



Project: Adams Co., CO
 Site: Sec.24-T1S-R66W
 Well: Rock Family LE 13-3HC
 Wellbore: Wellbore #1
 Design: Design #1
 Lat: 39° 57' 3.441 N
 Long: 104° 43' 40.958 W
 GL: 5102.30



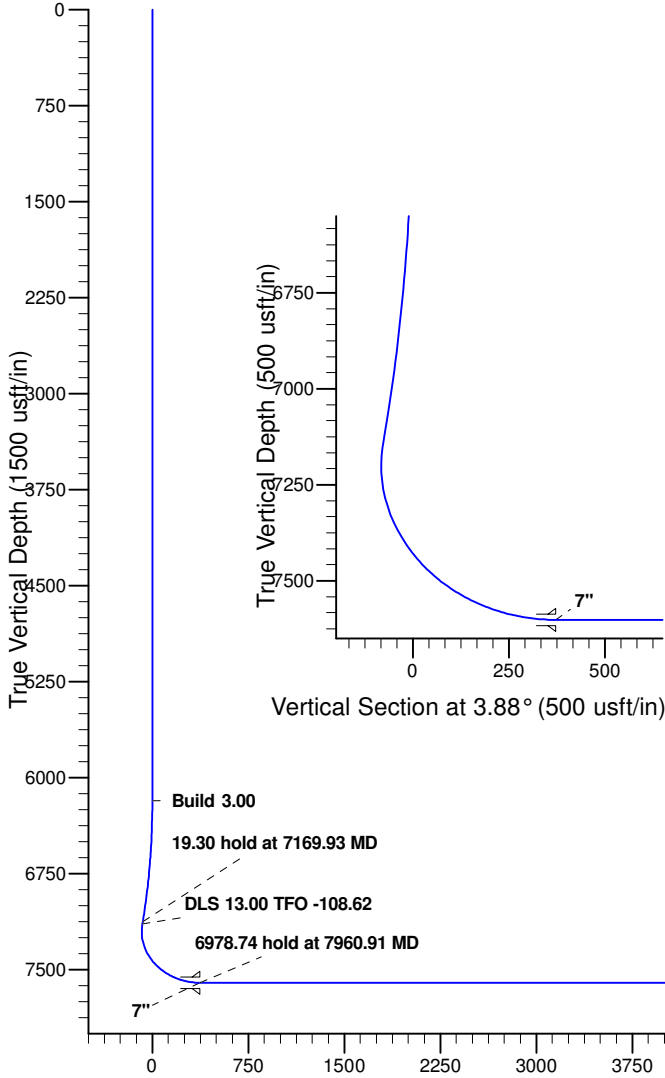
Precision
 Directional Services

KB: WELL @ 5118.80usft (Original Well Elev)

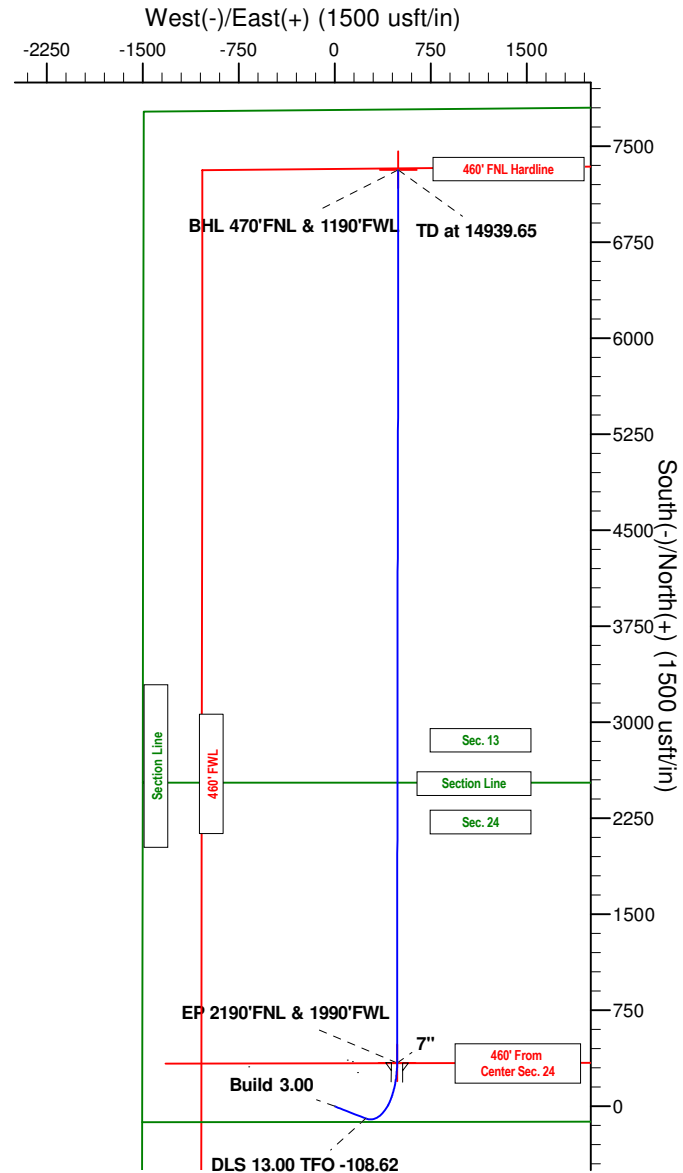


Azimuths to True North
 Magnetic North: 8.44°
 Magnetic Field
 Strength: 52610.0snT
 Dip Angle: 66.60°
 Date: 03/05/2014
 Model: IGRF2010

CASING DETAILS:
 TVD MD Name Size
 7601.80 7960.91 7" 7"



Vertical Section at 3.88° (1500 usft/in)



WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
BHL 470'FNL & 1190'FWL	7601.80	7317.53	496.64	39° 58' 15.758 N	104° 43' 34.579 W	Point
EP 2190'FNL & 1990'FWL	7601.80	338.79	487.25	39° 57' 6.790 N	104° 43' 34.702 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	
6180.00	0.00	0.00	6180.00	0.00	0.00	0.00	0.00	0.00	Build 3.00
7169.93	29.70	111.27	7126.19	-91.02	233.77	3.00	111.27	-74.98	19.30 hold at 7169.93 MD
7189.22	29.70	111.27	7142.95	-94.48	242.67	0.00	0.00	-77.84	DLS 13.00 TFO -108.62
7960.91	90.00	0.08	7601.80	338.79	487.25	13.00	-108.62	371.01	6978.74 hold at 7960.91 MD
14939.65	90.00	0.08	7601.80	7317.53	496.64	0.00	0.00	7334.36	TD at 14939.65



Great Western Oil & Gas

Adams Co., CO

Sec.24-T1S-R66W

Rock Family LE 13-3HC

Wellbore #1

Plan: Design #1

Standard Planning Report

05 March, 2014



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Company:	Great Western Oil & Gas	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Project:	Adams Co., CO	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site:	Sec.24-T1S-R66W	North Reference:	True
Well:	Rock Family LE 13-3HC	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Adams 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.24-T1S-R66W			
Site Position:		Northing:	1,225,922.14 usft	Latitude:	39° 57' 3.442 N
From:	Lat/Long	Easting:	3,216,269.34 usft	Longitude:	104° 43' 42.881 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.50

Well	Rock Family LE 13-3HC					
Well Position	+N/-S	-0.02 usft	Northing:	1,225,923.42 usft	Latitude:	39° 57' 3.441 N
	+E/-W	149.71 usft	Easting:	3,216,419.04 usft	Longitude:	104° 43' 40.958 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,102.30 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	03/05/14	8.44	66.60	52,610

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	3.88

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	
6,180.00	0.00	0.00	6,180.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,169.93	29.70	111.27	7,126.19	-91.02	233.77	3.00	3.00	0.00	111.27	
7,189.22	29.70	111.27	7,142.95	-94.48	242.67	0.00	0.00	0.00	0.00	
7,960.91	90.00	0.08	7,601.80	338.79	487.25	13.00	7.81	-14.41	-108.62	EP 2190'FNL & 1990'
14,939.65	90.00	0.08	7,601.80	7,317.53	496.64	0.00	0.00	0.00	0.00	BHL 470'FNL & 1190'

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Company:	Great Western Oil & Gas	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Project:	Adams Co., CO	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site:	Sec.24-T1S-R66W	North Reference:	True
Well:	Rock Family LE 13-3HC	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
100.00	0.00	0.00	100.00	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
300.00	0.00	0.00	300.00	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
500.00	0.00	0.00	500.00	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
700.00	0.00	0.00	700.00	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
900.00	0.00	0.00	900.00	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
1,100.00	0.00	0.00	1,100.00	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
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00

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Well:	Rock Family LE 13-3HC	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)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,180.00	0.00	0.00	6,180.00	0.00	0.00	0.00	0.00	0.00	0.00
Build 3.00									
6,200.00	0.60	111.27	6,200.00	-0.04	0.10	-0.03	3.00	3.00	0.00
6,300.00	3.60	111.27	6,299.92	-1.37	3.51	-1.13	3.00	3.00	0.00
6,400.00	6.60	111.27	6,399.51	-4.59	11.79	-3.78	3.00	3.00	0.00
6,500.00	9.60	111.27	6,498.50	-9.70	24.92	-7.99	3.00	3.00	0.00
6,600.00	12.60	111.27	6,596.62	-16.69	42.86	-13.75	3.00	3.00	0.00
6,700.00	15.60	111.27	6,693.60	-25.53	65.56	-21.03	3.00	3.00	0.00
6,800.00	18.60	111.27	6,789.17	-36.19	92.96	-29.82	3.00	3.00	0.00
6,900.00	21.60	111.27	6,883.07	-48.66	124.98	-40.09	3.00	3.00	0.00
7,000.00	24.60	111.27	6,975.04	-62.89	161.53	-51.81	3.00	3.00	0.00
7,100.00	27.60	111.27	7,064.83	-78.85	202.53	-64.96	3.00	3.00	0.00
7,169.93	29.70	111.27	7,126.19	-91.02	233.77	-74.98	3.00	3.00	0.00
19.30 hold at 7169.93 MD									
7,189.22	29.70	111.27	7,142.95	-94.48	242.67	-77.84	0.00	0.00	0.00
DLS 13.00 TFO -108.62									
7,200.00	29.28	108.56	7,152.34	-96.29	247.66	-79.30	13.00	-3.90	-25.20
7,225.00	28.52	102.01	7,174.23	-99.48	259.30	-81.69	13.00	-3.01	-26.18
7,250.00	28.10	95.22	7,196.24	-101.26	271.00	-82.68	13.00	-1.71	-27.19
7,275.00	28.01	88.31	7,218.31	-101.62	282.74	-82.24	13.00	-0.34	-27.64
7,300.00	28.27	81.43	7,240.36	-100.56	294.46	-80.39	13.00	1.04	-27.48
7,325.00	28.87	74.75	7,262.32	-98.09	306.14	-77.14	13.00	2.39	-26.73
7,350.00	29.78	68.38	7,284.12	-94.22	317.74	-72.49	13.00	3.65	-25.49
7,375.00	30.98	62.40	7,305.69	-88.95	329.22	-66.45	13.00	4.80	-23.90
7,400.00	32.44	56.87	7,326.97	-82.30	340.54	-59.05	13.00	5.82	-22.13
7,425.00	34.11	51.80	7,347.87	-74.30	351.67	-50.32	13.00	6.71	-20.31
7,450.00	35.98	47.16	7,368.34	-64.97	362.56	-40.27	13.00	7.47	-18.53
7,475.00	38.01	42.94	7,388.31	-54.34	373.20	-28.94	13.00	8.12	-16.87
7,500.00	40.18	39.10	7,407.71	-42.44	383.53	-16.37	13.00	8.67	-15.36
7,525.00	42.47	35.60	7,426.49	-29.31	393.53	-2.60	13.00	9.14	-14.01
7,550.00	44.85	32.39	7,444.58	-15.01	403.17	12.33	13.00	9.53	-12.82
7,575.00	47.31	29.45	7,461.92	0.44	412.41	28.37	13.00	9.86	-11.77
7,600.00	49.84	26.74	7,478.46	16.98	421.23	45.46	13.00	10.13	-10.86
7,625.00	52.44	24.22	7,494.15	34.55	429.60	63.56	13.00	10.37	-10.07
7,650.00	55.08	21.87	7,508.93	53.11	437.48	82.61	13.00	10.57	-9.39
7,675.00	57.76	19.67	7,522.75	72.58	444.86	102.54	13.00	10.74	-8.80
7,700.00	60.48	17.60	7,535.58	92.91	451.71	123.28	13.00	10.88	-8.29
7,725.00	63.23	15.64	7,547.37	114.03	458.01	144.78	13.00	11.00	-7.85
7,750.00	66.01	13.77	7,558.09	135.88	463.73	166.97	13.00	11.11	-7.48
7,775.00	68.81	11.97	7,567.69	158.38	468.87	189.76	13.00	11.19	-7.16
7,800.00	71.63	10.25	7,576.15	181.46	473.40	213.10	13.00	11.27	-6.90
7,825.00	74.46	8.58	7,583.45	205.05	477.31	236.90	13.00	11.33	-6.67
7,850.00	77.30	6.96	7,589.54	229.06	480.59	261.08	13.00	11.37	-6.49
7,875.00	80.15	5.37	7,594.43	253.44	483.22	285.58	13.00	11.41	-6.35
7,900.00	83.01	3.81	7,598.09	278.08	485.20	310.30	13.00	11.44	-6.24

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Well:	Rock Family LE 13-3HC	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)
7,925.00	85.88	2.27	7,600.51	302.93	486.52	335.18	13.00	11.46	-6.16
7,950.00	88.75	0.74	7,601.68	327.89	487.17	360.13	13.00	11.47	-6.12
7,960.91	90.00	0.08	7,601.80	338.79	487.25	371.01	13.00	11.48	-6.10
6978.74 hold at 7960.91 MD									
8,000.00	90.00	0.08	7,601.80	377.89	487.30	410.02	0.00	0.00	0.00
8,100.00	90.00	0.08	7,601.80	477.89	487.44	509.80	0.00	0.00	0.00
8,200.00	90.00	0.08	7,601.80	577.89	487.57	609.58	0.00	0.00	0.00
8,300.00	90.00	0.08	7,601.80	677.89	487.71	709.36	0.00	0.00	0.00
8,400.00	90.00	0.08	7,601.80	777.89	487.84	809.14	0.00	0.00	0.00
8,500.00	90.00	0.08	7,601.80	877.89	487.98	908.92	0.00	0.00	0.00
8,600.00	90.00	0.08	7,601.80	977.89	488.11	1,008.70	0.00	0.00	0.00
8,700.00	90.00	0.08	7,601.80	1,077.89	488.25	1,108.47	0.00	0.00	0.00
8,800.00	90.00	0.08	7,601.80	1,177.89	488.38	1,208.25	0.00	0.00	0.00
8,900.00	90.00	0.08	7,601.80	1,277.89	488.51	1,308.03	0.00	0.00	0.00
9,000.00	90.00	0.08	7,601.80	1,377.89	488.65	1,407.81	0.00	0.00	0.00
9,100.00	90.00	0.08	7,601.80	1,477.89	488.78	1,507.59	0.00	0.00	0.00
9,200.00	90.00	0.08	7,601.80	1,577.89	488.92	1,607.37	0.00	0.00	0.00
9,300.00	90.00	0.08	7,601.80	1,677.89	489.05	1,707.15	0.00	0.00	0.00
9,400.00	90.00	0.08	7,601.80	1,777.89	489.19	1,806.93	0.00	0.00	0.00
9,500.00	90.00	0.08	7,601.80	1,877.89	489.32	1,906.71	0.00	0.00	0.00
9,600.00	90.00	0.08	7,601.80	1,977.89	489.46	2,006.49	0.00	0.00	0.00
9,700.00	90.00	0.08	7,601.80	2,077.89	489.59	2,106.27	0.00	0.00	0.00
9,800.00	90.00	0.08	7,601.80	2,177.89	489.73	2,206.05	0.00	0.00	0.00
9,900.00	90.00	0.08	7,601.80	2,277.89	489.86	2,305.83	0.00	0.00	0.00
10,000.00	90.00	0.08	7,601.80	2,377.89	489.99	2,405.61	0.00	0.00	0.00
10,100.00	90.00	0.08	7,601.80	2,477.89	490.13	2,505.39	0.00	0.00	0.00
10,200.00	90.00	0.08	7,601.80	2,577.89	490.26	2,605.17	0.00	0.00	0.00
10,300.00	90.00	0.08	7,601.80	2,677.89	490.40	2,704.95	0.00	0.00	0.00
10,400.00	90.00	0.08	7,601.80	2,777.89	490.53	2,804.73	0.00	0.00	0.00
10,500.00	90.00	0.08	7,601.80	2,877.89	490.67	2,904.51	0.00	0.00	0.00
10,600.00	90.00	0.08	7,601.80	2,977.89	490.80	3,004.29	0.00	0.00	0.00
10,700.00	90.00	0.08	7,601.80	3,077.89	490.94	3,104.06	0.00	0.00	0.00
10,800.00	90.00	0.08	7,601.80	3,177.89	491.07	3,203.84	0.00	0.00	0.00
10,900.00	90.00	0.08	7,601.80	3,277.89	491.21	3,303.62	0.00	0.00	0.00
11,000.00	90.00	0.08	7,601.80	3,377.89	491.34	3,403.40	0.00	0.00	0.00
11,100.00	90.00	0.08	7,601.80	3,477.89	491.48	3,503.18	0.00	0.00	0.00
11,200.00	90.00	0.08	7,601.80	3,577.89	491.61	3,602.96	0.00	0.00	0.00
11,300.00	90.00	0.08	7,601.80	3,677.89	491.74	3,702.74	0.00	0.00	0.00
11,400.00	90.00	0.08	7,601.80	3,777.89	491.88	3,802.52	0.00	0.00	0.00
11,500.00	90.00	0.08	7,601.80	3,877.88	492.01	3,902.30	0.00	0.00	0.00
11,600.00	90.00	0.08	7,601.80	3,977.88	492.15	4,002.08	0.00	0.00	0.00
11,700.00	90.00	0.08	7,601.80	4,077.88	492.28	4,101.86	0.00	0.00	0.00
11,800.00	90.00	0.08	7,601.80	4,177.88	492.42	4,201.64	0.00	0.00	0.00
11,900.00	90.00	0.08	7,601.80	4,277.88	492.55	4,301.42	0.00	0.00	0.00
12,000.00	90.00	0.08	7,601.80	4,377.88	492.69	4,401.20	0.00	0.00	0.00
12,100.00	90.00	0.08	7,601.80	4,477.88	492.82	4,500.98	0.00	0.00	0.00
12,200.00	90.00	0.08	7,601.80	4,577.88	492.96	4,600.76	0.00	0.00	0.00
12,300.00	90.00	0.08	7,601.80	4,677.88	493.09	4,700.54	0.00	0.00	0.00
12,400.00	90.00	0.08	7,601.80	4,777.88	493.22	4,800.32	0.00	0.00	0.00
12,500.00	90.00	0.08	7,601.80	4,877.88	493.36	4,900.10	0.00	0.00	0.00
12,600.00	90.00	0.08	7,601.80	4,977.88	493.49	4,999.88	0.00	0.00	0.00
12,700.00	90.00	0.08	7,601.80	5,077.88	493.63	5,099.65	0.00	0.00	0.00
12,800.00	90.00	0.08	7,601.80	5,177.88	493.76	5,199.43	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Company:	Great Western Oil & Gas	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Project:	Adams Co., CO	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site:	Sec.24-T1S-R66W	North Reference:	True
Well:	Rock Family LE 13-3HC	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)
12,900.00	90.00	0.08	7,601.80	5,277.88	493.90	5,299.21	0.00	0.00	0.00
13,000.00	90.00	0.08	7,601.80	5,377.88	494.03	5,398.99	0.00	0.00	0.00
13,100.00	90.00	0.08	7,601.80	5,477.88	494.17	5,498.77	0.00	0.00	0.00
13,200.00	90.00	0.08	7,601.80	5,577.88	494.30	5,598.55	0.00	0.00	0.00
13,300.00	90.00	0.08	7,601.80	5,677.88	494.44	5,698.33	0.00	0.00	0.00
13,400.00	90.00	0.08	7,601.80	5,777.88	494.57	5,798.11	0.00	0.00	0.00
13,500.00	90.00	0.08	7,601.80	5,877.88	494.71	5,897.89	0.00	0.00	0.00
13,600.00	90.00	0.08	7,601.80	5,977.88	494.84	5,997.67	0.00	0.00	0.00
13,700.00	90.00	0.08	7,601.80	6,077.88	494.97	6,097.45	0.00	0.00	0.00
13,800.00	90.00	0.08	7,601.80	6,177.88	495.11	6,197.23	0.00	0.00	0.00
13,900.00	90.00	0.08	7,601.80	6,277.88	495.24	6,297.01	0.00	0.00	0.00
14,000.00	90.00	0.08	7,601.80	6,377.88	495.38	6,396.79	0.00	0.00	0.00
14,100.00	90.00	0.08	7,601.80	6,477.88	495.51	6,496.57	0.00	0.00	0.00
14,200.00	90.00	0.08	7,601.80	6,577.88	495.65	6,596.35	0.00	0.00	0.00
14,300.00	90.00	0.08	7,601.80	6,677.88	495.78	6,696.13	0.00	0.00	0.00
14,400.00	90.00	0.08	7,601.80	6,777.88	495.92	6,795.91	0.00	0.00	0.00
14,500.00	90.00	0.08	7,601.80	6,877.88	496.05	6,895.69	0.00	0.00	0.00
14,600.00	90.00	0.08	7,601.80	6,977.88	496.19	6,995.47	0.00	0.00	0.00
14,700.00	90.00	0.08	7,601.80	7,077.88	496.32	7,095.24	0.00	0.00	0.00
14,800.00	90.00	0.08	7,601.80	7,177.88	496.46	7,195.02	0.00	0.00	0.00
14,900.00	90.00	0.08	7,601.80	7,277.88	496.59	7,294.80	0.00	0.00	0.00
14,939.65	90.00	0.08	7,601.80	7,317.53	496.64	7,334.36	0.00	0.00	0.00
TD at 14939.65									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
EP 2190'FNL & 1990'FV - plan hits target center - Point	0.00	0.00	7,601.80	338.79	487.25	1,226,266.45	3,216,903.32	39° 57' 6.790 N	104° 43' 34.702 W
BHL 470'FNL & 1190'FV - plan hits target center - Point	0.00	0.00	7,601.80	7,317.53	496.64	1,233,245.00	3,216,851.96	39° 58' 15.758 N	104° 43' 34.579 W

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
7,960.91	7,601.80	7"	7	7-1/2	

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Company:	Great Western Oil & Gas	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Project:	Adams Co., CO	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site:	Sec.24-T1S-R66W	North Reference:	True
Well:	Rock Family LE 13-3HC	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,180.00	6,180.00	0.00	0.00	Build 3.00
7,169.93	7,126.19	-91.02	233.77	19.30 hold at 7169.93 MD
7,189.22	7,142.95	-94.48	242.67	DLS 13.00 TFO -108.62
7,960.91	7,601.80	338.79	487.25	6978.74 hold at 7960.91 MD
14,939.65	7,601.80	7,317.53	496.64	TD at 14939.65



Precision
Directional Services

Great Western Oil & Gas

Adams Co., CO
Sec.24-T1S-R66W
Rock Family LE 13-3HC

Wellbore #1
Design #1

Anticollision Report

05 March, 2014



Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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	03/05/14		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	14,939.65	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.24-T1S-R66W						
Rock Family LE 13-021HN - Wellbore #1 - Design #1	4,500.00	4,500.00	149.71	126.23	6.377	CC, ES
Rock Family LE 13-021HN - Wellbore #1 - Design #1	4,600.00	4,592.69	152.13	128.15	6.344	SF
Rock Family LE 13-28HN-1 - Wellbore #1 - Design #1	5,400.00	5,400.00	30.28	2.09	1.074	Level 2, CC, ES, SF
Rock Family LE 13-29HN - Wellbore #1 - Design #1	6,180.00	6,180.00	60.00	27.72	1.859	CC
Rock Family LE 13-29HN - Wellbore #1 - Design #1	6,200.00	6,200.00	60.09	27.72	1.856	ES, SF
Rock Family LE 13-3HN - Wellbore #1 - Design #1	6,180.00	6,180.00	29.72	-2.55	0.921	Level 1, CC, SF
Rock Family LE 13-3HN - Wellbore #1 - Design #1	6,200.00	6,200.00	29.82	-2.56	0.921	Level 1, ES
Rock Family LE 13-4HC - Wellbore #1 - Design #1	5,925.94	5,925.94	89.71	58.77	2.899	CC, ES
Rock Family LE 13-4HC - Wellbore #1 - Design #1	6,000.00	5,997.59	90.45	59.12	2.888	SF
Rock Family LE 13-4HN - Wellbore #1 - Design #1	5,233.33	5,233.33	119.99	92.68	4.393	CC, ES
Rock Family LE 13-4HN - Wellbore #1 - Design #1	5,300.00	5,297.07	120.60	92.94	4.361	SF

