

Cirque Resources LP

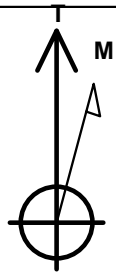
Well Name: **Matira East Federal 30-31-6-15-4CH**

Surface Location: Matira East Federal Pad Sec.30-T12N-R65W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 6002.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1597910.25	3220414.66	40.971900	-104.701850	
RKB - 25' WELL @ 6027.0ft (RKB - 25')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
330' Setback	1.0	-10386.6	-400.0	Polygon
Sectionline	1.0	-245.0	-400.0	Polygon
SHL 245'FSL & 1810'FEL, Sec.30	1.0	0.0	0.0	Point
BHL 340'FSL & 1980'FEL, Sec.6	8912.0	-10376.6	-262.5	Point
Landing Pt. 350'FNL & 1980'FEL, Sec.31	8912.0	-593.9	-174.0	Point



Azimuths to True North
Magnetic North: 8.45°

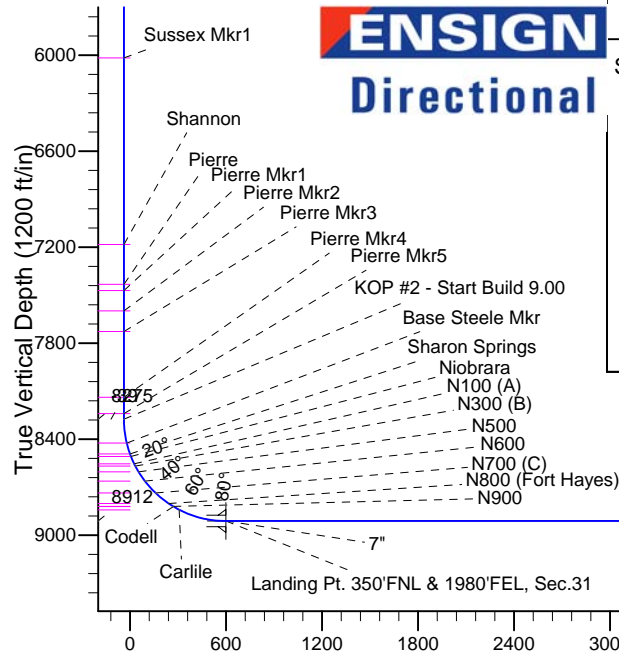
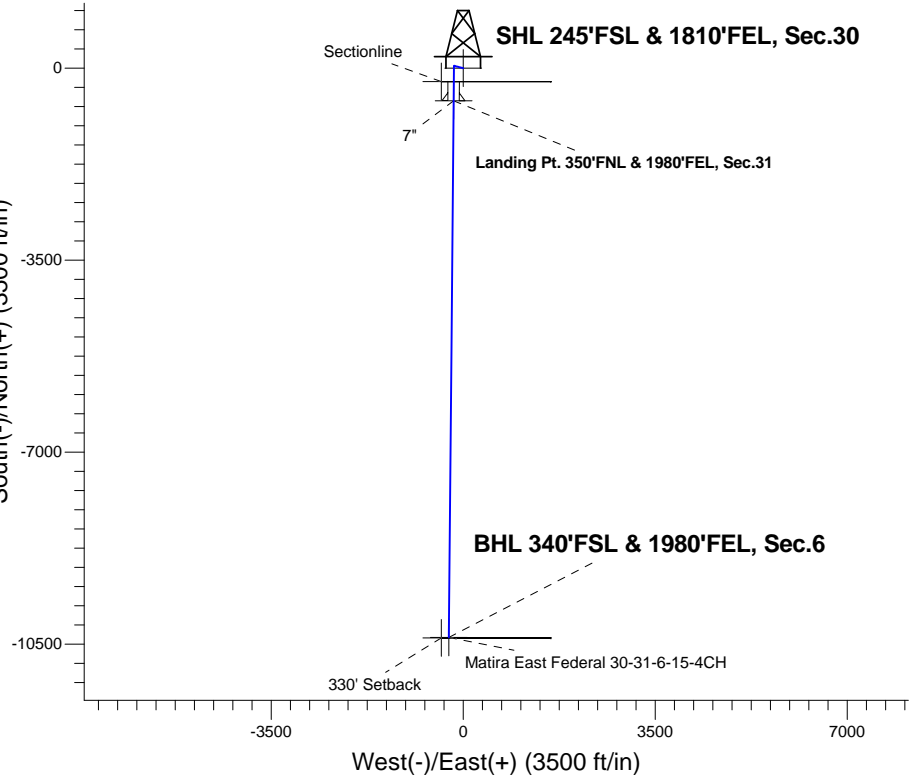
Magnetic Field
Strength: 53088.1snT
Dip Angle: 67.41°
Date: 8/25/2014
Model: IGRF2010

Matira East Federal Pad Sec.30-T12N-R65W
Matira East Federal 30-31-6-15-4CH
Plan #1 (8-25-14)
17:46, August 25 2014

ANNOTATIONS

TVD	MD	Annotation
1800.0	1800.0	KOP - Start Build 1.50
3641.7	3648.8	Start Drop -1.50
8275.4	8283.0	KOP #2 - Start Build 9.00
8912.0	19066.5	TD at 19066.5

South(-)/North(+) (3500 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	2158.8	5.38	284.39	2158.3	4.2	-16.3	1.50	284.39	-3.8	
4	3648.8	5.38	284.39	3641.7	38.9	-151.7	0.00	0.00	-35.1	
5	4007.6	0.00	0.00	4000.0	43.1	-168.0	1.50	180.00	-38.8	
6	8283.0	0.00	0.00	8275.4	43.1	-168.0	0.00	0.00	-38.8	
7	9283.0	90.00	180.54	8912.0	-593.5	-174.0	9.00	180.54	597.7	
8	9283.4	90.00	180.54	8912.0	-593.9	-174.0	0.00	0.00	598.1	Landing Pt. 350'FNL & 1980'FEL, Sec.31
9	9285.4	90.00	180.52	8912.0	-595.8	-174.0	1.00	-90.00	600.1	
10	19066.5	90.00	180.52	8912.0	-10376.6	-262.5	0.00	0.00	10379.9	BHL 340'FSL & 1980'FEL, Sec.6

BHL 340'FSL & 1980'FEL, Sec.6

TD at 19066.5

Vertical Section at 181.45° (1200 ft/in)



Cirque Resources LP

Sec.30-T12N-R65W

Matira East Federal Pad Sec.30-T12N-R65W

Matira East Federal 30-31-6-15-4CH

Wellbore #1

Plan: Plan #1 (8-25-14)

Standard Planning Report

25 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	
2,158.8	5.38	284.39	2,158.3	4.2	-16.3	1.50	1.50	0.00	284.39	
3,648.8	5.38	284.39	3,641.7	38.9	-151.7	0.00	0.00	0.00	0.00	
4,007.6	0.00	0.00	4,000.0	43.1	-168.0	1.50	-1.50	0.00	180.00	
8,283.0	0.00	0.00	8,275.4	43.1	-168.0	0.00	0.00	0.00	0.00	
9,283.0	90.00	180.54	8,912.0	-593.5	-174.0	9.00	9.00	0.00	180.54	
9,283.4	90.00	180.54	8,912.0	-593.9	-174.0	0.00	0.00	0.00	0.00	Landing Pt. 350'FN
9,285.4	90.00	180.52	8,912.0	-595.8	-174.0	1.00	0.00	-1.00	-90.00	
19,066.5	90.00	180.52	8,912.0	-10,376.6	-262.5	0.00	0.00	0.00	0.00	BHL 340'FSL & 198

Database:	Landmark	Local Co-ordinate Reference:	Well Matira East Federal 30-31-6-15-4CH
Company:	Cirque Resources LP	TVD Reference:	WELL @ 6027.0ft (RKB - 25')
Project:	Sec.30-T12N-R65W	MD Reference:	WELL @ 6027.0ft (RKB - 25')
Site:	Matira East Federal Pad Sec.30-T12N-R65W	North Reference:	True
Well:	Matira East Federal 30-31-6-15-4CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-25-14)		

