

Cirque Resources LP

Well Name: **Matira West Federal 30-19-14-3CH**

Surface Location: Matira West Federal Pad Sec.30-T12N-R65W

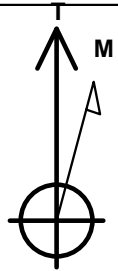
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 6018.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1597914.47	3218854.26	40.971950	-104.707500	
RKB - 25' WELL @ 6043.0ft (RKB - 25')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
Sectionline	1.0	-255.0	238.7	Polygon
SHL 255'FNL & 1940'FWL, Sec.30	1.0	0.0	0.0	Point
BHL 162'FNL & 1940'FWL, Sec.19	8928.0	10092.5	132.5	Point
Landing Pt. 1020'FSL & 1940'FWL, Sec.30	8928.0	765.0	5.5	Point



Azimuths to True North
Magnetic North: 8.45°

Magnetic Field
Strength: 53088.9snT
Dip Angle: 67.41°
Date: 8/20/2014
Model: IGRF2010

Matira West Federal Pad Sec.30-T12N-R65W
Matira West Federal 30-19-14-3CH
Plan #1 (8-20-14)
10:19, August 20 2014

ANNOTATIONS

TVD	MD	Annotation
1800.0	1800.0	KOP - Start Build 2.00
2923.9	2928.6	Start Drop -1.00
8291.4	8297.1	KOP #2 - Start Build 9.00
8928.0	18625.9	TD at 18625.9

South(-)/North(+) (3100 ft/in)

BHL 162'FNL & 1940'FWL, Sec.19

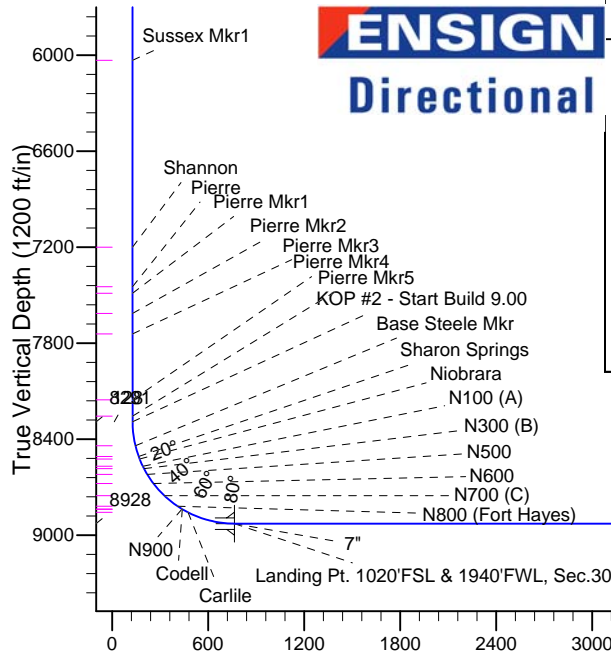
Matira West Federal 30-19-14-3CH

Landing Pt. 1020'FSL & 1940'FWL, Sec.30

SHL 255'FNL & 1940'FWL, Sec.30

Sectionline

West(-)/East(+) (3100 ft/in)



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1800.0	0.00	0.00	1800.0	0.0	0.0	0.00	0.00	0.0	
3	2088.6	5.77	358.66	2088.1	14.5	-0.3	2.00	358.66	14.5	
4	2928.6	5.77	358.66	2923.8	99.0	-2.3	0.00	0.00	98.9	
5	3505.7	0.00	0.00	3500.0	128.0	-3.0	1.00	180.00	127.9	
6	8297.1	0.00	0.00	8291.4	128.0	-3.0	0.00	0.00	127.9	
7	9297.1	90.00	0.77	8928.0	764.6	5.5	9.00	0.77	764.6	
8	9297.5	90.00	0.77	8928.0	765.0	5.5	0.00	0.00	765.0	
9	9298.9	90.00	0.78	8928.0	766.3	5.5	1.00	90.00	766.3	
10	18625.9	90.00	0.78	8928.0	10092.5	132.5	0.00	0.00	10093.4	BHL 162'FNL & 1940'FWL, Sec.19

BHL 162'FNL & 1940'FWL, Sec.19

TD at 18625.9

Vertical Section at 0.75° (1200 ft/in)



Cirque Resources LP

Sec.30-T12N-R65W

Matira West Federal Pad Sec.30-T12N-R65W

Matira West Federal 30-19-14-3CH

Wellbore #1

Plan: Plan #1 (8-20-14)

Standard Planning Report

20 August, 2014

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,088.6	5.77	358.66	2,088.1	14.5	-0.3	2.00	2.00	0.00	358.66	
2,928.6	5.77	358.66	2,923.8	99.0	-2.3	0.00	0.00	0.00	0.00	
3,505.7	0.00	0.00	3,500.0	128.0	-3.0	1.00	-1.00	0.00	180.00	
8,297.1	0.00	0.00	8,291.4	128.0	-3.0	0.00	0.00	0.00	0.00	
9,297.1	90.00	0.77	8,928.0	764.6	5.5	9.00	9.00	0.00	0.77	
9,297.5	90.00	0.77	8,928.0	765.0	5.5	0.00	0.00	0.00	0.00	
9,298.9	90.00	0.78	8,928.0	766.3	5.5	1.00	0.00	1.00	90.00	
18,625.9	90.00	0.78	8,928.0	10,092.5	132.5	0.00	0.00	0.00	0.00	BHL 162°FNL & 194°

