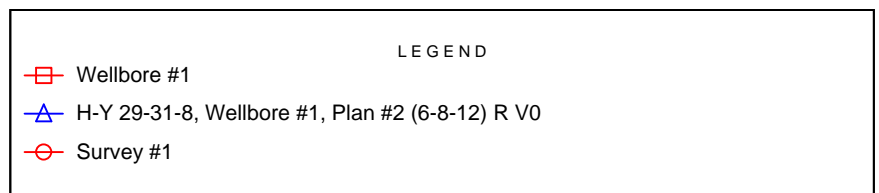
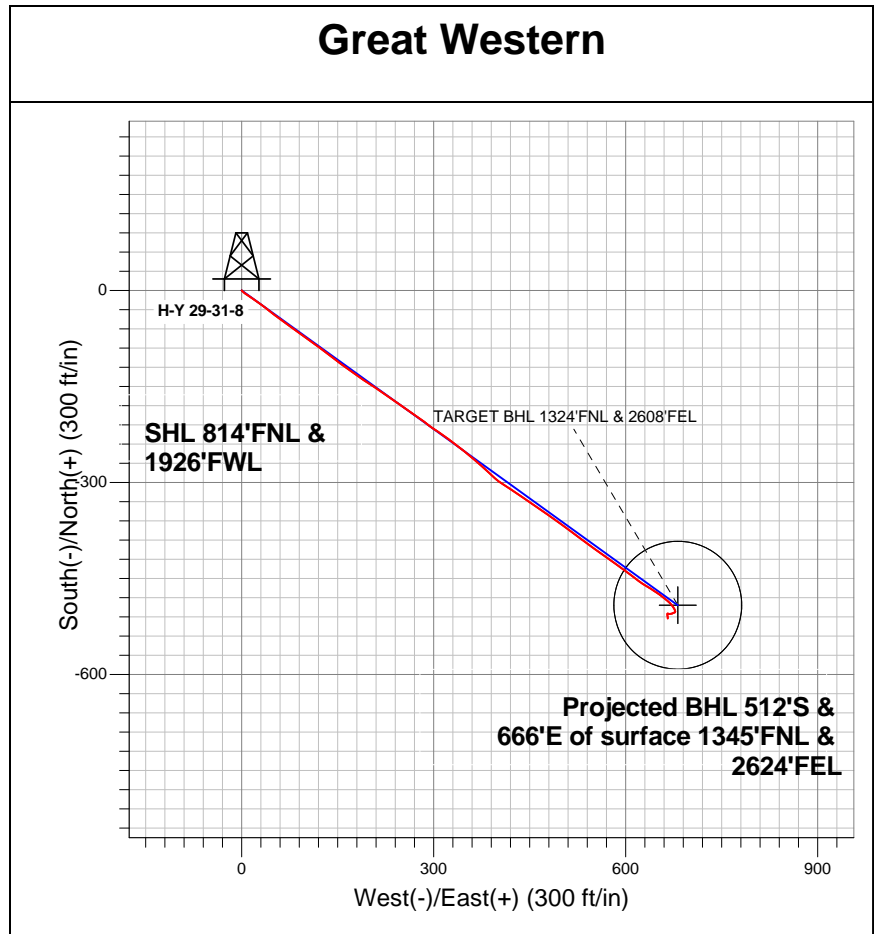
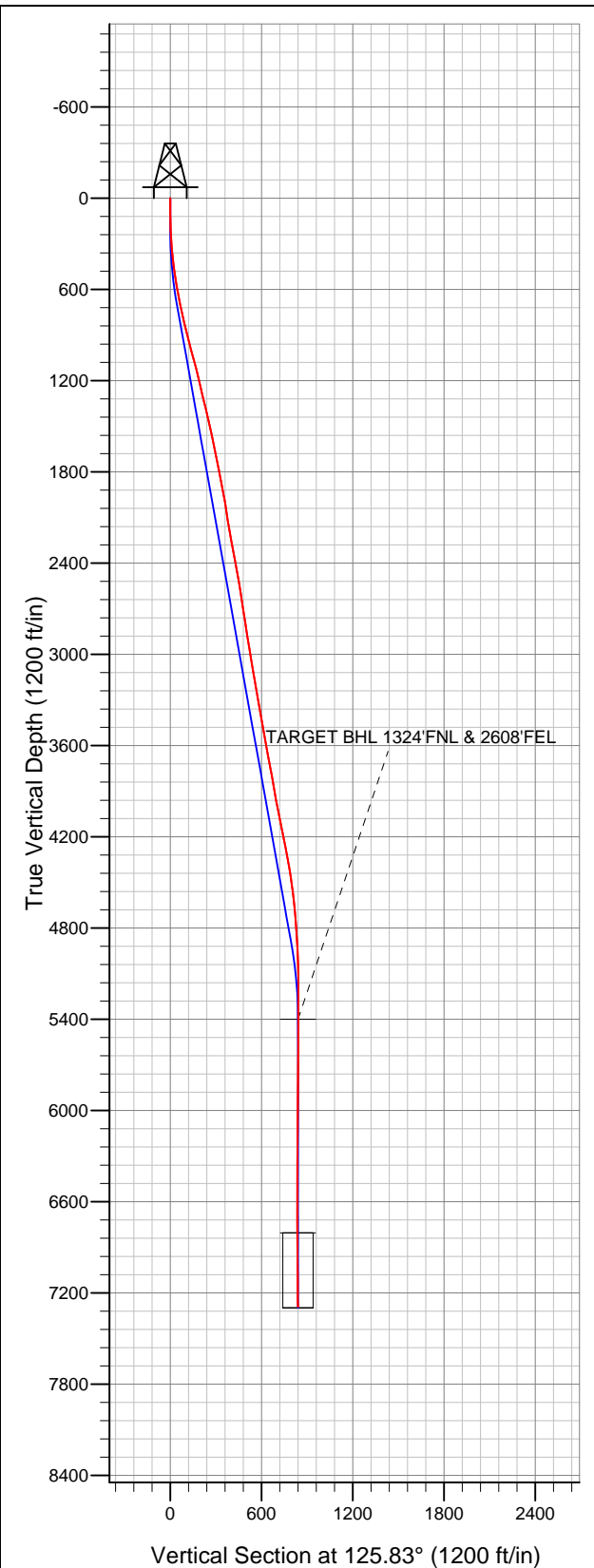