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 1.50									
1,828.0	0.42	284.39	1,828.0	0.0	-0.1	0.0	1.50	1.50	0.00
Fox Hills									
1,900.0	1.50	284.39	1,900.0	0.3	-1.3	-0.3	1.50	1.50	0.00
2,000.0	3.00	284.39	1,999.9	1.3	-5.1	-1.2	1.50	1.50	0.00
2,100.0	4.50	284.39	2,099.7	2.9	-11.4	-2.6	1.50	1.50	0.00
2,158.8	5.38	284.39	2,158.3	4.2	-16.3	-3.8	1.50	1.50	0.00
2,200.0	5.38	284.39	2,199.3	5.1	-20.1	-4.6	0.00	0.00	0.00
2,300.0	5.38	284.39	2,298.9	7.5	-29.1	-6.7	0.00	0.00	0.00
2,400.0	5.38	284.39	2,398.4	9.8	-38.2	-8.8	0.00	0.00	0.00
2,500.0	5.38	284.39	2,498.0	12.1	-47.3	-10.9	0.00	0.00	0.00
Fox Hills Mkr 1									
2,600.0	5.38	284.39	2,597.5	14.5	-56.4	-13.0	0.00	0.00	0.00
2,700.0	5.38	284.39	2,697.1	16.8	-65.5	-15.1	0.00	0.00	0.00
2,800.0	5.38	284.39	2,796.6	19.1	-74.6	-17.2	0.00	0.00	0.00
2,900.0	5.38	284.39	2,896.2	21.5	-83.7	-19.3	0.00	0.00	0.00
3,000.0	5.38	284.39	2,995.8	23.8	-92.7	-21.4	0.00	0.00	0.00
3,100.0	5.38	284.39	3,095.3	26.1	-101.8	-23.5	0.00	0.00	0.00
3,200.0	5.38	284.39	3,194.9	28.5	-110.9	-25.6	0.00	0.00	0.00
3,300.0	5.38	284.39	3,294.4	30.8	-120.0	-27.7	0.00	0.00	0.00
3,400.0	5.38	284.39	3,394.0	33.1	-129.1	-29.8	0.00	0.00	0.00
3,500.0	5.38	284.39	3,493.6	35.4	-138.2	-31.9	0.00	0.00	0.00
3,600.0	5.38	284.39	3,593.1	37.8	-147.3	-34.0	0.00	0.00	0.00
3,648.8	5.38	284.39	3,641.7	38.9	-151.7	-35.1	0.00	0.00	0.00
Start Drop -1.50									
3,700.0	4.61	284.39	3,692.7	40.0	-156.0	-36.1	1.50	-1.50	0.00
3,800.0	3.11	284.39	3,792.5	41.7	-162.5	-37.6	1.50	-1.50	0.00
3,900.0	1.61	284.39	3,892.4	42.7	-166.5	-38.5	1.50	-1.50	0.00
4,000.0	0.11	284.39	3,992.4	43.1	-168.0	-38.8	1.50	-1.50	0.00
4,007.6	0.00	0.00	4,000.0	43.1	-168.0	-38.8	1.50	-1.50	0.00
4,100.0	0.00	0.00	4,092.4	43.1	-168.0	-38.8	0.00	0.00	0.00
4,200.0	0.00	0.00	4,192.4	43.1	-168.0	-38.8	0.00	0.00	0.00
4,300.0	0.00	0.00	4,292.4	43.1	-168.0	-38.8	0.00	0.00	0.00
4,303.6	0.00	0.00	4,296.0	43.1	-168.0	-38.8	0.00	0.00	0.00
Teapot									

Database:	Landmark	Local Co-ordinate Reference:	Well Matira East Federal 30-31-6-15-4CH
Company:	Cirque Resources LP	TVD Reference:	WELL @ 6027.0ft (RKB - 25')
Project:	Sec.30-T12N-R65W	MD Reference:	WELL @ 6027.0ft (RKB - 25')
Site:	Matira East Federal Pad Sec.30-T12N-R65W	North Reference:	True
Well:	Matira East Federal 30-31-6-15-4CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-25-14)		

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)
4,400.0	0.00	0.00	4,392.4	43.1	-168.0	-38.8	0.00	0.00	0.00
4,500.0	0.00	0.00	4,492.4	43.1	-168.0	-38.8	0.00	0.00	0.00
4,600.0	0.00	0.00	4,592.4	43.1	-168.0	-38.8	0.00	0.00	0.00
4,700.0	0.00	0.00	4,692.4	43.1	-168.0	-38.8	0.00	0.00	0.00
4,800.0	0.00	0.00	4,792.4	43.1	-168.0	-38.8	0.00	0.00	0.00
4,900.0	0.00	0.00	4,892.4	43.1	-168.0	-38.8	0.00	0.00	0.00
5,000.0	0.00	0.00	4,992.4	43.1	-168.0	-38.8	0.00	0.00	0.00
5,100.0	0.00	0.00	5,092.4	43.1	-168.0	-38.8	0.00	0.00	0.00
5,200.0	0.00	0.00	5,192.4	43.1	-168.0	-38.8	0.00	0.00	0.00
5,239.6	0.00	0.00	5,232.0	43.1	-168.0	-38.8	0.00	0.00	0.00
Parkman									
5,271.6	0.00	0.00	5,264.0	43.1	-168.0	-38.8	0.00	0.00	0.00
Sussex									
5,300.0	0.00	0.00	5,292.4	43.1	-168.0	-38.8	0.00	0.00	0.00
5,400.0	0.00	0.00	5,392.4	43.1	-168.0	-38.8	0.00	0.00	0.00
5,500.0	0.00	0.00	5,492.4	43.1	-168.0	-38.8	0.00	0.00	0.00
5,600.0	0.00	0.00	5,592.4	43.1	-168.0	-38.8	0.00	0.00	0.00
5,608.6	0.00	0.00	5,601.0	43.1	-168.0	-38.8	0.00	0.00	0.00
Pierre Upper Mkr1									
5,700.0	0.00	0.00	5,692.4	43.1	-168.0	-38.8	0.00	0.00	0.00
5,800.0	0.00	0.00	5,792.4	43.1	-168.0	-38.8	0.00	0.00	0.00
5,900.0	0.00	0.00	5,892.4	43.1	-168.0	-38.8	0.00	0.00	0.00
6,000.0	0.00	0.00	5,992.4	43.1	-168.0	-38.8	0.00	0.00	0.00
6,024.6	0.00	0.00	6,017.0	43.1	-168.0	-38.8	0.00	0.00	0.00
Sussex Mkr1									
6,100.0	0.00	0.00	6,092.4	43.1	-168.0	-38.8	0.00	0.00	0.00
6,200.0	0.00	0.00	6,192.4	43.1	-168.0	-38.8	0.00	0.00	0.00
6,300.0	0.00	0.00	6,292.4	43.1	-168.0	-38.8	0.00	0.00	0.00
6,400.0	0.00	0.00	6,392.4	43.1	-168.0	-38.8	0.00	0.00	0.00
6,500.0	0.00	0.00	6,492.4	43.1	-168.0	-38.8	0.00	0.00	0.00
6,600.0	0.00	0.00	6,592.4	43.1	-168.0	-38.8	0.00	0.00	0.00
6,700.0	0.00	0.00	6,692.4	43.1	-168.0	-38.8	0.00	0.00	0.00
6,800.0	0.00	0.00	6,792.4	43.1	-168.0	-38.8	0.00	0.00	0.00
6,900.0	0.00	0.00	6,892.4	43.1	-168.0	-38.8	0.00	0.00	0.00
7,000.0	0.00	0.00	6,992.4	43.1	-168.0	-38.8	0.00	0.00	0.00
7,100.0	0.00	0.00	7,092.4	43.1	-168.0	-38.8	0.00	0.00	0.00
7,191.6	0.00	0.00	7,184.0	43.1	-168.0	-38.8	0.00	0.00	0.00
Shannon									
7,200.0	0.00	0.00	7,192.4	43.1	-168.0	-38.8	0.00	0.00	0.00
7,300.0	0.00	0.00	7,292.4	43.1	-168.0	-38.8	0.00	0.00	0.00
7,400.0	0.00	0.00	7,392.4	43.1	-168.0	-38.8	0.00	0.00	0.00
7,439.6	0.00	0.00	7,432.0	43.1	-168.0	-38.8	0.00	0.00	0.00
Pierre									
7,479.6	0.00	0.00	7,472.0	43.1	-168.0	-38.8	0.00	0.00	0.00
Pierre Mkr1									
7,500.0	0.00	0.00	7,492.4	43.1	-168.0	-38.8	0.00	0.00	0.00
7,600.0	0.00	0.00	7,592.4	43.1	-168.0	-38.8	0.00	0.00	0.00
7,606.6	0.00	0.00	7,599.0	43.1	-168.0	-38.8	0.00	0.00	0.00
Pierre Mkr2									
7,700.0	0.00	0.00	7,692.4	43.1	-168.0	-38.8	0.00	0.00	0.00
7,734.6	0.00	0.00	7,727.0	43.1	-168.0	-38.8	0.00	0.00	0.00
Pierre Mkr3									
7,800.0	0.00	0.00	7,792.4	43.1	-168.0	-38.8	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Matira East Federal 30-31-6-15-4CH
Company:	Cirque Resources LP	TVD Reference:	WELL @ 6027.0ft (RKB - 25')
Project:	Sec.30-T12N-R65W	MD Reference:	WELL @ 6027.0ft (RKB - 25')
Site:	Matira East Federal Pad Sec.30-T12N-R65W	North Reference:	True
Well:	Matira East Federal 30-31-6-15-4CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-25-14)		