Database:	Landmark	Local Co-ordinate Reference:	Well Matira West Federal 30-19-14-3CH
Company:	Cirque Resources LP	TVD Reference:	WELL @ 6043.0ft (RKB - 25')
Project:	Sec.30-T12N-R65W	MD Reference:	WELL @ 6043.0ft (RKB - 25')
Site:	Matira West Federal Pad Sec.30-T12N-R65W	North Reference:	True
Well:	Matira West Federal 30-19-14-3CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-20-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 2.00									
1,844.0	0.88	358.66	1,844.0	0.3	0.0	0.3	2.00	2.00	0.00
Fox Hills									
1,900.0	2.00	358.66	1,900.0	1.7	0.0	1.7	2.00	2.00	0.00
2,000.0	4.00	358.66	1,999.8	7.0	-0.2	7.0	2.00	2.00	0.00
2,088.6	5.77	358.66	2,088.1	14.5	-0.3	14.5	2.00	2.00	0.00
2,100.0	5.77	358.66	2,099.5	15.7	-0.4	15.7	0.00	0.00	0.00
2,200.0	5.77	358.66	2,198.9	25.7	-0.6	25.7	0.00	0.00	0.00
2,300.0	5.77	358.66	2,298.4	35.8	-0.8	35.8	0.00	0.00	0.00
2,400.0	5.77	358.66	2,397.9	45.8	-1.1	45.8	0.00	0.00	0.00
2,500.0	5.77	358.66	2,497.4	55.9	-1.3	55.9	0.00	0.00	0.00
2,516.7	5.77	358.66	2,514.0	57.6	-1.3	57.5	0.00	0.00	0.00
Fox Hills Mkr 1									
2,600.0	5.77	358.66	2,596.9	65.9	-1.5	65.9	0.00	0.00	0.00
2,700.0	5.77	358.66	2,696.4	76.0	-1.8	76.0	0.00	0.00	0.00
2,800.0	5.77	358.66	2,795.9	86.0	-2.0	86.0	0.00	0.00	0.00
2,900.0	5.77	358.66	2,895.4	96.1	-2.3	96.1	0.00	0.00	0.00
2,928.6	5.77	358.66	2,923.9	99.0	-2.3	98.9	0.00	0.00	0.00
Start Drop -1.00									
3,000.0	5.06	358.66	2,994.9	105.7	-2.5	105.7	1.00	-1.00	0.00
3,100.0	4.06	358.66	3,094.6	113.6	-2.7	113.6	1.00	-1.00	0.00
3,200.0	3.06	358.66	3,194.4	119.8	-2.8	119.8	1.00	-1.00	0.00
3,300.0	2.06	358.66	3,294.3	124.3	-2.9	124.3	1.00	-1.00	0.00
3,400.0	1.06	358.66	3,394.3	127.0	-3.0	127.0	1.00	-1.00	0.00
3,500.0	0.06	358.66	3,494.3	128.0	-3.0	127.9	1.00	-1.00	0.00
3,505.7	0.00	0.00	3,500.0	128.0	-3.0	127.9	1.00	-1.00	0.00
3,600.0	0.00	0.00	3,594.3	128.0	-3.0	127.9	0.00	0.00	0.00
3,700.0	0.00	0.00	3,694.3	128.0	-3.0	127.9	0.00	0.00	0.00
3,800.0	0.00	0.00	3,794.3	128.0	-3.0	127.9	0.00	0.00	0.00
3,900.0	0.00	0.00	3,894.3	128.0	-3.0	127.9	0.00	0.00	0.00
4,000.0	0.00	0.00	3,994.3	128.0	-3.0	127.9	0.00	0.00	0.00
4,100.0	0.00	0.00	4,094.3	128.0	-3.0	127.9	0.00	0.00	0.00
4,200.0	0.00	0.00	4,194.3	128.0	-3.0	127.9	0.00	0.00	0.00
4,300.0	0.00	0.00	4,294.3	128.0	-3.0	127.9	0.00	0.00	0.00
4,317.7	0.00	0.00	4,312.0	128.0	-3.0	127.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Matira West Federal 30-19-14-3CH
Company:	Cirque Resources LP	TVD Reference:	WELL @ 6043.0ft (RKB - 25')
Project:	Sec.30-T12N-R65W	MD Reference:	WELL @ 6043.0ft (RKB - 25')
Site:	Matira West Federal Pad Sec.30-T12N-R65W	North Reference:	True
Well:	Matira West Federal 30-19-14-3CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-20-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Teapot									
4,400.0	0.00	0.00	4,394.3	128.0	-3.0	127.9	0.00	0.00	0.00
4,500.0	0.00	0.00	4,494.3	128.0	-3.0	127.9	0.00	0.00	0.00
4,600.0	0.00	0.00	4,594.3	128.0	-3.0	127.9	0.00	0.00	0.00
4,700.0	0.00	0.00	4,694.3	128.0	-3.0	127.9	0.00	0.00	0.00
4,800.0	0.00	0.00	4,794.3	128.0	-3.0	127.9	0.00	0.00	0.00
4,900.0	0.00	0.00	4,894.3	128.0	-3.0	127.9	0.00	0.00	0.00
5,000.0	0.00	0.00	4,994.3	128.0	-3.0	127.9	0.00	0.00	0.00
5,100.0	0.00	0.00	5,094.3	128.0	-3.0	127.9	0.00	0.00	0.00
5,200.0	0.00	0.00	5,194.3	128.0	-3.0	127.9	0.00	0.00	0.00
5,253.7	0.00	0.00	5,248.0	128.0	-3.0	127.9	0.00	0.00	0.00
Parkman									
5,285.7	0.00	0.00	5,280.0	128.0	-3.0	127.9	0.00	0.00	0.00
Sussex									
5,300.0	0.00	0.00	5,294.3	128.0	-3.0	127.9	0.00	0.00	0.00
5,400.0	0.00	0.00	5,394.3	128.0	-3.0	127.9	0.00	0.00	0.00
5,500.0	0.00	0.00	5,494.3	128.0	-3.0	127.9	0.00	0.00	0.00
5,600.0	0.00	0.00	5,594.3	128.0	-3.0	127.9	0.00	0.00	0.00
5,622.7	0.00	0.00	5,617.0	128.0	-3.0	127.9	0.00	0.00	0.00
Pierre Upper Mkr1									
5,700.0	0.00	0.00	5,694.3	128.0	-3.0	127.9	0.00	0.00	0.00
5,800.0	0.00	0.00	5,794.3	128.0	-3.0	127.9	0.00	0.00	0.00
5,900.0	0.00	0.00	5,894.3	128.0	-3.0	127.9	0.00	0.00	0.00
6,000.0	0.00	0.00	5,994.3	128.0	-3.0	127.9	0.00	0.00	0.00
6,038.7	0.00	0.00	6,033.0	128.0	-3.0	127.9	0.00	0.00	0.00
Sussex Mkr1									
6,100.0	0.00	0.00	6,094.3	128.0	-3.0	127.9	0.00	0.00	0.00
6,200.0	0.00	0.00	6,194.3	128.0	-3.0	127.9	0.00	0.00	0.00
6,300.0	0.00	0.00	6,294.3	128.0	-3.0	127.9	0.00	0.00	0.00
6,400.0	0.00	0.00	6,394.3	128.0	-3.0	127.9	0.00	0.00	0.00
6,500.0	0.00	0.00	6,494.3	128.0	-3.0	127.9	0.00	0.00	0.00
6,600.0	0.00	0.00	6,594.3	128.0	-3.0	127.9	0.00	0.00	0.00
6,700.0	0.00	0.00	6,694.3	128.0	-3.0	127.9	0.00	0.00	0.00
6,800.0	0.00	0.00	6,794.3	128.0	-3.0	127.9	0.00	0.00	0.00
6,900.0	0.00	0.00	6,894.3	128.0	-3.0	127.9	0.00	0.00	0.00
7,000.0	0.00	0.00	6,994.3	128.0	-3.0	127.9	0.00	0.00	0.00
7,100.0	0.00	0.00	7,094.3	128.0	-3.0	127.9	0.00	0.00	0.00
7,200.0	0.00	0.00	7,194.3	128.0	-3.0	127.9	0.00	0.00	0.00
7,205.7	0.00	0.00	7,200.0	128.0	-3.0	127.9	0.00	0.00	0.00
Shannon									
7,300.0	0.00	0.00	7,294.3	128.0	-3.0	127.9	0.00	0.00	0.00
7,400.0	0.00	0.00	7,394.3	128.0	-3.0	127.9	0.00	0.00	0.00
7,453.7	0.00	0.00	7,448.0	128.0	-3.0	127.9	0.00	0.00	0.00
Pierre									