**Well Name: H-Y 29-31-8**

Surface Location: H-Y (West) 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	1411999.43	3161512.44	40.462889	-104.919542	
Original Well Elev			WELL @ 4797.0ft (Original Well Elev)			



## Final Survey Plot

Projected Final Survey -  
7370'MD & 7292'TVD @ 840°VS  
0.60 deg Inc 188.80 deg AZ

Project: SEC.29-T6N-R67W  
Site: H-Y (West) Pad Sec.29-T6N-R67W  
Well: H-Y 29-31-8  
Plan: Wellbore #1



## **Great Western**

**SEC.29-T6N-R67W**

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

**H-Y 29-31-8**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**14 June, 2012**

<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well H-Y 29-31-8
<b>Project:</b>	SEC.29-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4797.0ft (Original Well Elev)
<b>Site:</b>	H-Y (West) Pad Sec.29-T6N-R67W	<b>MD Reference:</b>	WELL @ 4797.0ft (Original Well Elev)
<b>Well:</b>	H-Y 29-31-8	<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 (West) Pad Sec.29-T6N-R67W			
Site Position:		Northing:		1,412,089.37 ft	
From:	Lat/Long	Easting:		Longitude:	
		3,161,502.67 ft		-104.919575	
Position Uncertainty:		Slot Radius:		Grid Convergence:	
0.0 ft		"		0.38 °	

Well	H-Y 29-31-8					
Well Position	+N/-S	0.0 ft	Northing:	1,411,999.43 ft	Latitude:	40.462889
	+E/-W	0.0 ft	Easting:	3,161,512.44 ft	Longitude:	-104.919542
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	5/3/2012	8.83	67.05	53,055

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 (°)	
	5,400.0	0.0	0.0	125.83	

Survey Program		Date	6/14/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
57.0	7,370.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