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)
7,900.0	0.00	0.00	7,892.4	43.1	-168.0	-38.8	0.00	0.00	0.00
8,000.0	0.00	0.00	7,992.4	43.1	-168.0	-38.8	0.00	0.00	0.00
8,100.0	0.00	0.00	8,092.4	43.1	-168.0	-38.8	0.00	0.00	0.00
8,146.6	0.00	0.00	8,139.0	43.1	-168.0	-38.8	0.00	0.00	0.00
Pierre Mkr4									
8,200.0	0.00	0.00	8,192.4	43.1	-168.0	-38.8	0.00	0.00	0.00
8,248.6	0.00	0.00	8,241.0	43.1	-168.0	-38.8	0.00	0.00	0.00
Pierre Mkr5									
8,283.0	0.00	0.00	8,275.4	43.1	-168.0	-38.8	0.00	0.00	0.00
KOP #2 - Start Build 9.00									
8,300.0	1.53	180.54	8,292.4	42.9	-168.0	-38.6	9.00	9.00	0.00
8,400.0	10.53	180.54	8,391.7	32.4	-168.1	-28.1	9.00	9.00	0.00
8,434.0	13.59	180.54	8,425.0	25.3	-168.2	-21.0	9.00	9.00	0.00
Base Steele Mkr									
8,500.0	19.53	180.54	8,488.2	6.5	-168.3	-2.2	9.00	9.00	0.00
8,505.1	19.99	180.54	8,493.0	4.8	-168.4	-0.5	9.00	9.00	0.00
Sharon Springs									
8,521.1	21.43	180.54	8,508.0	-0.9	-168.4	5.2	9.00	9.00	0.00
Niobrara									
8,571.4	25.95	180.54	8,554.0	-21.1	-168.6	25.4	9.00	9.00	0.00
N100 (A)									
8,587.1	27.36	180.54	8,568.0	-28.1	-168.7	32.4	9.00	9.00	0.00
N300 (B)									
8,600.0	28.53	180.54	8,579.4	-34.2	-168.7	38.5	9.00	9.00	0.00
8,628.3	31.08	180.54	8,604.0	-48.3	-168.9	52.5	9.00	9.00	0.00
N500									
8,698.5	37.39	180.54	8,662.0	-87.7	-169.2	92.0	9.00	9.00	0.00
N600									
8,700.0	37.53	180.54	8,663.2	-88.7	-169.2	92.9	9.00	9.00	0.00
8,799.4	46.48	180.54	8,737.0	-155.1	-169.9	159.4	9.00	9.00	0.00
N700 (C)									
8,800.0	46.53	180.54	8,737.4	-155.5	-169.9	159.8	9.00	9.00	0.00
8,900.0	55.53	180.54	8,800.2	-233.2	-170.6	237.4	9.00	9.00	0.00
8,904.9	55.97	180.54	8,803.0	-237.3	-170.6	241.5	9.00	9.00	0.00
N800 (Fort Hayes)									
8,938.4	58.99	180.54	8,821.0	-265.5	-170.9	269.7	9.00	9.00	0.00
N900									
8,940.4	59.16	180.54	8,822.0	-267.2	-170.9	271.4	9.00	9.00	0.00
Codell									
8,981.7	62.88	180.54	8,842.0	-303.3	-171.3	307.5	9.00	9.00	0.00
Carlile									
9,000.0	64.53	180.54	8,850.1	-319.7	-171.4	324.0	9.00	9.00	0.00
9,100.0	73.53	180.54	8,885.9	-413.0	-172.3	417.2	9.00	9.00	0.00
9,200.0	82.53	180.54	8,906.6	-510.7	-173.2	514.9	9.00	9.00	0.00
9,283.0	90.00	180.54	8,912.0	-593.5	-174.0	597.7	9.00	9.00	0.00
9,283.4	90.00	180.54	8,912.0	-593.9	-174.0	598.1	0.00	0.00	0.00
7"									
9,285.4	90.00	180.52	8,912.0	-595.8	-174.0	600.1	1.00	0.00	-1.00
9,300.0	90.00	180.52	8,912.0	-610.5	-174.1	614.7	0.00	0.00	0.00
9,400.0	90.00	180.52	8,912.0	-710.5	-175.0	714.7	0.00	0.00	0.00
9,500.0	90.00	180.52	8,912.0	-810.5	-175.9	814.7	0.00	0.00	0.00
9,600.0	90.00	180.52	8,912.0	-910.5	-176.8	914.7	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Matira East Federal 30-31-6-15-4CH
Company:	Cirque Resources LP	TVD Reference:	WELL @ 6027.0ft (RKB - 25')
Project:	Sec.30-T12N-R65W	MD Reference:	WELL @ 6027.0ft (RKB - 25')
Site:	Matira East Federal Pad Sec.30-T12N-R65W	North Reference:	True
Well:	Matira East Federal 30-31-6-15-4CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-25-14)		

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)
9,700.0	90.00	180.52	8,912.0	-1,010.5	-177.7	1,014.6	0.00	0.00	0.00
9,800.0	90.00	180.52	8,912.0	-1,110.5	-178.7	1,114.6	0.00	0.00	0.00
9,900.0	90.00	180.52	8,912.0	-1,210.5	-179.6	1,214.6	0.00	0.00	0.00
10,000.0	90.00	180.52	8,912.0	-1,310.5	-180.5	1,314.6	0.00	0.00	0.00
10,100.0	90.00	180.52	8,912.0	-1,410.5	-181.4	1,414.6	0.00	0.00	0.00
10,200.0	90.00	180.52	8,912.0	-1,510.5	-182.3	1,514.6	0.00	0.00	0.00
10,300.0	90.00	180.52	8,912.0	-1,610.4	-183.2	1,614.6	0.00	0.00	0.00
10,400.0	90.00	180.52	8,912.0	-1,710.4	-184.1	1,714.5	0.00	0.00	0.00
10,500.0	90.00	180.52	8,912.0	-1,810.4	-185.0	1,814.5	0.00	0.00	0.00
10,600.0	90.00	180.52	8,912.0	-1,910.4	-185.9	1,914.5	0.00	0.00	0.00
10,700.0	90.00	180.52	8,912.0	-2,010.4	-186.8	2,014.5	0.00	0.00	0.00
10,800.0	90.00	180.52	8,912.0	-2,110.4	-187.7	2,114.5	0.00	0.00	0.00
10,900.0	90.00	180.52	8,912.0	-2,210.4	-188.6	2,214.5	0.00	0.00	0.00
11,000.0	90.00	180.52	8,912.0	-2,310.4	-189.5	2,314.5	0.00	0.00	0.00
11,100.0	90.00	180.52	8,912.0	-2,410.4	-190.4	2,414.5	0.00	0.00	0.00
11,200.0	90.00	180.52	8,912.0	-2,510.4	-191.3	2,514.4	0.00	0.00	0.00
11,300.0	90.00	180.52	8,912.0	-2,610.4	-192.2	2,614.4	0.00	0.00	0.00
11,400.0	90.00	180.52	8,912.0	-2,710.4	-193.1	2,714.4	0.00	0.00	0.00
11,500.0	90.00	180.52	8,912.0	-2,810.4	-194.0	2,814.4	0.00	0.00	0.00
11,600.0	90.00	180.52	8,912.0	-2,910.4	-194.9	2,914.4	0.00	0.00	0.00
11,700.0	90.00	180.52	8,912.0	-3,010.4	-195.8	3,014.4	0.00	0.00	0.00
11,800.0	90.00	180.52	8,912.0	-3,110.4	-196.7	3,114.4	0.00	0.00	0.00
11,900.0	90.00	180.52	8,912.0	-3,210.4	-197.6	3,214.4	0.00	0.00	0.00
12,000.0	90.00	180.52	8,912.0	-3,310.4	-198.5	3,314.3	0.00	0.00	0.00
12,100.0	90.00	180.52	8,912.0	-3,410.4	-199.5	3,414.3	0.00	0.00	0.00
12,200.0	90.00	180.52	8,912.0	-3,510.4	-200.4	3,514.3	0.00	0.00	0.00
12,300.0	90.00	180.52	8,912.0	-3,610.4	-201.3	3,614.3	0.00	0.00	0.00
12,400.0	90.00	180.52	8,912.0	-3,710.4	-202.2	3,714.3	0.00	0.00	0.00
12,500.0	90.00	180.52	8,912.0	-3,810.4	-203.1	3,814.3	0.00	0.00	0.00
12,600.0	90.00	180.52	8,912.0	-3,910.4	-204.0	3,914.3	0.00	0.00	0.00
12,700.0	90.00	180.52	8,912.0	-4,010.3	-204.9	4,014.2	0.00	0.00	0.00
12,800.0	90.00	180.52	8,912.0	-4,110.3	-205.8	4,114.2	0.00	0.00	0.00
12,900.0	90.00	180.52	8,912.0	-4,210.3	-206.7	4,214.2	0.00	0.00	0.00
13,000.0	90.00	180.52	8,912.0	-4,310.3	-207.6	4,314.2	0.00	0.00	0.00
13,100.0	90.00	180.52	8,912.0	-4,410.3	-208.5	4,414.2	0.00	0.00	0.00
13,200.0	90.00	180.52	8,912.0	-4,510.3	-209.4	4,514.2	0.00	0.00	0.00
13,300.0	90.00	180.52	8,912.0	-4,610.3	-210.3	4,614.2	0.00	0.00	0.00
13,400.0	90.00	180.52	8,912.0	-4,710.3	-211.2	4,714.2	0.00	0.00	0.00
13,500.0	90.00	180.52	8,912.0	-4,810.3	-212.1	4,814.1	0.00	0.00	0.00
13,600.0	90.00	180.52	8,912.0	-4,910.3	-213.0	4,914.1	0.00	0.00	0.00
13,700.0	90.00	180.52	8,912.0	-5,010.3	-213.9	5,014.1	0.00	0.00	0.00
13,800.0	90.00	180.52	8,912.0	-5,110.3	-214.8	5,114.1	0.00	0.00	0.00
13,900.0	90.00	180.52	8,912.0	-5,210.3	-215.7	5,214.1	0.00	0.00	0.00
14,000.0	90.00	180.52	8,912.0	-5,310.3	-216.6	5,314.1	0.00	0.00	0.00
14,100.0	90.00	180.52	8,912.0	-5,410.3	-217.5	5,414.1	0.00	0.00	0.00
14,200.0	90.00	180.52	8,912.0	-5,510.3	-218.4	5,514.0	0.00	0.00	0.00
14,300.0	90.00	180.52	8,912.0	-5,610.3	-219.3	5,614.0	0.00	0.00	0.00
14,400.0	90.00	180.52	8,912.0	-5,710.3	-220.3	5,714.0	0.00	0.00	0.00
14,500.0	90.00	180.52	8,912.0	-5,810.3	-221.2	5,814.0	0.00	0.00	0.00
14,600.0	90.00	180.52	8,912.0	-5,910.3	-222.1	5,914.0	0.00	0.00	0.00
14,700.0	90.00	180.52	8,912.0	-6,010.3	-223.0	6,014.0	0.00	0.00	0.00
14,800.0	90.00	180.52	8,912.0	-6,110.3	-223.9	6,114.0	0.00	0.00	0.00
14,900.0	90.00	180.52	8,912.0	-6,210.3	-224.8	6,214.0	0.00	0.00	0.00
15,000.0	90.00	180.52	8,912.0	-6,310.3	-225.7	6,313.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Matira East Federal 30-31-6-15-4CH
Company:	Cirque Resources LP	TVD Reference:	WELL @ 6027.0ft (RKB - 25')
Project:	Sec.30-T12N-R65W	MD Reference:	WELL @ 6027.0ft (RKB - 25')
Site:	Matira East Federal Pad Sec.30-T12N-R65W	North Reference:	True
Well:	Matira East Federal 30-31-6-15-4CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-25-14)		