7,493.7	0.00	0.00	7,488.0	128.0	-3.0	127.9	0.00	0.00	0.00
Pierre Mkr1									
7,500.0	0.00	0.00	7,494.3	128.0	-3.0	127.9	0.00	0.00	0.00
7,600.0	0.00	0.00	7,594.3	128.0	-3.0	127.9	0.00	0.00	0.00
7,620.7	0.00	0.00	7,615.0	128.0	-3.0	127.9	0.00	0.00	0.00
Pierre Mkr2									
7,700.0	0.00	0.00	7,694.3	128.0	-3.0	127.9	0.00	0.00	0.00
7,748.7	0.00	0.00	7,743.0	128.0	-3.0	127.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Matira West Federal 30-19-14-3CH
Company:	Cirque Resources LP	TVD Reference:	WELL @ 6043.0ft (RKB - 25')
Project:	Sec.30-T12N-R65W	MD Reference:	WELL @ 6043.0ft (RKB - 25')
Site:	Matira West Federal Pad Sec.30-T12N-R65W	North Reference:	True
Well:	Matira West Federal 30-19-14-3CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-20-14)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
Pierre Mkr3										
7,800.0	0.00	0.00	7,794.3	128.0	-3.0	127.9	0.00	0.00	0.00	
7,900.0	0.00	0.00	7,894.3	128.0	-3.0	127.9	0.00	0.00	0.00	
8,000.0	0.00	0.00	7,994.3	128.0	-3.0	127.9	0.00	0.00	0.00	
8,100.0	0.00	0.00	8,094.3	128.0	-3.0	127.9	0.00	0.00	0.00	
8,160.7	0.00	0.00	8,155.0	128.0	-3.0	127.9	0.00	0.00	0.00	
Pierre Mkr4										
8,200.0	0.00	0.00	8,194.3	128.0	-3.0	127.9	0.00	0.00	0.00	
8,262.7	0.00	0.00	8,257.0	128.0	-3.0	127.9	0.00	0.00	0.00	
Pierre Mkr5										
8,297.1	0.00	0.00	8,291.4	128.0	-3.0	127.9	0.00	0.00	0.00	
KOP #2 - Start Build 9.00										
8,300.0	0.26	0.77	8,294.3	128.0	-3.0	128.0	9.00	9.00	0.00	
8,400.0	9.26	0.77	8,393.8	136.3	-2.9	136.2	9.00	9.00	0.00	
8,448.1	13.59	0.77	8,441.0	145.8	-2.8	145.8	9.00	9.00	0.00	
Base Steele Mkr										
8,500.0	18.26	0.77	8,490.9	160.1	-2.6	160.0	9.00	9.00	0.00	
8,519.2	19.99	0.77	8,509.0	166.3	-2.5	166.3	9.00	9.00	0.00	
Sharon Springs										
8,535.2	21.43	0.77	8,524.0	172.0	-2.4	172.0	9.00	9.00	0.00	
Niobrara										
8,585.5	25.95	0.77	8,570.0	192.2	-2.1	192.2	9.00	9.00	0.00	
N100 (A)										
8,600.0	27.26	0.77	8,583.0	198.7	-2.1	198.7	9.00	9.00	0.00	
8,601.1	27.36	0.77	8,584.0	199.2	-2.0	199.2	9.00	9.00	0.00	
N300 (B)										
8,642.4	31.08	0.77	8,620.0	219.4	-1.8	219.3	9.00	9.00	0.00	
N500										
8,700.0	36.26	0.77	8,667.9	251.3	-1.4	251.2	9.00	9.00	0.00	
8,712.6	37.39	0.77	8,678.0	258.8	-1.2	258.8	9.00	9.00	0.00	
N600										
8,800.0	45.26	0.77	8,743.6	316.5	-0.5	316.5	9.00	9.00	0.00	
8,813.5	46.48	0.77	8,753.0	326.2	-0.3	326.2	9.00	9.00	0.00	
N700 (C)										
8,900.0	54.26	0.77	8,808.1	392.7	0.5	392.7	9.00	9.00	0.00	
8,919.0	55.97	0.77	8,819.0	408.4	0.8	408.3	9.00	9.00	0.00	
N800 (Fort Hayes)										
8,952.5	58.99	0.77	8,837.0	436.6	1.1	436.6	9.00	9.00	0.00	
N900										
8,954.5	59.16	0.77	8,838.0	438.3	1.2	438.2	9.00	9.00	0.00	
Codell										
8,995.8	62.88	0.77	8,858.0	474.4	1.6	474.4	9.00	9.00	0.00	
Carlile										
9,000.0	63.26	0.77	8,859.9	478.2	1.7	478.1	9.00	9.00	0.00	
9,100.0	72.26	0.77	8,897.7	570.6	2.9	570.6	9.00	9.00	0.00	
9,200.0	81.26	0.77	8,920.6	667.8	4.2	667.8	9.00	9.00	0.00	
9,297.1	90.00	0.77	8,928.0	764.6	5.5	764.6	9.00	9.00	0.00	
9,297.5	90.00	0.77	8,928.0	765.0	5.5	765.0	0.00	0.00	0.00	
7"										
9,298.9	90.00	0.78	8,928.0	766.3	5.5	766.3	0.97	0.00	0.97	
9,300.0	90.00	0.78	8,928.0	767.5	5.6	767.5	0.00	0.00	0.00	
9,400.0	90.00	0.78	8,928.0	867.5	6.9	867.5	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Matira West Federal 30-19-14-3CH
Company:	Cirque Resources LP	TVD Reference:	WELL @ 6043.0ft (RKB - 25')
Project:	Sec.30-T12N-R65W	MD Reference:	WELL @ 6043.0ft (RKB - 25')
Site:	Matira West Federal Pad Sec.30-T12N-R65W	North Reference:	True
Well:	Matira West Federal 30-19-14-3CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-20-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,500.0	90.00	0.78	8,928.0	967.4	8.3	967.5	0.00	0.00	0.00
9,600.0	90.00	0.78	8,928.0	1,067.4	9.6	1,067.5	0.00	0.00	0.00
9,700.0	90.00	0.78	8,928.0	1,167.4	11.0	1,167.5	0.00	0.00	0.00
9,800.0	90.00	0.78	8,928.0	1,267.4	12.4	1,267.5	0.00	0.00	0.00
9,900.0	90.00	0.78	8,928.0	1,367.4	13.7	1,367.5	0.00	0.00	0.00
10,000.0	90.00	0.78	8,928.0	1,467.4	15.1	1,467.5	0.00	0.00	0.00
10,100.0	90.00	0.78	8,928.0	1,567.4	16.4	1,567.5	0.00	0.00	0.00
10,200.0	90.00	0.78	8,928.0	1,667.4	17.8	1,667.5	0.00	0.00	0.00
10,300.0	90.00	0.78	8,928.0	1,767.4	19.2	1,767.5	0.00	0.00	0.00
10,400.0	90.00	0.78	8,928.0	1,867.4	20.5	1,867.5	0.00	0.00	0.00
10,500.0	90.00	0.78	8,928.0	1,967.4	21.9	1,967.5	0.00	0.00	0.00
10,600.0	90.00	0.78	8,928.0	2,067.3	23.3	2,067.5	0.00	0.00	0.00
10,700.0	90.00	0.78	8,928.0	2,167.3	24.6	2,167.5	0.00	0.00	0.00
10,800.0	90.00	0.78	8,928.0	2,267.3	26.0	2,267.5	0.00	0.00	0.00
10,900.0	90.00	0.78	8,928.0	2,367.3	27.3	2,367.5	0.00	0.00	0.00
11,000.0	90.00	0.78	8,928.0	2,467.3	28.7	2,467.5	0.00	0.00	0.00
11,100.0	90.00	0.78	8,928.0	2,567.3	30.1	2,567.5	0.00	0.00	0.00
11,200.0	90.00	0.78	8,928.0	2,667.3	31.4	2,667.5	0.00	0.00	0.00
11,300.0	90.00	0.78	8,928.0	2,767.3	32.8	2,767.5	0.00	0.00	0.00
11,400.0	90.00	0.78	8,928.0	2,867.3	34.1	2,867.5	0.00	0.00	0.00
11,500.0	90.00	0.78	8,928.0	2,967.3	35.5	2,967.5	0.00	0.00	0.00
11,600.0	90.00	0.78	8,928.0	3,067.2	36.9	3,067.5	0.00	0.00	0.00
