

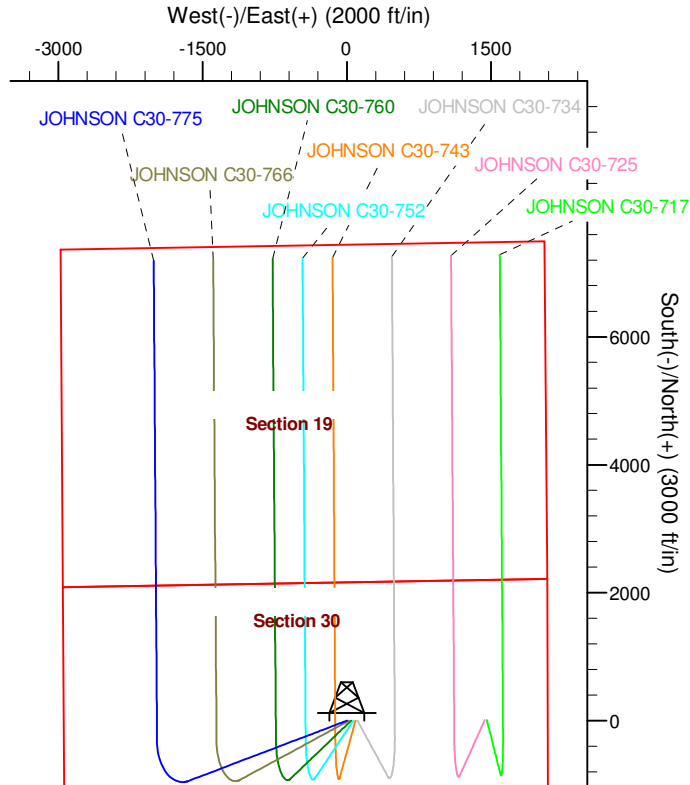
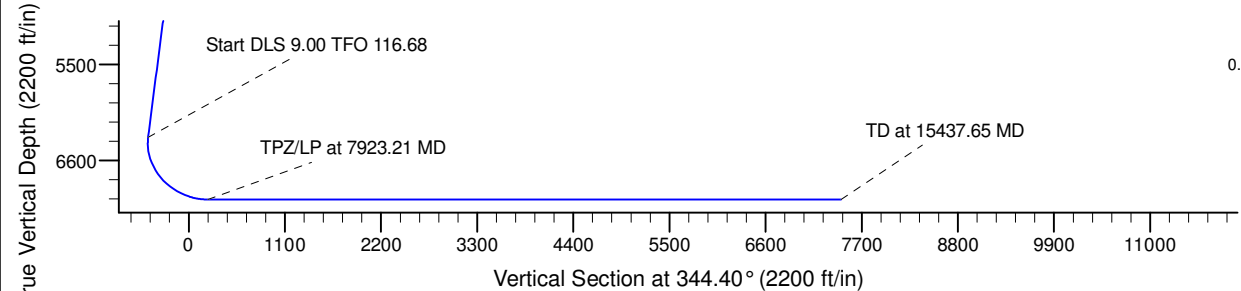
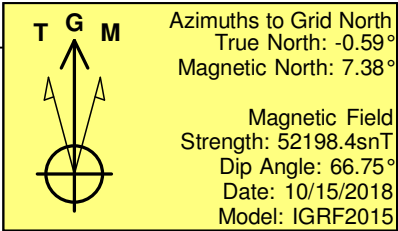
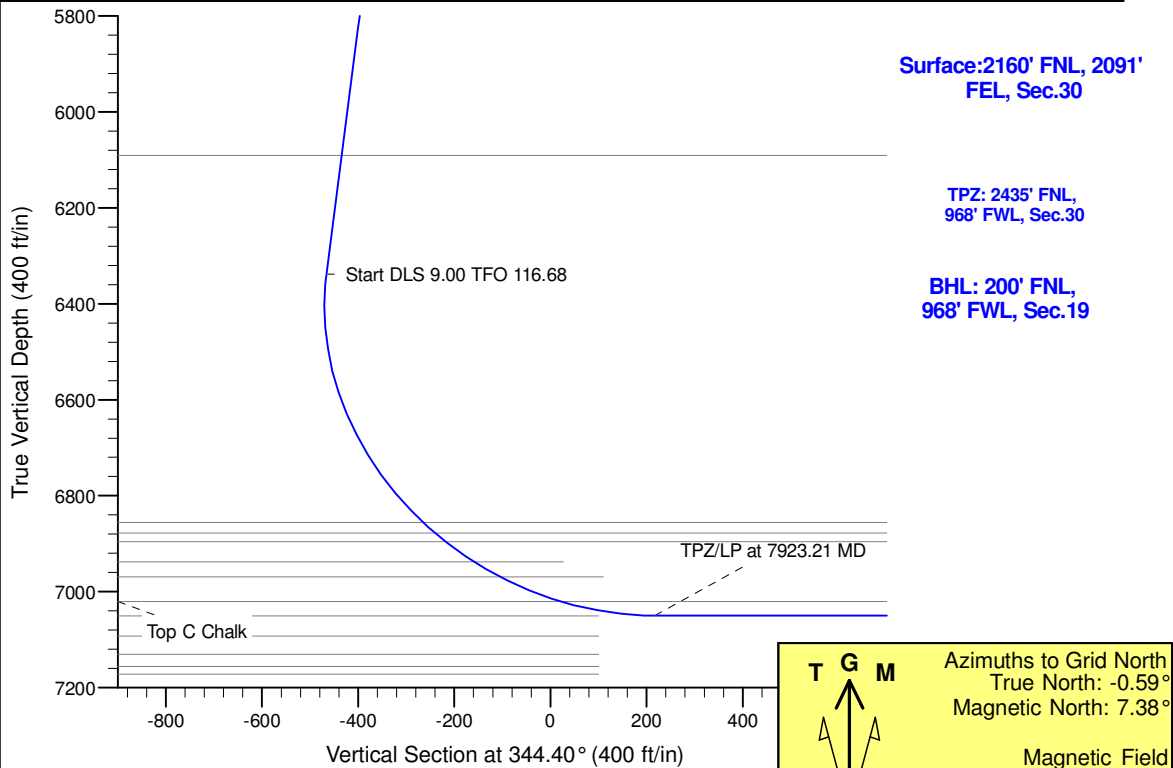
Project: Bronco
Site: C Section 30
Well: JOHNSON C30-775
Wellbore: Wellbore #1
Design: Plan #1

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	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	
3	3378.63	27.57	240.19	3326.03	-161.75	-282.31	2.00	240.19	-79.85	
4	6776.60	27.57	240.19	6338.08	-943.65	-1647.02	0.00	0.00	-465.84	
5	7923.21	90.00	359.74	7050.00	-325.32	-1973.26	9.00	116.68	217.45	TPZ JOHNSON C30-775
6	15437.65	90.00	359.74	7050.00	7189.04	-2007.77	0.00	0.00	7464.15	BHL JOHNSON C30-775



WELL DETAILS: JOHNSON C30-775				
0.00	0.00	1347831.45	3253385.85	40.2846350
				-104.5917400
Plan: Plan #1 (JOHNSON C30-775/Wellbore #1)				
Created By: Colby Baxter	Date: 14:51, October 15 2018			
Checked: _____	Date: _____			
Reviewed: _____	Date: _____			
Approved: _____	Date: _____			