Offset Design		Sec.24-T1S-R66W - Rock Family LE 13-021HN - Wellbore #1 - Design #1										Offset Site Error:		0.00 usft
Survey Program:		0-MWD										Offset Well Error:		0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	-90.00	0.00	-149.71	149.71					
100.00	100.00	100.00	100.00	0.22	0.22	-90.00	0.00	-149.71	149.71	149.27	0.44	342.424		
200.00	200.00	200.00	200.00	0.48	0.48	-90.00	0.00	-149.71	149.71	148.75	0.96	155.817		
300.00	300.00	300.00	300.00	0.74	0.74	-90.00	0.00	-149.71	149.71	148.23	1.48	100.855		
400.00	400.00	400.00	400.00	1.00	1.00	-90.00	0.00	-149.71	149.71	147.70	2.01	74.557		
500.00	500.00	500.00	500.00	1.27	1.27	-90.00	0.00	-149.71	149.71	147.18	2.53	59.136		
600.00	600.00	600.00	600.00	1.53	1.53	-90.00	0.00	-149.71	149.71	146.65	3.06	49.002		
700.00	700.00	700.00	700.00	1.79	1.79	-90.00	0.00	-149.71	149.71	146.13	3.58	41.832		
800.00	800.00	800.00	800.00	2.05	2.05	-90.00	0.00	-149.71	149.71	145.61	4.10	36.493		
900.00	900.00	900.00	900.00	2.31	2.31	-90.00	0.00	-149.71	149.71	145.08	4.63	32.363		
1,000.00	1,000.00	1,000.00	1,000.00	2.57	2.57	-90.00	0.00	-149.71	149.71	144.56	5.15	29.072		
1,100.00	1,100.00	1,100.00	1,100.00	2.84	2.84	-90.00	0.00	-149.71	149.71	144.04	5.67	26.389		
1,200.00	1,200.00	1,200.00	1,200.00	3.10	3.10	-90.00	0.00	-149.71	149.71	143.51	6.20	24.159		
1,300.00	1,300.00	1,300.00	1,300.00	3.36	3.36	-90.00	0.00	-149.71	149.71	142.99	6.72	22.277		
1,400.00	1,400.00	1,400.00	1,400.00	3.62	3.62	-90.00	0.00	-149.71	149.71	142.47	7.24	20.667		
1,500.00	1,500.00	1,500.00	1,500.00	3.88	3.88	-90.00	0.00	-149.71	149.71	141.94	7.77	19.274		

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

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design Sec.24-T1S-R66W - Rock Family LE 13-021HN - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
1,600.00	1,600.00	1,600.00	1,600.00	4.15	4.15	-90.00	0.00	-149.71	149.71	141.42	8.29	18.056		
1,700.00	1,700.00	1,700.00	1,700.00	4.41	4.41	-90.00	0.00	-149.71	149.71	140.89	8.81	16.984		
1,800.00	1,800.00	1,800.00	1,800.00	4.67	4.67	-90.00	0.00	-149.71	149.71	140.37	9.34	16.032		
1,900.00	1,900.00	1,900.00	1,900.00	4.93	4.93	-90.00	0.00	-149.71	149.71	139.85	9.86	15.180		
2,000.00	2,000.00	2,000.00	2,000.00	5.19	5.19	-90.00	0.00	-149.71	149.71	139.32	10.39	14.415		
2,100.00	2,100.00	2,100.00	2,100.00	5.45	5.45	-90.00	0.00	-149.71	149.71	138.80	10.91	13.723		
2,200.00	2,200.00	2,200.00	2,200.00	5.72	5.72	-90.00	0.00	-149.71	149.71	138.28	11.43	13.095		
2,300.00	2,300.00	2,300.00	2,300.00	5.98	5.98	-90.00	0.00	-149.71	149.71	137.75	11.96	12.521		
2,400.00	2,400.00	2,400.00	2,400.00	6.24	6.24	-90.00	0.00	-149.71	149.71	137.23	12.48	11.996		
2,500.00	2,500.00	2,500.00	2,500.00	6.50	6.50	-90.00	0.00	-149.71	149.71	136.71	13.00	11.513		
2,600.00	2,600.00	2,600.00	2,600.00	6.76	6.76	-90.00	0.00	-149.71	149.71	136.18	13.53	11.067		
2,700.00	2,700.00	2,700.00	2,700.00	7.03	7.03	-90.00	0.00	-149.71	149.71	135.66	14.05	10.655		
2,800.00	2,800.00	2,800.00	2,800.00	7.29	7.29	-90.00	0.00	-149.71	149.71	135.14	14.57	10.272		
2,900.00	2,900.00	2,900.00	2,900.00	7.55	7.55	-90.00	0.00	-149.71	149.71	134.61	15.10	9.916		
3,000.00	3,000.00	3,000.00	3,000.00	7.81	7.81	-90.00	0.00	-149.71	149.71	134.09	15.62	9.584		
3,100.00	3,100.00	3,100.00	3,100.00	8.07	8.07	-90.00	0.00	-149.71	149.71	133.56	16.15	9.273		
3,200.00	3,200.00	3,200.00	3,200.00	8.33	8.33	-90.00	0.00	-149.71	149.71	133.04	16.67	8.981		
3,300.00	3,300.00	3,300.00	3,300.00	8.60	8.60	-90.00	0.00	-149.71	149.71	132.52	17.19	8.708		
3,400.00	3,400.00	3,400.00	3,400.00	8.86	8.86	-90.00	0.00	-149.71	149.71	131.99	17.72	8.451		
3,500.00	3,500.00	3,500.00	3,500.00	9.12	9.12	-90.00	0.00	-149.71	149.71	131.47	18.24	8.208		
3,600.00	3,600.00	3,600.00	3,600.00	9.38	9.38	-90.00	0.00	-149.71	149.71	130.95	18.76	7.979		
3,700.00	3,700.00	3,700.00	3,700.00	9.64	9.64	-90.00	0.00	-149.71	149.71	130.42	19.29	7.762		
3,800.00	3,800.00	3,800.00	3,800.00	9.91	9.91	-90.00	0.00	-149.71	149.71	129.90	19.81	7.557		
3,900.00	3,900.00	3,900.00	3,900.00	10.17	10.17	-90.00	0.00	-149.71	149.71	129.38	20.33	7.363		
4,000.00	4,000.00	4,000.00	4,000.00	10.43	10.43	-90.00	0.00	-149.71	149.71	128.85	20.86	7.178		
4,100.00	4,100.00	4,100.00	4,100.00	10.69	10.69	-90.00	0.00	-149.71	149.71	128.33	21.38	7.002		
4,200.00	4,200.00	4,200.00	4,200.00	10.95	10.95	-90.00	0.00	-149.71	149.71	127.80	21.90	6.835		
4,300.00	4,300.00	4,300.00	4,300.00	11.21	11.21	-90.00	0.00	-149.71	149.71	127.28	22.43	6.675		
4,400.00	4,400.00	4,400.00	4,400.00	11.48	11.48	-90.00	0.00	-149.71	149.71	126.76	22.95	6.523		
4,500.00	4,500.00	4,500.00	4,500.00	11.74	11.74	-90.00	0.00	-149.71	149.71	126.23	23.48	6.377 CC, ES		
4,600.00	4,600.00	4,592.69	4,592.65	12.00	11.98	-90.08	-0.21	-151.95	152.13	128.15	23.98	6.344 SF		
4,700.00	4,700.00	4,684.94	4,684.65	12.26	12.22	-90.30	-0.83	-158.62	159.36	134.88	24.48	6.509		
4,800.00	4,800.00	4,776.34	4,775.37	12.52	12.46	-90.63	-1.87	-169.58	171.37	146.38	24.99	6.859		
4,900.00	4,900.00	4,866.48	4,864.23	12.78	12.70	-91.02	-3.28	-184.61	188.07	162.59	25.48	7.380		
5,000.00	5,000.00	4,955.00	4,950.70	13.05	12.93	-91.42	-5.05	-203.41	209.36	183.38	25.98	8.058		
5,100.00	5,100.00	5,041.57	5,034.34	13.31	13.17	-91.81	-7.15	-225.64	235.11	208.64	26.47	8.881		
5,200.00	5,200.00	5,125.91	5,114.77	13.57	13.39	-92.17	-9.53	-250.91	265.16	238.20	26.96	9.834		
5,300.00	5,300.00	5,207.80	5,191.71	13.83	13.62	-92.50	-12.16	-278.80	299.34	271.89	27.45	10.906		
5,400.00	5,400.00	5,287.04	5,264.96	14.09	13.84	-92.78	-14.99	-308.89	337.45	309.53	27.93	12.082		
5,500.00	5,500.00	5,363.52	5,334.40	14.36	14.06	-93.02	-17.99	-340.78	379.31	350.90	28.41	13.352		
5,600.00	5,600.00	5,437.13	5,399.98	14.62	14.27	-93.23	-21.13	-374.06	424.70	395.82	28.88	14.705		
5,700.00	5,700.00	5,509.69	5,463.32	14.88	14.49	-93.42	-24.45	-409.28	473.42	444.06	29.36	16.126		
5,800.00	5,800.00	5,596.28	5,538.30	15.14	14.75	-93.61	-28.51	-452.40	523.41	493.54	29.88	17.518		
5,900.00	5,900.00	5,682.87	5,613.28	15.40	15.02	-93.76	-32.57	-495.52	573.41	543.01	30.40	18.860		
6,000.00	6,000.00	5,769.47	5,688.27	15.66	15.29	-93.89	-36.63	-538.64	623.42	592.48	30.93	20.154		
6,100.00	6,100.00	5,856.06	5,763.25	15.93	15.56	-94.00	-40.69	-581.76	673.42	641.96	31.47	21.402		
6,180.00	6,180.00	5,925.33	5,823.24	16.14	15.79	-94.08	-43.94	-616.25	713.43	681.53	31.89	22.368		
6,200.00	6,200.00	5,942.60	5,838.19	16.19	15.84	-94.48	-44.75	-624.85	723.51	691.70	31.81	22.745		
6,300.00	6,299.92	6,027.49	5,911.70	16.45	16.12	-93.72	-48.73	-667.12	776.35	744.16	32.18	24.124		
6,400.00	6,399.51	6,109.76	5,982.94	16.71	16.39	-93.03	-52.59	-708.09	833.11	800.62	32.49	25.643		
6,500.00	6,498.50	6,189.18	6,051.71	16.97	16.66	-92.38	-56.32	-747.64	893.67	860.93	32.74	27.297		
6,600.00	6,596.62	6,265.54	6,117.83	17.24	16.92	-91.73	-59.90	-785.66	957.89	924.97	32.92	29.098		

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

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
6,700.00	6,693.60	6,338.62	6,181.12	17.50	17.16	151.04	-63.33	-822.06	1,025.63	992.60	33.04	31.045		
6,800.00	6,789.17	6,408.24	6,241.40	17.77	17.40	150.29	-66.59	-856.72	1,096.75	1,063.65	33.10	33.137		
6,900.00	6,883.07	6,474.19	6,298.51	18.04	17.63	149.45	-69.69	-889.56	1,171.09	1,137.98	33.11	35.370		
7,000.00	6,975.04	6,536.29	6,352.29	18.32	17.85	148.46	-72.60	-920.49	1,248.47	1,215.39	33.09	37.734		
7,100.00	7,064.83	6,594.38	6,402.59	18.60	18.05	147.29	-75.32	-949.41	1,328.74	1,295.69	33.04	40.211		
7,169.93	7,126.19	6,632.53	6,435.62	18.80	18.19	146.33	-77.11	-968.41	1,386.47	1,353.46	33.02	41.994		
7,189.22	7,142.95	6,642.77	6,444.49	18.85	18.22	146.54	-77.59	-973.51	1,402.58	1,369.50	33.08	42.400		
7,200.00	7,152.34	6,648.50	6,449.45	18.89	18.24	151.08	-77.86	-976.36	1,411.60	1,378.71	32.89	42.920		
7,225.00	7,174.23	6,661.81	6,460.98	18.96	18.29	161.96	-78.49	-982.99	1,432.64	1,399.84	32.79	43.686		
7,250.00	7,196.24	6,675.13	6,472.51	19.03	18.34	173.13	-79.11	-989.62	1,453.77	1,420.86	32.91	44.171		
7,275.00	7,218.31	6,688.41	6,484.01	19.10	18.38	-175.64	-79.73	-996.24	1,474.94	1,441.68	33.26	44.350		
7,300.00	7,240.36	6,701.62	6,495.45	19.18	18.43	-164.60	-80.35	-1,002.81	1,496.07	1,462.26	33.81	44.250		
7,325.00	7,262.32	6,714.70	6,506.78	19.25	18.48	-153.98	-80.97	-1,009.33	1,517.10	1,482.58	34.52	43.946		
7,350.00	7,284.12	6,727.62	6,517.97	19.32	18.52	-143.96	-81.57	-1,015.76	1,537.98	1,502.65	35.33	43.534		
7,375.00	7,305.69	6,740.34	6,528.98	19.39	18.57	-134.64	-82.17	-1,022.09	1,558.65	1,522.49	36.16	43.101		
7,400.00	7,326.97	6,752.81	6,539.78	19.46	18.61	-126.11	-82.76	-1,028.30	1,579.05	1,542.09	36.97	42.716		
7,425.00	7,347.87	6,765.00	6,550.33	19.54	18.66	-118.37	-83.33	-1,034.37	1,599.14	1,561.45	37.70	42.420		
7,450.00	7,368.34	6,776.86	6,560.60	19.61	18.70	-111.39	-83.88	-1,040.28	1,618.88	1,580.55	38.33	42.236		
7,475.00	7,388.31	6,788.36	6,570.56	19.68	18.74	-105.14	-84.42	-1,046.00	1,638.22	1,599.37	38.85	42.173		
7,500.00	7,407.71	6,799.45	6,580.17	19.75	18.78	-99.55	-84.94	-1,051.53	1,657.12	1,617.88	39.24	42.230		
7,525.00	7,426.49	6,810.12	6,589.40	19.82	18.82	-94.55	-85.44	-1,056.84	1,675.55	1,636.03	39.52	42.402		
7,550.00	7,444.58	6,820.31	6,598.23	19.90	18.86	-90.10	-85.92	-1,061.92	1,693.46	1,653.79	39.68	42.680		
7,575.00	7,461.92	6,830.00	6,606.62	19.97	18.89	-86.13	-86.38	-1,066.74	1,710.84	1,671.11	39.73	43.057		
7,600.00	7,478.46	6,839.16	6,614.55	20.04	18.92	-82.58	-86.81	-1,071.30	1,727.65	1,687.95	39.70	43.522		
7,625.00	7,494.15	6,847.75	6,621.99	20.11	18.95	-79.41	-87.21	-1,075.58	1,743.86	1,704.29	39.57	44.067		
7,650.00	7,508.93	6,855.75	6,628.92	20.19	18.98	-76.58	-87.58	-1,079.57	1,759.44	1,720.06	39.38	44.681		
7,675.00	7,522.75	6,863.14	6,635.31	20.26	19.01	-74.06	-87.93	-1,083.24	1,774.38	1,735.25	39.12	45.354		
7,700.00	7,535.58	6,869.88	6,641.15	20.33	19.03	-71.80	-88.25	-1,086.60	1,788.64	1,749.82	38.82	46.077		
7,725.00	7,547.37	6,875.97	6,646.42	20.41	19.06	-69.78	-88.53	-1,089.63	1,802.20	1,763.73	38.48	46.839		
7,750.00	7,558.09	6,881.37	6,651.10	20.48	19.07	-67.99	-88.79	-1,092.32	1,815.05	1,776.94	38.11	47.627		
7,775.00	7,567.69	6,886.07	6,655.17	20.56	19.09	-66.39	-89.01	-1,094.66	1,827.16	1,789.44	37.73	48.431		
7,800.00	7,576.15	6,890.06	6,658.62	20.63	19.11	-64.98	-89.19	-1,096.65	1,838.52	1,801.18	37.34	49.236		
7,825.00	7,583.45	6,893.32	6,661.45	20.70	19.12	-63.73	-89.35	-1,098.27	1,849.11	1,812.15	36.96	50.028		
7,850.00	7,589.54	6,895.84	6,663.63	20.78	19.13	-62.64	-89.46	-1,099.53	1,858.91	1,822.31	36.60	50.794		
7,875.00	7,594.43	6,897.62	6,665.17	20.86	19.13	-61.70	-89.55	-1,100.41	1,867.90	1,831.64	36.26	51.517		
7,900.00	7,598.09	6,898.65	6,666.06	20.93	19.14	-60.89	-89.60	-1,100.93	1,876.07	1,840.12	35.95	52.184		
7,925.00	7,600.51	6,898.92	6,666.30	21.01	19.14	-60.21	-89.61	-1,101.06	1,883.41	1,847.70	35.71	52.742		
7,950.00	7,601.68	6,898.44	6,665.88	21.08	19.14	-59.66	-89.59	-1,100.82	1,889.90	1,854.30	35.60	53.084		
7,960.91	7,601.80	6,897.99	6,665.49	21.12	19.13	-59.46	-89.56	-1,100.60	1,892.47	1,856.90	35.57	53.205		
8,000.00	7,601.80	6,896.13	6,663.88	21.24	19.13	-59.41	-89.48	-1,099.67	1,901.74	1,866.06	35.68	53.298		
8,100.00	7,601.80	6,891.37	6,659.76	21.55	19.11	-59.26	-89.25	-1,097.30	1,928.86	1,892.88	35.97	53.617		
8,200.00	7,601.80	6,886.61	6,655.64	21.88	19.09	-59.11	-89.03	-1,094.93	1,960.69	1,924.42	36.28	54.045		
8,300.00	7,601.80	6,881.86	6,651.52	22.22	19.08	-58.96	-88.81	-1,092.56	1,997.03	1,960.43	36.59	54.572		
8,400.00	7,601.80	8,401.13	7,363.80	22.56	24.07	-83.18	780.49	-1,500.98	2,003.01	1,957.85	45.16	44.351		
8,500.00	7,601.80	8,501.13	7,363.80	22.92	24.40	-83.18	880.49	-1,500.85	2,003.02	1,957.14	45.88	43.658		
8,600.00	7,601.80	8,601.13	7,363.80	23.28	24.75	-83.18	980.49	-1,500.72	2,003.02	1,956.40	46.61	42.970		
8,700.00	7,601.80	8,701.13	7,363.80	23.66	25.09	-83.18	1,080.49	-1,500.59	2,003.02	1,955.66	47.37	42.287		
8,800.00	7,601.80	8,801.13	7,363.80	24.04	25.45	-83.18	1,180.49	-1,500.46	2,003.03	1,954.89	48.14	41.611		
8,900.00	7,601.80	8,901.13	7,363.80	24.43	25.82	-83.18	1,280.49	-1,500.32	2,003.03	1,954.11	48.92	40.943		
9,000.00	7,601.80	9,001.13	7,363.80	24.82	26.19	-83.18	1,380.49	-1,500.19	2,003.03	1,953.31	49.72	40.284		
9,100.00	7,601.80	9,101.13	7,363.80	25.23	26.58	-83.18	1,480.49	-1,500.06	2,003.04	1,952.50	50.54	39.635		
9,200.00	7,601.80	9,201.13	7,363.80	25.64	26.97	-83.18	1,580.49	-1,499.93	2,003.04	1,951.68	51.37	38.996		

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

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,300.00	7,601.80	9,301.13	7,363.80	26.06	27.36	-83.18	1,680.49	-1,499.80	2,003.05	1,950.84	52.21	38.368		
9,400.00	7,601.80	9,401.13	7,363.80	26.48	27.77	-83.18	1,780.49	-1,499.67	2,003.05	1,949.99	53.06	37.750		
9,500.00	7,601.80	9,501.13	7,363.80	26.91	28.18	-83.18	1,880.49	-1,499.54	2,003.05	1,949.13	53.93	37.144		
9,600.00	7,601.80	9,601.13	7,363.80	27.35	28.59	-83.18	1,980.49	-1,499.41	2,003.06	1,948.25	54.80	36.550		
9,700.00	7,601.80	9,701.13	7,363.80	27.79	29.01	-83.18	2,080.49	-1,499.28	2,003.06	1,947.37	55.69	35.968		
9,800.00	7,601.80	9,801.13	7,363.80	28.24	29.44	-83.18	2,180.49	-1,499.15	2,003.06	1,946.48	56.59	35.397		
9,900.00	7,601.80	9,901.13	7,363.80	28.69	29.87	-83.18	2,280.49	-1,499.02	2,003.07	1,945.57	57.50	34.838		
10,000.00	7,601.80	10,001.13	7,363.80	29.15	30.31	-83.18	2,380.49	-1,498.89	2,003.07	1,944.66	58.41	34.292		
10,100.00	7,601.80	10,101.13	7,363.80	29.61	30.76	-83.18	2,480.49	-1,498.76	2,003.08	1,943.74	59.34	33.757		
10,200.00	7,601.80	10,201.13	7,363.80	30.08	31.20	-83.18	2,580.49	-1,498.62	2,003.08	1,942.81	60.27	33.234		
10,300.00	7,601.80	10,301.13	7,363.80	30.55	31.66	-83.18	2,680.49	-1,498.49	2,003.08	1,941.87	61.21	32.722		
10,400.00	7,601.80	10,401.13	7,363.80	31.02	32.11	-83.18	2,780.49	-1,498.36	2,003.09	1,940.92	62.16	32.222		
10,500.00	7,601.80	10,501.13	7,363.80	31.50	32.57	-83.18	2,880.49	-1,498.23	2,003.09	1,939.97	63.12	31.734		
10,600.00	7,601.80	10,601.13	7,363.80	31.98	33.04	-83.18	2,980.49	-1,498.10	2,003.09	1,939.01	64.09	31.256		
10,700.00	7,601.80	10,701.13	7,363.80	32.46	33.51	-83.18	3,080.49	-1,497.97	2,003.10	1,938.04	65.06	30.790		
10,800.00	7,601.80	10,801.13	7,363.80	32.95	33.98	-83.18	3,180.49	-1,497.84	2,003.10	1,937.07	66.03	30.334		
10,900.00	7,601.80	10,901.13	7,363.80	33.44	34.46	-83.18	3,280.49	-1,497.71	2,003.11	1,936.09	67.02	29.889		
11,000.00	7,601.80	11,001.13	7,363.80	33.93	34.94	-83.18	3,380.49	-1,497.58	2,003.11	1,935.10	68.01	29.454		
11,100.00	7,601.80	11,101.13	7,363.80	34.43	35.42	-83.18	3,480.49	-1,497.45	2,003.11	1,934.11	69.00	29.030		
11,200.00	7,601.80	11,201.13	7,363.80	34.93	35.90	-83.18	3,580.49	-1,497.32	2,003.12	1,933.11	70.00	28.615		
11,300.00	7,601.80	11,301.13	7,363.80	35.43	36.39	-83.18	3,680.49	-1,497.19	2,003.12	1,932.11	71.01	28.210		
11,400.00	7,601.80	11,401.13	7,363.80	35.94	36.88	-83.18	3,780.49	-1,497.05	2,003.12	1,931.11	72.02	27.814		
11,500.00	7,601.80	11,501.13	7,363.80	36.44	37.38	-83.18	3,880.49	-1,496.92	2,003.13	1,930.09	73.03	27.427		
11,600.00	7,601.80	11,601.13	7,363.80	36.95	37.88	-83.18	3,980.49	-1,496.79	2,003.13	1,929.08	74.05	27.050		
11,700.00	7,601.80	11,701.13	7,363.80	37.46	38.38	-83.18	4,080.49	-1,496.66	2,003.14	1,928.06	75.08	26.681		
11,800.00	7,601.80	11,801.13	7,363.80	37.98	38.88	-83.18	4,180.49	-1,496.53	2,003.14	1,927.03	76.11	26.320		
11,900.00	7,601.80	11,901.13	7,363.80	38.49	39.38	-83.18	4,280.49	-1,496.40	2,003.14	1,926.01	77.14	25.968		
12,000.00	7,601.80	12,001.13	7,363.80	39.01	39.89	-83.18	4,380.49	-1,496.27	2,003.15	1,924.97	78.17	25.624		
12,100.00	7,601.80	12,101.13	7,363.80	39.53	40.40	-83.18	4,480.49	-1,496.14	2,003.15	1,923.94	79.21	25.288		
12,200.00	7,601.80	12,201.13	7,363.80	40.05	40.91	-83.18	4,580.49	-1,496.01	2,003.15	1,922.90	80.26	24.959		
12,300.00	7,601.80	12,301.13	7,363.80	40.58	41.42	-83.18	4,680.49	-1,495.88	2,003.16	1,921.85	81.30	24.638		
12,400.00	7,601.80	12,401.13	7,363.80	41.10	41.93	-83.18	4,780.49	-1,495.75	2,003.16	1,920.81	82.35	24.324		
12,500.00	7,601.80	12,501.13	7,363.80	41.63	42.45	-83.18	4,880.49	-1,495.62	2,003.17	1,919.76	83.41	24.017		
12,600.00	7,601.80	12,601.13	7,363.80	42.16	42.97	-83.18	4,980.49	-1,495.49	2,003.17	1,918.71	84.46	23.716		
12,700.00	7,601.80	12,701.13	7,363.80	42.69	43.49	-83.18	5,080.49	-1,495.35	2,003.17	1,917.65	85.52	23.423		
12,800.00	7,601.80	12,801.13	7,363.80	43.22	44.01	-83.18	5,180.49	-1,495.22	2,003.18	1,916.59	86.58	23.136		
12,900.00	7,601.80	12,901.13	7,363.80	43.75	44.53	-83.18	5,280.49	-1,495.09	2,003.18	1,915.53	87.65	22.855		
13,000.00	7,601.80	13,001.13	7,363.80	44.28	45.06	-83.18	5,380.49	-1,494.96	2,003.19	1,914.47	88.72	22.580		
13,100.00	7,601.80	13,101.13	7,363.80	44.82	45.58	-83.18	5,480.49	-1,494.83	2,003.19	1,913.40	89.79	22.311		
13,200.00	7,601.80	13,201.13	7,363.80	45.35	46.11	-83.18	5,580.48	-1,494.70	2,003.19	1,912.33	90.86	22.047		
13,300.00	7,601.80	13,301.13	7,363.80	45.89	46.64	-83.18	5,680.48	-1,494.57	2,003.20	1,911.26	91.93	21.790		
13,400.00	7,601.80	13,401.13	7,363.80	46.43	47.17	-83.18	5,780.48	-1,494.44	2,003.20	1,910.19	93.01	21.538		
13,500.00	7,601.80	13,501.13	7,363.80	46.97	47.70	-83.18	5,880.48	-1,494.31	2,003.20	1,909.11	94.09	21.291		
13,600.00	7,601.80	13,601.13	7,363.80	47.51	48.23	-83.18	5,980.48	-1,494.18	2,003.21	1,908.04	95.17	21.049		
13,700.00	7,601.80	13,701.13	7,363.80	48.05	48.77	-83.18	6,080.48	-1,494.05	2,003.21	1,906.96	96.25	20.812		
13,800.00	7,601.80	13,801.13	7,363.80	48.59	49.30	-83.18	6,180.48	-1,493.92	2,003.22	1,905.88	97.34	20.580		
13,900.00	7,601.80	13,901.13	7,363.80	49.14	49.84	-83.18	6,280.48	-1,493.79	2,003.22	1,904.79	98.43	20.353		
14,000.00	7,601.80	14,001.13	7,363.80	49.68	50.38	-83.18	6,380.48	-1,493.65	2,003.22	1,903.71	99.51	20.130		
14,100.00	7,601.80	14,101.13	7,363.80	50.23	50.91	-83.18	6,480.48	-1,493.52	2,003.23	1,902.62	100.61	19.912		
14,200.00	7,601.80	14,201.13	7,363.80	50.78	51.45	-83.18	6,580.48	-1,493.39	2,003.23	1,901.53	101.70	19.698		
14,300.00	7,601.80	14,301.13	7,363.80	51.32	51.99	-83.18	6,680.48	-1,493.26	2,003.23	1,900.44	102.79	19.488		
14,400.00	7,601.80	14,401.13	7,363.80	51.87	52.54	-83.18	6,780.48	-1,493.13	2,003.24	1,899.35	103.89	19.283		