11,700.0	90.00	0.78	8,928.0	3,167.2	38.2	3,167.5	0.00	0.00	0.00
11,800.0	90.00	0.78	8,928.0	3,267.2	39.6	3,267.5	0.00	0.00	0.00
11,900.0	90.00	0.78	8,928.0	3,367.2	40.9	3,367.5	0.00	0.00	0.00
12,000.0	90.00	0.78	8,928.0	3,467.2	42.3	3,467.5	0.00	0.00	0.00
12,100.0	90.00	0.78	8,928.0	3,567.2	43.7	3,567.5	0.00	0.00	0.00
12,200.0	90.00	0.78	8,928.0	3,667.2	45.0	3,667.5	0.00	0.00	0.00
12,300.0	90.00	0.78	8,928.0	3,767.2	46.4	3,767.5	0.00	0.00	0.00
12,400.0	90.00	0.78	8,928.0	3,867.2	47.8	3,867.5	0.00	0.00	0.00
12,500.0	90.00	0.78	8,928.0	3,967.2	49.1	3,967.5	0.00	0.00	0.00
12,600.0	90.00	0.78	8,928.0	4,067.2	50.5	4,067.5	0.00	0.00	0.00
12,700.0	90.00	0.78	8,928.0	4,167.1	51.8	4,167.5	0.00	0.00	0.00
12,800.0	90.00	0.78	8,928.0	4,267.1	53.2	4,267.5	0.00	0.00	0.00
12,900.0	90.00	0.78	8,928.0	4,367.1	54.6	4,367.5	0.00	0.00	0.00
13,000.0	90.00	0.78	8,928.0	4,467.1	55.9	4,467.5	0.00	0.00	0.00
13,100.0	90.00	0.78	8,928.0	4,567.1	57.3	4,567.5	0.00	0.00	0.00
13,200.0	90.00	0.78	8,928.0	4,667.1	58.6	4,667.5	0.00	0.00	0.00
13,300.0	90.00	0.78	8,928.0	4,767.1	60.0	4,767.5	0.00	0.00	0.00
13,400.0	90.00	0.78	8,928.0	4,867.1	61.4	4,867.5	0.00	0.00	0.00
13,500.0	90.00	0.78	8,928.0	4,967.1	62.7	4,967.5	0.00	0.00	0.00
13,600.0	90.00	0.78	8,928.0	5,067.1	64.1	5,067.5	0.00	0.00	0.00
13,700.0	90.00	0.78	8,928.0	5,167.1	65.4	5,167.5	0.00	0.00	0.00
13,800.0	90.00	0.78	8,928.0	5,267.0	66.8	5,267.5	0.00	0.00	0.00
13,900.0	90.00	0.78	8,928.0	5,367.0	68.2	5,367.5	0.00	0.00	0.00
14,000.0	90.00	0.78	8,928.0	5,467.0	69.5	5,467.5	0.00	0.00	0.00
14,100.0	90.00	0.78	8,928.0	5,567.0	70.9	5,567.5	0.00	0.00	0.00
14,200.0	90.00	0.78	8,928.0	5,667.0	72.3	5,667.5	0.00	0.00	0.00
14,300.0	90.00	0.78	8,928.0	5,767.0	73.6	5,767.5	0.00	0.00	0.00
14,400.0	90.00	0.78	8,928.0	5,867.0	75.0	5,867.5	0.00	0.00	0.00
14,500.0	90.00	0.78	8,928.0	5,967.0	76.3	5,967.5	0.00	0.00	0.00
14,600.0	90.00	0.78	8,928.0	6,067.0	77.7	6,067.5	0.00	0.00	0.00
14,700.0	90.00	0.78	8,928.0	6,167.0	79.1	6,167.5	0.00	0.00	0.00
14,800.0	90.00	0.78	8,928.0	6,267.0	80.4	6,267.5	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Matira West Federal 30-19-14-3CH
Company:	Cirque Resources LP	TVD Reference:	WELL @ 6043.0ft (RKB - 25')
Project:	Sec.30-T12N-R65W	MD Reference:	WELL @ 6043.0ft (RKB - 25')
Site:	Matira West Federal Pad Sec.30-T12N-R65W	North Reference:	True
Well:	Matira West Federal 30-19-14-3CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-20-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
14,900.0	90.00	0.78	8,928.0	6,366.9	81.8	6,367.5	0.00	0.00	0.00
15,000.0	90.00	0.78	8,928.0	6,466.9	83.1	6,467.5	0.00	0.00	0.00
15,100.0	90.00	0.78	8,928.0	6,566.9	84.5	6,567.5	0.00	0.00	0.00
15,200.0	90.00	0.78	8,928.0	6,666.9	85.9	6,667.5	0.00	0.00	0.00
15,300.0	90.00	0.78	8,928.0	6,766.9	87.2	6,767.5	0.00	0.00	0.00
15,400.0	90.00	0.78	8,928.0	6,866.9	88.6	6,867.5	0.00	0.00	0.00
15,500.0	90.00	0.78	8,928.0	6,966.9	89.9	6,967.5	0.00	0.00	0.00
15,600.0	90.00	0.78	8,928.0	7,066.9	91.3	7,067.5	0.00	0.00	0.00
15,700.0	90.00	0.78	8,928.0	7,166.9	92.7	7,167.5	0.00	0.00	0.00
15,800.0	90.00	0.78	8,928.0	7,266.9	94.0	7,267.5	0.00	0.00	0.00
15,900.0	90.00	0.78	8,928.0	7,366.9	95.4	7,367.5	0.00	0.00	0.00
16,000.0	90.00	0.78	8,928.0	7,466.8	96.8	7,467.5	0.00	0.00	0.00
16,100.0	90.00	0.78	8,928.0	7,566.8	98.1	7,567.5	0.00	0.00	0.00
16,200.0	90.00	0.78	8,928.0	7,666.8	99.5	7,667.5	0.00	0.00	0.00
16,300.0	90.00	0.78	8,928.0	7,766.8	100.8	7,767.5	0.00	0.00	0.00
16,400.0	90.00	0.78	8,928.0	7,866.8	102.2	7,867.5	0.00	0.00	0.00
16,500.0	90.00	0.78	8,928.0	7,966.8	103.6	7,967.5	0.00	0.00	0.00
16,600.0	90.00	0.78	8,928.0	8,066.8	104.9	8,067.5	0.00	0.00	0.00
16,700.0	90.00	0.78	8,928.0	8,166.8	106.3	8,167.5	0.00	0.00	0.00
16,800.0	90.00	0.78	8,928.0	8,266.8	107.6	8,267.5	0.00	0.00	0.00
16,900.0	90.00	0.78	8,928.0	8,366.8	109.0	8,367.5	0.00	0.00	0.00
17,000.0	90.00	0.78	8,928.0	8,466.7	110.4	8,467.5	0.00	0.00	0.00
17,100.0	90.00	0.78	8,928.0	8,566.7	111.7	8,567.5	0.00	0.00	0.00
17,200.0	90.00	0.78	8,928.0	8,666.7	113.1	8,667.5	0.00	0.00	0.00
17,300.0	90.00	0.78	8,928.0	8,766.7	114.4	8,767.5	0.00	0.00	0.00
17,400.0	90.00	0.78	8,928.0	8,866.7	115.8	8,867.5	0.00	0.00	0.00
17,500.0	90.00	0.78	8,928.0	8,966.7	117.2	8,967.5	0.00	0.00	0.00
17,600.0	90.00	0.78	8,928.0	9,066.7	118.5	9,067.5	0.00	0.00	0.00
17,700.0	90.00	0.78	8,928.0	9,166.7	119.9	9,167.5	0.00	0.00	0.00
17,800.0	90.00	0.78	8,928.0	9,266.7	121.3	9,267.5	0.00	0.00	0.00
17,900.0	90.00	0.78	8,928.0	9,366.7	122.6	9,367.5	0.00	0.00	0.00
18,000.0	90.00	0.78	8,928.0	9,466.7	124.0	9,467.5	0.00	0.00	0.00
18,100.0	90.00	0.78	8,928.0	9,566.6	125.3	9,567.5	0.00	0.00	0.00
18,200.0	90.00	0.78	8,928.0	9,666.6	126.7	9,667.5	0.00	0.00	0.00
18,300.0	90.00	0.78	8,928.0	9,766.6	128.1	9,767.5	0.00	0.00	0.00
18,400.0	90.00	0.78	8,928.0	9,866.6	129.4	9,867.5	0.00	0.00	0.00
18,500.0	90.00	0.78	8,928.0	9,966.6	130.8	9,967.5	0.00	0.00	0.00
18,600.0	90.00	0.78	8,928.0	10,066.6	132.1	10,067.5	0.00	0.00	0.00
18,625.9	90.00	0.78	8,928.0	10,092.5	132.5	10,093.4	0.00	0.00	0.00
TD at 18625.9									