Northern Region - DJ Basin

Bronco

C Section 30

JOHNSON C30-775

Wellbore #1

Plan: Plan #1

Standard Survey Report

15 October, 2018

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well JOHNSON C30-775
Project:	Bronco	TVD Reference:	KB @ 4906.00ft
Site:	C Section 30	MD Reference:	KB @ 4906.00ft
Well:	JOHNSON C30-775	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDMP

Project	Bronco, 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		C Section 30			
Site Position:		Northing:	1,345,306.95 usft	Latitude:	40.2777815
From:	Map	Easting:	3,250,664.82 usft	Longitude:	-104.6015845
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.58 °

Well	JOHNSON C30-775					
Well Position	+N/-S	0.00 ft	Northing:	1,347,831.45 usft	Latitude:	40.2846350
	+E/-W	0.00 ft	Easting:	3,253,385.85 usft	Longitude:	-104.5917400
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,876.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/15/2018	7.97	66.75	52,198.41854741

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	344.40	

Survey Tool Program	Date	10/15/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	15,437.65	Plan #1 (Wellbore #1)	2_MWD+IFR1	A005Mb: IFR declination correction only	

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 JOHNSON C30-775
Project:	Bronco	TVD Reference:	KB @ 4906.00ft
Site:	C Section 30	MD Reference:	KB @ 4906.00ft
Well:	JOHNSON C30-775	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	2.00	240.19	2,099.98	-0.87	-1.51	-0.43	2.00	2.00	0.00
2,200.00	4.00	240.19	2,199.84	-3.47	-6.06	-1.71	2.00	2.00	0.00
2,300.00	6.00	240.19	2,299.45	-7.80	-13.62	-3.85	2.00	2.00	0.00
2,400.00	8.00	240.19	2,398.70	-13.86	-24.19	-6.84	2.00	2.00	0.00
2,500.00	10.00	240.19	2,497.47	-21.64	-37.76	-10.68	2.00	2.00	0.00
2,600.00	12.00	240.19	2,595.62	-31.12	-54.32	-15.36	2.00	2.00	0.00
2,700.00	14.00	240.19	2,693.06	-42.30	-73.84	-20.88	2.00	2.00	0.00
2,800.00	16.00	240.19	2,789.64	-55.17	-96.29	-27.24	2.00	2.00	0.00
2,900.00	18.00	240.19	2,885.27	-69.70	-121.66	-34.41	2.00	2.00	0.00
3,000.00	20.00	240.19	2,979.82	-85.89	-149.91	-42.40	2.00	2.00	0.00
3,100.00	22.00	240.19	3,073.17	-103.70	-181.00	-51.19	2.00	2.00	0.00
3,200.00	24.00	240.19	3,165.21	-123.13	-214.90	-60.78	2.00	2.00	0.00
3,300.00	26.00	240.19	3,255.84	-144.13	-251.57	-71.15	2.00	2.00	0.00
3,378.63	27.57	240.19	3,326.03	-161.75	-282.31	-79.85	2.00	2.00	0.00
3,400.00	27.57	240.19	3,344.97	-166.67	-290.90	-82.28	0.00	0.00	0.00
3,500.00	27.57	240.19	3,433.62	-189.68	-331.06	-93.64	0.00	0.00	0.00
3,600.00	27.57	240.19	3,522.26	-212.69	-371.22	-105.00	0.00	0.00	0.00
3,700.00	27.57	240.19	3,610.90	-235.70	-411.38	-116.35	0.00	0.00	0.00
3,800.00	27.57	240.19	3,699.54	-258.71	-451.55	-127.71	0.00	0.00	0.00
3,900.00	27.57	240.19	3,788.19	-281.72	-491.71	-139.07	0.00	0.00	0.00
4,000.00	27.57	240.19	3,876.83	-304.73	-531.87	-150.43	0.00	0.00	0.00
4,100.00	27.57	240.19	3,965.47	-327.74	-572.03	-161.79	0.00	0.00	0.00
4,200.00	27.57	240.19	4,054.11	-350.75	-612.20	-173.15	0.00	0.00	0.00
4,300.00	27.57	240.19	4,142.76	-373.76	-652.36	-184.51	0.00	0.00	0.00
4,400.00	27.57	240.19	4,231.40	-396.77	-692.52	-195.87	0.00	0.00	0.00
4,500.00	27.57	240.19	4,320.04	-419.78	-732.68	-207.23	0.00	0.00	0.00
4,600.00	27.57	240.19	4,408.68	-442.80	-772.84	-218.59	0.00	0.00	0.00
4,700.00	27.57	240.19	4,497.33	-465.81	-813.01	-229.95	0.00	0.00	0.00
4,800.00	27.57	240.19	4,585.97	-488.82	-853.17	-241.31	0.00	0.00	0.00
4,900.00	27.57	240.19	4,674.61	-511.83	-893.33	-252.67	0.00	0.00	0.00
5,000.00	27.57	240.19	4,763.25	-534.84	-933.49	-264.03	0.00	0.00	0.00
5,100.00	27.57	240.19	4,851.90	-557.85	-973.66	-275.39	0.00	0.00	0.00
5,200.00	27.57	240.19	4,940.54	-580.86	-1,013.82	-286.75	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well JOHNSON C30-775
Project:	Bronco	TVD Reference:	KB @ 4906.00ft
Site:	C Section 30	MD Reference:	KB @ 4906.00ft
Well:	JOHNSON C30-775	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)
5,300.00	27.57	240.19	5,029.18	-603.87	-1,053.98	-298.10	0.00	0.00	0.00
5,400.00	27.57	240.19	5,117.82	-626.88	-1,094.14	-309.46	0.00	0.00	0.00
5,500.00	27.57	240.19	5,206.47	-649.89	-1,134.31	-320.82	0.00	0.00	0.00
5,600.00	27.57	240.19	5,295.11	-672.90	-1,174.47	-332.18	0.00	0.00	0.00
5,700.00	27.57	240.19	5,383.75	-695.91	-1,214.63	-343.54	0.00	0.00	0.00
5,800.00	27.57	240.19	5,472.39	-718.92	-1,254.79	-354.90	0.00	0.00	0.00
5,900.00	27.57	240.19	5,561.04	-741.93	-1,294.95	-366.26	0.00	0.00	0.00
6,000.00	27.57	240.19	5,649.68	-764.94	-1,335.12	-377.62	0.00	0.00	0.00
6,100.00	27.57	240.19	5,738.32	-787.96	-1,375.28	-388.98	0.00	0.00	0.00
6,200.00	27.57	240.19	5,826.97	-810.97	-1,415.44	-400.34	0.00	0.00	0.00
6,300.00	27.57	240.19	5,915.61	-833.98	-1,455.60	-411.70	0.00	0.00	0.00
6,400.00	27.57	240.19	6,004.25	-856.99	-1,495.77	-423.06	0.00	0.00	0.00
6,500.00	27.57	240.19	6,092.89	-880.00	-1,535.93	-434.42	0.00	0.00	0.00
6,600.00	27.57	240.19	6,181.54	-903.01	-1,576.09	-445.78	0.00	0.00	0.00
6,700.00	27.57	240.19	6,270.18	-926.02	-1,616.25	-457.14	0.00	0.00	0.00
6,776.60	27.57	240.19	6,338.08	-943.65	-1,647.02	-465.84	0.00	0.00	0.00
6,800.00	26.69	244.38	6,358.90	-948.61	-1,656.46	-468.08	9.00	-3.78	17.92
6,900.00	24.51	264.70	6,449.26	-960.26	-1,697.45	-468.28	9.00	-2.17	20.32
7,000.00	25.33	286.07	6,540.13	-956.25	-1,738.75	-453.30	9.00	0.82	21.37
7,100.00	28.89	304.31	6,629.28	-936.67	-1,779.34	-423.53	9.00	3.55	18.24
7,200.00	34.34	318.05	6,714.53	-902.01	-1,818.22	-379.68	9.00	5.45	13.74
7,300.00	40.92	328.14	6,793.76	-853.12	-1,854.44	-322.85	9.00	6.59	10.09
7,400.00	48.18	335.75	6,865.02	-791.20	-1,887.09	-254.43	9.00	7.25	7.62
7,500.00	55.83	341.78	6,926.57	-717.78	-1,915.39	-176.11	9.00	7.65	6.02
7,600.00	63.73	346.78	6,976.89	-634.67	-1,938.63	-89.81	9.00	7.90	5.00
7,700.00	71.78	351.14	7,014.74	-543.91	-1,956.24	2.34	9.00	8.05	4.36
7,800.00	79.92	355.10	7,039.18	-447.74	-1,967.79	98.07	9.00	8.14	3.97
7,900.00	88.10	358.87	7,049.62	-348.53	-1,972.98	195.03	9.00	8.18	3.77
7,923.21	90.00	359.74	7,050.00	-325.32	-1,973.26	217.45	9.00	8.19	3.72
8,000.00	90.00	359.74	7,050.00	-248.53	-1,973.62	291.51	0.00	0.00	0.00
8,100.00	90.00	359.74	7,050.00	-148.53	-1,974.08	387.94	0.00	0.00	0.00
8,200.00	90.00	359.74	7,050.00	-48.54	-1,974.53	484.38	0.00	0.00	0.00
8,300.00	90.00	359.74	7,050.00	51.46	-1,974.99	580.82	0.00	0.00	0.00
8,400.00	90.00	359.74	7,050.00	151.46	-1,975.45	677.25	0.00	0.00	0.00