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

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design Sec.24-T1S-R66W - Rock Family LE 13-021HN - Wellbore #1 - Design #1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
14,500.00	7,601.80	14,501.13	7,363.80	52.42	53.08	-83.18	6,880.48	-1,493.00	2,003.24	1,898.26	104.99	19.081	
14,600.00	7,601.80	14,601.13	7,363.80	52.97	53.62	-83.18	6,980.48	-1,492.87	2,003.25	1,897.16	106.08	18.884	
14,700.00	7,601.80	14,701.13	7,363.80	53.52	54.17	-83.18	7,080.48	-1,492.74	2,003.25	1,896.06	107.18	18.690	
14,800.00	7,601.80	14,801.13	7,363.80	54.07	54.71	-83.18	7,180.48	-1,492.61	2,003.25	1,894.97	108.29	18.500	
14,900.00	7,601.80	14,901.13	7,363.80	54.62	55.26	-83.18	7,280.48	-1,492.48	2,003.26	1,893.87	109.39	18.313	
14,905.99	7,601.80	14,907.12	7,363.80	54.66	55.29	-83.18	7,286.47	-1,492.47	2,003.26	1,893.80	109.46	18.302	
14,939.65	7,601.80	14,920.00	7,363.80	54.84	55.36	-83.18	7,299.36	-1,492.45	2,003.37	1,893.65	109.71	18.260	

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	89.98	0.01	30.28	30.28					
100.00	100.00	100.00	100.00	0.22	0.22	89.98	0.01	30.28	30.28	29.84	0.44	69.254		
200.00	200.00	200.00	200.00	0.48	0.48	89.98	0.01	30.28	30.28	29.32	0.96	31.514		
300.00	300.00	300.00	300.00	0.74	0.74	89.98	0.01	30.28	30.28	28.79	1.48	20.398		
400.00	400.00	400.00	400.00	1.00	1.00	89.98	0.01	30.28	30.28	28.27	2.01	15.079		
500.00	500.00	500.00	500.00	1.27	1.27	89.98	0.01	30.28	30.28	27.75	2.53	11.960		
600.00	600.00	600.00	600.00	1.53	1.53	89.98	0.01	30.28	30.28	27.22	3.06	9.910		
700.00	700.00	700.00	700.00	1.79	1.79	89.98	0.01	30.28	30.28	26.70	3.58	8.460		
800.00	800.00	800.00	800.00	2.05	2.05	89.98	0.01	30.28	30.28	26.18	4.10	7.381		
900.00	900.00	900.00	900.00	2.31	2.31	89.98	0.01	30.28	30.28	25.65	4.63	6.545		
1,000.00	1,000.00	1,000.00	1,000.00	2.57	2.57	89.98	0.01	30.28	30.28	25.13	5.15	5.880		
1,100.00	1,100.00	1,100.00	1,100.00	2.84	2.84	89.98	0.01	30.28	30.28	24.61	5.67	5.337		
1,200.00	1,200.00	1,200.00	1,200.00	3.10	3.10	89.98	0.01	30.28	30.28	24.08	6.20	4.886		
1,300.00	1,300.00	1,300.00	1,300.00	3.36	3.36	89.98	0.01	30.28	30.28	23.56	6.72	4.505		
1,400.00	1,400.00	1,400.00	1,400.00	3.62	3.62	89.98	0.01	30.28	30.28	23.03	7.24	4.180		
1,500.00	1,500.00	1,500.00	1,500.00	3.88	3.88	89.98	0.01	30.28	30.28	22.51	7.77	3.898		
1,600.00	1,600.00	1,600.00	1,600.00	4.15	4.15	89.98	0.01	30.28	30.28	21.99	8.29	3.652		
1,700.00	1,700.00	1,700.00	1,700.00	4.41	4.41	89.98	0.01	30.28	30.28	21.46	8.81	3.435		
1,800.00	1,800.00	1,800.00	1,800.00	4.67	4.67	89.98	0.01	30.28	30.28	20.94	9.34	3.242		
1,900.00	1,900.00	1,900.00	1,900.00	4.93	4.93	89.98	0.01	30.28	30.28	20.42	9.86	3.070		
2,000.00	2,000.00	2,000.00	2,000.00	5.19	5.19	89.98	0.01	30.28	30.28	19.89	10.39	2.915		
2,100.00	2,100.00	2,100.00	2,100.00	5.45	5.45	89.98	0.01	30.28	30.28	19.37	10.91	2.775		
2,200.00	2,200.00	2,200.00	2,200.00	5.72	5.72	89.98	0.01	30.28	30.28	18.85	11.43	2.648		
2,300.00	2,300.00	2,300.00	2,300.00	5.98	5.98	89.98	0.01	30.28	30.28	18.32	11.96	2.532		
2,400.00	2,400.00	2,400.00	2,400.00	6.24	6.24	89.98	0.01	30.28	30.28	17.80	12.48	2.426		
2,500.00	2,500.00	2,500.00	2,500.00	6.50	6.50	89.98	0.01	30.28	30.28	17.27	13.00	2.328		
2,600.00	2,600.00	2,600.00	2,600.00	6.76	6.76	89.98	0.01	30.28	30.28	16.75	13.53	2.238		
2,700.00	2,700.00	2,700.00	2,700.00	7.03	7.03	89.98	0.01	30.28	30.28	16.23	14.05	2.155		
2,800.00	2,800.00	2,800.00	2,800.00	7.29	7.29	89.98	0.01	30.28	30.28	15.70	14.57	2.078		
2,900.00	2,900.00	2,900.00	2,900.00	7.55	7.55	89.98	0.01	30.28	30.28	15.18	15.10	2.005		
3,000.00	3,000.00	3,000.00	3,000.00	7.81	7.81	89.98	0.01	30.28	30.28	14.66	15.62	1.938		
3,100.00	3,100.00	3,100.00	3,100.00	8.07	8.07	89.98	0.01	30.28	30.28	14.13	16.15	1.875		
3,200.00	3,200.00	3,200.00	3,200.00	8.33	8.33	89.98	0.01	30.28	30.28	13.61	16.67	1.816		
3,300.00	3,300.00	3,300.00	3,300.00	8.60	8.60	89.98	0.01	30.28	30.28	13.09	17.19	1.761		
3,400.00	3,400.00	3,400.00	3,400.00	8.86	8.86	89.98	0.01	30.28	30.28	12.56	17.72	1.709		
3,500.00	3,500.00	3,500.00	3,500.00	9.12	9.12	89.98	0.01	30.28	30.28	12.04	18.24	1.660		
3,600.00	3,600.00	3,600.00	3,600.00	9.38	9.38	89.98	0.01	30.28	30.28	11.52	18.76	1.614		
3,700.00	3,700.00	3,700.00	3,700.00	9.64	9.64	89.98	0.01	30.28	30.28	10.99	19.29	1.570		
3,800.00	3,800.00	3,800.00	3,800.00	9.91	9.91	89.98	0.01	30.28	30.28	10.47	19.81	1.528		
3,900.00	3,900.00	3,900.00	3,900.00	10.17	10.17	89.98	0.01	30.28	30.28	9.94	20.33	1.489 Level 3		
4,000.00	4,000.00	4,000.00	4,000.00	10.43	10.43	89.98	0.01	30.28	30.28	9.42	20.86	1.452 Level 3		
4,100.00	4,100.00	4,100.00	4,100.00	10.69	10.69	89.98	0.01	30.28	30.28	8.90	21.38	1.416 Level 3		
4,200.00	4,200.00	4,200.00	4,200.00	10.95	10.95	89.98	0.01	30.28	30.28	8.37	21.90	1.382 Level 3		
4,300.00	4,300.00	4,300.00	4,300.00	11.21	11.21	89.98	0.01	30.28	30.28	7.85	22.43	1.350 Level 3		
4,400.00	4,400.00	4,400.00	4,400.00	11.48	11.48	89.98	0.01	30.28	30.28	7.33	22.95	1.319 Level 3		
4,500.00	4,500.00	4,500.00	4,500.00	11.74	11.74	89.98	0.01	30.28	30.28	6.80	23.48	1.290 Level 3		
4,600.00	4,600.00	4,600.00	4,600.00	12.00	12.00	89.98	0.01	30.28	30.28	6.28	24.00	1.262 Level 3		
4,700.00	4,700.00	4,700.00	4,700.00	12.26	12.26	89.98	0.01	30.28	30.28	5.76	24.52	1.235 Level 2		
4,800.00	4,800.00	4,800.00	4,800.00	12.52	12.52	89.98	0.01	30.28	30.28	5.23	25.05	1.209 Level 2		
4,900.00	4,900.00	4,900.00	4,900.00	12.78	12.78	89.98	0.01	30.28	30.28	4.71	25.57	1.184 Level 2		
5,000.00	5,000.00	5,000.00	5,000.00	13.05	13.05	89.98	0.01	30.28	30.28	4.18	26.09	1.160 Level 2		
5,100.00	5,100.00	5,100.00	5,100.00	13.31	13.31	89.98	0.01	30.28	30.28	3.66	26.62	1.138 Level 2		

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

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design												Sec.24-T1S-R66W - Rock Family LE 13-28HN-1 - Wellbore #1 - Design #1		Offset Site Error: 0.00 usft	
Survey Program: 0-MWD												Offset Well Error: 0.00 usft			
Reference		Offset		Semi Major Axis		Distance						Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		Separation Factor		
5,200.00	5,200.00	5,200.00	5,200.00	13.57	13.57	89.98	0.01	30.28	30.28	3.14	27.14	1.116	Level 2		
5,300.00	5,300.00	5,300.00	5,300.00	13.83	13.83	89.98	0.01	30.28	30.28	2.61	27.66	1.094	Level 2		
5,400.00	5,400.00	5,400.00	5,400.00	14.09	14.09	89.98	0.01	30.28	30.28	2.09	28.19	1.074	Level 2, CC, ES, SF		
5,500.00	5,500.00	5,498.73	5,498.70	14.36	14.35	90.48	-0.27	31.88	31.90	3.20	28.71	1.111	Level 2		
5,600.00	5,600.00	5,596.73	5,596.47	14.62	14.61	92.07	-1.39	38.33	38.52	9.28	29.23	1.317	Level 3		
5,700.00	5,700.00	5,693.80	5,692.87	14.88	14.86	93.85	-3.34	49.58	50.21	20.44	29.77	1.687			
5,800.00	5,800.00	5,789.48	5,787.18	15.14	15.12	95.31	-6.08	65.38	66.90	36.60	30.31	2.207			
5,900.00	5,900.00	5,883.31	5,878.78	15.40	15.36	96.38	-9.54	85.38	88.49	57.63	30.86	2.867			
6,000.00	6,000.00	5,974.92	5,967.14	15.66	15.61	97.14	-13.66	109.15	114.81	83.38	31.43	3.653			
6,100.00	6,100.00	6,063.97	6,051.84	15.93	15.85	97.67	-18.36	136.24	145.67	113.66	32.01	4.551			
6,180.00	6,180.00	6,133.20	6,116.74	16.14	16.04	98.00	-22.47	159.97	173.49	141.00	32.48	5.341			
6,200.00	6,200.00	6,150.25	6,132.58	16.19	16.08	-13.16	-23.55	166.17	180.77	148.50	32.27	5.602			
6,300.00	6,299.92	6,234.74	6,210.25	16.45	16.32	-12.82	-29.23	198.92	216.80	184.08	32.73	6.625			
6,400.00	6,399.51	6,318.04	6,285.31	16.71	16.55	-12.74	-35.39	234.51	252.17	219.05	33.12	7.614			
6,500.00	6,498.50	6,400.00	6,357.56	16.97	16.79	-12.82	-42.00	272.63	286.82	253.38	33.45	8.576			
6,600.00	6,596.62	6,492.01	6,437.33	17.24	17.06	-13.08	-49.83	317.80	319.48	285.73	33.74	9.468			
6,700.00	6,693.60	6,587.96	6,520.48	17.50	17.35	-13.49	-58.01	364.99	347.40	313.40	33.99	10.220			
6,800.00	6,789.17	6,685.16	6,604.70	17.77	17.65	-14.05	-66.30	412.79	370.44	336.25	34.19	10.834			
6,900.00	6,883.07	6,783.34	6,689.78	18.04	17.95	-14.75	-74.67	461.07	388.58	354.24	34.34	11.315			
7,000.00	6,975.04	6,882.22	6,775.47	18.32	18.27	-15.61	-83.10	509.70	401.81	367.36	34.45	11.664			
7,100.00	7,064.83	6,981.55	6,861.54	18.60	18.58	-16.65	-91.56	558.54	410.17	375.65	34.52	11.883			
7,169.93	7,126.19	7,051.12	6,921.83	18.80	18.81	-17.50	-97.49	592.76	413.14	378.59	34.55	11.958			
7,189.22	7,142.95	7,070.33	6,938.47	18.85	18.87	-17.76	-99.13	602.20	413.64	378.96	34.68	11.929			
7,200.00	7,152.34	7,081.06	6,947.77	18.89	18.91	-15.55	-100.05	607.48	413.92	379.17	34.75	11.910			
7,225.00	7,174.23	7,106.13	6,969.53	18.96	18.99	-10.16	-101.49	619.83	414.59	379.67	34.92	11.871			
7,250.00	7,196.24	7,131.10	6,991.24	19.03	19.07	-4.50	-101.51	632.15	415.28	380.19	35.09	11.836			
7,275.00	7,218.31	7,155.97	7,012.83	19.10	19.15	1.27	-100.13	644.41	415.97	380.73	35.24	11.804			
7,300.00	7,240.36	7,180.74	7,034.24	19.18	19.23	7.00	-97.36	656.56	416.67	381.29	35.38	11.776			
7,325.00	7,262.32	7,205.42	7,055.39	19.25	19.31	12.55	-93.23	668.57	417.37	381.85	35.52	11.751			
7,350.00	7,284.12	7,230.00	7,076.23	19.32	19.39	17.78	-87.77	680.41	418.08	382.43	35.65	11.729			
7,375.00	7,305.69	7,254.50	7,096.70	19.39	19.47	22.63	-81.01	692.04	418.78	383.02	35.77	11.709			
7,400.00	7,326.97	7,278.90	7,116.74	19.46	19.54	27.02	-72.99	703.42	419.48	383.60	35.88	11.692			
7,425.00	7,347.87	7,303.22	7,136.29	19.54	19.62	30.97	-63.74	714.53	420.17	384.19	35.98	11.677			
7,450.00	7,368.34	7,327.46	7,155.31	19.61	19.70	34.47	-53.29	725.33	420.86	384.78	36.08	11.664			
7,475.00	7,388.31	7,351.62	7,173.73	19.68	19.77	37.55	-41.70	735.81	421.53	385.36	36.17	11.653			
7,500.00	7,407.71	7,375.70	7,191.52	19.75	19.85	40.26	-29.01	745.92	422.19	385.93	36.26	11.642			
7,525.00	7,426.49	7,400.00	7,208.83	19.82	19.92	42.63	-15.10	755.76	422.83	386.48	36.35	11.633			
7,550.00	7,444.58	7,423.65	7,225.02	19.90	20.00	44.69	-0.51	764.97	423.45	387.02	36.43	11.624			
7,575.00	7,461.92	7,447.53	7,240.64	19.97	20.07	46.49	15.20	773.85	424.05	387.54	36.51	11.615			
7,600.00	7,478.46	7,471.34	7,255.47	20.04	20.15	48.06	31.81	782.29	424.63	388.04	36.59	11.606			
7,625.00	7,494.15	7,495.10	7,269.45	20.11	20.22	49.43	49.28	790.25	425.17	388.51	36.66	11.596			
7,650.00	7,508.93	7,518.80	7,282.57	20.19	20.29	50.61	67.55	797.71	425.69	388.95	36.74	11.586			
7,675.00	7,522.75	7,542.45	7,294.79	20.26	20.36	51.64	86.57	804.67	426.18	389.35	36.82	11.574			
7,700.00	7,535.58	7,566.06	7,306.09	20.33	20.44	52.53	106.27	811.11	426.63	389.72	36.91	11.560			
7,725.00	7,547.37	7,589.62	7,316.43	20.41	20.51	53.29	126.60	817.00	427.05	390.05	36.99	11.544			
7,750.00	7,558.09	7,613.15	7,325.80	20.48	20.58	53.95	147.50	822.34	427.43	390.34	37.09	11.525			
7,775.00	7,567.69	7,636.64	7,334.17	20.56	20.65	54.51	168.92	827.12	427.77	390.59	37.18	11.504			
7,800.00	7,576.15	7,660.10	7,341.54	20.63	20.72	54.98	190.79	831.33	428.07	390.78	37.29	11.480			
7,825.00	7,583.45	7,683.53	7,347.87	20.70	20.79	55.37	213.06	834.95	428.33	390.93	37.40	11.453			
7,850.00	7,589.54	7,706.95	7,353.16	20.78	20.86	55.69	235.67	837.97	428.54	391.02	37.52	11.422			
7,875.00	7,594.43	7,730.34	7,357.39	20.86	20.93	55.93	258.54	840.41	428.72	391.07	37.65	11.387			
7,900.00	7,598.09	7,753.72	7,360.56	20.93	21.00	56.12	281.63	842.23	428.84	391.06	37.79	11.349			

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

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design												Sec.24-T1S-R66W - Rock Family LE 13-28HN-1 - Wellbore #1 - Design #1		Offset Site Error:		0.00 usft	
Survey Program: 0-MWD														Offset Well Error:		0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor					
7,925.00	7,600.51	7,777.10	7,362.66	21.01	21.07	56.24	304.88	843.45	428.93	390.99	37.93	11.307					
7,950.00	7,601.68	7,800.46	7,363.69	21.08	21.14	56.29	328.21	844.06	428.96	390.87	38.09	11.262					
7,960.91	7,601.80	7,810.66	7,363.80	21.12	21.17	56.30	338.41	844.14	428.97	390.80	38.16	11.240					
8,000.00	7,601.80	7,849.72	7,363.80	21.24	21.29	56.30	377.47	844.18	428.96	390.51	38.45	11.157					
8,100.00	7,601.80	7,949.72	7,363.80	21.55	21.60	56.30	477.47	844.30	428.95	389.76	39.19	10.945					
8,200.00	7,601.80	8,049.72	7,363.80	21.88	21.92	56.30	577.47	844.42	428.93	388.98	39.95	10.737					
8,300.00	7,601.80	8,149.72	7,363.80	22.22	22.25	56.30	677.47	844.53	428.92	388.19	40.73	10.532					
8,400.00	7,601.80	8,249.72	7,363.80	22.56	22.59	56.30	777.47	844.65	428.90	387.38	41.52	10.331					
8,500.00	7,601.80	8,349.72	7,363.80	22.92	22.94	56.29	877.47	844.77	428.89	386.56	42.33	10.133					
8,600.00	7,601.80	8,449.72	7,363.80	23.28	23.30	56.29	977.47	844.88	428.87	385.73	43.15	9.940					
8,700.00	7,601.80	8,549.72	7,363.80	23.66	23.67	56.29	1,077.47	845.00	428.86	384.88	43.98	9.751					
8,800.00	7,601.80	8,649.72	7,363.80	24.04	24.05	56.29	1,177.47	845.12	428.84	384.01	44.83	9.566					
8,900.00	7,601.80	8,749.72	7,363.80	24.43	24.43	56.29	1,277.47	845.24	428.83	383.14	45.69	9.385					
9,000.00	7,601.80	8,849.72	7,363.80	24.82	24.83	56.29	1,377.47	845.35	428.81	382.25	46.56	9.210					
9,100.00	7,601.80	8,949.72	7,363.80	25.23	25.23	56.29	1,477.47	845.47	428.80	381.36	47.44	9.038					
9,200.00	7,601.80	9,049.72	7,363.80	25.64	25.64	56.29	1,577.47	845.59	428.79	380.45	48.34	8.871					
9,300.00	7,601.80	9,149.72	7,363.80	26.06	26.05	56.28	1,677.47	845.70	428.77	379.53	49.24	8.708					
9,400.00	7,601.80	9,249.72	7,363.80	26.48	26.47	56.28	1,777.47	845.82	428.76	378.61	50.15	8.550					
9,500.00	7,601.80	9,349.72	7,363.80	26.91	26.90	56.28	1,877.47	845.94	428.74	377.67	51.07	8.395					
9,600.00	7,601.80	9,449.72	7,363.80	27.35	27.33	56.28	1,977.47	846.06	428.73	376.73	52.00	8.245					
9,700.00	7,601.80	9,549.72	7,363.80	27.79	27.77	56.28	2,077.47	846.17	428.71	375.78	52.93	8.099					
9,800.00	7,601.80	9,649.72	7,363.80	28.24	28.21	56.28	2,177.47	846.29	428.70	374.82	53.87	7.957					
9,900.00	7,601.80	9,749.72	7,363.80	28.69	28.66	56.28	2,277.47	846.41	428.68	373.86	54.82	7.819					
10,000.00	7,601.80	9,849.72	7,363.80	29.15	29.12	56.27	2,377.47	846.52	428.67	372.89	55.78	7.685					
10,100.00	7,601.80	9,949.72	7,363.80	29.61	29.58	56.27	2,477.47	846.64	428.65	371.91	56.74	7.554					
10,200.00	7,601.80	10,049.72	7,363.80	30.08	30.04	56.27	2,577.47	846.76	428.64	370.93	57.71	7.427					
10,300.00	7,601.80	10,149.72	7,363.80	30.55	30.51	56.27	2,677.47	846.87	428.62	369.94	58.68	7.304					
10,400.00	7,601.80	10,249.72	7,363.80	31.02	30.98	56.27	2,777.47	846.99	428.61	368.95	59.66	7.184					
10,500.00	7,601.80	10,349.72	7,363.80	31.50	31.45	56.27	2,877.47	847.11	428.60	367.95	60.65	7.067					
10,600.00	7,601.80	10,449.72	7,363.80	31.98	31.93	56.27	2,977.47	847.23	428.58	366.94	61.64	6.953					
10,700.00	7,601.80	10,549.72	7,363.80	32.46	32.41	56.27	3,077.47	847.34	428.57	365.94	62.63	6.843					
10,800.00	7,601.80	10,649.72	7,363.80	32.95	32.90	56.26	3,177.47	847.46	428.55	364.92	63.63	6.735					
10,900.00	7,601.80	10,749.72	7,363.80	33.44	33.39	56.26	3,277.47	847.58	428.54	363.91	64.63	6.630					
11,000.00	7,601.80	10,849.72	7,363.80	33.93	33.88	56.26	3,377.47	847.69	428.52	362.88	65.64	6.529					
11,100.00	7,601.80	10,949.72	7,363.80	34.43	34.37	56.26	3,477.47	847.81	428.51	361.86	66.65	6.429					
11,200.00	7,601.80	11,049.72	7,363.80	34.93	34.87	56.26	3,577.47	847.93	428.49	360.83	67.66	6.333					
11,300.00	7,601.80	11,149.72	7,363.80	35.43	35.37	56.26	3,677.47	848.04	428.48	359.80	68.68	6.239					
11,400.00	7,601.80	11,249.72	7,363.80	35.94	35.87	56.26	3,777.47	848.16	428.46	358.76	69.70	6.147					
11,500.00	7,601.80	11,349.72	7,363.80	36.44	36.38	56.26	3,877.47	848.28	428.45	357.73	70.72	6.058					
11,600.00	7,601.80	11,449.72	7,363.80	36.95	36.89	56.25	3,977.47	848.40	428.43	356.68	71.75	5.971					
11,700.00	7,601.80	11,549.72	7,363.80	37.46	37.40	56.25	4,077.47	848.51	428.42	355.64	72.78	5.886					
11,800.00	7,601.80	11,649.72	7,363.80	37.98	37.91	56.25	4,177.47	848.63	428.41	354.59	73.81	5.804					
11,900.00	7,601.80	11,749.72	7,363.80	38.49	38.42	56.25	4,277.47	848.75	428.39	353.54	74.85	5.723					
12,000.00	7,601.80	11,849.72	7,363.80	39.01	38.94	56.25	4,377.47	848.86	428.38	352.49	75.89	5.645					
12,100.00	7,601.80	11,949.72	7,363.80	39.53	39.46	56.25	4,477.47	848.98	428.36	351.43	76.93	5.568					
12,200.00	7,601.80	12,049.72	7,363.80	40.05	39.98	56.25	4,577.47	849.10	428.35	350.38	77.97	5.494					
12,300.00	7,601.80	12,149.72	7,363.80	40.58	40.50	56.24	4,677.47	849.21	428.33	349.32	79.01	5.421					
12,400.00	7,601.80	12,249.72	7,363.80	41.10	41.02	56.24	4,777.47	849.33	428.32	348.26	80.06	5.350					
12,500.00	7,601.80	12,349.72	7,363.80	41.63	41.55	56.24	4,877.47	849.45	428.30	347.19	81.11	5.280					
12,600.00	7,601.80	12,449.72	7,363.80	42.16	42.07	56.24	4,977.47	849.57	428.29	346.13	82.16	5.213					
12,700.00	7,601.80	12,549.72	7,363.80	42.69	42.60	56.24	5,077.47	849.68	428.27	345.06	83.22	5.147					
12,800.00	7,601.80	12,649.72	7,363.80	43.22	43.13	56.24	5,177.47	849.80	428.26	343.99	84.27	5.082					