Database:	Landmark	Local Co-ordinate Reference:	Well Matira West Federal 30-19-14-3CH
Company:	Cirque Resources LP	TVD Reference:	WELL @ 6043.0ft (RKB - 25')
Project:	Sec.30-T12N-R65W	MD Reference:	WELL @ 6043.0ft (RKB - 25')
Site:	Matira West Federal Pad Sec.30-T12N-R65W	North Reference:	True
Well:	Matira West Federal 30-19-14-3CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-20-14)		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Sectionline	0.00	0.00	1.0	-255.0	238.7	1,597,661.61	3,219,095.20	40.971250	-104.706636
- plan misses target center by 349.3ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)									
- Polygon									
Point 1			1.0	0.0	0.0	1,597,661.61	3,219,095.20		
Point 2			1.0	0.0	-1,800.0	1,597,645.52	3,217,295.21		
Landing Pt. 1020'FSL	0.00	0.00	8,928.0	765.0	5.5	1,598,679.52	3,218,852.94	40.974050	-104.707480
- plan hits target center									
- Point									
BHL 162'FNL & 1940'	0.00	0.00	8,928.0	10,092.5	132.5	1,608,008.11	3,218,896.55	40.999650	-104.707020
- plan hits target center									
- Point									
SHL 255'FNL & 1940'	0.00	0.00	1.0	0.0	0.0	1,597,914.48	3,218,854.26	40.971950	-104.707500
- plan hits target center									
- Point									