8,500.00	90.00	359.74	7,050.00	251.46	-1,975.91	773.69	0.00	0.00	0.00
8,600.00	90.00	359.74	7,050.00	351.46	-1,976.37	870.13	0.00	0.00	0.00
8,700.00	90.00	359.74	7,050.00	451.46	-1,976.83	966.56	0.00	0.00	0.00
8,800.00	90.00	359.74	7,050.00	551.46	-1,977.29	1,063.00	0.00	0.00	0.00
8,900.00	90.00	359.74	7,050.00	651.46	-1,977.75	1,159.44	0.00	0.00	0.00
9,000.00	90.00	359.74	7,050.00	751.46	-1,978.21	1,255.87	0.00	0.00	0.00
9,100.00	90.00	359.74	7,050.00	851.46	-1,978.67	1,352.31	0.00	0.00	0.00
9,200.00	90.00	359.74	7,050.00	951.45	-1,979.13	1,448.75	0.00	0.00	0.00
9,300.00	90.00	359.74	7,050.00	1,051.45	-1,979.59	1,545.19	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well JOHNSON C30-775
Project:	Bronco	TVD Reference:	KB @ 4906.00ft
Site:	C Section 30	MD Reference:	KB @ 4906.00ft
Well:	JOHNSON C30-775	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	359.74	7,050.00	1,151.45	-1,980.04	1,641.62	0.00	0.00	0.00
9,500.00	90.00	359.74	7,050.00	1,251.45	-1,980.50	1,738.06	0.00	0.00	0.00
9,600.00	90.00	359.74	7,050.00	1,351.45	-1,980.96	1,834.50	0.00	0.00	0.00
9,700.00	90.00	359.74	7,050.00	1,451.45	-1,981.42	1,930.93	0.00	0.00	0.00
9,800.00	90.00	359.74	7,050.00	1,551.45	-1,981.88	2,027.37	0.00	0.00	0.00
9,900.00	90.00	359.74	7,050.00	1,651.45	-1,982.34	2,123.81	0.00	0.00	0.00
10,000.00	90.00	359.74	7,050.00	1,751.45	-1,982.80	2,220.24	0.00	0.00	0.00
10,100.00	90.00	359.74	7,050.00	1,851.44	-1,983.26	2,316.68	0.00	0.00	0.00
10,200.00	90.00	359.74	7,050.00	1,951.44	-1,983.72	2,413.12	0.00	0.00	0.00
10,300.00	90.00	359.74	7,050.00	2,051.44	-1,984.18	2,509.55	0.00	0.00	0.00
10,400.00	90.00	359.74	7,050.00	2,151.44	-1,984.64	2,605.99	0.00	0.00	0.00
10,500.00	90.00	359.74	7,050.00	2,251.44	-1,985.10	2,702.43	0.00	0.00	0.00
10,600.00	90.00	359.74	7,050.00	2,351.44	-1,985.55	2,798.86	0.00	0.00	0.00
10,700.00	90.00	359.74	7,050.00	2,451.44	-1,986.01	2,895.30	0.00	0.00	0.00
10,800.00	90.00	359.74	7,050.00	2,551.44	-1,986.47	2,991.74	0.00	0.00	0.00
10,900.00	90.00	359.74	7,050.00	2,651.44	-1,986.93	3,088.17	0.00	0.00	0.00
11,000.00	90.00	359.74	7,050.00	2,751.44	-1,987.39	3,184.61	0.00	0.00	0.00
11,100.00	90.00	359.74	7,050.00	2,851.43	-1,987.85	3,281.05	0.00	0.00	0.00
11,200.00	90.00	359.74	7,050.00	2,951.43	-1,988.31	3,377.49	0.00	0.00	0.00
11,300.00	90.00	359.74	7,050.00	3,051.43	-1,988.77	3,473.92	0.00	0.00	0.00
11,400.00	90.00	359.74	7,050.00	3,151.43	-1,989.23	3,570.36	0.00	0.00	0.00
11,500.00	90.00	359.74	7,050.00	3,251.43	-1,989.69	3,666.80	0.00	0.00	0.00
11,600.00	90.00	359.74	7,050.00	3,351.43	-1,990.15	3,763.23	0.00	0.00	0.00
11,700.00	90.00	359.74	7,050.00	3,451.43	-1,990.61	3,859.67	0.00	0.00	0.00
11,800.00	90.00	359.74	7,050.00	3,551.43	-1,991.06	3,956.11	0.00	0.00	0.00
11,900.00	90.00	359.74	7,050.00	3,651.43	-1,991.52	4,052.54	0.00	0.00	0.00
12,000.00	90.00	359.74	7,050.00	3,751.42	-1,991.98	4,148.98	0.00	0.00	0.00
12,100.00	90.00	359.74	7,050.00	3,851.42	-1,992.44	4,245.42	0.00	0.00	0.00
12,200.00	90.00	359.74	7,050.00	3,951.42	-1,992.90	4,341.85	0.00	0.00	0.00
12,300.00	90.00	359.74	7,050.00	4,051.42	-1,993.36	4,438.29	0.00	0.00	0.00
12,400.00	90.00	359.74	7,050.00	4,151.42	-1,993.82	4,534.73	0.00	0.00	0.00
12,500.00	90.00	359.74	7,050.00	4,251.42	-1,994.28	4,631.16	0.00	0.00	0.00
12,600.00	90.00	359.74	7,050.00	4,351.42	-1,994.74	4,727.60	0.00	0.00	0.00
12,700.00	90.00	359.74	7,050.00	4,451.42	-1,995.20	4,824.04	0.00	0.00	0.00
12,800.00	90.00	359.74	7,050.00	4,551.42	-1,995.66	4,920.47	0.00	0.00	0.00
12,900.00	90.00	359.74	7,050.00	4,651.42	-1,996.12	5,016.91	0.00	0.00	0.00
13,000.00	90.00	359.74	7,050.00	4,751.41	-1,996.57	5,113.35	0.00	0.00	0.00
13,100.00	90.00	359.74	7,050.00	4,851.41	-1,997.03	5,209.79	0.00	0.00	0.00
13,200.00	90.00	359.74	7,050.00	4,951.41	-1,997.49	5,306.22	0.00	0.00	0.00
13,300.00	90.00	359.74	7,050.00	5,051.41	-1,997.95	5,402.66	0.00	0.00	0.00
13,400.00	90.00	359.74	7,050.00	5,151.41	-1,998.41	5,499.10	0.00	0.00	0.00
13,500.00	90.00	359.74	7,050.00	5,251.41	-1,998.87	5,595.53	0.00	0.00	0.00
13,600.00	90.00	359.74	7,050.00	5,351.41	-1,999.33	5,691.97	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well JOHNSON C30-775
Project:	Bronco	TVD Reference:	KB @ 4906.00ft
Site:	C Section 30	MD Reference:	KB @ 4906.00ft
Well:	JOHNSON C30-775	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	359.74	7,050.00	5,451.41	-1,999.79	5,788.41	0.00	0.00	0.00
13,800.00	90.00	359.74	7,050.00	5,551.41	-2,000.25	5,884.84	0.00	0.00	0.00
13,900.00	90.00	359.74	7,050.00	5,651.40	-2,000.71	5,981.28	0.00	0.00	0.00
14,000.00	90.00	359.74	7,050.00	5,751.40	-2,001.17	6,077.72	0.00	0.00	0.00
14,100.00	90.00	359.74	7,050.00	5,851.40	-2,001.63	6,174.15	0.00	0.00	0.00
14,200.00	90.00	359.74	7,050.00	5,951.40	-2,002.08	6,270.59	0.00	0.00	0.00
14,300.00	90.00	359.74	7,050.00	6,051.40	-2,002.54	6,367.03	0.00	0.00	0.00
14,400.00	90.00	359.74	7,050.00	6,151.40	-2,003.00	6,463.46	0.00	0.00	0.00
14,500.00	90.00	359.74	7,050.00	6,251.40	-2,003.46	6,559.90	0.00	0.00	0.00
14,600.00	90.00	359.74	7,050.00	6,351.40	-2,003.92	6,656.34	0.00	0.00	0.00
14,700.00	90.00	359.74	7,050.00	6,451.40	-2,004.38	6,752.77	0.00	0.00	0.00
14,800.00	90.00	359.74	7,050.00	6,551.40	-2,004.84	6,849.21	0.00	0.00	0.00
14,900.00	90.00	359.74	7,050.00	6,651.39	-2,005.30	6,945.65	0.00	0.00	0.00
15,000.00	90.00	359.74	7,050.00	6,751.39	-2,005.76	7,042.09	0.00	0.00	0.00
15,100.00	90.00	359.74	7,050.00	6,851.39	-2,006.22	7,138.52	0.00	0.00	0.00
15,200.00	90.00	359.74	7,050.00	6,951.39	-2,006.68	7,234.96	0.00	0.00	0.00
15,300.00	90.00	359.74	7,050.00	7,051.39	-2,007.14	7,331.40	0.00	0.00	0.00
15,400.00	90.00	359.74	7,050.00	7,151.39	-2,007.59	7,427.83	0.00	0.00	0.00
15,437.65	90.00	359.74	7,050.00	7,189.04	-2,007.77	7,464.15	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
SHL JOHNSON C30-77! - hit/miss target - Shape - Point	0.00	0.00	0.00	0.00	0.00	1,347,831.45	3,253,385.85	40.2846350	-104.5917400
KOP JOHNSON C30-77 - plan hits target center - Point	0.00	0.00	6,338.08	-943.65	-1,647.02	1,346,887.81	3,251,738.84	40.2820909	-104.5976777
TPZ JOHNSON C30-77! - plan hits target center - Point	0.00	0.00	7,050.00	-325.32	-1,973.26	1,347,506.13	3,251,412.59	40.2837973	-104.5988245
BHL JOHNSON C30-77! - plan hits target center - Point	0.00	0.00	7,050.00	7,189.04	-2,007.77	1,355,020.48	3,251,378.09	40.3044246	-104.5986744

