



Project: Weld Co., CO
 Site: Sec.22-T1N-R65W
 Well: Drake 01N-65W-22-8N
 Wellbore: Wellbore #1
 Design: Design #1
 Lat: 40° 1' 48.846 N
 Long: 104° 38' 43.534 W
 GL: 5090.00

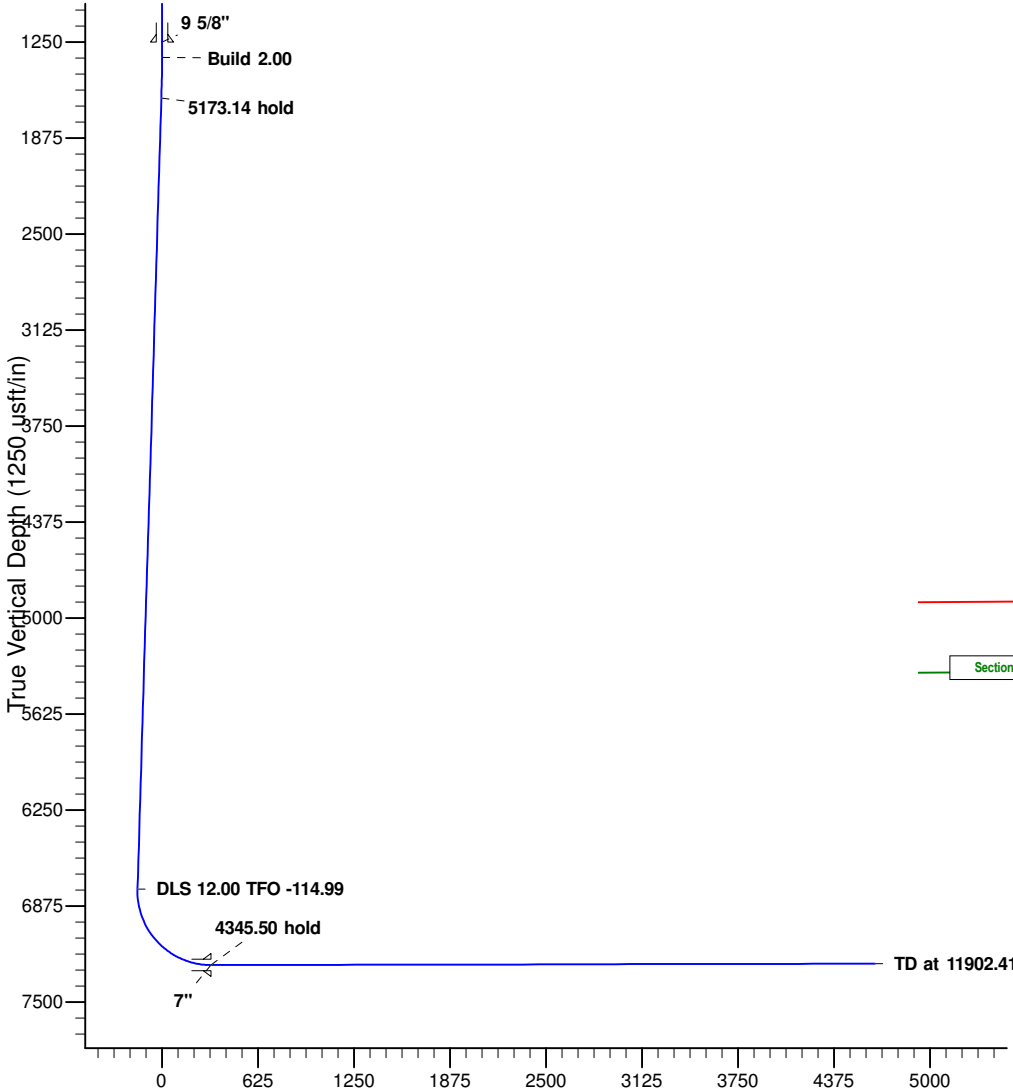


KB: WELL @ 5114.30usft (Original Well Elev)

