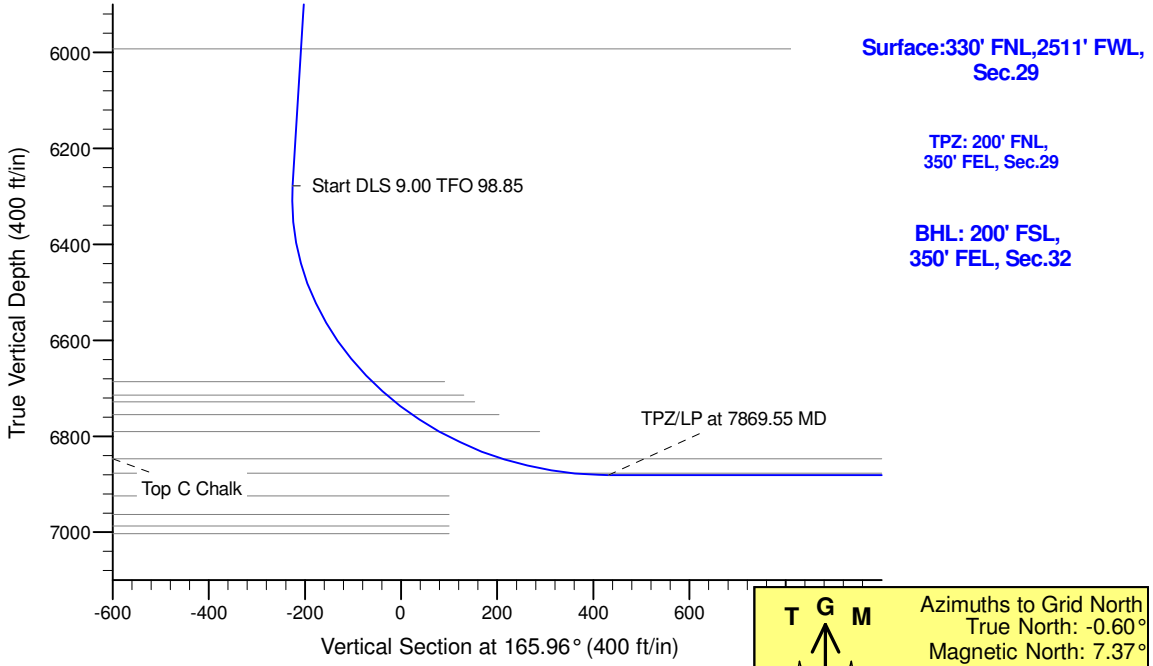
Project: Mustang
Site: C Section 29
Well: Johnson C32-715
Wellbore: Wellbore #1
Design: Plan #1