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well JOHNSON C30-775
Project:	Bronco	TVD Reference:	KB @ 4906.00ft
Site:	C Section 30	MD Reference:	KB @ 4906.00ft
Well:	JOHNSON C30-775	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 (°)	
665.00	665.00	Pierre				
727.00	727.00	Upper Pierre Aquifer Top				
1,622.00	1,622.00	Upper Pierre Aquifer Base				
3,995.68	3,873.00	Parkman				
4,457.08	4,282.00	Sussex				
5,369.74	5,091.00	Shannon				
6,497.87	6,091.00	Teepee Buttes				
7,386.60	6,856.00	Sharon Springs				
7,419.75	6,878.00	Top A Chalk				
7,448.19	6,896.00	Top A Marl				
7,520.78	6,938.00	Top B Chalk				
7,582.60	6,969.00	Top B Marl				
7,720.98	7,021.00	Top C Chalk				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2000	2000	0	0	Start Build 2.00	
6777	6338	-944	-1647	Start DLS 9.00 TFO 116.68	
7923	7050	-325	-1973	TPZ/LP at 7923.21 MD	
15,438	7050	7189	-2008	TD at 15437.65 MD	

Checked By: _____ Approved By: _____ Date: _____

Northern Region - DJ Basin

Bronco

C Section 30

JOHNSON C30-775

Wellbore #1

Plan #1

Anticollision Summary Report

15 October, 2018

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well JOHNSON C30-775
Project:	Bronco	TVD Reference:	KB @ 4906.00ft
Reference Site:	C Section 30	MD Reference:	KB @ 4906.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	JOHNSON C30-775	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	10/15/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	15,437.65	Plan #1 (Wellbore #1)	2_MWD+IFR1	A005Mb: IFR declination correction only