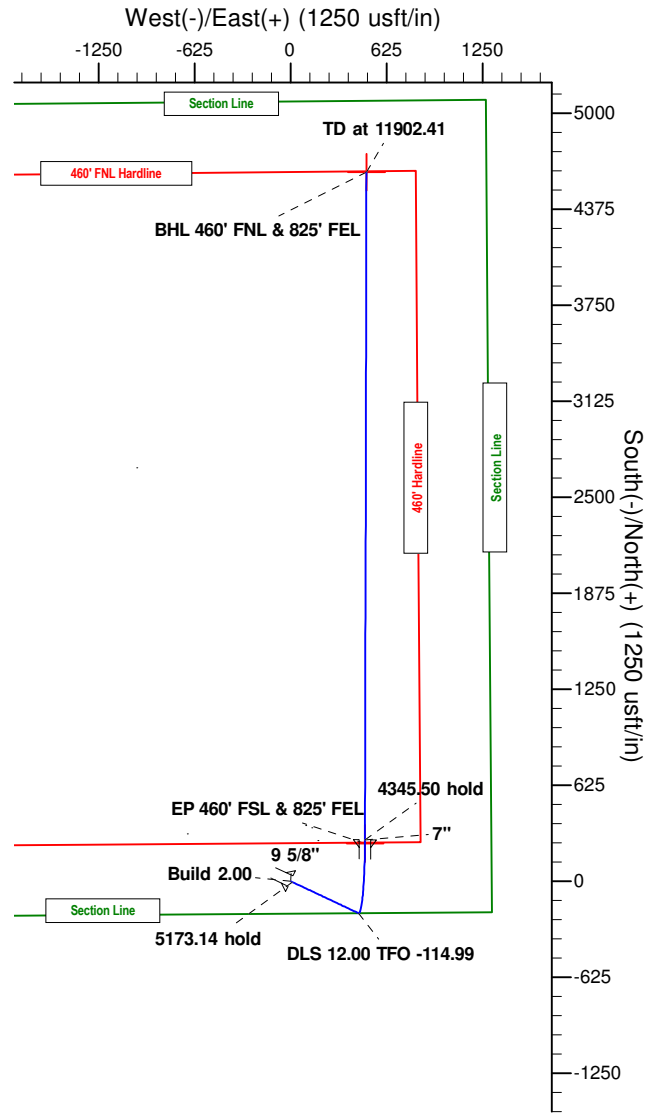


M Azimuths to True North
 Magnetic North: 8.33°
 Magnetic Field
 Strength: 52605.6snT
 Dip Angle: 66.66°
 Date: 09/12/2014
 Model: IGRF2010

CASING DETAILS:		Name	Size
TVD	MD	9 5/8"	9-5/8
1250.00	1250.00	7"	7
7259.30	7556.91		



Vertical Section at 6.11° (1250 usft/in)



WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
BHL 460' FNL & 825' FEL	7250.30	4615.40	493.88	40° 2' 34.458 N	104° 38' 37.183 W	Shape
EP 460' FSL & 825' FEL	7259.30	245.92	484.45	40° 1' 51.276 N	104° 38' 37.306 W	Point

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1350.00	0.00	0.00	1350.00	0.00	0.00	0.00	0.00	0.00	Build 2.00
1614.14	5.28	115.21	1613.76	-5.18	11.01	2.00	115.21	-3.98	5173.14 hold
6787.28	5.28	115.21	6764.93	-208.08	441.92	0.00	0.00	-159.88	DLS 12.00 TFO -114.99
7556.91	90.12	0.12	7259.30	269.92	484.45	12.00	-114.99	319.93	4345.50 hold
11902.41	90.12	0.12	7250.30	4615.40	493.88	0.00	0.00	4641.75	TD at 11902.41



Precision
Directional Services

Verdad Oil & Gas

Weld Co., CO

Sec.22-T1N-R65W

Drake 01N-65W-22-8N

Wellbore #1

Plan: Design #1

Standard Planning Report

12 September, 2014



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Drake 01N-65W-22-8N
Company:	Verdad Oil & Gas	TVD Reference:	WELL @ 5114.30usft (Original Well Elev)
Project:	Weld Co., CO	MD Reference:	WELL @ 5114.30usft (Original Well Elev)
Site:	Sec.22-T1N-R65W	North Reference:	True
Well:	Drake 01N-65W-22-8N	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Weld Co., CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	Sec.22-T1N-R65W				
Site Position:		Northing:	1,255,012.76 usft	Latitude:	40° 1' 48.846 N
From:	Lat/Long	Easting:	3,239,197.12 usft	Longitude:	104° 38' 44.884 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.55 °

Well	Drake 01N-65W-22-8N					
Well Position	+N/-S	-0.03 usft	Northing:	1,255,013.75 usft	Latitude:	40° 1' 48.846 N
	+E/-W	105.01 usft	Easting:	3,239,302.13 usft	Longitude:	104° 38' 43.534 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,090.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	09/12/14	8.33	66.66	52,606

Design	Design #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	6.11

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,350.00	0.00	0.00	1,350.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,614.14	5.28	115.21	1,613.76	-5.18	11.01	2.00	2.00	0.00	115.21	
6,787.28	5.28	115.21	6,764.93	-208.08	441.92	0.00	0.00	0.00	0.00	
7,556.91	90.12	0.12	7,259.30	269.92	484.45	12.00	11.02	-14.95	-114.99	EP 460' FSL & 825' F
11,902.41	90.12	0.12	7,250.30	4,615.40	493.88	0.00	0.00	0.00	0.00	BHL 460' FNL & 825'