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)
15,100.0	90.00	180.52	8,912.0	-6,410.3	-226.6	6,413.9	0.00	0.00	0.00
15,200.0	90.00	180.52	8,912.0	-6,510.2	-227.5	6,513.9	0.00	0.00	0.00
15,300.0	90.00	180.52	8,912.0	-6,610.2	-228.4	6,613.9	0.00	0.00	0.00
15,400.0	90.00	180.52	8,912.0	-6,710.2	-229.3	6,713.9	0.00	0.00	0.00
15,500.0	90.00	180.52	8,912.0	-6,810.2	-230.2	6,813.9	0.00	0.00	0.00
15,600.0	90.00	180.52	8,912.0	-6,910.2	-231.1	6,913.9	0.00	0.00	0.00
15,700.0	90.00	180.52	8,912.0	-7,010.2	-232.0	7,013.9	0.00	0.00	0.00
15,800.0	90.00	180.52	8,912.0	-7,110.2	-232.9	7,113.8	0.00	0.00	0.00
15,900.0	90.00	180.52	8,912.0	-7,210.2	-233.8	7,213.8	0.00	0.00	0.00
16,000.0	90.00	180.52	8,912.0	-7,310.2	-234.7	7,313.8	0.00	0.00	0.00
16,100.0	90.00	180.52	8,912.0	-7,410.2	-235.6	7,413.8	0.00	0.00	0.00
16,200.0	90.00	180.52	8,912.0	-7,510.2	-236.5	7,513.8	0.00	0.00	0.00
16,300.0	90.00	180.52	8,912.0	-7,610.2	-237.4	7,613.8	0.00	0.00	0.00
16,400.0	90.00	180.52	8,912.0	-7,710.2	-238.3	7,713.8	0.00	0.00	0.00
16,500.0	90.00	180.52	8,912.0	-7,810.2	-239.2	7,813.7	0.00	0.00	0.00
16,600.0	90.00	180.52	8,912.0	-7,910.2	-240.1	7,913.7	0.00	0.00	0.00
16,700.0	90.00	180.52	8,912.0	-8,010.2	-241.1	8,013.7	0.00	0.00	0.00
16,800.0	90.00	180.52	8,912.0	-8,110.2	-242.0	8,113.7	0.00	0.00	0.00
16,900.0	90.00	180.52	8,912.0	-8,210.2	-242.9	8,213.7	0.00	0.00	0.00
17,000.0	90.00	180.52	8,912.0	-8,310.2	-243.8	8,313.7	0.00	0.00	0.00
17,100.0	90.00	180.52	8,912.0	-8,410.2	-244.7	8,413.7	0.00	0.00	0.00
17,200.0	90.00	180.52	8,912.0	-8,510.2	-245.6	8,513.7	0.00	0.00	0.00
17,300.0	90.00	180.52	8,912.0	-8,610.2	-246.5	8,613.6	0.00	0.00	0.00
17,400.0	90.00	180.52	8,912.0	-8,710.2	-247.4	8,713.6	0.00	0.00	0.00
17,500.0	90.00	180.52	8,912.0	-8,810.2	-248.3	8,813.6	0.00	0.00	0.00
17,600.0	90.00	180.52	8,912.0	-8,910.1	-249.2	8,913.6	0.00	0.00	0.00
17,700.0	90.00	180.52	8,912.0	-9,010.1	-250.1	9,013.6	0.00	0.00	0.00
17,800.0	90.00	180.52	8,912.0	-9,110.1	-251.0	9,113.6	0.00	0.00	0.00
17,900.0	90.00	180.52	8,912.0	-9,210.1	-251.9	9,213.6	0.00	0.00	0.00
18,000.0	90.00	180.52	8,912.0	-9,310.1	-252.8	9,313.5	0.00	0.00	0.00
18,100.0	90.00	180.52	8,912.0	-9,410.1	-253.7	9,413.5	0.00	0.00	0.00
18,200.0	90.00	180.52	8,912.0	-9,510.1	-254.6	9,513.5	0.00	0.00	0.00
18,300.0	90.00	180.52	8,912.0	-9,610.1	-255.5	9,613.5	0.00	0.00	0.00
18,400.0	90.00	180.52	8,912.0	-9,710.1	-256.4	9,713.5	0.00	0.00	0.00
18,500.0	90.00	180.52	8,912.0	-9,810.1	-257.3	9,813.5	0.00	0.00	0.00
18,600.0	90.00	180.52	8,912.0	-9,910.1	-258.2	9,913.5	0.00	0.00	0.00
18,700.0	90.00	180.52	8,912.0	-10,010.1	-259.1	10,013.5	0.00	0.00	0.00
18,800.0	90.00	180.52	8,912.0	-10,110.1	-260.0	10,113.4	0.00	0.00	0.00
18,900.0	90.00	180.52	8,912.0	-10,210.1	-260.9	10,213.4	0.00	0.00	0.00
19,000.0	90.00	180.52	8,912.0	-10,310.1	-261.9	10,313.4	0.00	0.00	0.00
19,066.5	90.00	180.52	8,912.0	-10,376.6	-262.5	10,379.9	0.00	0.00	0.00

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)		Name	Casing Diameter (")	Hole Diameter (")
9,283.4	8,912.0	7"		7	7-1/2

Database:	Landmark	Local Co-ordinate Reference:	Well Matira East Federal 30-31-6-15-4CH
Company:	Cirque Resources LP	TVD Reference:	WELL @ 6027.0ft (RKB - 25')
Project:	Sec.30-T12N-R65W	MD Reference:	WELL @ 6027.0ft (RKB - 25')
Site:	Matira East Federal Pad Sec.30-T12N-R65W	North Reference:	True
Well:	Matira East Federal 30-31-6-15-4CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-25-14)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,828.0	1,828.0	Fox Hills				
2,500.0	2,498.0	Fox Hills Mkr 1				
4,303.6	4,296.0	Teapot				
5,239.6	5,232.0	Parkman				
5,271.6	5,264.0	Sussex				
5,608.6	5,601.0	Pierre Upper Mkr1				
6,024.6	6,017.0	Sussex Mkr1				
7,191.6	7,184.0	Shannon				
7,439.6	7,432.0	Pierre				
7,479.6	7,472.0	Pierre Mkr1				
7,606.6	7,599.0	Pierre Mkr2				
7,734.6	7,727.0	Pierre Mkr3				
8,146.6	8,139.0	Pierre Mkr4				
8,248.6	8,241.0	Pierre Mkr5				
8,434.0	8,425.0	Base Steele Mkr				
8,505.1	8,493.0	Sharon Springs				
8,521.1	8,508.0	Niobrara				
8,571.4	8,554.0	N100 (A)				
8,587.1	8,568.0	N300 (B)				
8,628.3	8,604.0	N500				
8,698.5	8,662.0	N600				
8,799.4	8,737.0	N700 (C)				
8,904.9	8,803.0	N800 (Fort Hayes)				
8,938.4	8,821.0	N900				
8,940.4	8,822.0	Codell				
8,981.7	8,842.0	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 1.50
3,648.8	3,641.7	38.9	-151.7	Start Drop -1.50
8,283.0	8,275.4	43.1	-168.0	KOP #2 - Start Build 9.00
19,066.5	8,912.0	-10,376.6	-262.5	TD at 19066.5



Cirque Resources LP

Sec.30-T12N-R65W

Matira East Federal Pad Sec.30-T12N-R65W

Matira East Federal 30-31-6-15-4CH

Wellbore #1

Plan #1 (8-25-14)

