Great Western

Well Name: **Schmunk EF 31-369HN**

Surface Location: Schmunk Pad Sec.31-T7N-R65W

North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

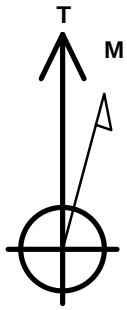
Ground Elevation: 4850.3

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1439632.93	3221234.78	40.537467	-104.704025	

RKB - 16.5' WELL @ 4866.8ft (RKB - 16.5')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 530'FNL & 2034'FEL	1.0	0.0	0.0	Point
BHL 470'FSL & 2336'FEL	7106.8	-4272.7	-335.8	Point
Entry Pt. 460'FNL & 2350'FEL	7106.8	78.7	-314.9	Point



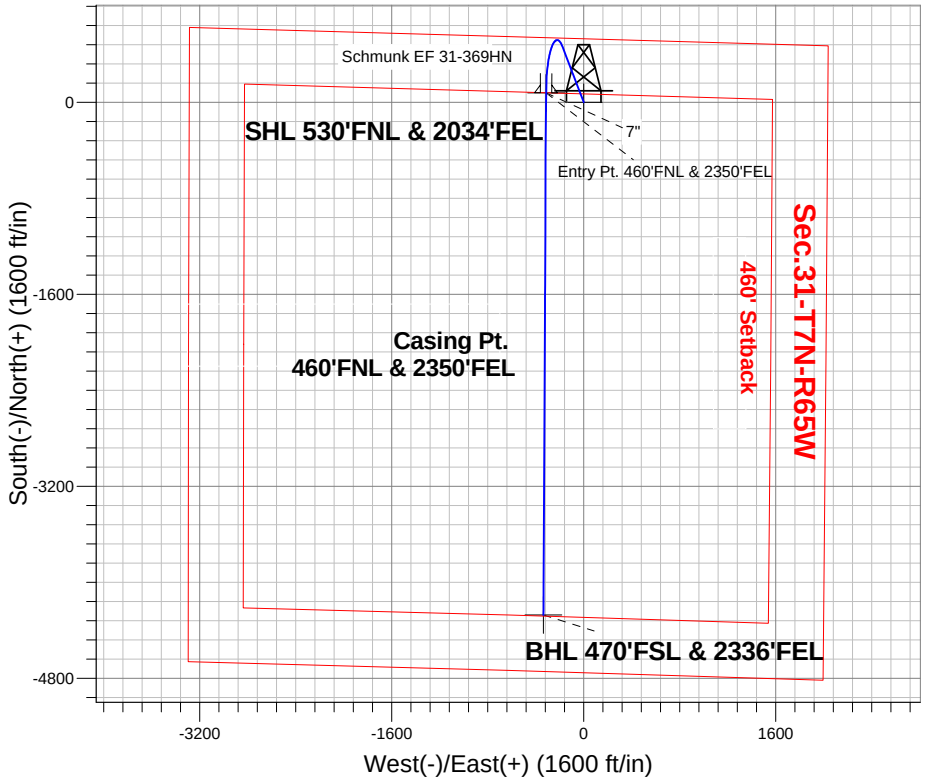
Azimuths to True North
Magnetic North: 8.52°

Magnetic Field
Strength: 52954.9snT
Dip Angle: 67.09°
Date: 11/13/2013
Model: IGRF2010

Schmunk Pad Sec.31-T7N-R65W
Schmunk EF 31-369HN
Plan #1 (11-13-13)
13:02, November 14 2013

ANNOTATIONS

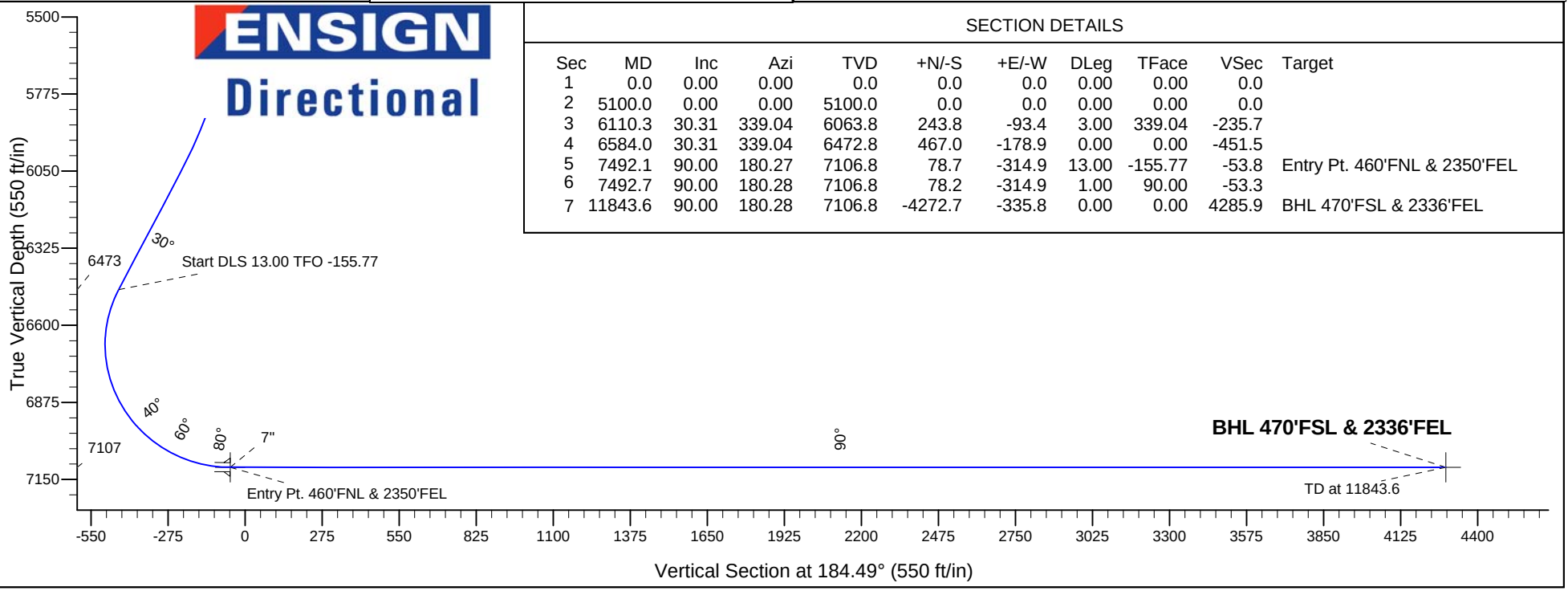
TVD	MD	Annotation
5100.0	5100.0	KOP - Start Build 3.00
6472.8	6584.0	Start DLS 13.00 TFO -155.77
7106.8	11843.6	TD at 11843.6



ENSIGN Directional

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	5100.0	0.00	0.00	5100.0	0.0	0.0	0.00	0.00	0.0	
3	6110.3	30.31	339.04	6063.8	243.8	-93.4	3.00	339.04	-235.7	
4	6584.0	30.31	339.04	6472.8	467.0	-178.9	0.00	0.00	-451.5	
5	7492.1	90.00	180.27	7106.8	78.7	-314.9	13.00	-155.77	-53.8	Entry Pt. 460'FNL & 2350'FEL
6	7492.7	90.00	180.28	7106.8	78.2	-314.9	1.00	90.00	-53.3	
7	11843.6	90.00	180.28	7106.8	-4272.7	-335.8	0.00	0.00	4285.9	BHL 470'FSL & 2336'FEL



Great Western

SEC.31-T7N-R65W
Schmunk Pad Sec.31-T7N-R65W
Schmunk EF 31-369HN

Wellbore #1

Plan: Plan #1 (11-13-13)

Standard Planning Report

14 November, 2013

Database:	Landmark	**Local Co-ordinate Reference:**	Well Schmunk EF 31-369HN
Company:	Great Western	**TVD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Project:	SEC.31-T7N-R65W	**MD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Site:	Schmunk Pad Sec.31-T7N-R65W	**North Reference:**	True
Well:	Schmunk EF 31-369HN	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-13-13)		

Project SEC.31-T7N-R65W, 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 Schmunk Pad Sec.31-T7N-R65W

Site Position:		**Northing:**	1,439,632.94 ft	**Latitude:**	40.537467
From:	Lat/Long	**Easting:**	3,221,234.78 ft	**Longitude:**	-104.704025
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.51 °

Well Schmunk EF 31-369HN

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,439,632.93 ft	**Latitude:**	40.537467
	+E/-W	0.0 ft	**Easting:**	3,221,234.78 ft	**Longitude:**	-104.704025
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,850.3 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/13/2013	8.52	67.09	52,955

Design Plan #1 (11-13-13)

