



Rockcliff Energy

Lea County, NM (NAD 27 NME)

Everest State 2

1H

ST #1

Design: ST #1

Standard Survey Report

12 January, 2017



Scientific Drilling

www.scientificdrilling.com

Company:	Rockcliff Energy	Local Co-ordinate Reference:	Site Everest State 2
Project:	Lea County, NM (NAD 27 NME)	TVD Reference:	KB @ 4266.0usft
Site:	Everest State 2	MD Reference:	KB @ 4266.0usft
Well:	1H	North Reference:	Grid
Wellbore:	ST #1	Survey Calculation Method:	Minimum Curvature
Design:	ST #1	Database:	Midland District

Project	Lea County, NM (NAD 27 NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Everest State 2		
Site Position:		Northing:	936,039.00 usft
From:	Map	Easting:	771,624.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	33° 34' 11.736 N
		Longitude:	103° 26' 29.756 W
		Grid Convergence:	0.49 °

Well	1H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	0.0 usft
		Latitude:	33° 34' 11.736 N
		Longitude:	103° 26' 29.756 W
		Ground Level:	4,250.0 usft

Wellbore	ST #1		
Magnetics	Model Name	Sample Date	Declination (°)
	HDGM	12/27/2016	7.08
			Dip Angle (°)
			61.37
			Field Strength (nT)
			48,826

Design	ST #1		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	4,177.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
			Direction (°)
			179.38

Survey Program	Date 1/12/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
196.0	4,177.0	SDI MWD (Pilot Hole)	MWD+HDGM
4,189.0	9,420.0	SDI MWD (ST #1)	MWD+HDGM
			Description
			OWSG MWD + HDGM
			OWSG MWD + HDGM

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
196.0	0.42	69.02	196.0	0.3	0.7	-0.2	0.21	0.21	0.00
383.0	0.75	54.60	383.0	1.2	2.3	-1.2	0.19	0.18	-7.71
566.0	0.77	45.18	566.0	2.8	4.2	-2.7	0.07	0.01	-5.15
750.0	0.80	42.36	750.0	4.6	5.9	-4.5	0.03	0.02	-1.53
939.0	0.85	50.10	938.9	6.5	7.9	-6.4	0.06	0.03	4.10
1,127.0	0.69	65.86	1,126.9	7.8	10.0	-7.7	0.14	-0.09	8.38
1,315.0	0.36	64.02	1,314.9	8.5	11.5	-8.4	0.18	-0.18	-0.98
1,504.0	0.44	62.14	1,503.9	9.1	12.7	-9.0	0.04	0.04	-0.99
1,691.0	0.41	75.78	1,690.9	9.6	14.0	-9.5	0.06	-0.02	7.29

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Wellbore:	ST #1	Survey Calculation Method:	Minimum Curvature
Design:	ST #1	Database:	Midland District

