

Well Name: Peterson CX GH 30-40D

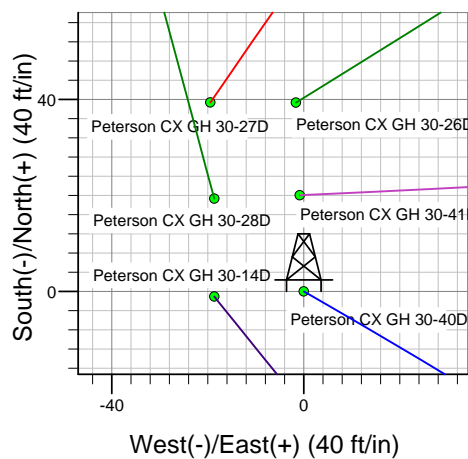
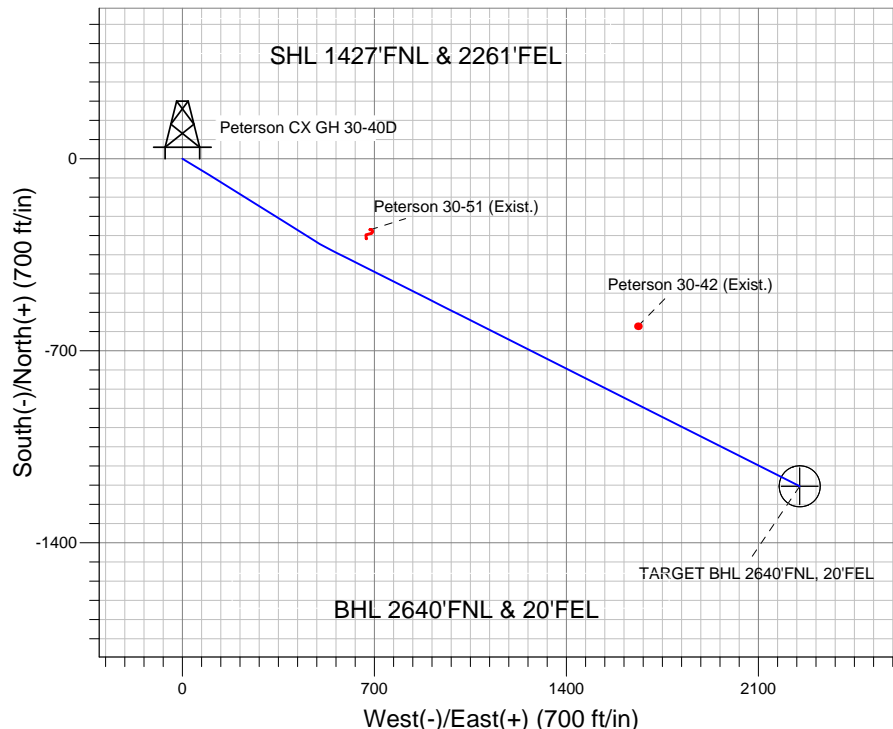
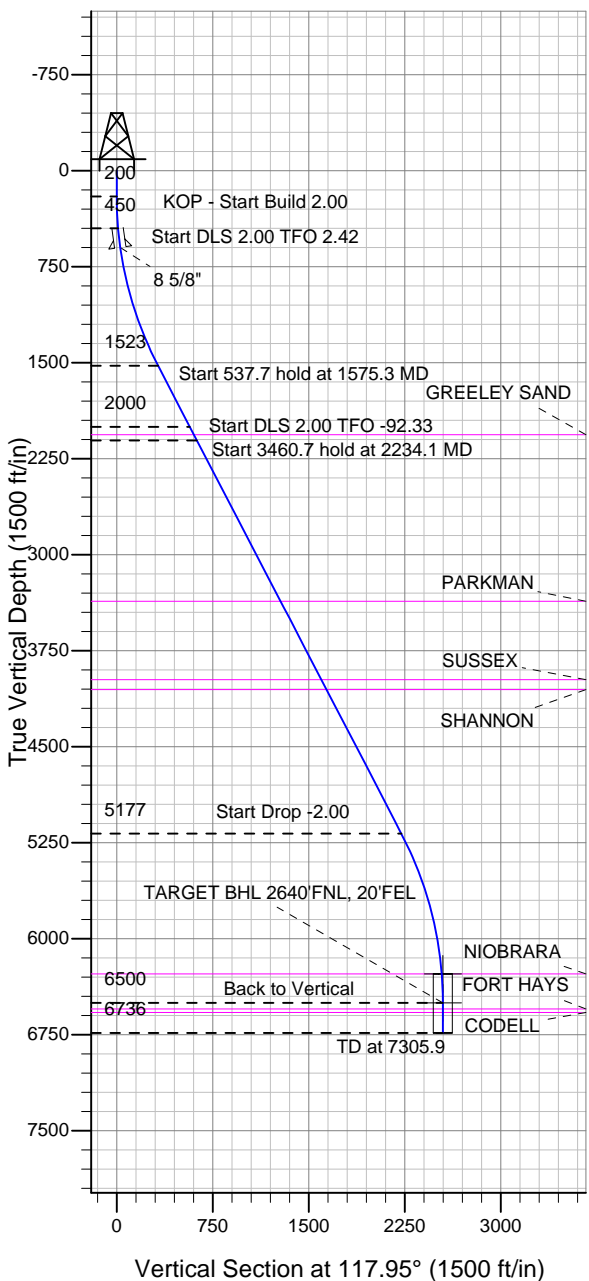
Surface Location: Peterson CX GH 30-41D Pad Sec.30-T5N-R63W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4574.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1380635.05	3284791.13	40.373739	-104.477822	

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

Great Western



Peterson CX GH 30-41D Pad Sec.30-T5N-R63W
Peterson CX GH 30-40D
Plan #1 (7-25-12)
9:19, 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 2640'FNL & 20'FEL	6274.0	-1194.1	2250.9	40.370461	-104.469744	Circle (Radius: 75.0)
TARGET BHL 2640'FNL, 20'FEL	6500.0	-1194.1	2250.9	40.370461	-104.469744	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	450.0	5.00	120.00	449.7	-5.5	9.4	2.00	120.00	10.9	
4	1575.3	27.50	122.01	1523.1	-169.8	275.7	2.00	2.42	323.1	
5	2113.0	27.50	122.01	2000.0	-301.4	486.2	0.00	0.00	570.8	
6	2234.1	27.50	116.76	2107.5	-328.8	534.9	2.00	-92.33	626.6	
7	5694.8	27.50	116.76	5177.1	-1048.3	1961.8	0.00	0.00	2224.3	
8	7069.9	0.00	0.00	6500.0	-1194.1	2250.9	2.00	180.00	2548.0	TARGET BHL 2640'FNL, 20'FEL
9	7305.9	0.00	0.00	6736.0	-1194.1	2250.9	0.00	0.00	2548.0	



Directional

Great Western

SEC.30-T5N-R63W

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

Peterson CX GH 30-40D

Wellbore #1

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

Standard Planning Report

31 July, 2012

Database:	Landmark	Local Co-ordinate Reference:	Well Peterson CX GH 30-40D
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 30-40D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-25-12)		

Project	SEC.30-T5N-R63W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

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

Well	Peterson CX GH 30-40D					
Well Position	+N-S	-20.1 ft	Northing:	1,380,635.05 ft	Latitude:	40.373739
	+E-W	0.8 ft	Easting:	3,284,791.13 ft	Longitude:	-104.477822
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,574.0 ft

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

Design	Plan #1 (7-25-12)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	117.95

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	
450.0	5.00	120.00	449.7	-5.5	9.4	2.00	2.00	0.00	120.00	
1,575.3	27.50	122.01	1,523.1	-169.8	275.7	2.00	2.00	0.18	2.42	
2,113.0	27.50	122.01	2,000.0	-301.4	486.2	0.00	0.00	0.00	0.00	
2,234.1	27.50	116.76	2,107.5	-328.8	534.9	2.00	0.00	-4.33	-92.33	
5,694.8	27.50	116.76	5,177.1	-1,048.3	1,961.8	0.00	0.00	0.00	0.00	
7,069.9	0.00	0.00	6,500.0	-1,194.1	2,250.9	2.00	-2.00	0.00	180.00	TARGET BHL 264C
7,305.9	0.00	0.00	6,736.0	-1,194.1	2,250.9	0.00	0.00	0.00	0.00	

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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 30-40D	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	120.00	240.0	-0.1	0.2	0.3	2.00	2.00	0.00
280.0	1.60	120.00	280.0	-0.6	1.0	1.1	2.00	2.00	0.00
320.0	2.40	120.00	320.0	-1.3	2.2	2.5	2.00	2.00	0.00
360.0	3.20	120.00	359.9	-2.2	3.9	4.5	2.00	2.00	0.00
400.0	4.00	120.00	399.8	-3.5	6.0	7.0	2.00	2.00	0.00
440.0	4.80	120.00	439.7	-5.0	8.7	10.0	2.00	2.00	0.00
450.0	5.00	120.00	449.7	-5.5	9.4	10.9	2.00	2.00	0.00
Start DLS 2.00 TFO 2.42									
480.0	5.60	120.26	479.6	-6.8	11.8	13.7	2.00	2.00	0.87
520.0	6.40	120.53	519.3	-9.0	15.4	17.8	2.00	2.00	0.68
560.0	7.20	120.74	559.1	-11.4	19.5	22.6	2.00	2.00	0.53
600.0	8.00	120.91	598.7	-14.1	24.1	27.9	2.00	2.00	0.42
601.3	8.02	120.92	600.0	-14.2	24.2	28.0	2.00	2.00	0.38
8 5/8"									
640.0	8.80	121.05	638.3	-17.1	29.1	33.7	2.00	2.00	0.35
680.0	9.60	121.16	677.8	-20.4	34.5	40.1	2.00	2.00	0.29
720.0	10.40	121.26	717.2	-24.0	40.5	47.0	2.00	2.00	0.24
760.0	11.20	121.35	756.4	-27.9	46.9	54.5	2.00	2.00	0.21
800.0	12.00	121.42	795.6	-32.1	53.7	62.5	2.00	2.00	0.18
840.0	12.80	121.48	834.7	-36.6	61.1	71.1	2.00	2.00	0.16
880.0	13.60	121.54	873.6	-41.3	68.9	80.2	2.00	2.00	0.14
920.0	14.40	121.59	912.4	-46.4	77.1	89.9	2.00	2.00	0.13
960.0	15.20	121.64	951.1	-51.7	85.8	100.0	2.00	2.00	0.11
1,000.0	16.00	121.68	989.6	-57.4	95.0	110.8	2.00	2.00	0.10
1,040.0	16.80	121.71	1,028.0	-63.3	104.6	122.0	2.00	2.00	0.09
1,080.0	17.60	121.75	1,066.2	-69.5	114.6	133.8	2.00	2.00	0.08
1,120.0	18.40	121.78	1,104.3	-76.0	125.1	146.2	2.00	2.00	0.08
1,160.0	19.20	121.81	1,142.1	-82.8	136.1	159.0	2.00	2.00	0.07
1,200.0	20.00	121.83	1,179.8	-89.9	147.5	172.4	2.00	2.00	0.07
1,240.0	20.80	121.86	1,217.3	-97.3	159.3	186.3	2.00	2.00	0.06
1,280.0	21.60	121.88	1,254.6	-104.9	171.6	200.8	2.00	2.00	0.06
1,320.0	22.40	121.90	1,291.7	-112.8	184.3	215.7	2.00	2.00	0.05
1,360.0	23.20	121.92	1,328.6	-121.0	197.5	231.2	2.00	2.00	0.05
1,400.0	24.00	121.94	1,365.2	-129.5	211.1	247.1	2.00	2.00	0.05
1,440.0	24.80	121.96	1,401.7	-138.2	225.1	263.6	2.00	2.00	0.04
1,480.0	25.60	121.97	1,437.8	-147.2	239.5	280.6	2.00	2.00	0.04
1,520.0	26.40	121.99	1,473.8	-156.5	254.4	298.1	2.00	2.00	0.04
1,560.0	27.20	122.00	1,509.5	-166.1	269.7	316.1	2.00	2.00	0.04
1,575.3	27.50	122.01	1,523.1	-169.8	275.7	323.1	2.00	2.00	0.03
Start 537.7 hold at 1575.3 MD									
1,600.0	27.50	122.01	1,545.0	-175.8	285.3	334.5	0.00	0.00	0.00
1,640.0	27.50	122.01	1,580.5	-185.6	301.0	352.9	0.00	0.00	0.00
1,680.0	27.50	122.01	1,616.0	-195.4	316.7	371.3	0.00	0.00	0.00
1,720.0	27.50	122.01	1,651.4	-205.2	332.3	389.7	0.00	0.00	0.00
1,760.0	27.50	122.01	1,686.9	-215.0	348.0	408.2	0.00	0.00	0.00
1,800.0	27.50	122.01	1,722.4	-224.8	363.7	426.6	0.00	0.00	0.00