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

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,900.00	7,601.80	12,749.72	7,363.80	43.75	43.66	56.24	5,277.47	849.92	428.24	342.92	85.33	5.019	
13,000.00	7,601.80	12,849.72	7,363.80	44.28	44.20	56.24	5,377.47	850.03	428.23	341.84	86.39	4.957	
13,100.00	7,601.80	12,949.72	7,363.80	44.82	44.73	56.23	5,477.47	850.15	428.22	340.77	87.45	4.897	
13,200.00	7,601.80	13,049.72	7,363.80	45.35	45.27	56.23	5,577.47	850.27	428.20	339.69	88.51	4.838	
13,300.00	7,601.80	13,149.72	7,363.80	45.89	45.80	56.23	5,677.47	850.38	428.19	338.61	89.57	4.780	
13,400.00	7,601.80	13,249.72	7,363.80	46.43	46.34	56.23	5,777.47	850.50	428.17	337.53	90.64	4.724	
13,500.00	7,601.80	13,349.72	7,363.80	46.97	46.88	56.23	5,877.47	850.62	428.16	336.45	91.70	4.669	
13,600.00	7,601.80	13,449.72	7,363.80	47.51	47.42	56.23	5,977.47	850.74	428.14	335.37	92.77	4.615	
13,700.00	7,601.80	13,549.72	7,363.80	48.05	47.96	56.23	6,077.47	850.85	428.13	334.29	93.84	4.562	
13,800.00	7,601.80	13,649.72	7,363.80	48.59	48.50	56.23	6,177.47	850.97	428.11	333.20	94.91	4.511	
13,900.00	7,601.80	13,749.72	7,363.80	49.14	49.04	56.22	6,277.47	851.09	428.10	332.12	95.98	4.460	
14,000.00	7,601.80	13,849.72	7,363.80	49.68	49.59	56.22	6,377.47	851.20	428.08	331.03	97.06	4.411	
14,100.00	7,601.80	13,949.72	7,363.80	50.23	50.13	56.22	6,477.47	851.32	428.07	329.94	98.13	4.362	
14,200.00	7,601.80	14,049.72	7,363.80	50.78	50.68	56.22	6,577.47	851.44	428.05	328.85	99.21	4.315	
14,300.00	7,601.80	14,149.72	7,363.80	51.32	51.22	56.22	6,677.47	851.55	428.04	327.76	100.28	4.268	
14,400.00	7,601.80	14,249.72	7,363.80	51.87	51.77	56.22	6,777.47	851.67	428.03	326.67	101.36	4.223	
14,500.00	7,601.80	14,349.72	7,363.80	52.42	52.32	56.22	6,877.47	851.79	428.01	325.57	102.44	4.178	
14,600.00	7,601.80	14,449.72	7,363.80	52.97	52.87	56.21	6,977.47	851.91	428.00	324.48	103.52	4.135	
14,700.00	7,601.80	14,549.72	7,363.80	53.52	53.42	56.21	7,077.47	852.02	427.98	323.38	104.60	4.092	
14,800.00	7,601.80	14,649.72	7,363.80	54.07	53.97	56.21	7,177.47	852.14	427.97	322.29	105.68	4.050	
14,900.00	7,601.80	14,749.72	7,363.80	54.62	54.52	56.21	7,277.47	852.26	427.95	321.19	106.76	4.008	
14,939.65	7,601.80	14,789.37	7,363.80	54.84	54.74	56.21	7,317.11	852.30	427.95	320.76	107.19	3.992	

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-90.00	0.00	-60.00	60.00					
100.00	100.00	100.00	100.00	0.22	0.22	-90.00	0.00	-60.00	60.00	59.56	0.44	137.226		
200.00	200.00	200.00	200.00	0.48	0.48	-90.00	0.00	-60.00	60.00	59.04	0.96	62.443		
300.00	300.00	300.00	300.00	0.74	0.74	-90.00	0.00	-60.00	60.00	58.51	1.48	40.418		
400.00	400.00	400.00	400.00	1.00	1.00	-90.00	0.00	-60.00	60.00	57.99	2.01	29.878		
500.00	500.00	500.00	500.00	1.27	1.27	-90.00	0.00	-60.00	60.00	57.46	2.53	23.699		
600.00	600.00	600.00	600.00	1.53	1.53	-90.00	0.00	-60.00	60.00	56.94	3.06	19.637		
700.00	700.00	700.00	700.00	1.79	1.79	-90.00	0.00	-60.00	60.00	56.42	3.58	16.764		
800.00	800.00	800.00	800.00	2.05	2.05	-90.00	0.00	-60.00	60.00	55.89	4.10	14.625		
900.00	900.00	900.00	900.00	2.31	2.31	-90.00	0.00	-60.00	60.00	55.37	4.63	12.969		
1,000.00	1,000.00	1,000.00	1,000.00	2.57	2.57	-90.00	0.00	-60.00	60.00	54.85	5.15	11.651		
1,100.00	1,100.00	1,100.00	1,100.00	2.84	2.84	-90.00	0.00	-60.00	60.00	54.32	5.67	10.575		
1,200.00	1,200.00	1,200.00	1,200.00	3.10	3.10	-90.00	0.00	-60.00	60.00	53.80	6.20	9.682		
1,300.00	1,300.00	1,300.00	1,300.00	3.36	3.36	-90.00	0.00	-60.00	60.00	53.28	6.72	8.927		
1,400.00	1,400.00	1,400.00	1,400.00	3.62	3.62	-90.00	0.00	-60.00	60.00	52.75	7.24	8.282		
1,500.00	1,500.00	1,500.00	1,500.00	3.88	3.88	-90.00	0.00	-60.00	60.00	52.23	7.77	7.724		
1,600.00	1,600.00	1,600.00	1,600.00	4.15	4.15	-90.00	0.00	-60.00	60.00	51.70	8.29	7.236		
1,700.00	1,700.00	1,700.00	1,700.00	4.41	4.41	-90.00	0.00	-60.00	60.00	51.18	8.81	6.806		
1,800.00	1,800.00	1,800.00	1,800.00	4.67	4.67	-90.00	0.00	-60.00	60.00	50.66	9.34	6.425		
1,900.00	1,900.00	1,900.00	1,900.00	4.93	4.93	-90.00	0.00	-60.00	60.00	50.13	9.86	6.084		
2,000.00	2,000.00	2,000.00	2,000.00	5.19	5.19	-90.00	0.00	-60.00	60.00	49.61	10.39	5.777		
2,100.00	2,100.00	2,100.00	2,100.00	5.45	5.45	-90.00	0.00	-60.00	60.00	49.09	10.91	5.500		
2,200.00	2,200.00	2,200.00	2,200.00	5.72	5.72	-90.00	0.00	-60.00	60.00	48.56	11.43	5.248		
2,300.00	2,300.00	2,300.00	2,300.00	5.98	5.98	-90.00	0.00	-60.00	60.00	48.04	11.96	5.018		
2,400.00	2,400.00	2,400.00	2,400.00	6.24	6.24	-90.00	0.00	-60.00	60.00	47.52	12.48	4.807		
2,500.00	2,500.00	2,500.00	2,500.00	6.50	6.50	-90.00	0.00	-60.00	60.00	46.99	13.00	4.614		
2,600.00	2,600.00	2,600.00	2,600.00	6.76	6.76	-90.00	0.00	-60.00	60.00	46.47	13.53	4.435		
2,700.00	2,700.00	2,700.00	2,700.00	7.03	7.03	-90.00	0.00	-60.00	60.00	45.95	14.05	4.270		
2,800.00	2,800.00	2,800.00	2,800.00	7.29	7.29	-90.00	0.00	-60.00	60.00	45.42	14.57	4.117		
2,900.00	2,900.00	2,900.00	2,900.00	7.55	7.55	-90.00	0.00	-60.00	60.00	44.90	15.10	3.974		
3,000.00	3,000.00	3,000.00	3,000.00	7.81	7.81	-90.00	0.00	-60.00	60.00	44.37	15.62	3.841		
3,100.00	3,100.00	3,100.00	3,100.00	8.07	8.07	-90.00	0.00	-60.00	60.00	43.85	16.15	3.716		
3,200.00	3,200.00	3,200.00	3,200.00	8.33	8.33	-90.00	0.00	-60.00	60.00	43.33	16.67	3.599		
3,300.00	3,300.00	3,300.00	3,300.00	8.60	8.60	-90.00	0.00	-60.00	60.00	42.80	17.19	3.490		
3,400.00	3,400.00	3,400.00	3,400.00	8.86	8.86	-90.00	0.00	-60.00	60.00	42.28	17.72	3.387		
3,500.00	3,500.00	3,500.00	3,500.00	9.12	9.12	-90.00	0.00	-60.00	60.00	41.76	18.24	3.289		
3,600.00	3,600.00	3,600.00	3,600.00	9.38	9.38	-90.00	0.00	-60.00	60.00	41.23	18.76	3.198		
3,700.00	3,700.00	3,700.00	3,700.00	9.64	9.64	-90.00	0.00	-60.00	60.00	40.71	19.29	3.111		
3,800.00	3,800.00	3,800.00	3,800.00	9.91	9.91	-90.00	0.00	-60.00	60.00	40.19	19.81	3.029		
3,900.00	3,900.00	3,900.00	3,900.00	10.17	10.17	-90.00	0.00	-60.00	60.00	39.66	20.33	2.951		
4,000.00	4,000.00	4,000.00	4,000.00	10.43	10.43	-90.00	0.00	-60.00	60.00	39.14	20.86	2.876		
4,100.00	4,100.00	4,100.00	4,100.00	10.69	10.69	-90.00	0.00	-60.00	60.00	38.61	21.38	2.806		
4,200.00	4,200.00	4,200.00	4,200.00	10.95	10.95	-90.00	0.00	-60.00	60.00	38.09	21.90	2.739		
4,300.00	4,300.00	4,300.00	4,300.00	11.21	11.21	-90.00	0.00	-60.00	60.00	37.57	22.43	2.675		
4,400.00	4,400.00	4,400.00	4,400.00	11.48	11.48	-90.00	0.00	-60.00	60.00	37.04	22.95	2.614		
4,500.00	4,500.00	4,500.00	4,500.00	11.74	11.74	-90.00	0.00	-60.00	60.00	36.52	23.48	2.556		
4,600.00	4,600.00	4,600.00	4,600.00	12.00	12.00	-90.00	0.00	-60.00	60.00	36.00	24.00	2.500		
4,700.00	4,700.00	4,700.00	4,700.00	12.26	12.26	-90.00	0.00	-60.00	60.00	35.47	24.52	2.447		
4,800.00	4,800.00	4,800.00	4,800.00	12.52	12.52	-90.00	0.00	-60.00	60.00	34.95	25.05	2.395		
4,900.00	4,900.00	4,900.00	4,900.00	12.78	12.78	-90.00	0.00	-60.00	60.00	34.43	25.57	2.346		
5,000.00	5,000.00	5,000.00	5,000.00	13.05	13.05	-90.00	0.00	-60.00	60.00	33.90	26.09	2.299		
5,100.00	5,100.00	5,100.00	5,100.00	13.31	13.31	-90.00	0.00	-60.00	60.00	33.38	26.62	2.254		

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

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,200.00	5,200.00	5,200.00	5,200.00	13.57	13.57	-90.00	0.00	-60.00	60.00	32.86	27.14	2.211		
5,300.00	5,300.00	5,300.00	5,300.00	13.83	13.83	-90.00	0.00	-60.00	60.00	32.33	27.66	2.169		
5,400.00	5,400.00	5,400.00	5,400.00	14.09	14.09	-90.00	0.00	-60.00	60.00	31.81	28.19	2.128		
5,500.00	5,500.00	5,500.00	5,500.00	14.36	14.36	-90.00	0.00	-60.00	60.00	31.28	28.71	2.090		
5,600.00	5,600.00	5,600.00	5,600.00	14.62	14.62	-90.00	0.00	-60.00	60.00	30.76	29.24	2.052		
5,700.00	5,700.00	5,700.00	5,700.00	14.88	14.88	-90.00	0.00	-60.00	60.00	30.24	29.76	2.016		
5,800.00	5,800.00	5,800.00	5,800.00	15.14	15.14	-90.00	0.00	-60.00	60.00	29.71	30.28	1.981		
5,900.00	5,900.00	5,900.00	5,900.00	15.40	15.40	-90.00	0.00	-60.00	60.00	29.19	30.81	1.948		
6,000.00	6,000.00	6,000.00	6,000.00	15.66	15.66	-90.00	0.00	-60.00	60.00	28.67	31.33	1.915		
6,100.00	6,100.00	6,100.00	6,100.00	15.93	15.93	-90.00	0.00	-60.00	60.00	28.14	31.85	1.884		
6,180.00	6,180.00	6,180.00	6,180.00	16.14	16.14	-90.00	0.00	-60.00	60.00	27.72	32.27	1.859 CC		
6,200.00	6,200.00	6,200.00	6,200.00	16.19	16.19	158.76	0.00	-60.00	60.09	27.72	32.38	1.856 ES, SF		
6,300.00	6,299.92	6,299.92	6,299.92	16.45	16.45	159.92	0.00	-60.00	63.52	30.67	32.85	1.934		
6,400.00	6,399.51	6,399.51	6,399.51	16.71	16.71	162.28	0.00	-60.00	71.94	38.68	33.26	2.163		
6,500.00	6,498.50	6,491.69	6,491.49	16.97	16.95	162.33	-3.40	-63.84	89.26	55.68	33.58	2.658		
6,600.00	6,596.62	6,579.04	6,577.61	17.24	17.18	159.40	-12.92	-74.61	119.06	85.20	33.86	3.516		
6,700.00	6,693.60	6,659.27	6,654.96	17.50	17.39	155.83	-26.97	-90.50	160.78	126.68	34.10	4.715		
6,800.00	6,789.17	6,731.06	6,722.10	17.77	17.58	152.53	-43.74	-109.48	213.39	179.07	34.32	6.218		
6,900.00	6,883.07	6,793.98	6,778.94	18.04	17.75	149.59	-61.60	-129.67	275.42	240.91	34.51	7.980		
7,000.00	6,975.04	6,854.02	6,831.25	18.32	17.92	146.80	-81.07	-151.77	345.20	310.49	34.72	9.944		
7,100.00	7,064.83	6,925.02	6,894.32	18.60	18.11	145.78	-98.16	-179.37	418.68	383.82	34.86	12.012		
7,169.93	7,126.19	6,971.55	6,936.67	18.80	18.24	146.27	-103.27	-197.89	471.59	436.75	34.84	13.534		
7,189.22	7,142.95	6,983.79	6,947.88	18.85	18.27	146.88	-103.80	-202.79	486.40	451.49	34.90	13.935		
7,200.00	7,152.34	6,990.57	6,954.08	18.89	18.29	151.21	-103.94	-205.50	494.69	459.93	34.76	14.232		
7,225.00	7,174.23	7,006.19	6,968.39	18.96	18.33	161.49	-103.89	-211.76	514.08	479.58	34.50	14.899		
7,250.00	7,196.24	7,021.73	6,982.62	19.03	18.38	171.96	-103.28	-217.98	533.61	499.22	34.39	15.517		
7,275.00	7,218.31	7,037.25	6,996.80	19.10	18.42	-177.58	-102.13	-224.18	553.20	518.77	34.43	16.069		
7,300.00	7,240.36	7,052.81	7,010.97	19.18	18.46	-167.33	-100.43	-230.37	572.78	538.16	34.62	16.547		
7,325.00	7,262.32	7,068.47	7,025.17	19.25	18.50	-157.48	-98.17	-236.58	592.27	557.34	34.93	16.956		
7,350.00	7,284.12	7,084.30	7,039.44	19.32	18.55	-148.17	-95.32	-242.81	611.63	576.30	35.34	17.309		
7,375.00	7,305.69	7,100.35	7,053.81	19.39	18.59	-139.52	-91.87	-249.09	630.79	594.99	35.80	17.621		
7,400.00	7,326.97	7,116.69	7,068.30	19.46	18.64	-131.59	-87.77	-255.42	649.70	613.42	36.27	17.910		
7,425.00	7,347.87	7,133.39	7,082.95	19.54	18.68	-124.39	-82.98	-261.82	668.30	631.56	36.74	18.189		
7,450.00	7,368.34	7,150.50	7,097.79	19.61	18.73	-117.90	-77.45	-268.30	686.55	649.37	37.17	18.469		
7,475.00	7,388.31	7,168.09	7,112.83	19.68	18.78	-112.09	-71.11	-274.87	704.39	666.81	37.57	18.748		
7,500.00	7,407.71	7,186.24	7,128.09	19.75	18.82	-106.91	-63.89	-281.53	721.77	683.81	37.97	19.010		
7,525.00	7,426.49	7,205.03	7,143.58	19.82	18.88	-102.31	-55.70	-288.29	738.66	700.36	38.30	19.285		
7,550.00	7,444.58	7,224.52	7,159.30	19.90	18.93	-98.23	-46.45	-295.16	755.00	716.43	38.57	19.573		
7,575.00	7,461.92	7,244.79	7,175.24	19.97	18.98	-94.64	-36.03	-302.11	770.75	731.97	38.79	19.872		
7,600.00	7,478.46	7,265.93	7,191.38	20.04	19.04	-91.47	-24.32	-309.15	785.86	746.92	38.94	20.179		
7,625.00	7,494.15	7,288.02	7,207.66	20.11	19.10	-88.69	-11.21	-316.26	800.29	761.23	39.06	20.489		
7,650.00	7,508.93	7,311.13	7,224.04	20.19	19.17	-86.26	3.45	-323.40	813.98	774.84	39.14	20.799		
7,675.00	7,522.75	7,335.34	7,240.42	20.26	19.23	-84.14	19.78	-330.54	826.89	787.70	39.18	21.102		
7,700.00	7,535.58	7,360.72	7,256.67	20.33	19.31	-82.31	37.93	-337.62	838.96	799.75	39.21	21.395		
7,725.00	7,547.37	7,387.32	7,272.66	20.41	19.38	-80.74	58.02	-344.59	850.15	810.92	39.23	21.671		
7,750.00	7,558.09	7,415.18	7,288.18	20.48	19.46	-79.40	80.14	-351.34	860.41	821.17	39.24	21.924		
7,775.00	7,567.69	7,444.32	7,303.00	20.56	19.54	-78.26	104.38	-357.79	869.68	830.42	39.26	22.151		
7,800.00	7,576.15	7,474.72	7,316.88	20.63	19.63	-77.32	130.74	-363.83	877.92	838.63	39.29	22.346		
7,825.00	7,583.45	7,506.34	7,329.50	20.70	19.72	-76.54	159.19	-369.31	885.07	845.75	39.33	22.505		
7,850.00	7,589.54	7,539.08	7,340.57	20.78	19.82	-75.92	189.62	-374.11	891.09	851.71	39.39	22.625		
7,875.00	7,594.43	7,572.80	7,349.77	20.86	19.92	-75.45	221.81	-378.09	895.94	856.48	39.46	22.703		
7,900.00	7,598.09	7,607.34	7,356.84	20.93	20.02	-75.09	255.47	-381.14	899.58	860.02	39.56	22.737		