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)
1,879.0	0.56	82.32	1,878.9	9.9	15.6	-9.8	0.08	0.08	3.48
2,067.0	0.59	95.84	2,066.9	10.0	17.4	-9.8	0.07	0.02	7.19
2,183.0	0.52	107.33	2,182.9	9.7	18.5	-9.5	0.11	-0.06	9.91
2,293.0	0.58	117.61	2,292.9	9.3	19.5	-9.1	0.10	0.05	9.35
2,482.0	0.67	115.50	2,481.9	8.4	21.3	-8.2	0.05	0.05	-1.12
2,670.0	0.78	110.80	2,669.8	7.5	23.5	-7.2	0.07	0.06	-2.50
2,858.0	0.74	103.85	2,857.8	6.7	25.9	-6.5	0.05	-0.02	-3.70
3,046.0	0.94	110.72	3,045.8	5.9	28.5	-5.6	0.12	0.11	3.65
3,235.0	1.04	105.90	3,234.8	4.9	31.6	-4.5	0.07	0.05	-2.55
3,424.0	0.96	133.44	3,423.8	3.3	34.4	-3.0	0.26	-0.04	14.57
3,613.0	1.02	93.87	3,612.7	2.1	37.2	-1.7	0.36	0.03	-20.94
3,801.0	1.17	87.05	3,800.7	2.1	40.8	-1.7	0.11	0.08	-3.63
3,989.0	1.01	86.35	3,988.7	2.3	44.4	-1.8	0.09	-0.09	-0.37
4,177.0	0.77	74.79	4,176.6	2.8	47.3	-2.2	0.16	-0.13	-6.15
4,189.0	2.10	155.66	4,188.6	2.6	47.4	-2.1	17.66	11.08	673.92
4,221.0	5.21	169.16	4,220.6	0.6	48.0	-0.1	10.02	9.72	42.19
4,252.0	7.64	176.67	4,251.4	-2.8	48.3	3.3	8.28	7.84	24.23
4,283.0	10.65	177.12	4,282.0	-7.7	48.6	8.3	9.71	9.71	1.45
4,315.0	14.61	180.05	4,313.2	-14.7	48.8	15.3	12.53	12.38	9.16
4,346.0	20.05	185.59	4,342.8	-23.9	48.2	24.5	18.32	17.55	17.87
4,377.0	25.36	190.94	4,371.4	-35.8	46.5	36.3	18.36	17.13	17.26
4,408.0	29.32	193.13	4,398.9	-49.7	43.5	50.1	13.18	12.77	7.06
4,439.0	31.20	194.60	4,425.7	-64.8	39.7	65.3	6.52	6.06	4.74
4,471.0	32.70	190.55	4,452.8	-81.4	36.0	81.7	8.17	4.69	-12.66
4,502.0	34.66	187.72	4,478.6	-98.3	33.3	98.7	8.10	6.32	-9.13
4,534.0	36.75	187.80	4,504.6	-116.8	30.8	117.2	6.53	6.53	0.25
4,565.0	38.38	187.51	4,529.2	-135.6	28.3	135.9	5.29	5.26	-0.94
4,596.0	41.12	188.22	4,553.0	-155.2	25.6	155.5	8.96	8.84	2.29
4,628.0	44.35	187.06	4,576.5	-176.7	22.7	177.0	10.39	10.09	-3.63
4,659.0	47.14	185.63	4,598.1	-198.8	20.2	199.0	9.59	9.00	-4.61
4,675.3	48.62	185.26	4,609.1	-210.8	19.1	211.0	9.22	9.06	-2.27
FTP (MD= 4675.3')									
4,690.0	49.95	184.94	4,618.7	-221.9	18.1	222.1	9.22	9.07	-2.18
4,722.0	52.73	184.30	4,638.7	-246.8	16.1	247.0	8.83	8.69	-2.00
4,753.0	55.48	184.02	4,656.8	-271.9	14.3	272.0	8.90	8.87	-0.90
4,785.0	58.53	184.55	4,674.3	-298.6	12.3	298.7	9.63	9.53	1.66
4,816.0	62.60	185.01	4,689.5	-325.5	10.0	325.6	13.19	13.13	1.48
4,847.0	65.87	184.57	4,703.0	-353.3	7.7	353.4	10.63	10.55	-1.42
4,878.0	69.33	184.76	4,714.8	-381.9	5.4	381.9	11.18	11.16	0.61
4,910.0	72.42	183.82	4,725.3	-412.0	3.1	412.1	10.05	9.66	-2.94
4,941.0	75.64	182.77	4,733.8	-441.8	1.4	441.8	10.89	10.39	-3.39
4,972.0	79.10	181.85	4,740.6	-472.0	0.2	472.0	11.53	11.16	-2.97
5,004.0	82.81	181.01	4,745.6	-503.6	-0.6	503.6	11.88	11.59	-2.63

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Wellbore:	ST #1	Survey Calculation Method:	Minimum Curvature
Design:	ST #1	Database:	Midland District