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Drake 01N-65W-22-8N
Company:	Verdad Oil & Gas	TVD Reference:	WELL @ 5114.30usft (Original Well Elev)
Project:	Weld Co., CO	MD Reference:	WELL @ 5114.30usft (Original Well Elev)
Site:	Sec.22-T1N-R65W	North Reference:	True
Well:	Drake 01N-65W-22-8N	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,350.00	0.00	0.00	1,350.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Build 2.00										
1,400.00	1.00	115.21	1,400.00	-0.19	0.39	-0.14	2.00	2.00	0.00	0.00
1,500.00	3.00	115.21	1,499.93	-1.67	3.55	-1.29	2.00	2.00	0.00	0.00
1,600.00	5.00	115.21	1,599.68	-4.64	9.86	-3.57	2.00	2.00	0.00	0.00
1,614.14	5.28	115.21	1,613.76	-5.18	11.01	-3.98	2.00	2.00	0.00	0.00
5173.14 hold										
1,700.00	5.28	115.21	1,699.26	-8.55	18.16	-6.57	0.00	0.00	0.00	0.00
1,800.00	5.28	115.21	1,798.84	-12.47	26.49	-9.58	0.00	0.00	0.00	0.00
1,900.00	5.28	115.21	1,898.41	-16.40	34.82	-12.60	0.00	0.00	0.00	0.00
2,000.00	5.28	115.21	1,997.99	-20.32	43.15	-15.61	0.00	0.00	0.00	0.00
2,100.00	5.28	115.21	2,097.56	-24.24	51.48	-18.62	0.00	0.00	0.00	0.00
2,200.00	5.28	115.21	2,197.14	-28.16	59.81	-21.64	0.00	0.00	0.00	0.00
2,300.00	5.28	115.21	2,296.71	-32.08	68.14	-24.65	0.00	0.00	0.00	0.00
2,400.00	5.28	115.21	2,396.29	-36.01	76.47	-27.67	0.00	0.00	0.00	0.00
2,500.00	5.28	115.21	2,495.86	-39.93	84.80	-30.68	0.00	0.00	0.00	0.00
2,600.00	5.28	115.21	2,595.44	-43.85	93.13	-33.69	0.00	0.00	0.00	0.00
2,700.00	5.28	115.21	2,695.01	-47.77	101.46	-36.71	0.00	0.00	0.00	0.00
2,800.00	5.28	115.21	2,794.59	-51.69	109.79	-39.72	0.00	0.00	0.00	0.00
2,900.00	5.28	115.21	2,894.16	-55.62	118.12	-42.73	0.00	0.00	0.00	0.00
3,000.00	5.28	115.21	2,993.74	-59.54	126.45	-45.75	0.00	0.00	0.00	0.00
3,100.00	5.28	115.21	3,093.31	-63.46	134.78	-48.76	0.00	0.00	0.00	0.00
3,200.00	5.28	115.21	3,192.89	-67.38	143.11	-51.77	0.00	0.00	0.00	0.00
3,300.00	5.28	115.21	3,292.47	-71.30	151.44	-54.79	0.00	0.00	0.00	0.00
3,400.00	5.28	115.21	3,392.04	-75.23	159.77	-57.80	0.00	0.00	0.00	0.00
3,500.00	5.28	115.21	3,491.62	-79.15	168.10	-60.81	0.00	0.00	0.00	0.00
3,600.00	5.28	115.21	3,591.19	-83.07	176.43	-63.83	0.00	0.00	0.00	0.00
3,700.00	5.28	115.21	3,690.77	-86.99	184.76	-66.84	0.00	0.00	0.00	0.00
3,800.00	5.28	115.21	3,790.34	-90.92	193.09	-69.85	0.00	0.00	0.00	0.00
3,900.00	5.28	115.21	3,889.92	-94.84	201.42	-72.87	0.00	0.00	0.00	0.00
4,000.00	5.28	115.21	3,989.49	-98.76	209.75	-75.88	0.00	0.00	0.00	0.00
4,100.00	5.28	115.21	4,089.07	-102.68	218.08	-78.90	0.00	0.00	0.00	0.00
4,200.00	5.28	115.21	4,188.64	-106.60	226.41	-81.91	0.00	0.00	0.00	0.00
4,300.00	5.28	115.21	4,288.22	-110.53	234.74	-84.92	0.00	0.00	0.00	0.00
4,400.00	5.28	115.21	4,387.79	-114.45	243.07	-87.94	0.00	0.00	0.00	0.00
4,500.00	5.28	115.21	4,487.37	-118.37	251.40	-90.95	0.00	0.00	0.00	0.00
4,600.00	5.28	115.21	4,586.94	-122.29	259.73	-93.96	0.00	0.00	0.00	0.00
4,700.00	5.28	115.21	4,686.52	-126.21	268.06	-96.98	0.00	0.00	0.00	0.00
4,800.00	5.28	115.21	4,786.09	-130.14	276.39	-99.99	0.00	0.00	0.00	0.00
4,900.00	5.28	115.21	4,885.67	-134.06	284.72	-103.00	0.00	0.00	0.00	0.00

