3	38.46	26.383		
3,800.0	3,652.6	3,584.7	3,326.8	20.5	25.7	-98.53	75.7	1,178.3	1,052.1	1,012.3	39.80	26.434		
3,900.0	3,747.3	3,677.4	3,408.9	21.2	26.6	-98.37	77.7	1,221.2	1,089.5	1,048.4	41.14	26.481		
4,000.0	3,842.0	3,770.1	3,491.1	21.9	27.5	-98.23	79.8	1,264.0	1,126.9	1,084.4	42.48	26.525		
4,100.0	3,936.7	3,862.8	3,573.3	22.6	28.5	-98.09	81.8	1,306.9	1,164.3	1,120.5	43.82	26.567		
4,200.0	4,031.4	3,955.5	3,655.5	23.2	29.4	-97.97	83.8	1,349.8	1,201.7	1,156.5	45.16	26.607		
4,300.0	4,126.1	4,048.3	3,737.6	23.9	30.4	-97.85	85.8	1,392.7	1,239.1	1,192.6	46.51	26.644		
4,400.0	4,220.8	4,141.0	3,819.8	24.6	31.3	-97.73	87.8	1,435.6	1,276.5	1,228.6	47.85	26.679		
4,500.0	4,315.5	4,233.7	3,902.0	25.3	32.3	-97.63	89.8	1,478.5	1,313.9	1,264.7	49.19	26.712		
4,600.0	4,410.2	4,326.4	3,984.1	26.0	33.2	-97.53	91.9	1,521.4	1,351.3	1,300.8	50.53	26.744		
4,700.0	4,504.8	4,419.1	4,066.3	26.6	34.1	-97.43	93.9	1,564.2	1,388.7	1,336.9	51.87	26.773		
4,800.0	4,599.5	4,511.8	4,148.5	27.3	35.1	-97.34	95.9	1,607.1	1,426.2	1,372.9	53.21	26.802		
4,900.0	4,694.2	4,604.5	4,230.7	28.0	36.0	-97.26	97.9	1,650.0	1,463.6	1,409.0	54.55	26.829		

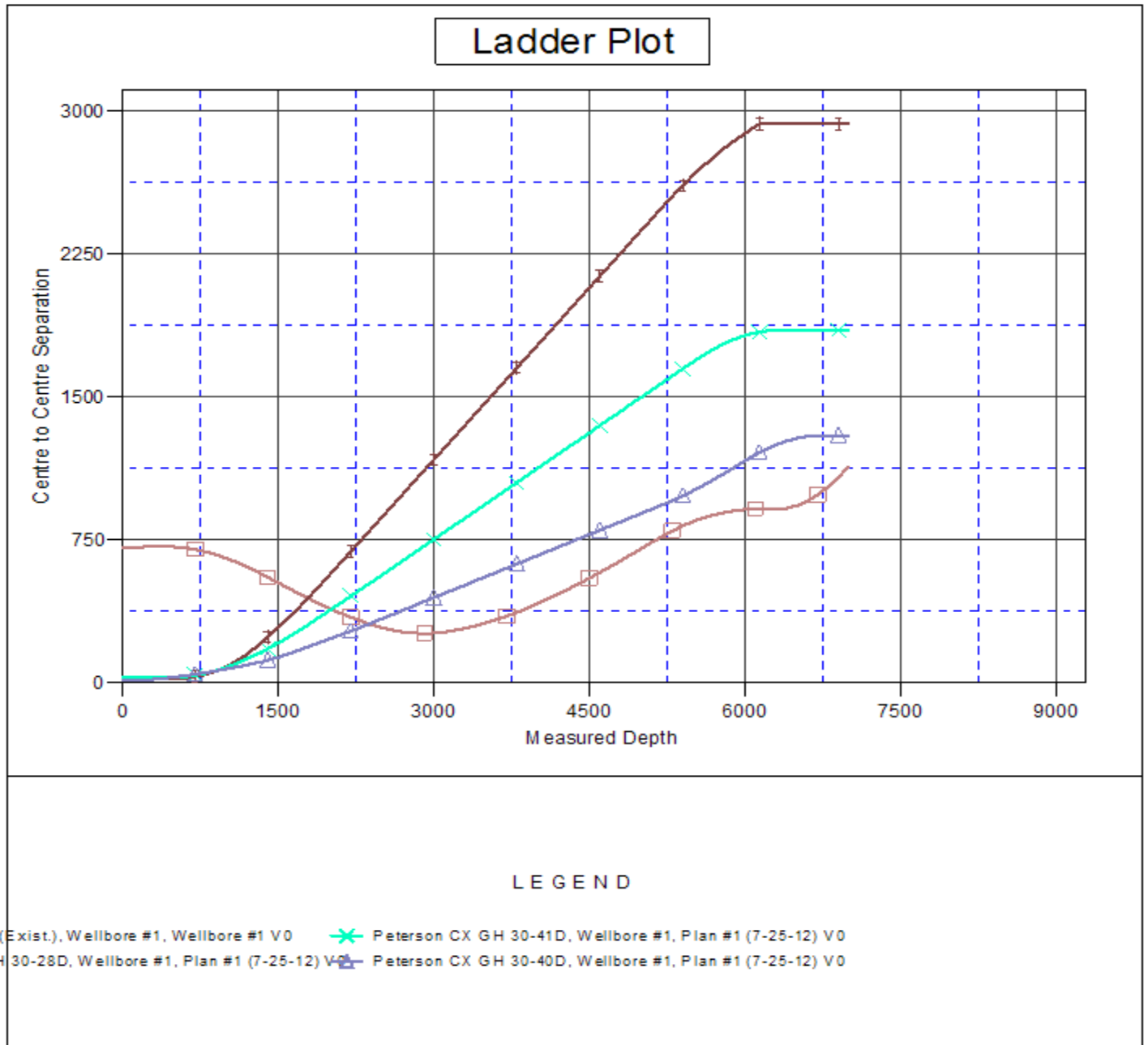
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Great Western	Local Co-ordinate Reference:	Well Peterson CX GH 30-14D
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 30-14D	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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,788.9	4,697.2	4,312.8	28.7	37.0	-97.18		99.9	1,692.9	1,501.0	1,445.1	55.89	26.855	
5,100.0	4,883.6	4,789.9	4,395.0	29.4	37.9	-97.10		101.9	1,735.8	1,538.4	1,481.2	57.24	26.879	
5,200.7	4,979.0	4,883.3	4,477.8	30.0	38.9	-97.03		104.0	1,779.0	1,576.1	1,517.6	58.59	26.903	
5,300.0	5,073.5	4,975.4	4,559.4	30.6	39.8	-97.68		106.0	1,821.6	1,613.1	1,553.0	60.08	26.851	
5,400.0	5,169.8	5,068.1	4,641.5	31.0	40.7	-98.21		108.0	1,864.4	1,649.9	1,588.5	61.42	26.865	
5,500.0	5,266.9	5,160.7	4,723.6	31.4	41.7	-98.61		110.0	1,907.3	1,686.3	1,623.7	62.68	26.905	