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

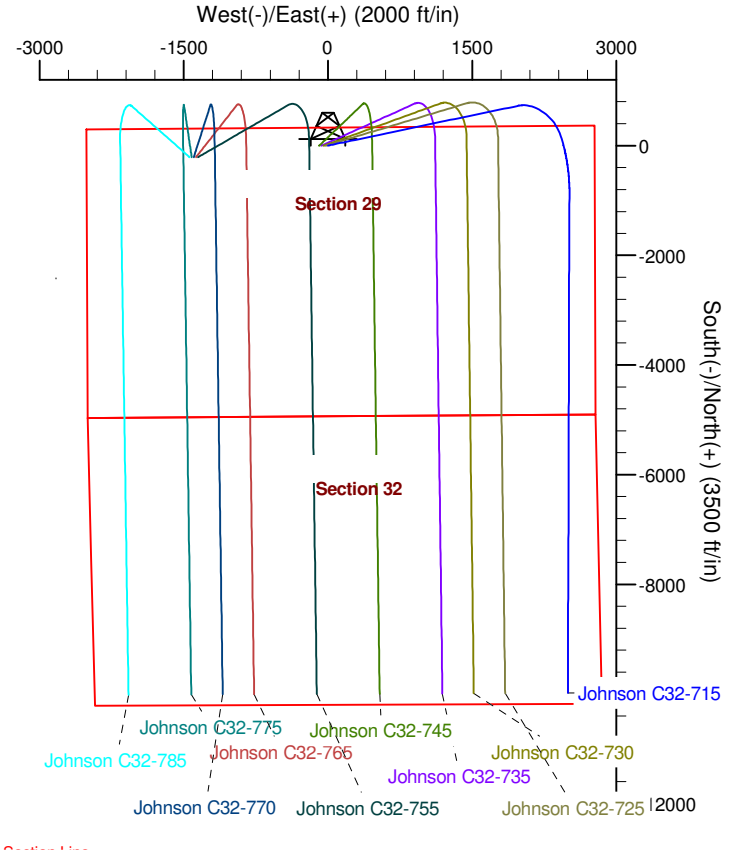
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	
3	3196.22	29.91	69.82	3142.64	105.28	286.42	2.50	69.82	-32.63	
4	6813.37	29.91	69.82	6278.17	727.43	1979.11	0.00	0.00	-225.43	
5	7869.55	90.00	170.00	6881.00	162.18	2425.30	9.00	98.85	431.20	TPZ Johnson C32-715
6	8878.97	90.00	180.09	6881.00	-842.17	2512.34	1.00	90.00	1426.65	BHL Johnson C32-715
7	18020.42	90.00	180.09	6881.00	-9983.61	2497.31	0.00	0.00	10291.21	BHL Johnson C32-715



Surface:330' FNL,2511' FWL, Sec.29

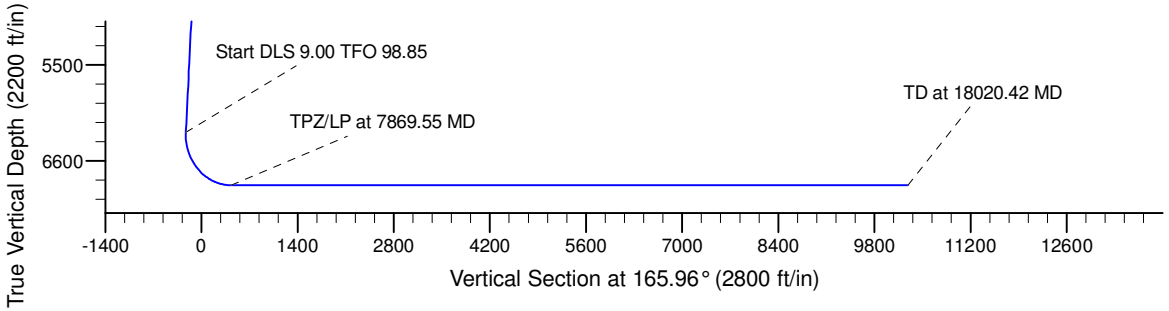
TPZ: 200' FNL, 350' FEL, Sec.29

BHL: 200' FSL, 350' FEL, Sec.32



Azimuths to Grid North
True North: -0.60°
Magnetic North: 7.37°

Magnetic Field
Strength: 52207.1snT
Dip Angle: 66.76°
Date: 10/4/2018
Model: IGRF2015



WELL DETAILS: Johnson C32-715

	Northing	Easting	Latitude	Longitude
0.00	0.00	1349748.60	3257983.01	4774.00 40.2897670	-104.5751910

Plan: Plan #1 (Johnson C32-715/Wellbore #1)

Created By: Colby Baxter Date: 15:42, October 04 2018

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Northern Region - DJ Basin

Mustang
C Section 29
Johnson C32-715

Wellbore #1

Plan: Plan #1

Standard Survey Report

04 October, 2018

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Johnson C32-715
Project:	Mustang	**TVD Reference:**	KB @ 4804.00ft
Site:	C Section 29	**MD Reference:**	KB @ 4804.00ft
Well:	Johnson C32-715	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDMP