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Project:	Weld Co., CO	MD Reference:	WELL @ 5114.30usft (Original Well Elev)
Site:	Sec.22-T1N-R65W	North Reference:	True
Well:	Drake 01N-65W-22-8N	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,000.00	5.28	115.21	4,985.24	-137.98	293.05	-106.02	0.00	0.00	0.00	
5,100.00	5.28	115.21	5,084.82	-141.90	301.38	-109.03	0.00	0.00	0.00	
5,200.00	5.28	115.21	5,184.40	-145.82	309.71	-112.04	0.00	0.00	0.00	
5,300.00	5.28	115.21	5,283.97	-149.75	318.04	-115.06	0.00	0.00	0.00	
5,400.00	5.28	115.21	5,383.55	-153.67	326.37	-118.07	0.00	0.00	0.00	
5,500.00	5.28	115.21	5,483.12	-157.59	334.70	-121.08	0.00	0.00	0.00	
5,600.00	5.28	115.21	5,582.70	-161.51	343.03	-124.10	0.00	0.00	0.00	
5,700.00	5.28	115.21	5,682.27	-165.44	351.36	-127.11	0.00	0.00	0.00	
5,800.00	5.28	115.21	5,781.85	-169.36	359.69	-130.13	0.00	0.00	0.00	
5,900.00	5.28	115.21	5,881.42	-173.28	368.01	-133.14	0.00	0.00	0.00	
6,000.00	5.28	115.21	5,981.00	-177.20	376.34	-136.15	0.00	0.00	0.00	
6,100.00	5.28	115.21	6,080.57	-181.12	384.67	-139.17	0.00	0.00	0.00	
6,200.00	5.28	115.21	6,180.15	-185.05	393.00	-142.18	0.00	0.00	0.00	
6,300.00	5.28	115.21	6,279.72	-188.97	401.33	-145.19	0.00	0.00	0.00	
6,400.00	5.28	115.21	6,379.30	-192.89	409.66	-148.21	0.00	0.00	0.00	
6,500.00	5.28	115.21	6,478.87	-196.81	417.99	-151.22	0.00	0.00	0.00	
6,600.00	5.28	115.21	6,578.45	-200.73	426.32	-154.23	0.00	0.00	0.00	
6,700.00	5.28	115.21	6,678.02	-204.66	434.65	-157.25	0.00	0.00	0.00	
6,787.28	5.28	115.21	6,764.93	-208.08	441.92	-159.88	0.00	0.00	0.00	
DLS 12.00 TFO -114.99										
6,800.00	4.84	98.58	6,777.60	-208.41	442.98	-160.09	12.00	-3.49	-130.74	
6,825.00	5.31	64.53	6,802.51	-208.07	445.07	-159.53	12.00	1.86	-136.20	
6,850.00	7.13	42.16	6,827.37	-206.42	447.16	-157.67	12.00	7.30	-89.48	
6,875.00	9.56	29.94	6,852.10	-203.47	449.23	-154.52	12.00	9.74	-48.91	
6,900.00	12.25	22.82	6,876.65	-199.23	451.30	-150.08	12.00	10.75	-28.46	
6,925.00	15.05	18.28	6,900.94	-193.70	453.35	-144.36	12.00	11.22	-18.18	
6,950.00	17.92	15.14	6,924.91	-186.90	455.37	-137.39	12.00	11.47	-12.53	
6,975.00	20.82	12.85	6,948.49	-178.85	457.37	-129.17	12.00	11.61	-9.15	
7,000.00	23.75	11.11	6,971.62	-169.58	459.32	-119.74	12.00	11.70	-6.99	
7,025.00	26.69	9.72	6,994.24	-159.10	461.24	-109.12	12.00	11.77	-5.53	
7,050.00	29.64	8.60	7,016.28	-147.45	463.12	-97.34	12.00	11.81	-4.51	
7,075.00	32.60	7.66	7,037.67	-134.66	464.94	-84.43	12.00	11.84	-3.76	
7,100.00	35.57	6.86	7,058.38	-120.76	466.70	-70.42	12.00	11.87	-3.19	
7,125.00	38.54	6.17	7,078.33	-105.80	468.41	-55.36	12.00	11.88	-2.76	
7,150.00	41.52	5.56	7,097.47	-89.80	470.05	-39.28	12.00	11.90	-2.42	
7,175.00	44.49	5.02	7,115.75	-72.83	471.62	-22.23	12.00	11.91	-2.15	
7,200.00	47.47	4.54	7,133.12	-54.91	473.12	-4.26	12.00	11.92	-1.94	
7,225.00	50.46	4.10	7,149.53	-36.11	474.54	14.59	12.00	11.93	-1.76	
7,250.00	53.44	3.70	7,164.94	-16.47	475.87	34.26	12.00	11.93	-1.62	
7,275.00	56.42	3.32	7,179.30	3.95	477.12	54.69	12.00	11.94	-1.50	
7,300.00	59.41	2.97	7,192.58	25.10	478.28	75.84	12.00	11.94	-1.40	
7,325.00	62.39	2.64	7,204.73	46.91	479.35	97.65	12.00	11.95	-1.31	
7,350.00	65.38	2.33	7,215.73	69.34	480.33	120.05	12.00	11.95	-1.24	
7,375.00	68.37	2.04	7,225.55	92.31	481.20	142.99	12.00	11.95	-1.18	
7,400.00	71.36	1.75	7,234.16	115.77	481.98	166.39	12.00	11.95	-1.14	
7,425.00	74.35	1.48	7,241.53	139.64	482.65	190.20	12.00	11.95	-1.10	
7,450.00	77.33	1.21	7,247.64	163.87	483.22	214.36	12.00	11.96	-1.07	
7,475.00	80.32	0.95	7,252.48	188.39	483.68	238.79	12.00	11.96	-1.04	
7,500.00	83.31	0.70	7,256.04	213.13	484.04	263.43	12.00	11.96	-1.02	
7,525.00	86.30	0.44	7,258.30	238.03	484.29	288.20	12.00	11.96	-1.01	
7,550.00	89.29	0.19	7,259.26	263.01	484.43	313.05	12.00	11.96	-1.00	
7,556.91	90.12	0.12	7,259.30	269.92	484.45	319.93	12.00	11.96	-1.00	
4345.50 hold										
7,600.00	90.12	0.12	7,259.21	313.00	484.54	362.78	0.00	0.00	0.00	