Casing Points					
	Measured Depth	Vertical Depth		Casing Diameter	Hole Diameter
	(ft)	(ft)	Name	(")	(")
	9,297.5	8,928.0	7"	7	7-1/2

Database:	Landmark	Local Co-ordinate Reference:	Well Matira West Federal 30-19-14-3CH
Company:	Cirque Resources LP	TVD Reference:	WELL @ 6043.0ft (RKB - 25')
Project:	Sec.30-T12N-R65W	MD Reference:	WELL @ 6043.0ft (RKB - 25')
Site:	Matira West Federal Pad Sec.30-T12N-R65W	North Reference:	True
Well:	Matira West Federal 30-19-14-3CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-20-14)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,844.0	1,844.0	Fox Hills				
2,516.7	2,514.0	Fox Hills Mkr 1				
4,317.7	4,312.0	Teapot				
5,253.7	5,248.0	Parkman				
5,285.7	5,280.0	Sussex				
5,622.7	5,617.0	Pierre Upper Mkr1				
6,038.7	6,033.0	Sussex Mkr1				
7,205.7	7,200.0	Shannon				
7,453.7	7,448.0	Pierre				
7,493.7	7,488.0	Pierre Mkr1				
7,620.7	7,615.0	Pierre Mkr2				
7,748.7	7,743.0	Pierre Mkr3				
8,160.7	8,155.0	Pierre Mkr4				
8,262.7	8,257.0	Pierre Mkr5				
8,448.1	8,441.0	Base Steele Mkr				
8,519.2	8,509.0	Sharon Springs				
8,535.2	8,524.0	Niobrara				
8,585.5	8,570.0	N100 (A)				
8,601.1	8,584.0	N300 (B)				
8,642.4	8,620.0	N500				
8,712.6	8,678.0	N600				
8,813.5	8,753.0	N700 (C)				
8,919.0	8,819.0	N800 (Fort Hayes)				
8,952.5	8,837.0	N900				
8,954.5	8,838.0	Codell				
8,995.8	8,858.0	Carlile				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,800.0	1,800.0	0.0	0.0	KOP - Start Build 2.00
2,928.6	2,923.9	99.0	-2.3	Start Drop -1.00
8,297.1	8,291.4	128.0	-3.0	KOP #2 - Start Build 9.00
18,625.9	8,928.0	10,092.5	132.5	TD at 18625.9