Project	Mustang, 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 29				
Site Position:		**Northing:**	1,346,017.00 usft	**Latitude:**	40.2794770
From:	Lat/Long	**Easting:**	3,259,619.89 usft	**Longitude:**	-104.5694640
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.60 °

Well	Johnson C32-715					
Well Position	**+N/-S**	0.00 ft	**Northing:**	1,349,748.60 usft	**Latitude:**	40.2897670
	+E/-W	0.00 ft	**Easting:**	3,257,983.02 usft	**Longitude:**	-104.5751910
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,774.00 ft

Wellbore	Wellbore #1				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	10/4/2018	7.96	66.76	52,207.05101122

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	165.96

Survey Tool Program **Date** 10/4/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	18,020.42	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 C32-715
Project:	Mustang	**TVD Reference:**	KB @ 4804.00ft
Site:	C Section 29	**MD Reference:**	KB @ 4804.00ft
Well:	Johnson C32-715	**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	2.50	69.82	2,099.97	0.75	2.05	-0.23	2.50	2.50	0.00
2,200.00	5.00	69.82	2,199.75	3.01	8.19	-0.93	2.50	2.50	0.00
2,300.00	7.50	69.82	2,299.14	6.76	18.40	-2.10	2.50	2.50	0.00
2,400.00	10.00	69.82	2,397.97	12.01	32.68	-3.72	2.50	2.50	0.00
2,500.00	12.50	69.82	2,496.04	18.74	50.99	-5.81	2.50	2.50	0.00
2,600.00	15.00	69.82	2,593.17	26.94	73.30	-8.35	2.50	2.50	0.00
2,700.00	17.50	69.82	2,689.17	36.59	99.56	-11.34	2.50	2.50	0.00
2,800.00	20.00	69.82	2,783.85	47.68	129.73	-14.78	2.50	2.50	0.00
2,900.00	22.50	69.82	2,877.05	60.19	163.74	-18.65	2.50	2.50	0.00
3,000.00	25.00	69.82	2,968.57	74.08	201.54	-22.96	2.50	2.50	0.00
3,100.00	27.50	69.82	3,058.25	89.34	243.05	-27.69	2.50	2.50	0.00
3,196.22	29.91	69.82	3,142.64	105.28	286.42	-32.63	2.50	2.50	0.00
3,200.00	29.91	69.82	3,145.92	105.93	288.19	-32.83	0.00	0.00	0.00
3,300.00	29.91	69.82	3,232.60	123.13	334.99	-38.16	0.00	0.00	0.00
3,400.00	29.91	69.82	3,319.29	140.33	381.79	-43.49	0.00	0.00	0.00
3,500.00	29.91	69.82	3,405.97	157.53	428.58	-48.82	0.00	0.00	0.00
3,600.00	29.91	69.82	3,492.66	174.73	475.38	-54.15	0.00	0.00	0.00
3,700.00	29.91	69.82	3,579.34	191.93	522.17	-59.48	0.00	0.00	0.00
3,800.00	29.91	69.82	3,666.03	209.13	568.97	-64.81	0.00	0.00	0.00
3,900.00	29.91	69.82	3,752.71	226.33	615.77	-70.14	0.00	0.00	0.00
4,000.00	29.91	69.82	3,839.40	243.53	662.56	-75.47	0.00	0.00	0.00
4,100.00	29.91	69.82	3,926.08	260.73	709.36	-80.80	0.00	0.00	0.00
4,200.00	29.91	69.82	4,012.77	277.93	756.15	-86.13	0.00	0.00	0.00
4,300.00	29.91	69.82	4,099.45	295.13	802.95	-91.46	0.00	0.00	0.00
4,400.00	29.91	69.82	4,186.14	312.33	849.75	-96.79	0.00	0.00	0.00
4,500.00	29.91	69.82	4,272.82	329.53	896.54	-102.12	0.00	0.00	0.00
4,600.00	29.91	69.82	4,359.51	346.73	943.34	-107.45	0.00	0.00	0.00
4,700.00	29.91	69.82	4,446.19	363.93	990.13	-112.78	0.00	0.00	0.00
4,800.00	29.91	69.82	4,532.88	381.13	1,036.93	-118.11	0.00	0.00	0.00
4,900.00	29.91	69.82	4,619.56	398.33	1,083.73	-123.44	0.00	0.00	0.00
5,000.00	29.91	69.82	4,706.25	415.53	1,130.52	-128.77	0.00	0.00	0.00
5,100.00	29.91	69.82	4,792.93	432.73	1,177.32	-134.10	0.00	0.00	0.00
5,200.00	29.91	69.82	4,879.62	449.93	1,224.11	-139.43	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Johnson C32-715
