

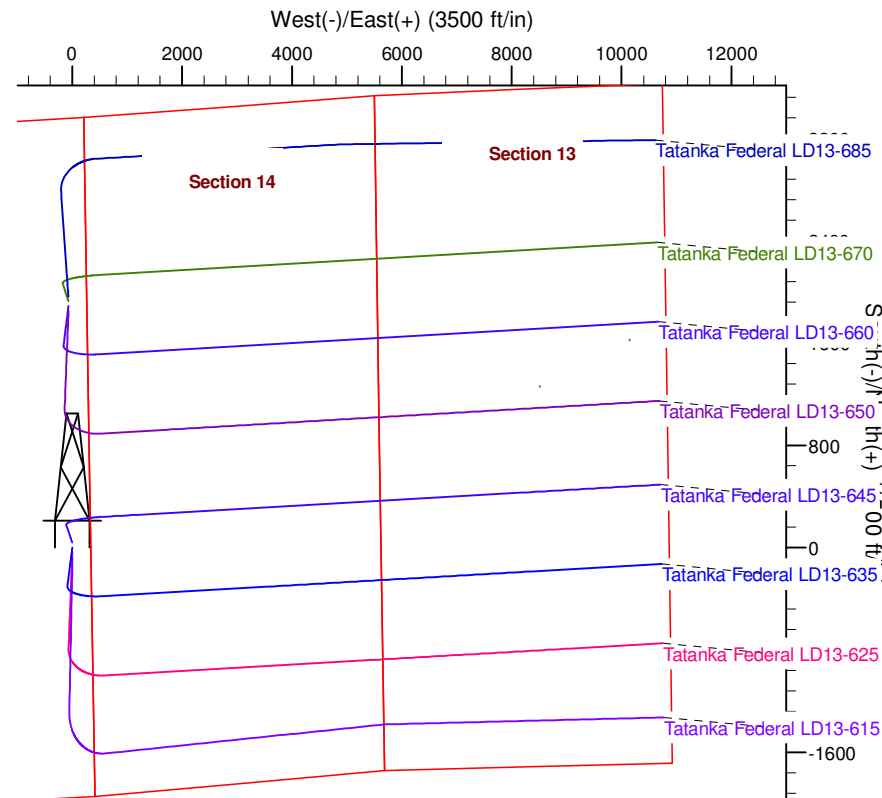
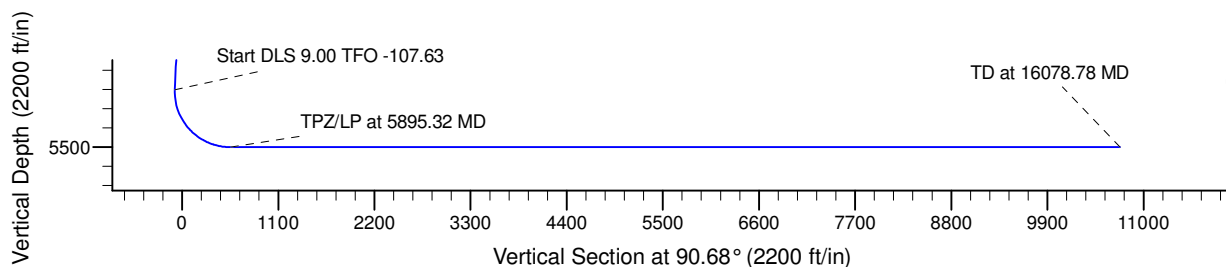
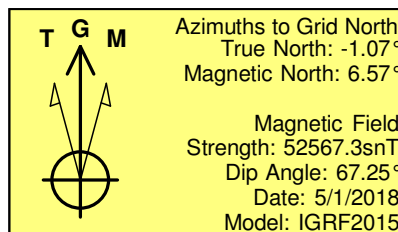
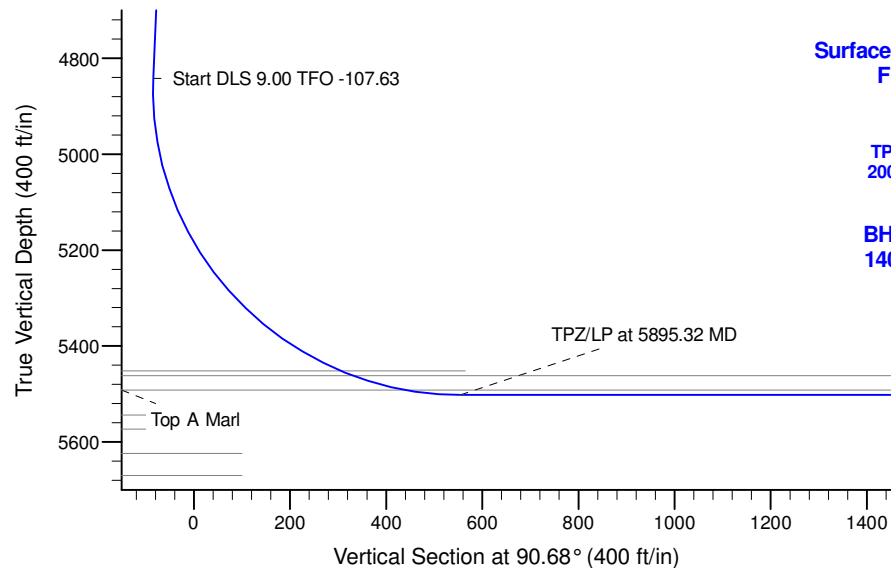
Project: East Pony
Site: LD Section 15
Well: Tatanka Federal LD13-635
Wellbore: Wellbore #1
Design: Plan #1

Northern Region - DJ Basin

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	0.00	0.00	
3	3036.82	8.74	196.40	3035.13	-31.89	-9.39	2.00	196.40	-9.01	
4	4865.71	8.74	196.40	4842.80	-298.37	-87.84	0.00	0.00	-84.32	
5	5895.32	90.00	88.58	5502.00	-379.01	550.29	9.00	-107.63	554.72	Tatanka Federal LD13-635 TPZ/LP
6	16078.78	90.00	88.58	5502.00	-126.48	10730.62	0.00	0.00	10731.36	Tatanka Federal LD13-635 BHL



WELL DETAILS: Tatanka Federal LD13-635

	Northing	Easting	Latitude	Longitude
0.00	0.00	1520176.05	4662.00 40.7494800	-103.8418200

Plan: Plan #1 (Tatanka Federal LD13-635/Wellbore #1)

Created By: Colby Baxter Date: 11:05, July 10 2018

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Northern Region - DJ Basin

East Pony

LD Section 15

Tatanka Federal LD13-635

Wellbore #1

Plan: Plan #1

Standard Survey Report

10 July, 2018

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Tatanka Federal LD13-635
Project:	East Pony	TVD Reference:	Well @ 4692.00ft
Site:	LD Section 15	MD Reference:	Well @ 4692.00ft
Well:	Tatanka Federal LD13-635	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

Project	East Pony, Weld County Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		LD Section 15			
Site Position:		Northing:	1,522,925.45 usft	Latitude:	40.7571973
From:	Map	Easting:	3,456,045.62 usft	Longitude:	-103.8537859
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	1.06 °