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

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design Sec.24-T1S-R66W - Rock Family LE 13-29HN - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
7,925.00	7,600.51	7,642.47	7,361.52	21.01	20.13	-74.86	290.22	-383.14	901.99	862.30	39.69	22.727		
7,950.00	7,601.68	7,677.96	7,363.67	21.08	20.24	-74.74	325.62	-384.04	903.14	863.31	39.83	22.672		
7,960.91	7,601.80	7,692.23	7,363.80	21.12	20.28	-74.72	339.89	-384.08	903.25	863.35	39.90	22.637		
8,000.00	7,601.80	7,731.32	7,363.80	21.24	20.40	-74.72	378.99	-384.03	903.25	863.10	40.15	22.497		
8,100.00	7,601.80	7,831.32	7,363.80	21.55	20.72	-74.72	478.99	-383.90	903.26	862.46	40.80	22.139		
8,200.00	7,601.80	7,931.32	7,363.80	21.88	21.05	-74.72	578.99	-383.78	903.27	861.80	41.47	21.780		
8,300.00	7,601.80	8,031.32	7,363.80	22.22	21.39	-74.72	678.99	-383.65	903.28	861.11	42.16	21.423		
8,400.00	7,601.80	8,131.32	7,363.80	22.56	21.74	-74.72	778.99	-383.52	903.28	860.41	42.88	21.066		
8,500.00	7,601.80	8,231.32	7,363.80	22.92	22.10	-74.72	878.99	-383.40	903.29	859.68	43.61	20.713		
8,600.00	7,601.80	8,331.32	7,363.80	23.28	22.47	-74.72	978.99	-383.27	903.30	858.94	44.36	20.363		
8,700.00	7,601.80	8,431.32	7,363.80	23.66	22.85	-74.72	1,078.99	-383.15	903.31	858.18	45.13	20.016		
8,800.00	7,601.80	8,531.32	7,363.80	24.04	23.24	-74.72	1,178.99	-383.02	903.32	857.40	45.91	19.674		
8,900.00	7,601.80	8,631.32	7,363.80	24.43	23.63	-74.72	1,278.99	-382.89	903.32	856.61	46.71	19.337		
9,000.00	7,601.80	8,731.32	7,363.80	24.82	24.04	-74.72	1,378.99	-382.77	903.33	855.80	47.53	19.006		
9,100.00	7,601.80	8,831.32	7,363.80	25.23	24.45	-74.72	1,478.99	-382.64	903.34	854.98	48.36	18.680		
9,200.00	7,601.80	8,931.32	7,363.80	25.64	24.87	-74.72	1,578.99	-382.51	903.35	854.15	49.20	18.360		
9,300.00	7,601.80	9,031.32	7,363.80	26.06	25.29	-74.72	1,678.99	-382.39	903.36	853.30	50.06	18.047		
9,400.00	7,601.80	9,131.32	7,363.80	26.48	25.72	-74.72	1,778.99	-382.26	903.37	852.44	50.92	17.740		
9,500.00	7,601.80	9,231.32	7,363.80	26.91	26.16	-74.72	1,878.99	-382.14	903.37	851.57	51.80	17.439		
9,600.00	7,601.80	9,331.32	7,363.80	27.35	26.60	-74.72	1,978.99	-382.01	903.38	850.69	52.69	17.144		
9,700.00	7,601.80	9,431.32	7,363.80	27.79	27.05	-74.73	2,078.99	-381.88	903.39	849.80	53.59	16.857		
9,800.00	7,601.80	9,531.32	7,363.80	28.24	27.50	-74.73	2,178.99	-381.76	903.40	848.90	54.50	16.575		
9,900.00	7,601.80	9,631.32	7,363.80	28.69	27.96	-74.73	2,278.99	-381.63	903.41	847.98	55.42	16.300		
10,000.00	7,601.80	9,731.32	7,363.80	29.15	28.42	-74.73	2,378.99	-381.51	903.41	847.06	56.35	16.032		
10,100.00	7,601.80	9,831.32	7,363.80	29.61	28.89	-74.73	2,478.99	-381.38	903.42	846.13	57.29	15.770		
10,200.00	7,601.80	9,931.32	7,363.80	30.08	29.36	-74.73	2,578.99	-381.25	903.43	845.20	58.23	15.514		
10,300.00	7,601.80	10,031.32	7,363.80	30.55	29.83	-74.73	2,678.99	-381.13	903.44	844.25	59.19	15.265		
10,400.00	7,601.80	10,131.32	7,363.80	31.02	30.31	-74.73	2,778.99	-381.00	903.45	843.30	60.15	15.021		
10,500.00	7,601.80	10,231.32	7,363.80	31.50	30.79	-74.73	2,878.99	-380.87	903.45	842.34	61.11	14.784		
10,600.00	7,601.80	10,331.32	7,363.80	31.98	31.28	-74.73	2,978.99	-380.75	903.46	841.38	62.09	14.552		
10,700.00	7,601.80	10,431.32	7,363.80	32.46	31.77	-74.73	3,078.99	-380.62	903.47	840.41	63.07	14.326		
10,800.00	7,601.80	10,531.32	7,363.80	32.95	32.26	-74.73	3,178.99	-380.50	903.48	839.43	64.05	14.106		
10,900.00	7,601.80	10,631.32	7,363.80	33.44	32.76	-74.73	3,278.99	-380.37	903.49	838.44	65.04	13.891		
11,000.00	7,601.80	10,731.32	7,363.80	33.93	33.26	-74.73	3,378.98	-380.24	903.50	837.46	66.04	13.681		
11,100.00	7,601.80	10,831.32	7,363.80	34.43	33.76	-74.73	3,478.98	-380.12	903.50	836.46	67.04	13.476		
11,200.00	7,601.80	10,931.32	7,363.80	34.93	34.26	-74.73	3,578.98	-379.99	903.51	835.46	68.05	13.277		
11,300.00	7,601.80	11,031.32	7,363.80	35.43	34.77	-74.73	3,678.98	-379.87	903.52	834.46	69.06	13.083		
11,400.00	7,601.80	11,131.32	7,363.80	35.94	35.28	-74.73	3,778.98	-379.74	903.53	833.45	70.08	12.893		
11,500.00	7,601.80	11,231.32	7,363.80	36.44	35.79	-74.73	3,878.98	-379.61	903.54	832.44	71.10	12.708		
11,600.00	7,601.80	11,331.32	7,363.80	36.95	36.30	-74.73	3,978.98	-379.49	903.54	831.42	72.13	12.527		
11,700.00	7,601.80	11,431.32	7,363.80	37.46	36.82	-74.73	4,078.98	-379.36	903.55	830.40	73.16	12.351		
11,800.00	7,601.80	11,531.32	7,363.80	37.98	37.34	-74.73	4,178.98	-379.23	903.56	829.37	74.19	12.179		
11,900.00	7,601.80	11,631.32	7,363.80	38.49	37.86	-74.73	4,278.98	-379.11	903.57	828.34	75.23	12.011		
12,000.00	7,601.80	11,731.32	7,363.80	39.01	38.38	-74.73	4,378.98	-378.98	903.58	827.31	76.27	11.847		
12,100.00	7,601.80	11,831.32	7,363.80	39.53	38.90	-74.73	4,478.98	-378.86	903.59	826.27	77.31	11.688		
12,200.00	7,601.80	11,931.32	7,363.80	40.05	39.43	-74.73	4,578.98	-378.73	903.59	825.23	78.36	11.531		
12,300.00	7,601.80	12,031.32	7,363.80	40.58	39.95	-74.73	4,678.98	-378.60	903.60	824.19	79.41	11.379		
12,400.00	7,601.80	12,131.32	7,363.80	41.10	40.48	-74.73	4,778.98	-378.48	903.61	823.15	80.46	11.230		
12,500.00	7,601.80	12,231.32	7,363.80	41.63	41.01	-74.73	4,878.98	-378.35	903.62	822.10	81.52	11.085		
12,600.00	7,601.80	12,331.32	7,363.80	42.16	41.54	-74.73	4,978.98	-378.23	903.63	821.05	82.58	10.942		
12,700.00	7,601.80	12,431.32	7,363.80	42.69	42.08	-74.73	5,078.98	-378.10	903.63	819.99	83.64	10.804		
12,800.00	7,601.80	12,531.32	7,363.80	43.22	42.61	-74.73	5,178.98	-377.97	903.64	818.94	84.71	10.668		

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

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,900.00	7,601.80	12,631.32	7,363.80	43.75	43.15	-74.73	5,278.98	-377.85	903.65	817.88	85.77	10.535	
13,000.00	7,601.80	12,731.32	7,363.80	44.28	43.68	-74.73	5,378.98	-377.72	903.66	816.82	86.84	10.406	
13,100.00	7,601.80	12,831.32	7,363.80	44.82	44.22	-74.73	5,478.98	-377.59	903.67	815.75	87.92	10.279	
13,200.00	7,601.80	12,931.32	7,363.80	45.35	44.76	-74.73	5,578.98	-377.47	903.67	814.69	88.99	10.155	
13,300.00	7,601.80	13,031.32	7,363.80	45.89	45.30	-74.73	5,678.98	-377.34	903.68	813.62	90.07	10.034	
13,400.00	7,601.80	13,131.32	7,363.80	46.43	45.84	-74.73	5,778.98	-377.22	903.69	812.55	91.14	9.915	
13,500.00	7,601.80	13,231.32	7,363.80	46.97	46.39	-74.73	5,878.98	-377.09	903.70	811.47	92.22	9.799	
13,600.00	7,601.80	13,331.32	7,363.80	47.51	46.93	-74.73	5,978.98	-376.96	903.71	810.40	93.31	9.685	
13,700.00	7,601.80	13,431.32	7,363.80	48.05	47.47	-74.73	6,078.98	-376.84	903.72	809.32	94.39	9.574	
13,800.00	7,601.80	13,531.32	7,363.80	48.59	48.02	-74.73	6,178.98	-376.71	903.72	808.25	95.48	9.465	
13,900.00	7,601.80	13,631.32	7,363.80	49.14	48.57	-74.73	6,278.98	-376.59	903.73	807.17	96.56	9.359	
14,000.00	7,601.80	13,731.32	7,363.80	49.68	49.11	-74.73	6,378.98	-376.46	903.74	806.09	97.65	9.255	
14,100.00	7,601.80	13,831.32	7,363.80	50.23	49.66	-74.73	6,478.98	-376.33	903.75	805.00	98.74	9.152	
14,200.00	7,601.80	13,931.32	7,363.80	50.78	50.21	-74.73	6,578.98	-376.21	903.76	803.92	99.84	9.052	
14,300.00	7,601.80	14,031.32	7,363.80	51.32	50.76	-74.73	6,678.98	-376.08	903.76	802.83	100.93	8.954	
14,400.00	7,601.80	14,131.32	7,363.80	51.87	51.31	-74.73	6,778.98	-375.95	903.77	801.75	102.03	8.858	
14,500.00	7,601.80	14,231.32	7,363.80	52.42	51.86	-74.73	6,878.98	-375.83	903.78	800.66	103.12	8.764	
14,600.00	7,601.80	14,331.32	7,363.80	52.97	52.42	-74.73	6,978.98	-375.70	903.79	799.57	104.22	8.672	
14,700.00	7,601.80	14,431.32	7,363.80	53.52	52.97	-74.73	7,078.98	-375.58	903.80	798.47	105.32	8.581	
14,800.00	7,601.80	14,531.32	7,363.80	54.07	53.52	-74.73	7,178.98	-375.45	903.80	797.38	106.42	8.493	
14,900.00	7,601.80	14,631.32	7,363.80	54.62	54.08	-74.73	7,278.98	-375.32	903.81	796.29	107.53	8.406	
14,916.69	7,601.80	14,648.01	7,363.80	54.72	54.17	-74.73	7,295.67	-375.30	903.81	796.10	107.71	8.391	
14,939.65	7,601.80	14,661.85	7,363.80	54.84	54.25	-74.73	7,309.51	-375.29	903.86	795.95	107.91	8.376	

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-90.00	0.00	-29.72	29.72					
100.00	100.00	100.00	100.00	0.22	0.22	-90.00	0.00	-29.72	29.72	29.28	0.44	67.972		
200.00	200.00	200.00	200.00	0.48	0.48	-90.00	0.00	-29.72	29.72	28.76	0.96	30.930		
300.00	300.00	300.00	300.00	0.74	0.74	-90.00	0.00	-29.72	29.72	28.23	1.48	20.020		
400.00	400.00	400.00	400.00	1.00	1.00	-90.00	0.00	-29.72	29.72	27.71	2.01	14.800		
500.00	500.00	500.00	500.00	1.27	1.27	-90.00	0.00	-29.72	29.72	27.19	2.53	11.739		
600.00	600.00	600.00	600.00	1.53	1.53	-90.00	0.00	-29.72	29.72	26.66	3.06	9.727		
700.00	700.00	700.00	700.00	1.79	1.79	-90.00	0.00	-29.72	29.72	26.14	3.58	8.304		
800.00	800.00	800.00	800.00	2.05	2.05	-90.00	0.00	-29.72	29.72	25.62	4.10	7.244		
900.00	900.00	900.00	900.00	2.31	2.31	-90.00	0.00	-29.72	29.72	25.09	4.63	6.424		
1,000.00	1,000.00	1,000.00	1,000.00	2.57	2.57	-90.00	0.00	-29.72	29.72	24.57	5.15	5.771		
1,100.00	1,100.00	1,100.00	1,100.00	2.84	2.84	-90.00	0.00	-29.72	29.72	24.04	5.67	5.238		
1,200.00	1,200.00	1,200.00	1,200.00	3.10	3.10	-90.00	0.00	-29.72	29.72	23.52	6.20	4.796		
1,300.00	1,300.00	1,300.00	1,300.00	3.36	3.36	-90.00	0.00	-29.72	29.72	23.00	6.72	4.422		
1,400.00	1,400.00	1,400.00	1,400.00	3.62	3.62	-90.00	0.00	-29.72	29.72	22.47	7.24	4.102		
1,500.00	1,500.00	1,500.00	1,500.00	3.88	3.88	-90.00	0.00	-29.72	29.72	21.95	7.77	3.826		
1,600.00	1,600.00	1,600.00	1,600.00	4.15	4.15	-90.00	0.00	-29.72	29.72	21.43	8.29	3.584		
1,700.00	1,700.00	1,700.00	1,700.00	4.41	4.41	-90.00	0.00	-29.72	29.72	20.90	8.81	3.371		
1,800.00	1,800.00	1,800.00	1,800.00	4.67	4.67	-90.00	0.00	-29.72	29.72	20.38	9.34	3.182		
1,900.00	1,900.00	1,900.00	1,900.00	4.93	4.93	-90.00	0.00	-29.72	29.72	19.86	9.86	3.013		
2,000.00	2,000.00	2,000.00	2,000.00	5.19	5.19	-90.00	0.00	-29.72	29.72	19.33	10.39	2.861		
2,100.00	2,100.00	2,100.00	2,100.00	5.45	5.45	-90.00	0.00	-29.72	29.72	18.81	10.91	2.724		
2,200.00	2,200.00	2,200.00	2,200.00	5.72	5.72	-90.00	0.00	-29.72	29.72	18.28	11.43	2.599		
2,300.00	2,300.00	2,300.00	2,300.00	5.98	5.98	-90.00	0.00	-29.72	29.72	17.76	11.96	2.486		
2,400.00	2,400.00	2,400.00	2,400.00	6.24	6.24	-90.00	0.00	-29.72	29.72	17.24	12.48	2.381		
2,500.00	2,500.00	2,500.00	2,500.00	6.50	6.50	-90.00	0.00	-29.72	29.72	16.71	13.00	2.285		
2,600.00	2,600.00	2,600.00	2,600.00	6.76	6.76	-90.00	0.00	-29.72	29.72	16.19	13.53	2.197		
2,700.00	2,700.00	2,700.00	2,700.00	7.03	7.03	-90.00	0.00	-29.72	29.72	15.67	14.05	2.115		
2,800.00	2,800.00	2,800.00	2,800.00	7.29	7.29	-90.00	0.00	-29.72	29.72	15.14	14.57	2.039		
2,900.00	2,900.00	2,900.00	2,900.00	7.55	7.55	-90.00	0.00	-29.72	29.72	14.62	15.10	1.968		
3,000.00	3,000.00	3,000.00	3,000.00	7.81	7.81	-90.00	0.00	-29.72	29.72	14.10	15.62	1.902		
3,100.00	3,100.00	3,100.00	3,100.00	8.07	8.07	-90.00	0.00	-29.72	29.72	13.57	16.15	1.841		
3,200.00	3,200.00	3,200.00	3,200.00	8.33	8.33	-90.00	0.00	-29.72	29.72	13.05	16.67	1.783		
3,300.00	3,300.00	3,300.00	3,300.00	8.60	8.60	-90.00	0.00	-29.72	29.72	12.53	17.19	1.729		
3,400.00	3,400.00	3,400.00	3,400.00	8.86	8.86	-90.00	0.00	-29.72	29.72	12.00	17.72	1.677		
3,500.00	3,500.00	3,500.00	3,500.00	9.12	9.12	-90.00	0.00	-29.72	29.72	11.48	18.24	1.629		
3,600.00	3,600.00	3,600.00	3,600.00	9.38	9.38	-90.00	0.00	-29.72	29.72	10.95	18.76	1.584		
3,700.00	3,700.00	3,700.00	3,700.00	9.64	9.64	-90.00	0.00	-29.72	29.72	10.43	19.29	1.541		
3,800.00	3,800.00	3,800.00	3,800.00	9.91	9.91	-90.00	0.00	-29.72	29.72	9.91	19.81	1.500		
3,900.00	3,900.00	3,900.00	3,900.00	10.17	10.17	-90.00	0.00	-29.72	29.72	9.38	20.33	1.461	Level 3	
4,000.00	4,000.00	4,000.00	4,000.00	10.43	10.43	-90.00	0.00	-29.72	29.72	8.86	20.86	1.425	Level 3	
4,100.00	4,100.00	4,100.00	4,100.00	10.69	10.69	-90.00	0.00	-29.72	29.72	8.34	21.38	1.390	Level 3	
4,200.00	4,200.00	4,200.00	4,200.00	10.95	10.95	-90.00	0.00	-29.72	29.72	7.81	21.90	1.357	Level 3	
4,300.00	4,300.00	4,300.00	4,300.00	11.21	11.21	-90.00	0.00	-29.72	29.72	7.29	22.43	1.325	Level 3	
4,400.00	4,400.00	4,400.00	4,400.00	11.48	11.48	-90.00	0.00	-29.72	29.72	6.77	22.95	1.295	Level 3	
4,500.00	4,500.00	4,500.00	4,500.00	11.74	11.74	-90.00	0.00	-29.72	29.72	6.24	23.48	1.266	Level 3	
4,600.00	4,600.00	4,600.00	4,600.00	12.00	12.00	-90.00	0.00	-29.72	29.72	5.72	24.00	1.238	Level 2	
4,700.00	4,700.00	4,700.00	4,700.00	12.26	12.26	-90.00	0.00	-29.72	29.72	5.19	24.52	1.212	Level 2	
4,800.00	4,800.00	4,800.00	4,800.00	12.52	12.52	-90.00	0.00	-29.72	29.72	4.67	25.05	1.187	Level 2	
4,900.00	4,900.00	4,900.00	4,900.00	12.78	12.78	-90.00	0.00	-29.72	29.72	4.15	25.57	1.162	Level 2	
5,000.00	5,000.00	5,000.00	5,000.00	13.05	13.05	-90.00	0.00	-29.72	29.72	3.62	26.09	1.139	Level 2	
5,100.00	5,100.00	5,100.00	5,100.00	13.31	13.31	-90.00	0.00	-29.72	29.72	3.10	26.62	1.116	Level 2	

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

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,200.00	5,200.00	5,200.00	5,200.00	13.57	13.57	-90.00	0.00	-29.72	29.72	2.58	27.14	1.095 Level 2		
5,300.00	5,300.00	5,300.00	5,300.00	13.83	13.83	-90.00	0.00	-29.72	29.72	2.05	27.66	1.074 Level 2		
5,400.00	5,400.00	5,400.00	5,400.00	14.09	14.09	-90.00	0.00	-29.72	29.72	1.53	28.19	1.054 Level 2		
5,500.00	5,500.00	5,500.00	5,500.00	14.36	14.36	-90.00	0.00	-29.72	29.72	1.01	28.71	1.035 Level 2		
5,600.00	5,600.00	5,600.00	5,600.00	14.62	14.62	-90.00	0.00	-29.72	29.72	0.48	29.24	1.017 Level 2		
5,700.00	5,700.00	5,700.00	5,700.00	14.88	14.88	-90.00	0.00	-29.72	29.72	-0.04	29.76	0.999 Level 1		
5,800.00	5,800.00	5,800.00	5,800.00	15.14	15.14	-90.00	0.00	-29.72	29.72	-0.56	30.28	0.981 Level 1		
5,900.00	5,900.00	5,900.00	5,900.00	15.40	15.40	-90.00	0.00	-29.72	29.72	-1.09	30.81	0.965 Level 1		
6,000.00	6,000.00	6,000.00	6,000.00	15.66	15.66	-90.00	0.00	-29.72	29.72	-1.61	31.33	0.949 Level 1		
6,100.00	6,100.00	6,100.00	6,100.00	15.93	15.93	-90.00	0.00	-29.72	29.72	-2.14	31.85	0.933 Level 1		
6,180.00	6,180.00	6,180.00	6,180.00	16.14	16.14	-90.00	0.00	-29.72	29.72	-2.55	32.27	0.921 Level 1, CC, SF		
6,200.00	6,200.00	6,200.00	6,200.00	16.19	16.19	158.80	0.00	-29.72	29.82	-2.56	32.38	0.921 Level 1, ES		
6,300.00	6,299.92	6,299.92	6,299.92	16.45	16.45	161.05	0.00	-29.72	33.26	0.41	32.85	1.012 Level 2		
6,400.00	6,399.51	6,399.51	6,399.51	16.71	16.71	164.94	0.00	-29.72	41.77	8.51	33.25	1.256 Level 3		
6,500.00	6,498.50	6,502.23	6,502.15	16.97	16.98	167.04	-1.97	-27.86	53.48	19.89	33.59	1.592		
6,600.00	6,596.62	6,608.28	6,606.74	17.24	17.26	161.29	-14.32	-16.22	59.98	26.09	33.89	1.770		
6,700.00	6,693.60	6,713.20	6,706.62	17.50	17.54	148.27	-37.45	5.60	62.50	28.22	34.29	1.823		
6,800.00	6,789.17	6,814.50	6,797.67	17.77	17.81	128.73	-69.62	35.95	66.64	31.63	35.00	1.904		
6,900.00	6,883.07	6,923.54	6,895.28	18.04	18.10	116.03	-98.29	74.44	71.88	36.12	35.76	2.010		
7,000.00	6,975.04	7,034.04	6,997.77	18.32	18.40	125.28	-100.32	114.88	63.98	28.10	35.88	1.783		
7,082.76	7,049.52	7,115.84	7,072.24	18.55	18.62	152.46	-84.11	144.29	56.29	21.45	34.84	1.616		
7,100.00	7,064.83	7,131.27	7,085.91	18.60	18.66	159.70	-79.40	149.69	56.88	22.34	34.54	1.647		
7,169.93	7,126.19	7,187.72	7,134.39	18.80	18.82	-173.76	-57.88	168.86	73.34	39.29	34.05	2.154		
7,189.22	7,142.95	7,201.60	7,145.90	18.85	18.85	-168.19	-51.57	173.41	81.54	47.29	34.25	2.381		
7,200.00	7,152.34	7,209.14	7,152.07	18.89	18.87	-162.48	-47.99	175.84	86.55	51.97	34.58	2.503		
7,225.00	7,174.23	7,225.00	7,164.85	18.96	18.92	-150.47	-40.08	180.90	98.81	63.43	35.38	2.793		
7,250.00	7,196.24	7,243.44	7,179.37	19.03	18.97	-138.74	-30.26	186.64	111.54	75.33	36.21	3.080		
7,275.00	7,218.31	7,260.22	7,192.23	19.10	19.01	-128.30	-20.78	191.73	124.49	87.55	36.94	3.370		
7,300.00	7,240.36	7,275.00	7,203.28	19.18	19.05	-118.92	-11.99	196.10	137.46	99.94	37.53	3.663		
7,325.00	7,262.32	7,293.15	7,216.47	19.25	19.10	-109.89	-0.66	201.32	150.28	112.28	38.00	3.955		
7,350.00	7,284.12	7,309.35	7,227.85	19.32	19.15	-101.88	9.94	205.83	162.91	124.58	38.33	4.250		
7,375.00	7,305.69	7,325.00	7,238.51	19.39	19.19	-94.68	20.60	210.04	175.26	136.73	38.54	4.548		
7,400.00	7,326.97	7,341.29	7,249.22	19.46	19.24	-88.18	32.12	214.29	187.29	148.66	38.63	4.848		
7,425.00	7,347.87	7,357.07	7,259.20	19.54	19.28	-82.41	43.68	218.24	198.96	160.34	38.62	5.152		
7,450.00	7,368.34	7,375.00	7,270.07	19.61	19.33	-77.23	57.27	222.55	210.24	171.73	38.51	5.459		
7,475.00	7,388.31	7,388.29	7,277.79	19.68	19.37	-72.79	67.64	225.61	221.07	182.76	38.31	5.770		
7,500.00	7,407.71	7,400.00	7,284.36	19.75	19.40	-68.91	76.99	228.21	231.52	193.49	38.03	6.088		
7,525.00	7,426.49	7,419.13	7,294.57	19.82	19.45	-65.30	92.64	232.26	241.42	203.73	37.69	6.405		
7,550.00	7,444.58	7,434.43	7,302.28	19.90	19.50	-62.21	105.50	235.32	250.89	213.61	37.28	6.729		
7,575.00	7,461.92	7,450.00	7,309.69	19.97	19.54	-59.47	118.87	238.26	259.86	223.04	36.83	7.057		
7,600.00	7,478.46	7,464.83	7,316.34	20.04	19.58	-57.07	131.86	240.90	268.33	232.01	36.32	7.388		
7,625.00	7,494.15	7,479.94	7,322.69	20.11	19.63	-54.96	145.34	243.42	276.28	240.50	35.78	7.721		
7,650.00	7,508.93	7,495.00	7,328.59	20.19	19.67	-53.09	159.00	245.77	283.71	248.49	35.22	8.055		
7,675.00	7,522.75	7,510.02	7,334.03	20.26	19.72	-51.45	172.83	247.93	290.59	255.95	34.64	8.389		
7,700.00	7,535.58	7,525.00	7,339.02	20.33	19.76	-50.02	186.81	249.92	296.93	262.88	34.06	8.718		
7,725.00	7,547.37	7,539.94	7,343.56	20.41	19.80	-48.77	200.92	251.73	302.72	269.24	33.48	9.041		
7,750.00	7,558.09	7,550.00	7,346.36	20.48	19.83	-47.70	210.52	252.85	308.01	275.10	32.91	9.358		
7,775.00	7,567.69	7,569.72	7,351.26	20.56	19.89	-46.75	229.52	254.80	312.62	280.22	32.40	9.649		
7,800.00	7,576.15	7,584.58	7,354.43	20.63	19.94	-45.95	243.98	256.07	316.71	284.80	31.91	9.925		
7,825.00	7,583.45	7,600.00	7,357.23	20.70	19.98	-45.29	259.10	257.20	320.23	288.75	31.48	10.173		
7,850.00	7,589.54	7,614.23	7,359.38	20.78	20.03	-44.75	273.14	258.06	323.16	292.06	31.10	10.390		
7,875.00	7,594.43	7,625.00	7,360.73	20.86	20.06	-44.33	283.82	258.61	325.56	294.77	30.79	10.574		