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	184.49

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	
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.00	0.00	0.00	0.00	
6,110.3	30.31	339.04	6,063.8	243.8	-93.4	3.00	3.00	0.00	339.04	
6,584.0	30.31	339.04	6,472.8	467.0	-178.9	0.00	0.00	0.00	0.00	
7,492.1	90.00	180.27	7,106.8	78.7	-314.9	13.00	6.57	-17.48	-155.77	Entry Pt. 460'FNL &
7,492.7	90.00	180.28	7,106.8	78.2	-314.9	1.00	0.00	1.00	90.00	
11,843.6	90.00	180.28	7,106.8	-4,272.7	-335.8	0.00	0.00	0.00	0.00	BHL 470'FSL & 233

Database:	Landmark	**Local Co-ordinate Reference:**	Well Schmunk EF 31-369HN
Company:	Great Western	**TVD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Project:	SEC.31-T7N-R65W	**MD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Site:	Schmunk Pad Sec.31-T7N-R65W	**North Reference:**	True
Well:	Schmunk EF 31-369HN	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-13-13)		

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
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 530'FNL & 2034'FEL									
100.0	0.00	0.00	100.0	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
300.0	0.00	0.00	300.0	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
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00

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Site:	Schmunk Pad Sec.31-T7N-R65W	**North Reference:**	True
Well:	Schmunk EF 31-369HN	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-13-13)		

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)
KOP - Start Build 3.00									
5,200.0	3.00	339.04	5,200.0	2.4	-0.9	-2.4	3.00	3.00	0.00
5,300.0	6.00	339.04	5,299.6	9.8	-3.7	-9.4	3.00	3.00	0.00
5,400.0	9.00	339.04	5,398.8	22.0	-8.4	-21.2	3.00	3.00	0.00
5,500.0	12.00	339.04	5,497.1	39.0	-14.9	-37.7	3.00	3.00	0.00
5,600.0	15.00	339.04	5,594.3	60.8	-23.3	-58.8	3.00	3.00	0.00
5,700.0	18.00	339.04	5,690.2	87.3	-33.4	-84.4	3.00	3.00	0.00
5,800.0	21.00	339.04	5,784.4	118.5	-45.4	-114.5	3.00	3.00	0.00
5,900.0	24.00	339.04	5,876.8	154.2	-59.1	-149.1	3.00	3.00	0.00
6,000.0	27.00	339.04	5,967.1	194.4	-74.5	-188.0	3.00	3.00	0.00
6,100.0	30.00	339.04	6,054.9	238.9	-91.5	-231.0	3.00	3.00	0.00
6,110.3	30.31	339.04	6,063.8	243.8	-93.4	-235.7	3.00	3.00	0.00
6,200.0	30.31	339.04	6,141.3	286.0	-109.6	-276.6	0.00	0.00	0.00
6,300.0	30.31	339.04	6,227.6	333.2	-127.6	-322.1	0.00	0.00	0.00
6,400.0	30.31	339.04	6,313.9	380.3	-145.7	-367.7	0.00	0.00	0.00
6,500.0	30.31	339.04	6,400.3	427.4	-163.7	-413.3	0.00	0.00	0.00
6,584.0	30.31	339.04	6,472.8	467.0	-178.9	-451.6	0.00	0.00	0.00
Start DLS 13.00 TFO -155.77									
6,600.0	28.42	337.25	6,486.7	474.3	-181.8	-458.6	13.01	-11.79	-11.21
6,700.0	17.57	318.33	6,578.8	507.7	-201.1	-490.3	13.00	-10.85	-18.91
6,800.0	11.95	270.17	6,675.8	519.0	-221.6	-500.0	13.00	-5.62	-48.16
6,900.0	17.60	222.11	6,772.8	507.8	-242.2	-487.2	13.00	5.65	-48.06
7,000.0	28.46	203.26	6,864.8	474.5	-261.8	-452.5	13.00	10.86	-18.86
7,100.0	40.53	194.60	6,947.1	421.0	-279.5	-397.8	13.00	12.07	-8.65
7,200.0	52.98	189.45	7,015.5	349.8	-294.3	-325.7	13.00	12.46	-5.15
7,300.0	65.60	185.78	7,066.5	264.8	-305.5	-240.0	13.00	12.61	-3.67
7,400.0	78.28	182.79	7,097.4	170.2	-312.5	-145.2	13.00	12.69	-2.99
7,492.1	89.99	180.27	7,106.8	78.7	-314.9	-53.8	12.99	12.71	-2.73
7" - Entry Pt. 460'FNL & 2350'FEL									
7,492.7	90.00	180.28	7,106.8	78.2	-314.9	-53.3	1.40	1.18	0.75
7,500.0	90.00	180.28	7,106.8	70.9	-315.0	-46.0	0.00	0.00	0.00
7,600.0	90.00	180.28	7,106.8	-29.1	-315.4	53.8	0.00	0.00	0.00
7,700.0	90.00	180.28	7,106.8	-129.1	-315.9	153.5	0.00	0.00	0.00
7,800.0	90.00	180.28	7,106.8	-229.1	-316.4	253.2	0.00	0.00	0.00
7,900.0	90.00	180.28	7,106.8	-329.1	-316.9	353.0	0.00	0.00	0.00
8,000.0	90.00	180.28	7,106.8	-429.1	-317.4	452.7	0.00	0.00	0.00
8,100.0	90.00	180.28	7,106.8	-529.1	-317.8	552.4	0.00	0.00	0.00
8,200.0	90.00	180.28	7,106.8	-629.1	-318.3	652.1	0.00	0.00	0.00
8,300.0	90.00	180.28	7,106.8	-729.1	-318.8	751.9	0.00	0.00	0.00
8,400.0	90.00	180.28	7,106.8	-829.1	-319.3	851.6	0.00	0.00	0.00
8,500.0	90.00	180.28	7,106.8	-929.1	-319.8	951.3	0.00	0.00	0.00
8,600.0	90.00	180.28	7,106.8	-1,029.1	-320.2	1,051.1	0.00	0.00	0.00
8,700.0	90.00	180.28	7,106.8	-1,129.1	-320.7	1,150.8	0.00	0.00	0.00
8,800.0	90.00	180.28	7,106.8	-1,229.1	-321.2	1,250.5	0.00	0.00	0.00
8,900.0	90.00	180.28	7,106.8	-1,329.1	-321.7	1,350.2	0.00	0.00	0.00
9,000.0	90.00	180.28	7,106.8	-1,429.1	-322.2	1,450.0	0.00	0.00	0.00
9,100.0	90.00	180.28	7,106.8	-1,529.1	-322.6	1,549.7	0.00	0.00	0.00
9,200.0	90.00	180.28	7,106.8	-1,629.1	-323.1	1,649.4	0.00	0.00	0.00
9,300.0	90.00	180.28	7,106.8	-1,729.1	-323.6	1,749.2	0.00	0.00	0.00
9,400.0	90.00	180.28	7,106.8	-1,829.1	-324.1	1,848.9	0.00	0.00	0.00
9,500.0	90.00	180.28	7,106.8	-1,929.1	-324.6	1,948.6	0.00	0.00	0.00
9,600.0	90.00	180.28	7,106.8	-2,029.1	-325.0	2,048.4	0.00	0.00	0.00
9,700.0	90.00	180.28	7,106.8	-2,129.1	-325.5	2,148.1	0.00	0.00	0.00

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Site:	Schmunk Pad Sec.31-T7N-R65W	**North Reference:**	True
Well:	Schmunk EF 31-369HN	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-13-13)		

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)
9,800.0	90.00	180.28	7,106.8	-2,229.1	-326.0	2,247.8	0.00	0.00	0.00
9,900.0	90.00	180.28	7,106.8	-2,329.1	-326.5	2,347.5	0.00	0.00	0.00
10,000.0	90.00	180.28	7,106.8	-2,429.1	-327.0	2,447.3	0.00	0.00	0.00
10,100.0	90.00	180.28	7,106.8	-2,529.1	-327.5	2,547.0	0.00	0.00	0.00
10,200.0	90.00	180.28	7,106.8	-2,629.1	-327.9	2,646.7	0.00	0.00	0.00
10,300.0	90.00	180.28	7,106.8	-2,729.1	-328.4	2,746.5	0.00	0.00	0.00
10,400.0	90.00	180.28	7,106.8	-2,829.1	-328.9	2,846.2	0.00	0.00	0.00
10,500.0	90.00	180.28	7,106.8	-2,929.1	-329.4	2,945.9	0.00	0.00	0.00
10,600.0	90.00	180.28	7,106.8	-3,029.1	-329.9	3,045.6	0.00	0.00	0.00
10,700.0	90.00	180.28	7,106.8	-3,129.1	-330.3	3,145.4	0.00	0.00	0.00
10,800.0	90.00	180.28	7,106.8	-3,229.1	-330.8	3,245.1	0.00	0.00	0.00
10,900.0	90.00	180.28	7,106.8	-3,329.1	-331.3	3,344.8	0.00	0.00	0.00
11,000.0	90.00	180.28	7,106.8	-3,429.1	-331.8	3,444.6	0.00	0.00	0.00
11,100.0	90.00	180.28	7,106.8	-3,529.1	-332.3	3,544.3	0.00	0.00	0.00
11,200.0	90.00	180.28	7,106.8	-3,629.1	-332.7	3,644.0	0.00	0.00	0.00
11,300.0	90.00	180.28	7,106.8	-3,729.1	-333.2	3,743.7	0.00	0.00	0.00
11,400.0	90.00	180.28	7,106.8	-3,829.1	-333.7	3,843.5	0.00	0.00	0.00
11,500.0	90.00	180.28	7,106.8	-3,929.1	-334.2	3,943.2	0.00	0.00	0.00
11,600.0	90.00	180.28	7,106.8	-4,029.1	-334.7	4,042.9	0.00	0.00	0.00
11,700.0	90.00	180.28	7,106.8	-4,129.1	-335.1	4,142.7	0.00	0.00	0.00
11,800.0	90.00	180.28	7,106.8	-4,229.1	-335.6	4,242.4	0.00	0.00	0.00
11,843.6	90.00	180.28	7,106.8	-4,272.7	-335.8	4,285.9	0.00	0.00	0.00
TD at 11843.6 - BHL 470'FSL & 2336'FEL									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,492.1	7,106.8	7"	7	7-1/2