Anticollision Report

25 August, 2014

Company:	Cirque Resources LP	Local Co-ordinate Reference:	Well Matira East Federal 30-31-6-15-4CH
Project:	Sec.30-T12N-R65W	TVD Reference:	WELL @ 6027.0ft (RKB - 25')
Reference Site:	Matira East Federal Pad Sec.30-T12N-R65W	MD Reference:	WELL @ 6027.0ft (RKB - 25')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Matira East Federal 30-31-6-15-4CH	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 (8-25-14)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (8-25-14)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 8/25/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	19,066.5	Plan #1 (8-25-14) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Matira East Federal Pad Sec.30-T12N-R65W						
Matira East Federal 30-19-15-1CH - Wellbore #1 - Plan	1,000.0	1,000.0	121.5	117.2	28.452	CC, ES
Matira East Federal 30-19-15-1CH - Wellbore #1 - Plan	1,300.0	1,286.9	136.5	131.0	24.601	SF
Matira East 30-19-15-3CH - Wellbore #1 - Plan #1 (8-25-	1,800.0	1,800.0	41.4	33.6	5.265	CC, ES
Matira East 30-19-15-3CH - Wellbore #1 - Plan #1 (8-25-	8,300.0	8,300.0	101.4	64.4	2.736	SF
Matira East 30-31-6-15-2CH - Wellbore #1 - Plan #1 (8-2	1,200.0	1,200.0	80.1	74.9	15.491	CC, ES
Matira East 30-31-6-15-2CH - Wellbore #1 - Plan #1 (8-2	1,400.0	1,394.3	86.8	80.8	14.423	SF

Offset Design Matira East Federal Pad Sec.30-T12N-R65W - Matira East Federal 30-19-15-1CH - Wellbore #1 - Plan												
Survey Program: 0-MWD												
Reference	Offset	Semi Major Axis										
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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	121.5	121.5			
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	121.5	121.5	121.3	0.22	540.591
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	121.5	121.5	120.8	0.67	180.197
300.0	300.0	300.0	300.0	0.6	0.6	90.00	0.0	121.5	121.5	120.4	1.12	108.118
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	121.5	121.5	119.9	1.57	77.227
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	121.5	121.5	119.5	2.02	60.066
600.0	600.0	600.0	600.0	1.2	1.2	90.00	0.0	121.5	121.5	119.0	2.47	49.145
700.0	700.0	700.0	700.0	1.5	1.5	90.00	0.0	121.5	121.5	118.6	2.92	41.584
800.0	800.0	800.0	800.0	1.7	1.7	90.00	0.0	121.5	121.5	118.1	3.37	36.039
900.0	900.0	900.0	900.0	1.9	1.9	90.00	0.0	121.5	121.5	117.7	3.82	31.799
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.00	0.0	121.5	121.5	117.2	4.27	28.452 CC, ES
1,100.0	1,100.0	1,095.9	1,095.9	2.4	2.3	90.04	-0.1	123.1	123.2	118.5	4.70	26.221
1,200.0	1,200.0	1,191.6	1,191.4	2.6	2.5	90.17	-0.4	127.9	128.2	123.1	5.12	25.045
1,300.0	1,300.0	1,286.9	1,286.4	2.8	2.7	90.35	-0.8	135.8	136.5	131.0	5.55	24.601 SF
1,400.0	1,400.0	1,381.5	1,380.4	3.0	3.0	90.58	-1.5	146.8	148.1	142.1	6.00	24.704
1,500.0	1,500.0	1,475.3	1,473.1	3.3	3.2	90.82	-2.3	160.8	163.0	156.6	6.47	25.209
1,600.0	1,600.0	1,570.2	1,566.5	3.5	3.5	91.06	-3.3	177.7	180.9	173.9	6.97	25.963
1,700.0	1,700.0	1,668.5	1,663.1	3.7	3.8	91.28	-4.4	195.9	199.4	191.9	7.50	26.577
1,800.0	1,800.0	1,766.7	1,759.6	3.9	4.2	91.45	-5.4	214.1	218.0	209.9	8.06	27.057
1,900.0	1,900.0	1,864.8	1,855.9	4.1	4.5	167.22	-6.5	232.3	237.7	229.6	8.16	29.145
2,000.0	1,999.9	1,962.2	1,951.7	4.4	4.9	167.46	-7.6	250.3	260.0	251.4	8.58	30.312

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

Offset Design		Matira East Federal Pad Sec.30-T12N-R65W - Martira East Federal 30-19-15-1CH - Wellbore #1 - Plan											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		
2,100.0	2,099.7	2,059.1	2,046.9	4.6	5.2	167.76	-8.6	268.2	284.8	275.8	8.99	31.664		
2,200.0	2,199.3	2,155.3	2,141.5	4.8	5.6	168.12	-9.7	286.0	311.8	302.4	9.41	33.127		
2,300.0	2,298.9	2,251.5	2,235.9	5.0	6.0	168.48	-10.7	303.8	339.3	329.5	9.85	34.460		
2,400.0	2,398.4	2,347.6	2,330.4	5.3	6.3	168.79	-11.7	321.6	366.8	356.5	10.28	35.668		
2,500.0	2,498.0	2,443.7	2,424.9	5.5	6.7	169.06	-12.8	339.4	394.3	383.6	10.73	36.767		
2,600.0	2,597.5	2,539.9	2,519.3	5.7	7.1	169.29	-13.8	357.2	421.9	410.7	11.17	37.769		
2,700.0	2,697.1	2,636.0	2,613.8	6.0	7.5	169.49	-14.9	375.0	449.4	437.8	11.62	38.687		
2,800.0	2,796.6	2,732.1	2,708.3	6.2	7.9	169.67	-15.9	392.8	476.9	464.8	12.06	39.530		
2,900.0	2,896.2	2,828.2	2,802.7	6.5	8.3	169.83	-17.0	410.5	504.4	491.9	12.51	40.306		
3,000.0	2,995.8	2,924.4	2,897.2	6.8	8.7	169.98	-18.0	428.3	532.0	519.0	12.97	41.022		
3,100.0	3,095.3	3,020.5	2,991.6	7.0	9.1	170.11	-19.1	446.1	559.5	546.1	13.42	41.685		
3,200.0	3,194.9	3,116.6	3,086.1	7.3	9.4	170.22	-20.1	463.9	587.0	573.2	13.88	42.300		
3,300.0	3,294.4	3,212.7	3,180.6	7.5	9.8	170.33	-21.1	481.7	614.6	600.2	14.34	42.872		
3,400.0	3,394.0	3,308.9	3,275.0	7.8	10.2	170.43	-22.2	499.5	642.1	627.3	14.79	43.405		
3,500.0	3,493.6	3,405.0	3,369.5	8.1	10.6	170.52	-23.2	517.3	669.7	654.4	15.25	43.902		
3,600.0	3,593.1	3,501.1	3,463.9	8.3	11.0	170.60	-24.3	535.1	697.2	681.5	15.71	44.368		
3,700.0	3,692.7	3,597.3	3,558.5	8.6	11.4	170.71	-25.3	552.9	724.4	708.2	16.19	44.745		
3,800.0	3,792.5	3,694.2	3,653.6	8.8	11.8	170.81	-26.4	570.8	749.4	732.8	16.66	44.990		
3,900.0	3,892.4	3,791.6	3,749.4	9.0	12.2	170.87	-27.4	588.8	772.0	754.8	17.12	45.090		
4,000.0	3,992.4	3,889.6	3,845.7	9.2	12.6	170.89	-28.5	606.9	791.9	774.4	17.57	45.062		
4,100.0	4,092.4	3,987.8	3,942.2	9.4	13.1	95.23	-29.6	625.1	810.5	792.5	18.02	44.967		
4,200.0	4,192.4	4,086.1	4,038.8	9.6	13.5	95.19	-30.6	643.3	829.0	810.5	18.49	44.839		
4,300.0	4,292.4	4,184.4	4,135.3	9.8	13.9	95.15	-31.7	661.5	847.5	828.6	18.95	44.715		
4,400.0	4,392.4	4,282.6	4,231.9	10.0	14.3	95.11	-32.8	679.7	866.1	846.6	19.42	44.596		
4,500.0	4,492.4	4,380.9	4,328.5	10.2	14.7	95.08	-33.8	697.9	884.6	864.7	19.89	44.482		
4,600.0	4,592.4	4,479.2	4,425.0	10.4	15.1	95.04	-34.9	716.0	903.1	882.8	20.35	44.372		
4,700.0	4,692.4	4,577.4	4,521.6	10.6	15.5	95.01	-36.0	734.2	921.6	900.8	20.82	44.265		
4,800.0	4,792.4	4,675.7	4,618.2	10.8	15.9	94.98	-37.0	752.4	940.2	918.9	21.29	44.163		
4,900.0	4,892.4	4,774.0	4,714.7	11.0	16.3	94.94	-38.1	770.6	958.7	937.0	21.76	44.064		
5,000.0	4,992.4	4,872.2	4,811.3	11.2	16.8	94.91	-39.2	788.8	977.2	955.0	22.23	43.968		
5,100.0	5,092.4	4,970.5	4,907.9	11.5	17.2	94.89	-40.2	807.0	995.8	973.1	22.70	43.875		