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
57.0	0.00	215.90	57.0	0.0	0.0	0.0	0.00	0.00	0.00
145.0	1.10	138.60	145.0	-0.6	0.6	0.8	1.25	1.25	0.00
236.0	2.90	131.00	235.9	-2.8	2.9	4.0	2.00	1.98	-8.35
328.0	5.00	123.80	327.7	-6.6	8.0	10.3	2.34	2.28	-7.83
419.0	6.70	123.80	418.2	-11.7	15.7	19.6	1.87	1.87	0.00
511.0	8.30	125.70	509.4	-18.6	25.5	31.6	1.76	1.74	2.07
601.0	9.80	127.70	598.3	-27.1	36.9	45.7	1.70	1.67	2.22
693.0	11.40	128.20	688.7	-37.5	50.2	62.6	1.74	1.74	0.54
785.0	13.20	125.00	778.6	-49.1	66.0	82.2	2.09	1.96	-3.48
860.0	14.10	125.90	851.5	-59.4	80.4	99.9	1.23	1.20	1.20
949.0	14.90	125.70	937.7	-72.4	98.4	122.2	0.90	0.90	-0.22
1,043.0	14.90	126.60	1,028.5	-86.7	118.0	146.4	0.25	0.00	0.96

<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well H-Y 29-31-8
<b>Project:</b>	SEC.29-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4797.0ft (Original Well Elev)
<b>Site:</b>	H-Y (West) Pad Sec.29-T6N-R67W	<b>MD Reference:</b>	WELL @ 4797.0ft (Original Well Elev)
<b>Well:</b>	H-Y 29-31-8	<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)	
1,138.0	14.10	127.80	1,120.5	-101.0	136.9	170.1	0.90	-0.84	1.26	
1,233.0	13.10	126.30	1,212.8	-114.5	154.7	192.5	1.12	-1.05	-1.58	
1,328.0	13.50	124.80	1,305.3	-127.2	172.5	214.3	0.56	0.42	-1.58	
1,423.0	13.20	124.80	1,397.7	-139.7	190.5	236.3	0.32	-0.32	0.00	
1,518.0	12.80	122.90	1,490.3	-151.6	208.3	257.6	0.62	-0.42	-2.00	
1,613.0	12.10	125.40	1,583.0	-163.1	225.2	278.1	0.93	-0.74	2.63	
1,708.0	11.60	124.70	1,676.0	-174.3	241.2	297.6	0.55	-0.53	-0.74	
1,803.0	11.00	124.30	1,769.2	-184.9	256.5	316.2	0.64	-0.63	-0.42	
1,898.0	11.30	125.50	1,862.4	-195.4	271.6	334.6	0.40	0.32	1.26	
1,991.0	10.30	127.00	1,953.7	-205.7	285.6	352.0	1.12	-1.08	1.61	
2,086.0	9.10	125.40	2,047.4	-215.1	298.6	368.0	1.29	-1.26	-1.68	
2,181.0	9.00	124.30	2,141.2	-223.7	310.8	382.9	0.21	-0.11	-1.16	
2,276.0	9.40	126.40	2,235.0	-232.5	323.2	398.1	0.55	0.42	2.21	
2,368.0	11.00	127.70	2,325.5	-242.3	336.2	414.4	1.76	1.74	1.41	
2,460.0	11.20	128.50	2,415.8	-253.2	350.1	432.1	0.27	0.22	0.87	
2,552.0	9.30	130.80	2,506.3	-263.7	362.8	448.4	2.11	-2.07	2.50	
2,645.0	8.80	132.80	2,598.2	-273.4	373.7	463.0	0.64	-0.54	2.15	
2,740.0	9.00	132.20	2,692.0	-283.3	384.5	477.6	0.23	0.21	-0.63	
2,835.0	9.20	132.10	2,785.8	-293.4	395.6	492.5	0.21	0.21	-0.11	
2,930.0	8.60	121.50	2,879.7	-302.2	407.3	507.2	1.83	-0.63	-11.16	
3,025.0	9.30	125.00	2,973.5	-310.3	419.7	521.9	0.93	0.74	3.68	
3,120.0	9.70	123.40	3,067.2	-319.1	432.6	537.6	0.50	0.42	-1.68	
3,214.0	10.00	123.40	3,159.8	-328.0	446.1	553.6	0.32	0.32	0.00	
3,308.0	9.80	126.40	3,252.4	-337.2	459.3	569.8	0.59	-0.21	3.19	
3,403.0	9.60	124.10	3,346.1	-346.5	472.4	585.8	0.46	-0.21	-2.42	