Cirque Resources LP

Sec.30-T12N-R65W

Matira West Federal Pad Sec.30-T12N-R65W

Matira West Federal 30-19-14-3CH

Wellbore #1

Plan #1 (8-20-14)

Anticollision Report

20 August, 2014

Company:	Cirque Resources LP	Local Co-ordinate Reference:	Well Matira West Federal 30-19-14-3CH
Project:	Sec.30-T12N-R65W	TVD Reference:	WELL @ 6043.0ft (RKB - 25')
Reference Site:	Matira West Federal Pad Sec.30-T12N-R65W	MD Reference:	WELL @ 6043.0ft (RKB - 25')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Matira West Federal 30-19-14-3CH	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-20-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,400.0	2,397.9	2,397.9	2,397.9	5.3	5.3	140.27	0.0	38.7	60.7	50.1	10.55	5.748		
2,500.0	2,497.4	2,497.4	2,497.4	5.6	5.5	145.63	0.0	38.7	68.7	57.7	11.00	6.244		
2,600.0	2,596.9	2,596.9	2,596.9	5.8	5.7	149.84	0.0	38.7	77.2	65.8	11.45	6.742		
2,700.0	2,696.4	2,696.4	2,696.4	6.1	5.9	153.20	0.0	38.7	86.1	74.2	11.91	7.230		
2,800.0	2,795.9	2,795.9	2,795.9	6.3	6.2	155.93	0.0	38.7	95.2	82.8	12.36	7.702		
2,900.0	2,895.4	2,895.4	2,895.4	6.6	6.4	158.18	0.0	38.7	104.4	91.6	12.81	8.153		
3,000.0	2,994.9	2,994.9	2,994.9	6.8	6.6	160.01	0.0	38.7	113.4	100.2	13.25	8.560		
3,100.0	3,094.6	3,096.5	3,096.5	7.0	6.8	161.20	0.8	38.7	120.2	106.5	13.66	8.795		
3,200.0	3,194.4	3,198.5	3,198.5	7.2	7.1	161.74	3.4	38.7	123.6	109.6	14.08	8.783		
3,300.0	3,294.3	3,299.6	3,299.5	7.4	7.3	161.74	7.6	38.7	124.0	109.5	14.49	8.556		
3,400.0	3,394.3	3,399.6	3,399.4	7.6	7.5	161.45	12.1	38.7	122.4	107.5	14.90	8.216		
3,500.0	3,494.3	3,499.5	3,499.2	7.8	7.8	160.86	16.5	38.7	119.2	103.9	15.30	7.789		
3,600.0	3,594.3	3,599.4	3,599.0	8.0	8.0	158.75	20.9	38.7	115.0	99.3	15.73	7.315		
3,700.0	3,694.3	3,699.3	3,698.8	8.2	8.2	157.92	25.3	38.7	110.9	94.8	16.17	6.859		
3,800.0	3,794.3	3,798.4	3,797.8	8.4	8.4	157.09	29.4	38.7	107.1	90.5	16.61	6.448		
3,900.0	3,894.3	3,896.7	3,896.0	8.6	8.6	156.53	32.1	38.7	104.6	87.6	16.99	6.156		
4,000.0	3,994.3	3,995.0	3,994.4	8.8	8.7	156.32	33.0	38.7	103.7	86.4	17.38	5.968		
4,035.4	4,029.6	4,030.3	4,029.6	8.9	8.8	156.32	33.0	38.7	103.7	86.2	17.53	5.918		
4,100.0	4,094.3	4,094.9	4,094.3	9.1	8.9	156.32	33.0	38.7	103.7	85.9	17.80	5.828		
4,200.0	4,194.3	4,194.9	4,194.3	9.3	9.2	156.32	33.0	38.7	103.7	85.5	18.24	5.686		
4,300.0	4,294.3	4,294.9	4,294.3	9.5	9.4	156.32	33.0	38.7	103.7	85.0	18.69	5.550		
4,400.0	4,394.3	4,394.9	4,394.3	9.7	9.6	156.32	33.0	38.7	103.7	84.6	19.14	5.421		
4,500.0	4,494.3	4,494.9	4,494.3	9.9	9.8	156.32	33.0	38.7	103.7	84.2	19.58	5.297		
4,600.0	4,594.3	4,594.9	4,594.3	10.1	10.1	156.32	33.0	38.7	103.7	83.7	20.03	5.179		
4,700.0	4,694.3	4,694.9	4,694.3	10.4	10.3	156.32	33.0	38.7	103.7	83.3	20.48	5.066		
4,800.0	4,794.3	4,794.9	4,794.3	10.6	10.5	156.32	33.0	38.7	103.7	82.8	20.92	4.958		
4,900.0	4,894.3	4,894.9	4,894.3	10.8	10.7	156.32	33.0	38.7	103.7	82.4	21.37	4.854		
5,000.0	4,994.3	4,994.9	4,994.3	11.0	11.0	156.32	33.0	38.7	103.7	81.9	21.82	4.755		
5,100.0	5,094.3	5,094.9	5,094.3	11.2	11.2	156.32	33.0	38.7	103.7	81.5	22.26	4.660		
5,200.0	5,194.3	5,194.9	5,194.3	11.4	11.4	156.32	33.0	38.7	103.7	81.0	22.71	4.568		
5,300.0	5,294.3	5,294.9	5,294.3	11.7	11.6	156.32	33.0	38.7	103.7	80.6	23.16	4.480		
5,400.0	5,394.3	5,394.9	5,394.3	11.9	11.9	156.32	33.0	38.7	103.7	80.1	23.60	4.395		
5,500.0	5,494.3	5,494.9	5,494.3	12.1	12.1	156.32	33.0	38.7	103.7	79.7	24.05	4.313		
5,600.0	5,594.3	5,594.9	5,594.3	12.3	12.3	156.32	33.0	38.7	103.7	79.2	24.50	4.234		
5,700.0	5,694.3	5,694.9	5,694.3	12.5	12.5	156.32	33.0	38.7	103.7	78.8	24.95	4.158		
5,800.0	5,794.3	5,794.9	5,794.3	12.8	12.8	156.32	33.0	38.7	103.7	78.3	25.39	4.085		
5,900.0	5,894.3	5,894.9	5,894.3	13.0	13.0	156.32	33.0	38.7	103.7	77.9	25.84	4.014		
6,000.0	5,994.3	5,994.9	5,994.3	13.2	13.2	156.32	33.0	38.7	103.7	77.4	26.29	3.946		
6,100.0	6,094.3	6,094.9	6,094.3	13.4	13.4	156.32	33.0	38.7	103.7	77.0	26.74	3.880		
6,200.0	6,194.3	6,194.9	6,194.3	13.6	13.7	156.32	33.0	38.7	103.7	76.5	27.18	3.816		
6,300.0	6,294.3	6,294.9	6,294.3	13.9	13.9	156.32	33.0	38.7	103.7	76.1	27.63	3.754		
6,400.0	6,394.3	6,394.9	6,394.3	14.1	14.1	156.32	33.0	38.7	103.7	75.7	28.08	3.694		
6,500.0	6,494.3	6,494.9	6,494.3	14.3	14.3	156.32	33.0	38.7	103.7	75.2	28.53	3.636		
6,600.0	6,594.3	6,594.9	6,594.3	14.5	14.6	156.32	33.0	38.7	103.7	74.8	28.98	3.580		
6,700.0	6,694.3	6,694.9	6,694.3	14.8	14.8	156.32	33.0	38.7	103.7	74.3	29.42	3.525		
6,800.0	6,794.3	6,794.9	6,794.3	15.0	15.0	156.32	33.0	38.7	103.7	73.9	29.87	3.473		
6,900.0	6,894.3	6,894.9	6,894.3	15.2	15.2	156.32	33.0	38.7	103.7	73.4	30.32	3.421		
7,000.0	6,994.3	6,994.9	6,994.3	15.4	15.5	156.32	33.0	38.7	103.7	73.0	30.77	3.371		
7,100.0	7,094.3	7,094.9	7,094.3	15.6	15.7	156.32	33.0	38.7	103.7	72.5	31.22	3.323		
7,200.0	7,194.3	7,194.9	7,194.3	15.9	15.9	156.32	33.0	38.7	103.7	72.1	31.66	3.276		
7,300.0	7,294.3	7,294.9	7,294.3	16.1	16.1	156.32	33.0	38.7	103.7	71.6	32.11	3.230		
7,400.0	7,394.3	7,394.9	7,394.3	16.3	16.4	156.32	33.0	38.7	103.7	71.2	32.56	3.186		