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						
C Section 19						
BROOMFIELD #18-19(SI) - Wellbore #1 - Gyro Surveys	14,332.54	7,004.64	77.49	-26.12	0.748	Level 1, CC, ES, SF
CPC-OSTER #19-01(PA) - Wellbore #1 - Gyro Surveys	15,066.85	6,857.55	3,419.49	3,309.10	30.978	CC
CPC-OSTER #19-01(PA) - Wellbore #1 - Gyro Surveys	15,100.00	6,857.28	3,419.65	3,308.98	30.899	ES
CPC-OSTER #19-01(PA) - Wellbore #1 - Gyro Surveys	15,437.65	6,854.57	3,439.53	3,326.32	30.382	SF
FREEDOM II C #19-3(PA) - Wellbore #1 - Gyro Surveys	15,033.20	6,993.52	822.47	711.72	7.426	CC, ES, SF
Freedom One C19-5 - Wellbore #1 - Wellbore #1 - As Dr	13,439.49	6,978.77	474.69	379.60	4.992	CC, ES, SF
Freedom Two 19-4 - Wellbore #1 - Wellbore #1 - As Drille	15,113.84	7,015.50	417.29	306.11	3.753	CC, ES, SF
FREEDOM TWO C #19-6(PA) - Wellbore #1 - Gyro Surv	13,659.38	7,019.43	827.43	730.32	8.521	CC, ES
FREEDOM TWO C #19-6(PA) - Wellbore #1 - Gyro Surv	13,700.00	7,019.39	828.42	731.20	8.520	SF
MOORE UPRC C #19-2(PR) - Wellbore #1 - No Surveys	14,982.99	6,959.00	2,238.97	2,092.20	15.255	CC
MOORE UPRC C #19-2(PR) - Wellbore #1 - No Surveys	15,000.00	6,959.00	2,239.04	2,092.13	15.241	ES
MOORE UPRC C #19-2(PR) - Wellbore #1 - No Surveys	15,200.00	6,959.00	2,249.46	2,101.29	15.181	SF
MOORE UPRC C #19-7(PR) - Wellbore #1 - No Surveys	13,826.57	6,959.00	2,150.41	2,015.40	15.928	CC, ES
MOORE UPRC C #19-7(PR) - Wellbore #1 - No Surveys	14,000.00	6,959.00	2,157.39	2,021.19	15.840	SF
OSTER #20-19(SI) - Wellbore #1 - No Surveys	11,734.16	6,954.00	2,683.61	2,568.92	23.399	CC, ES
OSTER #20-19(SI) - Wellbore #1 - No Surveys	12,100.00	6,954.00	2,708.43	2,591.10	23.083	SF
OSTER PM C #19-8(PR) - Wellbore #1 - No Surveys	13,731.64	6,943.00	3,586.30	3,452.39	26.780	CC, ES
OSTER PM C #19-8(PR) - Wellbore #1 - No Surveys	14,300.00	6,943.00	3,631.06	3,492.91	26.283	SF
VICTOR C #19-10(PR) - Wellbore #1 - No Surveys	12,366.07	6,967.00	1,886.70	1,765.97	15.627	CC, ES
VICTOR C #19-10(PR) - Wellbore #1 - No Surveys	12,500.00	6,967.00	1,891.45	1,769.79	15.547	SF
VICTOR C #19-11(SI) - Wellbore #1 - No Surveys	12,286.48	7,008.00	885.19	764.86	7.356	CC, ES
VICTOR C #19-11(SI) - Wellbore #1 - No Surveys	12,300.00	7,008.00	885.29	764.89	7.353	SF
VICTOR C #19-14(PA) - Wellbore #1 - Gyro Surveys	10,871.48	6,956.24	1,021.27	950.80	14.492	CC, ES
VICTOR C #19-14(PA) - Wellbore #1 - Gyro Surveys	10,900.00	6,956.24	1,021.67	951.01	14.460	SF
VICTOR C #19-15(PR) - Wellbore #1 - No Surveys	11,111.55	6,989.00	2,099.94	1,990.53	19.194	CC, ES
VICTOR C #19-15(PR) - Wellbore #1 - No Surveys	11,400.00	6,989.00	2,119.66	2,008.29	19.033	SF
VICTOR C #19-16(SI) - Wellbore #1 - No Surveys	2,000.00	1,905.00	3,214.56	3,191.00	136.437	CC, ES
VICTOR C #19-16(SI) - Wellbore #1 - No Surveys	11,800.00	6,955.00	3,505.95	3,391.86	30.730	SF
VICTOR C #19-9(PA) - Wellbore #1 - Gyro Surveys	12,527.20	6,906.60	3,409.05	3,323.72	39.952	CC, ES
VICTOR C #19-9(PA) - Wellbore #1 - Gyro Surveys	13,300.00	6,918.51	3,495.52	3,404.70	38.489	SF
Victor C19-12 - Wellbore #1 - Wellbore #1 - As Drilled	12,342.99	4,300.01	2,739.41	2,682.66	48.267	CC, ES
Victor C19-12 - Wellbore #1 - Wellbore #1 - As Drilled	13,300.00	4,300.01	2,901.77	2,836.10	44.190	SF
Victor C19-13 - Wellbore #1 - Wellbore #1 - As Drilled	10,881.16	6,991.73	450.55	379.56	6.347	CC, ES
Victor C19-13 - Wellbore #1 - Wellbore #1 - As Drilled	10,900.00	6,991.58	450.94	379.73	6.332	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 JOHNSON C30-775
Project:	Bronco	TVD Reference:	KB @ 4906.00ft
Reference Site:	C Section 30	MD Reference:	KB @ 4906.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	JOHNSON C30-775	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						
C Section 30						
ANDERSON #1(PR) - Wellbore #1 - No Surveys	9,743.36	7,014.00	351.18	252.41	3.556	CC, ES, SF
ANDERSON #2(PA) - Wellbore #1 - Gyro Surveys	5,096.31	4,809.94	2,173.68	2,134.84	55.961	CC
ANDERSON #2(PA) - Wellbore #1 - Gyro Surveys	5,200.00	4,897.00	2,174.36	2,134.55	54.617	ES
ANDERSON #2(PA) - Wellbore #1 - Gyro Surveys	6,950.00	6,423.70	2,376.03	2,320.47	42.766	SF
BROSNAHAN #1(SI) - Wellbore #1 - No Surveys	5,379.71	5,057.84	550.39	482.21	8.072	CC
BROSNAHAN #1(SI) - Wellbore #1 - No Surveys	5,400.00	5,075.82	550.47	482.00	8.039	ES