Well	Tatanka Federal LD13-635					
Well Position	+N/-S	0.00 ft	Northing:	1,520,176.05 usft	Latitude:	40.7494800
	+E/-W	0.00 ft	Easting:	3,459,412.70 usft	Longitude:	-103.8418200
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,662.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/1/2018	7.64	67.25	52,567.29634653

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	90.68	

Survey Tool Program	Date	7/10/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	16,078.77	Plan #1 (Wellbore #1)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis	

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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Tatanka Federal LD13-635
Project:	East Pony	TVD Reference:	Well @ 4692.00ft
Site:	LD Section 15	MD Reference:	Well @ 4692.00ft
Well:	Tatanka Federal LD13-635	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

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)	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,700.00	2.00	196.40	2,699.98	-1.67	-0.49	-0.47	2.00	2.00	0.00	
2,800.00	4.00	196.40	2,799.84	-6.69	-1.97	-1.89	2.00	2.00	0.00	
2,900.00	6.00	196.40	2,899.45	-15.05	-4.43	-4.25	2.00	2.00	0.00	
3,000.00	8.00	196.40	2,998.70	-26.75	-7.87	-7.56	2.00	2.00	0.00	
3,036.82	8.74	196.40	3,035.13	-31.89	-9.39	-9.01	2.00	2.00	0.00	
3,100.00	8.74	196.40	3,097.58	-41.09	-12.10	-11.61	0.00	0.00	0.00	
3,200.00	8.74	196.40	3,196.42	-55.66	-16.39	-15.73	0.00	0.00	0.00	
3,300.00	8.74	196.40	3,295.26	-70.23	-20.68	-19.85	0.00	0.00	0.00	
3,400.00	8.74	196.40	3,394.10	-84.80	-24.97	-23.96	0.00	0.00	0.00	
3,500.00	8.74	196.40	3,492.94	-99.37	-29.26	-28.08	0.00	0.00	0.00	
3,600.00	8.74	196.40	3,591.78	-113.94	-33.54	-32.20	0.00	0.00	0.00	
3,700.00	8.74	196.40	3,690.61	-128.52	-37.83	-36.32	0.00	0.00	0.00	
3,800.00	8.74	196.40	3,789.45	-143.09	-42.12	-40.43	0.00	0.00	0.00	
3,900.00	8.74	196.40	3,888.29	-157.66	-46.41	-44.55	0.00	0.00	0.00	
4,000.00	8.74	196.40	3,987.13	-172.23	-50.70	-48.67	0.00	0.00	0.00	
4,100.00	8.74	196.40	4,085.97	-186.80	-54.99	-52.79	0.00	0.00	0.00	
4,200.00	8.74	196.40	4,184.81	-201.37	-59.28	-56.90	0.00	0.00	0.00	
4,300.00	8.74	196.40	4,283.65	-215.94	-63.57	-61.02	0.00	0.00	0.00	
4,400.00	8.74	196.40	4,382.49	-230.51	-67.86	-65.14	0.00	0.00	0.00	
4,500.00	8.74	196.40	4,481.33	-245.08	-72.15	-69.26	0.00	0.00	0.00	
4,600.00	8.74	196.40	4,580.17	-259.65	-76.44	-73.37	0.00	0.00	0.00	
4,700.00	8.74	196.40	4,679.01	-274.22	-80.73	-77.49	0.00	0.00	0.00	
4,800.00	8.74	196.40	4,777.85	-288.79	-85.02	-81.61	0.00	0.00	0.00	
4,865.71	8.74	196.40	4,842.80	-298.37	-87.84	-84.32	0.00	0.00	0.00	
4,900.00	8.33	175.67	4,876.72	-303.34	-88.39	-84.80	9.00	-1.17	-60.46	
5,000.00	12.55	129.68	4,975.20	-317.53	-79.46	-75.71	9.00	4.21	-45.99	
5,100.00	20.15	112.07	5,071.14	-330.97	-55.09	-51.18	9.00	7.61	-17.61	

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Tatanka Federal LD13-635
Project:	East Pony	TVD Reference:	Well @ 4692.00ft
Site:	LD Section 15	MD Reference:	Well @ 4692.00ft
Well:	Tatanka Federal LD13-635	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

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)
5,200.00	28.56	104.17	5,162.18	-343.32	-15.86	-11.81	9.00	8.41	-7.90
5,300.00	37.23	99.68	5,246.08	-354.28	37.25	41.42	9.00	8.67	-4.49
5,400.00	46.01	96.70	5,320.77	-363.58	102.93	107.21	9.00	8.78	-2.98
5,500.00	54.85	94.49	5,384.41	-370.99	179.58	183.94	9.00	8.84	-2.21
5,600.00	63.72	92.72	5,435.43	-376.33	265.30	269.71	9.00	8.87	-1.77
5,700.00	72.61	91.20	5,472.59	-379.47	357.97	362.42	9.00	8.89	-1.52
5,800.00	81.51	89.83	5,494.95	-380.33	455.33	459.78	9.00	8.90	-1.37
5,895.32	90.00	88.58	5,502.00	-379.01	550.29	554.72	9.00	8.90	-1.31
5,900.00	90.00	88.58	5,502.00	-378.89	554.97	559.40	0.00	0.00	0.00
6,000.00	90.00	88.58	5,502.00	-376.41	654.94	659.33	0.00	0.00	0.00
6,100.00	90.00	88.58	5,502.00	-373.93	754.91	759.26	0.00	0.00	0.00
6,200.00	90.00	88.58	5,502.00	-371.45	854.88	859.20	0.00	0.00	0.00
6,300.00	90.00	88.58	5,502.00	-368.97	954.85	959.13	0.00	0.00	0.00
6,400.00	90.00	88.58	5,502.00	-366.49	1,054.82	1,059.06	0.00	0.00	0.00
6,500.00	90.00	88.58	5,502.00	-364.01	1,154.79	1,159.00	0.00	0.00	0.00
6,600.00	90.00	88.58	5,502.00	-361.53	1,254.75	1,258.93	0.00	0.00	0.00
6,700.00	90.00	88.58	5,502.00	-359.05	1,354.72	1,358.86	0.00	0.00	0.00
6,800.00	90.00	88.58	5,502.00	-356.57	1,454.69	1,458.79	0.00	0.00	0.00
6,900.00	90.00	88.58	5,502.00	-354.09	1,554.66	1,558.73	0.00	0.00	0.00
7,000.00	90.00	88.58	5,502.00	-351.61	1,654.63	1,658.66	0.00	0.00	0.00
7,100.00	90.00	88.58	5,502.00	-349.13	1,754.60	1,758.59	0.00	0.00	0.00
7,200.00	90.00	88.58	5,502.00	-346.65	1,854.57	1,858.53	0.00	0.00	0.00
7,300.00	90.00	88.58	5,502.00	-344.17	1,954.54	1,958.46	0.00	0.00	0.00
7,400.00	90.00	88.58	5,502.00	-341.69	2,054.51	2,058.39	0.00	0.00	0.00
7,500.00	90.00	88.58	5,502.00	-339.21	2,154.48	2,158.33	0.00	0.00	0.00
7,600.00	90.00	88.58	5,502.00	-336.73	2,254.45	2,258.26	0.00	0.00	0.00
7,700.00	90.00	88.58	5,502.00	-334.25	2,354.42	2,358.19	0.00	0.00	0.00
7,800.00	90.00	88.58	5,502.00	-331.77	2,454.39	2,458.13	0.00	0.00	0.00
7,900.00	90.00	88.58	5,502.00	-329.29	2,554.35	2,558.06	0.00	0.00	0.00
8,000.00	90.00	88.58	5,502.00	-326.81	2,654.32	2,657.99	0.00	0.00	0.00
8,100.00	90.00	88.58	5,502.00	-324.33	2,754.29	2,757.92	0.00	0.00	0.00
8,200.00	90.00	88.58	5,502.00	-321.86	2,854.26	2,857.86	0.00	0.00	0.00
8,300.00	90.00	88.58	5,502.00	-319.38	2,954.23	2,957.79	0.00	0.00	0.00
8,400.00	90.00	88.58	5,502.00	-316.90	3,054.20	3,057.72	0.00	0.00	0.00
8,500.00	90.00	88.58	5,502.00	-314.42	3,154.17	3,157.66	0.00	0.00	0.00
8,600.00	90.00	88.58	5,502.00	-311.94	3,254.14	3,257.59	0.00	0.00	0.00
8,700.00	90.00	88.58	5,502.00	-309.46	3,354.11	3,357.52	0.00	0.00	0.00
8,800.00	90.00	88.58	5,502.00	-306.98	3,454.08	3,457.46	0.00	0.00	0.00
8,900.00	90.00	88.58	5,502.00	-304.50	3,554.05	3,557.39	0.00	0.00	0.00
9,000.00	90.00	88.58	5,502.00	-302.02	3,654.02	3,657.32	0.00	0.00	0.00
9,100.00	90.00	88.58	5,502.00	-299.54	3,753.99	3,757.26	0.00	0.00	0.00
9,200.00	90.00	88.58	5,502.00	-297.06	3,853.95	3,857.19	0.00	0.00	0.00
9,300.00	90.00	88.58	5,502.00	-294.58	3,953.92	3,957.12	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Tatanka Federal LD13-635
Project:	East Pony	TVD Reference:	Well @ 4692.00ft
Site:	LD Section 15	MD Reference:	Well @ 4692.00ft
Well:	Tatanka Federal LD13-635	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