Offset Design		Matira East Federal Pad Sec.30-T12N-R65W - Matira East 30-19-15-3CH - Wellbore #1 - Plan #1 (8-25)										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	41.4	41.4					
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	41.4	41.4	41.2	0.22	184.292		
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	41.4	41.4	40.7	0.67	61.431		
300.0	300.0	300.0	300.0	0.6	0.6	90.00	0.0	41.4	41.4	40.3	1.12	36.858		
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	41.4	41.4	39.8	1.57	26.327		
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	41.4	41.4	39.4	2.02	20.477		
600.0	600.0	600.0	600.0	1.2	1.2	90.00	0.0	41.4	41.4	39.0	2.47	16.754		
700.0	700.0	700.0	700.0	1.5	1.5	90.00	0.0	41.4	41.4	38.5	2.92	14.176		
800.0	800.0	800.0	800.0	1.7	1.7	90.00	0.0	41.4	41.4	38.1	3.37	12.286		
900.0	900.0	900.0	900.0	1.9	1.9	90.00	0.0	41.4	41.4	37.6	3.82	10.841		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.00	0.0	41.4	41.4	37.2	4.27	9.700		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	90.00	0.0	41.4	41.4	36.7	4.72	8.776		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	90.00	0.0	41.4	41.4	36.3	5.17	8.013		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	90.00	0.0	41.4	41.4	35.8	5.62	7.372		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	90.00	0.0	41.4	41.4	35.4	6.07	6.826		
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	90.00	0.0	41.4	41.4	34.9	6.52	6.355		
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	90.00	0.0	41.4	41.4	34.5	6.97	5.945		
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	90.00	0.0	41.4	41.4	34.0	7.42	5.585		
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	90.00	0.0	41.4	41.4	33.6	7.87	5.265 CC, ES		
1,900.0	1,900.0	1,900.0	1,900.0	4.1	4.2	166.04	0.0	41.4	42.7	34.4	8.30	5.141		
2,000.0	1,999.9	1,999.9	1,999.9	4.4	4.4	167.20	0.0	41.4	46.5	37.8	8.73	5.330		
2,100.0	2,099.7	2,099.7	2,099.7	4.6	4.6	168.75	0.0	41.4	52.9	43.8	9.15	5.785		
2,200.0	2,199.3	2,199.3	2,199.3	4.8	4.8	170.35	0.0	41.4	61.7	52.1	9.57	6.448		
2,300.0	2,298.9	2,298.9	2,298.9	5.0	5.1	171.62	0.0	41.4	71.0	61.0	10.00	7.095		
2,400.0	2,398.4	2,398.4	2,398.4	5.3	5.3	172.60	0.0	41.4	80.2	69.8	10.44	7.689		
2,500.0	2,498.0	2,498.0	2,498.0	5.5	5.5	173.37	0.0	41.4	89.6	78.7	10.87	8.236		
2,600.0	2,597.5	2,600.5	2,600.5	5.7	5.7	173.49	1.1	40.0	97.4	86.1	11.31	8.610		
2,700.0	2,697.1	2,703.4	2,703.3	6.0	6.0	172.54	4.5	35.8	102.2	90.4	11.75	8.698		
2,800.0	2,796.6	2,805.7	2,805.1	6.2	6.2	170.63	10.1	28.8	104.1	91.9	12.19	8.540		
2,900.0	2,896.2	2,905.6	2,904.6	6.5	6.4	168.52	16.2	21.2	105.3	92.7	12.63	8.338		
3,000.0	2,995.8	3,005.5	3,004.0	6.8	6.6	166.46	22.3	13.6	106.6	93.6	13.07	8.156		
3,100.0	3,095.3	3,105.4	3,103.4	7.0	6.9	164.45	28.4	5.9	108.1	94.6	13.53	7.992		
3,200.0	3,194.9	3,205.4	3,202.9	7.3	7.1	162.50	34.5	-1.7	109.7	95.7	13.98	7.845		
3,300.0	3,294.4	3,305.3	3,302.3	7.5	7.4	160.61	40.6	-9.3	111.4	97.0	14.45	7.713		
3,400.0	3,394.0	3,405.2	3,401.8	7.8	7.6	158.77	46.7	-16.9	113.3	98.3	14.92	7.593		
3,500.0	3,493.6	3,505.1	3,501.2	8.1	7.9	157.00	52.8	-24.5	115.2	99.8	15.39	7.485		
3,600.0	3,593.1	3,605.0	3,600.6	8.3	8.1	155.29	58.8	-32.1	117.3	101.4	15.87	7.387		
3,700.0	3,692.7	3,704.9	3,700.1	8.6	8.4	153.57	64.9	-39.8	119.1	102.8	16.36	7.280		
3,800.0	3,792.5	3,804.8	3,799.5	8.8	8.6	151.37	71.0	-47.4	119.1	102.2	16.84	7.072		
3,900.0	3,892.4	3,904.6	3,898.8	9.0	8.9	148.51	77.1	-55.0	116.9	99.6	17.31	6.754		
4,000.0	3,992.4	4,004.3	3,998.0	9.2	9.1	144.79	83.2	-62.6	112.9	95.1	17.79	6.347		
4,100.0	4,092.4	4,103.8	4,097.0	9.4	9.4	64.74	89.3	-70.2	108.3	90.0	18.31	5.914		
4,200.0	4,192.4	4,203.3	4,196.1	9.6	9.7	59.94	95.3	-77.7	104.3	85.5	18.85	5.535		
4,300.0	4,292.4	4,302.9	4,295.1	9.8	9.9	54.81	101.4	-85.3	101.2	81.8	19.40	5.217		
4,400.0	4,392.4	4,402.4	4,394.2	10.0	10.2	49.39	107.5	-92.9	98.9	79.0	19.95	4.958		
4,500.0	4,492.4	4,501.9	4,493.2	10.2	10.5	43.78	113.5	-100.5	97.6	77.1	20.50	4.760		
4,589.6	4,582.0	4,591.1	4,582.0	10.4	10.7	38.66	119.0	-107.3	97.2	76.2	20.98	4.632		
4,600.0	4,592.4	4,601.4	4,592.3	10.4	10.7	38.07	119.6	-108.1	97.2	76.1	21.03	4.620		
4,700.0	4,692.4	4,700.9	4,691.3	10.6	11.0	32.36	125.7	-115.7	97.8	76.2	21.55	4.536		
4,800.0	4,792.4	4,801.0	4,790.9	10.8	11.2	27.25	131.2	-122.6	99.1	77.1	22.03	4.501		
4,900.0	4,892.4	4,901.6	4,891.4	11.0	11.4	24.13	134.7	-127.0	100.4	78.0	22.43	4.475		
5,000.0	4,992.4	5,002.5	4,992.3	11.2	11.6	23.00	136.0	-128.6	100.9	78.1	22.82	4.422		

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Company:	Cirque Resources LP	Local Co-ordinate Reference:	Well Matira East Federal 30-31-6-15-4CH
Project:	Sec.30-T12N-R65W	TVD Reference:	WELL @ 6027.0ft (RKB - 25')
Reference Site:	Matira East Federal Pad Sec.30-T12N-R65W	MD Reference:	WELL @ 6027.0ft (RKB - 25')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Matira East Federal 30-31-6-15-4CH	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 (8-25-14)	Offset TVD Reference:	Offset Datum