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)	
5,035.0	86.27	180.12	4,748.5	-534.5	-0.9	534.4	11.52	11.16	-2.87	
5,130.0	91.04	180.19	4,750.8	-629.4	-1.2	629.4	5.02	5.02	0.07	
5,224.0	91.81	181.04	4,748.4	-723.4	-2.2	723.3	1.22	0.82	0.90	
5,318.0	90.03	181.38	4,746.9	-817.3	-4.2	817.2	1.93	-1.89	0.36	
5,412.0	90.13	181.95	4,746.8	-911.3	-6.9	911.2	0.62	0.11	0.61	
5,506.0	89.73	179.82	4,746.9	-1,005.3	-8.3	1,005.1	2.31	-0.43	-2.27	
5,601.0	91.07	177.70	4,746.2	-1,100.2	-6.3	1,100.1	2.64	1.41	-2.23	
5,695.0	89.73	176.02	4,745.6	-1,194.1	-1.1	1,194.0	2.29	-1.43	-1.79	
5,790.0	89.83	176.25	4,745.9	-1,288.9	5.3	1,288.9	0.26	0.11	0.24	
5,884.0	91.01	176.25	4,745.3	-1,382.7	11.4	1,382.7	1.26	1.26	0.00	
5,979.0	91.17	177.44	4,743.5	-1,477.5	16.6	1,477.6	1.26	0.17	1.25	
6,073.0	90.20	177.97	4,742.3	-1,571.4	20.4	1,571.6	1.18	-1.03	0.56	
6,167.0	87.42	178.11	4,744.3	-1,665.3	23.6	1,665.5	2.96	-2.96	0.15	
6,261.0	89.20	178.87	4,747.1	-1,759.3	26.1	1,759.4	2.06	1.89	0.81	
6,356.0	92.55	180.39	4,745.6	-1,854.2	26.7	1,854.4	3.87	3.53	1.60	
6,450.0	90.80	179.13	4,742.9	-1,948.2	27.1	1,948.4	2.29	-1.86	-1.34	
6,544.0	89.03	177.95	4,743.0	-2,042.1	29.5	2,042.3	2.26	-1.88	-1.26	
6,638.0	88.89	178.40	4,744.7	-2,136.1	32.5	2,136.3	0.50	-0.15	0.48	
6,732.0	90.60	178.85	4,745.1	-2,230.1	34.7	2,230.3	1.88	1.82	0.48	
6,826.0	89.66	178.96	4,744.9	-2,324.0	36.5	2,324.3	1.01	-1.00	0.12	
6,921.0	91.51	178.70	4,743.9	-2,419.0	38.5	2,419.3	1.97	1.95	-0.27	
7,015.0	90.27	178.90	4,742.5	-2,513.0	40.4	2,513.3	1.34	-1.32	0.21	
7,109.0	89.43	179.35	4,742.7	-2,607.0	41.9	2,607.3	1.01	-0.89	0.48	
7,203.0	88.62	180.02	4,744.3	-2,700.9	42.4	2,701.2	1.12	-0.86	0.71	
7,297.0	89.60	179.11	4,745.8	-2,794.9	43.1	2,795.2	1.42	1.04	-0.97	
7,391.0	88.99	179.79	4,746.9	-2,888.9	44.0	2,889.2	0.97	-0.65	0.72	
7,485.0	89.10	181.30	4,748.5	-2,982.9	43.1	2,983.2	1.61	0.12	1.61	
7,580.0	88.59	181.26	4,750.4	-3,077.9	41.0	3,078.1	0.54	-0.54	-0.04	
7,674.0	90.13	181.51	4,751.5	-3,171.8	38.7	3,172.0	1.66	1.64	0.27	
7,768.0	89.83	181.43	4,751.5	-3,265.8	36.3	3,266.0	0.33	-0.32	-0.09	
7,862.0	90.67	181.78	4,751.1	-3,359.7	33.7	3,359.9	0.97	0.89	0.37	
7,956.0	90.97	181.93	4,749.7	-3,453.7	30.6	3,453.8	0.36	0.32	0.16	
8,050.0	90.71	182.69	4,748.4	-3,547.6	26.8	3,547.7	0.85	-0.28	0.81	
8,143.0	88.86	181.48	4,748.7	-3,640.5	23.5	3,640.6	2.38	-1.99	-1.30	
8,237.0	88.49	181.45	4,750.9	-3,734.5	21.1	3,734.5	0.39	-0.39	-0.03	
8,331.0	88.92	181.17	4,753.0	-3,828.4	18.9	3,828.4	0.55	0.46	-0.30	
8,425.0	88.63	180.18	4,755.0	-3,922.4	17.8	3,922.4	1.10	-0.31	-1.05	
8,519.0	89.09	178.75	4,756.9	-4,016.4	18.7	4,016.3	1.60	0.49	-1.52	
8,614.0	89.83	178.25	4,757.8	-4,111.3	21.2	4,111.3	0.94	0.78	-0.53	
8,708.0	89.53	177.61	4,758.3	-4,205.3	24.6	4,205.3	0.75	-0.32	-0.68	
8,802.0	89.60	178.68	4,759.0	-4,299.2	27.6	4,299.3	1.14	0.07	1.14	
8,896.0	91.31	180.82	4,758.3	-4,393.2	28.0	4,393.3	2.91	1.82	2.28	
8,989.0	90.13	180.55	4,757.1	-4,486.2	26.9	4,486.2	1.30	-1.27	-0.29	

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Well:	1H	North Reference:	Grid
Wellbore:	ST #1	Survey Calculation Method:	Minimum Curvature
Design:	ST #1	Database:	Midland District

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)
9,084.0	89.06	178.90	4,757.8	-4,581.2	27.4	4,581.2	2.07	-1.13	-1.74
9,178.0	87.07	177.53	4,761.0	-4,675.1	30.3	4,675.1	2.57	-2.12	-1.46
9,272.0	89.26	178.57	4,764.0	-4,769.0	33.5	4,769.1	2.58	2.33	1.11
9,342.6	90.98	179.37	4,763.8	-4,839.6	34.8	4,839.6	2.69	2.44	1.13
LTP (MD= 9342.6')									
9,363.0	91.48	179.60	4,763.4	-4,859.9	34.9	4,860.0	2.69	2.44	1.13
Final MWD Survey (9363.0' MD)									
9,420.0	91.48	179.60	4,761.9	-4,916.9	35.3	4,917.0	0.00	0.00	0.00
Final Projection to Bit (9420.0' MD)									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,675.3	4,609.1	-210.8	19.1	FTP (MD= 4675.3')
9,342.6	4,763.8	-4,839.6	34.8	LTP (MD= 9342.6')
9,363.0	4,763.4	-4,859.9	34.9	Final MWD Survey (9363.0' MD)
9,420.0	4,761.9	-4,916.9	35.3	Final Projection to Bit (9420.0' MD)

Checked By: _____	Approved By: _____	Date: _____
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