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Project:	Weld Co., CO	MD Reference:	WELL @ 5114.30usft (Original Well Elev)
Site:	Sec.22-T1N-R65W	North Reference:	True
Well:	Drake 01N-65W-22-8N	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,700.00	90.12	0.12	7,259.00	413.00	484.76	462.24	0.00	0.00	0.00
7,800.00	90.12	0.12	7,258.80	513.00	484.97	561.69	0.00	0.00	0.00
7,900.00	90.12	0.12	7,258.59	613.00	485.19	661.15	0.00	0.00	0.00
8,000.00	90.12	0.12	7,258.38	713.00	485.41	760.60	0.00	0.00	0.00
8,100.00	90.12	0.12	7,258.18	813.00	485.63	860.06	0.00	0.00	0.00
8,200.00	90.12	0.12	7,257.97	913.00	485.84	959.51	0.00	0.00	0.00
8,300.00	90.12	0.12	7,257.76	1,013.00	486.06	1,058.97	0.00	0.00	0.00
8,400.00	90.12	0.12	7,257.55	1,113.00	486.28	1,158.42	0.00	0.00	0.00
8,500.00	90.12	0.12	7,257.35	1,213.00	486.49	1,257.88	0.00	0.00	0.00
8,600.00	90.12	0.12	7,257.14	1,313.00	486.71	1,357.33	0.00	0.00	0.00
8,700.00	90.12	0.12	7,256.93	1,413.00	486.93	1,456.79	0.00	0.00	0.00
8,800.00	90.12	0.12	7,256.73	1,513.00	487.14	1,556.24	0.00	0.00	0.00
8,900.00	90.12	0.12	7,256.52	1,613.00	487.36	1,655.70	0.00	0.00	0.00
9,000.00	90.12	0.12	7,256.31	1,713.00	487.58	1,755.15	0.00	0.00	0.00
9,100.00	90.12	0.12	7,256.10	1,813.00	487.80	1,854.61	0.00	0.00	0.00
9,200.00	90.12	0.12	7,255.90	1,913.00	488.01	1,954.06	0.00	0.00	0.00
9,300.00	90.12	0.12	7,255.69	2,013.00	488.23	2,053.52	0.00	0.00	0.00
9,400.00	90.12	0.12	7,255.48	2,113.00	488.45	2,152.97	0.00	0.00	0.00
9,500.00	90.12	0.12	7,255.28	2,213.00	488.66	2,252.43	0.00	0.00	0.00
9,600.00	90.12	0.12	7,255.07	2,313.00	488.88	2,351.88	0.00	0.00	0.00
9,700.00	90.12	0.12	7,254.86	2,413.00	489.10	2,451.34	0.00	0.00	0.00
9,800.00	90.12	0.12	7,254.65	2,512.99	489.32	2,550.79	0.00	0.00	0.00
9,900.00	90.12	0.12	7,254.45	2,612.99	489.53	2,650.25	0.00	0.00	0.00
10,000.00	90.12	0.12	7,254.24	2,712.99	489.75	2,749.70	0.00	0.00	0.00
10,100.00	90.12	0.12	7,254.03	2,812.99	489.97	2,849.16	0.00	0.00	0.00
10,200.00	90.12	0.12	7,253.83	2,912.99	490.18	2,948.61	0.00	0.00	0.00
10,300.00	90.12	0.12	7,253.62	3,012.99	490.40	3,048.07	0.00	0.00	0.00
10,400.00	90.12	0.12	7,253.41	3,112.99	490.62	3,147.52	0.00	0.00	0.00
10,500.00	90.12	0.12	7,253.20	3,212.99	490.84	3,246.98	0.00	0.00	0.00
10,600.00	90.12	0.12	7,253.00	3,312.99	491.05	3,346.43	0.00	0.00	0.00
10,700.00	90.12	0.12	7,252.79	3,412.99	491.27	3,445.89	0.00	0.00	0.00
10,800.00	90.12	0.12	7,252.58	3,512.99	491.49	3,545.34	0.00	0.00	0.00
10,900.00	90.12	0.12	7,252.38	3,612.99	491.70	3,644.80	0.00	0.00	0.00
11,000.00	90.12	0.12	7,252.17	3,712.99	491.92	3,744.25	0.00	0.00	0.00
11,100.00	90.12	0.12	7,251.96	3,812.99	492.14	3,843.71	0.00	0.00	0.00
11,200.00	90.12	0.12	7,251.75	3,912.99	492.36	3,943.16	0.00	0.00	0.00
11,300.00	90.12	0.12	7,251.55	4,012.99	492.57	4,042.62	0.00	0.00	0.00
11,400.00	90.12	0.12	7,251.34	4,112.99	492.79	4,142.07	0.00	0.00	0.00
11,500.00	90.12	0.12	7,251.13	4,212.99	493.01	4,241.53	0.00	0.00	0.00
11,600.00	90.12	0.12	7,250.93	4,312.99	493.22	4,340.98	0.00	0.00	0.00
11,700.00	90.12	0.12	7,250.72	4,412.99	493.44	4,440.44	0.00	0.00	0.00
11,800.00	90.12	0.12	7,250.51	4,512.99	493.66	4,539.89	0.00	0.00	0.00
11,902.41	90.12	0.12	7,250.30	4,615.40	493.88	4,641.75	0.00	0.00	0.00
TD at 11902.41									