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)
9,400.00	90.00	88.58	5,502.00	-292.10	4,053.89	4,057.05	0.00	0.00	0.00
9,500.00	90.00	88.58	5,502.00	-289.62	4,153.86	4,156.99	0.00	0.00	0.00
9,600.00	90.00	88.58	5,502.00	-287.14	4,253.83	4,256.92	0.00	0.00	0.00
9,700.00	90.00	88.58	5,502.00	-284.66	4,353.80	4,356.85	0.00	0.00	0.00
9,800.00	90.00	88.58	5,502.00	-282.18	4,453.77	4,456.79	0.00	0.00	0.00
9,900.00	90.00	88.58	5,502.00	-279.70	4,553.74	4,556.72	0.00	0.00	0.00
10,000.00	90.00	88.58	5,502.00	-277.22	4,653.71	4,656.65	0.00	0.00	0.00
10,100.00	90.00	88.58	5,502.00	-274.74	4,753.68	4,756.59	0.00	0.00	0.00
10,200.00	90.00	88.58	5,502.00	-272.26	4,853.65	4,856.52	0.00	0.00	0.00
10,300.00	90.00	88.58	5,502.00	-269.78	4,953.62	4,956.45	0.00	0.00	0.00
10,400.00	90.00	88.58	5,502.00	-267.30	5,053.59	5,056.39	0.00	0.00	0.00
10,500.00	90.00	88.58	5,502.00	-264.82	5,153.56	5,156.32	0.00	0.00	0.00
10,600.00	90.00	88.58	5,502.00	-262.34	5,253.52	5,256.25	0.00	0.00	0.00
10,700.00	90.00	88.58	5,502.00	-259.86	5,353.49	5,356.18	0.00	0.00	0.00
10,800.00	90.00	88.58	5,502.00	-257.38	5,453.46	5,456.12	0.00	0.00	0.00
10,900.00	90.00	88.58	5,502.00	-254.90	5,553.43	5,556.05	0.00	0.00	0.00
11,000.00	90.00	88.58	5,502.00	-252.42	5,653.40	5,655.98	0.00	0.00	0.00
11,100.00	90.00	88.58	5,502.00	-249.94	5,753.37	5,755.92	0.00	0.00	0.00
11,200.00	90.00	88.58	5,502.00	-247.46	5,853.34	5,855.85	0.00	0.00	0.00
11,300.00	90.00	88.58	5,502.00	-244.98	5,953.31	5,955.78	0.00	0.00	0.00
11,400.00	90.00	88.58	5,502.00	-242.50	6,053.28	6,055.72	0.00	0.00	0.00
11,500.00	90.00	88.58	5,502.00	-240.02	6,153.25	6,155.65	0.00	0.00	0.00
11,600.00	90.00	88.58	5,502.00	-237.54	6,253.22	6,255.58	0.00	0.00	0.00
11,700.00	90.00	88.58	5,502.00	-235.06	6,353.19	6,355.52	0.00	0.00	0.00
11,800.00	90.00	88.58	5,502.00	-232.58	6,453.16	6,455.45	0.00	0.00	0.00
11,900.00	90.00	88.58	5,502.00	-230.10	6,553.12	6,555.38	0.00	0.00	0.00
12,000.00	90.00	88.58	5,502.00	-227.62	6,653.09	6,655.31	0.00	0.00	0.00
12,100.00	90.00	88.58	5,502.00	-225.15	6,753.06	6,755.25	0.00	0.00	0.00
12,200.00	90.00	88.58	5,502.00	-222.67	6,853.03	6,855.18	0.00	0.00	0.00
12,300.00	90.00	88.58	5,502.00	-220.19	6,953.00	6,955.11	0.00	0.00	0.00
12,400.00	90.00	88.58	5,502.00	-217.71	7,052.97	7,055.05	0.00	0.00	0.00
12,500.00	90.00	88.58	5,502.00	-215.23	7,152.94	7,154.98	0.00	0.00	0.00
12,600.00	90.00	88.58	5,502.00	-212.75	7,252.91	7,254.91	0.00	0.00	0.00
12,700.00	90.00	88.58	5,502.00	-210.27	7,352.88	7,354.85	0.00	0.00	0.00
12,800.00	90.00	88.58	5,502.00	-207.79	7,452.85	7,454.78	0.00	0.00	0.00
12,900.00	90.00	88.58	5,502.00	-205.31	7,552.82	7,554.71	0.00	0.00	0.00
13,000.00	90.00	88.58	5,502.00	-202.83	7,652.79	7,654.65	0.00	0.00	0.00
13,100.00	90.00	88.58	5,502.00	-200.35	7,752.76	7,754.58	0.00	0.00	0.00
13,200.00	90.00	88.58	5,502.00	-197.87	7,852.73	7,854.51	0.00	0.00	0.00
13,300.00	90.00	88.58	5,502.00	-195.39	7,952.69	7,954.44	0.00	0.00	0.00
13,400.00	90.00	88.58	5,502.00	-192.91	8,052.66	8,054.38	0.00	0.00	0.00
13,500.00	90.00	88.58	5,502.00	-190.43	8,152.63	8,154.31	0.00	0.00	0.00
13,600.00	90.00	88.58	5,502.00	-187.95	8,252.60	8,254.24	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Tatanka Federal LD13-635
Project:	East Pony	TVD Reference:	Well @ 4692.00ft
Site:	LD Section 15	MD Reference:	Well @ 4692.00ft
Well:	Tatanka Federal LD13-635	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