5,600.0	5,364.8	5,279.4	4,829.1	31.8	42.8	-98.77		112.6	1,961.6	1,722.1	1,658.1	63.96	26.923	
5,700.0	5,463.3	5,443.0	4,977.7	32.1	44.1	-98.65		115.8	2,029.8	1,754.4	1,689.2	65.19	26.913	
5,800.0	5,562.4	5,612.3	5,135.4	32.3	45.2	-98.48		118.7	2,091.5	1,782.4	1,716.2	66.24	26.907	
5,900.0	5,661.9	5,786.8	5,301.4	32.5	46.1	-98.27		121.2	2,145.1	1,805.9	1,738.8	67.12	26.907	
6,000.0	5,761.7	5,965.9	5,474.9	32.7	46.9	-98.01		123.3	2,189.6	1,824.8	1,757.0	67.80	26.914	
6,100.0	5,861.6	6,149.0	5,654.7	32.8	47.5	-97.72		124.9	2,223.8	1,838.7	1,770.4	68.29	26.926	
6,138.4	5,900.0	6,220.1	5,725.1	32.8	47.7	43.56		125.4	2,234.0	1,842.7	1,774.3	68.43	26.929	
6,200.0	5,961.6	6,335.2	5,839.4	32.8	47.9	43.83		126.0	2,246.7	1,847.7	1,779.1	68.57	26.948	
6,300.0	6,061.6	6,523.6	6,027.4	32.9	48.1	44.06		126.5	2,257.6	1,851.9	1,783.1	68.77	26.928	
6,400.0	6,161.6	6,657.8	6,161.6	33.0	48.2	44.08		126.5	2,258.6	1,852.3	1,783.3	68.95	26.865	
6,500.0	6,261.6	6,757.8	6,261.6	33.1	48.3	44.08		126.5	2,258.6	1,852.3	1,783.2	69.10	26.806	
6,600.0	6,361.6	6,857.8	6,361.6	33.1	48.3	44.08		126.5	2,258.6	1,852.3	1,783.0	69.26	26.745	
6,700.0	6,461.6	6,957.8	6,461.6	33.2	48.4	44.08		126.5	2,258.6	1,852.3	1,782.8	69.42	26.683	
6,800.0	6,561.6	7,057.8	6,561.6	33.3	48.5	44.08		126.5	2,258.6	1,852.3	1,782.7	69.58	26.621	
6,900.0	6,661.6	7,157.8	6,661.6	33.4	48.5	44.08		126.5	2,258.6	1,852.3	1,782.5	69.74	26.559	
6,954.5	6,716.1	7,212.2	6,716.1	33.4	48.6	44.08		126.5	2,258.6	1,852.3	1,782.4	69.83	26.524	
6,994.4	6,756.0	7,232.1	6,736.0	33.5	48.6	44.08		126.5	2,258.6	1,852.4	1,782.5	69.88	26.507	

Company:	Great Western	Local Co-ordinate Reference:	Well Peterson CX GH 30-14D
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 30-14D	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 30-14D
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 30-14D
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 30-14D	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 30-14D
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°