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Drake 01N-65W-22-8N
Company:	Verdad Oil & Gas	TVD Reference:	WELL @ 5114.30usft (Original Well Elev)
Project:	Weld Co., CO	MD Reference:	WELL @ 5114.30usft (Original Well Elev)
Site:	Sec.22-T1N-R65W	North Reference:	True
Well:	Drake 01N-65W-22-8N	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Design Targets										
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
- Shape										
BHL 460' FNL & 825' FE - plan hits target center - Point	0.00	0.00	7,250.30	4,615.40	493.88	1,259,633.69	3,239,751.51	40° 2' 34.458 N	104° 38' 37.183 W	
EP 460' FSL & 825' FEL - plan misses target center by 0.56usft at 7532.92usft MD (7258.75 TVD, 245.94 N, 484.34 E) - Point	0.00	0.00	7,259.30	245.92	484.45	1,255,264.32	3,239,784.18	40° 1' 51.276 N	104° 38' 37.306 W	

Casing Points					
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter	
(usft)	(usft)		(")	(")	
1,250.00	1,250.00	9 5/8"	9-5/8	12-1/4	
7,556.91	7,259.30	7"	7	7-1/2	

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(usft)	(usft)	+N/-S	+E/-W		
		(usft)	(usft)		
1,350.00	1,350.00	0.00	0.00	Build 2.00	
1,614.14	1,613.76	-5.18	11.01	5173.14 hold	
6,787.28	6,764.93	-208.08	441.92	DLS 12.00 TFO -114.99	
7,556.91	7,259.30	269.92	484.45	4345.50 hold	
11,902.41	7,250.30	4,615.40	493.88	TD at 11902.41	



Precision
Directional Services

Verdad Oil & Gas

Weld Co., CO
Sec.22-T1N-R65W
Drake 01N-65W-22-8N

Wellbore #1
Design #1

Anticollision Summary Report

12 September, 2014



Company:	Verdad Oil & Gas	Local Co-ordinate Reference:	Well Drake 01N-65W-22-8N
Project:	Weld Co., CO	TVD Reference:	WELL @ 5114.30usft (Original Well Elev)
Reference Site:	Sec.22-T1N-R65W	MD Reference:	WELL @ 5114.30usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Drake 01N-65W-22-8N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

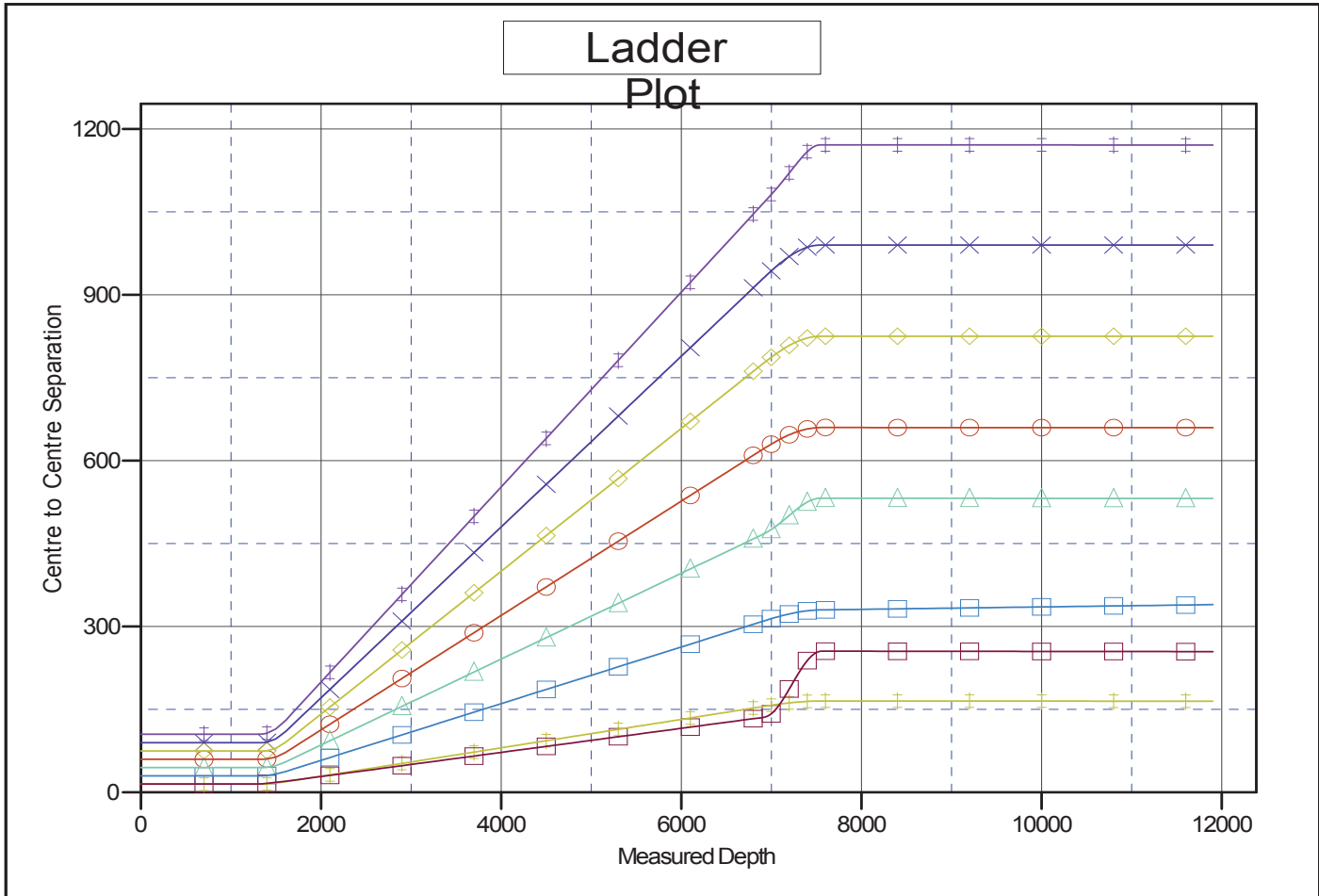
Reference	Design #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	09/12/14		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	11,902.41	Design #1 (Wellbore #1)	MWD	Std MWD

