

Project: East Pony
Site: LD Section 15
Well: Tatanka Federal LD13-685
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

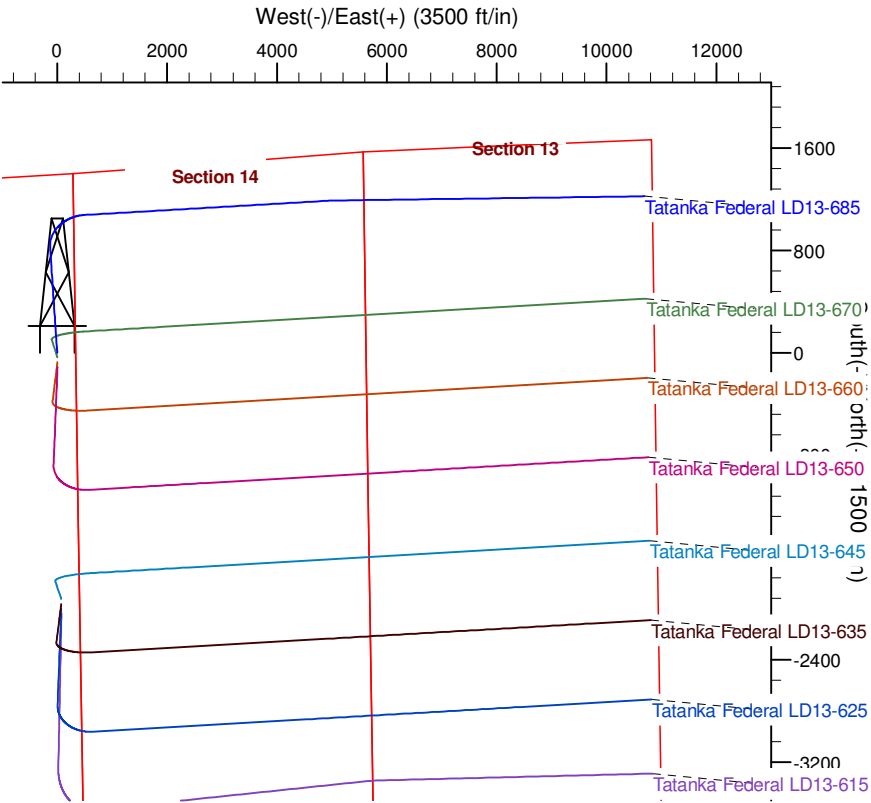
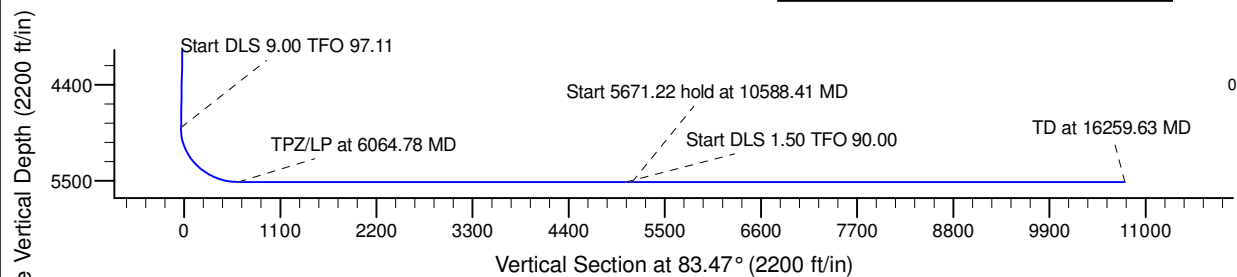
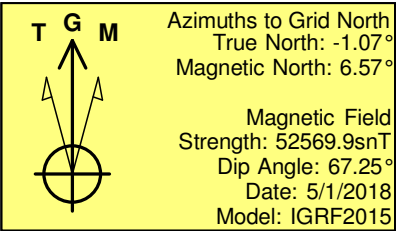
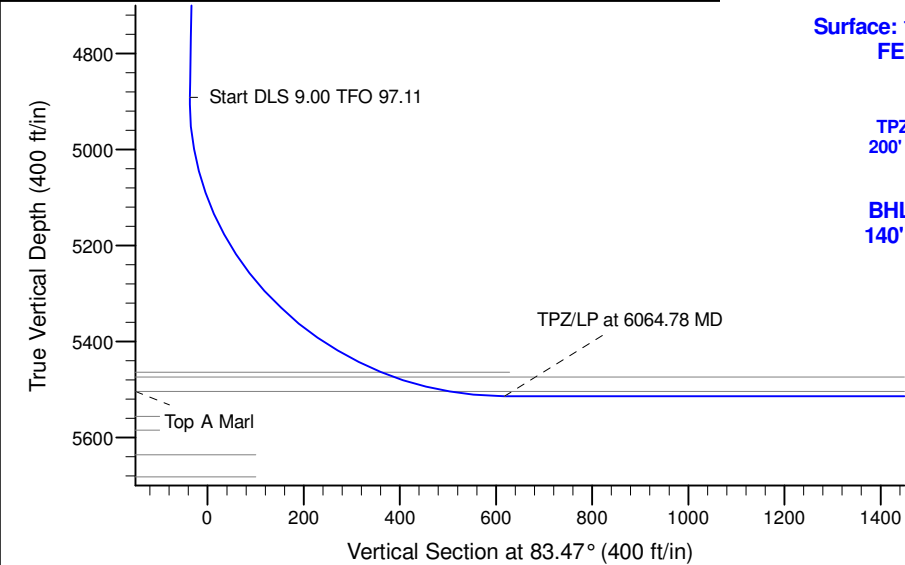
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	0.00	
3	3256.28	21.13	350.94	3232.51	190.13	-30.32	2.00	350.94	-8.50	
4	5034.35	21.13	350.94	4891.08	822.98	-131.22	0.00	0.00	-36.79	
5	6064.78	90.00	88.56	5514.00	1077.45	498.48	9.00	97.11	617.76	Tatanka Federal LD13-685 TPZ/LP
6	10514.78	90.00	88.56	5514.00	1189.28	4947.07	0.00	0.00	5050.22	
7	10588.41	90.00	89.66	5514.00	1190.42	5020.70	1.50	90.00	5123.49	
8	16259.63	90.00	89.66	5514.00	1223.63	10691.81	0.00	0.00	10761.60	Tatanka Federal LD13-685 BHL

Surface: 1392' FNL, 335' FEL, Sec.15

TPZ: 330' FNL, 200' FWL, Sec.14

BHL: 440' FNL, 140' FEL, Sec.13



WELL DETAILS: Tatanka Federal LD13-685					
0.00	0.00	Northing	Easting	4680.00 Latitude	Longitude
		1522138.78	3459339.97	40.7548700	-103.8419500
Plan: Plan #1 (Tatanka Federal LD13-685/Wellbore #1)					
Created By: Colby Baxter			Date: 12:02, July 10 2018		
Checked: _____			Date: _____		
Reviewed: _____			Date: _____		
Approved: _____			Date: _____		