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Site:	C Section 29	**MD Reference:**	KB @ 4804.00ft
Well:	Johnson C32-715	**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	29.91	69.82	4,966.30	467.13	1,270.91	-144.76	0.00	0.00	0.00
5,400.00	29.91	69.82	5,052.99	484.33	1,317.71	-150.09	0.00	0.00	0.00
5,500.00	29.91	69.82	5,139.67	501.53	1,364.50	-155.42	0.00	0.00	0.00
5,600.00	29.91	69.82	5,226.36	518.73	1,411.30	-160.76	0.00	0.00	0.00
5,700.00	29.91	69.82	5,313.04	535.93	1,458.09	-166.09	0.00	0.00	0.00
5,800.00	29.91	69.82	5,399.73	553.13	1,504.89	-171.42	0.00	0.00	0.00
5,900.00	29.91	69.82	5,486.41	570.33	1,551.69	-176.75	0.00	0.00	0.00
6,000.00	29.91	69.82	5,573.10	587.53	1,598.48	-182.08	0.00	0.00	0.00
6,100.00	29.91	69.82	5,659.78	604.73	1,645.28	-187.41	0.00	0.00	0.00
6,200.00	29.91	69.82	5,746.47	621.93	1,692.07	-192.74	0.00	0.00	0.00
6,300.00	29.91	69.82	5,833.15	639.13	1,738.87	-198.07	0.00	0.00	0.00
6,400.00	29.91	69.82	5,919.84	656.33	1,785.67	-203.40	0.00	0.00	0.00
6,500.00	29.91	69.82	6,006.52	673.53	1,832.46	-208.73	0.00	0.00	0.00
6,600.00	29.91	69.82	6,093.21	690.73	1,879.26	-214.06	0.00	0.00	0.00
6,700.00	29.91	69.82	6,179.89	707.93	1,926.05	-219.39	0.00	0.00	0.00
6,800.00	29.91	69.82	6,266.58	725.13	1,972.85	-224.72	0.00	0.00	0.00
6,813.37	29.91	69.82	6,278.17	727.43	1,979.11	-225.43	0.00	0.00	0.00
6,900.00	29.63	85.55	6,353.48	736.56	2,020.79	-224.17	9.00	-0.32	18.16
7,000.00	31.57	102.87	6,439.72	732.64	2,071.06	-208.17	9.00	1.94	17.32
7,100.00	35.53	117.55	6,523.19	713.33	2,122.44	-176.97	9.00	3.96	14.68
7,200.00	40.92	129.23	6,601.82	679.11	2,173.67	-131.33	9.00	5.39	11.68
7,300.00	47.25	138.45	6,673.69	630.82	2,223.50	-72.40	9.00	6.33	9.22
7,400.00	54.18	145.89	6,737.02	569.64	2,270.69	-1.60	9.00	6.93	7.44
7,500.00	61.49	152.09	6,790.25	497.10	2,314.08	79.30	9.00	7.31	6.21
7,600.00	69.05	157.48	6,832.08	414.97	2,352.61	168.33	9.00	7.56	5.39
7,700.00	76.76	162.35	6,861.47	325.27	2,385.32	263.28	9.00	7.71	4.86
7,800.00	84.56	166.91	6,877.70	230.21	2,411.41	361.83	9.00	7.80	4.56
7,869.55	90.00	170.00	6,881.00	162.18	2,425.30	431.20	9.00	7.83	4.45
7,900.00	90.00	170.30	6,881.00	132.18	2,430.51	461.57	1.00	0.00	1.00
8,000.00	90.00	171.30	6,881.00	33.47	2,446.49	561.21	1.00	0.00	1.00
8,100.00	90.00	172.30	6,881.00	-65.51	2,460.74	660.69	1.00	0.00	1.00
8,200.00	90.00	173.30	6,881.00	-164.72	2,473.27	759.97	1.00	0.00	1.00
8,300.00	90.00	174.30	6,881.00	-264.14	2,484.06	859.04	1.00	0.00	1.00
8,400.00	90.00	175.30	6,881.00	-363.73	2,493.12	957.84	1.00	0.00	1.00
8,500.00	90.00	176.30	6,881.00	-463.46	2,500.43	1,056.37	1.00	0.00	1.00
8,600.00	90.00	177.30	6,881.00	-563.30	2,506.01	1,154.58	1.00	0.00	1.00
8,700.00	90.00	178.30	6,881.00	-663.22	2,509.84	1,252.45	1.00	0.00	1.00
8,800.00	90.00	179.30	6,881.00	-763.20	2,511.92	1,349.94	1.00	0.00	1.00
8,878.97	90.00	180.09	6,881.00	-842.17	2,512.34	1,426.65	1.00	0.00	1.00
8,900.00	90.00	180.09	6,881.00	-863.20	2,512.30	1,447.05	0.00	0.00	0.00
9,000.00	90.00	180.09	6,881.00	-963.20	2,512.14	1,544.02	0.00	0.00	0.00
9,100.00	90.00	180.09	6,881.00	-1,063.20	2,511.97	1,640.99	0.00	0.00	0.00
9,200.00	90.00	180.09	6,881.00	-1,163.20	2,511.81	1,737.96	0.00	0.00	0.00