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)
13,700.00	90.00	88.58	5,502.00	-185.47	8,352.57	8,354.18	0.00	0.00	0.00
13,800.00	90.00	88.58	5,502.00	-182.99	8,452.54	8,454.11	0.00	0.00	0.00
13,900.00	90.00	88.58	5,502.00	-180.51	8,552.51	8,554.04	0.00	0.00	0.00
14,000.00	90.00	88.58	5,502.00	-178.03	8,652.48	8,653.98	0.00	0.00	0.00
14,100.00	90.00	88.58	5,502.00	-175.55	8,752.45	8,753.91	0.00	0.00	0.00
14,200.00	90.00	88.58	5,502.00	-173.07	8,852.42	8,853.84	0.00	0.00	0.00
14,300.00	90.00	88.58	5,502.00	-170.59	8,952.39	8,953.78	0.00	0.00	0.00
14,400.00	90.00	88.58	5,502.00	-168.11	9,052.36	9,053.71	0.00	0.00	0.00
14,500.00	90.00	88.58	5,502.00	-165.63	9,152.33	9,153.64	0.00	0.00	0.00
14,600.00	90.00	88.58	5,502.00	-163.15	9,252.29	9,253.57	0.00	0.00	0.00
14,700.00	90.00	88.58	5,502.00	-160.67	9,352.26	9,353.51	0.00	0.00	0.00
14,800.00	90.00	88.58	5,502.00	-158.19	9,452.23	9,453.44	0.00	0.00	0.00
14,900.00	90.00	88.58	5,502.00	-155.71	9,552.20	9,553.37	0.00	0.00	0.00
15,000.00	90.00	88.58	5,502.00	-153.23	9,652.17	9,653.31	0.00	0.00	0.00
15,100.00	90.00	88.58	5,502.00	-150.75	9,752.14	9,753.24	0.00	0.00	0.00
15,200.00	90.00	88.58	5,502.00	-148.27	9,852.11	9,853.17	0.00	0.00	0.00
15,300.00	90.00	88.58	5,502.00	-145.79	9,952.08	9,953.11	0.00	0.00	0.00
15,400.00	90.00	88.58	5,502.00	-143.31	10,052.05	10,053.04	0.00	0.00	0.00
15,500.00	90.00	88.58	5,502.00	-140.83	10,152.02	10,152.97	0.00	0.00	0.00
15,600.00	90.00	88.58	5,502.00	-138.35	10,251.99	10,252.91	0.00	0.00	0.00
15,700.00	90.00	88.58	5,502.00	-135.87	10,351.96	10,352.84	0.00	0.00	0.00
15,800.00	90.00	88.58	5,502.00	-133.39	10,451.93	10,452.77	0.00	0.00	0.00
15,900.00	90.00	88.58	5,502.00	-130.92	10,551.89	10,552.70	0.00	0.00	0.00
16,000.00	90.00	88.58	5,502.00	-128.44	10,651.86	10,652.64	0.00	0.00	0.00
16,078.78	90.00	88.58	5,502.00	-126.48	10,730.62	10,731.36	0.00	0.00	0.00

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Tatanka Federal LD13-6	0.00	0.00	0.00	2,749.40	-3,367.08	1,522,925.45	3,456,045.62	40.7571973	-103.8537859
- plan misses target center by 4347.00ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									
Tatanka Federal LD13-6	0.00	0.00	4,842.81	-298.32	-87.83	1,519,877.73	3,459,324.87	40.7486658	-103.8421570
- plan misses target center by 0.05ft at 4865.71ft MD (4842.80 TVD, -298.37 N, -87.84 E)									
- Point									
Tatanka Federal LD13-6	0.00	0.00	5,502.00	-379.01	550.29	1,519,797.05	3,459,962.98	40.7484116	-103.8398599
- plan hits target center									
- Point									
Tatanka Federal LD13-6	0.00	0.00	5,502.00	-126.48	10,730.62	1,520,049.57	3,470,143.29	40.7485757	-103.8031076
- plan hits target center									
- Point									

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Tatanka Federal LD13-635
Project:	East Pony	TVD Reference:	Well @ 4692.00ft
Site:	LD Section 15	MD Reference:	Well @ 4692.00ft
Well:	Tatanka Federal LD13-635	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
385.00	385.00	Pierre				
719.00	719.00	Upper Pierre Aquifer Top				
1,343.00	1,343.00	Upper Pierre Aquifer Base				
3,193.51	3,190.00	Parkman				
3,684.20	3,675.00	Sussex				
4,284.16	4,268.00	Shannon				
4,643.33	4,623.00	Teepee Buttes				
5,639.96	5,452.00	Sharon Springs				
5,667.23	5,462.00	Top A Chalk				
5,781.73	5,492.00	Top A Marl				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2600	2600	0	0	Start Build 2.00	
4866	4843	-32	-9	Start DLS 9.00 TFO -107.63	
5895	5502	-298	-88	TPZ/LP at 5895.32 MD	
16,079	5502	-379	550	TD at 16078.78 MD	

Checked By: _____ Approved By: _____ Date: _____

Northern Region - DJ Basin

East Pony

LD Section 15

Tatanka Federal LD13-635

Wellbore #1

Plan #1

Anticollision Summary Report

10 July, 2018

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Tatanka Federal LD13-635
Project:	East Pony	TVD Reference:	Well @ 4692.00ft
Reference Site:	LD Section 15	MD Reference:	Well @ 4692.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tatanka Federal LD13-635	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	7/10/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	16,078.77	Plan #1 (Wellbore #1)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