Northern Region - DJ Basin

East Pony

LD Section 15

Tatanka Federal LD13-685

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 LD13-685
Project:	East Pony	TVD Reference:	Well @ 4710.00ft
Site:	LD Section 15	MD Reference:	Well @ 4710.00ft
Well:	Tatanka Federal LD13-685	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 LD13-685				
Well Position	+N/-S	0.00 ft	Northing:	1,522,138.79 usft	Latitude:	40.7548700
	+E/-W	0.00 ft	Easting:	3,459,339.97 usft	Longitude:	-103.8419500
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,680.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/1/2018	7.64	67.25	52,569.89133319

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	83.47	

Survey Tool Program	Date	7/10/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	16,259.63	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	

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Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Tatanka Federal LD13-685
Project:	East Pony	TVD Reference:	Well @ 4710.00ft
Site:	LD Section 15	MD Reference:	Well @ 4710.00ft
Well:	Tatanka Federal LD13-685	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	2.00	350.94	2,299.98	1.72	-0.27	-0.08	2.00	2.00	0.00
2,400.00	4.00	350.94	2,399.84	6.89	-1.10	-0.31	2.00	2.00	0.00
2,500.00	6.00	350.94	2,499.45	15.50	-2.47	-0.69	2.00	2.00	0.00
2,600.00	8.00	350.94	2,598.70	27.53	-4.39	-1.23	2.00	2.00	0.00
2,700.00	10.00	350.94	2,697.47	42.98	-6.85	-1.92	2.00	2.00	0.00
2,800.00	12.00	350.94	2,795.62	61.82	-9.86	-2.76	2.00	2.00	0.00
2,900.00	14.00	350.94	2,893.06	84.04	-13.40	-3.76	2.00	2.00	0.00
3,000.00	16.00	350.94	2,989.64	109.59	-17.47	-4.90	2.00	2.00	0.00
3,100.00	18.00	350.94	3,085.27	138.46	-22.08	-6.19	2.00	2.00	0.00
3,200.00	20.00	350.94	3,179.82	170.61	-27.20	-7.63	2.00	2.00	0.00
3,256.28	21.13	350.94	3,232.51	190.13	-30.32	-8.50	2.00	2.00	0.00
3,300.00	21.13	350.94	3,273.29	205.69	-32.80	-9.20	0.00	0.00	0.00
3,400.00	21.13	350.94	3,366.57	241.29	-38.47	-10.79	0.00	0.00	0.00
3,500.00	21.13	350.94	3,459.85	276.88	-44.15	-12.38	0.00	0.00	0.00
3,600.00	21.13	350.94	3,553.13	312.47	-49.82	-13.97	0.00	0.00	0.00
3,700.00	21.13	350.94	3,646.41	348.06	-55.50	-15.56	0.00	0.00	0.00
3,800.00	21.13	350.94	3,739.69	383.65	-61.17	-17.15	0.00	0.00	0.00
3,900.00	21.13	350.94	3,832.97	419.25	-66.84	-18.74	0.00	0.00	0.00
4,000.00	21.13	350.94	3,926.25	454.84	-72.52	-20.33	0.00	0.00	0.00
4,100.00	21.13	350.94	4,019.52	490.43	-78.19	-21.92	0.00	0.00	0.00
4,200.00	21.13	350.94	4,112.80	526.02	-83.87	-23.52	0.00	0.00	0.00
4,300.00	21.13	350.94	4,206.08	561.61	-89.54	-25.11	0.00	0.00	0.00
4,400.00	21.13	350.94	4,299.36	597.21	-95.22	-26.70	0.00	0.00	0.00
4,500.00	21.13	350.94	4,392.64	632.80	-100.89	-28.29	0.00	0.00	0.00
4,600.00	21.13	350.94	4,485.92	668.39	-106.57	-29.88	0.00	0.00	0.00
4,700.00	21.13	350.94	4,579.20	703.98	-112.24	-31.47	0.00	0.00	0.00
4,800.00	21.13	350.94	4,672.48	739.57	-117.92	-33.06	0.00	0.00	0.00
4,900.00	21.13	350.94	4,765.76	775.16	-123.59	-34.65	0.00	0.00	0.00
5,000.00	21.13	350.94	4,859.04	810.76	-129.27	-36.24	0.00	0.00	0.00
5,034.35	21.13	350.94	4,891.08	822.98	-131.22	-36.79	0.00	0.00	0.00
5,100.00	21.18	7.36	4,952.36	846.45	-131.56	-34.46	9.00	0.09	25.01

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Well:	Tatanka Federal LD13-685	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	24.09	29.65	5,044.81	882.18	-119.12	-18.04	9.00	2.91	22.29
5,300.00	29.44	45.84	5,134.18	917.12	-91.34	13.54	9.00	5.35	16.19
5,400.00	36.16	56.96	5,218.27	950.39	-48.88	59.50	9.00	6.72	11.12
5,500.00	43.61	64.86	5,294.99	981.20	7.19	118.70	9.00	7.45	7.90
5,600.00	51.48	70.81	5,362.47	1,008.77	75.49	189.70	9.00	7.86	5.95
5,700.00	59.58	75.57	5,419.04	1,032.42	154.36	270.75	9.00	8.10	4.76
5,800.00	67.83	79.58	5,463.32	1,051.58	241.84	359.83	9.00	8.25	4.02
5,900.00	76.17	83.15	5,494.20	1,065.77	335.77	454.78	9.00	8.34	3.57
6,000.00	84.56	86.47	5,510.92	1,074.65	433.86	553.24	9.00	8.39	3.32
6,064.78	90.00	88.56	5,514.00	1,077.45	498.48	617.76	9.00	8.40	3.23
6,100.00	90.00	88.56	5,514.00	1,078.33	533.69	652.84	0.00	0.00	0.00
6,200.00	90.00	88.56	5,514.00	1,080.85	633.66	752.44	0.00	0.00	0.00
6,300.00	90.00	88.56	5,514.00	1,083.36	733.62	852.05	0.00	0.00	0.00
6,400.00	90.00	88.56	5,514.00	1,085.87	833.59	951.65	0.00	0.00	0.00
6,500.00	90.00	88.56	5,514.00	1,088.38	933.56	1,051.26	0.00	0.00	0.00
6,600.00	90.00	88.56	5,514.00	1,090.90	1,033.53	1,150.86	0.00	0.00	0.00
6,700.00	90.00	88.56	5,514.00	1,093.41	1,133.50	1,250.47	0.00	0.00	0.00
6,800.00	90.00	88.56	5,514.00	1,095.92	1,233.47	1,350.08	0.00	0.00	0.00
6,900.00	90.00	88.56	5,514.00	1,098.44	1,333.43	1,449.68	0.00	0.00	0.00
7,000.00	90.00	88.56	5,514.00	1,100.95	1,433.40	1,549.29	0.00	0.00	0.00
7,100.00	90.00	88.56	5,514.00	1,103.46	1,533.37	1,648.89	0.00	0.00	0.00
7,200.00	90.00	88.56	5,514.00	1,105.98	1,633.34	1,748.50	0.00	0.00	0.00
7,300.00	90.00	88.56	5,514.00	1,108.49	1,733.31	1,848.11	0.00	0.00	0.00
7,400.00	90.00	88.56	5,514.00	1,111.00	1,833.28	1,947.71	0.00	0.00	0.00
7,500.00	90.00	88.56	5,514.00	1,113.51	1,933.24	2,047.32	0.00	0.00	0.00
7,600.00	90.00	88.56	5,514.00	1,116.03	2,033.21	2,146.92	0.00	0.00	0.00
7,700.00	90.00	88.56	5,514.00	1,118.54	2,133.18	2,246.53	0.00	0.00	0.00
7,800.00	90.00	88.56	5,514.00	1,121.05	2,233.15	2,346.13	0.00	0.00	0.00
7,900.00	90.00	88.56	5,514.00	1,123.57	2,333.12	2,445.74	0.00	0.00	0.00
8,000.00	90.00	88.56	5,514.00	1,126.08	2,433.09	2,545.35	0.00	0.00	0.00
8,100.00	90.00	88.56	5,514.00	1,128.59	2,533.06	2,644.95	0.00	0.00	0.00
8,200.00	90.00	88.56	5,514.00	1,131.11	2,633.02	2,744.56	0.00	0.00	0.00
8,300.00	90.00	88.56	5,514.00	1,133.62	2,732.99	2,844.16	0.00	0.00	0.00
8,400.00	90.00	88.56	5,514.00	1,136.13	2,832.96	2,943.77	0.00	0.00	0.00
8,500.00	90.00	88.56	5,514.00	1,138.64	2,932.93	3,043.38	0.00	0.00	0.00
8,600.00	90.00	88.56	5,514.00	1,141.16	3,032.90	3,142.98	0.00	0.00	0.00
8,700.00	90.00	88.56	5,514.00	1,143.67	3,132.87	3,242.59	0.00	0.00	0.00
8,800.00	90.00	88.56	5,514.00	1,146.18	3,232.83	3,342.19	0.00	0.00	0.00
8,900.00	90.00	88.56	5,514.00	1,148.70	3,332.80	3,441.80	0.00	0.00	0.00
9,000.00	90.00	88.56	5,514.00	1,151.21	3,432.77	3,541.41	0.00	0.00	0.00
9,100.00	90.00	88.56	5,514.00	1,153.72	3,532.74	3,641.01	0.00	0.00	0.00
9,200.00	90.00	88.56	5,514.00	1,156.24	3,632.71	3,740.62	0.00	0.00	0.00
9,300.00	90.00	88.56	5,514.00	1,158.75	3,732.68	3,840.22	0.00	0.00	0.00