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Well:	Johnson C32-715	**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)
9,300.00	90.00	180.09	6,881.00	-1,263.20	2,511.65	1,834.93	0.00	0.00	0.00
9,400.00	90.00	180.09	6,881.00	-1,363.20	2,511.48	1,931.90	0.00	0.00	0.00
9,500.00	90.00	180.09	6,881.00	-1,463.20	2,511.32	2,028.87	0.00	0.00	0.00
9,600.00	90.00	180.09	6,881.00	-1,563.20	2,511.15	2,125.84	0.00	0.00	0.00
9,700.00	90.00	180.09	6,881.00	-1,663.20	2,510.99	2,222.81	0.00	0.00	0.00
9,800.00	90.00	180.09	6,881.00	-1,763.20	2,510.82	2,319.78	0.00	0.00	0.00
9,900.00	90.00	180.09	6,881.00	-1,863.20	2,510.66	2,416.76	0.00	0.00	0.00
10,000.00	90.00	180.09	6,881.00	-1,963.20	2,510.49	2,513.73	0.00	0.00	0.00
10,100.00	90.00	180.09	6,881.00	-2,063.20	2,510.33	2,610.70	0.00	0.00	0.00
10,200.00	90.00	180.09	6,881.00	-2,163.20	2,510.17	2,707.67	0.00	0.00	0.00
10,300.00	90.00	180.09	6,881.00	-2,263.20	2,510.00	2,804.64	0.00	0.00	0.00
10,400.00	90.00	180.09	6,881.00	-2,363.20	2,509.84	2,901.61	0.00	0.00	0.00
10,500.00	90.00	180.09	6,881.00	-2,463.20	2,509.67	2,998.58	0.00	0.00	0.00
10,600.00	90.00	180.09	6,881.00	-2,563.20	2,509.51	3,095.55	0.00	0.00	0.00
10,700.00	90.00	180.09	6,881.00	-2,663.20	2,509.34	3,192.52	0.00	0.00	0.00
10,800.00	90.00	180.09	6,881.00	-2,763.20	2,509.18	3,289.49	0.00	0.00	0.00
10,900.00	90.00	180.09	6,881.00	-2,863.20	2,509.02	3,386.47	0.00	0.00	0.00
11,000.00	90.00	180.09	6,881.00	-2,963.20	2,508.85	3,483.44	0.00	0.00	0.00
11,100.00	90.00	180.09	6,881.00	-3,063.20	2,508.69	3,580.41	0.00	0.00	0.00
11,200.00	90.00	180.09	6,881.00	-3,163.20	2,508.52	3,677.38	0.00	0.00	0.00
11,300.00	90.00	180.09	6,881.00	-3,263.20	2,508.36	3,774.35	0.00	0.00	0.00
11,400.00	90.00	180.09	6,881.00	-3,363.20	2,508.19	3,871.32	0.00	0.00	0.00
11,500.00	90.00	180.09	6,881.00	-3,463.20	2,508.03	3,968.29	0.00	0.00	0.00
11,600.00	90.00	180.09	6,881.00	-3,563.20	2,507.86	4,065.26	0.00	0.00	0.00
11,700.00	90.00	180.09	6,881.00	-3,663.20	2,507.70	4,162.23	0.00	0.00	0.00
11,800.00	90.00	180.09	6,881.00	-3,763.20	2,507.54	4,259.20	0.00	0.00	0.00
11,900.00	90.00	180.09	6,881.00	-3,863.20	2,507.37	4,356.18	0.00	0.00	0.00
12,000.00	90.00	180.09	6,881.00	-3,963.20	2,507.21	4,453.15	0.00	0.00	0.00
12,100.00	90.00	180.09	6,881.00	-4,063.20	2,507.04	4,550.12	0.00	0.00	0.00
12,200.00	90.00	180.09	6,881.00	-4,163.20	2,506.88	4,647.09	0.00	0.00	0.00
12,300.00	90.00	180.09	6,881.00	-4,263.20	2,506.71	4,744.06	0.00	0.00	0.00
12,400.00	90.00	180.09	6,881.00	-4,363.19	2,506.55	4,841.03	0.00	0.00	0.00
12,500.00	90.00	180.09	6,881.00	-4,463.19	2,506.38	4,938.00	0.00	0.00	0.00
12,600.00	90.00	180.09	6,881.00	-4,563.19	2,506.22	5,034.97	0.00	0.00	0.00
12,700.00	90.00	180.09	6,881.00	-4,663.19	2,506.06	5,131.94	0.00	0.00	0.00
12,800.00	90.00	180.09	6,881.00	-4,763.19	2,505.89	5,228.91	0.00	0.00	0.00
12,900.00	90.00	180.09	6,881.00	-4,863.19	2,505.73	5,325.89	0.00	0.00	0.00
13,000.00	90.00	180.09	6,881.00	-4,963.19	2,505.56	5,422.86	0.00	0.00	0.00
13,100.00	90.00	180.09	6,881.00	-5,063.19	2,505.40	5,519.83	0.00	0.00	0.00
13,200.00	90.00	180.09	6,881.00	-5,163.19	2,505.23	5,616.80	0.00	0.00	0.00
13,300.00	90.00	180.09	6,881.00	-5,263.19	2,505.07	5,713.77	0.00	0.00	0.00
13,400.00	90.00	180.09	6,881.00	-5,363.19	2,504.91	5,810.74	0.00	0.00	0.00
13,500.00	90.00	180.09	6,881.00	-5,463.19	2,504.74	5,907.71	0.00	0.00	0.00