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
5,100.0	5,100.0	0.0	0.0	KOP - Start Build 3.00
6,584.0	6,472.8	467.0	-178.9	Start DLS 13.00 TFO -155.77
11,843.6	7,106.8	-4,272.7	-335.8	TD at 11843.6

ENSIGN Directional

Great Western

SEC.31-T7N-R65W
Schmunk Pad Sec.31-T7N-R65W
Schmunk EF 31-369HN

Wellbore #1
Plan #1 (11-13-13)

Anticollision Report

14 November, 2013

Company:	Great Western	**Local Co-ordinate Reference:**	Well Schmunk EF 31-369HN
Project:	SEC.31-T7N-R65W	**TVD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Reference Site:	Schmunk Pad Sec.31-T7N-R65W	**MD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Schmunk EF 31-369HN	**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 (11-13-13)	**Offset TVD Reference:**	Offset Datum

Reference Plan #1 (11-13-13)

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	**Error Surface:**	Elliptical Conic

Warning Levels Evaluated at: 2.00 **Sigma**

Survey Tool Program **Date** 11/13/2013

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,843.6	Plan #1 (11-13-13) (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Schmunk Pad Sec.31-T7N-R65W						
Schmunk EF 31-365HN - Wellbore #1 - Plan #1 (11-13-1	4,733.4	4,733.4	90.3	69.3	4.291	CC, ES
Schmunk EF 31-365HN - Wellbore #1 - Plan #1 (11-13-1	4,800.0	4,798.2	90.8	69.5	4.256	SF
Schmunk EF 31-367HN - Wellbore #1 - Plan #1 (11-13-1	5,100.0	5,100.0	60.3	37.6	2.657	CC, ES, SF
Schmunk EF 31-368HC - Wellbore #1 - Plan #1 (11-13-1	5,100.0	5,100.0	30.0	7.3	1.322	Level 3, CC, ES, SF

Offset Design Schmunk Pad Sec.31-T7N-R65W - Schmunk EF 31-365HN - Wellbore #1 - Plan #1 (11-13-13) **Offset Site Error:** 0.0 ft

Survey Program: 0-MWD **Offset Well Error:** 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.69	-1.1	90.3	90.3				
100.0	100.0	100.0	100.0	0.1	0.1	90.69	-1.1	90.3	90.3	90.1	0.22	401.937	
200.0	200.0	200.0	200.0	0.3	0.3	90.69	-1.1	90.3	90.3	89.7	0.67	133.979	
300.0	300.0	300.0	300.0	0.6	0.6	90.69	-1.1	90.3	90.3	89.2	1.12	80.387	
400.0	400.0	400.0	400.0	0.8	0.8	90.69	-1.1	90.3	90.3	88.8	1.57	57.420	
500.0	500.0	500.0	500.0	1.0	1.0	90.69	-1.1	90.3	90.3	88.3	2.02	44.660	
600.0	600.0	600.0	600.0	1.2	1.2	90.69	-1.1	90.3	90.3	87.9	2.47	36.540	
700.0	700.0	700.0	700.0	1.5	1.5	90.69	-1.1	90.3	90.3	87.4	2.92	30.918	
800.0	800.0	800.0	800.0	1.7	1.7	90.69	-1.1	90.3	90.3	87.0	3.37	26.796	
900.0	900.0	900.0	900.0	1.9	1.9	90.69	-1.1	90.3	90.3	86.5	3.82	23.643	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.69	-1.1	90.3	90.3	86.1	4.27	21.155	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	90.69	-1.1	90.3	90.3	85.6	4.72	19.140	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	90.69	-1.1	90.3	90.3	85.2	5.17	17.476	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	90.69	-1.1	90.3	90.3	84.7	5.62	16.077	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	90.69	-1.1	90.3	90.3	84.3	6.07	14.887	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	90.69	-1.1	90.3	90.3	83.8	6.52	13.860	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	90.69	-1.1	90.3	90.3	83.4	6.97	12.966	
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	90.69	-1.1	90.3	90.3	82.9	7.42	12.180	
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	90.69	-1.1	90.3	90.3	82.5	7.87	11.484	
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	90.69	-1.1	90.3	90.3	82.0	8.32	10.863	
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	90.69	-1.1	90.3	90.3	81.6	8.77	10.306	
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	90.69	-1.1	90.3	90.3	81.1	9.22	9.803	
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	90.69	-1.1	90.3	90.3	80.7	9.66	9.347	