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Site:	LD Section 15	MD Reference:	Well @ 4710.00ft
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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	88.56	5,514.00	1,161.26	3,832.64	3,939.83	0.00	0.00	0.00
9,500.00	90.00	88.56	5,514.00	1,163.78	3,932.61	4,039.43	0.00	0.00	0.00
9,600.00	90.00	88.56	5,514.00	1,166.29	4,032.58	4,139.04	0.00	0.00	0.00
9,700.00	90.00	88.56	5,514.00	1,168.80	4,132.55	4,238.65	0.00	0.00	0.00
9,800.00	90.00	88.56	5,514.00	1,171.31	4,232.52	4,338.25	0.00	0.00	0.00
9,900.00	90.00	88.56	5,514.00	1,173.83	4,332.49	4,437.86	0.00	0.00	0.00
10,000.00	90.00	88.56	5,514.00	1,176.34	4,432.46	4,537.46	0.00	0.00	0.00
10,100.00	90.00	88.56	5,514.00	1,178.85	4,532.42	4,637.07	0.00	0.00	0.00
10,200.00	90.00	88.56	5,514.00	1,181.37	4,632.39	4,736.68	0.00	0.00	0.00
10,300.00	90.00	88.56	5,514.00	1,183.88	4,732.36	4,836.28	0.00	0.00	0.00
10,400.00	90.00	88.56	5,514.00	1,186.39	4,832.33	4,935.89	0.00	0.00	0.00
10,500.00	90.00	88.56	5,514.00	1,188.91	4,932.30	5,035.49	0.00	0.00	0.00
10,514.78	90.00	88.56	5,514.00	1,189.28	4,947.07	5,050.22	0.00	0.00	0.00
10,588.41	90.00	89.66	5,514.00	1,190.42	5,020.70	5,123.49	1.50	0.00	1.50
10,600.00	90.00	89.66	5,514.00	1,190.49	5,032.28	5,135.01	0.00	0.00	0.00
10,700.00	90.00	89.66	5,514.00	1,191.07	5,132.28	5,234.43	0.00	0.00	0.00
10,800.00	90.00	89.66	5,514.00	1,191.66	5,232.28	5,333.84	0.00	0.00	0.00
10,900.00	90.00	89.66	5,514.00	1,192.24	5,332.28	5,433.26	0.00	0.00	0.00
11,000.00	90.00	89.66	5,514.00	1,192.83	5,432.28	5,532.67	0.00	0.00	0.00
11,100.00	90.00	89.66	5,514.00	1,193.41	5,532.27	5,632.09	0.00	0.00	0.00
11,200.00	90.00	89.66	5,514.00	1,194.00	5,632.27	5,731.51	0.00	0.00	0.00
11,300.00	90.00	89.66	5,514.00	1,194.58	5,732.27	5,830.92	0.00	0.00	0.00
11,400.00	90.00	89.66	5,514.00	1,195.17	5,832.27	5,930.34	0.00	0.00	0.00
11,500.00	90.00	89.66	5,514.00	1,195.76	5,932.27	6,029.76	0.00	0.00	0.00
11,600.00	90.00	89.66	5,514.00	1,196.34	6,032.27	6,129.17	0.00	0.00	0.00
11,700.00	90.00	89.66	5,514.00	1,196.93	6,132.26	6,228.59	0.00	0.00	0.00
11,800.00	90.00	89.66	5,514.00	1,197.51	6,232.26	6,328.01	0.00	0.00	0.00
11,900.00	90.00	89.66	5,514.00	1,198.10	6,332.26	6,427.42	0.00	0.00	0.00
12,000.00	90.00	89.66	5,514.00	1,198.68	6,432.26	6,526.84	0.00	0.00	0.00
12,100.00	90.00	89.66	5,514.00	1,199.27	6,532.26	6,626.25	0.00	0.00	0.00
12,200.00	90.00	89.66	5,514.00	1,199.86	6,632.26	6,725.67	0.00	0.00	0.00
12,300.00	90.00	89.66	5,514.00	1,200.44	6,732.25	6,825.09	0.00	0.00	0.00
12,400.00	90.00	89.66	5,514.00	1,201.03	6,832.25	6,924.50	0.00	0.00	0.00
12,500.00	90.00	89.66	5,514.00	1,201.61	6,932.25	7,023.92	0.00	0.00	0.00
12,600.00	90.00	89.66	5,514.00	1,202.20	7,032.25	7,123.34	0.00	0.00	0.00
12,700.00	90.00	89.66	5,514.00	1,202.78	7,132.25	7,222.75	0.00	0.00	0.00
12,800.00	90.00	89.66	5,514.00	1,203.37	7,232.24	7,322.17	0.00	0.00	0.00
12,900.00	90.00	89.66	5,514.00	1,203.95	7,332.24	7,421.59	0.00	0.00	0.00
13,000.00	90.00	89.66	5,514.00	1,204.54	7,432.24	7,521.00	0.00	0.00	0.00
13,100.00	90.00	89.66	5,514.00	1,205.13	7,532.24	7,620.42	0.00	0.00	0.00
13,200.00	90.00	89.66	5,514.00	1,205.71	7,632.24	7,719.83	0.00	0.00	0.00
13,300.00	90.00	89.66	5,514.00	1,206.30	7,732.24	7,819.25	0.00	0.00	0.00
13,400.00	90.00	89.66	5,514.00	1,206.88	7,832.23	7,918.67	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Tatanka Federal LD13-685
Project:	East Pony	TVD Reference:	Well @ 4710.00ft
Site:	LD Section 15	MD Reference:	Well @ 4710.00ft
Well:	Tatanka Federal LD13-685	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)
13,500.00	90.00	89.66	5,514.00	1,207.47	7,932.23	8,018.08	0.00	0.00	0.00
13,600.00	90.00	89.66	5,514.00	1,208.05	8,032.23	8,117.50	0.00	0.00	0.00
13,700.00	90.00	89.66	5,514.00	1,208.64	8,132.23	8,216.92	0.00	0.00	0.00
13,800.00	90.00	89.66	5,514.00	1,209.23	8,232.23	8,316.33	0.00	0.00	0.00
13,900.00	90.00	89.66	5,514.00	1,209.81	8,332.23	8,415.75	0.00	0.00	0.00
14,000.00	90.00	89.66	5,514.00	1,210.40	8,432.22	8,515.17	0.00	0.00	0.00
14,100.00	90.00	89.66	5,514.00	1,210.98	8,532.22	8,614.58	0.00	0.00	0.00
14,200.00	90.00	89.66	5,514.00	1,211.57	8,632.22	8,714.00	0.00	0.00	0.00
14,300.00	90.00	89.66	5,514.00	1,212.15	8,732.22	8,813.41	0.00	0.00	0.00
14,400.00	90.00	89.66	5,514.00	1,212.74	8,832.22	8,912.83	0.00	0.00	0.00
14,500.00	90.00	89.66	5,514.00	1,213.32	8,932.22	9,012.25	0.00	0.00	0.00
14,600.00	90.00	89.66	5,514.00	1,213.91	9,032.21	9,111.66	0.00	0.00	0.00
14,700.00	90.00	89.66	5,514.00	1,214.50	9,132.21	9,211.08	0.00	0.00	0.00
14,800.00	90.00	89.66	5,514.00	1,215.08	9,232.21	9,310.50	0.00	0.00	0.00
14,900.00	90.00	89.66	5,514.00	1,215.67	9,332.21	9,409.91	0.00	0.00	0.00
15,000.00	90.00	89.66	5,514.00	1,216.25	9,432.21	9,509.33	0.00	0.00	0.00
15,100.00	90.00	89.66	5,514.00	1,216.84	9,532.21	9,608.75	0.00	0.00	0.00
15,200.00	90.00	89.66	5,514.00	1,217.42	9,632.20	9,708.16	0.00	0.00	0.00
15,300.00	90.00	89.66	5,514.00	1,218.01	9,732.20	9,807.58	0.00	0.00	0.00
15,400.00	90.00	89.66	5,514.00	1,218.59	9,832.20	9,906.99	0.00	0.00	0.00
15,500.00	90.00	89.66	5,514.00	1,219.18	9,932.20	10,006.41	0.00	0.00	0.00
15,600.00	90.00	89.66	5,514.00	1,219.77	10,032.20	10,105.83	0.00	0.00	0.00
15,700.00	90.00	89.66	5,514.00	1,220.35	10,132.20	10,205.24	0.00	0.00	0.00
15,800.00	90.00	89.66	5,514.00	1,220.94	10,232.19	10,304.66	0.00	0.00	0.00
15,900.00	90.00	89.66	5,514.00	1,221.52	10,332.19	10,404.08	0.00	0.00	0.00
16,000.00	90.00	89.66	5,514.00	1,222.11	10,432.19	10,503.49	0.00	0.00	0.00
16,100.00	90.00	89.66	5,514.00	1,222.69	10,532.19	10,602.91	0.00	0.00	0.00
16,200.00	90.00	89.66	5,514.00	1,223.28	10,632.19	10,702.33	0.00	0.00	0.00
16,259.63	90.00	89.66	5,514.00	1,223.63	10,691.81	10,761.61	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Tatanka Federal LD13-685
Project:	East Pony	TVD Reference:	Well @ 4710.00ft
Site:	LD Section 15	MD Reference:	Well @ 4710.00ft
Well:	Tatanka Federal LD13-685	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Tatanka Federal LD13-6 - plan misses target center by 3386.97ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.00	0.00	786.66	-3,294.35	1,522,925.45	3,456,045.62	40.7571973	-103.8537859
Tatanka Federal LD13-6 - plan misses target center by 0.01ft at 5033.97ft MD (4890.72 TVD, 822.85 N, -131.20 E) - Point	0.00	0.00	4,890.73	822.83	-131.20	1,522,961.62	3,459,208.77	40.7571348	-103.8423679
Tatanka Federal LD13-6 - plan hits target center - Point	0.00	0.00	5,514.00	1,223.63	10,691.81	1,523,362.41	3,470,031.76	40.7576729	-103.8032813
Tatanka Federal LD13-6 - plan hits target center - Point	0.00	0.00	5,514.00	1,077.45	498.48	1,523,216.23	3,459,838.44	40.7578012	-103.8400783