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						
LD Section 01						
McCaffrey State LD12-74-1AHN - Original Drilling - Origin	14,472.11	10,391.02	4,095.59	3,958.42	29.857	CC
McCaffrey State LD12-74-1AHN - Original Drilling - Origin	14,500.00	10,391.02	4,095.69	3,958.28	29.806	ES
McCaffrey State LD12-74-1AHN - Original Drilling - Origin	16,078.78	10,391.02	4,399.46	4,237.89	27.229	SF
McCaffrey State LD12-75-1BHN - Original Drilling - Origin	13,963.73	10,303.02	4,098.06	3,968.25	31.570	CC
McCaffrey State LD12-75-1BHN - Original Drilling - Origin	14,000.00	10,303.02	4,098.22	3,967.90	31.447	ES
McCaffrey State LD12-75-1BHN - Original Drilling - Origin	15,800.00	10,303.02	4,490.65	4,327.50	27.524	SF
McCaffrey State LD12-75HN - Original Drilling - Original	13,590.60	10,402.02	4,102.41	3,975.10	32.224	CC
McCaffrey State LD12-75HN - Original Drilling - Original	13,700.00	10,402.02	4,103.87	3,974.45	31.710	ES
McCaffrey State LD12-75HN - Original Drilling - Original	15,400.00	10,402.02	4,483.72	4,320.61	27.489	SF
Nalen State LD12-76-1AHN - Original Drilling - Original D	13,125.84	10,388.02	4,106.95	3,983.85	33.363	CC, ES
Nalen State LD12-76-1AHN - Original Drilling - Original D	15,100.00	10,388.02	4,556.79	4,408.66	30.762	SF
Nalen State LD12-77-1BHN - Original Drilling - Original D	12,748.35	10,419.02	4,108.79	3,992.31	35.275	CC
Nalen State LD12-77-1BHN - Original Drilling - Original D	12,800.00	10,419.02	4,109.11	3,992.23	35.155	ES
Nalen State LD12-77-1BHN - Original Drilling - Original D	14,800.00	10,419.02	4,592.54	4,444.18	30.956	SF
Nalen State LD12-77HN - Original Drilling - Original Drilli	12,251.91	10,320.02	4,167.55	4,058.44	38.199	CC
Nalen State LD12-77HN - Original Drilling - Original Drilli	12,300.00	10,320.02	4,167.82	4,058.03	37.962	ES
Nalen State LD12-77HN - Original Drilling - Original Drilli	14,400.00	10,320.02	4,688.57	4,540.08	31.575	SF
Smith State LD12-72-1AHN - Original Drilling - Original D	15,732.68	10,216.02	4,087.91	3,933.70	26.509	CC, ES
Smith State LD12-72-1AHN - Original Drilling - Original D	16,078.78	10,216.02	4,102.54	3,945.98	26.205	SF
Smith State LD12-73-1BHN - Original Drilling - Original D	15,300.25	10,286.02	4,090.96	3,943.77	27.793	CC, ES
Smith State LD12-73-1BHN - Original Drilling - Original D	16,078.78	10,286.02	4,164.38	4,005.72	26.247	SF
Smith State LD12-73HN - Original Drilling - Original Drilli	14,867.92	10,349.02	4,093.66	3,952.50	29.000	CC
Smith State LD12-73HN - Original Drilling - Original Drilli	14,900.00	10,349.02	4,093.78	3,952.11	28.897	ES
Smith State LD12-73HN - Original Drilling - Original Drilli	16,078.78	10,349.02	4,268.98	4,104.44	25.944	SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Tatanka Federal LD13-635
Project:	East Pony	TVD Reference:	Well @ 4692.00ft
Reference Site:	LD Section 15	MD Reference:	Well @ 4692.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tatanka Federal LD13-635	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

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						
LD Section 02						
Gonsoulin State LD11-76HN - Original Drilling - Original D	7,629.65	10,851.00	4,090.65	4,033.85	72.013	CC, ES
Gonsoulin State LD11-76HN - Original Drilling - Original D	10,900.00	10,851.00	5,237.24	5,122.00	45.447	SF
Gradishar State LD11-72-1BHN - Original Drilling - Origin	10,735.94	10,443.02	4,116.77	4,025.88	45.293	CC
Gradishar State LD11-72-1BHN - Original Drilling - Origin	10,800.00	10,443.02	4,117.27	4,025.68	44.957	ES
Gradishar State LD11-72-1BHN - Original Drilling - Origin	13,200.00	10,443.02	4,797.85	4,662.68	35.494	SF
Gradishar State LD11-72HN - Original Drilling - Original D	10,291.73	10,436.02	4,113.03	4,026.70	47.642	CC
Gradishar State LD11-72HN - Original Drilling - Original D	10,400.00	10,436.02	4,114.46	4,026.32	46.681	ES
Gradishar State LD11-72HN - Original Drilling - Original D	12,700.00	10,436.02	4,766.21	4,632.03	35.520	SF
Gradishar State LD11-73-1AHN - Original Drilling - Origin	9,836.56	10,448.02	4,108.16	4,024.51	49.108	CC
Gradishar State LD11-73-1AHN - Original Drilling - Origin	9,900.00	10,448.02	4,108.65	4,023.68	48.351	ES
Gradishar State LD11-73-1AHN - Original Drilling - Origin	12,300.00	10,448.02	4,790.15	4,654.94	35.427	SF
Little State LD11-74-1BHN - Original Drilling - Original Dr	9,389.07	10,663.00	4,108.49	4,032.44	54.027	CC
Little State LD11-74-1BHN - Original Drilling - Original Dr	9,400.00	10,663.00	4,108.50	4,032.38	53.972	ES
Little State LD11-74-1BHN - Original Drilling - Original Dr	12,200.00	10,663.00	4,978.05	4,852.41	39.621	SF
Little State LD11-74HN - Original Drilling - Original Drillin	8,950.49	10,598.00	4,102.64	4,032.18	58.232	CC
Little State LD11-74HN - Original Drilling - Original Drillin	9,000.00	10,598.00	4,102.94	4,031.83	57.703	ES
Little State LD11-74HN - Original Drilling - Original Drillin	11,800.00	10,598.00	4,995.14	4,869.05	39.618	SF
Moses State LD11-77-1AHN - Original Drilling - Original D	7,221.65	10,911.02	4,090.15	4,038.52	79.218	CC
Moses State LD11-77-1AHN - Original Drilling - Original D	7,300.00	10,911.02	4,090.90	4,038.50	78.064	ES
Moses State LD11-77-1AHN - Original Drilling - Original D	10,500.00	10,911.02	5,241.84	5,126.75	45.547	SF
Moses State LD11-78-1BHN - Original Drilling - Original D	6,758.55	10,639.02	4,057.71	4,010.83	86.548	CC
Moses State LD11-78-1BHN - Original Drilling - Original D	6,800.00	10,639.02	4,057.92	4,010.63	85.809	ES
Moses State LD11-78-1BHN - Original Drilling - Original D	10,100.00	10,639.02	5,256.45	5,144.86	47.102	SF
Moses State LD11-78HN - Original Drilling - Original Drill	6,337.70	10,870.02	4,111.79	4,065.60	89.029	CC
Moses State LD11-78HN - Original Drilling - Original Drill	6,400.00	10,870.02	4,112.26	4,065.27	87.514	ES
Moses State LD11-78HN - Original Drilling - Original Drill	9,700.00	10,870.02	5,311.48	5,198.57	47.039	SF
LD Section 11						
Castor LD11-75HN - Original Drilling - Original Drilling - A	8,341.62	9,890.00	4,432.51	4,368.85	69.630	CC
Castor LD11-75HN - Original Drilling - Original Drilling - A	8,400.00	9,890.00	4,432.89	4,368.48	68.816	ES
Castor LD11-75HN - Original Drilling - Original Drilling - A	11,400.00	9,890.00	5,385.24	5,270.63	46.987	SF
LD Section 12						
Castor Federal LD13-78HN - Original Drilling - Original	11,639.37	9,052.67	59.36	-17.07	0.777	Level 1, CC, ES, SF
Castor LD12-78HN - Original Drilling - Original Drilling - A	11,602.46	4,852.96	4,104.42	4,011.34	44.097	CC, ES
Castor LD12-78HN - Original Drilling - Original Drilling - A	12,700.00	4,852.03	4,248.63	4,145.62	41.245	SF
LD Section 13						
Kog Nicola #1 (DA) - Original Drilling - Original Drilling - A	15,541.20	5,228.00	1,766.17	1,532.85	7.570	CC, ES
Kog Nicola #1 (DA) - Original Drilling - Original Drilling - A	15,600.00	5,228.00	1,767.15	1,533.22	7.554	SF
Rauth #G (DA) - Original Drilling - Original Drilling - As D	13,893.59	5,435.00	1,444.05	1,226.81	6.647	CC
Rauth #G (DA) - Original Drilling - Original Drilling - As D	13,900.00	5,435.00	1,444.06	1,226.75	6.645	ES
Rauth #G (DA) - Original Drilling - Original Drilling - As D	14,000.00	5,435.00	1,447.97	1,229.82	6.638	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Tatanka Federal LD13-635
Project:	East Pony	TVD Reference:	Well @ 4692.00ft
Reference Site:	LD Section 15	MD Reference:	Well @ 4692.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tatanka Federal LD13-635	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