Company:	Great Western	**Local Co-ordinate Reference:**	Well Schmunk EF 31-369HN
Project:	SEC.31-T7N-R65W	**TVD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Reference Site:	Schmunk Pad Sec.31-T7N-R65W	**MD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Schmunk EF 31-369HN	**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 (11-13-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Schmunk Pad Sec.31-T7N-R65W - Schmunk EF 31-365HN - Wellbore #1 - Plan #1 (11-13-13) — **Offset Site Error:** 0.0 ft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	90.69	-1.1	90.3	90.3	80.2	10.11	8.932	
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	90.69	-1.1	90.3	90.3	79.8	10.56	8.552	
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	90.69	-1.1	90.3	90.3	79.3	11.01	8.203	
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	90.69	-1.1	90.3	90.3	78.9	11.46	7.881	
2,700.0	2,700.0	2,700.0	2,700.0	6.0	6.0	90.69	-1.1	90.3	90.3	78.4	11.91	7.584	
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	90.69	-1.1	90.3	90.3	78.0	12.36	7.308	
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	90.69	-1.1	90.3	90.3	77.5	12.81	7.052	
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	90.69	-1.1	90.3	90.3	77.1	13.26	6.812	
3,100.0	3,100.0	3,100.0	3,100.0	6.9	6.9	90.69	-1.1	90.3	90.3	76.6	13.71	6.589	
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	90.69	-1.1	90.3	90.3	76.2	14.16	6.380	
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	90.69	-1.1	90.3	90.3	75.7	14.61	6.184	
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	90.69	-1.1	90.3	90.3	75.3	15.06	5.999	
3,500.0	3,500.0	3,500.0	3,500.0	7.8	7.8	90.69	-1.1	90.3	90.3	74.8	15.51	5.825	
3,600.0	3,600.0	3,600.0	3,600.0	8.0	8.0	90.69	-1.1	90.3	90.3	74.4	15.96	5.661	
3,700.0	3,700.0	3,700.0	3,700.0	8.2	8.2	90.69	-1.1	90.3	90.3	73.9	16.41	5.506	
3,800.0	3,800.0	3,800.0	3,800.0	8.4	8.4	90.69	-1.1	90.3	90.3	73.5	16.86	5.359	
3,900.0	3,900.0	3,900.0	3,900.0	8.7	8.7	90.69	-1.1	90.3	90.3	73.0	17.31	5.220	
4,000.0	4,000.0	4,000.0	4,000.0	8.9	8.9	90.69	-1.1	90.3	90.3	72.6	17.76	5.088	
4,100.0	4,100.0	4,100.0	4,100.0	9.1	9.1	90.69	-1.1	90.3	90.3	72.1	18.21	4.962	
4,200.0	4,200.0	4,200.0	4,200.0	9.3	9.3	90.69	-1.1	90.3	90.3	71.7	18.66	4.843	
4,300.0	4,300.0	4,300.0	4,300.0	9.6	9.6	90.69	-1.1	90.3	90.3	71.2	19.11	4.729	
4,400.0	4,400.0	4,400.0	4,400.0	9.8	9.8	90.69	-1.1	90.3	90.3	70.8	19.55	4.620	
4,500.0	4,500.0	4,500.0	4,500.0	10.0	10.0	90.69	-1.1	90.3	90.3	70.3	20.00	4.516	
4,600.0	4,600.0	4,600.0	4,600.0	10.2	10.2	90.69	-1.1	90.3	90.3	69.9	20.45	4.417	
4,700.0	4,700.0	4,700.0	4,700.0	10.5	10.5	90.69	-1.1	90.3	90.3	69.4	20.90	4.322	
4,733.4	4,733.4	4,733.4	4,733.4	10.5	10.5	90.69	-1.1	90.3	90.3	69.3	21.05	4.291	CC, ES
4,800.0	4,800.0	4,798.2	4,798.2	10.7	10.7	90.45	-0.7	90.8	90.8	69.5	21.35	4.256	SF
4,900.0	4,900.0	4,894.3	4,894.2	10.9	10.9	88.66	2.2	94.7	94.9	73.1	21.77	4.357	
5,000.0	5,000.0	4,989.7	4,989.1	11.1	11.1	85.52	8.0	102.3	103.2	81.0	22.20	4.647	
5,100.0	5,100.0	5,084.0	5,082.3	11.4	11.3	81.69	16.6	113.5	116.1	93.4	22.63	5.129	
5,200.0	5,200.0	5,176.7	5,173.2	11.6	11.5	99.27	27.7	128.1	134.2	111.1	23.05	5.822	
5,300.0	5,299.6	5,267.6	5,261.3	11.8	11.7	97.56	41.2	145.8	157.5	134.1	23.46	6.714	
5,400.0	5,398.8	5,356.3	5,346.2	12.0	12.0	96.94	56.8	166.2	185.7	161.8	23.87	7.778	
5,500.0	5,497.1	5,442.5	5,427.4	12.3	12.3	96.94	74.2	189.1	218.4	194.2	24.29	8.994	
5,600.0	5,594.3	5,525.9	5,504.7	12.5	12.6	97.23	93.1	214.0	255.6	230.9	24.71	10.344	
5,700.0	5,690.2	5,606.2	5,577.8	12.8	12.9	97.59	113.3	240.4	297.2	272.0	25.16	11.812	
5,800.0	5,784.4	5,683.4	5,646.7	13.1	13.3	97.89	134.5	268.1	342.8	317.2	25.63	13.375	
5,900.0	5,876.8	5,757.7	5,711.6	13.4	13.6	98.07	156.4	296.9	392.4	366.3	26.15	15.009	
6,000.0	5,967.1	5,841.8	5,784.3	13.8	14.1	98.59	182.0	330.5	444.5	417.7	26.75	16.617	
6,100.0	6,054.9	5,924.6	5,855.9	14.3	14.6	99.22	207.2	363.6	497.7	470.3	27.41	18.161	
6,200.0	6,141.3	6,006.4	5,926.6	14.8	15.2	101.40	232.1	396.2	552.1	524.0	28.14	19.618	
6,300.0	6,227.6	6,088.1	5,997.3	15.4	15.8	103.37	257.0	428.9	607.1	578.1	28.95	20.973	
6,400.0	6,313.9	6,169.9	6,068.0	16.0	16.3	105.02	281.9	461.6	662.5	632.7	29.81	22.225	
6,500.0	6,400.3	6,251.7	6,138.8	16.6	17.0	106.43	306.8	494.2	718.2	687.5	30.72	23.379	
6,600.0	6,486.7	6,333.5	6,209.5	17.3	17.6	110.58	331.7	526.9	774.3	742.6	31.64	24.470	
6,700.0	6,578.8	6,415.6	6,280.4	17.8	18.3	136.87	356.7	559.7	831.1	798.6	32.44	25.620	
6,800.0	6,675.8	6,494.7	6,348.9	18.1	18.9	-169.43	380.8	591.3	887.0	853.6	33.45	26.521	
6,900.0	6,772.8	6,566.9	6,411.3	18.3	19.5	-117.38	402.8	620.2	940.9	906.5	34.41	27.346	
7,000.0	6,864.8	6,628.5	6,464.6	18.2	20.0	-95.43	421.6	644.8	992.4	957.4	35.03	28.327	

Company:	Great Western	**Local Co-ordinate Reference:**	Well Schmunk EF 31-369HN
Project:	SEC.31-T7N-R65W	**TVD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Reference Site:	Schmunk Pad Sec.31-T7N-R65W	**MD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Schmunk EF 31-369HN	**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 (11-13-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Schmunk Pad Sec.31-T7N-R65W - Schmunk EF 31-367HN - Wellbore #1 - Plan #1 (11-13-13) — **Offset Site Error:** 0.0 ft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	91.03	-1.1	60.3	60.3				
100.0	100.0	100.0	100.0	0.1	0.1	91.03	-1.1	60.3	60.3	60.1	0.22	268.395	
200.0	200.0	200.0	200.0	0.3	0.3	91.03	-1.1	60.3	60.3	59.7	0.67	89.465	
300.0	300.0	300.0	300.0	0.6	0.6	91.03	-1.1	60.3	60.3	59.2	1.12	53.679	
400.0	400.0	400.0	400.0	0.8	0.8	91.03	-1.1	60.3	60.3	58.8	1.57	38.342	
500.0	500.0	500.0	500.0	1.0	1.0	91.03	-1.1	60.3	60.3	58.3	2.02	29.822	
600.0	600.0	600.0	600.0	1.2	1.2	91.03	-1.1	60.3	60.3	57.9	2.47	24.400	
700.0	700.0	700.0	700.0	1.5	1.5	91.03	-1.1	60.3	60.3	57.4	2.92	20.646	
800.0	800.0	800.0	800.0	1.7	1.7	91.03	-1.1	60.3	60.3	57.0	3.37	17.893	
900.0	900.0	900.0	900.0	1.9	1.9	91.03	-1.1	60.3	60.3	56.5	3.82	15.788	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	91.03	-1.1	60.3	60.3	56.1	4.27	14.126	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	91.03	-1.1	60.3	60.3	55.6	4.72	12.781	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	91.03	-1.1	60.3	60.3	55.2	5.17	11.669	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	91.03	-1.1	60.3	60.3	54.7	5.62	10.736	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	91.03	-1.1	60.3	60.3	54.3	6.07	9.941	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	91.03	-1.1	60.3	60.3	53.8	6.52	9.255	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	91.03	-1.1	60.3	60.3	53.4	6.97	8.658	
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	91.03	-1.1	60.3	60.3	52.9	7.42	8.133	
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	91.03	-1.1	60.3	60.3	52.5	7.87	7.668	
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	91.03	-1.1	60.3	60.3	52.0	8.32	7.254	
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	91.03	-1.1	60.3	60.3	51.6	8.77	6.882	
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	91.03	-1.1	60.3	60.3	51.1	9.22	6.546	
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	91.03	-1.1	60.3	60.3	50.7	9.66	6.242	
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	91.03	-1.1	60.3	60.3	50.2	10.11	5.964	
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	91.03	-1.1	60.3	60.3	49.8	10.56	5.711	
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	91.03	-1.1	60.3	60.3	49.3	11.01	5.477	
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	91.03	-1.1	60.3	60.3	48.9	11.46	5.263	
2,700.0	2,700.0	2,700.0	2,700.0	6.0	6.0	91.03	-1.1	60.3	60.3	48.4	11.91	5.064	
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	91.03	-1.1	60.3	60.3	48.0	12.36	4.880	
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	91.03	-1.1	60.3	60.3	47.5	12.81	4.709	
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	91.03	-1.1	60.3	60.3	47.1	13.26	4.549	
3,100.0	3,100.0	3,100.0	3,100.0	6.9	6.9	91.03	-1.1	60.3	60.3	46.6	13.71	4.400	
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	91.03	-1.1	60.3	60.3	46.2	14.16	4.260	
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	91.03	-1.1	60.3	60.3	45.7	14.61	4.129	
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	91.03	-1.1	60.3	60.3	45.3	15.06	4.006	
3,500.0	3,500.0	3,500.0	3,500.0	7.8	7.8	91.03	-1.1	60.3	60.3	44.8	15.51	3.890	
3,600.0	3,600.0	3,600.0	3,600.0	8.0	8.0	91.03	-1.1	60.3	60.3	44.4	15.96	3.780	
3,700.0	3,700.0	3,700.0	3,700.0	8.2	8.2	91.03	-1.1	60.3	60.3	43.9	16.41	3.677	
3,800.0	3,800.0	3,800.0	3,800.0	8.4	8.4	91.03	-1.1	60.3	60.3	43.5	16.86	3.579	
3,900.0	3,900.0	3,900.0	3,900.0	8.7	8.7	91.03	-1.1	60.3	60.3	43.0	17.31	3.486	
4,000.0	4,000.0	4,000.0	4,000.0	8.9	8.9	91.03	-1.1	60.3	60.3	42.6	17.76	3.397	
4,100.0	4,100.0	4,100.0	4,100.0	9.1	9.1	91.03	-1.1	60.3	60.3	42.1	18.21	3.314	
4,200.0	4,200.0	4,200.0	4,200.0	9.3	9.3	91.03	-1.1	60.3	60.3	41.7	18.66	3.234	
4,300.0	4,300.0	4,300.0	4,300.0	9.6	9.6	91.03	-1.1	60.3	60.3	41.2	19.11	3.158	
4,400.0	4,400.0	4,400.0	4,400.0	9.8	9.8	91.03	-1.1	60.3	60.3	40.8	19.55	3.085	
4,500.0	4,500.0	4,500.0	4,500.0	10.0	10.0	91.03	-1.1	60.3	60.3	40.3	20.00	3.016	
4,600.0	4,600.0	4,600.0	4,600.0	10.2	10.2	91.03	-1.1	60.3	60.3	39.9	20.45	2.949	
4,700.0	4,700.0	4,700.0	4,700.0	10.5	10.5	91.03	-1.1	60.3	60.3	39.4	20.90	2.886	
4,800.0	4,800.0	4,800.0	4,800.0	10.7	10.7	91.03	-1.1	60.3	60.3	39.0	21.35	2.825	
4,900.0	4,900.0	4,900.0	4,900.0	10.9	10.9	91.03	-1.1	60.3	60.3	38.5	21.80	2.767	
5,000.0	5,000.0	5,000.0	5,000.0	11.1	11.1	91.03	-1.1	60.3	60.3	38.1	22.25	2.711	
5,100.0	5,100.0	5,100.0	5,100.0	11.4	11.4	91.03	-1.1	60.3	60.3	37.6	22.70	2.657	CC, ES, SF