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Site:	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	North Reference:	True
Well:	Peterson CX GH 30-40D	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)
1,840.0	27.50	122.01	1,757.9	-234.6	379.3	445.0	0.00	0.00	0.00
1,880.0	27.50	122.01	1,793.4	-244.4	395.0	463.4	0.00	0.00	0.00
1,920.0	27.50	122.01	1,828.8	-254.2	410.6	481.9	0.00	0.00	0.00
1,960.0	27.50	122.01	1,864.3	-264.0	426.3	500.3	0.00	0.00	0.00
2,000.0	27.50	122.01	1,899.8	-273.8	442.0	518.7	0.00	0.00	0.00
2,040.0	27.50	122.01	1,935.3	-283.5	457.6	537.1	0.00	0.00	0.00
2,080.0	27.50	122.01	1,970.8	-293.3	473.3	555.6	0.00	0.00	0.00
2,113.0	27.50	122.01	2,000.0	-301.4	486.2	570.8	0.00	0.00	0.00
Start DLS 2.00 TFO -92.33									
2,120.0	27.50	121.70	2,006.2	-303.1	489.0	574.0	2.00	-0.08	-4.33
2,160.0	27.48	119.97	2,041.7	-312.6	504.8	592.4	2.00	-0.05	-4.33
2,182.9	27.48	118.98	2,062.0	-317.8	514.0	603.0	2.00	0.00	-4.33
GREELEY SAND									
2,200.0	27.48	118.24	2,077.2	-321.6	520.9	610.9	2.00	0.02	-4.33
2,234.1	27.50	116.76	2,107.5	-328.8	534.9	626.6	2.00	0.06	-4.33
Start 3460.7 hold at 2234.1 MD									
2,240.0	27.50	116.76	2,112.7	-330.0	537.3	629.3	0.00	0.00	0.00
2,280.0	27.50	116.76	2,148.2	-338.4	553.8	647.8	0.00	0.00	0.00
2,320.0	27.50	116.76	2,183.7	-346.7	570.3	666.3	0.00	0.00	0.00
2,360.0	27.50	116.76	2,219.1	-355.0	586.8	684.7	0.00	0.00	0.00
2,400.0	27.50	116.76	2,254.6	-363.3	603.3	703.2	0.00	0.00	0.00
2,440.0	27.50	116.76	2,290.1	-371.6	619.8	721.7	0.00	0.00	0.00
2,480.0	27.50	116.76	2,325.6	-379.9	636.3	740.1	0.00	0.00	0.00
2,520.0	27.50	116.76	2,361.1	-388.3	652.8	758.6	0.00	0.00	0.00
2,560.0	27.50	116.76	2,396.5	-396.6	669.3	777.1	0.00	0.00	0.00
2,600.0	27.50	116.76	2,432.0	-404.9	685.8	795.5	0.00	0.00	0.00
2,640.0	27.50	116.76	2,467.5	-413.2	702.3	814.0	0.00	0.00	0.00
2,680.0	27.50	116.76	2,503.0	-421.5	718.8	832.5	0.00	0.00	0.00
2,720.0	27.50	116.76	2,538.5	-429.8	735.2	850.9	0.00	0.00	0.00
2,760.0	27.50	116.76	2,573.9	-438.2	751.7	869.4	0.00	0.00	0.00
2,800.0	27.50	116.76	2,609.4	-446.5	768.2	887.9	0.00	0.00	0.00
2,840.0	27.50	116.76	2,644.9	-454.8	784.7	906.4	0.00	0.00	0.00
2,880.0	27.50	116.76	2,680.4	-463.1	801.2	924.8	0.00	0.00	0.00
2,920.0	27.50	116.76	2,715.9	-471.4	817.7	943.3	0.00	0.00	0.00
2,960.0	27.50	116.76	2,751.3	-479.7	834.2	961.8	0.00	0.00	0.00
3,000.0	27.50	116.76	2,786.8	-488.1	850.7	980.2	0.00	0.00	0.00
3,040.0	27.50	116.76	2,822.3	-496.4	867.2	998.7	0.00	0.00	0.00
3,080.0	27.50	116.76	2,857.8	-504.7	883.7	1,017.2	0.00	0.00	0.00
3,120.0	27.50	116.76	2,893.3	-513.0	900.2	1,035.6	0.00	0.00	0.00
3,160.0	27.50	116.76	2,928.7	-521.3	916.7	1,054.1	0.00	0.00	0.00
3,200.0	27.50	116.76	2,964.2	-529.6	933.2	1,072.6	0.00	0.00	0.00
3,240.0	27.50	116.76	2,999.7	-538.0	949.7	1,091.0	0.00	0.00	0.00
3,280.0	27.50	116.76	3,035.2	-546.3	966.1	1,109.5	0.00	0.00	0.00
3,320.0	27.50	116.76	3,070.7	-554.6	982.6	1,128.0	0.00	0.00	0.00
3,360.0	27.50	116.76	3,106.1	-562.9	999.1	1,146.4	0.00	0.00	0.00
3,400.0	27.50	116.76	3,141.6	-571.2	1,015.6	1,164.9	0.00	0.00	0.00
3,440.0	27.50	116.76	3,177.1	-579.5	1,032.1	1,183.4	0.00	0.00	0.00
3,480.0	27.50	116.76	3,212.6	-587.9	1,048.6	1,201.8	0.00	0.00	0.00
3,520.0	27.50	116.76	3,248.1	-596.2	1,065.1	1,220.3	0.00	0.00	0.00
3,560.0	27.50	116.76	3,283.5	-604.5	1,081.6	1,238.8	0.00	0.00	0.00
3,600.0	27.50	116.76	3,319.0	-612.8	1,098.1	1,257.2	0.00	0.00	0.00
3,640.0	27.50	116.76	3,354.5	-621.1	1,114.6	1,275.7	0.00	0.00	0.00
3,648.5	27.50	116.76	3,362.0	-622.9	1,118.1	1,279.6	0.00	0.00	0.00