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
397.00	397.00	Pierre				
737.00	737.00	Upper Pierre Aquifer Top				
1,361.00	1,361.00	Upper Pierre Aquifer Base				
3,223.64	3,202.00	Parkman				
3,743.52	3,687.00	Sussex				
4,379.24	4,280.00	Shannon				
4,759.82	4,635.00	Teepee Buttes				
5,801.82	5,464.00	Sharon Springs				
5,829.92	5,474.00	Top A Chalk				
5,947.85	5,504.00	Top A Marl				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2200	2200	0	0	Start Build 2.00
5034	4891	190	-30	Start DLS 9.00 TFO 97.11
6065	5514	823	-131	TPZ/LP at 6064.78 MD
10,515	5514	1077	498	Start DLS 1.50 TFO 90.00
10,588	5514	1189	4947	Start 5671.22 hold at 10588.41 MD
16,260	5514	1190	5021	TD at 16259.63 MD

Checked By: _____	Approved By: _____	Date: _____
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Northern Region - DJ Basin

East Pony

LD Section 15

Tatanka Federal LD13-685

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 LD13-685
Project:	East Pony	TVD Reference:	Well @ 4710.00ft
Reference Site:	LD Section 15	MD Reference:	Well @ 4710.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tatanka Federal LD13-685	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	16,259.63	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	14,500.00	10,391.02	770.03	627.74	5.412	SF
McCaffrey State LD12-74-1AHN - Original Drilling - Origin	14,667.80	10,391.02	751.53	613.71	5.453	CC, ES
McCaffrey State LD12-75-1BHN - Original Drilling - Origin	14,159.46	10,303.02	744.92	614.28	5.702	CC
McCaffrey State LD12-75-1BHN - Original Drilling - Origin	14,200.00	10,303.02	746.02	614.18	5.658	ES
McCaffrey State LD12-75-1BHN - Original Drilling - Origin	14,400.00	10,303.02	782.79	639.23	5.453	SF
McCaffrey State LD12-75HN - Original Drilling - Original	13,786.32	10,402.02	742.30	615.26	5.843	CC
McCaffrey State LD12-75HN - Original Drilling - Original	13,800.00	10,402.02	742.43	614.69	5.812	ES
McCaffrey State LD12-75HN - Original Drilling - Original	14,000.00	10,402.02	772.44	631.04	5.463	SF
Nalen State LD12-76-1AHN - Original Drilling - Original D	13,100.00	10,388.02	769.48	635.41	5.740	SF
Nalen State LD12-76-1AHN - Original Drilling - Original D	13,300.00	10,388.02	737.21	611.93	5.885	ES
Nalen State LD12-76-1AHN - Original Drilling - Original D	13,321.56	10,388.02	736.89	612.43	5.921	CC
Nalen State LD12-77-1BHN - Original Drilling - Original D	12,800.00	10,419.02	747.87	626.26	6.149	SF
Nalen State LD12-77-1BHN - Original Drilling - Original D	12,944.10	10,419.02	733.86	616.89	6.274	CC, ES
Nalen State LD12-77HN - Original Drilling - Original Drilli	12,446.64	10,320.02	781.36	671.56	7.116	CC, ES
Nalen State LD12-77HN - Original Drilling - Original Drilli	12,800.00	10,320.02	857.54	727.99	6.619	SF
Smith State LD12-72-1AHN - Original Drilling - Original D	15,800.00	10,216.02	779.50	619.56	4.874	SF
Smith State LD12-72-1AHN - Original Drilling - Original D	15,900.00	10,216.02	769.39	612.93	4.918	ES
Smith State LD12-72-1AHN - Original Drilling - Original D	15,928.30	10,216.02	768.87	613.24	4.940	CC
Smith State LD12-73-1BHN - Original Drilling - Original D	15,495.88	10,286.02	763.02	615.41	5.169	CC, ES
Smith State LD12-73-1BHN - Original Drilling - Original D	15,700.00	10,286.02	789.85	635.50	5.117	SF
Smith State LD12-73HN - Original Drilling - Original Drilli	15,063.58	10,349.02	757.47	615.70	5.343	CC
Smith State LD12-73HN - Original Drilling - Original Drilli	15,100.00	10,349.02	758.35	615.20	5.298	ES
Smith State LD12-73HN - Original Drilling - Original Drilli	15,300.00	10,349.02	793.51	638.55	5.121	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 LD13-685
Project:	East Pony	TVD Reference:	Well @ 4710.00ft
Reference Site:	LD Section 15	MD Reference:	Well @ 4710.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tatanka Federal LD13-685	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	7,800.00	10,851.00	670.46	611.38	11.348	ES
Gonsoulin State LD11-76HN - Original Drilling - Original D	7,839.05	10,851.00	669.32	611.49	11.574	CC
Gonsoulin State LD11-76HN - Original Drilling - Original D	8,300.00	10,851.00	812.69	722.46	9.006	SF
Gradishar State LD11-72-1BHN - Original Drilling - Origin	10,931.90	10,443.02	701.38	609.68	7.649	CC, ES
Gradishar State LD11-72-1BHN - Original Drilling - Origin	11,300.00	10,443.02	792.10	678.52	6.974	SF
Gradishar State LD11-72HN - Original Drilling - Original D	10,501.14	10,436.02	692.52	605.69	7.975	CC
Gradishar State LD11-72HN - Original Drilling - Original D	10,514.78	10,436.02	692.65	605.19	7.920	ES
Gradishar State LD11-72HN - Original Drilling - Original D	10,800.00	10,436.02	758.62	649.08	6.926	SF
Gradishar State LD11-73-1AHN - Original Drilling - Origin	10,045.97	10,448.02	691.45	607.54	8.241	CC
Gradishar State LD11-73-1AHN - Original Drilling - Origin	10,100.00	10,448.02	693.55	605.41	7.869	ES
Gradishar State LD11-73-1AHN - Original Drilling - Origin	10,400.00	10,448.02	776.81	663.58	6.861	SF
Little State LD11-74-1BHN - Original Drilling - Original Dr	9,598.48	10,663.00	691.85	615.40	9.050	CC, ES
Little State LD11-74-1BHN - Original Drilling - Original Dr	10,000.00	10,663.00	799.92	698.41	7.880	SF
Little State LD11-74HN - Original Drilling - Original Drillin	9,159.89	10,598.00	684.52	613.53	9.643	CC
Little State LD11-74HN - Original Drilling - Original Drillin	9,200.00	10,598.00	685.69	613.13	9.449	ES