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Johnson C32-715
Project:	Mustang	**TVD Reference:**	KB @ 4804.00ft
Site:	C Section 29	**MD Reference:**	KB @ 4804.00ft
Well:	Johnson C32-715	**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)
13,600.00	90.00	180.09	6,881.00	-5,563.19	2,504.58	6,004.68	0.00	0.00	0.00
13,700.00	90.00	180.09	6,881.00	-5,663.19	2,504.41	6,101.65	0.00	0.00	0.00
13,800.00	90.00	180.09	6,881.00	-5,763.19	2,504.25	6,198.62	0.00	0.00	0.00
13,900.00	90.00	180.09	6,881.00	-5,863.19	2,504.08	6,295.60	0.00	0.00	0.00
14,000.00	90.00	180.09	6,881.00	-5,963.19	2,503.92	6,392.57	0.00	0.00	0.00
14,100.00	90.00	180.09	6,881.00	-6,063.19	2,503.75	6,489.54	0.00	0.00	0.00
14,200.00	90.00	180.09	6,881.00	-6,163.19	2,503.59	6,586.51	0.00	0.00	0.00
14,300.00	90.00	180.09	6,881.00	-6,263.19	2,503.43	6,683.48	0.00	0.00	0.00
14,400.00	90.00	180.09	6,881.00	-6,363.19	2,503.26	6,780.45	0.00	0.00	0.00
14,500.00	90.00	180.09	6,881.00	-6,463.19	2,503.10	6,877.42	0.00	0.00	0.00
14,600.00	90.00	180.09	6,881.00	-6,563.19	2,502.93	6,974.39	0.00	0.00	0.00
14,700.00	90.00	180.09	6,881.00	-6,663.19	2,502.77	7,071.36	0.00	0.00	0.00
14,800.00	90.00	180.09	6,881.00	-6,763.19	2,502.60	7,168.33	0.00	0.00	0.00
14,900.00	90.00	180.09	6,881.00	-6,863.19	2,502.44	7,265.31	0.00	0.00	0.00
15,000.00	90.00	180.09	6,881.00	-6,963.19	2,502.27	7,362.28	0.00	0.00	0.00
15,100.00	90.00	180.09	6,881.00	-7,063.19	2,502.11	7,459.25	0.00	0.00	0.00
15,200.00	90.00	180.09	6,881.00	-7,163.19	2,501.95	7,556.22	0.00	0.00	0.00
15,300.00	90.00	180.09	6,881.00	-7,263.19	2,501.78	7,653.19	0.00	0.00	0.00
15,400.00	90.00	180.09	6,881.00	-7,363.19	2,501.62	7,750.16	0.00	0.00	0.00
15,500.00	90.00	180.09	6,881.00	-7,463.19	2,501.45	7,847.13	0.00	0.00	0.00
15,600.00	90.00	180.09	6,881.00	-7,563.19	2,501.29	7,944.10	0.00	0.00	0.00
15,700.00	90.00	180.09	6,881.00	-7,663.19	2,501.12	8,041.07	0.00	0.00	0.00
15,800.00	90.00	180.09	6,881.00	-7,763.19	2,500.96	8,138.04	0.00	0.00	0.00