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						
LD Section 14						
Alice G Nay #1 (PA) - Original Drilling - Original Drilling -	8,657.04	5,447.00	101.18	-53.23	0.655	Level 1, CC, ES, SF
Alice Nay #1 (DA) - Original Drilling - Original Drilling - As	8,635.68	5,477.00	2,094.24	1,939.47	13.532	CC, ES
Alice Nay #1 (DA) - Original Drilling - Original Drilling - As	8,900.00	5,477.00	2,110.85	1,953.57	13.421	SF
Alice Nay #1/2 (DA) - Original Drilling - Original Drilling -	8,652.68	5,457.00	764.30	609.74	4.945	CC, ES
Alice Nay #1/2 (DA) - Original Drilling - Original Drilling -	8,700.00	5,457.00	765.77	610.83	4.943	SF
Alice Nay #1/3 (DA) - Original Drilling - Original Drilling -	8,983.21	5,454.00	434.43	276.15	2.745	CC, ES, SF
Alice Nay #2 (DA) - Original Drilling - Original Drilling - As	9,132.85	5,460.00	437.18	277.05	2.730	CC, ES, SF
Brady #1 (DA) - Original Drilling - Original Drilling - As Dr	10,296.22	5,490.00	1,785.62	1,611.15	10.235	CC
Brady #1 (DA) - Original Drilling - Original Drilling - As Dr	10,300.00	5,490.00	1,785.63	1,611.12	10.232	ES
Brady #1 (DA) - Original Drilling - Original Drilling - As Dr	10,400.00	5,490.00	1,788.64	1,613.12	10.190	SF
Castor Federal LD14-68HN - Original Drilling - Original D	2,962.97	3,372.03	2,870.97	2,851.54	147.786	CC
Castor Federal LD14-68HN - Original Drilling - Original D	3,000.00	3,415.66	2,871.18	2,851.39	145.089	ES
Castor Federal LD14-68HN - Original Drilling - Original D	10,600.00	9,850.00	3,173.70	2,997.38	17.999	SF
McDermott #1-14 (PA) - Original Drilling - Original Drilling	8,821.51	5,447.00	267.80	111.51	1.714	CC, ES, SF
Nay #1 (DA) - Original Drilling - Original Drilling - As Drille	8,648.39	5,619.00	1,438.36	1,280.61	9.118	CC, ES
Nay #1 (DA) - Original Drilling - Original Drilling - As Drille	8,800.00	5,619.00	1,446.33	1,287.22	9.090	SF
Zimith #1 (DA) - Original Drilling - Original Drilling - As Dr	6,678.31	5,470.00	1,417.40	1,282.74	10.526	CC, ES
Zimith #1 (DA) - Original Drilling - Original Drilling - As Dr	6,800.00	5,470.00	1,422.61	1,287.07	10.496	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Tatanka Federal LD13-635
Project:	East Pony	TVD Reference:	Well @ 4692.00ft
Reference Site:	LD Section 15	MD Reference:	Well @ 4692.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tatanka Federal LD13-635	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
LD Section 15						
Castor Federal LD15-72HN - Original Drilling - Original D	5,348.29	8,968.92	475.44	411.14	7.394	CC
Castor Federal LD15-72HN - Original Drilling - Original D	5,350.00	8,969.10	475.44	410.99	7.376	ES
Castor Federal LD15-72HN - Original Drilling - Original D	5,450.00	8,979.43	493.91	421.55	6.826	SF
Castor Federal LD15-73-1HN - Original Drilling - Original	5,226.16	8,876.31	737.01	666.63	10.472	CC
Castor Federal LD15-73-1HN - Original Drilling - Original	5,250.00	8,879.89	737.83	666.31	10.316	ES
Castor Federal LD15-73-1HN - Original Drilling - Original	5,350.00	8,893.79	758.83	683.24	10.039	SF
Castor Federal LD15-74-1HN - Original Drilling - Original D	5,188.22	8,959.92	1,055.98	984.35	14.743	CC
Castor Federal LD15-73HN - Original Drilling - Original D	5,200.00	8,961.12	1,056.15	984.14	14.667	ES
Castor Federal LD15-73HN - Original Drilling - Original D	5,350.00	8,975.16	1,088.05	1,011.91	14.290	SF
Castor Federal LD15-74-1HN - Original Drilling - Original	5,156.63	9,120.29	1,402.45	1,332.64	20.090	CC, ES
Castor Federal LD15-74-1HN - Original Drilling - Original	5,300.00	9,140.05	1,425.41	1,352.74	19.616	SF
Castor Federal LD15-74HN - Original Drilling - Original D	5,105.90	8,998.57	1,687.59	1,615.33	23.353	CC, ES
Castor Federal LD15-74HN - Original Drilling - Original D	5,250.00	9,028.60	1,709.60	1,634.91	22.890	SF
Castor Federal LD15-75-1HN - Original Drilling - Original	5,097.13	9,061.26	2,016.14	1,944.03	27.959	CC
Castor Federal LD15-75-1HN - Original Drilling - Original	5,100.00	9,061.88	2,016.14	1,943.99	27.941	ES
Castor Federal LD15-75-1HN - Original Drilling - Original	5,300.00	9,104.65	2,057.51	1,982.44	27.408	SF
Dillos PC LD15-74HN - Original Drilling - Original Drilling	5,040.14	8,986.66	2,598.65	2,524.49	35.045	CC
Dillos PC LD15-74HN - Original Drilling - Original Drilling	5,050.00	8,987.71	2,598.74	2,524.48	34.995	ES
Dillos PC LD15-74HN - Original Drilling - Original Drilling	5,200.00	8,997.63	2,623.35	2,547.67	34.665	SF
Fiscus Federal LD15-76HN - Original Drilling - Original D	5,027.37	8,902.39	2,934.27	2,857.09	38.021	CC, ES
Fiscus Federal LD15-76HN - Original Drilling - Original D	5,150.00	8,908.32	2,948.54	2,870.36	37.718	SF
Fiscus Federal LD15-77-1HN - Original Drilling - Original	5,027.41	9,044.87	3,275.46	3,197.58	42.062	CC, ES
Fiscus Federal LD15-77-1HN - Original Drilling - Original	5,200.00	9,071.01	3,303.00	3,223.49	41.543	SF
Fiscus Federal LD15-77HN - Original Drilling - Original D	5,008.54	8,973.88	3,509.25	3,431.11	44.910	CC, ES
Fiscus Federal LD15-77HN - Original Drilling - Original D	5,200.00	9,013.05	3,542.69	3,462.71	44.294	SF
Tatanka Federal LD13-615 - Wellbore #1 - Plan #1	2,115.64	2,116.64	72.92	58.21	4.958	CC
Tatanka Federal LD13-615 - Wellbore #1 - Plan #1	2,200.00	2,200.93	72.92	57.61	4.763	ES
Tatanka Federal LD13-615 - Wellbore #1 - Plan #1	16,078.78	16,469.25	1,201.04	930.37	4.437	SF
Tatanka Federal LD13-625 - Wellbore #1 - Plan #1	2,400.00	2,400.00	36.43	19.69	2.176	CC, ES, SF
Tatanka Federal LD13-645 - Wellbore #1 - Plan #1	2,600.00	2,601.00	40.08	21.90	2.205	CC, ES, SF
Tatanka Federal LD13-650 - Wellbore #1 - Plan #1	5,849.49	6,054.60	1,271.89	1,230.58	30.789	CC
Tatanka Federal LD13-650 - Wellbore #1 - Plan #1	16,078.78	16,262.14	1,275.10	1,003.80	4.700	ES, SF
Tatanka Federal LD13-660 - Wellbore #1 - Plan #1	2,991.67	3,250.11	1,847.41	1,825.97	86.135	CC
Tatanka Federal LD13-660 - Wellbore #1 - Plan #1	16,078.78	16,173.38	1,896.03	1,624.89	6.993	ES, SF
Tatanka Federal LD13-670 - Wellbore #1 - Plan #1	2,600.00	2,617.00	1,927.61	1,909.38	105.707	CC, ES
Tatanka Federal LD13-670 - Wellbore #1 - Plan #1	16,078.78	16,154.79	2,515.75	2,244.58	9.277	SF
Tatanka Federal LD13-685 - Wellbore #1 - Plan #1	2,109.35	2,127.35	1,964.09	1,949.37	133.418	CC
Tatanka Federal LD13-685 - Wellbore #1 - Plan #1	2,200.00	2,200.00	1,964.17	1,948.87	128.325	ES
Tatanka Federal LD13-685 - Wellbore #1 - Plan #1	16,078.78	16,259.63	3,314.74	3,043.16	12.205	SF