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Site:	Peterson CX GH 30-41D Pad Sec.30-T5N-R63W	North Reference:	True
Well:	Peterson CX GH 30-40D	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)
PARKMAN									
3,680.0	27.50	116.76	3,390.0	-629.4	1,131.1	1,294.2	0.00	0.00	0.00
3,720.0	27.50	116.76	3,425.5	-637.8	1,147.6	1,312.6	0.00	0.00	0.00
3,760.0	27.50	116.76	3,460.9	-646.1	1,164.1	1,331.1	0.00	0.00	0.00
3,800.0	27.50	116.76	3,496.4	-654.4	1,180.6	1,349.6	0.00	0.00	0.00
3,840.0	27.50	116.76	3,531.9	-662.7	1,197.0	1,368.0	0.00	0.00	0.00
3,880.0	27.50	116.76	3,567.4	-671.0	1,213.5	1,386.5	0.00	0.00	0.00
3,920.0	27.50	116.76	3,602.9	-679.3	1,230.0	1,405.0	0.00	0.00	0.00
3,960.0	27.50	116.76	3,638.3	-687.7	1,246.5	1,423.4	0.00	0.00	0.00
4,000.0	27.50	116.76	3,673.8	-696.0	1,263.0	1,441.9	0.00	0.00	0.00
4,040.0	27.50	116.76	3,709.3	-704.3	1,279.5	1,460.4	0.00	0.00	0.00
4,080.0	27.50	116.76	3,744.8	-712.6	1,296.0	1,478.8	0.00	0.00	0.00
4,120.0	27.50	116.76	3,780.3	-720.9	1,312.5	1,497.3	0.00	0.00	0.00
4,160.0	27.50	116.76	3,815.7	-729.2	1,329.0	1,515.8	0.00	0.00	0.00
4,200.0	27.50	116.76	3,851.2	-737.5	1,345.5	1,534.2	0.00	0.00	0.00
4,240.0	27.50	116.76	3,886.7	-745.9	1,362.0	1,552.7	0.00	0.00	0.00
4,280.0	27.50	116.76	3,922.2	-754.2	1,378.5	1,571.2	0.00	0.00	0.00
4,320.0	27.50	116.76	3,957.7	-762.5	1,395.0	1,589.6	0.00	0.00	0.00
4,340.7	27.50	116.76	3,976.0	-766.8	1,403.5	1,599.2	0.00	0.00	0.00
SUSSEX									
4,360.0	27.50	116.76	3,993.1	-770.8	1,411.5	1,608.1	0.00	0.00	0.00
4,400.0	27.50	116.76	4,028.6	-779.1	1,427.9	1,626.6	0.00	0.00	0.00
4,427.5	27.50	116.76	4,053.0	-784.8	1,439.3	1,639.3	0.00	0.00	0.00
SHANNON									
4,440.0	27.50	116.76	4,064.1	-787.4	1,444.4	1,645.0	0.00	0.00	0.00
4,480.0	27.50	116.76	4,099.6	-795.8	1,460.9	1,663.5	0.00	0.00	0.00
4,520.0	27.50	116.76	4,135.1	-804.1	1,477.4	1,682.0	0.00	0.00	0.00
4,560.0	27.50	116.76	4,170.5	-812.4	1,493.9	1,700.4	0.00	0.00	0.00
4,600.0	27.50	116.76	4,206.0	-820.7	1,510.4	1,718.9	0.00	0.00	0.00
4,640.0	27.50	116.76	4,241.5	-829.0	1,526.9	1,737.4	0.00	0.00	0.00
4,680.0	27.50	116.76	4,277.0	-837.3	1,543.4	1,755.8	0.00	0.00	0.00
4,720.0	27.50	116.76	4,312.5	-845.7	1,559.9	1,774.3	0.00	0.00	0.00
4,760.0	27.50	116.76	4,347.9	-854.0	1,576.4	1,792.8	0.00	0.00	0.00
4,800.0	27.50	116.76	4,383.4	-862.3	1,592.9	1,811.2	0.00	0.00	0.00
4,840.0	27.50	116.76	4,418.9	-870.6	1,609.4	1,829.7	0.00	0.00	0.00
4,880.0	27.50	116.76	4,454.4	-878.9	1,625.9	1,848.2	0.00	0.00	0.00
4,920.0	27.50	116.76	4,489.9	-887.2	1,642.4	1,866.6	0.00	0.00	0.00
4,960.0	27.50	116.76	4,525.3	-895.6	1,658.8	1,885.1	0.00	0.00	0.00
5,000.0	27.50	116.76	4,560.8	-903.9	1,675.3	1,903.6	0.00	0.00	0.00
5,040.0	27.50	116.76	4,596.3	-912.2	1,691.8	1,922.0	0.00	0.00	0.00
5,080.0	27.50	116.76	4,631.8	-920.5	1,708.3	1,940.5	0.00	0.00	0.00
5,120.0	27.50	116.76	4,667.3	-928.8	1,724.8	1,959.0	0.00	0.00	0.00
5,160.0	27.50	116.76	4,702.7	-937.1	1,741.3	1,977.4	0.00	0.00	0.00
5,200.0	27.50	116.76	4,738.2	-945.5	1,757.8	1,995.9	0.00	0.00	0.00
5,240.0	27.50	116.76	4,773.7	-953.8	1,774.3	2,014.4	0.00	0.00	0.00
5,280.0	27.50	116.76	4,809.2	-962.1	1,790.8	2,032.8	0.00	0.00	0.00
5,320.0	27.50	116.76	4,844.7	-970.4	1,807.3	2,051.3	0.00	0.00	0.00
5,360.0	27.50	116.76	4,880.1	-978.7	1,823.8	2,069.8	0.00	0.00	0.00
5,400.0	27.50	116.76	4,915.6	-987.0	1,840.3	2,088.2	0.00	0.00	0.00
5,440.0	27.50	116.76	4,951.1	-995.4	1,856.8	2,106.7	0.00	0.00	0.00
5,480.0	27.50	116.76	4,986.6	-1,003.7	1,873.3	2,125.2	0.00	0.00	0.00
5,520.0	27.50	116.76	5,022.1	-1,012.0	1,889.7	2,143.6	0.00	0.00	0.00
5,560.0	27.50	116.76	5,057.5	-1,020.3	1,906.2	2,162.1	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Peterson CX GH 30-40D
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 30-40D	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)
5,600.0	27.50	116.76	5,093.0	-1,028.6	1,922.7	2,180.6	0.00	0.00	0.00
5,640.0	27.50	116.76	5,128.5	-1,036.9	1,939.2	2,199.0	0.00	0.00	0.00
5,680.0	27.50	116.76	5,164.0	-1,045.3	1,955.7	2,217.5	0.00	0.00	0.00
5,694.8	27.50	116.76	5,177.1	-1,048.3	1,961.8	2,224.3	0.00	0.00	0.00
Start Drop -2.00									
5,720.0	27.00	116.76	5,199.5	-1,053.5	1,972.1	2,235.9	2.00	-2.00	0.00
5,760.0	26.20	116.76	5,235.3	-1,061.6	1,988.1	2,253.8	2.00	-2.00	0.00
5,800.0	25.40	116.76	5,271.3	-1,069.4	2,003.7	2,271.2	2.00	-2.00	0.00
5,840.0	24.60	116.76	5,307.5	-1,077.0	2,018.7	2,288.1	2.00	-2.00	0.00
5,880.0	23.80	116.76	5,344.0	-1,084.4	2,033.4	2,304.5	2.00	-2.00	0.00
5,920.0	23.00	116.76	5,380.7	-1,091.6	2,047.6	2,320.4	2.00	-2.00	0.00
5,960.0	22.20	116.76	5,417.7	-1,098.5	2,061.3	2,335.7	2.00	-2.00	0.00
6,000.0	21.40	116.76	5,454.8	-1,105.2	2,074.6	2,350.6	2.00	-2.00	0.00
6,040.0	20.60	116.76	5,492.1	-1,111.6	2,087.4	2,364.9	2.00	-2.00	0.00
6,080.0	19.80	116.76	5,529.7	-1,117.9	2,099.7	2,378.7	2.00	-2.00	0.00
6,120.0	19.00	116.76	5,567.4	-1,123.8	2,111.5	2,392.0	2.00	-2.00	0.00
6,160.0	18.20	116.76	5,605.3	-1,129.6	2,122.9	2,404.7	2.00	-2.00	0.00
6,200.0	17.40	116.76	5,643.4	-1,135.1	2,133.9	2,417.0	2.00	-2.00	0.00
6,240.0	16.60	116.76	5,681.7	-1,140.3	2,144.3	2,428.7	2.00	-2.00	0.00
6,280.0	15.80	116.76	5,720.1	-1,145.4	2,154.3	2,439.8	2.00	-2.00	0.00
6,320.0	15.00	116.76	5,758.6	-1,150.2	2,163.7	2,450.4	2.00	-2.00	0.00
6,360.0	14.20	116.76	5,797.3	-1,154.7	2,172.7	2,460.5	2.00	-2.00	0.00
6,400.0	13.40	116.76	5,836.2	-1,159.0	2,181.3	2,470.1	2.00	-2.00	0.00
6,440.0	12.60	116.76	5,875.2	-1,163.0	2,189.3	2,479.0	2.00	-2.00	0.00
6,480.0	11.80	116.76	5,914.3	-1,166.8	2,196.8	2,487.5	2.00	-2.00	0.00
6,520.0	11.00	116.76	5,953.5	-1,170.4	2,203.9	2,495.4	2.00	-2.00	0.00
6,560.0	10.20	116.76	5,992.8	-1,173.7	2,210.5	2,502.8	2.00	-2.00	0.00
6,600.0	9.40	116.76	6,032.2	-1,176.8	2,216.5	2,509.6	2.00	-2.00	0.00
6,640.0	8.60	116.76	6,071.7	-1,179.6	2,222.1	2,515.8	2.00	-2.00	0.00
6,680.0	7.80	116.76	6,111.3	-1,182.2	2,227.2	2,521.5	2.00	-2.00	0.00
6,720.0	7.00	116.76	6,151.0	-1,184.5	2,231.8	2,526.7	2.00	-2.00	0.00
6,760.0	6.20	116.76	6,190.7	-1,186.6	2,235.9	2,531.3	2.00	-2.00	0.00
6,800.0	5.40	116.76	6,230.5	-1,188.4	2,239.5	2,535.3	2.00	-2.00	0.00
6,840.0	4.60	116.76	6,270.3	-1,189.9	2,242.7	2,538.8	2.00	-2.00	0.00
6,843.7	4.52	116.76	6,274.0	-1,190.1	2,242.9	2,539.1	2.00	-2.00	0.00
NIOBRARA									
6,880.0	3.80	116.76	6,310.2	-1,191.3	2,245.3	2,541.7	2.00	-2.00	0.00
6,920.0	3.00	116.76	6,350.2	-1,192.3	2,247.4	2,544.1	2.00	-2.00	0.00
6,960.0	2.20	116.76	6,390.1	-1,193.1	2,249.0	2,545.9	2.00	-2.00	0.00
7,000.0	1.40	116.76	6,430.1	-1,193.7	2,250.1	2,547.2	2.00	-2.00	0.00
7,040.0	0.60	116.76	6,470.1	-1,194.0	2,250.7	2,547.8	2.00	-2.00	0.00
7,069.9	0.00	0.00	6,500.0	-1,194.1	2,250.9	2,548.0	2.00	-2.00	0.00
Back to Vertical									
7,080.0	0.00	0.00	6,510.1	-1,194.1	2,250.9	2,548.0	0.00	0.00	0.00
7,118.9	0.00	0.00	6,549.0	-1,194.1	2,250.9	2,548.0	0.00	0.00	0.00
FORT HAYS									
7,120.0	0.00	0.00	6,550.1	-1,194.1	2,250.9	2,548.0	0.00	0.00	0.00
7,145.9	0.00	0.00	6,576.0	-1,194.1	2,250.9	2,548.0	0.00	0.00	0.00
CODELL									
7,160.0	0.00	0.00	6,590.1	-1,194.1	2,250.9	2,548.0	0.00	0.00	0.00
7,200.0	0.00	0.00	6,630.1	-1,194.1	2,250.9	2,548.0	0.00	0.00	0.00
7,240.0	0.00	0.00	6,670.1	-1,194.1	2,250.9	2,548.0	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Peterson CX GH 30-40D
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 30-40D	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)	
7,280.0	0.00	0.00	6,710.1	-1,194.1	2,250.9	2,548.0	0.00	0.00	0.00	
7,305.9	0.00	0.00	6,736.0	-1,194.1	2,250.9	2,548.0	0.00	0.00	0.00	

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 (°)	
2,182.9	2,062.0	GREELEY SAND		0.00		
3,648.5	3,362.0	PARKMAN		0.00		
4,340.7	3,976.0	SUSSEX		0.00		
4,427.5	4,053.0	SHANNON		0.00		
6,843.7	6,274.0	NIOBRARA		0.00		
7,118.9	6,549.0	FORT HAYS		0.00		
7,145.9	6,576.0	CODELL		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
200.0	200.0	0.0	0.0	KOP - Start Build 2.00	
450.0	449.7	-5.5	9.4	Start DLS 2.00 TFO 2.42	
1,575.3	1,523.1	-169.8	275.7	Start 537.7 hold at 1575.3 MD	
2,113.0	2,000.0	-301.4	486.2	Start DLS 2.00 TFO -92.33	
2,234.1	2,107.5	-328.8	534.9	Start 3460.7 hold at 2234.1 MD	
5,694.8	5,177.1	-1,048.3	1,961.8	Start Drop -2.00	
7,069.9	6,500.0	-1,194.1	2,250.9	Back to Vertical	
7,305.9	6,736.0	-1,194.1	2,250.9	TD at 7305.9	



Directional

Great Western

SEC.30-T5N-R63W

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

Peterson CX GH 30-40D

Wellbore #1

Plan #1 (7-25-12)