15,900.00	90.00	180.09	6,881.00	-7,863.19	2,500.80	8,235.02	0.00	0.00	0.00
16,000.00	90.00	180.09	6,881.00	-7,963.19	2,500.63	8,331.99	0.00	0.00	0.00
16,100.00	90.00	180.09	6,881.00	-8,063.19	2,500.47	8,428.96	0.00	0.00	0.00
16,200.00	90.00	180.09	6,881.00	-8,163.19	2,500.30	8,525.93	0.00	0.00	0.00
16,300.00	90.00	180.09	6,881.00	-8,263.19	2,500.14	8,622.90	0.00	0.00	0.00
16,400.00	90.00	180.09	6,881.00	-8,363.19	2,499.97	8,719.87	0.00	0.00	0.00
16,500.00	90.00	180.09	6,881.00	-8,463.19	2,499.81	8,816.84	0.00	0.00	0.00
16,600.00	90.00	180.09	6,881.00	-8,563.19	2,499.64	8,913.81	0.00	0.00	0.00
16,700.00	90.00	180.09	6,881.00	-8,663.19	2,499.48	9,010.78	0.00	0.00	0.00
16,800.00	90.00	180.09	6,881.00	-8,763.19	2,499.32	9,107.75	0.00	0.00	0.00
16,900.00	90.00	180.09	6,881.00	-8,863.19	2,499.15	9,204.73	0.00	0.00	0.00
17,000.00	90.00	180.09	6,881.00	-8,963.19	2,498.99	9,301.70	0.00	0.00	0.00
17,100.00	90.00	180.09	6,881.00	-9,063.19	2,498.82	9,398.67	0.00	0.00	0.00
17,200.00	90.00	180.09	6,881.00	-9,163.19	2,498.66	9,495.64	0.00	0.00	0.00
17,300.00	90.00	180.09	6,881.00	-9,263.19	2,498.49	9,592.61	0.00	0.00	0.00
17,400.00	90.00	180.09	6,881.00	-9,363.19	2,498.33	9,689.58	0.00	0.00	0.00
17,500.00	90.00	180.09	6,881.00	-9,463.19	2,498.17	9,786.55	0.00	0.00	0.00
17,600.00	90.00	180.09	6,881.00	-9,563.19	2,498.00	9,883.52	0.00	0.00	0.00
17,700.00	90.00	180.09	6,881.00	-9,663.19	2,497.84	9,980.49	0.00	0.00	0.00
17,800.00	90.00	180.09	6,881.00	-9,763.19	2,497.67	10,077.47	0.00	0.00	0.00
17,900.00	90.00	180.09	6,881.00	-9,863.19	2,497.51	10,174.44	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Johnson C32-715
Project:	Mustang	**TVD Reference:**	KB @ 4804.00ft
Site:	C Section 29	**MD Reference:**	KB @ 4804.00ft
Well:	Johnson C32-715	**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)
18,000.00	90.00	180.09	6,881.00	-9,963.19	2,497.34	10,271.41	0.00	0.00	0.00
18,020.42	90.00	180.09	6,881.00	-9,983.61	2,497.31	10,291.21	0.00	0.00	0.00