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Tatanka Federal LD13-635
Project:	East Pony	TVD Reference:	Well @ 4692.00ft
Reference Site:	LD Section 15	MD Reference:	Well @ 4692.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tatanka Federal LD13-635	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

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						
LD Section 22						
Fiscus LD22-76HN - Original Drilling - As Drilled	5,086.92	10,079.02	3,677.52	3,599.14	46.920	CC, ES
Fiscus LD22-76HN - Original Drilling - As Drilled	5,350.00	10,079.02	3,729.57	3,648.77	46.158	SF
Gracie LD22-720 - Original Drilling - Original Drilling - As	5,491.85	10,754.00	2,003.28	1,957.84	44.080	CC, ES
Gracie LD22-720 - Original Drilling - Original Drilling - As	5,650.00	10,754.00	2,017.20	1,971.29	43.938	SF
Gracie LD22-730 - Original Drilling - Original Drilling - As	5,279.56	10,481.00	2,208.86	2,163.65	48.849	CC, ES
Gracie LD22-730 - Original Drilling - Original Drilling - As	5,650.00	10,481.00	2,294.01	2,245.63	47.421	SF
Gracie LD22-740 - Original Drilling - Original Drilling - As	5,168.35	10,427.00	2,560.71	2,486.88	34.681	CC, ES
Gracie LD22-740 - Original Drilling - Original Drilling - As	5,550.00	10,427.00	2,662.12	2,582.12	33.278	SF
Gracie LD22-750 - Original Drilling - Original Drilling - As	5,121.05	10,575.00	3,021.73	2,934.94	34.819	CC, ES
Gracie LD22-750 - Original Drilling - Original Drilling - As	5,400.00	10,575.00	3,081.15	2,991.09	34.214	SF
Kidd LD22-770 - Original Drilling - Original Drilling - As D	5,042.59	10,396.00	4,075.73	3,986.55	45.702	CC
Kidd LD22-770 - Original Drilling - Original Drilling - As D	5,050.00	10,396.00	4,075.77	3,986.53	45.672	ES
Kidd LD22-770 - Original Drilling - Original Drilling - As D	5,250.00	10,396.00	4,110.58	4,019.79	45.277	SF
Kidd LD22-780 - Original Drilling - Original Drilling - As D	5,031.90	10,500.00	4,652.68	4,557.98	49.130	CC, ES
Kidd LD22-780 - Original Drilling - Original Drilling - As D	5,200.00	10,500.00	4,675.88	4,580.04	48.789	SF
LD Section 23						
Fiscus Federal LD23-78HN - Original Drilling - Original D	6,388.13	10,037.02	2,216.07	2,170.93	49.098	CC
Fiscus Federal LD23-78HN - Original Drilling - Original D	6,400.00	10,037.02	2,216.10	2,170.90	49.035	ES
Fiscus Federal LD23-78HN - Original Drilling - Original D	8,100.00	10,037.02	2,800.26	2,716.32	33.361	SF
Hensley #A-1 (DA) - Hensley #A-1 OH - As-drilled (No Su	8,995.20	5,528.00	2,207.09	1,946.81	8.480	CC
Hensley #A-1 (DA) - Hensley #A-1 OH - As-drilled (No Su	9,000.00	5,528.00	2,207.10	1,946.76	8.478	ES
Hensley #A-1 (DA) - Hensley #A-1 OH - As-drilled (No Su	9,200.00	5,528.00	2,216.58	1,953.97	8.441	SF
Ingram #1 (DA) - Ingram #1 OH - As-drilled (No Surveys)	10,314.32	5,532.00	2,193.05	1,917.02	7.945	CC, ES
Ingram #1 (DA) - Ingram #1 OH - As-drilled (No Surveys)	10,500.00	5,532.00	2,200.89	1,922.72	7.912	SF