Anticollision Report

31 July, 2012

Company:	Great Western	Local Co-ordinate Reference:	Well Peterson CX GH 30-40D
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 30-40D	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 30-42 (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 (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		
1,575.3	1,523.1	1,523.1	1,523.1	7.3	30.5	-16.09	-610.9	1,661.2	1,454.1	1,422.5	31.59	46.023		
1,600.0	1,545.0	1,545.0	1,545.0	7.6	30.9	-16.21	-610.9	1,661.2	1,443.0	1,410.9	32.11	44.944		
1,700.0	1,633.7	1,633.7	1,633.7	8.6	32.7	-16.74	-610.9	1,661.2	1,398.3	1,364.1	34.19	40.895		
1,800.0	1,722.4	1,722.4	1,722.4	9.6	34.4	-17.29	-610.9	1,661.2	1,353.8	1,317.5	36.30	37.292		
1,900.0	1,811.1	1,811.1	1,811.1	10.5	36.2	-17.89	-610.9	1,661.2	1,309.3	1,270.9	38.43	34.068		
2,000.0	1,899.8	1,899.8	1,899.8	11.5	38.0	-18.52	-610.9	1,661.2	1,265.0	1,224.4	40.59	31.167		
2,100.0	1,988.5	1,988.5	1,988.5	12.5	39.8	-19.20	-610.9	1,661.2	1,220.8	1,178.0	42.77	28.545		
2,113.0	2,000.0	2,000.0	2,000.0	12.7	40.0	-19.30	-610.9	1,661.2	1,215.1	1,172.0	43.05	28.223		
2,200.0	2,077.2	2,077.2	2,077.2	13.5	41.5	-15.70	-610.9	1,661.2	1,176.4	1,131.8	44.64	26.355		
2,234.1	2,107.5	2,107.5	2,107.5	13.8	42.1	-14.26	-610.9	1,661.2	1,161.1	1,115.8	45.23	25.668		
2,300.0	2,165.9	2,165.9	2,165.9	14.4	43.3	-14.63	-610.9	1,661.2	1,131.4	1,084.8	46.63	24.266		
2,400.0	2,254.6	2,254.6	2,254.6	15.4	45.1	-15.24	-610.9	1,661.2	1,086.5	1,037.7	48.77	22.276		
2,500.0	2,343.3	2,343.3	2,343.3	16.4	46.9	-15.91	-610.9	1,661.2	1,041.7	990.7	50.95	20.445		
2,600.0	2,432.0	2,432.0	2,432.0	17.4	48.6	-16.63	-610.9	1,661.2	996.9	943.8	53.15	18.756		
2,700.0	2,520.7	2,520.7	2,520.7	18.4	50.4	-17.41	-610.9	1,661.2	952.4	897.0	55.39	17.193		
2,800.0	2,609.4	2,609.4	2,609.4	19.4	52.2	-18.28	-610.9	1,661.2	908.0	850.3	57.67	15.743		
2,900.0	2,698.1	2,698.1	2,698.1	20.4	54.0	-19.23	-610.9	1,661.2	863.8	803.8	60.00	14.396		
3,000.0	2,786.8	2,786.8	2,786.8	21.5	55.7	-20.27	-610.9	1,661.2	819.8	757.4	62.38	13.141		
3,100.0	2,875.5	2,875.5	2,875.5	22.5	57.5	-21.44	-610.9	1,661.2	776.0	711.2	64.83	11.969		
3,200.0	2,964.2	2,964.2	2,964.2	23.5	59.3	-22.74	-610.9	1,661.2	732.6	665.2	67.36	10.875		
3,300.0	3,052.9	3,052.9	3,052.9	24.5	61.1	-24.20	-610.9	1,661.2	689.5	619.5	69.98	9.852		
3,400.0	3,141.6	3,141.6	3,141.6	25.5	62.8	-25.84	-610.9	1,661.2	646.8	574.1	72.72	8.894		
3,500.0	3,230.3	3,230.3	3,230.3	26.5	64.6	-27.70	-610.9	1,661.2	604.6	529.0	75.60	7.998		
3,600.0	3,319.0	3,319.0	3,319.0	27.5	66.4	-29.83	-610.9	1,661.2	563.1	484.5	78.64	7.161		
3,700.0	3,407.7	3,407.7	3,407.7	28.6	68.2	-32.27	-610.9	1,661.2	522.4	440.5	81.88	6.380		
3,800.0	3,496.4	3,496.4	3,496.4	29.6	69.9	-35.09	-610.9	1,661.2	482.6	397.3	85.36	5.654		
3,900.0	3,585.1	3,585.1	3,585.1	30.6	71.7	-38.37	-610.9	1,661.2	444.1	355.0	89.12	4.983		
4,000.0	3,673.8	3,673.8	3,673.8	31.6	73.5	-42.21	-610.9	1,661.2	407.2	314.0	93.20	4.369		
4,100.0	3,762.5	3,762.5	3,762.5	32.6	75.3	-46.71	-610.9	1,661.2	372.3	274.7	97.63	3.814		
4,200.0	3,851.2	3,851.2	3,851.2	33.6	77.0	-51.99	-610.9	1,661.2	340.2	237.8	102.39	3.322		
4,300.0	3,939.9	3,939.9	3,939.9	34.7	78.8	-58.16	-610.9	1,661.2	311.6	204.2	107.42	2.901		
4,400.0	4,028.6	4,028.6	4,028.6	35.7	80.6	-65.27	-610.9	1,661.2	287.6	175.1	112.51	2.556		
4,500.0	4,117.3	4,117.3	4,117.3	36.7	82.3	-73.30	-610.9	1,661.2	269.5	152.1	117.35	2.296		
4,600.0	4,206.0	4,206.0	4,206.0	37.7	84.1	-82.05	-610.9	1,661.2	258.4	136.9	121.50	2.127		
4,686.9	4,283.1	4,283.1	4,283.1	38.6	85.7	-90.00	-610.9	1,661.2	255.3	131.0	124.23	2.055 CC		
4,700.0	4,294.7	4,294.7	4,294.7	38.7	85.9	-91.20	-610.9	1,661.2	255.3	130.8	124.56	2.050 ES, SF		
4,800.0	4,383.4	4,383.4	4,383.4	39.7	87.7	-100.28	-610.9	1,661.2	260.5	134.2	126.34	2.062		
4,900.0	4,472.1	4,472.1	4,472.1	40.8	89.4	-108.87	-610.9	1,661.2	273.6	146.6	126.97	2.154		
5,000.0	4,560.8	4,560.8	4,560.8	41.8	91.2	-116.67	-610.9	1,661.2	293.3	166.5	126.80	2.313		
5,100.0	4,649.5	4,649.5	4,649.5	42.8	93.0	-123.53	-610.9	1,661.2	318.6	192.4	126.21	2.525		
5,200.0	4,738.2	4,738.2	4,738.2	43.8	94.8	-129.46	-610.9	1,661.2	348.2	222.7	125.53	2.774		
5,300.0	4,826.9	4,826.9	4,826.9	44.8	96.5	-134.53	-610.9	1,661.2	381.2	256.2	124.97	3.050		
5,400.0	4,915.6	4,915.6	4,915.6	45.9	98.3	-138.85	-610.9	1,661.2	416.6	292.0	124.63	3.343		
5,500.0	5,004.3	5,004.3	5,004.3	46.9	100.1	-142.53	-610.9	1,661.2	454.0	329.4	124.54	3.645		
5,600.0	5,093.0	5,093.0	5,093.0	47.9	101.9	-145.68	-610.9	1,661.2	492.9	368.1	124.71	3.952		
5,694.8	5,177.1	5,177.1	5,177.1	48.9	103.5	-148.27	-610.9	1,661.2	530.8	405.7	125.09	4.243		
5,700.0	5,181.7	5,181.7	5,181.7	48.9	103.6	-148.42	-610.9	1,661.2	532.9	407.7	125.16	4.258		
5,800.0	5,271.3	5,271.3	5,271.3	49.7	105.4	-151.12	-610.9	1,661.2	572.3	445.6	126.69	4.517		
5,900.0	5,362.3	5,362.3	5,362.3	50.4	107.2	-153.32	-610.9	1,661.2	609.6	481.0	128.60	4.740		
6,000.0	5,454.8	5,454.8	5,454.8	51.1	109.1	-155.14	-610.9	1,661.2	644.4	513.6	130.77	4.928		
6,100.0	5,548.5	5,548.5	5,548.5	51.7	111.0	-156.64	-610.9	1,661.2	676.5	543.4	133.11	5.082		

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 30-40D
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 30-40D	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 30-42 (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)						
6,200.0	5,643.4	5,643.4	5,643.4	52.3	112.9	-157.88	-610.9	1,661.2	705.8	570.3	135.56	5.207					
6,300.0	5,739.3	5,739.3	5,739.3	52.8	114.8	-158.90	-610.9	1,661.2	732.2	594.2	138.07	5.303					
6,400.0	5,836.2	5,836.2	5,836.2	53.2	116.7	-159.75	-610.9	1,661.2	755.6	615.0	140.58	5.375					
6,500.0	5,933.9	5,933.9	5,933.9	53.6	118.7	-160.43	-610.9	1,661.2	775.8	632.7	143.07	5.423					
6,600.0	6,032.2	6,032.2	6,032.2	53.9	120.6	-160.98	-610.9	1,661.2	792.9	647.4	145.51	5.449					
6,700.0	6,131.1	6,131.1	6,131.1	54.1	122.6	-161.41	-610.9	1,661.2	806.7	658.9	147.87	5.456					
6,800.0	6,230.5	6,230.5	6,230.5	54.3	124.6	-161.73	-610.9	1,661.2	817.3	667.2	150.13	5.444					
6,900.0	6,330.2	6,330.2	6,330.2	54.5	126.6	-161.94	-610.9	1,661.2	824.6	672.3	152.28	5.415					
7,000.0	6,430.1	6,430.1	6,430.1	54.6	128.6	-162.05	-610.9	1,661.2	828.6	674.2	154.32	5.369					
7,069.9	6,500.0	6,500.0	6,500.0	54.6	130.0	-45.32	-610.9	1,661.2	829.4	673.7	155.66	5.328					
7,100.0	6,530.1	6,530.1	6,530.1	54.6	130.6	-45.32	-610.9	1,661.2	829.4	673.1	156.29	5.307					
7,200.0	6,630.1	6,630.1	6,630.1	54.7	132.6	-45.32	-610.9	1,661.2	829.4	671.0	158.40	5.236					
7,305.9	6,736.0	6,736.0	6,736.0	54.7	134.7	-45.32	-610.9	1,661.2	829.4	668.8	160.62	5.163					

Company:	Great Western	Local Co-ordinate Reference:	Well Peterson CX GH 30-40D
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 30-40D	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 30-51 (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							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		
0.0	0.0	0.0	0.0	0.0	0.0	113.41	-290.3	670.6	730.8					
100.0	100.0	99.2	99.2	0.1	0.1	113.42	-290.4	670.6	730.8	730.6	0.22	3,262.003		
200.0	200.0	198.5	198.5	0.3	0.2	113.43	-290.7	670.7	731.0	730.4	0.56	1,304.702		
300.0	300.0	298.7	298.7	0.5	0.4	-6.56	-291.0	670.8	729.4	728.5	0.98	743.861		
400.0	399.8	398.7	398.7	0.8	0.6	-6.61	-291.2	670.9	724.4	723.0	1.40	515.728		
450.0	449.7	448.7	448.6	0.9	0.7	-6.66	-291.3	670.9	720.6	719.0	1.62	444.398		
500.0	499.5	498.5	498.5	1.0	0.8	-7.11	-291.4	670.9	715.9	714.1	1.84	389.154		
600.0	598.7	597.9	597.9	1.3	1.0	-7.76	-291.7	671.0	703.9	701.7	2.28	308.603		
700.0	697.5	697.5	697.5	1.6	1.3	-8.28	-291.8	671.0	688.5	685.8	2.73	252.038		
800.0	795.6	796.5	796.5	2.0	1.5	-8.82	-291.5	671.0	669.6	666.4	3.19	210.026		
900.0	893.1	896.0	896.0	2.5	1.7	-9.41	-290.8	671.0	647.1	643.4	3.66	177.032		
1,000.0	989.6	994.5	994.5	3.0	1.9	-10.10	-289.9	670.7	620.9	616.8	4.13	150.297		
1,100.0	1,085.3	1,089.7	1,089.7	3.6	2.1	-10.89	-288.7	670.4	591.4	586.8	4.62	128.118		
1,200.0	1,179.8	1,183.6	1,183.6	4.2	2.3	-11.86	-287.4	670.2	558.8	553.7	5.12	109.218		
1,300.0	1,273.2	1,276.7	1,276.7	5.0	2.5	-13.06	-285.8	670.1	523.1	517.4	5.64	92.747		
1,400.0	1,365.2	1,368.5	1,368.4	5.8	2.7	-14.56	-284.2	670.0	484.3	478.1	6.20	78.171		
1,500.0	1,455.9	1,459.3	1,459.2	6.6	2.9	-16.45	-282.5	669.9	442.7	435.9	6.80	65.103		
1,575.3	1,523.1	1,526.7	1,526.6	7.3	3.0	-18.21	-281.4	669.7	409.5	402.2	7.30	56.070		
1,600.0	1,545.0	1,548.7	1,548.6	7.6	3.1	-18.77	-281.1	669.6	398.4	390.9	7.49	53.217		
1,700.0	1,633.7	1,636.4	1,636.3	8.6	3.2	-21.32	-279.8	669.1	353.6	345.3	8.28	42.732		
1,800.0	1,722.4	1,723.0	1,722.9	9.6	3.4	-24.51	-278.6	668.9	310.0	300.8	9.18	33.760		
1,900.0	1,811.1	1,810.1	1,810.0	10.5	3.6	-28.70	-277.5	669.2	267.9	257.6	10.27	26.085		
2,000.0	1,899.8	1,898.7	1,898.6	11.5	3.8	-34.28	-276.8	669.7	227.7	216.1	11.62	19.589		
2,100.0	1,988.5	1,987.7	1,987.6	12.5	4.0	-41.80	-276.7	670.1	190.2	176.9	13.34	14.263		
2,113.0	2,000.0	1,999.3	1,999.1	12.7	4.0	-42.96	-276.7	670.2	185.6	172.0	13.59	13.660		
2,200.0	2,077.2	2,076.2	2,076.1	13.5	4.2	-48.13	-276.8	670.7	156.3	141.0	15.32	10.203		
2,234.1	2,107.5	2,106.3	2,106.2	13.8	4.2	-50.90	-276.8	670.9	145.6	129.6	16.05	9.076		
2,300.0	2,165.9	2,164.6	2,164.5	14.4	4.3	-60.57	-276.6	671.5	127.7	110.1	17.62	7.247		
2,400.0	2,254.6	2,253.5	2,253.3	15.4	4.5	-79.29	-276.1	672.5	111.3	91.5	19.82	5.616		
2,445.6	2,295.1	2,294.2	2,294.1	15.9	4.6	-88.85	-276.0	673.1	109.4	89.0	20.43	5.356 CC, ES, SF		
2,500.0	2,343.3	2,342.9	2,342.7	16.4	4.7	-100.19	-275.9	673.8	112.1	91.4	20.67	5.422		
2,600.0	2,432.0	2,432.3	2,432.1	17.4	4.9	-118.41	-275.9	675.4	129.4	109.3	20.07	6.446		
2,700.0	2,520.7	2,521.0	2,520.8	18.4	5.1	-131.75	-275.6	677.1	158.1	139.1	19.04	8.304		
2,800.0	2,609.4	2,609.7	2,609.5	19.4	5.3	-140.97	-274.9	678.9	193.5	175.2	18.24	10.605		
2,900.0	2,698.1	2,699.5	2,699.3	20.4	5.5	-147.46	-274.1	680.8	232.1	214.4	17.77	13.062		
3,000.0	2,786.8	2,789.4	2,789.1	21.5	5.7	-152.14	-273.3	682.8	272.6	255.0	17.59	15.500		
3,100.0	2,875.5	2,879.5	2,879.3	22.5	5.8	-155.67	-272.8	684.9	314.0	296.4	17.59	17.849		
3,200.0	2,964.2	2,969.7	2,969.5	23.5	6.0	-158.44	-272.6	686.9	356.0	338.3	17.73	20.081		
3,300.0	3,052.9	3,057.7	3,057.4	24.5	6.2	-160.63	-272.7	688.6	398.6	380.6	17.96	22.187		
3,400.0	3,141.6	3,144.0	3,143.7	25.5	6.4	-162.39	-272.4	689.8	442.1	423.8	18.27	24.193		
3,500.0	3,230.3	3,230.6	3,230.3	26.5	6.6	-163.85	-271.8	690.6	486.6	467.9	18.64	26.109		
3,600.0	3,319.0	3,318.5	3,318.2	27.5	6.8	-165.10	-271.0	691.1	531.5	512.4	19.04	27.920		
3,700.0	3,407.7	3,406.4	3,406.1	28.6	6.9	-166.16	-270.1	691.6	576.7	557.2	19.46	29.629		
3,800.0	3,496.4	3,496.3	3,496.0	29.6	7.1	-167.09	-269.3	692.0	622.1	602.1	19.92	31.233		
3,900.0	3,585.1	3,586.4	3,586.1	30.6	7.3	-167.91	-268.7	692.5	667.3	646.9	20.39	32.732		
4,000.0	3,673.8	3,674.6	3,674.2	31.6	7.5	-168.61	-268.1	693.1	712.6	691.8	20.87	34.142		
4,100.0	3,762.5	3,762.2	3,761.9	32.6	7.7	-169.22	-267.5	693.6	758.1	736.8	21.37	35.478		
4,200.0	3,851.2	3,848.3	3,848.0	33.6	7.9	-169.75	-266.8	693.9	803.9	782.0	21.87	36.750		
4,300.0	3,939.9	3,933.0	3,932.6	34.7	8.1	-170.22	-265.8	693.9	850.1	827.7	22.39	37.972		
4,400.0	4,028.6	4,018.0	4,017.6	35.7	8.2	-170.65	-264.6	693.6	896.7	873.8	22.91	39.147		
4,500.0	4,117.3	4,105.8	4,105.4	36.7	8.4	-171.03	-263.2	693.3	943.5	920.1	23.44	40.260		

