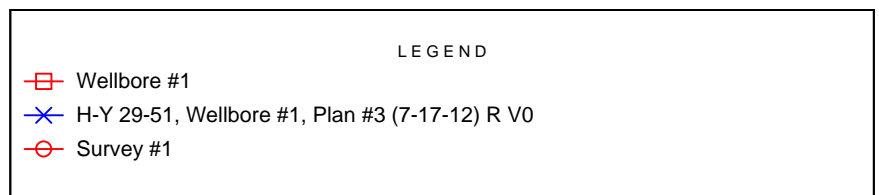
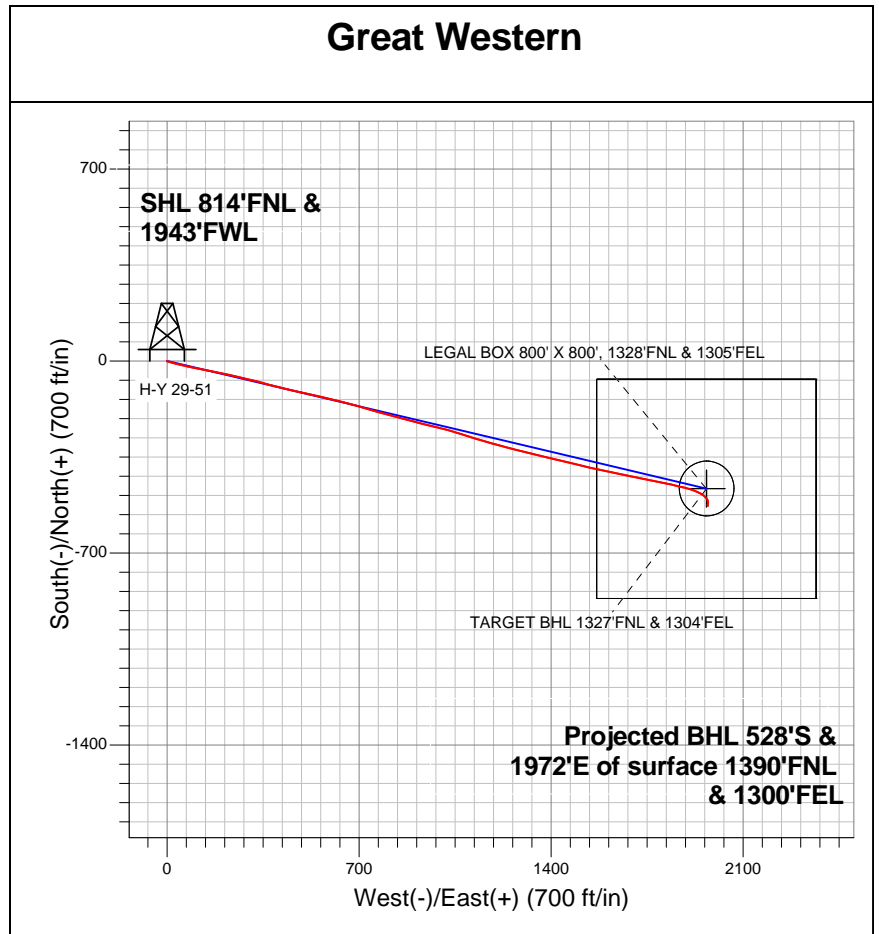
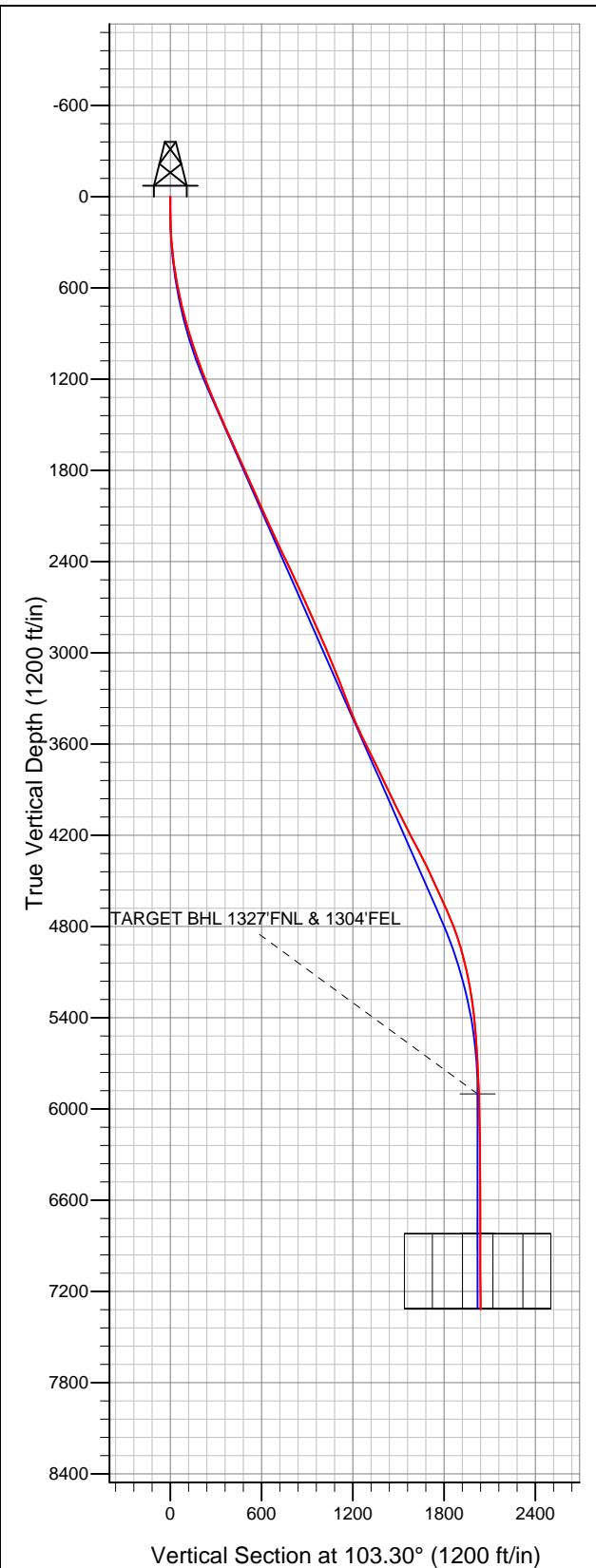