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

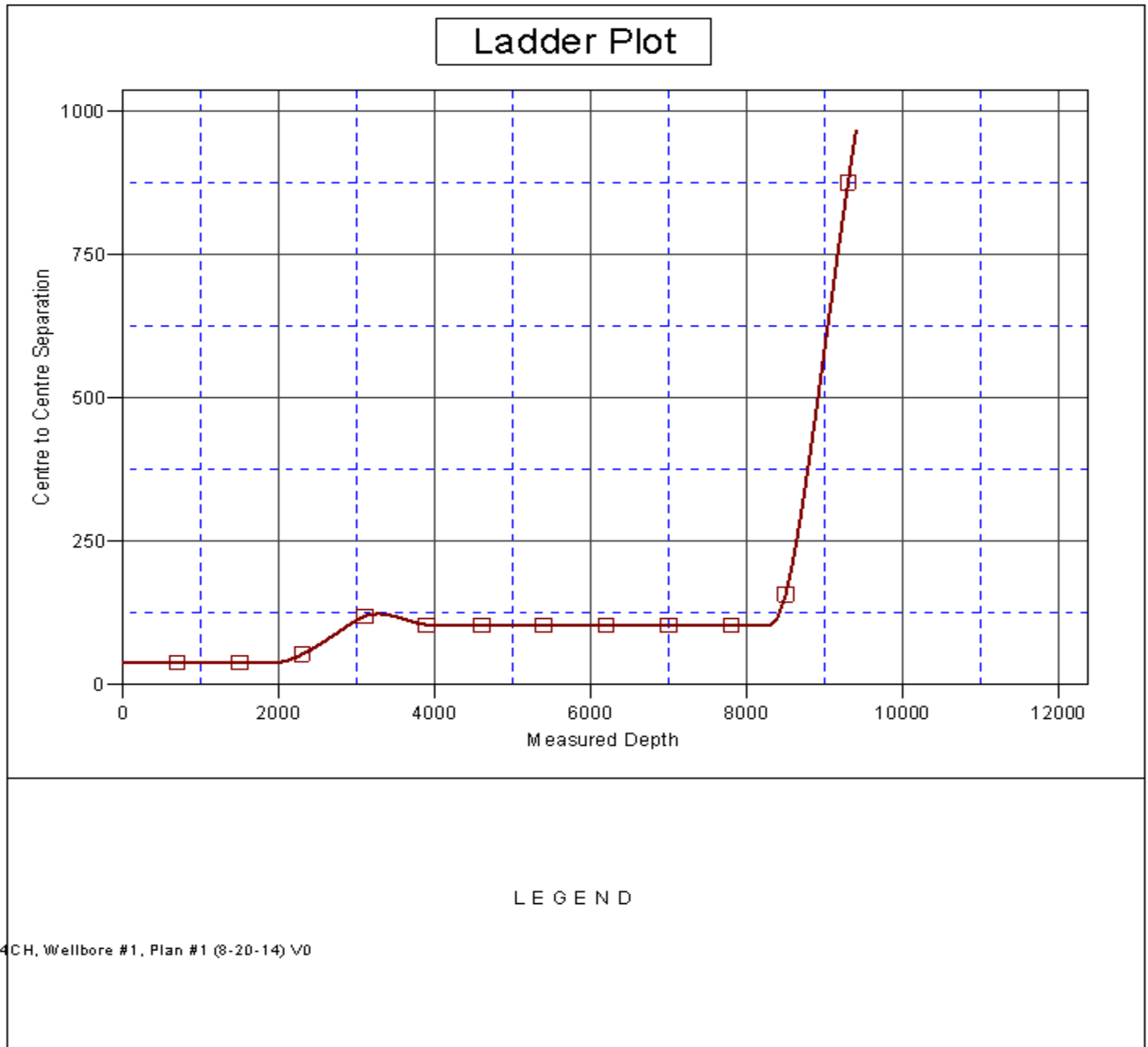
Company:	Cirque Resources LP	Local Co-ordinate Reference:	Well Matira West Federal 30-19-14-3CH
Project:	Sec.30-T12N-R65W	TVD Reference:	WELL @ 6043.0ft (RKB - 25')
Reference Site:	Matira West Federal Pad Sec.30-T12N-R65W	MD Reference:	WELL @ 6043.0ft (RKB - 25')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Matira West Federal 30-19-14-3CH	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-20-14)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
7,500.0	7,494.3	7,494.9	7,494.3	16.5	16.6	156.32	33.0	38.7	103.7	70.7	33.01	3.143	
7,600.0	7,594.3	7,594.9	7,594.3	16.7	16.8	156.32	33.0	38.7	103.7	70.3	33.46	3.100	
7,700.0	7,694.3	7,694.9	7,694.3	17.0	17.0	156.32	33.0	38.7	103.7	69.8	33.91	3.059	
7,800.0	7,794.3	7,794.9	7,794.3	17.2	17.2	156.32	33.0	38.7	103.7	69.4	34.36	3.019	
7,900.0	7,894.3	7,894.9	7,894.3	17.4	17.5	156.32	33.0	38.7	103.7	68.9	34.80	2.981	
8,000.0	7,994.3	7,994.9	7,994.3	17.6	17.7	156.32	33.0	38.7	103.7	68.5	35.25	2.943	
8,100.0	8,094.3	8,094.9	8,094.3	17.9	17.9	156.32	33.0	38.7	103.7	68.0	35.70	2.906	
8,200.0	8,194.3	8,194.9	8,194.3	18.1	18.1	156.32	33.0	38.7	103.7	67.6	36.15	2.870	
8,265.7	8,259.9	8,260.6	8,259.9	18.2	18.3	155.58	33.0	38.7	103.8	67.4	36.44	2.849	
8,300.0	8,294.3	8,294.5	8,293.9	18.3	18.4	155.56	33.0	38.7	103.7	67.1	36.60	2.835 SF	
8,400.0	8,393.8	8,379.6	8,378.7	18.5	18.5	157.72	27.0	38.6	117.9	81.2	36.73	3.210	
8,500.0	8,490.9	8,450.0	8,447.7	18.8	18.6	160.99	13.5	38.6	158.2	121.9	36.28	4.361	
8,600.0	8,583.0	8,514.0	8,508.9	19.1	18.7	163.59	-5.3	38.5	220.8	185.5	35.26	6.262	
8,700.0	8,667.9	8,550.0	8,542.4	19.5	18.8	163.10	-18.6	38.4	300.3	266.5	33.82	8.879	
8,800.0	8,743.6	8,582.9	8,572.2	19.9	18.9	160.57	-32.3	38.4	390.6	358.3	32.25	12.110	
8,900.0	8,808.1	8,600.0	8,587.5	20.5	18.9	149.29	-40.1	38.3	487.3	455.2	32.07	15.192	
9,000.0	8,859.9	8,600.0	8,587.5	21.2	18.9	76.59	-40.1	38.3	586.6	547.2	39.46	14.868	
9,100.0	8,897.7	8,600.0	8,587.5	22.0	18.9	21.69	-40.1	38.3	685.9	658.3	27.58	24.864	
9,200.0	8,920.6	8,584.6	8,573.8	23.0	18.9	10.43	-33.1	38.4	782.8	758.5	24.24	32.291	
9,300.0	8,928.0	8,568.8	8,559.5	24.1	18.8	6.76	-26.2	38.4	875.7	852.4	23.28	37.609	
9,400.0	8,928.0	8,550.0	8,542.4	25.2	18.8	6.45	-18.6	38.4	966.8	943.3	23.49	41.163	

Company:	Cirque Resources LP	Local Co-ordinate Reference:	Well Matira West Federal 30-19-14-3CH
Project:	Sec.30-T12N-R65W	TVD Reference:	WELL @ 6043.0ft (RKB - 25')
Reference Site:	Matira West Federal Pad Sec.30-T12N-R65W	MD Reference:	WELL @ 6043.0ft (RKB - 25')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Matira West Federal 30-19-14-3CH	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-20-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 6043.0ft (RKB - 25')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Matira West Federal 30-19-14-3CH
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.51°



Company:	Cirque Resources LP	Local Co-ordinate Reference:	Well Matira West Federal 30-19-14-3CH
Project:	Sec.30-T12N-R65W	TVD Reference:	WELL @ 6043.0ft (RKB - 25')
Reference Site:	Matira West Federal Pad Sec.30-T12N-R65W	MD Reference:	WELL @ 6043.0ft (RKB - 25')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Matira West Federal 30-19-14-3CH	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-20-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 6043.0ft (RKB - 25')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Matira West Federal 30-19-14-3CH
Coordinate System is US State Plane 1983, Colorado Northern Zone
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