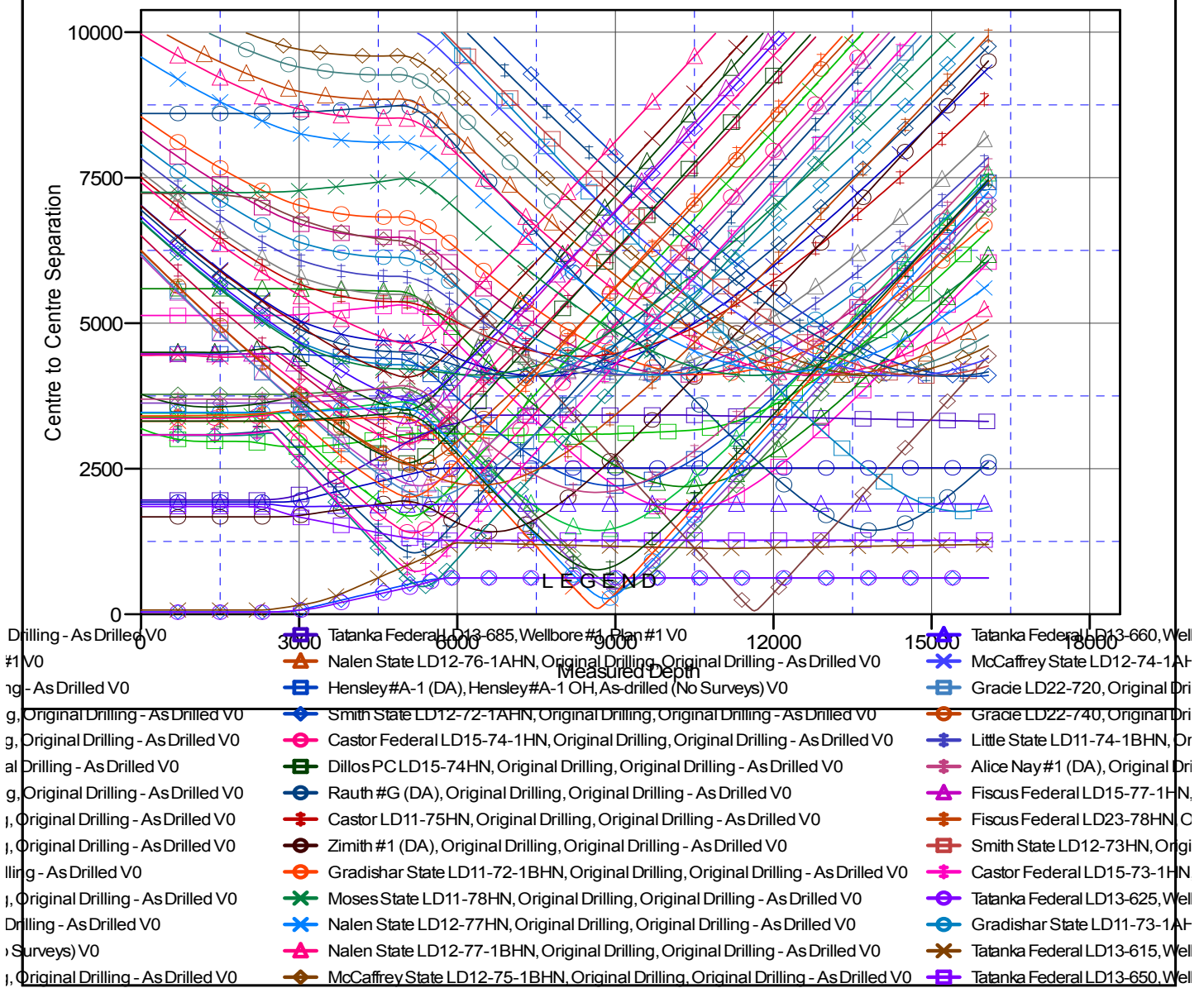
Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Tatanka Federal LD13-635
Project:	East Pony	TVD Reference:	Well @ 4692.00ft
Reference Site:	LD Section 15	MD Reference:	Well @ 4692.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tatanka Federal LD13-635	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 4692.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Tatanka Federal LD13-635
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.07°

Ladder Plot



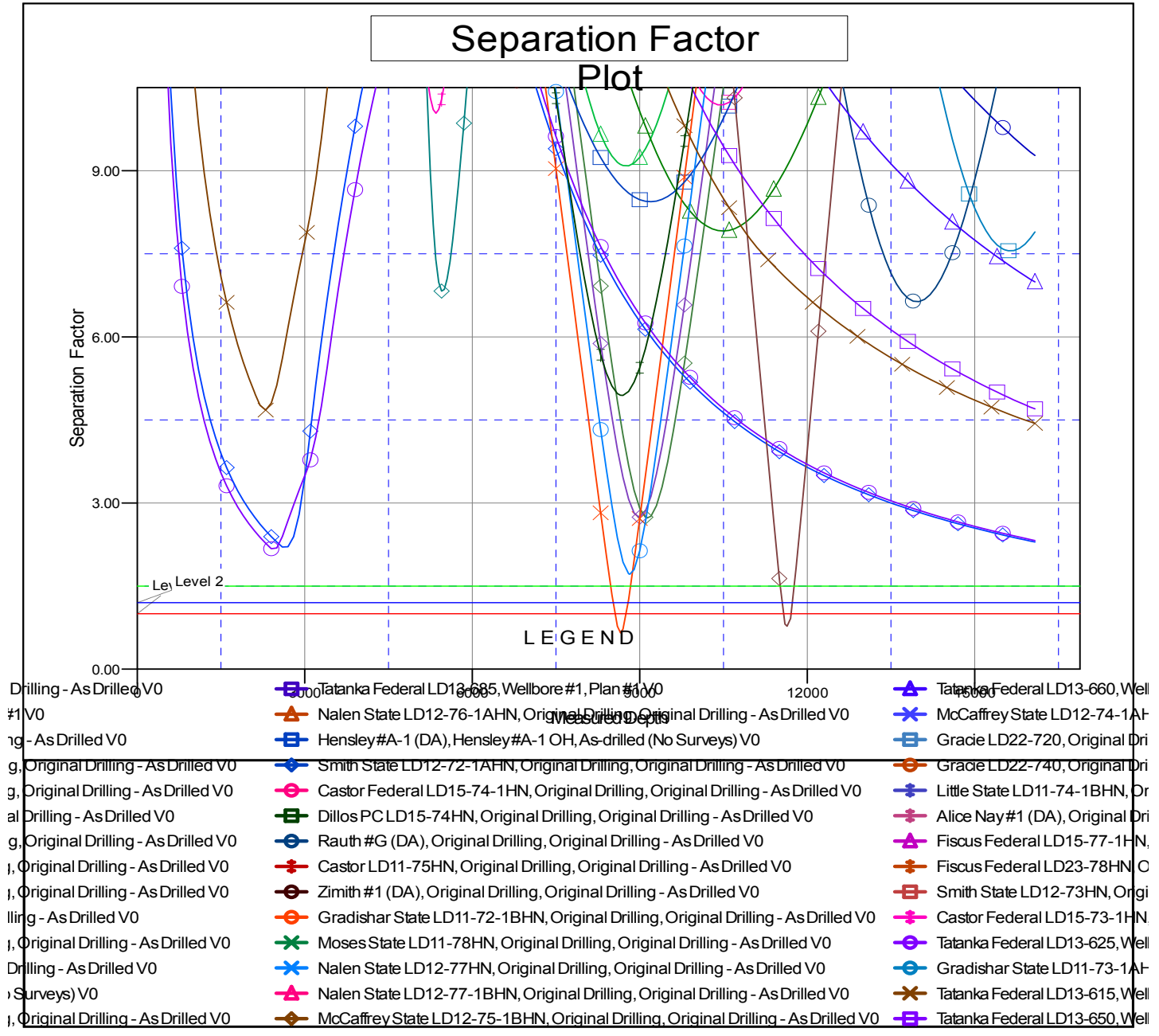
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Tatanka Federal LD13-635
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Reference Well:	Tatanka Federal LD13-635	Survey Calculation Method:	Minimum Curvature
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Reference Depths are relative to Well @ 4692.00ft
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Central Meridian is -105.5000000

Coordinates are relative to: Tatanka Federal LD13-635
Coordinate System is US State Plane 1983, Colorado Northern Zone
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