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

Company:	Great Western	**Local Co-ordinate Reference:**	Well Schmunk EF 31-369HN
Project:	SEC.31-T7N-R65W	**TVD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Reference Site:	Schmunk Pad Sec.31-T7N-R65W	**MD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Schmunk EF 31-369HN	**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 (11-13-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Schmunk Pad Sec.31-T7N-R65W - Schmunk EF 31-367HN - Wellbore #1 - Plan #1 (11-13-13) — **Offset Site Error:** 0.0 ft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,200.0	5,200.0	5,199.6	5,199.5	11.6	11.6	113.63	-0.5	60.5	61.5	38.4	23.14	2.658	
5,300.0	5,299.6	5,298.6	5,298.5	11.8	11.8	115.39	4.4	62.0	66.0	42.5	23.56	2.802	
5,400.0	5,398.8	5,397.6	5,396.9	12.0	12.0	116.49	14.2	65.1	74.0	50.0	23.97	3.085	
5,500.0	5,497.1	5,496.1	5,494.2	12.3	12.2	116.97	28.8	69.7	85.3	60.9	24.37	3.499	
5,600.0	5,594.3	5,594.2	5,590.2	12.5	12.5	116.96	48.0	75.7	99.9	75.1	24.78	4.032	
5,700.0	5,690.2	5,691.6	5,684.3	12.8	12.7	116.60	71.7	83.2	117.8	92.6	25.21	4.672	
5,800.0	5,784.4	5,788.2	5,776.4	13.1	13.0	116.02	99.7	92.0	138.8	113.2	25.69	5.405	
5,900.0	5,876.8	5,883.9	5,865.9	13.4	13.2	115.30	131.8	102.0	163.0	136.8	26.22	6.216	
6,000.0	5,967.1	5,978.5	5,952.8	13.8	13.6	114.50	167.7	113.3	190.2	163.3	26.84	7.086	
6,100.0	6,054.9	6,072.1	6,036.7	14.3	13.9	113.65	207.2	125.7	220.3	192.7	27.56	7.994	
6,200.0	6,141.3	6,164.7	6,117.6	14.8	14.4	113.16	250.1	139.2	252.4	224.0	28.44	8.877	
6,300.0	6,227.6	6,258.7	6,198.4	15.4	14.8	112.24	296.1	153.6	285.2	255.7	29.45	9.685	
6,400.0	6,313.9	6,353.1	6,279.4	16.0	15.4	111.49	342.4	168.1	318.0	287.4	30.53	10.416	
6,500.0	6,400.3	6,447.5	6,360.3	16.6	15.9	110.88	388.6	182.6	350.8	319.1	31.67	11.076	
6,600.0	6,486.7	6,541.9	6,441.3	17.3	16.5	112.62	434.9	197.2	383.7	350.9	32.83	11.688	
6,700.0	6,578.8	6,629.5	6,518.7	17.8	17.0	133.19	473.3	211.0	417.9	384.3	33.57	12.447	
6,800.0	6,675.8	6,716.0	6,600.8	18.1	17.4	-177.03	495.8	225.5	454.0	419.9	34.11	13.310	
6,900.0	6,772.8	6,804.9	6,688.1	18.3	17.6	-127.55	501.5	240.8	490.5	456.0	34.42	14.247	
7,000.0	6,864.8	6,897.8	6,778.5	18.2	17.7	-107.67	488.3	256.6	525.7	491.3	34.48	15.249	
7,100.0	6,947.1	6,996.6	6,869.4	18.0	17.6	-98.58	453.7	272.3	558.2	523.9	34.24	16.299	
7,200.0	7,015.5	7,103.1	6,956.3	17.7	17.3	-93.71	394.3	287.1	586.1	552.3	33.77	17.353	
7,300.0	7,066.5	7,218.7	7,031.8	17.4	17.0	-91.10	308.1	299.7	607.7	574.5	33.21	18.300	
7,400.0	7,097.4	7,343.1	7,085.5	17.1	16.6	-89.99	196.7	308.3	621.5	588.7	32.80	18.947	
7,500.0	7,106.8	7,473.8	7,106.7	16.9	16.3	-89.99	68.3	311.1	626.0	593.3	32.79	19.093	
7,600.0	7,106.8	7,575.9	7,106.8	16.8	16.5	-90.00	-33.8	310.3	625.8	592.6	33.20	18.849	
7,700.0	7,106.8	7,675.9	7,106.8	17.2	17.0	-90.00	-133.8	309.6	625.5	591.5	34.03	18.380	
7,800.0	7,106.8	7,775.9	7,106.8	17.9	17.7	-90.00	-233.8	308.9	625.3	590.0	35.27	17.730	
7,900.0	7,106.8	7,875.9	7,106.8	18.8	18.5	-90.00	-333.8	308.1	625.0	588.1	36.86	16.955	
8,000.0	7,106.8	7,975.9	7,106.8	19.8	19.5	-90.00	-433.8	307.4	624.8	586.0	38.77	16.112	
8,100.0	7,106.8	8,075.9	7,106.8	20.9	20.6	-90.00	-533.8	306.6	624.5	583.5	40.96	15.247	
8,200.0	7,106.8	8,175.9	7,106.8	22.2	21.8	-90.00	-633.8	305.9	624.2	580.9	43.37	14.392	
8,300.0	7,106.8	8,275.9	7,106.8	23.5	23.1	-90.00	-733.8	305.2	624.0	578.0	45.98	13.569	
8,400.0	7,106.8	8,375.9	7,106.8	24.8	24.5	-90.00	-833.7	304.4	623.7	575.0	48.76	12.792	
8,500.0	7,106.8	8,475.9	7,106.8	26.3	25.9	-90.00	-933.7	303.7	623.5	571.8	51.67	12.066	
8,600.0	7,106.8	8,575.9	7,106.8	27.8	27.4	-90.00	-1,033.7	302.9	623.2	568.5	54.70	11.394	
8,700.0	7,106.8	8,675.9	7,106.8	29.4	29.0	-90.00	-1,133.7	302.2	622.9	565.1	57.82	10.774	
8,800.0	7,106.8	8,775.9	7,106.8	31.0	30.6	-90.00	-1,233.7	301.5	622.7	561.7	61.02	10.204	
8,900.0	7,106.8	8,875.9	7,106.8	32.6	32.2	-90.00	-1,333.7	300.7	622.4	558.1	64.30	9.680	
9,000.0	7,106.8	8,975.9	7,106.8	34.2	33.9	-90.00	-1,433.7	300.0	622.2	554.5	67.64	9.199	
9,100.0	7,106.8	9,075.9	7,106.8	35.9	35.6	-90.00	-1,533.7	299.2	621.9	550.9	71.02	8.756	
9,200.0	7,106.8	9,175.9	7,106.8	37.6	37.3	-90.00	-1,633.7	298.5	621.6	547.2	74.45	8.349	
9,300.0	7,106.8	9,275.9	7,106.8	39.3	39.0	-90.00	-1,733.7	297.8	621.4	543.5	77.92	7.974	
9,400.0	7,106.8	9,375.9	7,106.8	41.1	40.7	-90.00	-1,833.7	297.0	621.1	539.7	81.43	7.628	
9,500.0	7,106.8	9,475.9	7,106.8	42.9	42.5	-90.00	-1,933.7	296.3	620.9	535.9	84.96	7.308	
9,600.0	7,106.8	9,575.9	7,106.8	44.6	44.3	-90.00	-2,033.7	295.5	620.6	532.1	88.52	7.011	
9,700.0	7,106.8	9,675.9	7,106.8	46.4	46.1	-90.00	-2,133.7	294.8	620.3	528.2	92.10	6.736	
9,800.0	7,106.8	9,775.9	7,106.8	48.2	47.9	-90.00	-2,233.7	294.1	620.1	524.4	95.70	6.479	
9,900.0	7,106.8	9,875.9	7,106.8	50.0	49.7	-90.00	-2,333.7	293.3	619.8	520.5	99.32	6.241	
10,000.0	7,106.8	9,975.9	7,106.8	51.8	51.5	-90.00	-2,433.7	292.6	619.6	516.6	102.96	6.018	
10,100.0	7,106.8	10,075.9	7,106.8	53.6	53.3	-90.00	-2,533.7	291.8	619.3	512.7	106.61	5.809	
10,200.0	7,106.8	10,175.9	7,106.8	55.5	55.1	-90.00	-2,633.7	291.1	619.0	508.8	110.27	5.614	
10,300.0	7,106.8	10,275.9	7,106.8	57.3	57.0	-90.00	-2,733.7	290.4	618.8	504.8	113.95	5.431	