3,498.0	9.90	125.20	3,439.7	-355.6	485.6	601.9	0.37	0.32	1.16	
3,592.0	10.50	125.40	3,532.2	-365.2	499.2	618.5	0.64	0.64	0.21	
3,687.0	10.70	126.60	3,625.6	-375.5	513.3	636.0	0.31	0.21	1.26	
3,782.0	10.60	127.50	3,719.0	-386.1	527.4	653.6	0.20	-0.11	0.95	
3,876.0	10.10	127.50	3,811.4	-396.4	540.7	670.4	0.53	-0.53	0.00	
3,971.0	9.70	124.00	3,905.0	-405.9	554.0	686.8	0.76	-0.42	-3.68	
4,066.0	11.10	124.30	3,998.5	-415.5	568.2	703.9	1.47	1.47	0.32	
4,160.0	11.30	126.60	4,090.7	-426.1	583.1	722.2	0.52	0.21	2.45	
4,255.0	11.30	128.70	4,183.8	-437.5	597.8	740.8	0.43	0.00	2.21	
4,350.0	11.10	125.70	4,277.0	-448.7	612.5	759.2	0.65	-0.21	-3.16	
4,444.0	10.00	122.40	4,369.4	-458.3	626.7	776.4	1.33	-1.17	-3.51	
4,539.0	8.90	121.90	4,463.1	-466.6	639.9	792.0	1.16	-1.16	-0.53	
4,633.0	6.90	125.20	4,556.2	-473.7	650.7	804.9	2.18	-2.13	3.51	
4,732.0	6.00	129.10	4,654.6	-480.4	659.6	816.0	1.01	-0.91	3.94	
4,827.0	4.80	131.90	4,749.2	-486.2	666.4	824.9	1.29	-1.26	2.95	
4,922.0	3.70	138.00	4,843.9	-491.1	671.4	831.8	1.25	-1.16	6.42	
5,017.0	2.60	147.70	4,938.8	-495.2	674.6	836.8	1.28	-1.16	10.21	
5,112.0	1.80	158.40	5,033.7	-498.4	676.3	840.1	0.94	-0.84	11.26	
5,302.0	0.50	184.80	5,223.7	-502.0	677.3	843.0	0.72	-0.68	13.89	
5,478.2	0.57	246.65	5,399.9	-503.1	676.5	843.0	0.32	0.04	35.09	
TARGET BHL 1324'FNL & 2608'FEL										
5,491.0	0.60	249.70	5,412.7	-503.2	676.3	842.9	0.32	0.20	23.90	
5,681.0	0.60	253.30	5,602.7	-503.8	674.5	841.7	0.02	0.00	1.89	
5,871.0	0.70	249.50	5,792.6	-504.5	672.4	840.5	0.06	0.05	-2.00	
6,061.0	0.50	252.50	5,982.6	-505.2	670.5	839.4	0.11	-0.11	1.58	
6,247.0	0.60	270.40	6,168.6	-505.4	668.8	838.1	0.11	0.05	9.62	
6,436.0	0.60	285.90	6,357.6	-505.1	666.8	836.3	0.09	0.00	8.20	
6,626.0	0.30	298.00	6,547.6	-504.6	665.5	834.9	0.16	-0.16	6.37	
6,816.0	0.80	195.50	6,737.6	-505.7	664.7	834.9	0.48	0.26	-53.95	

<b>Company:</b>	Great Western	<b>Local Co-ordinate Reference:</b>	Well H-Y 29-31-8
<b>Project:</b>	SEC.29-T6N-R67W	<b>TVD Reference:</b>	WELL @ 4797.0ft (Original Well Elev)
<b>Site:</b>	H-Y (West) Pad Sec.29-T6N-R67W	<b>MD Reference:</b>	WELL @ 4797.0ft (Original Well Elev)
<b>Well:</b>	H-Y 29-31-8	<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)
6,884.3	0.70	179.01	6,805.9	-506.5	664.5	835.3	0.35	-0.15	-24.16
TARGET CIRCLE 1324'FNL & 2608'FEL									
7,005.0	0.70	144.00	6,926.6	-507.9	665.0	836.4	0.35	0.00	-29.00
7,195.0	0.90	176.50	7,116.6	-510.3	665.8	838.5	0.26	0.11	17.11
7,320.0	0.60	188.80	7,241.6	-511.9	665.7	839.4	0.27	-0.24	9.84
7,370.0	0.60	188.80	7,291.6	-512.4	665.6	839.6	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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