**Well Name: H-Y 29-51**

Surface Location: H-Y (East) Pad Sec.29-T6N-R67W  
North American Datum 1983 US State Plane 1983Colorado Northern Zone  
Ground Elevation: 4783.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1412001.37	3161530.24	40.462894	-104.919478	
Original Well Elev			WELL @ 4797.0ft (Original Well Elev)			



## Final Survey Plot

Projected Final Survey -  
7721'MD & 7317'TVD @ 2041'VS  
0.40 deg Inc 125.70 deg AZ

Project: SEC.29-T6N-R67W  
Site: H-Y (East) Pad Sec.29-T6N-R67W  
Well: H-Y 29-51  
Plan: Wellbore #1



## **Great Western**

**SEC.29-T6N-R67W**

**H-Y (East) Pad Sec.29-T6N-R67W**

**H-Y 29-51**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**25 July, 2012**

<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well H-Y 29-51
<b>Project:</b>	SEC.29-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4797.0ft (Original Well Elev)
<b>Site:</b>	H-Y (East) Pad Sec.29-T6N-R67W	<b>MD Reference:</b>	WELL @ 4797.0ft (Original Well Elev)
<b>Well:</b>	H-Y 29-51	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

<b>Project</b>	SEC.29-T6N-R67W, Weld County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site		H-Y (East) Pad Sec.29-T6N-R67W			
Site Position:		Northing:	1,412,090.58 ft	Latitude:	40.463139 °
From:	Lat/Long	Easting:	3,161,521.31 ft	Longitude:	-104.919508 °
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.38 °

Well	H-Y 29-51					
Well Position	+N/-S	0.0 ft	Northing:	1,412,001.37 ft	Latitude:	40.462894
	+E/-W	0.0 ft	Easting:	3,161,530.24 ft	Longitude:	-104.919478
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,783.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/17/2012	8.81	67.04	53,034

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	103.30	

Survey Program		Date	7/25/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
87.0	7,721.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

Survey	Wellbore Data									
	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)
Survey A	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	87.0	0.90	169.30	87.0	-0.7	0.1	0.3	1.03	1.03	0.00
	181.0	1.80	113.00	181.0	-2.0	1.6	2.0	1.60	0.96	-59.89
	275.0	4.30	99.50	274.8	-3.1	6.5	7.0	2.75	2.66	-14.36
	366.0	6.10	102.10	365.5	-4.7	14.6	15.2	1.99	1.98	2.86
	457.0	8.00	105.80	455.8	-7.4	25.4	26.4	2.15	2.09	4.07
	548.0	9.80	106.20	545.7	-11.3	38.9	40.5	1.98	1.98	0.44
	639.0	11.50	105.10	635.1	-15.9	55.1	57.3	1.88	1.87	-1.21
	730.0	13.60	103.00	723.9	-20.6	74.3	77.0	2.36	2.31	-2.31
	861.0	16.50	100.40	850.4	-27.5	107.6	111.0	2.27	2.21	-1.98
	948.0	17.60	99.90	933.6	-31.9	132.7	136.5	1.28	1.26	-0.57
	1,043.0	19.00	101.40	1,023.8	-37.5	162.0	166.3	1.55	1.47	1.58
	1,137.0	19.50	101.40	1,112.5	-43.6	192.4	197.3	0.53	0.53	0.00