BROSNAHAN #1(SI) - Wellbore #1 - No Surveys	5,600.00	5,253.11	559.76	488.58	7.864	SF
BROSNAHAN #14-30(SI) - Wellbore #1 - No Surveys	6,826.09	6,342.31	1,821.07	1,732.35	20.527	CC, ES
BROSNAHAN #14-30(SI) - Wellbore #1 - No Surveys	7,000.00	6,500.13	1,844.71	1,753.51	20.226	SF
Brosnahan 13-30 - Wellbore #1 - Wellbore #1 - As Drilled	7,416.46	7,280.01	576.48	529.16	12.181	CC, ES
Brosnahan 13-30 - Wellbore #1 - Wellbore #1 - As Drilled	7,600.00	7,280.01	626.60	572.31	11.541	SF
JOHNSON #30-15(PR) - Wellbore #1 - No Surveys	2,000.00	1,947.00	1,151.11	1,127.18	48.108	CC, ES
JOHNSON #30-15(PR) - Wellbore #1 - No Surveys	9,600.00	6,997.00	2,791.62	2,693.93	28.576	SF
Johnson A-30 - Wellbore #1 - Wellbore #1 - As Drilled	7,017.27	6,503.49	1,654.81	1,602.29	31.506	CC, ES
Johnson A-30 - Wellbore #1 - Wellbore #1 - As Drilled	7,200.00	6,663.12	1,681.57	1,627.13	30.889	SF
JOHNSON C30-717 - Wellbore #1 - Plan #1	2,000.00	1,970.00	1,457.43	1,443.66	105.877	CC, ES
JOHNSON C30-717 - Wellbore #1 - Plan #1	15,437.65	14,786.81	3,602.10	3,419.26	19.702	SF
JOHNSON C30-725 - Wellbore #1 - Plan #1	2,000.00	1,971.00	1,435.11	1,421.34	104.228	CC, ES
JOHNSON C30-725 - Wellbore #1 - Plan #1	15,437.65	14,919.25	3,093.04	2,909.65	16.866	SF
JOHNSON C30-734 - Wellbore #1 - Plan #1	2,000.00	2,002.00	112.44	98.56	8.101	CC, ES
JOHNSON C30-734 - Wellbore #1 - Plan #1	2,200.00	2,201.84	118.54	103.27	7.761	SF
JOHNSON C30-743 - Wellbore #1 - Plan #1	2,000.00	2,001.00	90.12	76.24	6.494	CC, ES
JOHNSON C30-743 - Wellbore #1 - Plan #1	2,100.00	2,100.98	91.64	77.06	6.285	SF
JOHNSON C30-752 - Wellbore #1 - Plan #1	2,000.00	2,001.00	67.52	53.64	4.866	CC, ES
JOHNSON C30-752 - Wellbore #1 - Plan #1	2,100.00	2,100.98	69.04	54.46	4.735	SF
JOHNSON C30-760 - Wellbore #1 - Plan #1	2,000.00	2,000.00	44.92	31.05	3.238	CC, ES
JOHNSON C30-760 - Wellbore #1 - Plan #1	2,100.00	2,100.02	46.44	31.87	3.186	SF
JOHNSON C30-766 - Wellbore #1 - Plan #1	2,000.00	2,000.00	22.60	8.73	1.629	CC, ES, SF
Johnson D06-730 - Wellbore #1 - Plan #1	2,000.00	1,964.00	1,510.94	1,497.20	109.936	CC, ES
Johnson D06-730 - Wellbore #1 - Plan #1	6,900.00	7,542.02	3,444.26	3,389.72	63.149	SF
Johnson D06-734 - Wellbore #1 - Plan #1	2,000.00	1,965.00	1,488.73	1,474.98	108.292	CC, ES
Johnson D06-734 - Wellbore #1 - Plan #1	6,900.00	7,623.70	2,853.08	2,797.99	51.794	SF
Johnson D06-744 - Wellbore #1 - Plan #1	2,000.00	1,966.00	1,466.27	1,452.52	106.630	CC, ES
Johnson D06-744 - Wellbore #1 - Plan #1	6,950.00	7,760.60	2,582.93	2,526.66	45.906	SF
Johnson D06-756 - Wellbore #1 - Plan #1	2,654.74	2,924.12	1,413.57	1,394.59	74.488	CC, ES
Johnson D06-756 - Wellbore #1 - Plan #1	6,850.00	7,612.91	2,219.84	2,163.92	39.700	SF
Johnson D06-761 - Wellbore #1 - Plan #1	2,000.00	2,005.00	187.66	173.77	13.510	CC, ES
Johnson D06-761 - Wellbore #1 - Plan #1	2,300.00	2,304.45	202.17	186.19	12.651	SF
Johnson D06-766 - Wellbore #1 - Plan #1	2,000.00	2,003.00	174.85	160.97	12.594	CC, ES
Johnson D06-766 - Wellbore #1 - Plan #1	2,300.00	2,302.45	188.70	172.73	11.813	SF
Johnson D06-777 - Wellbore #1 - Plan #1	2,000.00	2,002.00	164.48	150.60	11.850	CC, ES
Johnson D06-777 - Wellbore #1 - Plan #1	2,500.00	2,513.43	190.40	173.08	10.987	SF
Johnson D06-785 - Wellbore #1 - Plan #1	2,001.77	2,002.84	156.46	142.57	11.265	CC
Johnson D06-785 - Wellbore #1 - Plan #1	2,100.00	2,103.56	156.90	142.32	10.763	ES
Johnson D06-785 - Wellbore #1 - Plan #1	7,350.00	7,703.70	541.72	483.26	9.267	SF
Loustalet #30-03(SI) - Wellbore #1 - No Surveys	2,000.00	1,897.00	2,107.02	2,083.53	89.695	CC, ES
Loustalet #30-03(SI) - Wellbore #1 - No Surveys	10,500.00	6,947.00	3,501.52	3,398.21	33.896	SF
LOUSTALET #30-1(PR) - Wellbore #1 - Gyro Surveys	2,000.00	1,957.00	1,515.11	1,491.10	63.091	CC
LOUSTALET #30-1(PR) - Wellbore #1 - Gyro Surveys	2,100.00	2,056.98	1,516.12	1,490.88	60.086	ES
LOUSTALET #30-1(PR) - Wellbore #1 - Gyro Surveys	10,000.00	7,007.00	2,137.14	2,036.70	21.277	SF
LOUSTALET #30-14(PR) - Wellbore #1 - No Surveys	2,000.00	1,936.00	1,355.56	1,331.73	56.881	CC, ES
LOUSTALET #30-14(PR) - Wellbore #1 - No Surveys	9,100.00	6,986.00	3,380.13	3,285.21	35.611	SF
LOUSTALET #30-2(PR) - Wellbore #1 - No Surveys	2,000.00	1,961.00	238.36	214.31	9.911	CC, ES