Company:	Great Western	**Local Co-ordinate Reference:**	Well Schmunk EF 31-369HN
Project:	SEC.31-T7N-R65W	**TVD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Reference Site:	Schmunk Pad Sec.31-T7N-R65W	**MD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Schmunk EF 31-369HN	**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 (11-13-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Schmunk Pad Sec.31-T7N-R65W - Schmunk EF 31-367HN - Wellbore #1 - Plan #1 (11-13-13)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,400.0	7,106.8	10,375.9	7,106.8	59.1	58.8	-90.00	-2,833.7	289.6	618.5	500.9	117.63	5.258	
10,500.0	7,106.8	10,475.9	7,106.8	61.0	60.6	-90.00	-2,933.7	288.9	618.3	496.9	121.33	5.096	
10,600.0	7,106.8	10,575.9	7,106.8	62.8	62.5	-90.00	-3,033.7	288.1	618.0	493.0	125.03	4.943	
10,700.0	7,106.8	10,675.9	7,106.8	64.7	64.4	-90.00	-3,133.7	287.4	617.7	489.0	128.74	4.798	
10,800.0	7,106.8	10,775.9	7,106.8	66.5	66.2	-90.00	-3,233.7	286.7	617.5	485.0	132.47	4.662	
10,900.0	7,106.8	10,875.9	7,106.8	68.4	68.1	-90.00	-3,333.7	285.9	617.2	481.0	136.19	4.532	
11,000.0	7,106.8	10,975.9	7,106.8	70.2	69.9	-90.00	-3,433.7	285.2	617.0	477.0	139.93	4.409	
11,100.0	7,106.8	11,075.9	7,106.8	72.1	71.8	-90.00	-3,533.7	284.4	616.7	473.0	143.66	4.293	
11,200.0	7,106.8	11,175.9	7,106.8	74.0	73.7	-90.00	-3,633.7	283.7	616.5	469.0	147.41	4.182	
11,300.0	7,106.8	11,275.9	7,106.8	75.9	75.5	-90.00	-3,733.7	283.0	616.2	465.0	151.16	4.076	
11,400.0	7,106.8	11,375.9	7,106.8	77.7	77.4	-90.00	-3,833.7	282.2	615.9	461.0	154.91	3.976	
11,500.0	7,106.8	11,475.9	7,106.8	79.6	79.3	-90.00	-3,933.7	281.5	615.7	457.0	158.67	3.880	
11,600.0	7,106.8	11,575.9	7,106.8	81.5	81.2	-90.00	-4,033.6	280.7	615.4	453.0	162.43	3.789	
11,700.0	7,106.8	11,675.9	7,106.8	83.4	83.1	-90.00	-4,133.6	280.0	615.2	449.0	166.20	3.701	
11,800.0	7,106.8	11,775.9	7,106.8	85.2	84.9	-90.00	-4,233.6	279.3	614.9	444.9	169.97	3.618	
11,843.6	7,106.8	11,819.5	7,106.8	86.1	85.8	-90.00	-4,277.3	278.9	614.8	443.2	171.61	3.582	

Company:	Great Western	**Local Co-ordinate Reference:**	Well Schmunk EF 31-369HN
Project:	SEC.31-T7N-R65W	**TVD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Reference Site:	Schmunk Pad Sec.31-T7N-R65W	**MD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Schmunk EF 31-369HN	**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 (11-13-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Schmunk Pad Sec.31-T7N-R65W - Schmunk EF 31-368HC - Wellbore #1 - Plan #1 (11-13-13) — **Offset Site Error:** 0.0 ft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.02	0.0	30.0	30.0				
100.0	100.0	100.0	100.0	0.1	0.1	90.02	0.0	30.0	30.0	29.8	0.22	133.557	
200.0	200.0	200.0	200.0	0.3	0.3	90.02	0.0	30.0	30.0	29.3	0.67	44.519	
300.0	300.0	300.0	300.0	0.6	0.6	90.02	0.0	30.0	30.0	28.9	1.12	26.711	
400.0	400.0	400.0	400.0	0.8	0.8	90.02	0.0	30.0	30.0	28.4	1.57	19.080	
500.0	500.0	500.0	500.0	1.0	1.0	90.02	0.0	30.0	30.0	28.0	2.02	14.840	
600.0	600.0	600.0	600.0	1.2	1.2	90.02	0.0	30.0	30.0	27.5	2.47	12.142	
700.0	700.0	700.0	700.0	1.5	1.5	90.02	0.0	30.0	30.0	27.1	2.92	10.274	
800.0	800.0	800.0	800.0	1.7	1.7	90.02	0.0	30.0	30.0	26.6	3.37	8.904	
900.0	900.0	900.0	900.0	1.9	1.9	90.02	0.0	30.0	30.0	26.2	3.82	7.856	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.02	0.0	30.0	30.0	25.7	4.27	7.029	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	90.02	0.0	30.0	30.0	25.3	4.72	6.360	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	90.02	0.0	30.0	30.0	24.8	5.17	5.807	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	90.02	0.0	30.0	30.0	24.4	5.62	5.342	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	90.02	0.0	30.0	30.0	24.0	6.07	4.947	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	90.02	0.0	30.0	30.0	23.5	6.52	4.605	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	90.02	0.0	30.0	30.0	23.1	6.97	4.308	
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	90.02	0.0	30.0	30.0	22.6	7.42	4.047	
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	90.02	0.0	30.0	30.0	22.2	7.87	3.816	
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	90.02	0.0	30.0	30.0	21.7	8.32	3.610	
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	90.02	0.0	30.0	30.0	21.3	8.77	3.425	
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	90.02	0.0	30.0	30.0	20.8	9.22	3.257	
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	90.02	0.0	30.0	30.0	20.4	9.66	3.106	
2,300.0	2,300.0	2,300.0	2,300.0	5.1	5.1	90.02	0.0	30.0	30.0	19.9	10.11	2.968	
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	90.02	0.0	30.0	30.0	19.5	10.56	2.842	
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	90.02	0.0	30.0	30.0	19.0	11.01	2.726	
2,600.0	2,600.0	2,600.0	2,600.0	5.7	5.7	90.02	0.0	30.0	30.0	18.6	11.46	2.619	
2,700.0	2,700.0	2,700.0	2,700.0	6.0	6.0	90.02	0.0	30.0	30.0	18.1	11.91	2.520	
2,800.0	2,800.0	2,800.0	2,800.0	6.2	6.2	90.02	0.0	30.0	30.0	17.7	12.36	2.428	
2,900.0	2,900.0	2,900.0	2,900.0	6.4	6.4	90.02	0.0	30.0	30.0	17.2	12.81	2.343	
3,000.0	3,000.0	3,000.0	3,000.0	6.6	6.6	90.02	0.0	30.0	30.0	16.8	13.26	2.264	
3,100.0	3,100.0	3,100.0	3,100.0	6.9	6.9	90.02	0.0	30.0	30.0	16.3	13.71	2.189	
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.1	90.02	0.0	30.0	30.0	15.9	14.16	2.120	
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.3	90.02	0.0	30.0	30.0	15.4	14.61	2.055	
3,400.0	3,400.0	3,400.0	3,400.0	7.5	7.5	90.02	0.0	30.0	30.0	15.0	15.06	1.993	
3,500.0	3,500.0	3,500.0	3,500.0	7.8	7.8	90.02	0.0	30.0	30.0	14.5	15.51	1.936	
3,600.0	3,600.0	3,600.0	3,600.0	8.0	8.0	90.02	0.0	30.0	30.0	14.1	15.96	1.881	
3,700.0	3,700.0	3,700.0	3,700.0	8.2	8.2	90.02	0.0	30.0	30.0	13.6	16.41	1.830	
3,800.0	3,800.0	3,800.0	3,800.0	8.4	8.4	90.02	0.0	30.0	30.0	13.2	16.86	1.781	
3,900.0	3,900.0	3,900.0	3,900.0	8.7	8.7	90.02	0.0	30.0	30.0	12.7	17.31	1.735	
4,000.0	4,000.0	4,000.0	4,000.0	8.9	8.9	90.02	0.0	30.0	30.0	12.3	17.76	1.691	
4,100.0	4,100.0	4,100.0	4,100.0	9.1	9.1	90.02	0.0	30.0	30.0	11.8	18.21	1.649	
4,200.0	4,200.0	4,200.0	4,200.0	9.3	9.3	90.02	0.0	30.0	30.0	11.4	18.66	1.609	
4,300.0	4,300.0	4,300.0	4,300.0	9.6	9.6	90.02	0.0	30.0	30.0	10.9	19.11	1.571	
4,400.0	4,400.0	4,400.0	4,400.0	9.8	9.8	90.02	0.0	30.0	30.0	10.5	19.55	1.535	
4,500.0	4,500.0	4,500.0	4,500.0	10.0	10.0	90.02	0.0	30.0	30.0	10.0	20.00	1.501	
4,600.0	4,600.0	4,600.0	4,600.0	10.2	10.2	90.02	0.0	30.0	30.0	9.6	20.45	1.468	Level 3
4,700.0	4,700.0	4,700.0	4,700.0	10.5	10.5	90.02	0.0	30.0	30.0	9.1	20.90	1.436	Level 3
4,800.0	4,800.0	4,800.0	4,800.0	10.7	10.7	90.02	0.0	30.0	30.0	8.7	21.35	1.406	Level 3
4,900.0	4,900.0	4,900.0	4,900.0	10.9	10.9	90.02	0.0	30.0	30.0	8.2	21.80	1.377	Level 3
5,000.0	5,000.0	5,000.0	5,000.0	11.1	11.1	90.02	0.0	30.0	30.0	7.8	22.25	1.349	Level 3
5,100.0	5,100.0	5,100.0	5,100.0	11.4	11.4	90.02	0.0	30.0	30.0	7.3	22.70	1.322	Level 3, CC, ES, SF