Little State LD11-74HN - Original Drilling - Original Drillin	9,600.00	10,598.00	813.80	709.55	7.807	SF
Moses State LD11-77-1AHN - Original Drilling - Original D	7,431.05	10,911.02	672.72	620.21	12.811	CC, ES
Moses State LD11-77-1AHN - Original Drilling - Original D	7,900.00	10,911.02	820.04	729.59	9.067	SF
Moses State LD11-78-1BHN - Original Drilling - Original D	6,967.94	10,639.02	636.36	588.20	13.214	CC
Moses State LD11-78-1BHN - Original Drilling - Original D	7,000.00	10,639.02	637.16	587.90	12.934	ES
Moses State LD11-78-1BHN - Original Drilling - Original D	7,400.00	10,639.02	769.17	683.13	8.940	SF
Moses State LD11-78HN - Original Drilling - Original Drill	6,547.11	10,870.02	692.24	644.90	14.622	CC
Moses State LD11-78HN - Original Drilling - Original Drill	6,600.00	10,870.02	694.26	643.76	13.750	ES
Moses State LD11-78HN - Original Drilling - Original Drill	7,100.00	10,870.02	885.93	792.46	9.478	SF
LD Section 11						
Castor LD11-75HN - Original Drilling - Original Drilling - A	8,551.13	9,890.00	1,013.47	949.19	15.767	CC
Castor LD11-75HN - Original Drilling - Original Drilling - A	8,600.00	9,890.00	1,014.64	949.01	15.460	ES
Castor LD11-75HN - Original Drilling - Original Drilling - A	9,100.00	9,890.00	1,152.55	1,062.90	12.857	SF
LD Section 12						
Castor Federal LD13-78HN - Original Drilling - Original	11,831.83	5,643.88	4.30	-60.18	0.067	Level 1, CC, ES, SF
Castor LD12-78HN - Original Drilling - Original Drilling - A	11,799.42	5,113.00	816.30	724.08	8.852	CC
Castor LD12-78HN - Original Drilling - Original Drilling - A	11,800.00	5,113.00	816.30	724.07	8.851	ES
Castor LD12-78HN - Original Drilling - Original Drilling - A	11,900.00	5,113.00	822.47	729.09	8.808	SF
LD Section 13						
Kog Nicola #1 (DA) - Original Drilling - Original Drilling - A	15,780.82	5,222.00	1,557.78	1,323.49	6.649	CC
Kog Nicola #1 (DA) - Original Drilling - Original Drilling - A	15,800.00	5,222.00	1,557.90	1,323.44	6.645	ES, SF
Rauth #G (DA) - Original Drilling - Original Drilling - As D	14,139.61	5,429.00	1,911.05	1,692.76	8.755	CC, ES
Rauth #G (DA) - Original Drilling - Original Drilling - As D	14,200.00	5,429.00	1,912.01	1,693.18	8.738	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Tatanka Federal LD13-685
Project:	East Pony	TVD Reference:	Well @ 4710.00ft
Reference Site:	LD Section 15	MD Reference:	Well @ 4710.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tatanka Federal LD13-685	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 -	8,865.11	5,441.00	3,320.99	3,165.65	21.379	CC
Alice G Nay #1 (PA) - Original Drilling - Original Drilling -	8,900.00	5,441.00	3,321.17	3,165.48	21.332	ES
Alice G Nay #1 (PA) - Original Drilling - Original Drilling -	9,400.00	5,441.00	3,363.79	3,203.48	20.983	SF
Alice Nay #1 (DA) - Original Drilling - Original Drilling - As	8,844.42	5,471.00	1,327.92	1,172.21	8.528	CC, ES
Alice Nay #1 (DA) - Original Drilling - Original Drilling - As	8,900.00	5,471.00	1,329.08	1,172.93	8.511	SF
Alice Nay #1/2 (DA) - Original Drilling - Original Drilling -	8,860.97	5,451.00	2,657.86	2,502.37	17.093	CC
Alice Nay #1/2 (DA) - Original Drilling - Original Drilling -	8,900.00	5,451.00	2,658.15	2,502.27	17.053	ES
Alice Nay #1/2 (DA) - Original Drilling - Original Drilling -	9,200.00	5,451.00	2,679.40	2,520.84	16.898	SF
Alice Nay #1/3 (DA) - Original Drilling - Original Drilling -	9,191.39	5,448.00	2,987.84	2,828.67	18.771	CC
Alice Nay #1/3 (DA) - Original Drilling - Original Drilling -	9,200.00	5,448.00	2,987.86	2,828.59	18.760	ES
Alice Nay #1/3 (DA) - Original Drilling - Original Drilling -	9,600.00	5,448.00	3,015.66	2,852.69	18.504	SF
Alice Nay #2 (DA) - Original Drilling - Original Drilling - As	9,341.03	5,454.00	2,985.14	2,824.13	18.540	CC
Alice Nay #2 (DA) - Original Drilling - Original Drilling - As	9,400.00	5,454.00	2,985.72	2,824.11	18.475	ES
Alice Nay #2 (DA) - Original Drilling - Original Drilling - As	9,800.00	5,454.00	3,020.22	2,855.00	18.281	SF
Brady #1 (DA) - Original Drilling - Original Drilling - As Dr	10,504.86	5,484.00	1,637.09	1,461.84	9.341	CC
Brady #1 (DA) - Original Drilling - Original Drilling - As Dr	10,514.78	5,484.00	1,637.12	1,461.77	9.336	ES
Brady #1 (DA) - Original Drilling - Original Drilling - As Dr	10,600.00	5,484.00	1,638.92	1,462.85	9.308	SF
Castor Federal LD14-68HN - Original Drilling - Original D	10,494.50	9,850.00	265.16	90.64	1.519	CC, ES, SF
McDermott #1-14 (PA) - Original Drilling - Original Drilling	9,029.64	5,441.00	3,154.42	2,997.23	20.067	CC, ES
McDermott #1-14 (PA) - Original Drilling - Original Drilling	9,500.00	5,441.00	3,189.30	3,027.74	19.740	SF
Nay #1 (DA) - Original Drilling - Original Drilling - As Drille	8,856.91	5,613.00	1,983.80	1,825.11	12.501	CC, ES
Nay #1 (DA) - Original Drilling - Original Drilling - As Drille	9,000.00	5,613.00	1,988.96	1,829.01	12.435	SF
Zimith #1 (DA) - Original Drilling - Original Drilling - As Dr	2,200.00	2,150.00	1,642.65	1,592.00	32.429	CC
Zimith #1 (DA) - Original Drilling - Original Drilling - As Dr	2,300.00	2,249.98	1,643.83	1,590.82	31.009	ES
Zimith #1 (DA) - Original Drilling - Original Drilling - As Dr	7,100.00	5,464.00	2,015.42	1,878.04	14.670	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 LD13-685
Project:	East Pony	TVD Reference:	Well @ 4710.00ft