<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well H-Y 29-51
<b>Project:</b>	SEC.29-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4797.0ft (Original Well Elev)
<b>Site:</b>	H-Y (East) Pad Sec.29-T6N-R67W	<b>MD Reference:</b>	WELL @ 4797.0ft (Original Well Elev)
<b>Well:</b>	H-Y 29-51	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

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)	
1,233.0	21.30	103.00	1,202.5	-50.7	225.1	230.7	1.96	1.88	1.67	
1,326.0	21.80	102.70	1,289.0	-58.3	258.4	264.9	0.55	0.54	-0.32	
1,420.0	23.80	103.60	1,375.6	-66.6	293.9	301.3	2.16	2.13	0.96	
1,515.0	23.30	103.70	1,462.7	-75.5	330.8	339.3	0.53	-0.53	0.11	
1,610.0	24.40	105.10	1,549.6	-85.1	368.0	377.7	1.30	1.16	1.47	
1,705.0	24.60	105.10	1,636.1	-95.4	406.0	417.0	0.21	0.21	0.00	
1,800.0	23.90	103.40	1,722.7	-105.0	443.8	456.0	1.04	-0.74	-1.79	
1,895.0	24.00	101.80	1,809.5	-113.4	481.4	494.6	0.69	0.11	-1.68	
1,990.0	24.40	102.90	1,896.2	-121.7	519.5	533.5	0.63	0.42	1.16	
2,085.0	24.20	102.70	1,982.7	-130.4	557.6	572.6	0.23	-0.21	-0.21	
2,179.0	24.20	103.20	2,068.5	-139.0	595.1	611.2	0.22	0.00	0.53	
2,273.0	24.60	103.90	2,154.1	-148.1	632.9	650.0	0.53	0.43	0.74	
2,367.0	24.30	105.10	2,239.7	-157.8	670.6	688.9	0.62	-0.32	1.28	
2,462.0	25.60	106.90	2,325.8	-168.9	709.1	728.9	1.58	1.37	1.89	
2,557.0	26.30	105.80	2,411.2	-180.6	749.0	770.4	0.89	0.74	-1.16	
2,651.0	24.90	105.70	2,496.0	-191.6	788.1	811.0	1.49	-1.49	-0.11	
2,746.0	24.30	105.30	2,582.4	-202.2	826.2	850.5	0.66	-0.63	-0.42	
2,841.0	24.40	105.00	2,668.9	-212.4	864.0	889.7	0.17	0.11	-0.32	
2,936.0	24.40	103.40	2,755.4	-222.1	902.0	928.9	0.70	0.00	-1.68	
3,032.0	23.60	104.60	2,843.1	-231.5	939.9	967.9	0.98	-0.83	1.25	
3,128.0	23.50	102.70	2,931.1	-240.6	977.2	1,006.3	0.80	-0.10	-1.98	
3,224.0	23.20	104.30	3,019.3	-249.4	1,014.2	1,044.3	0.73	-0.31	1.67	
3,318.0	21.90	106.90	3,106.1	-259.1	1,048.9	1,080.4	1.74	-1.38	2.77	
3,408.0	21.60	108.10	3,189.7	-269.1	1,080.7	1,113.6	0.60	-0.33	1.33	
3,503.0	20.30	108.30	3,278.4	-279.7	1,113.0	1,147.5	1.37	-1.37	0.21	
3,597.0	21.30	106.00	3,366.3	-289.6	1,144.8	1,180.8	1.37	1.06	-2.45	
3,692.0	23.70	105.80	3,454.0	-299.5	1,179.8	1,217.1	2.53	2.53	-0.21	
3,787.0	25.10	104.60	3,540.5	-309.8	1,217.7	1,256.3	1.56	1.47	-1.26	
3,881.0	26.00	104.80	3,625.4	-320.1	1,256.9	1,296.8	0.96	0.96	0.21	
3,976.0	26.60	104.80	3,710.5	-330.8	1,297.6	1,338.9	0.63	0.63	0.00	
4,071.0	26.50	102.70	3,795.5	-340.9	1,338.8	1,381.4	0.99	-0.11	-2.21	
4,165.0	25.60	103.60	3,879.9	-350.3	1,379.0	1,422.6	1.05	-0.96	0.96	
4,260.0	24.80	103.10	3,965.9	-359.7	1,418.4	1,463.1	0.87	-0.84	-0.53	
4,355.0	26.70	103.70	4,051.5	-369.2	1,458.5	1,504.3	2.02	2.00	0.63	
4,449.0	27.40	103.60	4,135.2	-379.3	1,500.1	1,547.1	0.75	0.74	-0.11	
4,544.0	28.10	103.40	4,219.3	-389.6	1,543.1	1,591.3	0.74	0.74	-0.21	
4,639.0	26.80	101.30	4,303.6	-399.0	1,585.8	1,635.1	1.71	-1.37	-2.21	
4,733.0	26.60	101.30	4,387.5	-407.3	1,627.3	1,677.3	0.21	-0.21	0.00	
4,830.0	24.40	102.10	4,475.1	-415.8	1,668.2	1,719.1	2.30	-2.27	0.82	
4,925.0	25.00	101.80	4,561.4	-424.0	1,707.0	1,758.7	0.65	0.63	-0.32	
5,019.0	24.40	101.10	4,646.8	-431.8	1,745.5	1,798.0	0.71	-0.64	-0.74	
5,114.0	23.00	101.30	4,733.8	-439.2	1,782.9	1,836.2	1.48	-1.47	0.21	
5,210.0	19.70	101.80	4,823.2	-446.2	1,817.2	1,871.1	3.44	-3.44	0.52	
5,303.0	17.50	103.00	4,911.3	-452.5	1,846.2	1,900.7	2.40	-2.37	1.29	
5,398.0	14.30	103.90	5,002.7	-458.6	1,871.5	1,926.8	3.38	-3.37	0.95	
5,494.0	12.70	104.60	5,096.0	-464.1	1,893.2	1,949.2	1.68	-1.67	0.73	
5,587.0	10.50	107.10	5,187.1	-469.1	1,911.2	1,967.9	2.43	-2.37	2.69	
5,682.0	8.40	111.30	5,280.8	-474.2	1,925.9	1,983.4	2.33	-2.21	4.42	
5,777.0	6.90	116.20	5,375.0	-479.2	1,937.5	1,995.8	1.72	-1.58	5.16	
5,871.0	5.40	123.10	5,468.4	-484.2	1,946.3	2,005.5	1.78	-1.60	7.34	
5,966.0	4.30	125.70	5,563.1	-488.7	1,952.9	2,013.0	1.18	-1.16	2.74	
6,062.0	3.30	130.60	5,658.9	-492.6	1,957.9	2,018.7	1.09	-1.04	5.10	
6,154.0	2.80	135.70	5,750.7	-495.9	1,961.5	2,023.0	0.62	-0.54	5.54	
6,248.0	2.40	138.40	5,844.6	-499.0	1,964.4	2,026.5	0.44	-0.43	2.87	