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec.22-T1N-R65W						
Drake 01N-65W-22-1C - Wellbore #1 - Design #1	1,300.00	1,300.00	105.01	98.33	15.721	CC, ES
Drake 01N-65W-22-1C - Wellbore #1 - Design #1	11,902.41	12,107.19	1,171.10	1,092.14	14.831	SF
Drake 01N-65W-22-2N - Wellbore #1 - Design #1	1,350.00	1,350.00	89.89	82.95	12.950	CC, ES
Drake 01N-65W-22-2N - Wellbore #1 - Design #1	11,902.41	11,901.47	990.02	911.13	12.549	SF
Drake 01N-65W-22-3N - Wellbore #1 - Design #1	1,350.00	1,350.00	74.77	67.83	10.771	CC, ES
Drake 01N-65W-22-3N - Wellbore #1 - Design #1	1,500.00	1,497.91	79.61	71.89	10.318	SF
Drake 01N-65W-22-4N - Wellbore #1 - Design #1	1,350.00	1,350.00	59.93	52.98	8.633	CC, ES
Drake 01N-65W-22-4N - Wellbore #1 - Design #1	1,500.00	1,499.46	63.68	55.97	8.250	SF
Drake 01N-65W-22-5C - Wellbore #1 - Design #1	1,350.00	1,350.00	44.80	37.86	6.455	CC, ES
Drake 01N-65W-22-5C - Wellbore #1 - Design #1	1,500.00	1,499.93	48.39	40.67	6.267	SF
Drake 01N-65W-22-6N - Wellbore #1 - Design #1	1,350.00	1,350.00	29.96	23.02	4.317	CC, ES
Drake 01N-65W-22-6N - Wellbore #1 - Design #1	1,400.00	1,400.00	30.36	23.16	4.215	SF
Drake 01N-65W-22-7N - Wellbore #1 - Design #1	1,350.00	1,350.00	14.84	7.90	2.138	CC, ES
Drake 01N-65W-22-7N - Wellbore #1 - Design #1	11,902.41	11,892.63	164.91	86.03	2.091	SF
Drake 01N-65W-22-9C - Wellbore #1 - Design #1	1,300.00	1,300.00	15.12	8.44	2.264	CC, ES
Drake 01N-65W-22-9C - Wellbore #1 - Design #1	1,350.00	1,349.75	15.53	8.59	2.238	SF

Company:	Verdad Oil & Gas	Local Co-ordinate Reference:	Well Drake 01N-65W-22-8N
Project:	Weld Co., CO	TVD Reference:	WELL @ 5114.30usft (Original Well Elev)
Reference Site:	Sec.22-T1N-R65W	MD Reference:	WELL @ 5114.30usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Drake 01N-65W-22-8N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5114.30usft (Original Well E) Coordinates are relative to: Drake 01N-65W-22-8N
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
 Central Meridian is 105° 30' 0.000 W Grid Convergence at Surface is: 0.55°