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

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
7,900.00	7,598.09	7,643.82	7,362.50	20.93	20.12	-44.01	302.54	259.33	327.29	296.70	30.58	10.701	
7,925.00	7,600.51	7,658.61	7,363.36	21.01	20.16	-43.80	317.29	259.69	328.47	298.02	30.45	10.786	
7,950.00	7,601.68	7,675.00	7,363.79	21.08	20.21	-43.70	333.68	259.88	329.08	298.65	30.42	10.817	
7,960.91	7,601.80	7,680.40	7,363.80	21.12	20.23	-43.69	339.08	259.89	329.15	298.72	30.43	10.817	
8,000.00	7,601.80	7,719.49	7,363.80	21.24	20.35	-43.69	378.17	259.94	329.15	298.41	30.74	10.707	
8,100.00	7,601.80	7,819.49	7,363.80	21.55	20.67	-43.69	478.17	260.06	329.16	297.61	31.55	10.434	
8,200.00	7,601.80	7,919.49	7,363.80	21.88	21.00	-43.69	578.17	260.18	329.17	296.80	32.37	10.169	
8,300.00	7,601.80	8,019.49	7,363.80	22.22	21.34	-43.70	678.17	260.31	329.17	295.97	33.21	9.913	
8,400.00	7,601.80	8,119.49	7,363.80	22.56	21.69	-43.70	778.17	260.43	329.18	295.12	34.06	9.665	
8,500.00	7,601.80	8,219.49	7,363.80	22.92	22.05	-43.70	878.17	260.55	329.19	294.26	34.92	9.426	
8,600.00	7,601.80	8,319.49	7,363.80	23.28	22.42	-43.70	978.17	260.68	329.20	293.39	35.80	9.195	
8,700.00	7,601.80	8,419.49	7,363.80	23.66	22.80	-43.70	1,078.17	260.80	329.20	292.51	36.69	8.972	
8,800.00	7,601.80	8,519.49	7,363.80	24.04	23.19	-43.70	1,178.17	260.92	329.21	291.62	37.59	8.757	
8,900.00	7,601.80	8,619.49	7,363.80	24.43	23.59	-43.70	1,278.17	261.05	329.22	290.72	38.50	8.550	
9,000.00	7,601.80	8,719.49	7,363.80	24.82	23.99	-43.71	1,378.17	261.17	329.23	289.80	39.42	8.351	
9,100.00	7,601.80	8,819.49	7,363.80	25.23	24.40	-43.71	1,478.17	261.29	329.24	288.88	40.35	8.159	
9,200.00	7,601.80	8,919.49	7,363.80	25.64	24.82	-43.71	1,578.17	261.42	329.24	287.95	41.29	7.974	
9,300.00	7,601.80	9,019.49	7,363.80	26.06	25.24	-43.71	1,678.17	261.54	329.25	287.02	42.23	7.796	
9,400.00	7,601.80	9,119.49	7,363.80	26.48	25.67	-43.71	1,778.17	261.66	329.26	286.07	43.18	7.624	
9,500.00	7,601.80	9,219.49	7,363.80	26.91	26.11	-43.71	1,878.17	261.79	329.27	285.12	44.14	7.459	
9,600.00	7,601.80	9,319.49	7,363.80	27.35	26.55	-43.71	1,978.17	261.91	329.27	284.17	45.11	7.300	
9,700.00	7,601.80	9,419.49	7,363.80	27.79	27.00	-43.71	2,078.17	262.03	329.28	283.20	46.08	7.146	
9,800.00	7,601.80	9,519.49	7,363.80	28.24	27.45	-43.72	2,178.17	262.16	329.29	282.24	47.05	6.998	
9,900.00	7,601.80	9,619.49	7,363.80	28.69	27.91	-43.72	2,278.17	262.28	329.30	281.26	48.03	6.856	
10,000.00	7,601.80	9,719.49	7,363.80	29.15	28.37	-43.72	2,378.17	262.40	329.30	280.29	49.02	6.718	
10,100.00	7,601.80	9,819.49	7,363.80	29.61	28.84	-43.72	2,478.17	262.53	329.31	279.30	50.01	6.585	
10,200.00	7,601.80	9,919.49	7,363.80	30.08	29.31	-43.72	2,578.17	262.65	329.32	278.32	51.00	6.457	
10,300.00	7,601.80	10,019.49	7,363.80	30.55	29.79	-43.72	2,678.17	262.78	329.33	277.33	52.00	6.333	
10,400.00	7,601.80	10,119.49	7,363.80	31.02	30.27	-43.72	2,778.17	262.90	329.33	276.33	53.00	6.214	
10,500.00	7,601.80	10,219.49	7,363.80	31.50	30.75	-43.73	2,878.17	263.02	329.34	275.34	54.01	6.098	
10,600.00	7,601.80	10,319.49	7,363.80	31.98	31.24	-43.73	2,978.17	263.15	329.35	274.34	55.01	5.987	
10,700.00	7,601.80	10,419.49	7,363.80	32.46	31.73	-43.73	3,078.17	263.27	329.36	273.33	56.03	5.879	
10,800.00	7,601.80	10,519.49	7,363.80	32.95	32.22	-43.73	3,178.17	263.39	329.37	272.32	57.04	5.774	
10,900.00	7,601.80	10,619.49	7,363.80	33.44	32.72	-43.73	3,278.17	263.52	329.37	271.31	58.06	5.673	
11,000.00	7,601.80	10,719.49	7,363.80	33.93	33.22	-43.73	3,378.17	263.64	329.38	270.30	59.08	5.575	
11,100.00	7,601.80	10,819.49	7,363.80	34.43	33.72	-43.73	3,478.17	263.76	329.39	269.29	60.10	5.480	
11,200.00	7,601.80	10,919.49	7,363.80	34.93	34.22	-43.74	3,578.17	263.89	329.40	268.27	61.13	5.389	
11,300.00	7,601.80	11,019.49	7,363.80	35.43	34.73	-43.74	3,678.17	264.01	329.40	267.25	62.16	5.300	
11,400.00	7,601.80	11,119.49	7,363.80	35.94	35.24	-43.74	3,778.17	264.13	329.41	266.23	63.19	5.213	
11,500.00	7,601.80	11,219.49	7,363.80	36.44	35.75	-43.74	3,878.17	264.26	329.42	265.20	64.22	5.130	
11,600.00	7,601.80	11,319.49	7,363.80	36.95	36.26	-43.74	3,978.17	264.38	329.43	264.18	65.25	5.049	
11,700.00	7,601.80	11,419.49	7,363.80	37.46	36.78	-43.74	4,078.17	264.50	329.43	263.15	66.29	4.970	
11,800.00	7,601.80	11,519.49	7,363.80	37.98	37.30	-43.74	4,178.17	264.63	329.44	262.12	67.33	4.893	
11,900.00	7,601.80	11,619.49	7,363.80	38.49	37.82	-43.75	4,278.17	264.75	329.45	261.08	68.37	4.819	
12,000.00	7,601.80	11,719.49	7,363.80	39.01	38.34	-43.75	4,378.17	264.87	329.46	260.05	69.41	4.747	
12,100.00	7,601.80	11,819.49	7,363.80	39.53	38.86	-43.75	4,478.17	265.00	329.47	259.02	70.45	4.677	
12,200.00	7,601.80	11,919.49	7,363.80	40.05	39.39	-43.75	4,578.17	265.12	329.47	257.98	71.49	4.608	
12,300.00	7,601.80	12,019.49	7,363.80	40.58	39.92	-43.75	4,678.17	265.24	329.48	256.94	72.54	4.542	
12,400.00	7,601.80	12,119.49	7,363.80	41.10	40.45	-43.75	4,778.17	265.37	329.49	255.90	73.59	4.478	
12,500.00	7,601.80	12,219.49	7,363.80	41.63	40.98	-43.75	4,878.17	265.49	329.50	254.86	74.64	4.415	
12,600.00	7,601.80	12,319.49	7,363.80	42.16	41.51	-43.76	4,978.17	265.62	329.50	253.82	75.69	4.354	
12,700.00	7,601.80	12,419.49	7,363.80	42.69	42.04	-43.76	5,078.17	265.74	329.51	252.78	76.74	4.294	

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

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
12,800.00	7,601.80	12,519.49	7,363.80	43.22	42.58	-43.76	5,178.17	265.86	329.52	251.73	77.79	4.236	
12,900.00	7,601.80	12,619.49	7,363.80	43.75	43.11	-43.76	5,278.17	265.99	329.53	250.68	78.84	4.180	
13,000.00	7,601.80	12,719.49	7,363.80	44.28	43.65	-43.76	5,378.17	266.11	329.53	249.64	79.90	4.125	
13,100.00	7,601.80	12,819.49	7,363.80	44.82	44.19	-43.76	5,478.17	266.23	329.54	248.59	80.95	4.071	
13,200.00	7,601.80	12,919.49	7,363.80	45.35	44.73	-43.76	5,578.16	266.36	329.55	247.54	82.01	4.018	
13,300.00	7,601.80	13,019.49	7,363.80	45.89	45.27	-43.77	5,678.16	266.48	329.56	246.49	83.07	3.967	
13,400.00	7,601.80	13,119.49	7,363.80	46.43	45.81	-43.77	5,778.16	266.60	329.57	245.44	84.13	3.918	
13,500.00	7,601.80	13,219.49	7,363.80	46.97	46.35	-43.77	5,878.16	266.73	329.57	244.39	85.18	3.869	
13,600.00	7,601.80	13,319.49	7,363.80	47.51	46.90	-43.77	5,978.16	266.85	329.58	243.34	86.24	3.821	
13,700.00	7,601.80	13,419.49	7,363.80	48.05	47.44	-43.77	6,078.16	266.97	329.59	242.28	87.31	3.775	
13,800.00	7,601.80	13,519.49	7,363.80	48.59	47.99	-43.77	6,178.16	267.10	329.60	241.23	88.37	3.730	
13,900.00	7,601.80	13,619.49	7,363.80	49.14	48.53	-43.77	6,278.16	267.22	329.60	240.17	89.43	3.686	
14,000.00	7,601.80	13,719.49	7,363.80	49.68	49.08	-43.78	6,378.16	267.34	329.61	239.12	90.49	3.642	
14,100.00	7,601.80	13,819.49	7,363.80	50.23	49.63	-43.78	6,478.16	267.47	329.62	238.06	91.56	3.600	
14,200.00	7,601.80	13,919.49	7,363.80	50.78	50.18	-43.78	6,578.16	267.59	329.63	237.00	92.62	3.559	
14,300.00	7,601.80	14,019.49	7,363.80	51.32	50.73	-43.78	6,678.16	267.71	329.63	235.95	93.69	3.518	
14,400.00	7,601.80	14,119.49	7,363.80	51.87	51.28	-43.78	6,778.16	267.84	329.64	234.89	94.75	3.479	
14,500.00	7,601.80	14,219.49	7,363.80	52.42	51.83	-43.78	6,878.16	267.96	329.65	233.83	95.82	3.440	
14,600.00	7,601.80	14,319.49	7,363.80	52.97	52.38	-43.78	6,978.16	268.08	329.66	232.77	96.89	3.402	
14,700.00	7,601.80	14,419.49	7,363.80	53.52	52.94	-43.78	7,078.16	268.21	329.67	231.71	97.96	3.365	
14,800.00	7,601.80	14,519.49	7,363.80	54.07	53.49	-43.79	7,178.16	268.33	329.67	230.65	99.03	3.329	
14,900.00	7,601.80	14,619.49	7,363.80	54.62	54.05	-43.79	7,278.16	268.45	329.68	229.59	100.09	3.294	
14,919.88	7,601.80	14,639.37	7,363.80	54.73	54.16	-43.79	7,298.04	268.48	329.68	229.38	100.31	3.287	
14,939.65	7,601.80	14,657.03	7,363.80	54.84	54.25	-43.79	7,315.70	268.50	329.69	229.18	100.51	3.280	

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design												Sec.24-T1S-R66W - Rock Family LE 13-4HC - Wellbore #1 - Design #1		Offset Site Error:		0.00 usft	
Survey Program: 0-MWD														Offset Well Error:		0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	+N/-S (usft)	+E/-W (usft)	(usft)	(usft)	(usft)						
0.00	0.00	0.00	0.00	0.00	0.00	-90.00	0.00	-89.71	89.71								
100.00	100.00	100.00	100.00	0.22	0.22	-90.00	0.00	-89.71	89.71	89.28	0.44	205.198					
200.00	200.00	200.00	200.00	0.48	0.48	-90.00	0.00	-89.71	89.71	88.75	0.96	93.373					
300.00	300.00	300.00	300.00	0.74	0.74	-90.00	0.00	-89.71	89.71	88.23	1.48	60.438					
400.00	400.00	400.00	400.00	1.00	1.00	-90.00	0.00	-89.71	89.71	87.71	2.01	44.678					
500.00	500.00	500.00	500.00	1.27	1.27	-90.00	0.00	-89.71	89.71	87.18	2.53	35.438					
600.00	600.00	600.00	600.00	1.53	1.53	-90.00	0.00	-89.71	89.71	86.66	3.06	29.364					
700.00	700.00	700.00	700.00	1.79	1.79	-90.00	0.00	-89.71	89.71	86.13	3.58	25.068					
800.00	800.00	800.00	800.00	2.05	2.05	-90.00	0.00	-89.71	89.71	85.61	4.10	21.869					
900.00	900.00	900.00	900.00	2.31	2.31	-90.00	0.00	-89.71	89.71	85.09	4.63	19.393					
1,000.00	1,000.00	1,000.00	1,000.00	2.57	2.57	-90.00	0.00	-89.71	89.71	84.56	5.15	17.421					
1,100.00	1,100.00	1,100.00	1,100.00	2.84	2.84	-90.00	0.00	-89.71	89.71	84.04	5.67	15.814					
1,200.00	1,200.00	1,200.00	1,200.00	3.10	3.10	-90.00	0.00	-89.71	89.71	83.52	6.20	14.477					
1,300.00	1,300.00	1,300.00	1,300.00	3.36	3.36	-90.00	0.00	-89.71	89.71	82.99	6.72	13.349					
1,400.00	1,400.00	1,400.00	1,400.00	3.62	3.62	-90.00	0.00	-89.71	89.71	82.47	7.24	12.385					
1,500.00	1,500.00	1,500.00	1,500.00	3.88	3.88	-90.00	0.00	-89.71	89.71	81.95	7.77	11.550					
1,600.00	1,600.00	1,600.00	1,600.00	4.15	4.15	-90.00	0.00	-89.71	89.71	81.42	8.29	10.820					
1,700.00	1,700.00	1,700.00	1,700.00	4.41	4.41	-90.00	0.00	-89.71	89.71	80.90	8.81	10.178					
1,800.00	1,800.00	1,800.00	1,800.00	4.67	4.67	-90.00	0.00	-89.71	89.71	80.38	9.34	9.607					
1,900.00	1,900.00	1,900.00	1,900.00	4.93	4.93	-90.00	0.00	-89.71	89.71	79.85	9.86	9.097					
2,000.00	2,000.00	2,000.00	2,000.00	5.19	5.19	-90.00	0.00	-89.71	89.71	79.33	10.39	8.638					
2,100.00	2,100.00	2,100.00	2,100.00	5.45	5.45	-90.00	0.00	-89.71	89.71	78.80	10.91	8.224					
2,200.00	2,200.00	2,200.00	2,200.00	5.72	5.72	-90.00	0.00	-89.71	89.71	78.28	11.43	7.847					
2,300.00	2,300.00	2,300.00	2,300.00	5.98	5.98	-90.00	0.00	-89.71	89.71	77.76	11.96	7.503					
2,400.00	2,400.00	2,400.00	2,400.00	6.24	6.24	-90.00	0.00	-89.71	89.71	77.23	12.48	7.189					
2,500.00	2,500.00	2,500.00	2,500.00	6.50	6.50	-90.00	0.00	-89.71	89.71	76.71	13.00	6.899					
2,600.00	2,600.00	2,600.00	2,600.00	6.76	6.76	-90.00	0.00	-89.71	89.71	76.19	13.53	6.632					
2,700.00	2,700.00	2,700.00	2,700.00	7.03	7.03	-90.00	0.00	-89.71	89.71	75.66	14.05	6.385					
2,800.00	2,800.00	2,800.00	2,800.00	7.29	7.29	-90.00	0.00	-89.71	89.71	75.14	14.57	6.156					
2,900.00	2,900.00	2,900.00	2,900.00	7.55	7.55	-90.00	0.00	-89.71	89.71	74.62	15.10	5.942					
3,000.00	3,000.00	3,000.00	3,000.00	7.81	7.81	-90.00	0.00	-89.71	89.71	74.09	15.62	5.743					
3,100.00	3,100.00	3,100.00	3,100.00	8.07	8.07	-90.00	0.00	-89.71	89.71	73.57	16.15	5.557					
3,200.00	3,200.00	3,200.00	3,200.00	8.33	8.33	-90.00	0.00	-89.71	89.71	73.04	16.67	5.382					
3,300.00	3,300.00	3,300.00	3,300.00	8.60	8.60	-90.00	0.00	-89.71	89.71	72.52	17.19	5.218					
3,400.00	3,400.00	3,400.00	3,400.00	8.86	8.86	-90.00	0.00	-89.71	89.71	72.00	17.72	5.064					
3,500.00	3,500.00	3,500.00	3,500.00	9.12	9.12	-90.00	0.00	-89.71	89.71	71.47	18.24	4.919					
3,600.00	3,600.00	3,600.00	3,600.00	9.38	9.38	-90.00	0.00	-89.71	89.71	70.95	18.76	4.781					
3,700.00	3,700.00	3,700.00	3,700.00	9.64	9.64	-90.00	0.00	-89.71	89.71	70.43	19.29	4.652					
3,800.00	3,800.00	3,800.00	3,800.00	9.91	9.91	-90.00	0.00	-89.71	89.71	69.90	19.81	4.529					
3,900.00	3,900.00	3,900.00	3,900.00	10.17	10.17	-90.00	0.00	-89.71	89.71	69.38	20.33	4.412					
4,000.00	4,000.00	4,000.00	4,000.00	10.43	10.43	-90.00	0.00	-89.71	89.71	68.86	20.86	4.301					
4,100.00	4,100.00	4,100.00	4,100.00	10.69	10.69	-90.00	0.00	-89.71	89.71	68.33	21.38	4.196					
4,200.00	4,200.00	4,200.00	4,200.00	10.95	10.95	-90.00	0.00	-89.71	89.71	67.81	21.90	4.096					
4,300.00	4,300.00	4,300.00	4,300.00	11.21	11.21	-90.00	0.00	-89.71	89.71	67.29	22.43	4.000					
4,400.00	4,400.00	4,400.00	4,400.00	11.48	11.48	-90.00	0.00	-89.71	89.71	66.76	22.95	3.909					
4,500.00	4,500.00	4,500.00	4,500.00	11.74	11.74	-90.00	0.00	-89.71	89.71	66.24	23.48	3.822					
4,600.00	4,600.00	4,600.00	4,600.00	12.00	12.00	-90.00	0.00	-89.71	89.71	65.71	24.00	3.738					
4,700.00	4,700.00	4,700.00	4,700.00	12.26	12.26	-90.00	0.00	-89.71	89.71	65.19	24.52	3.658					
4,800.00	4,800.00	4,800.00	4,800.00	12.52	12.52	-90.00	0.00	-89.71	89.71	64.67	25.05	3.582					
4,900.00	4,900.00	4,900.00	4,900.00	12.78	12.78	-90.00	0.00	-89.71	89.71	64.14	25.57	3.509					
5,000.00	5,000.00	5,000.00	5,000.00	13.05	13.05	-90.00	0.00	-89.71	89.71	63.62	26.09	3.438					
5,100.00	5,100.00	5,100.00	5,100.00	13.31	13.31	-90.00	0.00	-89.71	89.71	63.10	26.62	3.371					

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

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Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design Sec.24-T1S-R66W - Rock Family LE 13-4HC - Wellbore #1 - Design #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,200.00	5,200.00	5,200.00	5,200.00	13.57	13.57	-90.00	0.00	-89.71	89.71	62.57	27.14	3.305		
5,300.00	5,300.00	5,300.00	5,300.00	13.83	13.83	-90.00	0.00	-89.71	89.71	62.05	27.66	3.243		
5,400.00	5,400.00	5,400.00	5,400.00	14.09	14.09	-90.00	0.00	-89.71	89.71	61.53	28.19	3.183		
5,500.00	5,500.00	5,500.00	5,500.00	14.36	14.36	-90.00	0.00	-89.71	89.71	61.00	28.71	3.125		
5,600.00	5,600.00	5,600.00	5,600.00	14.62	14.62	-90.00	0.00	-89.71	89.71	60.48	29.24	3.069		
5,700.00	5,700.00	5,700.00	5,700.00	14.88	14.88	-90.00	0.00	-89.71	89.71	59.95	29.76	3.015		
5,800.00	5,800.00	5,800.00	5,800.00	15.14	15.14	-90.00	0.00	-89.71	89.71	59.43	30.28	2.963		
5,900.00	5,900.00	5,900.00	5,900.00	15.40	15.40	-90.00	0.00	-89.71	89.71	58.91	30.81	2.912		
5,925.94	5,925.94	5,925.94	5,925.94	15.47	15.47	-90.00	0.00	-89.71	89.71	58.77	30.94	2.899 CC, ES		
6,000.00	6,000.00	5,997.59	5,997.58	15.66	15.66	-90.11	-0.18	-90.42	90.45	59.12	31.32	2.888 SF		
6,100.00	6,100.00	6,092.95	6,092.80	15.93	15.91	-90.84	-1.40	-95.27	95.55	63.72	31.83	3.001		
6,180.00	6,180.00	6,168.73	6,168.22	16.14	16.11	-91.79	-3.19	-102.41	103.13	70.89	32.24	3.199		
6,200.00	6,200.00	6,187.57	6,186.91	16.19	16.16	156.66	-3.75	-104.63	105.61	73.26	32.35	3.265		
6,300.00	6,299.92	6,280.44	6,278.72	16.45	16.40	155.70	-7.17	-118.21	123.69	90.88	32.81	3.770		
6,400.00	6,399.51	6,370.30	6,366.80	16.71	16.64	155.28	-11.50	-135.45	150.99	117.79	33.21	4.547		
6,500.00	6,498.50	6,456.11	6,450.03	16.97	16.86	155.16	-16.58	-155.64	187.09	153.56	33.53	5.580		
6,600.00	6,596.62	6,537.02	6,527.59	17.24	17.08	155.12	-22.21	-177.99	231.46	197.68	33.78	6.852		
6,700.00	6,693.60	6,612.43	6,598.92	17.50	17.28	155.03	-28.16	-201.66	283.51	249.55	33.96	8.349		
6,800.00	6,789.17	6,681.91	6,663.76	17.77	17.47	154.82	-34.25	-225.88	342.62	308.55	34.07	10.057		
6,900.00	6,883.07	6,745.25	6,722.04	18.04	17.65	154.46	-40.30	-249.94	408.12	374.00	34.12	11.962		
7,000.00	6,975.04	6,800.00	6,771.73	18.32	17.80	153.86	-45.91	-272.23	479.35	445.24	34.11	14.053		
7,100.00	7,064.83	6,853.42	6,819.55	18.60	17.95	153.10	-51.72	-295.31	555.64	521.56	34.08	16.305		
7,169.93	7,126.19	6,885.56	6,848.00	18.80	18.05	152.38	-55.37	-309.82	611.67	577.63	34.04	17.968		
7,189.22	7,142.95	6,900.00	6,860.70	18.85	18.09	152.64	-57.04	-316.48	627.48	593.34	34.13	18.383		
7,200.00	7,152.34	6,900.00	6,860.70	18.89	18.09	156.97	-57.04	-316.48	636.28	602.26	34.02	18.701		
7,225.00	7,174.23	6,909.31	6,868.85	18.96	18.11	167.43	-58.14	-320.83	656.89	623.01	33.89	19.386		
7,250.00	7,196.24	6,919.74	6,877.97	19.03	18.14	178.10	-59.37	-325.75	677.61	643.70	33.92	19.977		
7,275.00	7,218.31	6,929.90	6,886.82	19.10	18.17	-171.25	-60.59	-330.58	698.38	664.25	34.12	20.467		
7,300.00	7,240.36	6,939.77	6,895.39	19.18	18.20	-160.82	-61.78	-335.32	719.12	684.65	34.47	20.861		
7,325.00	7,262.32	6,949.37	6,903.71	19.25	18.23	-150.79	-62.95	-339.98	739.80	704.87	34.93	21.179		
7,350.00	7,284.12	6,962.02	6,914.65	19.32	18.27	-141.53	-64.50	-346.14	760.35	724.89	35.45	21.447		
7,375.00	7,305.69	6,974.44	6,925.40	19.39	18.30	-132.96	-66.02	-352.19	780.68	744.69	35.99	21.692		
7,400.00	7,326.97	6,986.52	6,935.84	19.46	18.34	-125.11	-67.50	-358.06	800.78	764.27	36.51	21.934		
7,425.00	7,347.87	6,998.20	6,945.94	19.54	18.37	-117.98	-68.93	-363.75	820.61	783.62	36.99	22.187		
7,450.00	7,368.34	7,009.45	6,955.68	19.61	18.41	-111.53	-70.31	-369.23	840.14	802.74	37.40	22.462		
7,475.00	7,388.31	7,020.25	6,965.01	19.68	18.44	-105.71	-71.63	-374.48	859.36	821.62	37.75	22.766		
7,500.00	7,407.71	7,030.54	6,973.92	19.75	18.47	-100.47	-72.89	-379.49	878.25	840.23	38.01	23.103		
7,525.00	7,426.49	7,040.30	6,982.36	19.82	18.50	-95.74	-74.09	-384.25	896.77	858.57	38.20	23.476		
7,550.00	7,444.58	7,049.50	6,990.32	19.90	18.53	-91.48	-75.21	-388.73	914.92	876.62	38.30	23.886		
7,575.00	7,461.92	7,058.11	6,997.76	19.97	18.55	-87.63	-76.27	-392.92	932.68	894.32	38.36	24.313		
7,600.00	7,478.46	7,066.10	7,004.67	20.04	18.57	-84.15	-77.25	-396.81	950.02	911.66	38.36	24.768		
7,625.00	7,494.15	7,073.44	7,011.02	20.11	18.60	-80.99	-78.15	-400.38	966.94	928.66	38.28	25.258		
7,650.00	7,508.93	7,080.12	7,016.79	20.19	18.62	-78.11	-78.96	-403.63	983.41	945.27	38.15	25.780		
7,675.00	7,522.75	7,086.10	7,021.96	20.26	18.63	-75.49	-79.70	-406.54	999.43	961.48	37.95	26.333		
7,700.00	7,535.58	7,091.37	7,026.52	20.33	18.65	-73.10	-80.34	-409.11	1,014.97	977.26	37.71	26.914		
7,725.00	7,547.37	7,095.91	7,030.45	20.41	18.66	-70.91	-80.90	-411.32	1,030.02	992.59	37.43	27.519		
7,750.00	7,558.09	7,099.72	7,033.74	20.48	18.67	-68.92	-81.36	-413.17	1,044.55	1,007.44	37.11	28.144		
7,775.00	7,567.69	7,102.77	7,036.38	20.56	18.68	-67.09	-81.74	-414.66	1,058.57	1,021.79	36.78	28.783		
7,800.00	7,576.15	7,105.05	7,038.36	20.63	18.69	-65.42	-82.02	-415.77	1,072.04	1,035.61	36.43	29.429		
7,825.00	7,583.45	7,106.57	7,039.67	20.70	18.70	-63.90	-82.20	-416.51	1,084.95	1,048.87	36.07	30.076		
7,850.00	7,589.54	7,107.31	7,040.31	20.78	18.70	-62.51	-82.29	-416.87	1,097.28	1,061.55	35.73	30.714		
7,875.00	7,594.43	7,107.27	7,040.28	20.86	18.70	-61.25	-82.29	-416.85	1,109.02	1,073.62	35.39	31.335		