Offset Design		Matira East Federal Pad Sec.30-T12N-R65W - Matira East 30-19-15-3CH - Wellbore #1 - Plan #1 (8-25)										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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
5,100.0	5,092.4	5,102.6	5,092.4	11.5	11.8	22.99	136.0	-128.6	100.9	77.7	23.22	4.346		
5,200.0	5,192.4	5,202.6	5,192.4	11.7	12.0	22.99	136.0	-128.6	100.9	77.3	23.65	4.268		
5,300.0	5,292.4	5,302.6	5,292.4	11.9	12.2	22.99	136.0	-128.6	100.9	76.8	24.07	4.193		
5,400.0	5,392.4	5,402.6	5,392.4	12.1	12.4	22.99	136.0	-128.6	100.9	76.4	24.50	4.120		
5,500.0	5,492.4	5,502.6	5,492.4	12.3	12.6	22.99	136.0	-128.6	100.9	76.0	24.92	4.049		
5,600.0	5,592.4	5,602.6	5,592.4	12.5	12.9	22.99	136.0	-128.6	100.9	75.6	25.35	3.981		
5,700.0	5,692.4	5,702.6	5,692.4	12.7	13.1	22.99	136.0	-128.6	100.9	75.1	25.78	3.915		
5,800.0	5,792.4	5,802.6	5,792.4	13.0	13.3	22.99	136.0	-128.6	100.9	74.7	26.21	3.851		
5,900.0	5,892.4	5,902.6	5,892.4	13.2	13.5	22.99	136.0	-128.6	100.9	74.3	26.64	3.789		
6,000.0	5,992.4	6,002.6	5,992.4	13.4	13.7	22.99	136.0	-128.6	100.9	73.9	27.07	3.728		
6,100.0	6,092.4	6,102.6	6,092.4	13.6	13.9	22.99	136.0	-128.6	100.9	73.4	27.50	3.670		
6,200.0	6,192.4	6,202.6	6,192.4	13.8	14.1	22.99	136.0	-128.6	100.9	73.0	27.93	3.613		
6,300.0	6,292.4	6,302.6	6,292.4	14.0	14.4	22.99	136.0	-128.6	100.9	72.6	28.36	3.558		
6,400.0	6,392.4	6,402.6	6,392.4	14.3	14.6	22.99	136.0	-128.6	100.9	72.1	28.79	3.505		
6,500.0	6,492.4	6,502.6	6,492.4	14.5	14.8	22.99	136.0	-128.6	100.9	71.7	29.23	3.453		
6,600.0	6,592.4	6,602.6	6,592.4	14.7	15.0	22.99	136.0	-128.6	100.9	71.3	29.66	3.402		
6,700.0	6,692.4	6,702.6	6,692.4	14.9	15.2	22.99	136.0	-128.6	100.9	70.8	30.09	3.353		
6,800.0	6,792.4	6,802.6	6,792.4	15.1	15.4	22.99	136.0	-128.6	100.9	70.4	30.53	3.306		
6,900.0	6,892.4	6,902.6	6,892.4	15.3	15.6	22.99	136.0	-128.6	100.9	70.0	30.96	3.259		
7,000.0	6,992.4	7,002.6	6,992.4	15.6	15.9	22.99	136.0	-128.6	100.9	69.5	31.40	3.214		
7,100.0	7,092.4	7,102.6	7,092.4	15.8	16.1	22.99	136.0	-128.6	100.9	69.1	31.84	3.170		
7,200.0	7,192.4	7,202.6	7,192.4	16.0	16.3	22.99	136.0	-128.6	100.9	68.6	32.27	3.127		
7,300.0	7,292.4	7,302.6	7,292.4	16.2	16.5	22.99	136.0	-128.6	100.9	68.2	32.71	3.085		
7,400.0	7,392.4	7,402.6	7,392.4	16.4	16.7	22.99	136.0	-128.6	100.9	67.8	33.14	3.045		
7,500.0	7,492.4	7,502.6	7,492.4	16.7	16.9	22.99	136.0	-128.6	100.9	67.3	33.58	3.005		
7,600.0	7,592.4	7,602.6	7,592.4	16.9	17.2	22.99	136.0	-128.6	100.9	66.9	34.02	2.967		
7,700.0	7,692.4	7,702.6	7,692.4	17.1	17.4	22.99	136.0	-128.6	100.9	66.5	34.46	2.929		
7,800.0	7,792.4	7,802.6	7,792.4	17.3	17.6	22.99	136.0	-128.6	100.9	66.0	34.90	2.892		
7,900.0	7,892.4	7,902.6	7,892.4	17.5	17.8	22.99	136.0	-128.6	100.9	65.6	35.33	2.856		
8,000.0	7,992.4	8,002.6	7,992.4	17.8	18.0	22.99	136.0	-128.6	100.9	65.1	35.77	2.821		
8,100.0	8,092.4	8,102.6	8,092.4	18.0	18.3	22.99	136.0	-128.6	100.9	64.7	36.21	2.787		
8,200.0	8,192.4	8,202.6	8,192.4	18.2	18.5	22.99	136.0	-128.6	100.9	64.3	36.65	2.754		
8,252.5	8,244.8	8,255.0	8,244.8	18.3	18.6	-157.62	136.0	-128.6	101.3	64.4	36.87	2.746		
8,300.0	8,292.4	8,300.0	8,289.8	18.4	18.7	-157.63	136.3	-128.6	101.4	64.4	37.07	2.736 SF		
8,400.0	8,391.7	8,384.0	8,373.3	18.6	18.9	-160.20	144.4	-128.5	120.2	83.2	37.03	3.246		
8,500.0	8,488.2	8,456.8	8,444.4	18.8	19.1	-163.54	160.2	-128.3	164.8	128.5	36.37	4.532		
8,600.0	8,579.4	8,513.4	8,498.0	18.9	19.2	-165.37	178.1	-128.1	231.0	195.9	35.10	6.580		
8,700.0	8,663.2	8,550.0	8,531.8	19.1	19.3	-164.87	192.2	-128.0	312.8	279.3	33.42	9.358		
8,800.0	8,737.4	8,577.2	8,556.4	19.3	19.4	-161.59	203.9	-127.8	404.6	372.9	31.70	12.762		
8,900.0	8,800.2	8,600.0	8,576.6	19.6	19.5	-150.79	214.5	-127.7	502.3	470.9	31.35	16.022		
9,000.0	8,850.1	8,600.0	8,576.6	20.1	19.5	-66.17	214.5	-127.7	601.8	564.7	37.10	16.220		
9,100.0	8,885.9	8,585.3	8,563.6	20.8	19.5	-16.21	207.5	-127.8	700.7	675.2	25.47	27.507		
9,200.0	8,906.6	8,573.5	8,553.1	21.5	19.4	-8.53	202.2	-127.8	797.1	773.7	23.38	34.092		
9,300.0	8,912.0	8,550.0	8,531.8	22.5	19.3	-5.84	192.2	-128.0	889.3	866.4	22.98	38.703		
9,400.0	8,912.0	8,550.0	8,531.8	23.5	19.3	-5.84	192.2	-128.0	980.6	957.3	23.24	42.184		

Company:	Cirque Resources LP	Local Co-ordinate Reference:	Well Matira East Federal 30-31-6-15-4CH
Project:	Sec.30-T12N-R65W	TVD Reference:	WELL @ 6027.0ft (RKB - 25')
Reference Site:	Matira East Federal Pad Sec.30-T12N-R65W	MD Reference:	WELL @ 6027.0ft (RKB - 25')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Matira East Federal 30-31-6-15-4CH	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 (8-25-14)	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		
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	80.1	80.1					
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	80.1	80.1	79.9	0.22	356.299		
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	80.1	80.1	79.4	0.67	118.766		
300.0	300.0	300.0	300.0	0.6	0.6	90.00	0.0	80.1	80.1	79.0	1.12	71.260		
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	80.1	80.1	78.5	1.57	50.900		
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	80.1	80.1	78.1	2.02	39.589		
600.0	600.0	600.0	600.0	1.2	1.2	90.00	0.0	80.1	80.1	77.6	2.47	32.391		
700.0	700.0	700.0	700.0	1.5	1.5	90.00	0.0	80.1	80.1	77.2	2.92	27.408		
800.0	800.0	800.0	800.0	1.7	1.7	90.00	0.0	80.1	80.1	76.7	3.37	23.753		
900.0	900.0	900.0	900.0	1.9	1.9	90.00	0.0	80.1	80.1	76.3	3.82	20.959		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.00	0.0	80.1	80.1	75.8	4.27	18.753		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	90.00	0.0	80.1	80.1	75.4	4.72	16.967		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	90.00	0.0	80.1	80.1	74.9	5.17	15.491 CC, ES		
1,300.0	1,300.0	1,297.3	1,297.3	2.8	2.8	90.17	-0.2	81.7	81.8	76.2	5.60	14.605		
1,400.0	1,400.0	1,394.3	1,394.2	3.0	3.0	90.65	-1.0	86.6	86.8	80.8	6.02	14.423 SF		
1,500.0	1,500.0	1,490.9	1,490.4	3.3	3.2	91.33	-2.2	94.7	95.2	88.7	6.45	14.762		
1,600.0	1,600.0	1,586.9	1,585.7	3.5	3.4	92.10	-3.9	105.9	106.9	100.0	6.89	15.510		
1,700.0	1,700.0	1,682.0	1,679.7	3.7	3.7	92.86	-6.0	120.1	121.9	114.6	7.36	16.569		
1,800.0	1,800.0	1,778.2	1,774.3	3.9	3.9	93.58	-8.6	137.2	139.8	132.0	7.86	17.802		
1,900.0	1,900.0	1,876.2	1,870.7	4.1	4.2	169.80	-11.3	155.1	159.5	151.3	8.16	19.554		
2,000.0	1,999.9	1,973.7	1,966.5	4.4	4.6	170.40	-13.9	172.8	181.6	173.1	8.57	21.200		
2,100.0	2,099.7	2,070.6	2,061.7	4.6	4.9	170.97	-16.6	190.5	206.3	197.4	8.98	22.982		
2,200.0	2,199.3	2,166.8	2,156.3	4.8	5.3	171.52	-19.2	208.0	233.3	224.0	9.39	24.851		
2,300.0	2,298.9	2,263.0	2,250.8	5.0	5.6	172.01	-21.8	225.5	260.8	251.0	9.82	26.570		
2,400.0	2,398.4	2,359.1	2,345.3	5.3	6.0	172.40	-24.5	243.0	288.3	278.0	10.25	28.135		
2,500.0	2,498.0	2,455.2	2,439.8	5.5	6.3	172.72	-27.1	260.5	315.8	305.1	10.68	29.564		
2,600.0	2,597.5	2,551.4	2,534.3	5.7	6.7	172.99	-29.7	278.1	343.2	332.1	11.12	30.872		
2,700.0	2,697.1	2,647.5	2,628.8	6.0	7.1	173.22	-32.4	295.6	370.7	359.2	11.56	32.074		
2,800.0	2,796.6	2,743.7	2,723.3	6.2	7.4	173.42	-35.0	313.1	398.2	386.2	12.00	33.180		
2,900.0	2,896.2	2,839.8	2,817.8	6.5	7.8	173.59	-37.6	330.6	425.7	413.3	12.45	34.201		
3,000.0	2,995.8	2,935.9	2,912.3	6.8	8.2	173.74	-40.3	348.1	453.2	440.3	12.90	35.146		
3,100.0	3,095.3	3,032.1	3,006.8	7.0	8.6	173.88	-42.9	365.6	480.7	467.4	13.35	36.022		
3,200.0	3,194.9	3,128.2	3,101.3	7.3	9.0	174.00	-45.5	383.1	508.3	494.5	13.80	36.837		
3,300.0	3,294.4	3,224.3	3,195.7	7.5	9.4	174.10	-48.2	400.7	535.8	521.5	14.25	37.596		
3,400.0	3,394.0	3,320.5	3,290.2	7.8	9.7	174.20	-50.8	418.2	563.3	548.6	14.71	38.304		
3,500.0	3,493.6	3,416.6	3,384.7	8.1	10.1	174.29	-53.4	435.7	590.8	575.6	15.16	38.966		
3,600.0	3,593.1	3,512.7	3,479.2	8.3	10.5	174.37	-56.1	453.2	618.3	602.7	15.62	39.587		
3,700.0	3,692.7	3,609.0	3,573.8	8.6	10.9	174.46	-58.7	470.7	645.5	629.4	16.09	40.117		
3,800.0	3,792.5	3,705.8	3,669.0	8.8	11.3	174.54	-61.3	488.4	670.5	653.9	16.55	40.506		
3,900.0	3,892.4	3,803.2	3,764.7	9.0	11.7	174.60	-64.0	506.1	692.9	675.9	17.01	40.738		
4,000.0	3,992.4	3,901.2	3,861.1	9.2	12.1	174.62	-66.7	524.0	712.8	695.4	17.46	40.829		
4,100.0	4,092.4	3,999.5	3,957.7	9.4	12.5	99.00	-69.4	541.9	731.2	713.3	17.91	40.836		
4,200.0	4,192.4	4,097.8	4,054.3	9.6	12.9	98.99	-72.1	559.8	749.7	731.3	18.37	40.811		
4,300.0	4,292.4	4,196.1	4,150.9	9.8	13.3	98.98	-74.8	577.7	768.1	749.2	18.83	40.784		
4,400.0	4,392.4	4,294.4	4,247.5	10.0	13.7	98.97	-77.4	595.6	786.5	767.2	19.30	40.758		
4,500.0	4,492.4	4,392.7	4,344.1	10.2	14.2	98.96	-80.1	613.5	804.9	785.2	19.76	40.732		
4,600.0	4,592.4	4,491.0	4,440.7	10.4	14.6	98.95	-82.8	631.4	823.3	803.1	20.23	40.705		
4,700.0	4,692.4	4,589.3	4,537.3	10.6	15.0	98.94	-85.5	649.3	841.8	821.1	20.69	40.679		
4,800.0	4,792.4	4,687.6	4,633.9	10.8	15.4	98.93	-88.2	667.2	860.2	839.0	21.16	40.653		
4,900.0	4,892.4	4,785.8	4,730.5	11.0	15.8	98.93	-90.9	685.1	878.6	857.0	21.63	40.627		
5,000.0	4,992.4	4,884.1	4,827.1	11.2	16.2	98.92	-93.6	703.0	897.0	874.9	22.09	40.601		
5,100.0	5,092.4	4,982.4	4,923.7	11.5	16.6	98.91	-96.3	720.9	915.4	892.9	22.56	40.576		