LEGEND

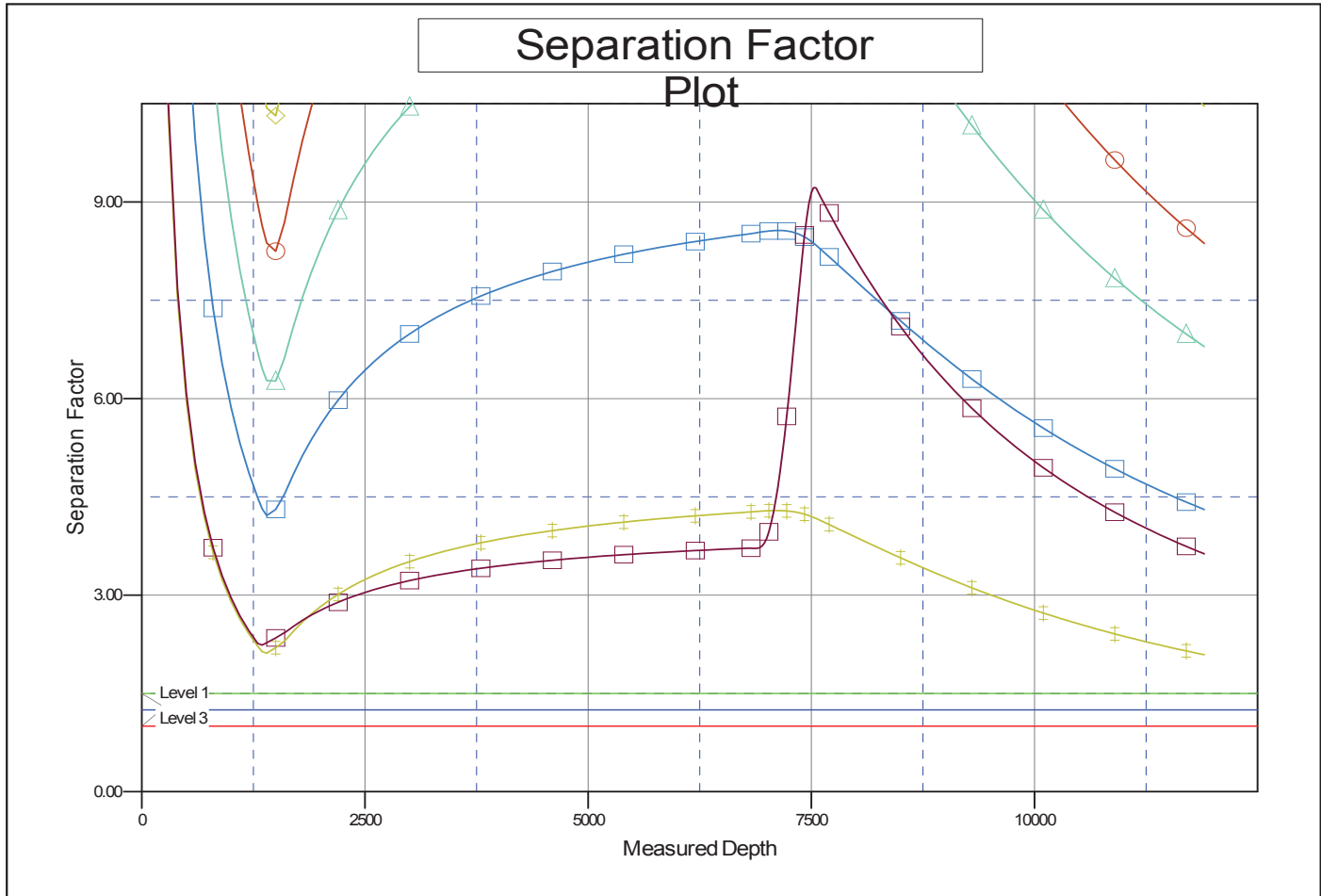
- ◆ Drake 01N-65W-22-1C, Wellbore #1, Design #1 V0
 ○ Drake 01N-65W-22-4N, Wellbore #1, Design #1 V0
 ◆ Drake 01N-65W-22-7N, Wellbore #1, Design #1 V0
- ✕ Drake 01N-65W-22-2N, Wellbore #1, Design #1 V0
 ▲ Drake 01N-65W-22-5C, Wellbore #1, Design #1 V0
 ■ Drake 01N-65W-22-9C, Wellbore #1, Design #1 V0
- ◆ Drake 01N-65W-22-3N, Wellbore #1, Design #1 V0
 ■ Drake 01N-65W-22-6N, Wellbore #1, Design #1 V0

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

Company:	Verdad Oil & Gas	Local Co-ordinate Reference:	Well Drake 01N-65W-22-8N
Project:	Weld Co., CO	TVD Reference:	WELL @ 5114.30usft (Original Well Elev)
Reference Site:	Sec.22-T1N-R65W	MD Reference:	WELL @ 5114.30usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Drake 01N-65W-22-8N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5114.30usft (Original Well E)
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: Drake 01N-65W-22-8N
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.55°



LEGEND

- Drake 01N-65W-22-1C, Wellbore #1, Design #1 V0
- Drake 01N-65W-22-4N, Wellbore #1, Design #1 V0
- Drake 01N-65W-22-7N, Wellbore #1, Design #1 V0
- Drake 01N-65W-22-2N, Wellbore #1, Design #1 V0
- Drake 01N-65W-22-5C, Wellbore #1, Design #1 V0
- Drake 01N-65W-22-9C, Wellbore #1, Design #1 V0
- Drake 01N-65W-22-3N, Wellbore #1, Design #1 V0
- Drake 01N-65W-22-6N, Wellbore #1, Design #1 V0