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

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
7,900.00	7,598.09	7,106.45	7,039.57	20.93	18.69	-60.11	-82.19	-416.45	1,120.14	1,085.05	35.08	31.928		
7,925.00	7,600.51	7,104.86	7,038.19	21.01	18.69	-59.09	-81.99	-415.67	1,130.63	1,095.82	34.81	32.483		
7,950.00	7,601.68	7,102.50	7,036.15	21.08	18.68	-58.18	-81.70	-414.52	1,140.46	1,105.89	34.57	32.989		
7,960.91	7,601.80	7,101.23	7,035.05	21.12	18.68	-57.82	-81.55	-413.91	1,144.54	1,110.06	34.48	33.192		
8,000.00	7,601.80	7,096.41	7,030.89	21.24	18.66	-57.56	-80.96	-411.56	1,159.50	1,124.97	34.53	33.583		
8,100.00	7,601.80	7,084.10	7,020.24	21.55	18.63	-56.90	-79.45	-405.57	1,202.62	1,167.97	34.65	34.710		
8,200.00	7,601.80	8,246.90	7,601.80	21.88	22.17	-90.00	579.44	-731.97	1,219.54	1,176.00	43.54	28.007		
8,300.00	7,601.80	8,346.90	7,601.80	22.22	22.51	-90.00	679.44	-731.84	1,219.55	1,175.33	44.22	27.580		
8,400.00	7,601.80	8,446.90	7,601.80	22.56	22.85	-90.00	779.44	-731.71	1,219.56	1,174.64	44.91	27.153		
8,500.00	7,601.80	8,546.90	7,601.80	22.92	23.20	-90.00	879.44	-731.59	1,219.56	1,173.93	45.63	26.728		
8,600.00	7,601.80	8,646.90	7,601.80	23.28	23.56	-90.00	979.44	-731.46	1,219.57	1,173.21	46.36	26.305		
8,700.00	7,601.80	8,746.90	7,601.80	23.66	23.93	-90.00	1,079.44	-731.33	1,219.58	1,172.46	47.11	25.886		
8,800.00	7,601.80	8,846.90	7,601.80	24.04	24.31	-90.00	1,179.44	-731.20	1,219.58	1,171.70	47.88	25.472		
8,900.00	7,601.80	8,946.90	7,601.80	24.43	24.70	-90.00	1,279.44	-731.07	1,219.59	1,170.93	48.66	25.061		
9,000.00	7,601.80	9,046.90	7,601.80	24.82	25.10	-90.00	1,379.44	-730.95	1,219.60	1,170.13	49.46	24.657		
9,100.00	7,601.80	9,146.90	7,601.80	25.23	25.50	-90.00	1,479.44	-730.82	1,219.60	1,169.33	50.28	24.258		
9,200.00	7,601.80	9,246.90	7,601.80	25.64	25.91	-90.00	1,579.44	-730.69	1,219.61	1,168.51	51.10	23.865		
9,300.00	7,601.80	9,346.90	7,601.80	26.06	26.32	-90.00	1,679.44	-730.56	1,219.62	1,167.67	51.94	23.479		
9,400.00	7,601.80	9,446.90	7,601.80	26.48	26.74	-90.00	1,779.44	-730.44	1,219.63	1,166.83	52.80	23.100		
9,500.00	7,601.80	9,546.90	7,601.80	26.91	27.17	-90.00	1,879.44	-730.31	1,219.63	1,165.97	53.66	22.728		
9,600.00	7,601.80	9,646.90	7,601.80	27.35	27.60	-90.00	1,979.44	-730.18	1,219.64	1,165.10	54.54	22.362		
9,700.00	7,601.80	9,746.90	7,601.80	27.79	28.04	-90.00	2,079.44	-730.05	1,219.65	1,164.22	55.43	22.004		
9,800.00	7,601.80	9,846.90	7,601.80	28.24	28.49	-90.00	2,179.44	-729.93	1,219.65	1,163.33	56.33	21.654		
9,900.00	7,601.80	9,946.90	7,601.80	28.69	28.94	-90.00	2,279.44	-729.80	1,219.66	1,162.43	57.23	21.311		
10,000.00	7,601.80	10,046.90	7,601.80	29.15	29.39	-90.00	2,379.44	-729.67	1,219.67	1,161.52	58.15	20.975		
10,100.00	7,601.80	10,146.90	7,601.80	29.61	29.85	-90.00	2,479.44	-729.54	1,219.67	1,160.60	59.08	20.646		
10,200.00	7,601.80	10,246.90	7,601.80	30.08	30.31	-90.00	2,579.44	-729.42	1,219.68	1,159.67	60.01	20.324		
10,300.00	7,601.80	10,346.90	7,601.80	30.55	30.78	-90.00	2,679.44	-729.29	1,219.69	1,158.73	60.95	20.010		
10,400.00	7,601.80	10,446.90	7,601.80	31.02	31.25	-90.00	2,779.44	-729.16	1,219.69	1,157.79	61.90	19.703		
10,500.00	7,601.80	10,546.90	7,601.80	31.50	31.73	-90.00	2,879.44	-729.03	1,219.70	1,156.84	62.86	19.403		
10,600.00	7,601.80	10,646.90	7,601.80	31.98	32.21	-90.00	2,979.44	-728.91	1,219.71	1,155.88	63.83	19.110		
10,700.00	7,601.80	10,746.90	7,601.80	32.46	32.69	-90.00	3,079.44	-728.78	1,219.72	1,154.92	64.80	18.823		
10,800.00	7,601.80	10,846.90	7,601.80	32.95	33.17	-90.00	3,179.44	-728.65	1,219.72	1,153.95	65.78	18.543		
10,900.00	7,601.80	10,946.90	7,601.80	33.44	33.66	-90.00	3,279.44	-728.52	1,219.73	1,152.97	66.76	18.270		
11,000.00	7,601.80	11,046.90	7,601.80	33.93	34.15	-90.00	3,379.44	-728.40	1,219.74	1,151.98	67.75	18.003		
11,100.00	7,601.80	11,146.90	7,601.80	34.43	34.65	-90.00	3,479.44	-728.27	1,219.74	1,151.00	68.75	17.742		
11,200.00	7,601.80	11,246.90	7,601.80	34.93	35.15	-90.00	3,579.44	-728.14	1,219.75	1,150.00	69.75	17.487		
11,300.00	7,601.80	11,346.90	7,601.80	35.43	35.65	-90.00	3,679.44	-728.01	1,219.76	1,149.00	70.76	17.239		
11,400.00	7,601.80	11,446.90	7,601.80	35.94	36.15	-90.00	3,779.44	-727.88	1,219.76	1,148.00	71.77	16.996		
11,500.00	7,601.80	11,546.90	7,601.80	36.44	36.65	-90.00	3,879.44	-727.76	1,219.77	1,146.99	72.79	16.758		
11,600.00	7,601.80	11,646.90	7,601.80	36.95	37.16	-90.00	3,979.44	-727.63	1,219.78	1,145.97	73.81	16.527		
11,700.00	7,601.80	11,746.90	7,601.80	37.46	37.67	-90.00	4,079.44	-727.50	1,219.79	1,144.95	74.83	16.300		
11,800.00	7,601.80	11,846.90	7,601.80	37.98	38.18	-90.00	4,179.44	-727.37	1,219.79	1,143.93	75.86	16.079		
11,900.00	7,601.80	11,946.90	7,601.80	38.49	38.70	-90.00	4,279.44	-727.25	1,219.80	1,142.90	76.90	15.863		
12,000.00	7,601.80	12,046.90	7,601.80	39.01	39.21	-90.00	4,379.44	-727.12	1,219.81	1,141.87	77.93	15.652		
12,100.00	7,601.80	12,146.90	7,601.80	39.53	39.73	-90.00	4,479.44	-726.99	1,219.81	1,140.84	78.97	15.446		
12,200.00	7,601.80	12,246.90	7,601.80	40.05	40.25	-90.00	4,579.44	-726.86	1,219.82	1,139.80	80.02	15.244		
12,300.00	7,601.80	12,346.90	7,601.80	40.58	40.77	-90.00	4,679.44	-726.74	1,219.83	1,138.76	81.07	15.047		
12,400.00	7,601.80	12,446.90	7,601.80	41.10	41.30	-90.00	4,779.44	-726.61	1,219.83	1,137.72	82.12	14.854		
12,500.00	7,601.80	12,546.90	7,601.80	41.63	41.82	-90.00	4,879.44	-726.48	1,219.84	1,136.67	83.17	14.666		
12,600.00	7,601.80	12,646.90	7,601.80	42.16	42.35	-90.00	4,979.44	-726.35	1,219.85	1,135.62	84.23	14.482		
12,700.00	7,601.80	12,746.90	7,601.80	42.69	42.87	-90.00	5,079.44	-726.23	1,219.86	1,134.56	85.29	14.302		

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

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
12,800.00	7,601.80	12,846.90	7,601.80	43.22	43.40	-90.00	5,179.44	-726.10	1,219.86	1,133.51	86.36	14.126		
12,900.00	7,601.80	12,946.90	7,601.80	43.75	43.94	-90.00	5,279.44	-725.97	1,219.87	1,132.45	87.42	13.954		
13,000.00	7,601.80	13,046.90	7,601.80	44.28	44.47	-90.00	5,379.44	-725.84	1,219.88	1,131.38	88.49	13.785		
13,100.00	7,601.80	13,146.90	7,601.80	44.82	45.00	-90.00	5,479.44	-725.72	1,219.88	1,130.32	89.56	13.620		
13,200.00	7,601.80	13,246.90	7,601.80	45.35	45.54	-90.00	5,579.44	-725.59	1,219.89	1,129.25	90.64	13.459		
13,300.00	7,601.80	13,346.90	7,601.80	45.89	46.07	-90.00	5,679.44	-725.46	1,219.90	1,128.18	91.71	13.301		
13,400.00	7,601.80	13,446.90	7,601.80	46.43	46.61	-90.00	5,779.44	-725.33	1,219.90	1,127.11	92.79	13.146		
13,500.00	7,601.80	13,546.90	7,601.80	46.97	47.15	-90.00	5,879.44	-725.20	1,219.91	1,126.04	93.87	12.995		
13,600.00	7,601.80	13,646.90	7,601.80	47.51	47.69	-90.00	5,979.44	-725.08	1,219.92	1,124.96	94.96	12.847		
13,700.00	7,601.80	13,746.90	7,601.80	48.05	48.23	-90.00	6,079.44	-724.95	1,219.93	1,123.88	96.04	12.702		
13,800.00	7,601.80	13,846.90	7,601.80	48.59	48.77	-90.00	6,179.44	-724.82	1,219.93	1,122.80	97.13	12.560		
13,900.00	7,601.80	13,946.90	7,601.80	49.14	49.31	-90.00	6,279.44	-724.69	1,219.94	1,121.72	98.22	12.421		
14,000.00	7,601.80	14,046.90	7,601.80	49.68	49.86	-90.00	6,379.44	-724.57	1,219.95	1,120.64	99.31	12.284		
14,100.00	7,601.80	14,146.90	7,601.80	50.23	50.40	-90.00	6,479.44	-724.44	1,219.95	1,119.55	100.40	12.151		
14,200.00	7,601.80	14,246.90	7,601.80	50.78	50.95	-90.00	6,579.44	-724.31	1,219.96	1,118.46	101.50	12.020		
14,300.00	7,601.80	14,346.90	7,601.80	51.32	51.49	-90.00	6,679.44	-724.18	1,219.97	1,117.37	102.59	11.891		
14,400.00	7,601.80	14,446.90	7,601.80	51.87	52.04	-90.00	6,779.44	-724.06	1,219.97	1,116.28	103.69	11.766		
14,500.00	7,601.80	14,546.90	7,601.80	52.42	52.59	-90.00	6,879.44	-723.93	1,219.98	1,115.19	104.79	11.642		
14,600.00	7,601.80	14,646.90	7,601.80	52.97	53.14	-90.00	6,979.44	-723.80	1,219.99	1,114.10	105.89	11.521		
14,700.00	7,601.80	14,746.90	7,601.80	53.52	53.69	-90.00	7,079.44	-723.67	1,220.00	1,113.00	106.99	11.403		
14,800.00	7,601.80	14,846.90	7,601.80	54.07	54.24	-90.00	7,179.44	-723.55	1,220.00	1,111.91	108.10	11.286		
14,900.00	7,601.80	14,946.90	7,601.80	54.62	54.79	-90.00	7,279.44	-723.42	1,220.01	1,110.81	109.20	11.172		
14,914.55	7,601.80	14,961.46	7,601.80	54.70	54.87	-90.00	7,293.99	-723.40	1,220.01	1,110.65	109.36	11.156		
14,939.65	7,601.80	14,974.07	7,601.80	54.84	54.94	-90.00	7,306.61	-723.38	1,220.08	1,110.50	109.57	11.135		

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
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Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-90.00	0.00	-119.99	119.99					
100.00	100.00	100.00	100.00	0.22	0.22	-90.00	0.00	-119.99	119.99	119.55	0.44	274.452		
200.00	200.00	200.00	200.00	0.48	0.48	-90.00	0.00	-119.99	119.99	119.03	0.96	124.887		
300.00	300.00	300.00	300.00	0.74	0.74	-90.00	0.00	-119.99	119.99	118.51	1.48	80.835		
400.00	400.00	400.00	400.00	1.00	1.00	-90.00	0.00	-119.99	119.99	117.98	2.01	59.757		
500.00	500.00	500.00	500.00	1.27	1.27	-90.00	0.00	-119.99	119.99	117.46	2.53	47.398		
600.00	600.00	600.00	600.00	1.53	1.53	-90.00	0.00	-119.99	119.99	116.94	3.06	39.275		
700.00	700.00	700.00	700.00	1.79	1.79	-90.00	0.00	-119.99	119.99	116.41	3.58	33.529		
800.00	800.00	800.00	800.00	2.05	2.05	-90.00	0.00	-119.99	119.99	115.89	4.10	29.249		
900.00	900.00	900.00	900.00	2.31	2.31	-90.00	0.00	-119.99	119.99	115.37	4.63	25.939		
1,000.00	1,000.00	1,000.00	1,000.00	2.57	2.57	-90.00	0.00	-119.99	119.99	114.84	5.15	23.301		
1,100.00	1,100.00	1,100.00	1,100.00	2.84	2.84	-90.00	0.00	-119.99	119.99	114.32	5.67	21.151		
1,200.00	1,200.00	1,200.00	1,200.00	3.10	3.10	-90.00	0.00	-119.99	119.99	113.80	6.20	19.364		
1,300.00	1,300.00	1,300.00	1,300.00	3.36	3.36	-90.00	0.00	-119.99	119.99	113.27	6.72	17.855		
1,400.00	1,400.00	1,400.00	1,400.00	3.62	3.62	-90.00	0.00	-119.99	119.99	112.75	7.24	16.564		
1,500.00	1,500.00	1,500.00	1,500.00	3.88	3.88	-90.00	0.00	-119.99	119.99	112.22	7.77	15.448		
1,600.00	1,600.00	1,600.00	1,600.00	4.15	4.15	-90.00	0.00	-119.99	119.99	111.70	8.29	14.472		
1,700.00	1,700.00	1,700.00	1,700.00	4.41	4.41	-90.00	0.00	-119.99	119.99	111.18	8.81	13.613		
1,800.00	1,800.00	1,800.00	1,800.00	4.67	4.67	-90.00	0.00	-119.99	119.99	110.65	9.34	12.849		
1,900.00	1,900.00	1,900.00	1,900.00	4.93	4.93	-90.00	0.00	-119.99	119.99	110.13	9.86	12.167		
2,000.00	2,000.00	2,000.00	2,000.00	5.19	5.19	-90.00	0.00	-119.99	119.99	109.61	10.39	11.554		
2,100.00	2,100.00	2,100.00	2,100.00	5.45	5.45	-90.00	0.00	-119.99	119.99	109.08	10.91	10.999		
2,200.00	2,200.00	2,200.00	2,200.00	5.72	5.72	-90.00	0.00	-119.99	119.99	108.56	11.43	10.495		
2,300.00	2,300.00	2,300.00	2,300.00	5.98	5.98	-90.00	0.00	-119.99	119.99	108.04	11.96	10.036		
2,400.00	2,400.00	2,400.00	2,400.00	6.24	6.24	-90.00	0.00	-119.99	119.99	107.51	12.48	9.615		
2,500.00	2,500.00	2,500.00	2,500.00	6.50	6.50	-90.00	0.00	-119.99	119.99	106.99	13.00	9.228		
2,600.00	2,600.00	2,600.00	2,600.00	6.76	6.76	-90.00	0.00	-119.99	119.99	106.46	13.53	8.870		
2,700.00	2,700.00	2,700.00	2,700.00	7.03	7.03	-90.00	0.00	-119.99	119.99	105.94	14.05	8.540		
2,800.00	2,800.00	2,800.00	2,800.00	7.29	7.29	-90.00	0.00	-119.99	119.99	105.42	14.57	8.233		
2,900.00	2,900.00	2,900.00	2,900.00	7.55	7.55	-90.00	0.00	-119.99	119.99	104.89	15.10	7.948		
3,000.00	3,000.00	3,000.00	3,000.00	7.81	7.81	-90.00	0.00	-119.99	119.99	104.37	15.62	7.681		
3,100.00	3,100.00	3,100.00	3,100.00	8.07	8.07	-90.00	0.00	-119.99	119.99	103.85	16.15	7.432		
3,200.00	3,200.00	3,200.00	3,200.00	8.33	8.33	-90.00	0.00	-119.99	119.99	103.32	16.67	7.199		
3,300.00	3,300.00	3,300.00	3,300.00	8.60	8.60	-90.00	0.00	-119.99	119.99	102.80	17.19	6.979		
3,400.00	3,400.00	3,400.00	3,400.00	8.86	8.86	-90.00	0.00	-119.99	119.99	102.28	17.72	6.773		
3,500.00	3,500.00	3,500.00	3,500.00	9.12	9.12	-90.00	0.00	-119.99	119.99	101.75	18.24	6.579		
3,600.00	3,600.00	3,600.00	3,600.00	9.38	9.38	-90.00	0.00	-119.99	119.99	101.23	18.76	6.395		
3,700.00	3,700.00	3,700.00	3,700.00	9.64	9.64	-90.00	0.00	-119.99	119.99	100.71	19.29	6.221		
3,800.00	3,800.00	3,800.00	3,800.00	9.91	9.91	-90.00	0.00	-119.99	119.99	100.18	19.81	6.057		
3,900.00	3,900.00	3,900.00	3,900.00	10.17	10.17	-90.00	0.00	-119.99	119.99	99.66	20.33	5.901		
4,000.00	4,000.00	4,000.00	4,000.00	10.43	10.43	-90.00	0.00	-119.99	119.99	99.13	20.86	5.753		
4,100.00	4,100.00	4,100.00	4,100.00	10.69	10.69	-90.00	0.00	-119.99	119.99	98.61	21.38	5.612		
4,200.00	4,200.00	4,200.00	4,200.00	10.95	10.95	-90.00	0.00	-119.99	119.99	98.09	21.90	5.478		
4,300.00	4,300.00	4,300.00	4,300.00	11.21	11.21	-90.00	0.00	-119.99	119.99	97.56	22.43	5.350		
4,400.00	4,400.00	4,400.00	4,400.00	11.48	11.48	-90.00	0.00	-119.99	119.99	97.04	22.95	5.228		
4,500.00	4,500.00	4,500.00	4,500.00	11.74	11.74	-90.00	0.00	-119.99	119.99	96.52	23.48	5.111		
4,600.00	4,600.00	4,600.00	4,600.00	12.00	12.00	-90.00	0.00	-119.99	119.99	95.99	24.00	5.000		
4,700.00	4,700.00	4,700.00	4,700.00	12.26	12.26	-90.00	0.00	-119.99	119.99	95.47	24.52	4.893		
4,800.00	4,800.00	4,800.00	4,800.00	12.52	12.52	-90.00	0.00	-119.99	119.99	94.95	25.05	4.791		
4,900.00	4,900.00	4,900.00	4,900.00	12.78	12.78	-90.00	0.00	-119.99	119.99	94.42	25.57	4.693		
5,000.00	5,000.00	5,000.00	5,000.00	13.05	13.05	-90.00	0.00	-119.99	119.99	93.90	26.09	4.599		
5,100.00	5,100.00	5,100.00	5,100.00	13.31	13.31	-90.00	0.00	-119.99	119.99	93.37	26.62	4.508		