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 30-40D
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 30-40D	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 30-51 (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
4,600.0	4,206.0	4,193.6	4,193.2	37.7	8.6	-171.38	-261.7	693.0	990.4	966.4	23.97	41.319	
4,700.0	4,294.7	4,280.8	4,280.4	38.7	8.8	-171.70	-260.3	692.5	1,037.4	1,012.9	24.50	42.334	
4,800.0	4,383.4	4,367.9	4,367.5	39.7	9.0	-172.02	-259.3	691.7	1,084.4	1,059.4	25.04	43.313	
4,900.0	4,472.1	4,455.9	4,455.5	40.8	9.2	-172.35	-258.5	690.6	1,131.6	1,106.0	25.57	44.254	
5,000.0	4,560.8	4,544.5	4,544.0	41.8	9.3	-172.67	-258.1	689.4	1,178.7	1,152.6	26.10	45.155	
5,100.0	4,649.5	4,634.1	4,633.6	42.8	9.5	-172.98	-258.0	688.0	1,225.9	1,199.2	26.64	46.015	
5,200.0	4,738.2	4,725.7	4,725.3	43.8	9.7	-173.29	-258.2	686.6	1,272.8	1,245.6	27.18	46.827	
5,300.0	4,826.9	4,817.6	4,817.1	44.8	9.9	-173.59	-258.8	685.3	1,319.5	1,291.8	27.72	47.596	
5,400.0	4,915.6	4,909.8	4,909.3	45.9	10.1	-173.85	-259.0	684.4	1,366.0	1,337.7	28.27	48.315	
5,500.0	5,004.3	5,002.2	5,001.8	46.9	10.3	-174.05	-258.8	684.3	1,412.3	1,383.4	28.83	48.986	
5,600.0	5,093.0	5,091.4	5,091.0	47.9	10.5	-174.23	-258.4	684.3	1,458.4	1,429.0	29.39	49.628	
5,694.8	5,177.1	5,176.0	5,175.5	48.9	10.6	-174.39	-258.3	684.3	1,502.1	1,472.2	29.91	50.216	
5,700.0	5,181.7	5,180.6	5,180.2	48.9	10.7	-174.41	-258.3	684.3	1,504.5	1,474.5	29.95	50.236	
5,800.0	5,271.3	5,270.1	5,269.6	49.7	10.8	-174.67	-258.3	684.1	1,548.9	1,518.3	30.60	50.620	
5,900.0	5,362.3	5,361.0	5,360.5	50.4	11.0	-174.88	-258.3	684.0	1,590.1	1,558.9	31.21	50.948	
6,000.0	5,454.8	5,456.6	5,456.1	51.1	11.2	-175.07	-258.1	684.1	1,628.2	1,596.4	31.79	51.216	
6,100.0	5,548.5	5,556.3	5,555.8	51.7	11.4	-175.24	-258.2	684.3	1,662.7	1,630.4	32.33	51.424	
6,200.0	5,643.4	5,651.8	5,651.3	52.3	11.6	-175.38	-258.4	684.8	1,693.7	1,660.8	32.82	51.604	
6,300.0	5,739.3	5,743.9	5,743.4	52.8	11.8	-175.50	-258.5	685.1	1,721.5	1,688.2	33.25	51.768	
6,400.0	5,836.2	5,837.4	5,836.9	53.2	12.0	-175.59	-258.3	685.4	1,746.1	1,712.5	33.64	51.906	
6,500.0	5,933.9	5,932.4	5,931.9	53.6	12.2	-175.67	-258.2	685.4	1,767.6	1,733.6	33.98	52.019	
6,600.0	6,032.2	6,028.1	6,027.7	53.9	12.4	-175.74	-258.2	685.2	1,785.7	1,751.5	34.27	52.112	
6,700.0	6,131.1	6,124.6	6,124.1	54.1	12.6	-175.80	-258.2	684.8	1,800.6	1,766.1	34.51	52.184	
6,800.0	6,230.5	6,224.8	6,224.3	54.3	12.8	-175.85	-258.1	684.4	1,812.2	1,777.5	34.70	52.226	
6,900.0	6,330.2	6,337.2	6,336.7	54.5	13.1	-175.88	-258.1	684.4	1,819.8	1,785.0	34.86	52.197	
7,000.0	6,430.1	6,435.9	6,435.5	54.6	13.3	-175.90	-258.5	684.8	1,823.5	1,788.5	34.95	52.175	
7,069.9	6,500.0	6,500.0	6,499.5	54.6	13.4	-59.15	-258.6	684.6	1,824.4	1,789.4	34.97	52.168	
7,100.0	6,530.1	6,500.0	6,499.5	54.6	13.4	-59.15	-258.6	684.6	1,824.6	1,789.6	35.01	52.121	
7,200.0	6,630.1	6,500.0	6,499.5	54.7	13.4	-59.15	-258.6	684.6	1,829.0	1,793.9	35.13	52.070	
7,305.9	6,736.0	6,500.0	6,499.5	54.7	13.4	-59.15	-258.6	684.6	1,839.6	1,804.4	35.25	52.183	