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 JOHNSON C30-775
Project:	Bronco	TVD Reference:	KB @ 4906.00ft
Reference Site:	C Section 30	MD Reference:	KB @ 4906.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	JOHNSON C30-775	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						
C Section 30						
LOUSTALET #30-2(PR) - Wellbore #1 - No Surveys	2,300.00	2,260.45	253.09	225.41	9.144	SF
LOUSTALET #30-4(SI) - Wellbore #1 - No Surveys	2,000.00	1,949.00	1,769.36	1,745.42	73.893	CC
LOUSTALET #30-4(SI) - Wellbore #1 - No Surveys	2,100.00	2,048.98	1,770.08	1,744.92	70.347	ES
LOUSTALET #30-4(SI) - Wellbore #1 - No Surveys	7,000.00	6,489.13	3,173.89	3,088.77	37.288	SF
LOUSTALET #30-44(PR) - Wellbore #1 - No Surveys	2,000.00	1,932.00	2,801.64	2,777.84	117.734	CC
LOUSTALET #30-44(PR) - Wellbore #1 - No Surveys	2,700.00	2,625.06	2,804.86	2,772.61	86.965	ES
LOUSTALET #30-44(PR) - Wellbore #1 - No Surveys	7,000.00	6,472.13	3,497.63	3,409.27	39.582	SF
STEWART #30-1(PR) - Wellbore #1 - Gyro Surveys	9,775.21	7,018.20	366.33	304.43	5.918	CC, ES, SF
STEWART #30-2(PA) - Wellbore #1 - Gyro Surveys	9,733.47	7,004.27	734.11	672.44	11.904	CC, ES
STEWART #30-2(PA) - Wellbore #1 - Gyro Surveys	9,800.00	7,004.50	737.12	675.00	11.865	SF
STEWART #30-23(PA) - Wellbore #1 - Gyro Surveys	8,174.64	7,027.93	285.30	231.67	5.320	CC, ES, SF
STEWART #30-25(SI) - Wellbore #1 - No Surveys	9,051.18	7,005.00	234.89	140.47	2.488	CC, ES, SF
STEWART R C #30-6(SI) - Wellbore #1 - No Surveys	4,483.90	4,260.77	658.16	602.60	11.845	CC
STEWART R C #30-6(SI) - Wellbore #1 - No Surveys	4,500.00	4,275.04	658.21	602.42	11.798	ES
STEWART R C #30-6(SI) - Wellbore #1 - No Surveys	8,500.00	7,005.00	927.53	835.15	10.040	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well JOHNSON C30-775
Project:	Bronco	TVD Reference:	KB @ 4906.00ft
Reference Site:	C Section 30	MD Reference:	KB @ 4906.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	JOHNSON C30-775	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 Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
G Section 25						
CPC Pluss 25-01 - Wellbore #1 - Wellbore #1 - As Drilled	9,745.36	4,400.01	3,002.05	2,955.41	64.375	CC, ES
CPC Pluss 25-01 - Wellbore #1 - Wellbore #1 - As Drilled	11,100.00	4,400.01	3,293.53	3,235.33	56.591	SF
Heartland C30-79-1HN - Original Drilling - Original Drilling	13,967.01	15,316.84	672.32	520.29	4.422	CC
Heartland C30-79-1HN - Original Drilling - Original Drilling	15,437.65	16,804.96	693.94	515.39	3.887	ES, SF
Heartland C30-79HN - Original Drilling - Original Drilling	14,994.34	16,343.26	1,019.44	849.13	5.986	CC
Heartland C30-79HN - Original Drilling - Original Drilling	15,307.71	16,664.30	1,021.15	845.44	5.812	ES, SF
Heartland C31-78-1HN - Original Drilling - Original Drilling	6,939.91	6,352.33	2,189.76	2,133.19	38.704	CC, ES
Heartland C31-78-1HN - Original Drilling - Original Drilling	7,100.00	6,387.20	2,213.88	2,156.04	38.275	SF
Heartland G25-72-1HN - Original Drilling - Original Drilling	13,397.49	14,731.98	1,292.53	1,081.28	6.119	CC
Heartland G25-72-1HN - Original Drilling - Original Drilling	15,437.65	16,802.58	1,302.68	1,034.60	4.859	ES, SF
Heartland State C31-79-1HN - Original Drilling - Original	6,988.54	6,372.00	2,401.94	2,349.27	45.608	CC, ES
Heartland State C31-79-1HN - Original Drilling - Original	7,150.00	6,390.24	2,425.73	2,371.87	45.039	SF
Heartland State G36-75-1HN - Original Drilling - Original	7,081.49	5,841.21	3,809.53	3,760.23	77.269	CC
Heartland State G36-75-1HN - Original Drilling - Original	7,150.00	7,150.00	3,811.74	3,756.33	68.791	ES, SF
Heartland State H01-73-1HN - Original Drilling - Original	7,143.15	6,517.27	3,015.75	2,967.86	62.968	CC
Heartland State H01-73-1HN - Original Drilling - Original	7,150.00	6,518.57	3,015.78	2,967.84	62.902	ES
Heartland State H01-73-1HN - Original Drilling - Original	7,450.00	6,559.02	3,083.75	3,033.79	61.730	SF
Heartland State H01-74-1HN - Original Drilling - Original	7,178.56	6,396.00	3,402.54	3,352.91	68.558	CC, ES
Heartland State H01-74-1HN - Original Drilling - Original	7,500.00	6,441.00	3,465.13	3,413.56	67.188	SF
Heartland State H01-74-1HN - Original Drilling - ST01 - S	7,178.56	6,396.00	3,402.54	3,352.91	68.558	CC, ES
Heartland State H01-74-1HN - Original Drilling - ST01 - S	7,500.00	6,441.00	3,465.13	3,413.56	67.188	SF
Ocoma G25-09 - Wellbore #1 - Wellbore #1 - As Drilled	7,508.45	6,857.66	1,622.96	1,571.67	31.639	CC, ES
Ocoma G25-09 - Wellbore #1 - Wellbore #1 - As Drilled	7,600.00	6,913.02	1,627.99	1,576.45	31.589	SF
Ocoma G25-16 - Wellbore #1 - Wellbore #1 - As Drilled	7,197.15	6,673.26	2,247.52	2,197.22	44.681	CC
Ocoma G25-16 - Wellbore #1 - Wellbore #1 - As Drilled	7,200.00	6,676.19	2,247.53	2,197.20	44.661	ES
Ocoma G25-16 - Wellbore #1 - Wellbore #1 - As Drilled	7,450.00	6,878.83	2,289.44	2,237.12	43.761	SF
Ocoma G25-23 - Wellbore #1 - Wellbore #1 - As Drilled	7,405.10	6,781.68	2,573.09	2,522.45	50.812	CC, ES
Ocoma G25-23 - Wellbore #1 - Wellbore #1 - As Drilled	7,600.00	6,887.54	2,594.30	2,542.79	50.367	SF
Pluss G25-08 - Wellbore #1 - Wellbore #1 - As Drilled	8,397.29	6,969.28	1,555.49	1,500.84	28.464	CC, ES
Pluss G25-08 - Wellbore #1 - Wellbore #1 - As Drilled	8,500.00	6,968.93	1,558.87	1,504.09	28.457	SF
Shelton G25-22 - Wellbore #1 - Wellbore #1 - As Drilled	7,900.00	6,924.48	2,300.61	2,246.88	42.819	SF
Shelton G25-22 - Wellbore #1 - Wellbore #1 - As Drilled	7,992.05	6,924.27	2,298.60	2,244.95	42.843	CC, ES
Shelton G25-75HN - Original Drilling - Original Drilling - A	7,400.00	9,230.00	3,613.48	3,536.04	46.657	SF
Shelton G25-75HN - Original Drilling - Original Drilling - A	8,100.00	8,521.18	3,512.19	3,443.84	51.383	ES
Shelton G25-75HN - Original Drilling - Original Drilling - A	8,150.10	8,497.62	3,512.00	3,443.91	51.576	CC
Shelton PC G24-74-1HN - Original Drilling - Original Drill	14,500.00	14,500.00	2,568.28	2,348.27	11.674	ES, SF
Shelton PC G24-74-1HN - Original Drilling - Original Drill	14,929.02	11,311.00	2,557.37	2,386.59	14.974	CC
Shelton PC G24-75HN - Original Drilling - Original Drilling	11,150.52	7,467.85	3,512.54	3,435.16	45.389	CC
Shelton PC G24-75HN - Original Drilling - Original Drilling	13,900.00	13,900.00	3,543.49	3,340.24	17.434	ES, SF
Shelton PC G25-74-1HN - Original Drilling - Original Drill	7,700.00	9,395.02	2,629.96	2,553.83	34.547	SF
Shelton PC G25-74-1HN - Original Drilling - Original Drill	8,296.23	8,732.02	2,607.34	2,539.82	38.613	CC
Shelton PC G25-74-1HN - Original Drilling - Original Drill	9,200.00	9,200.00	2,610.21	2,537.21	35.756	ES