Reference Site:	LD Section 15	MD Reference:	Well @ 4710.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tatanka Federal LD13-685	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 15						
Castor Federal LD15-72HN - Original Drilling - Original D	5,397.77	5,477.18	370.66	338.73	11.607	CC
Castor Federal LD15-72HN - Original Drilling - Original D	5,400.00	5,477.94	370.67	338.67	11.583	ES
Castor Federal LD15-72HN - Original Drilling - Original D	5,450.00	5,494.13	376.07	342.71	11.276	SF
Castor Federal LD15-73-1HN - Original Drilling - Original	5,287.50	5,388.76	645.37	612.36	19.554	CC, ES
Castor Federal LD15-73-1HN - Original Drilling - Original	5,350.00	5,421.37	650.69	616.87	19.238	SF
Castor Federal LD15-73HN - Original Drilling - Original D	5,256.83	5,419.96	936.26	903.03	28.172	CC, ES
Castor Federal LD15-74HN - Original Drilling - Original D	5,350.00	5,474.93	946.25	912.08	27.695	SF
Castor Federal LD15-74-1HN - Original Drilling - Original	5,291.18	5,664.99	1,244.33	1,208.38	34.614	CC, ES
Castor Federal LD15-74-1HN - Original Drilling - Original	5,400.00	5,690.13	1,257.81	1,221.11	34.269	SF
Castor Federal LD15-74HN - Original Drilling - Original D	5,209.50	5,468.06	1,615.03	1,580.17	46.333	CC, ES
Castor Federal LD15-74HN - Original Drilling - Original D	5,350.00	5,533.05	1,634.91	1,599.28	45.887	SF
Castor Federal LD15-75-1HN - Original Drilling - Original	5,203.22	5,473.80	1,933.16	1,898.33	55.508	CC, ES
Castor Federal LD15-75-1HN - Original Drilling - Original	5,350.00	5,533.00	1,954.24	1,918.55	54.756	SF
Dillos PC LD15-74HN - Original Drilling - Original Drilling	1,286.17	1,294.00	2,287.00	2,282.62	522.415	CC
Dillos PC LD15-74HN - Original Drilling - Original Drilling	1,300.00	1,301.42	2,287.02	2,282.58	515.020	ES
Dillos PC LD15-74HN - Original Drilling - Original Drilling	5,400.00	5,421.48	2,551.86	2,517.06	73.336	SF
Fiscus Federal LD15-76HN - Original Drilling - Original D	5,119.83	5,119.83	2,905.86	2,872.74	87.714	CC, ES
Fiscus Federal LD15-76HN - Original Drilling - Original D	5,350.00	5,460.14	2,943.70	2,908.87	84.515	SF
Fiscus Federal LD15-77-1HN - Original Drilling - Original	5,174.53	5,670.77	3,215.92	3,181.20	92.620	CC, ES
Fiscus Federal LD15-77-1HN - Original Drilling - Original	5,400.00	5,697.01	3,263.05	3,227.11	90.801	SF
Fiscus Federal LD15-77HN - Original Drilling - Original D	1,304.30	1,311.42	3,444.05	3,436.06	430.810	CC, ES
Fiscus Federal LD15-77HN - Original Drilling - Original D	5,400.00	5,427.01	3,542.43	3,507.65	101.834	SF
Tatanka Federal LD13-615 - Wellbore #1 - Plan #1	2,200.00	2,183.00	2,036.99	2,021.75	133.610	CC, ES
Tatanka Federal LD13-615 - Wellbore #1 - Plan #1	16,259.63	16,393.28	4,514.21	4,243.71	16.689	SF
Tatanka Federal LD13-625 - Wellbore #1 - Plan #1	2,200.00	2,182.00	2,000.52	1,985.28	131.249	CC, ES
Tatanka Federal LD13-625 - Wellbore #1 - Plan #1	16,259.63	16,269.99	3,935.80	3,664.37	14.500	SF
Tatanka Federal LD13-635 - Wellbore #1 - Plan #1	2,200.00	2,182.00	1,964.09	1,948.85	128.859	CC, ES
Tatanka Federal LD13-635 - Wellbore #1 - Plan #1	16,259.63	16,049.43	3,314.61	3,043.39	12.221	SF
Tatanka Federal LD13-645 - Wellbore #1 - Plan #1	2,200.00	2,181.00	1,924.02	1,908.78	126.259	CC, ES
Tatanka Federal LD13-645 - Wellbore #1 - Plan #1	16,259.63	16,080.35	2,694.92	2,423.40	9.925	SF
Tatanka Federal LD13-650 - Wellbore #1 - Plan #1	2,200.00	2,197.00	112.98	97.68	7.386	CC, ES
Tatanka Federal LD13-650 - Wellbore #1 - Plan #1	2,300.00	2,293.25	116.27	100.30	7.278	SF
Tatanka Federal LD13-660 - Wellbore #1 - Plan #1	2,200.00	2,202.00	72.92	57.61	4.762	CC, ES
Tatanka Federal LD13-660 - Wellbore #1 - Plan #1	2,300.00	2,302.02	74.66	58.62	4.657	SF
Tatanka Federal LD13-670 - Wellbore #1 - Plan #1	2,200.00	2,201.00	36.54	21.23	2.387	CC, ES, SF
LD Section 22						
Fiscus LD22-76HN - Original Drilling - As Drilled	3,924.67	10,079.02	6,010.85	5,954.67	106.994	CC, ES
Fiscus LD22-76HN - Original Drilling - As Drilled	8,800.00	10,079.02	8,333.46	8,242.08	91.192	SF
Gracie LD22-720 - Original Drilling - Original Drilling - As	4,044.24	10,754.00	5,058.39	5,015.39	117.639	CC, ES
Gracie LD22-720 - Original Drilling - Original Drilling - As	9,600.00	10,754.00	6,869.74	6,797.37	94.924	SF
Gracie LD22-730 - Original Drilling - Original Drilling - As	3,966.10	10,481.00	5,092.08	5,052.82	129.715	CC, ES
Gracie LD22-730 - Original Drilling - Original Drilling - As	9,500.00	10,481.00	7,235.22	7,163.24	100.507	SF
Gracie LD22-740 - Original Drilling - Original Drilling - As	3,951.55	10,427.00	5,236.21	5,186.41	105.133	CC, ES
Gracie LD22-740 - Original Drilling - Original Drilling - As	9,200.00	10,427.00	7,488.49	7,390.06	76.080	SF
Gracie LD22-750 - Original Drilling - Original Drilling - As	4,033.89	10,575.00	5,485.01	5,422.18	87.303	CC, ES
Gracie LD22-750 - Original Drilling - Original Drilling - As	8,300.00	10,575.00	7,322.11	7,224.77	75.222	SF
Kidd LD22-770 - Original Drilling - Original Drilling - As D	4,035.31	10,396.00	6,109.05	6,043.55	93.280	CC, ES
Kidd LD22-770 - Original Drilling - Original Drilling - As D	7,700.00	10,396.00	7,826.33	7,738.25	88.855	SF
Kidd LD22-780 - Original Drilling - Original Drilling - As D	4,131.72	10,500.00	6,516.45	6,440.86	86.208	CC, ES
Kidd LD22-780 - Original Drilling - Original Drilling - As D	5,200.00	10,500.00	6,616.68	6,537.53	83.599	SF