Company:	Great Western	Local Co-ordinate Reference:	Well Peterson CX GH 30-40D
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 30-40D	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 30-14D - 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	-93.35	-93.35	-1.1	-18.7	18.7	18.7	0.00	N/A	
100.0	100.0	100.0	100.0	0.1	0.1	-93.35	-93.35	-1.1	-18.7	18.7	18.5	0.22	83.198	
200.0	200.0	200.0	200.0	0.3	0.3	-93.35	-93.35	-1.1	-18.7	18.7	18.0	0.67	27.733 CC, ES	
300.0	300.0	300.0	300.0	0.5	0.6	149.36	149.36	-1.1	-18.7	20.2	19.1	1.11	18.149	
400.0	399.8	399.8	399.8	0.8	0.8	155.49	155.49	-1.1	-18.7	24.8	23.3	1.55	15.979	
450.0	449.7	450.0	450.0	0.9	0.9	158.16	158.16	-1.4	-18.4	28.1	26.4	1.77	15.912	
500.0	499.5	500.3	500.3	1.0	1.0	159.39	159.39	-2.5	-17.6	31.6	29.6	1.98	15.974	
600.0	598.7	601.0	600.8	1.3	1.2	160.14	160.14	-6.6	-14.2	39.1	36.7	2.40	16.267	
700.0	697.5	701.8	701.2	1.6	1.4	159.45	159.45	-13.5	-8.7	47.1	44.3	2.86	16.469	
800.0	795.6	802.8	801.5	2.0	1.7	157.93	157.93	-23.1	-0.9	55.7	52.4	3.37	16.558	
900.0	893.1	903.9	901.3	2.5	2.0	155.94	155.94	-35.5	9.1	64.9	61.0	3.93	16.514	
1,000.0	989.6	1,005.2	1,000.7	3.0	2.4	153.69	153.69	-50.7	21.3	74.8	70.2	4.58	16.329	
1,100.0	1,085.3	1,106.5	1,099.4	3.6	2.8	151.32	151.32	-68.6	35.7	85.4	80.1	5.33	16.011	
1,200.0	1,179.8	1,207.9	1,197.3	4.2	3.3	148.91	148.91	-89.2	52.3	96.7	90.5	6.21	15.583	
1,300.0	1,273.2	1,309.4	1,294.2	5.0	3.9	146.53	146.53	-112.6	71.1	108.9	101.7	7.22	15.086	
1,400.0	1,365.2	1,409.1	1,388.7	5.8	4.5	144.58	144.58	-137.4	91.2	122.4	114.1	8.34	14.686	
1,500.0	1,455.9	1,507.8	1,482.1	6.6	5.1	143.79	143.79	-162.1	111.1	138.8	129.3	9.47	14.659 SF	
1,575.3	1,523.1	1,581.7	1,552.1	7.3	5.6	143.79	143.79	-180.6	126.0	152.9	142.6	10.31	14.830	
1,600.0	1,545.0	1,605.9	1,575.0	7.6	5.8	143.92	143.92	-186.7	130.9	157.8	147.2	10.59	14.900	
1,700.0	1,633.7	1,704.0	1,667.9	8.6	6.4	144.36	144.36	-211.2	150.6	177.5	165.8	11.72	15.144	
1,800.0	1,722.4	1,802.0	1,760.7	9.6	7.0	144.71	144.71	-235.8	170.4	197.3	184.5	12.87	15.334	
1,900.0	1,811.1	1,900.0	1,853.5	10.5	7.7	145.00	145.00	-260.3	190.2	217.1	203.1	14.02	15.487	
2,000.0	1,899.8	1,998.0	1,946.3	11.5	8.4	145.24	145.24	-284.8	209.9	236.9	221.7	15.18	15.610	
2,100.0	1,988.5	2,096.0	2,039.1	12.5	9.0	145.44	145.44	-309.4	229.7	256.7	240.4	16.34	15.713	
2,113.0	2,000.0	2,108.7	2,051.1	12.7	9.1	145.47	145.47	-312.6	232.3	259.3	242.8	16.49	15.725	
2,200.0	2,077.2	2,193.9	2,131.8	13.5	9.7	149.04	149.04	-333.9	249.4	277.2	259.8	17.40	15.931	
2,234.1	2,107.5	2,227.2	2,163.3	13.8	9.9	150.32	150.32	-342.2	256.1	284.6	266.9	17.76	16.029	
2,300.0	2,165.9	2,291.4	2,224.1	14.4	10.3	149.97	149.97	-358.3	269.1	299.1	280.6	18.56	16.117	
2,400.0	2,254.6	2,388.9	2,316.5	15.4	11.0	149.51	149.51	-382.7	288.8	321.1	301.3	19.81	16.207	
2,500.0	2,343.3	2,486.5	2,408.8	16.4	11.6	149.10	149.10	-407.1	308.4	343.2	322.1	21.07	16.285	
2,600.0	2,432.0	2,584.0	2,501.2	17.4	12.3	148.75	148.75	-431.5	328.1	365.3	342.9	22.33	16.353	
2,700.0	2,520.7	2,681.5	2,593.5	18.4	12.9	148.43	148.43	-456.0	347.8	387.3	363.7	23.60	16.414	
2,800.0	2,609.4	2,779.0	2,685.8	19.4	13.6	148.15	148.15	-480.4	367.4	409.4	384.5	24.86	16.467	
2,900.0	2,698.1	2,876.5	2,778.2	20.4	14.3	147.90	147.90	-504.8	387.1	431.5	405.4	26.13	16.515	
3,000.0	2,786.8	2,974.0	2,870.5	21.5	14.9	147.67	147.67	-529.2	406.8	453.6	426.2	27.39	16.558	
3,100.0	2,875.5	3,071.5	2,962.8	22.5	15.6	147.46	147.46	-553.6	426.4	475.7	447.0	28.66	16.597	
3,200.0	2,964.2	3,169.0	3,055.2	23.5	16.2	147.27	147.27	-578.0	446.1	497.8	467.9	29.93	16.633	
3,300.0	3,052.9	3,266.6	3,147.5	24.5	16.9	147.10	147.10	-602.4	465.8	519.9	488.7	31.20	16.665	
3,400.0	3,141.6	3,364.1	3,239.8	25.5	17.6	146.94	146.94	-626.9	485.4	542.1	509.6	32.47	16.694	
3,500.0	3,230.3	3,461.6	3,332.2	26.5	18.2	146.79	146.79	-651.3	505.1	564.2	530.4	33.74	16.721	
3,600.0	3,319.0	3,559.1	3,424.5	27.5	18.9	146.66	146.66	-675.7	524.8	586.3	551.3	35.01	16.746	
3,700.0	3,407.7	3,656.6	3,516.8	28.6	19.5	146.53	146.53	-700.1	544.4	608.4	572.2	36.28	16.769	
3,800.0	3,496.4	3,754.1	3,609.2	29.6	20.2	146.42	146.42	-724.5	564.1	630.6	593.0	37.56	16.791	
3,900.0	3,585.1	3,851.6	3,701.5	30.6	20.9	146.31	146.31	-748.9	583.8	652.7	613.9	38.83	16.811	
4,000.0	3,673.8	3,949.1	3,793.8	31.6	21.5	146.21	146.21	-773.3	603.4	674.8	634.7	40.10	16.829	
4,100.0	3,762.5	4,046.6	3,886.2	32.6	22.2	146.11	146.11	-797.7	623.1	697.0	655.6	41.37	16.846	
4,200.0	3,851.2	4,144.2	3,978.5	33.6	22.9	146.02	146.02	-822.2	642.8	719.1	676.5	42.65	16.862	
4,300.0	3,939.9	4,241.7	4,070.9	34.7	23.5	145.94	145.94	-846.6	662.4	741.3	697.4	43.92	16.878	
4,400.0	4,028.6	4,339.2	4,163.2	35.7	24.2	145.86	145.86	-871.0	682.1	763.4	718.2	45.19	16.892	
4,500.0	4,117.3	4,436.7	4,255.5	36.7	24.8	145.78	145.78	-895.4	701.8	785.6	739.1	46.47	16.905	
4,600.0	4,206.0	4,534.2	4,347.9	37.7	25.5	145.71	145.71	-919.8	721.5	807.7	760.0	47.74	16.918	

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 30-40D
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 30-40D	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 30-14D - 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									
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
4,700.0	4,294.7	4,631.7	4,440.2	38.7	26.2	145.65	-944.2	741.1	829.9	780.8	49.02	16.930				
4,800.0	4,383.4	4,729.2	4,532.5	39.7	26.8	145.58	-968.6	760.8	852.0	801.7	50.29	16.941				
4,900.0	4,472.1	4,826.7	4,624.9	40.8	27.5	145.52	-993.0	780.5	874.2	822.6	51.57	16.952				
5,000.0	4,560.8	4,924.3	4,717.2	41.8	28.2	145.47	-1,017.5	800.1	896.3	843.5	52.84	16.962				
5,100.0	4,649.5	5,021.8	4,809.5	42.8	28.8	145.41	-1,041.9	819.8	918.5	864.3	54.12	16.972				
5,200.0	4,738.2	5,119.3	4,901.9	43.8	29.5	145.36	-1,066.3	839.5	940.6	885.2	55.39	16.981				
5,300.0	4,826.9	5,214.3	4,991.9	44.8	30.1	145.31	-1,090.1	858.6	962.8	906.1	56.64	16.999				
5,400.0	4,915.6	5,300.0	5,073.5	45.9	30.6	145.36	-1,110.3	874.9	985.9	928.2	57.70	17.087				
5,500.0	5,004.3	5,378.0	5,148.5	46.9	30.9	145.51	-1,127.0	888.3	1,010.6	952.0	58.57	17.256				
5,600.0	5,093.0	5,458.6	5,226.6	47.9	31.3	145.76	-1,142.6	900.9	1,036.8	977.4	59.34	17.472				
5,694.8	5,177.1	5,534.2	5,300.3	48.9	31.5	146.08	-1,155.7	911.5	1,063.0	1,003.0	59.98	17.722				
5,700.0	5,181.7	5,538.3	5,304.3	48.9	31.6	146.12	-1,156.3	912.0	1,064.5	1,004.4	60.01	17.738				
5,800.0	5,271.3	5,617.5	5,381.9	49.7	31.8	146.82	-1,168.3	921.7	1,092.1	1,031.7	60.45	18.066				
5,900.0	5,362.3	5,700.0	5,463.3	50.4	32.1	147.50	-1,179.0	930.3	1,118.5	1,057.7	60.82	18.392				
6,000.0	5,454.8	5,775.1	5,537.7	51.1	32.2	148.13	-1,187.2	936.9	1,143.7	1,082.6	61.10	18.717				
6,100.0	5,548.5	5,853.5	5,615.6	51.7	32.4	148.75	-1,194.1	942.4	1,167.5	1,106.2	61.31	19.044				
6,200.0	5,643.4	5,931.8	5,693.6	52.3	32.6	149.35	-1,199.3	946.6	1,190.0	1,128.6	61.43	19.372				
6,300.0	5,739.3	6,000.0	5,761.7	52.8	32.7	149.89	-1,202.5	949.2	1,211.3	1,149.8	61.50	19.696				
6,400.0	5,836.2	6,087.6	5,849.2	53.2	32.7	150.51	-1,204.8	951.0	1,231.2	1,169.7	61.44	20.040				
6,500.0	5,933.9	6,172.2	5,933.9	53.6	32.8	151.09	-1,205.1	951.3	1,249.7	1,188.4	61.31	20.382				
6,600.0	6,032.2	6,270.6	6,032.2	53.9	32.9	151.64	-1,205.1	951.3	1,265.6	1,204.4	61.15	20.697				
6,700.0	6,131.1	6,369.5	6,131.1	54.1	33.0	152.07	-1,205.1	951.3	1,278.5	1,217.5	61.00	20.958				
6,800.0	6,230.5	6,468.9	6,230.5	54.3	33.0	152.39	-1,205.1	951.3	1,288.4	1,227.5	60.88	21.161				
6,900.0	6,330.2	6,568.6	6,330.2	54.5	33.1	152.61	-1,205.1	951.3	1,295.2	1,234.4	60.78	21.308				
7,000.0	6,430.1	6,668.5	6,430.1	54.6	33.2	152.73	-1,205.1	951.3	1,298.9	1,238.2	60.71	21.396				
7,069.9	6,500.0	6,738.4	6,500.0	54.6	33.3	-90.49	-1,205.1	951.3	1,299.6	1,239.0	60.67	21.421				
7,100.0	6,530.1	6,768.5	6,530.1	54.6	33.3	-90.49	-1,205.1	951.3	1,299.6	1,238.9	60.72	21.402				
7,200.0	6,630.1	6,868.5	6,630.1	54.7	33.4	-90.49	-1,205.1	951.3	1,299.6	1,238.7	60.89	21.343				
7,305.9	6,736.0	6,974.4	6,736.0	54.7	33.4	-90.49	-1,205.1	951.3	1,299.6	1,238.6	61.08	21.279				