<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well H-Y 29-51
<b>Project:</b>	SEC.29-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4797.0ft (Original Well Elev)
<b>Site:</b>	H-Y (East) Pad Sec.29-T6N-R67W	<b>MD Reference:</b>	WELL @ 4797.0ft (Original Well Elev)
<b>Well:</b>	H-Y 29-51	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

## 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)
6,302.3	2.28	141.65	5,898.9	-500.7	1,965.9	2,028.3	0.33	-0.22	5.98
<b>TARGET BHL 1327'FNL &amp; 1304'FEL</b>									
6,343.0	2.20	144.30	5,939.6	-502.0	1,966.8	2,029.5	0.33	-0.20	6.52
6,533.0	1.80	150.10	6,129.5	-507.5	1,970.4	2,034.3	0.24	-0.21	3.05
6,722.0	1.50	163.10	6,318.4	-512.5	1,972.6	2,037.6	0.25	-0.16	6.88
6,912.0	1.30	177.00	6,508.3	-517.0	1,973.5	2,039.5	0.21	-0.11	7.32
7,102.0	1.70	208.00	6,698.3	-521.6	1,972.3	2,039.4	0.47	0.21	16.32
7,221.6	1.19	204.28	6,817.8	-524.3	1,970.9	2,038.7	0.43	-0.43	-3.11
<b>TARGET CIRCLE 1327'FNL &amp; 1304'FEL</b>									
7,221.8	1.19	204.28	6,818.1	-524.4	1,970.9	2,038.7	0.00	0.00	0.00
<b>LEGAL BOX 800' X 800', 1328'FNL &amp; 1305'FEL</b>									
7,291.0	0.90	200.20	6,887.2	-525.5	1,970.4	2,038.5	0.43	-0.42	-5.90
7,481.0	0.40	119.70	7,077.2	-527.2	1,970.5	2,038.9	0.49	-0.26	-42.37
7,671.0	0.40	125.70	7,267.2	-528.0	1,971.6	2,040.2	0.02	0.00	3.16
7,721.0	0.40	125.70	7,317.2	-528.2	1,971.9	2,040.5	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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