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

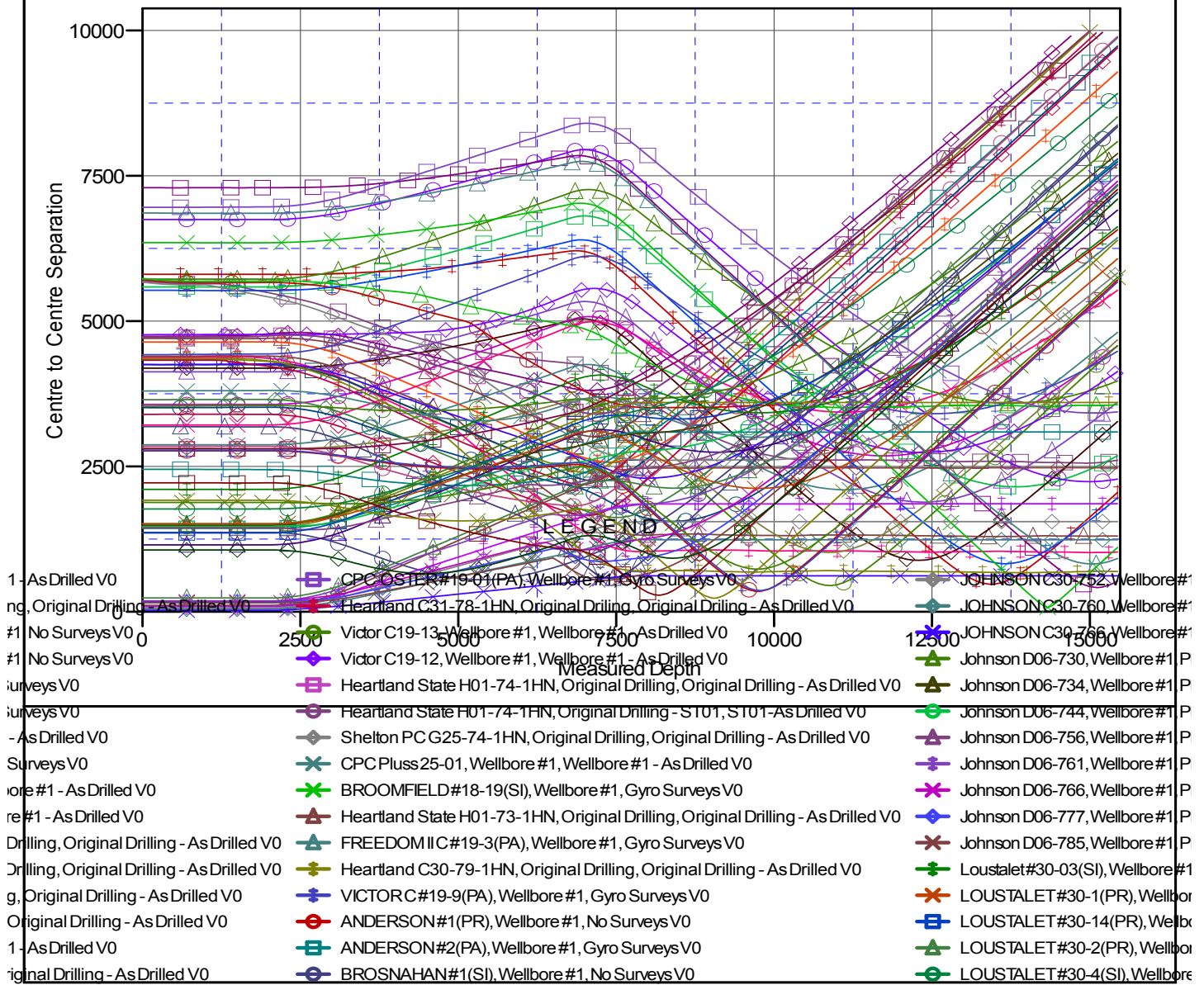
Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well JOHNSON C30-775
Project:	Bronco	TVD Reference:	KB @ 4906.00ft
Reference Site:	C Section 30	MD Reference:	KB @ 4906.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	JOHNSON C30-775	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 KB @ 4906.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: JOHNSON C30-775
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.59°

Ladder Plot



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

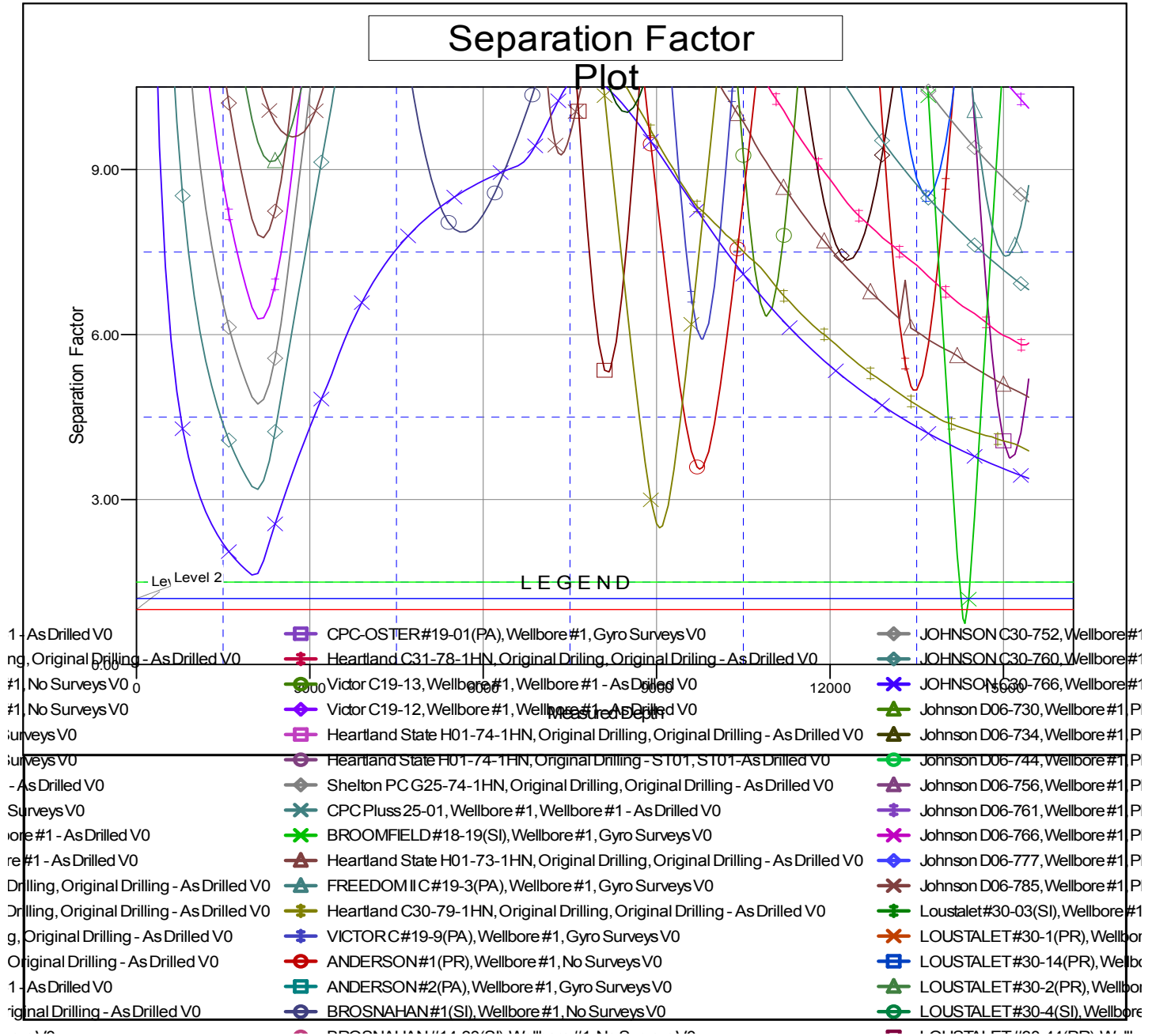
Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well JOHNSON C30-775
Project:	Bronco	TVD Reference:	KB @ 4906.00ft
Reference Site:	C Section 30	MD Reference:	KB @ 4906.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	JOHNSON C30-775	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 KB @ 4906.00ft
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.5000000

Coordinates are relative to: JOHNSON C30-775
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.59°



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