Company:	Great Western	Local Co-ordinate Reference:	Well Peterson CX GH 30-40D
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 30-40D	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 (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	-44.03	19.3	-18.7	26.9					
100.0	100.0	100.0	100.0	0.1	0.1	-44.03	19.3	-18.7	26.9	26.6	0.22	119.503		
200.0	200.0	200.0	200.0	0.3	0.3	-44.03	19.3	-18.7	26.9	26.2	0.67	39.834 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.6	-164.98	19.3	-18.7	28.5	27.4	1.11	25.631		
400.0	399.8	399.8	399.8	0.8	0.8	-167.27	19.3	-18.7	33.6	32.1	1.55	21.626		
450.0	449.7	449.7	449.7	0.9	0.9	-168.58	19.3	-18.7	37.5	35.7	1.78	21.058		
500.0	499.5	499.5	499.5	1.0	1.0	-170.23	19.3	-18.7	42.2	40.2	2.00	21.041 SF		
600.0	598.7	598.7	598.7	1.3	1.2	-172.83	19.3	-18.7	54.2	51.8	2.46	22.053		
700.0	697.5	697.5	697.5	1.6	1.5	-174.67	19.3	-18.7	69.8	66.9	2.92	23.916		
800.0	795.6	795.6	795.6	2.0	1.7	-175.97	19.3	-18.7	88.8	85.4	3.38	26.278		
900.0	893.1	890.4	890.3	2.5	1.9	-176.39	20.7	-19.0	112.4	108.5	3.84	29.232		
1,000.0	989.6	982.8	982.7	3.0	2.1	-175.89	24.9	-20.2	141.7	137.4	4.32	32.816		
1,100.0	1,085.3	1,072.5	1,072.1	3.6	2.3	-175.00	31.8	-22.0	176.7	171.9	4.80	36.833		
1,200.0	1,179.8	1,159.2	1,158.3	4.2	2.5	-173.98	41.0	-24.5	217.2	211.9	5.28	41.123		
1,300.0	1,273.2	1,242.4	1,240.7	5.0	2.7	-172.95	52.2	-27.5	263.1	257.3	5.77	45.556		
1,400.0	1,365.2	1,321.9	1,319.0	5.8	3.0	-171.97	65.1	-31.0	314.0	307.7	6.27	50.041		
1,500.0	1,455.9	1,400.0	1,395.6	6.6	3.2	-171.02	79.8	-34.9	369.7	362.9	6.79	54.462		
1,575.3	1,523.1	1,451.7	1,446.1	7.3	3.4	-170.38	90.6	-37.8	414.7	407.5	7.17	57.802		
1,600.0	1,545.0	1,469.0	1,462.9	7.6	3.5	-170.22	94.4	-38.8	429.9	422.6	7.31	58.784		
1,700.0	1,633.7	1,537.7	1,529.6	8.6	3.7	-169.60	110.5	-43.1	492.6	484.7	7.89	62.454		
1,800.0	1,722.4	1,600.0	1,589.6	9.6	4.0	-169.04	126.5	-47.4	556.8	548.3	8.46	65.824		
1,900.0	1,811.1	1,668.2	1,655.0	10.5	4.3	-168.43	145.4	-52.5	622.5	613.4	9.07	68.655		
2,000.0	1,899.8	1,730.2	1,714.0	11.5	4.6	-167.88	163.9	-57.5	689.6	679.9	9.67	71.296		
2,100.0	1,988.5	1,797.7	1,777.8	12.5	5.0	-167.31	185.2	-63.2	757.8	747.5	10.31	73.527		
2,113.0	2,000.0	1,807.2	1,786.7	12.7	5.1	-167.24	188.1	-64.0	766.7	756.3	10.39	73.784		
2,200.0	2,077.2	1,870.8	1,846.8	13.5	5.4	-162.01	208.3	-69.4	826.0	814.9	11.07	74.585		
2,234.1	2,107.5	1,895.9	1,870.5	13.8	5.6	-160.05	216.2	-71.5	849.1	837.7	11.34	74.869		
2,300.0	2,165.9	1,944.5	1,916.4	14.4	5.8	-159.99	231.6	-75.6	893.6	881.8	11.78	75.861		
2,400.0	2,254.6	2,018.2	1,986.1	15.4	6.3	-159.90	254.9	-81.9	961.1	948.7	12.46	77.124		
2,500.0	2,343.3	2,092.0	2,055.8	16.4	6.7	-159.83	278.2	-88.1	1,028.7	1,015.5	13.15	78.208		
2,600.0	2,432.0	2,165.7	2,125.4	17.4	7.2	-159.77	301.5	-94.4	1,096.2	1,082.4	13.85	79.142		
2,700.0	2,520.7	2,239.4	2,195.1	18.4	7.6	-159.71	324.9	-100.6	1,163.8	1,149.2	14.55	79.962		
2,800.0	2,609.4	2,313.1	2,264.8	19.4	8.1	-159.66	348.2	-106.9	1,231.3	1,216.0	15.26	80.684		
2,900.0	2,698.1	2,386.9	2,334.4	20.4	8.5	-159.62	371.5	-113.2	1,298.9	1,282.9	15.97	81.318		
3,000.0	2,786.8	2,460.6	2,404.1	21.5	9.0	-159.58	394.8	-119.4	1,366.4	1,349.7	16.69	81.879		
3,100.0	2,875.5	2,534.3	2,473.8	22.5	9.5	-159.54	418.2	-125.7	1,434.0	1,416.6	17.41	82.381		
3,200.0	2,964.2	2,608.1	2,543.4	23.5	9.9	-159.51	441.5	-131.9	1,501.5	1,483.4	18.13	82.832		
3,300.0	3,052.9	2,681.8	2,613.1	24.5	10.4	-159.48	464.8	-138.2	1,569.1	1,550.2	18.85	83.234		
3,400.0	3,141.6	2,755.5	2,682.8	25.5	10.9	-159.45	488.1	-144.4	1,636.6	1,617.0	19.58	83.596		
3,500.0	3,230.3	2,829.3	2,752.4	26.5	11.3	-159.42	511.5	-150.7	1,704.2	1,683.9	20.31	83.925		
3,600.0	3,319.0	2,903.0	2,822.1	27.5	11.8	-159.40	534.8	-157.0	1,771.7	1,750.7	21.04	84.224		
3,700.0	3,407.7	2,976.7	2,891.8	28.6	12.3	-159.38	558.1	-163.2	1,839.3	1,817.5	21.77	84.495		
3,800.0	3,496.4	3,050.5	2,961.4	29.6	12.8	-159.36	581.4	-169.5	1,906.8	1,884.3	22.50	84.742		
3,900.0	3,585.1	3,124.2	3,031.1	30.6	13.2	-159.34	604.7	-175.7	1,974.4	1,951.1	23.24	84.970		
4,000.0	3,673.8	3,197.9	3,100.8	31.6	13.7	-159.32	628.1	-182.0	2,041.9	2,018.0	23.97	85.178		
4,100.0	3,762.5	3,271.7	3,170.4	32.6	14.2	-159.31	651.4	-188.2	2,109.5	2,084.8	24.71	85.369		
4,200.0	3,851.2	3,345.4	3,240.1	33.6	14.7	-159.29	674.7	-194.5	2,177.0	2,151.6	25.45	85.545		
4,300.0	3,939.9	3,419.1	3,309.8	34.7	15.1	-159.28	698.0	-200.8	2,244.6	2,218.4	26.19	85.708		
4,400.0	4,028.6	3,492.9	3,379.4	35.7	15.6	-159.26	721.4	-207.0	2,312.1	2,285.2	26.93	85.859		
4,500.0	4,117.3	3,566.6	3,449.1	36.7	16.1	-159.25	744.7	-213.3	2,379.7	2,352.0	27.67	85.999		
4,600.0	4,206.0	3,640.3	3,518.8	37.7	16.6	-159.24	768.0	-219.5	2,447.2	2,418.8	28.41	86.129		

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 30-40D
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 30-40D	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 (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	
4,700.0	4,294.7	3,714.1	3,588.4	38.7	17.0	-159.22	791.3	-225.8	2,514.8	2,485.6	29.16	86.250		
4,800.0	4,383.4	3,787.8	3,658.1	39.7	17.5	-159.21	814.7	-232.0	2,582.4	2,552.5	29.90	86.362		
4,900.0	4,472.1	3,861.5	3,727.8	40.8	18.0	-159.20	838.0	-238.3	2,649.9	2,619.3	30.65	86.467		
5,000.0	4,560.8	3,935.3	3,797.4	41.8	18.5	-159.19	861.3	-244.5	2,717.5	2,686.1	31.39	86.565		
5,100.0	4,649.5	4,009.0	3,867.1	42.8	19.0	-159.18	884.6	-250.8	2,785.0	2,752.9	32.14	86.657		
5,200.0	4,738.2	4,082.7	3,936.8	43.8	19.4	-159.18	907.9	-257.1	2,852.6	2,819.7	32.89	86.742		
5,300.0	4,826.9	4,156.5	4,006.4	44.8	19.9	-159.17	931.3	-263.3	2,920.1	2,886.5	33.63	86.823		
5,400.0	4,915.6	4,230.2	4,076.1	45.9	20.4	-159.16	954.6	-269.6	2,987.7	2,953.3	34.38	86.898		
5,500.0	5,004.3	4,303.9	4,145.8	46.9	20.9	-159.15	977.9	-275.8	3,055.2	3,020.1	35.13	86.969		
5,600.0	5,093.0	4,377.7	4,215.4	47.9	21.4	-159.14	1,001.2	-282.1	3,122.8	3,086.9	35.88	87.036		
5,694.8	5,177.1	4,447.6	4,281.5	48.9	21.8	-159.14	1,023.4	-288.0	3,186.8	3,150.2	36.59	87.095		
5,700.0	5,181.7	4,451.4	4,285.1	48.9	21.8	-159.17	1,024.6	-288.3	3,190.3	3,153.7	36.63	87.087		
5,800.0	5,271.3	4,526.3	4,355.9	49.7	22.3	-159.77	1,048.3	-294.7	3,256.5	3,219.1	37.45	86.965		
5,900.0	5,362.3	4,603.3	4,428.7	50.4	22.8	-160.28	1,072.6	-301.2	3,320.3	3,282.0	38.25	86.803		
6,000.0	5,454.8	4,682.4	4,503.3	51.1	23.4	-160.72	1,097.6	-308.0	3,381.4	3,342.4	39.04	86.616		
6,100.0	5,548.5	4,763.3	4,579.8	51.7	23.9	-161.10	1,123.2	-314.8	3,439.9	3,400.1	39.81	86.414		
6,200.0	5,643.4	4,846.1	4,658.0	52.3	24.4	-161.42	1,149.4	-321.8	3,495.8	3,455.2	40.55	86.208		
6,300.0	5,739.3	4,930.6	4,737.8	52.8	25.0	-161.69	1,176.1	-329.0	3,548.8	3,507.6	41.26	86.003		
6,400.0	5,836.2	5,016.7	4,819.2	53.2	25.5	-161.90	1,203.4	-336.3	3,599.1	3,557.1	41.94	85.806		
6,500.0	5,933.9	5,104.3	4,902.0	53.6	26.1	-162.07	1,231.1	-343.8	3,646.4	3,603.8	42.59	85.622		
6,600.0	6,032.2	5,255.6	5,032.2	53.9	29.5	-161.82	1,403.7	-390.1	3,667.9	3,622.3	45.53	80.560		
6,700.0	6,131.1	6,354.6	6,131.1	54.1	29.6	-161.98	1,403.7	-390.1	3,681.8	3,635.9	45.86	80.283		
6,800.0	6,230.5	6,453.9	6,230.5	54.3	29.7	-162.10	1,403.7	-390.1	3,692.4	3,646.2	46.13	80.037		
6,900.0	6,330.2	6,553.6	6,330.2	54.5	29.8	-162.18	1,403.7	-390.1	3,699.7	3,653.3	46.35	79.818		
7,000.0	6,430.1	6,653.5	6,430.1	54.6	29.9	-162.22	1,403.7	-390.1	3,703.7	3,657.1	46.51	79.624		
7,069.9	6,500.0	6,723.4	6,500.0	54.6	30.0	-45.47	1,403.7	-390.1	3,704.5	3,657.9	46.60	79.498		
7,100.0	6,530.1	6,753.5	6,530.1	54.6	30.0	-45.47	1,403.7	-390.1	3,704.5	3,657.8	46.67	79.373		
7,200.0	6,630.1	6,853.5	6,630.1	54.7	30.1	-45.47	1,403.7	-390.1	3,704.5	3,657.6	46.92	78.958		
7,305.9	6,736.0	6,959.4	6,736.0	54.7	30.2	-45.47	1,403.7	-390.1	3,704.5	3,657.3	47.18	78.518		