Company:	Great Western	**Local Co-ordinate Reference:**	Well Schmunk EF 31-369HN
Project:	SEC.31-T7N-R65W	**TVD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Reference Site:	Schmunk Pad Sec.31-T7N-R65W	**MD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Schmunk EF 31-369HN	**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 (11-13-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Schmunk Pad Sec.31-T7N-R65W - Schmunk EF 31-368HC - Wellbore #1 - Plan #1 (11-13-13) — **Offset Site Error:** 0.0 ft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,200.0	5,200.0	5,200.0	5,200.0	11.6	11.6	115.47	0.0	30.0	31.1	7.9	23.14	1.342	Level 3
5,300.0	5,299.6	5,299.6	5,299.6	11.8	11.8	126.97	0.0	30.0	35.2	11.6	23.55	1.492	Level 3
5,400.0	5,398.8	5,399.6	5,399.5	12.0	12.0	139.03	1.3	30.0	43.6	19.7	23.90	1.826	
5,500.0	5,497.1	5,500.2	5,499.9	12.3	12.3	145.72	7.6	29.9	54.8	30.7	24.18	2.268	
5,600.0	5,594.3	5,601.2	5,600.3	12.5	12.5	148.83	19.2	29.8	67.7	43.3	24.43	2.771	
5,700.0	5,690.2	5,702.8	5,700.4	12.8	12.7	149.85	36.2	29.6	81.8	57.1	24.64	3.318	
5,800.0	5,784.4	5,804.7	5,799.8	13.1	12.9	149.62	58.7	29.4	96.9	72.1	24.85	3.901	
5,900.0	5,876.8	5,907.0	5,898.2	13.4	13.2	148.64	86.5	29.1	113.2	88.1	25.08	4.514	
6,000.0	5,967.1	6,009.5	5,995.3	13.8	13.5	147.19	119.6	28.7	130.5	105.2	25.34	5.150	
6,100.0	6,054.9	6,112.3	6,090.7	14.3	13.8	145.45	158.0	28.3	148.9	123.3	25.68	5.799	
6,200.0	6,141.3	6,215.6	6,184.2	14.8	14.2	143.41	201.7	27.8	166.8	140.4	26.45	6.309	
6,300.0	6,227.6	6,319.3	6,275.7	15.4	14.6	140.32	250.5	27.3	182.0	154.6	27.43	6.636	
6,400.0	6,313.9	6,419.0	6,361.7	16.0	15.1	136.85	300.8	26.7	195.7	167.2	28.57	6.851	
6,500.0	6,400.3	6,517.4	6,446.6	16.6	15.6	133.84	350.6	26.2	210.0	180.2	29.79	7.050	
6,600.0	6,486.7	6,615.8	6,531.4	17.3	16.2	133.00	400.4	25.6	224.7	193.5	31.12	7.220	
6,700.0	6,578.8	6,711.6	6,614.1	17.8	16.8	146.44	448.9	25.1	236.3	203.6	32.74	7.218	
6,800.0	6,675.8	6,795.6	6,690.1	18.1	17.2	-172.07	484.3	24.5	249.0	215.0	33.92	7.341	
6,900.0	6,772.8	6,883.9	6,775.8	18.3	17.5	-130.36	505.3	23.7	265.9	231.4	34.55	7.696	
7,000.0	6,864.8	6,979.1	6,870.7	18.2	17.6	-117.44	508.3	22.7	286.6	251.9	34.63	8.276	
7,100.0	6,947.1	7,083.6	6,972.9	18.0	17.6	-114.30	488.1	21.4	309.4	275.2	34.14	9.062	
7,200.0	7,015.5	7,200.4	7,078.1	17.7	17.4	-114.29	437.9	19.8	332.2	299.0	33.19	10.009	
7,300.0	7,066.5	7,332.4	7,176.2	17.4	17.1	-115.37	350.4	18.1	352.2	320.2	32.01	11.003	
7,400.0	7,097.4	7,480.0	7,249.9	17.1	16.7	-116.62	223.3	16.3	366.3	335.2	31.06	11.792	
7,500.0	7,106.8	7,638.4	7,277.8	16.9	16.6	-117.41	68.2	14.7	371.4	340.5	30.88	12.029	
7,600.0	7,106.8	7,738.4	7,277.8	16.8	16.8	-117.44	-31.8	13.9	371.1	339.8	31.31	11.852	
7,700.0	7,106.8	7,838.4	7,277.8	17.2	17.2	-117.46	-131.8	13.1	370.8	338.7	32.15	11.534	
7,800.0	7,106.8	7,938.4	7,277.8	17.9	17.8	-117.48	-231.8	12.3	370.6	337.2	33.33	11.116	
7,900.0	7,106.8	8,038.4	7,277.8	18.8	18.6	-117.50	-331.8	11.5	370.3	335.5	34.82	10.633	
8,000.0	7,106.8	8,138.4	7,277.8	19.8	19.5	-117.53	-431.8	10.7	370.0	333.4	36.58	10.114	
8,100.0	7,106.8	8,238.4	7,277.8	20.9	20.6	-117.55	-531.8	9.9	369.7	331.1	38.57	9.585	
8,200.0	7,106.8	8,338.4	7,277.8	22.2	21.8	-117.57	-631.8	9.1	369.4	328.7	40.76	9.063	
8,300.0	7,106.8	8,438.4	7,277.8	23.5	23.1	-117.60	-731.7	8.3	369.1	326.0	43.12	8.561	
8,400.0	7,106.8	8,538.4	7,277.8	24.8	24.5	-117.62	-831.7	7.5	368.9	323.2	45.62	8.086	
8,500.0	7,106.8	8,638.4	7,277.8	26.3	25.9	-117.64	-931.7	6.7	368.6	320.3	48.23	7.642	
8,600.0	7,106.8	8,738.4	7,277.8	27.8	27.4	-117.66	-1,031.7	5.9	368.3	317.3	50.95	7.228	
8,700.0	7,106.8	8,838.4	7,277.8	29.4	29.0	-117.69	-1,131.7	5.1	368.0	314.3	53.75	6.846	
8,800.0	7,106.8	8,938.4	7,277.8	31.0	30.6	-117.71	-1,231.7	4.3	367.7	311.1	56.63	6.494	
8,900.0	7,106.8	9,038.4	7,277.8	32.6	32.2	-117.73	-1,331.7	3.5	367.5	307.9	59.57	6.169	
9,000.0	7,106.8	9,138.4	7,277.8	34.2	33.9	-117.76	-1,431.7	2.7	367.2	304.6	62.56	5.870	
9,100.0	7,106.8	9,238.4	7,277.8	35.9	35.6	-117.78	-1,531.7	1.9	366.9	301.3	65.59	5.594	
9,200.0	7,106.8	9,338.4	7,277.8	37.6	37.3	-117.80	-1,631.7	1.2	366.6	297.9	68.66	5.339	
9,300.0	7,106.8	9,438.4	7,277.8	39.3	39.0	-117.83	-1,731.7	0.4	366.3	294.6	71.77	5.104	
9,400.0	7,106.8	9,538.4	7,277.8	41.1	40.7	-117.85	-1,831.7	-0.4	366.0	291.1	74.91	4.887	
9,500.0	7,106.8	9,638.4	7,277.8	42.9	42.5	-117.87	-1,931.7	-1.2	365.8	287.7	78.07	4.685	
9,600.0	7,106.8	9,738.4	7,277.8	44.6	44.3	-117.90	-2,031.7	-2.0	365.5	284.2	81.26	4.498	
9,700.0	7,106.8	9,838.4	7,277.8	46.4	46.1	-117.92	-2,131.7	-2.8	365.2	280.7	84.46	4.324	
9,800.0	7,106.8	9,938.4	7,277.8	48.2	47.9	-117.94	-2,231.7	-3.6	364.9	277.2	87.69	4.162	
9,900.0	7,106.8	10,038.4	7,277.8	50.0	49.7	-117.97	-2,331.7	-4.4	364.6	273.7	90.92	4.010	
10,000.0	7,106.8	10,138.4	7,277.8	51.8	51.5	-117.99	-2,431.7	-5.2	364.4	270.2	94.18	3.869	
10,100.0	7,106.8	10,238.4	7,277.8	53.6	53.3	-118.01	-2,531.7	-6.0	364.1	266.6	97.44	3.736	
10,200.0	7,106.8	10,338.4	7,277.8	55.5	55.1	-118.04	-2,631.7	-6.8	363.8	263.1	100.72	3.612	
10,300.0	7,106.8	10,438.4	7,277.8	57.3	57.0	-118.06	-2,731.7	-7.6	363.5	259.5	104.00	3.495	