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

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,200.00	5,200.00	5,200.00	5,200.00	13.57	13.57	-90.00	0.00	-119.99	119.99	92.85	27.14	4.421		
5,233.33	5,233.33	5,233.33	5,233.33	13.66	13.66	-90.00	0.00	-119.99	119.99	92.68	27.32	4.393 CC, ES		
5,300.00	5,300.00	5,297.07	5,297.06	13.83	13.82	-90.04	-0.08	-120.57	120.60	92.94	27.66	4.361 SF		
5,400.00	5,400.00	5,390.97	5,390.84	14.09	14.07	-90.36	-0.78	-125.13	125.47	97.30	28.16	4.455		
5,500.00	5,500.00	5,484.20	5,483.61	14.36	14.31	-90.93	-2.17	-134.17	135.18	106.51	28.67	4.715		
5,600.00	5,600.00	5,576.32	5,574.74	14.62	14.56	-91.63	-4.21	-147.48	149.69	120.51	29.17	5.131		
5,700.00	5,700.00	5,666.94	5,663.63	14.88	14.80	-92.38	-6.86	-164.80	168.90	139.23	29.68	5.692		
5,800.00	5,800.00	5,755.68	5,749.79	15.14	15.03	-93.10	-10.07	-185.78	192.71	162.54	30.17	6.387		
5,900.00	5,900.00	5,842.25	5,832.80	15.40	15.26	-93.76	-13.79	-210.04	220.95	190.29	30.67	7.205		
6,000.00	6,000.00	5,926.37	5,912.32	15.66	15.49	-94.33	-17.94	-237.15	253.47	222.32	31.16	8.136		
6,100.00	6,100.00	6,007.85	5,988.12	15.93	15.71	-94.82	-22.47	-266.68	290.07	258.43	31.64	9.168		
6,180.00	6,180.00	6,071.01	6,045.95	16.14	15.89	-95.15	-26.31	-291.75	322.15	290.13	32.03	10.059		
6,200.00	6,200.00	6,086.48	6,059.99	16.19	15.93	153.38	-27.30	-298.18	330.63	298.51	32.12	10.293		
6,300.00	6,299.92	6,160.94	6,126.79	16.45	16.15	152.54	-32.28	-330.69	377.65	345.13	32.52	11.614		
6,400.00	6,399.51	6,230.25	6,187.78	16.71	16.35	151.84	-37.26	-363.24	431.92	399.08	32.84	13.153		
6,500.00	6,498.50	6,305.96	6,253.43	16.97	16.57	151.27	-42.97	-400.52	492.11	459.00	33.11	14.862		
6,600.00	6,596.62	6,382.67	6,319.90	17.24	16.80	150.80	-48.77	-438.36	556.04	522.70	33.33	16.681		
6,700.00	6,693.60	6,456.18	6,383.60	17.50	17.03	150.35	-54.33	-474.62	623.48	589.98	33.49	18.616		
6,800.00	6,789.17	6,526.28	6,444.35	17.77	17.24	149.85	-59.63	-509.20	694.29	660.70	33.59	20.667		
6,900.00	6,883.07	6,592.80	6,501.99	18.04	17.45	149.27	-64.65	-542.01	768.34	734.69	33.65	22.833		
7,000.00	6,975.04	6,655.55	6,555.37	18.32	17.65	148.57	-69.39	-572.96	845.47	811.80	33.67	25.111		
7,100.00	7,064.83	6,714.34	6,607.32	18.60	17.83	147.68	-73.84	-601.97	925.50	891.83	33.67	27.489		
7,169.93	7,126.19	6,753.03	6,640.84	18.80	17.96	146.93	-76.76	-621.05	983.10	949.43	33.66	29.203		
7,189.22	7,142.95	6,763.42	6,649.85	18.85	17.99	147.18	-77.55	-626.18	999.17	965.42	33.75	29.604		
7,200.00	7,152.34	6,769.23	6,654.88	18.89	18.01	151.74	-77.99	-629.04	1,008.17	974.53	33.64	29.974		
7,225.00	7,174.23	6,782.70	6,666.55	18.96	18.05	162.60	-79.00	-635.69	1,029.15	995.68	33.47	30.745		
7,250.00	7,196.24	6,796.14	6,678.20	19.03	18.10	173.69	-80.02	-642.32	1,050.22	1,016.73	33.50	31.352		
7,275.00	7,218.31	6,809.50	6,689.78	19.10	18.14	-175.20	-81.03	-648.91	1,071.32	1,037.60	33.72	31.768		
7,300.00	7,240.36	6,822.74	6,701.26	19.18	18.18	-164.32	-82.03	-655.44	1,092.38	1,058.25	34.13	32.003		
7,325.00	7,262.32	6,835.83	6,712.59	19.25	18.23	-153.88	-83.02	-661.89	1,113.34	1,078.65	34.69	32.096		
7,350.00	7,284.12	6,848.70	6,723.75	19.32	18.27	-144.04	-83.99	-668.25	1,134.15	1,098.82	35.33	32.103		
7,375.00	7,305.69	6,861.34	6,734.70	19.39	18.31	-134.91	-84.95	-674.48	1,154.75	1,118.75	36.00	32.074		
7,400.00	7,326.97	6,873.68	6,745.40	19.46	18.35	-126.55	-85.88	-680.57	1,175.11	1,138.46	36.66	32.055		
7,425.00	7,347.87	6,885.71	6,755.82	19.54	18.39	-118.95	-86.79	-686.50	1,195.19	1,157.92	37.26	32.073		
7,450.00	7,368.34	6,897.36	6,765.92	19.61	18.43	-112.10	-87.67	-692.25	1,214.93	1,177.14	37.79	32.148		
7,475.00	7,388.31	6,908.62	6,775.67	19.68	18.46	-105.94	-88.52	-697.80	1,234.31	1,196.09	38.23	32.290		
7,500.00	7,407.71	6,919.44	6,785.05	19.75	18.50	-100.42	-89.34	-703.14	1,253.30	1,214.74	38.56	32.502		
7,525.00	7,426.49	6,929.78	6,794.01	19.82	18.53	-95.48	-90.12	-708.24	1,271.86	1,233.07	38.79	32.784		
7,550.00	7,444.58	6,939.62	6,802.54	19.90	18.56	-91.06	-90.86	-713.10	1,289.97	1,251.03	38.93	33.134		
7,575.00	7,461.92	6,948.92	6,810.60	19.97	18.59	-87.09	-91.57	-717.68	1,307.59	1,268.62	38.98	33.547		
7,600.00	7,478.46	6,957.66	6,818.17	20.04	18.62	-83.54	-92.23	-721.99	1,324.71	1,285.78	38.94	34.020		
7,625.00	7,494.15	6,965.80	6,825.22	20.11	18.65	-80.34	-92.84	-726.01	1,341.31	1,302.48	38.83	34.547		
7,650.00	7,508.93	6,973.31	6,831.74	20.19	18.68	-77.47	-93.41	-729.71	1,357.35	1,318.70	38.65	35.123		
7,675.00	7,522.75	6,980.18	6,837.69	20.26	18.70	-74.89	-93.93	-733.10	1,372.82	1,334.41	38.41	35.741		
7,700.00	7,535.58	6,986.39	6,843.07	20.33	18.72	-72.57	-94.40	-736.16	1,387.70	1,349.57	38.13	36.395		
7,725.00	7,547.37	6,991.90	6,847.84	20.41	18.74	-70.48	-94.81	-738.88	1,401.97	1,364.15	37.81	37.077		
7,750.00	7,558.09	6,996.71	6,852.01	20.48	18.75	-68.59	-95.18	-741.26	1,415.60	1,378.13	37.47	37.779		
7,775.00	7,567.69	7,000.80	6,855.55	20.56	18.77	-66.90	-95.49	-743.27	1,428.59	1,391.48	37.11	38.492		
7,800.00	7,576.15	7,004.15	6,858.46	20.63	18.78	-65.38	-95.74	-744.93	1,440.92	1,404.16	36.75	39.206		
7,825.00	7,583.45	7,006.76	6,860.72	20.70	18.79	-64.02	-95.94	-746.21	1,452.56	1,416.16	36.40	39.909		
7,850.00	7,589.54	7,008.61	6,862.33	20.78	18.79	-62.81	-96.08	-747.13	1,463.50	1,427.45	36.06	40.590		
7,875.00	7,594.43	7,009.71	6,863.28	20.86	18.80	-61.74	-96.16	-747.67	1,473.73	1,437.98	35.75	41.220		

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

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design													Offset Site Error:	0.00 usft
Survey Program: 0-MWD													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
7,900.00	7,598.09	7,010.04	6,863.56	20.93	18.80	-60.80	-96.18	-747.83	1,483.23	1,447.71	35.52	41.757		
7,925.00	7,600.51	7,009.61	6,863.19	21.01	18.79	-59.99	-96.15	-747.62	1,491.98	1,456.65	35.32	42.238		
7,950.00	7,601.68	7,008.41	6,862.15	21.08	18.79	-59.29	-96.06	-747.03	1,499.96	1,464.80	35.17	42.653		
7,960.91	7,601.80	7,007.65	6,861.49	21.12	18.79	-59.03	-96.00	-746.65	1,503.20	1,468.09	35.11	42.810		
8,000.00	7,601.80	7,004.67	6,858.91	21.24	18.78	-58.91	-95.78	-745.18	1,515.01	1,479.81	35.20	43.034		
8,100.00	7,601.80	7,981.46	7,363.80	21.55	21.85	-81.10	479.85	-1,031.79	1,537.76	1,495.40	42.36	36.301		
8,200.00	7,601.80	8,081.46	7,363.80	21.88	22.17	-81.10	579.85	-1,031.66	1,537.76	1,494.74	43.02	35.743		
8,300.00	7,601.80	8,181.46	7,363.80	22.22	22.50	-81.10	679.85	-1,031.53	1,537.77	1,494.06	43.70	35.185		
8,400.00	7,601.80	8,281.46	7,363.80	22.56	22.83	-81.10	779.85	-1,031.40	1,537.77	1,493.37	44.41	34.628		
8,500.00	7,601.80	8,381.46	7,363.80	22.92	23.18	-81.10	879.84	-1,031.27	1,537.78	1,492.65	45.13	34.074		
8,600.00	7,601.80	8,481.46	7,363.80	23.28	23.54	-81.10	979.84	-1,031.14	1,537.78	1,491.91	45.87	33.524		
8,700.00	7,601.80	8,581.46	7,363.80	23.66	23.90	-81.10	1,079.84	-1,031.01	1,537.79	1,491.16	46.63	32.980		
8,800.00	7,601.80	8,681.46	7,363.80	24.04	24.28	-81.10	1,179.84	-1,030.89	1,537.80	1,490.39	47.40	32.441		
8,900.00	7,601.80	8,781.46	7,363.80	24.43	24.66	-81.10	1,279.84	-1,030.76	1,537.80	1,489.61	48.19	31.909		
9,000.00	7,601.80	8,881.46	7,363.80	24.82	25.05	-81.10	1,379.84	-1,030.63	1,537.81	1,488.81	49.00	31.384		
9,100.00	7,601.80	8,981.46	7,363.80	25.23	25.45	-81.10	1,479.84	-1,030.50	1,537.81	1,487.99	49.82	30.868		
9,200.00	7,601.80	9,081.46	7,363.80	25.64	25.85	-81.10	1,579.84	-1,030.37	1,537.82	1,487.17	50.65	30.360		
9,300.00	7,601.80	9,181.46	7,363.80	26.06	26.27	-81.10	1,679.84	-1,030.24	1,537.82	1,486.33	51.50	29.861		
9,400.00	7,601.80	9,281.46	7,363.80	26.48	26.68	-81.10	1,779.84	-1,030.11	1,537.83	1,485.47	52.36	29.372		
9,500.00	7,601.80	9,381.46	7,363.80	26.91	27.11	-81.10	1,879.84	-1,029.98	1,537.84	1,484.61	53.23	28.891		
9,600.00	7,601.80	9,481.46	7,363.80	27.35	27.54	-81.10	1,979.84	-1,029.86	1,537.84	1,483.73	54.11	28.421		
9,700.00	7,601.80	9,581.46	7,363.80	27.79	27.98	-81.10	2,079.84	-1,029.73	1,537.85	1,482.84	55.00	27.960		
9,800.00	7,601.80	9,681.46	7,363.80	28.24	28.42	-81.10	2,179.84	-1,029.60	1,537.85	1,481.95	55.91	27.508		
9,900.00	7,601.80	9,781.46	7,363.80	28.69	28.86	-81.10	2,279.84	-1,029.47	1,537.86	1,481.04	56.82	27.067		
10,000.00	7,601.80	9,881.47	7,363.80	29.15	29.32	-81.10	2,379.84	-1,029.34	1,537.86	1,480.13	57.74	26.635		
10,100.00	7,601.80	9,981.47	7,363.80	29.61	29.77	-81.10	2,479.84	-1,029.21	1,537.87	1,479.20	58.67	26.213		
10,200.00	7,601.80	10,081.47	7,363.80	30.08	30.23	-81.10	2,579.84	-1,029.08	1,537.88	1,478.27	59.61	25.800		
10,300.00	7,601.80	10,181.47	7,363.80	30.55	30.70	-81.10	2,679.84	-1,028.95	1,537.88	1,477.33	60.55	25.397		
10,400.00	7,601.80	10,281.47	7,363.80	31.02	31.17	-81.10	2,779.84	-1,028.82	1,537.89	1,476.38	61.51	25.003		
10,500.00	7,601.80	10,381.47	7,363.80	31.50	31.64	-81.10	2,879.84	-1,028.70	1,537.89	1,475.42	62.47	24.619		
10,600.00	7,601.80	10,481.47	7,363.80	31.98	32.12	-81.10	2,979.84	-1,028.57	1,537.90	1,474.46	63.44	24.243		
10,700.00	7,601.80	10,581.47	7,363.80	32.46	32.60	-81.10	3,079.84	-1,028.44	1,537.90	1,473.49	64.41	23.876		
10,800.00	7,601.80	10,681.47	7,363.80	32.95	33.08	-81.10	3,179.84	-1,028.31	1,537.91	1,472.52	65.39	23.518		
10,900.00	7,601.80	10,781.47	7,363.80	33.44	33.57	-81.10	3,279.84	-1,028.18	1,537.92	1,471.53	66.38	23.168		
11,000.00	7,601.80	10,881.47	7,363.80	33.93	34.06	-81.10	3,379.84	-1,028.05	1,537.92	1,470.55	67.37	22.827		
11,100.00	7,601.80	10,981.47	7,363.80	34.43	34.55	-81.10	3,479.84	-1,027.92	1,537.93	1,469.55	68.37	22.494		
11,200.00	7,601.80	11,081.47	7,363.80	34.93	35.04	-81.10	3,579.84	-1,027.79	1,537.93	1,468.56	69.38	22.168		
11,300.00	7,601.80	11,181.47	7,363.80	35.43	35.54	-81.10	3,679.84	-1,027.66	1,537.94	1,467.55	70.38	21.851		
11,400.00	7,601.80	11,281.47	7,363.80	35.94	36.04	-81.10	3,779.84	-1,027.54	1,537.94	1,466.55	71.40	21.541		
11,500.00	7,601.80	11,381.47	7,363.80	36.44	36.55	-81.10	3,879.84	-1,027.41	1,537.95	1,465.53	72.42	21.238		
11,600.00	7,601.80	11,481.47	7,363.80	36.95	37.05	-81.10	3,979.84	-1,027.28	1,537.95	1,464.52	73.44	20.942		
11,700.00	7,601.80	11,581.47	7,363.80	37.46	37.56	-81.10	4,079.84	-1,027.15	1,537.96	1,463.50	74.47	20.653		
11,800.00	7,601.80	11,681.47	7,363.80	37.98	38.07	-81.10	4,179.84	-1,027.02	1,537.97	1,462.47	75.50	20.371		
11,900.00	7,601.80	11,781.47	7,363.80	38.49	38.58	-81.10	4,279.84	-1,026.89	1,537.97	1,461.44	76.53	20.096		
12,000.00	7,601.80	11,881.47	7,363.80	39.01	39.10	-81.10	4,379.84	-1,026.76	1,537.98	1,460.41	77.57	19.827		
12,100.00	7,601.80	11,981.47	7,363.80	39.53	39.62	-81.10	4,479.84	-1,026.63	1,537.98	1,459.37	78.61	19.564		
12,200.00	7,601.80	12,081.47	7,363.80	40.05	40.13	-81.10	4,579.84	-1,026.51	1,537.99	1,458.33	79.66	19.307		
12,300.00	7,601.80	12,181.47	7,363.80	40.58	40.65	-81.10	4,679.84	-1,026.38	1,537.99	1,457.29	80.71	19.057		
12,400.00	7,601.80	12,281.47	7,363.80	41.10	41.18	-81.10	4,779.84	-1,026.25	1,538.00	1,456.24	81.76	18.811		
12,500.00	7,601.80	12,381.47	7,363.80	41.63	41.70	-81.10	4,879.84	-1,026.12	1,538.01	1,455.19	82.81	18.572		
12,600.00	7,601.80	12,481.47	7,363.80	42.16	42.23	-81.10	4,979.84	-1,025.99	1,538.01	1,454.14	83.87	18.337		
12,700.00	7,601.80	12,581.47	7,363.80	42.69	42.75	-81.10	5,079.84	-1,025.86	1,538.02	1,453.08	84.93	18.108		

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

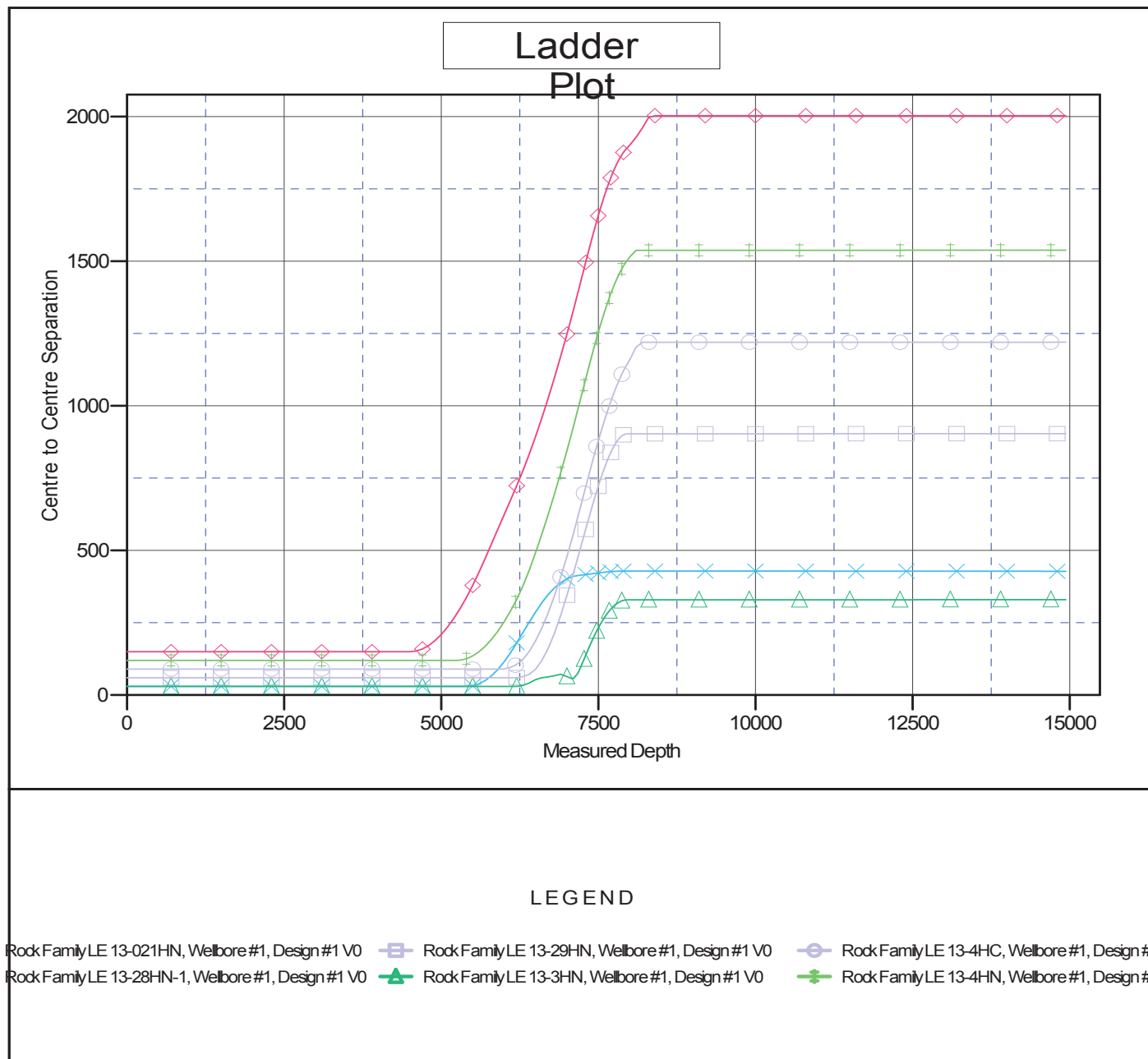
Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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

Offset Design Sec.24-T1S-R66W - Rock Family LE 13-4HN - Wellbore #1 - Design #1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
12,800.00	7,601.80	12,681.47	7,363.80	43.22	43.28	-81.10	5,179.84	-1,025.73	1,538.02	1,452.02	86.00	17.884	
12,900.00	7,601.80	12,781.47	7,363.80	43.75	43.81	-81.10	5,279.84	-1,025.60	1,538.03	1,450.96	87.06	17.665	
13,000.00	7,601.80	12,881.47	7,363.80	44.28	44.34	-81.10	5,379.84	-1,025.47	1,538.03	1,449.90	88.13	17.451	
13,100.00	7,601.80	12,981.47	7,363.80	44.82	44.87	-81.10	5,479.84	-1,025.35	1,538.04	1,448.83	89.21	17.242	
13,200.00	7,601.80	13,081.47	7,363.80	45.35	45.41	-81.10	5,579.84	-1,025.22	1,538.05	1,447.77	90.28	17.036	
13,300.00	7,601.80	13,181.47	7,363.80	45.89	45.94	-81.10	5,679.84	-1,025.09	1,538.05	1,446.70	91.36	16.836	
13,400.00	7,601.80	13,281.47	7,363.80	46.43	46.48	-81.10	5,779.84	-1,024.96	1,538.06	1,445.62	92.43	16.639	
13,500.00	7,601.80	13,381.47	7,363.80	46.97	47.02	-81.10	5,879.84	-1,024.83	1,538.06	1,444.55	93.52	16.447	
13,600.00	7,601.80	13,481.47	7,363.80	47.51	47.56	-81.10	5,979.84	-1,024.70	1,538.07	1,443.47	94.60	16.259	
13,700.00	7,601.80	13,581.47	7,363.80	48.05	48.10	-81.10	6,079.84	-1,024.57	1,538.07	1,442.39	95.68	16.075	
13,800.00	7,601.80	13,681.47	7,363.80	48.59	48.64	-81.10	6,179.84	-1,024.44	1,538.08	1,441.31	96.77	15.894	
13,900.00	7,601.80	13,781.47	7,363.80	49.14	49.18	-81.10	6,279.84	-1,024.32	1,538.09	1,440.23	97.86	15.718	
14,000.00	7,601.80	13,881.47	7,363.80	49.68	49.72	-81.10	6,379.84	-1,024.19	1,538.09	1,439.14	98.95	15.544	
14,100.00	7,601.80	13,981.47	7,363.80	50.23	50.27	-81.10	6,479.84	-1,024.06	1,538.10	1,438.06	100.04	15.375	
14,200.00	7,601.80	14,081.47	7,363.80	50.78	50.81	-81.10	6,579.84	-1,023.93	1,538.10	1,436.97	101.13	15.209	
14,300.00	7,601.80	14,181.47	7,363.80	51.32	51.36	-81.10	6,679.84	-1,023.80	1,538.11	1,435.88	102.23	15.046	
14,400.00	7,601.80	14,281.47	7,363.80	51.87	51.90	-81.10	6,779.84	-1,023.67	1,538.11	1,434.79	103.33	14.886	
14,500.00	7,601.80	14,381.47	7,363.80	52.42	52.45	-81.10	6,879.84	-1,023.54	1,538.12	1,433.70	104.42	14.730	
14,600.00	7,601.80	14,481.47	7,363.80	52.97	53.00	-81.10	6,979.84	-1,023.41	1,538.13	1,432.60	105.52	14.576	
14,700.00	7,601.80	14,581.47	7,363.80	53.52	53.55	-81.10	7,079.84	-1,023.28	1,538.13	1,431.51	106.63	14.426	
14,800.00	7,601.80	14,681.47	7,363.80	54.07	54.10	-81.10	7,179.84	-1,023.16	1,538.14	1,430.41	107.73	14.278	
14,900.00	7,601.80	14,781.47	7,363.80	54.62	54.65	-81.10	7,279.84	-1,023.03	1,538.14	1,429.31	108.83	14.133	
14,912.52	7,601.80	14,793.98	7,363.80	54.69	54.72	-81.10	7,292.36	-1,023.01	1,538.14	1,429.17	108.97	14.115	
14,939.65	7,601.80	14,806.06	7,363.80	54.84	54.78	-81.10	7,304.43	-1,023.00	1,538.22	1,429.03	109.19	14.088	

Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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 @ 5118.80usft (Original Well E
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: Rock Family LE 13-3HC
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.50°



Company:	Great Western Oil & Gas	Local Co-ordinate Reference:	Well Rock Family LE 13-3HC
Project:	Adams Co., CO	TVD Reference:	WELL @ 5118.80usft (Original Well Elev)
Reference Site:	Sec.24-T1S-R66W	MD Reference:	WELL @ 5118.80usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	Rock Family LE 13-3HC	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 @ 5118.80usft (Original Well E

Offset Depths are relative to Offset Datum

Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: Rock Family LE 13-3HC

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.50°