Company:	Great Western	Local Co-ordinate Reference:	Well Peterson CX GH 30-40D
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 30-40D	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	-2.39	20.0	-0.8	20.1				
100.0	100.0	100.0	100.0	0.1	0.1	-2.39	20.0	-0.8	20.1	19.8	0.22	89.260	
200.0	200.0	200.0	200.0	0.3	0.3	-2.39	20.0	-0.8	20.1	19.4	0.67	29.753 CC, ES	
300.0	300.0	300.0	300.0	0.5	0.6	-126.39	20.0	-0.8	21.0	19.9	1.11	18.964	
400.0	399.8	399.8	399.8	0.8	0.8	-136.22	20.0	-0.8	24.5	23.0	1.55	15.801	
450.0	449.7	449.8	449.8	0.9	0.9	-141.01	20.1	-0.4	27.3	25.6	1.77	15.421	
500.0	499.5	499.9	499.8	1.0	1.0	-144.67	20.1	0.9	30.7	28.7	2.00	15.393	
600.0	598.7	600.0	599.8	1.3	1.2	-148.27	20.4	6.1	38.9	36.4	2.45	15.865	
700.0	697.5	700.2	699.6	1.6	1.5	-148.81	20.8	14.9	48.6	45.6	2.94	16.529	
800.0	795.6	800.3	799.0	2.0	1.7	-147.76	21.4	27.1	59.8	56.3	3.48	17.175	
900.0	893.1	900.4	897.8	2.5	2.0	-145.91	22.1	42.7	72.7	68.6	4.10	17.703	
1,000.0	989.6	1,000.3	995.9	3.0	2.4	-143.73	23.0	61.8	87.2	82.4	4.83	18.070	
1,100.0	1,085.3	1,100.0	1,093.0	3.6	2.8	-141.44	24.0	84.2	103.5	97.8	5.66	18.274	
1,200.0	1,179.8	1,199.4	1,189.0	4.2	3.3	-139.18	25.3	109.8	121.5	114.9	6.63	18.336	
1,300.0	1,273.2	1,298.5	1,283.8	5.0	3.8	-137.01	26.6	138.7	141.4	133.7	7.73	18.293	
1,400.0	1,365.2	1,397.2	1,377.1	5.8	4.5	-134.96	28.1	170.8	163.1	154.1	8.97	18.176	
1,500.0	1,455.9	1,495.4	1,468.9	6.6	5.2	-133.04	29.8	205.8	186.7	176.3	10.36	18.013	
1,575.3	1,523.1	1,569.1	1,536.9	7.3	5.7	-131.67	31.1	234.2	205.6	194.1	11.51	17.864	
1,600.0	1,545.0	1,593.2	1,559.0	7.6	5.9	-131.31	31.6	243.8	212.0	200.1	11.90	17.815	
1,700.0	1,633.7	1,690.8	1,647.6	8.6	6.7	-129.53	33.5	284.8	237.6	224.0	13.59	17.477	
1,800.0	1,722.4	1,788.0	1,734.4	9.6	7.6	-127.36	35.5	328.5	263.0	247.5	15.42	17.049	
1,900.0	1,811.1	1,884.2	1,819.6	10.5	8.6	-125.33	37.6	373.0	288.6	271.3	17.32	16.666	
2,000.0	1,899.8	1,980.4	1,904.9	11.5	9.5	-123.62	39.7	417.5	314.5	295.3	19.22	16.366	
2,100.0	1,988.5	2,076.6	1,990.1	12.5	10.5	-122.17	41.8	462.0	340.6	319.5	21.12	16.126	
2,113.0	2,000.0	2,089.1	2,001.2	12.7	10.6	-122.00	42.1	467.8	344.0	322.6	21.37	16.099	
2,200.0	2,077.2	2,173.1	2,075.7	13.5	11.4	-117.47	43.9	506.7	365.8	342.7	23.07	15.853	
2,234.1	2,107.5	2,206.3	2,105.1	13.8	11.7	-115.78	44.6	522.0	373.7	350.0	23.72	15.754	
2,300.0	2,165.9	2,270.3	2,161.8	14.4	12.4	-115.27	46.0	551.6	388.7	363.8	24.96	15.575	
2,400.0	2,254.6	2,367.6	2,248.0	15.4	13.4	-114.57	48.1	596.6	411.6	384.7	26.89	15.303	
2,500.0	2,343.3	2,464.8	2,334.2	16.4	14.3	-113.94	50.3	641.6	434.5	405.6	28.83	15.068	
2,600.0	2,432.0	2,562.0	2,420.4	17.4	15.3	-113.37	52.4	686.6	457.4	426.6	30.77	14.864	
2,700.0	2,520.7	2,659.3	2,506.6	18.4	16.3	-112.86	54.5	731.5	480.4	447.7	32.72	14.684	
2,800.0	2,609.4	2,756.5	2,592.7	19.4	17.3	-112.40	56.6	776.5	503.4	468.8	34.66	14.525	
2,900.0	2,698.1	2,853.8	2,678.9	20.4	18.2	-111.97	58.7	821.5	526.5	489.9	36.60	14.383	
3,000.0	2,786.8	2,951.0	2,765.1	21.5	19.2	-111.58	60.8	866.5	549.6	511.0	38.55	14.256	
3,100.0	2,875.5	3,048.2	2,851.3	22.5	20.2	-111.23	63.0	911.4	572.7	532.2	40.49	14.142	
3,200.0	2,964.2	3,145.5	2,937.5	23.5	21.2	-110.90	65.1	956.4	595.8	553.3	42.44	14.039	
3,300.0	3,052.9	3,242.7	3,023.7	24.5	22.2	-110.59	67.2	1,001.4	618.9	574.5	44.38	13.945	
3,400.0	3,141.6	3,339.9	3,109.8	25.5	23.2	-110.31	69.3	1,046.4	642.0	595.7	46.33	13.859	
3,500.0	3,230.3	3,437.2	3,196.0	26.5	24.2	-110.04	71.4	1,091.4	665.2	616.9	48.27	13.780	
3,600.0	3,319.0	3,534.4	3,282.2	27.5	25.1	-109.80	73.5	1,136.3	688.4	638.2	50.22	13.708	
3,700.0	3,407.7	3,631.6	3,368.4	28.6	26.1	-109.57	75.6	1,181.3	711.6	659.4	52.16	13.641	
3,800.0	3,496.4	3,728.9	3,454.6	29.6	27.1	-109.35	77.8	1,226.3	734.8	680.7	54.11	13.579	
3,900.0	3,585.1	3,826.1	3,540.8	30.6	28.1	-109.15	79.9	1,271.3	758.0	701.9	56.05	13.522	
4,000.0	3,673.8	3,923.4	3,626.9	31.6	29.1	-108.96	82.0	1,316.3	781.2	723.2	58.00	13.469	
4,100.0	3,762.5	4,020.6	3,713.1	32.6	30.1	-108.78	84.1	1,361.2	804.4	744.5	59.94	13.419	
4,200.0	3,851.2	4,117.8	3,799.3	33.6	31.1	-108.61	86.2	1,406.2	827.6	765.8	61.89	13.373	
4,300.0	3,939.9	4,215.1	3,885.5	34.7	32.1	-108.45	88.3	1,451.2	850.9	787.0	63.83	13.329	
4,400.0	4,028.6	4,312.3	3,971.7	35.7	33.1	-108.30	90.5	1,496.2	874.1	808.3	65.78	13.289	
4,500.0	4,117.3	4,409.5	4,057.8	36.7	34.0	-108.16	92.6	1,541.1	897.4	829.6	67.72	13.250	
4,600.0	4,206.0	4,506.8	4,144.0	37.7	35.0	-108.02	94.7	1,586.1	920.6	850.9	69.67	13.214	

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 30-40D
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 30-40D	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	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	
4,700.0	4,294.7	4,604.0	4,230.2	38.7	36.0	-107.89	96.8	1,631.1	943.9	872.3	71.61	13.180		
4,800.0	4,383.4	4,701.2	4,316.4	39.7	37.0	-107.77	98.9	1,676.1	967.1	893.6	73.56	13.148		
4,900.0	4,472.1	4,798.5	4,402.6	40.8	38.0	-107.65	101.0	1,721.1	990.4	914.9	75.50	13.118		
5,000.0	4,560.8	4,895.7	4,488.8	41.8	39.0	-107.54	103.1	1,766.0	1,013.7	936.2	77.45	13.089		
5,100.0	4,649.5	4,993.0	4,574.9	42.8	40.0	-107.43	105.3	1,811.0	1,036.9	957.6	79.39	13.061		
5,200.0	4,738.2	5,090.2	4,661.1	43.8	41.0	-107.33	107.4	1,856.0	1,060.2	978.9	81.33	13.035		
5,300.0	4,826.9	5,187.4	4,747.3	44.8	42.0	-107.23	109.5	1,901.0	1,083.5	1,000.2	83.28	13.011		
5,400.0	4,915.6	5,289.1	4,837.9	45.9	42.9	-107.18	111.7	1,947.2	1,106.6	1,021.5	85.18	12.992 SF		
5,500.0	5,004.3	5,392.9	4,931.8	46.9	43.7	-107.31	113.7	1,991.2	1,129.3	1,042.3	86.91	12.993		
5,600.0	5,093.0	5,496.7	5,027.3	47.9	44.4	-107.63	115.6	2,031.7	1,151.3	1,062.8	88.54	13.003		
5,694.8	5,177.1	5,594.8	5,118.9	48.9	45.1	-108.09	117.3	2,066.9	1,171.8	1,081.8	90.00	13.021		
5,700.0	5,181.7	5,600.1	5,123.9	48.9	45.1	-108.14	117.4	2,068.7	1,172.9	1,082.8	90.07	13.022		
5,800.0	5,271.3	5,703.4	5,221.6	49.7	45.7	-109.09	119.0	2,102.1	1,193.5	1,102.1	91.35	13.064		
5,900.0	5,362.3	5,806.7	5,320.5	50.4	46.2	-110.01	120.4	2,131.9	1,212.6	1,120.1	92.50	13.108		
6,000.0	5,454.8	5,909.9	5,420.3	51.1	46.7	-110.88	121.6	2,158.2	1,230.1	1,136.6	93.52	13.154		
6,100.0	5,548.5	6,013.1	5,521.0	51.7	47.0	-111.71	122.7	2,180.8	1,246.1	1,151.7	94.40	13.201		
6,200.0	5,643.4	6,116.2	5,622.3	52.3	47.4	-112.52	123.6	2,199.8	1,260.5	1,165.4	95.14	13.249		
6,300.0	5,739.3	6,219.1	5,724.0	52.8	47.7	-113.29	124.3	2,215.1	1,273.4	1,177.6	95.76	13.298		
6,400.0	5,836.2	6,321.7	5,826.0	53.2	47.9	-114.04	124.8	2,226.8	1,284.7	1,188.4	96.25	13.347		
6,500.0	5,933.9	6,424.2	5,928.1	53.6	48.0	-114.76	125.2	2,234.7	1,294.3	1,197.7	96.61	13.397		
6,600.0	6,032.2	6,526.3	6,030.2	53.9	48.1	-115.45	125.4	2,239.0	1,302.4	1,205.5	96.86	13.446		
6,700.0	6,131.1	6,627.3	6,131.1	54.1	48.2	-116.12	125.4	2,239.9	1,308.8	1,211.8	97.00	13.493		
6,800.0	6,230.5	6,726.6	6,230.5	54.3	48.3	-116.64	125.4	2,239.9	1,313.8	1,216.7	97.10	13.530		
6,900.0	6,330.2	6,826.3	6,330.2	54.5	48.3	-117.00	125.4	2,239.9	1,317.3	1,220.1	97.20	13.552		
7,000.0	6,430.1	6,926.2	6,430.1	54.6	48.4	-117.20	125.4	2,239.9	1,319.2	1,221.9	97.29	13.559		
7,069.9	6,500.0	6,996.1	6,500.0	54.6	48.4	-0.48	125.4	2,239.9	1,319.6	1,222.2	97.36	13.554		
7,100.0	6,530.1	7,026.2	6,530.1	54.6	48.5	-0.48	125.4	2,239.9	1,319.6	1,222.2	97.40	13.549		
7,200.0	6,630.1	7,126.2	6,630.1	54.7	48.5	-0.48	125.4	2,239.9	1,319.6	1,222.1	97.52	13.531		
7,305.9	6,736.0	7,232.1	6,736.0	54.7	48.6	-0.48	125.4	2,239.9	1,319.6	1,221.9	97.66	13.513		

Reference Depths are relative to WELL @ 4588.0ft (Original Well Elev) Coordinates are relative to: Peterson CX GH 30-40D
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 30-40D
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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°