Company:	Great Western	**Local Co-ordinate Reference:**	Well Schmunk EF 31-369HN
Project:	SEC.31-T7N-R65W	**TVD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Reference Site:	Schmunk Pad Sec.31-T7N-R65W	**MD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Schmunk EF 31-369HN	**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 (11-13-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Schmunk Pad Sec.31-T7N-R65W - Schmunk EF 31-368HC - Wellbore #1 - Plan #1 (11-13-13)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

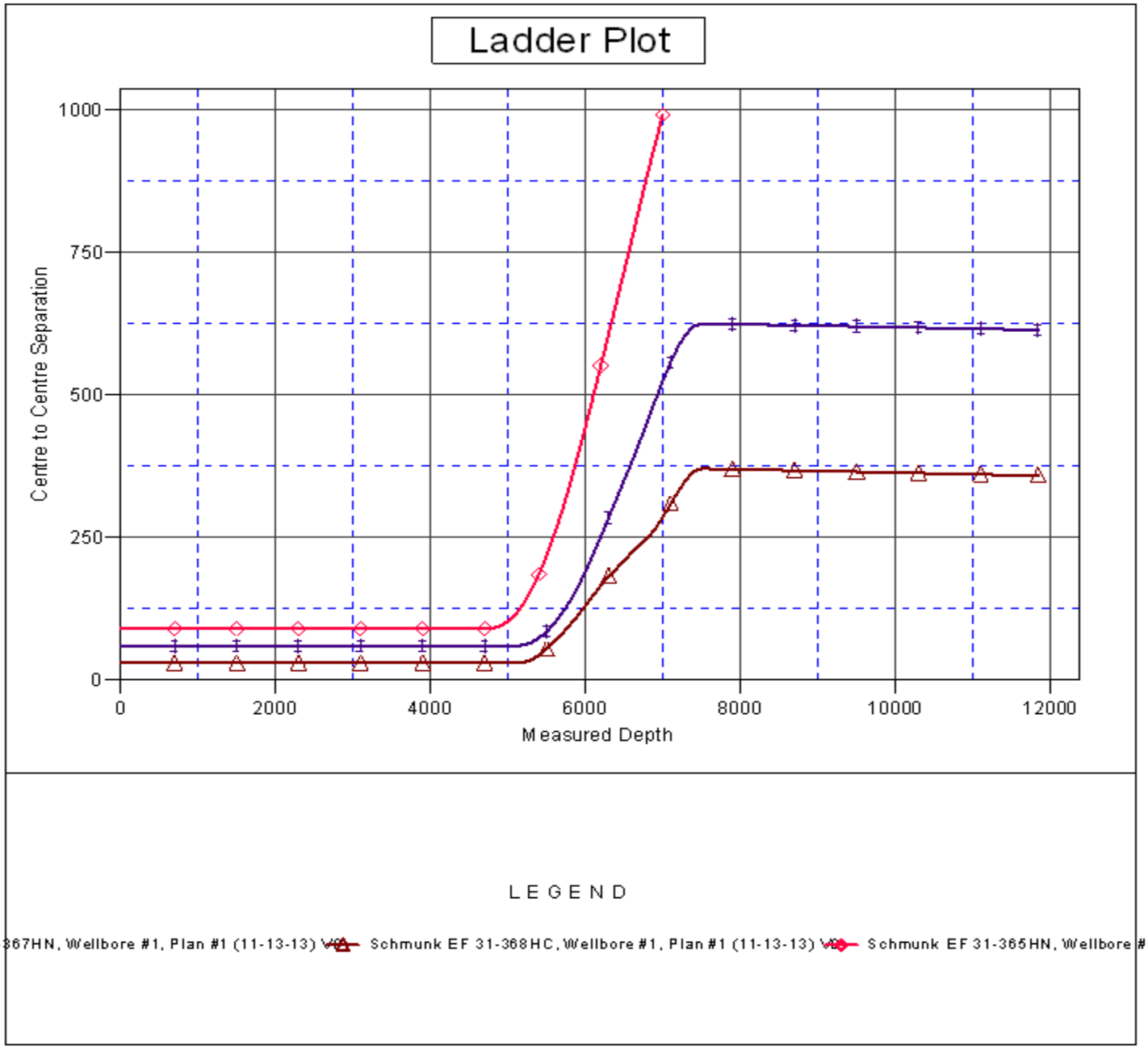
Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,400.0	7,106.8	10,538.4	7,277.8	59.1	58.8	-118.08	-2,831.7	-8.4	363.2	255.9	107.30	3.385	
10,500.0	7,106.8	10,638.4	7,277.8	61.0	60.7	-118.11	-2,931.7	-9.2	363.0	252.4	110.60	3.282	
10,600.0	7,106.8	10,738.4	7,277.8	62.8	62.5	-118.13	-3,031.7	-10.0	362.7	248.8	113.91	3.184	
10,700.0	7,106.8	10,838.4	7,277.8	64.7	64.4	-118.16	-3,131.7	-10.8	362.4	245.2	117.22	3.092	
10,800.0	7,106.8	10,938.4	7,277.8	66.5	66.2	-118.18	-3,231.7	-11.6	362.1	241.6	120.54	3.004	
10,900.0	7,106.8	11,038.4	7,277.8	68.4	68.1	-118.20	-3,331.7	-12.4	361.8	238.0	123.87	2.921	
11,000.0	7,106.8	11,138.4	7,277.8	70.2	70.0	-118.23	-3,431.6	-13.2	361.6	234.4	127.20	2.842	
11,100.0	7,106.8	11,238.4	7,277.8	72.1	71.8	-118.25	-3,531.6	-14.0	361.3	230.7	130.53	2.768	
11,200.0	7,106.8	11,338.4	7,277.8	74.0	73.7	-118.27	-3,631.6	-14.8	361.0	227.1	133.87	2.697	
11,300.0	7,106.8	11,438.4	7,277.8	75.9	75.6	-118.30	-3,731.6	-15.6	360.7	223.5	137.21	2.629	
11,400.0	7,106.8	11,538.4	7,277.8	77.7	77.4	-118.32	-3,831.6	-16.4	360.4	219.9	140.56	2.564	
11,500.0	7,106.8	11,638.4	7,277.8	79.6	79.3	-118.35	-3,931.6	-17.2	360.2	216.3	143.90	2.503	
11,600.0	7,106.8	11,738.4	7,277.8	81.5	81.2	-118.37	-4,031.6	-18.0	359.9	212.6	147.25	2.444	
11,700.0	7,106.8	11,838.4	7,277.8	83.4	83.1	-118.39	-4,131.6	-18.8	359.6	209.0	150.60	2.388	
11,800.0	7,106.8	11,938.4	7,277.8	85.2	85.0	-118.42	-4,231.6	-19.6	359.3	205.4	153.96	2.334	
11,843.6	7,106.8	11,982.0	7,277.8	86.1	85.8	-118.43	-4,275.3	-20.0	359.2	203.8	155.42	2.311	

Company:	Great Western	**Local Co-ordinate Reference:**	Well Schmunk EF 31-369HN
Project:	SEC.31-T7N-R65W	**TVD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Reference Site:	Schmunk Pad Sec.31-T7N-R65W	**MD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Schmunk EF 31-369HN	**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 (11-13-13)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4866.8ft (RKB - 16.5')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Schmunk EF 31-369HN
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.51°



Company:	Great Western	**Local Co-ordinate Reference:**	Well Schmunk EF 31-369HN
Project:	SEC.31-T7N-R65W	**TVD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Reference Site:	Schmunk Pad Sec.31-T7N-R65W	**MD Reference:**	WELL @ 4866.8ft (RKB - 16.5')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Schmunk EF 31-369HN	**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 (11-13-13)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4866.8ft (RKB - 16.5')	Coordinates are relative to: Schmunk EF 31-369HN
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: 0.51°