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 East Federal 30-31-6-15-4CH
Project:	Sec.30-T12N-R65W	TVD Reference:	WELL @ 6027.0ft (RKB - 25')
Reference Site:	Matira East Federal Pad Sec.30-T12N-R65W	MD Reference:	WELL @ 6027.0ft (RKB - 25')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Matira East Federal 30-31-6-15-4CH	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 (8-25-14)	Offset TVD Reference:	Offset Datum

Offset Design Matira East Federal Pad Sec.30-T12N-R65W - Matira East 30-31-6-15-2CH - Wellbore #1 - Plan #1 (8-2												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance									
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	Warning
5,200.0	5,192.4	5,080.7	5,020.3	11.7	17.0	98.90	-99.0	738.8	933.9	910.8	23.03	40.550	
5,300.0	5,292.4	5,179.0	5,117.0	11.9	17.4	98.90	-101.7	756.7	952.3	928.8	23.50	40.526	
5,400.0	5,392.4	5,277.3	5,213.6	12.1	17.8	98.89	-104.3	774.6	970.7	946.7	23.97	40.501	
5,500.0	5,492.4	5,375.6	5,310.2	12.3	18.2	98.88	-107.0	792.5	989.1	964.7	24.44	40.477	

Company:	Cirque Resources LP	Local Co-ordinate Reference:	Well Matira East Federal 30-31-6-15-4CH
Project:	Sec.30-T12N-R65W	TVD Reference:	WELL @ 6027.0ft (RKB - 25')
Reference Site:	Matira East Federal Pad Sec.30-T12N-R65W	MD Reference:	WELL @ 6027.0ft (RKB - 25')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Matira East Federal 30-31-6-15-4CH	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 (8-25-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 6027.0ft (RKB - 25')

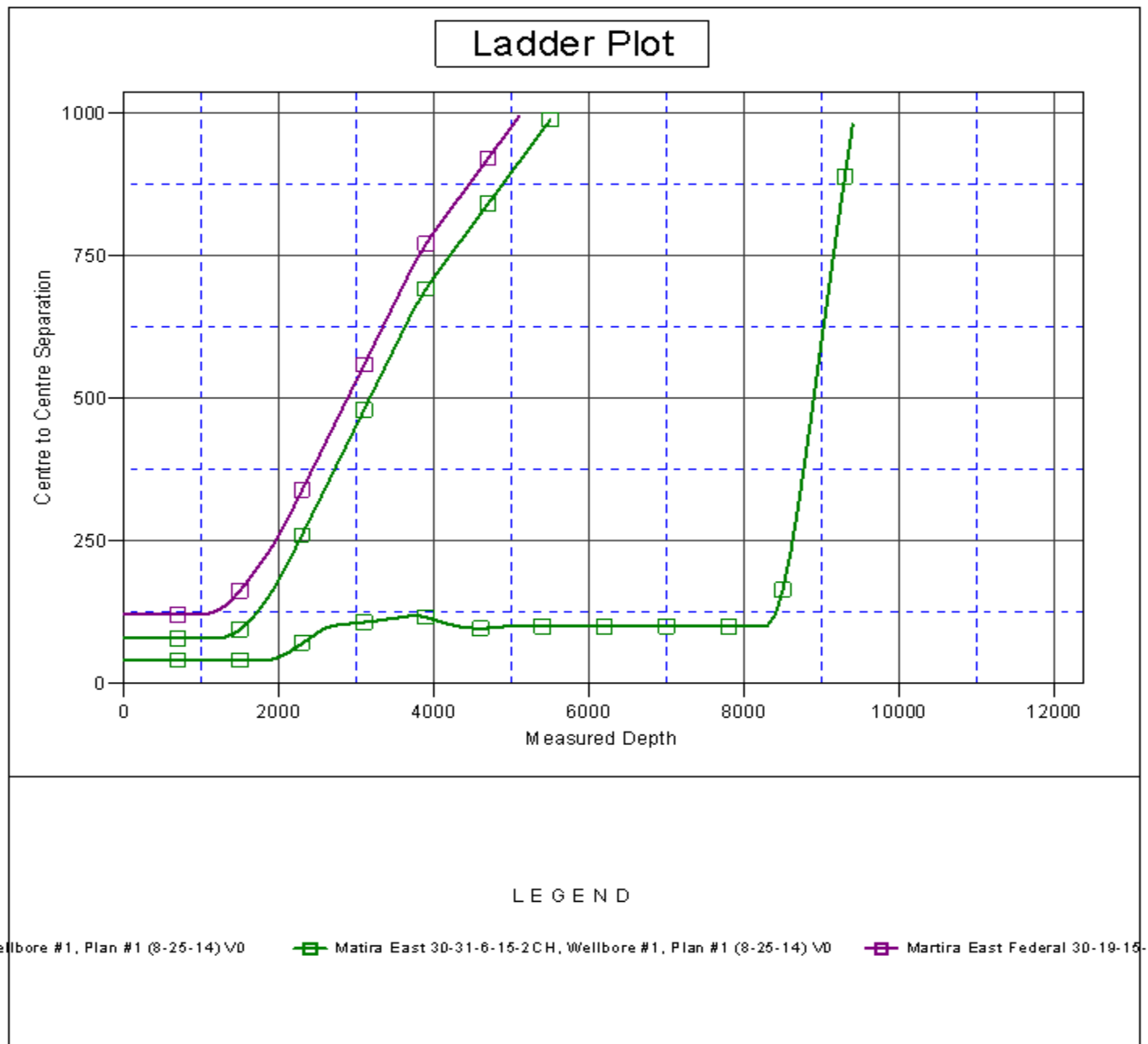
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Matira East Federal 30-31-6-15-4CH

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.52°



Company:	Cirque Resources LP	Local Co-ordinate Reference:	Well Matira East Federal 30-31-6-15-4CH
Project:	Sec.30-T12N-R65W	TVD Reference:	WELL @ 6027.0ft (RKB - 25')
Reference Site:	Matira East Federal Pad Sec.30-T12N-R65W	MD Reference:	WELL @ 6027.0ft (RKB - 25')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Matira East Federal 30-31-6-15-4CH	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 (8-25-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 6027.0ft (RKB - 25')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Matira East Federal 30-31-6-15-4CH

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.52°