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Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Tatanka Federal LD13-685
Project:	East Pony	TVD Reference:	Well @ 4710.00ft
Reference Site:	LD Section 15	MD Reference:	Well @ 4710.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tatanka Federal LD13-685	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 23						
Fiscus Federal LD23-78HN - Original Drilling - Original D	3,707.45	10,037.02	5,406.54	5,364.78	129.457	CC, ES
Fiscus Federal LD23-78HN - Original Drilling - Original D	11,500.00	10,037.02	7,457.93	7,346.84	67.137	SF
Hensley #A-1 (DA) - Hensley #A-1 OH - As-drilled (No Su	9,202.50	5,534.00	5,629.37	5,367.85	21.525	CC
Hensley #A-1 (DA) - Hensley #A-1 OH - As-drilled (No Su	9,300.00	5,534.00	5,630.22	5,367.64	21.442	ES
Hensley #A-1 (DA) - Hensley #A-1 OH - As-drilled (No Su	10,300.00	5,534.00	5,735.36	5,462.77	21.040	SF
Ingram #1 (DA) - Ingram #1 OH - As-drilled (No Surveys)	10,629.87	5,538.00	5,615.30	5,336.94	20.173	CC
Ingram #1 (DA) - Ingram #1 OH - As-drilled (No Surveys)	10,700.00	5,538.00	5,615.74	5,336.61	20.119	ES
Ingram #1 (DA) - Ingram #1 OH - As-drilled (No Surveys)	11,600.00	5,538.00	5,698.48	5,410.35	19.778	SF

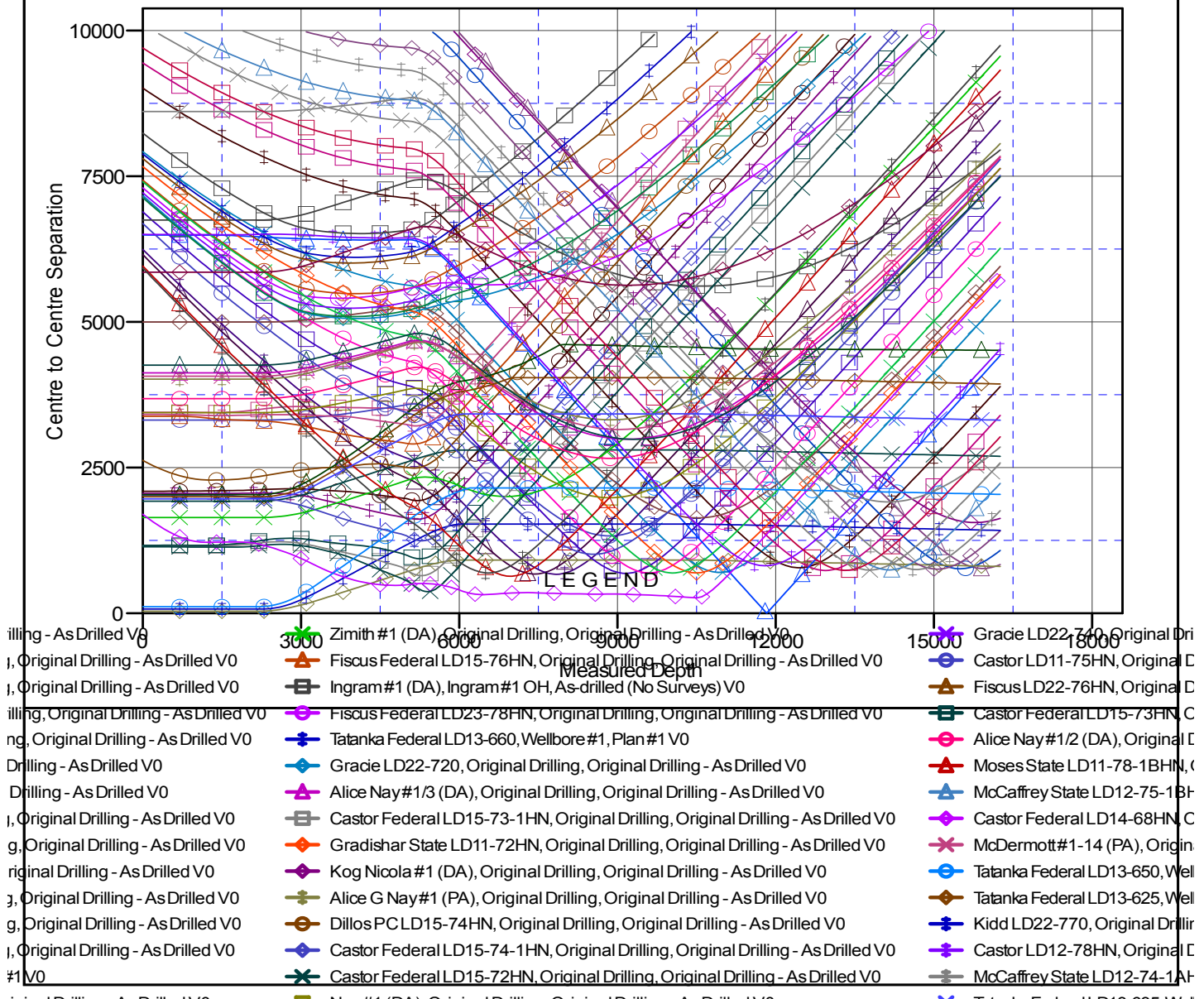
Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Tatanka Federal LD13-685
Project:	East Pony	TVD Reference:	Well @ 4710.00ft
Reference Site:	LD Section 15	MD Reference:	Well @ 4710.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tatanka Federal LD13-685	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 @ 4710.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Tatanka Federal LD13-685
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.07°

Ladder Plot



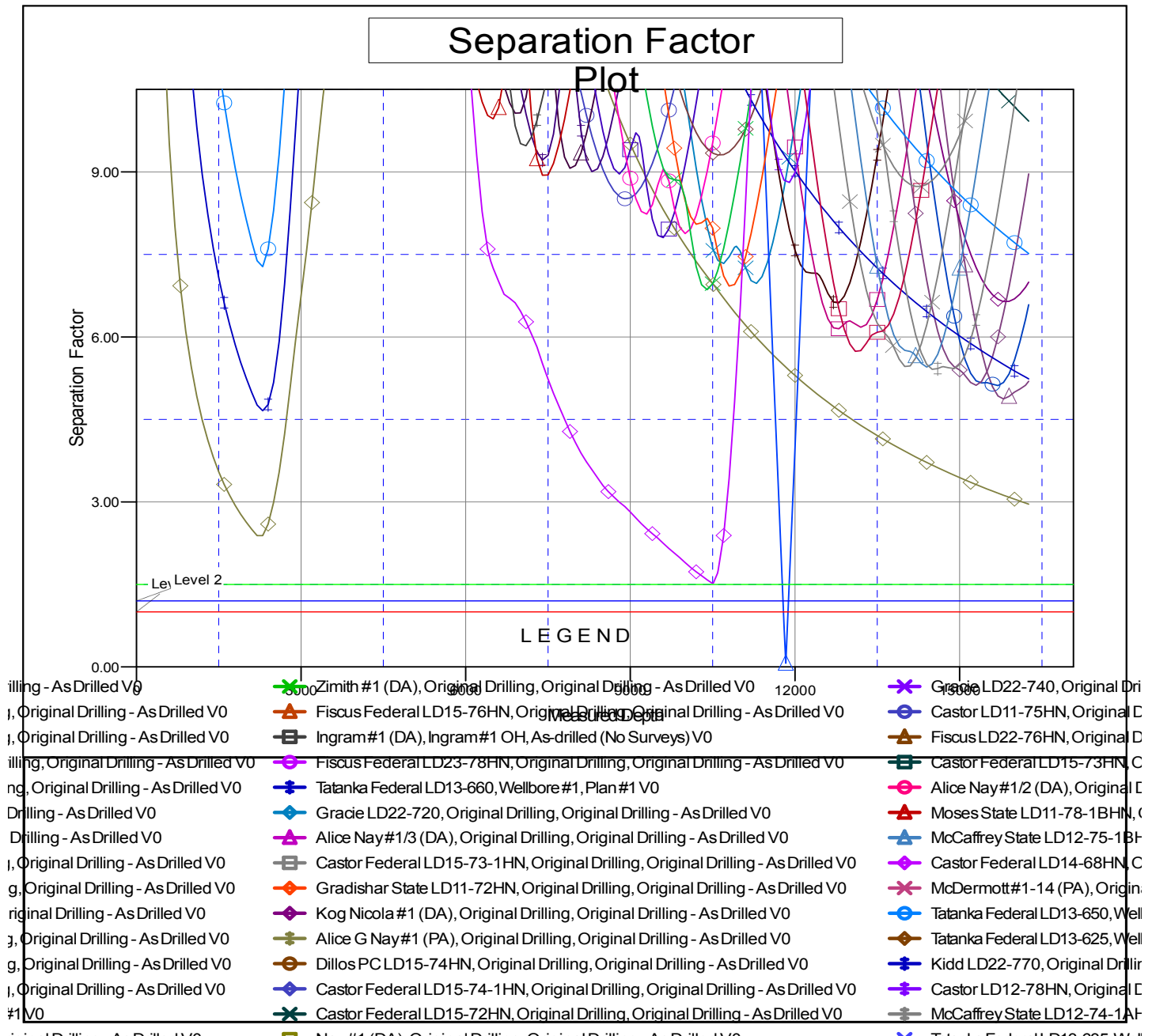
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Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Tatanka Federal LD13-685
Project:	East Pony	TVD Reference:	Well @ 4710.00ft
Reference Site:	LD Section 15	MD Reference:	Well @ 4710.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Tatanka Federal LD13-685	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 @ 4710.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Tatanka Federal LD13-685
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 1.07°



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