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
SHL Johnson C32-715 - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,349,748.60	3,257,983.02	40.2897670	-104.5751910
KOP Johnson C32-715 - plan hits target center - Point	0.00	0.00	6,278.17	727.43	1,979.11	1,350,476.03	3,259,962.12	40.2917069	-104.5680695
BHL Johnson C32-715 - plan hits target center - Point	0.00	0.00	6,881.00	-9,983.61	2,497.31	1,339,765.01	3,260,480.32	40.2622909	-104.5666161
TPZ Johnson C32-715 - plan hits target center - Point	0.00	0.00	6,881.00	162.18	2,425.30	1,349,910.78	3,260,408.31	40.2901424	-104.5664914

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
566.00	566.00	Pierre			
646.00	646.00	Upper Pierre Aquifer Top			
1,542.00	1,542.00	Upper Pierre Aquifer Base			
3,757.29	3,629.00	Parkman			
4,290.25	4,091.00	Sussex			
5,258.12	4,930.00	Shannon			
6,484.40	5,993.00	Teepee Buttes			
7,318.35	6,686.00	Sharon Springs			
7,361.90	6,714.00	Top A Chalk			
7,384.79	6,728.00	Top A Marl			
7,431.60	6,755.00	Top B Chalk			
7,499.47	6,790.00	Top B Marl			
7,645.35	6,847.00	Top C Chalk			
7,793.00	6,877.00	Top C Marl			

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Johnson C32-715
Project:	Mustang	**TVD Reference:**	KB @ 4804.00ft
Site:	C Section 29	**MD Reference:**	KB @ 4804.00ft
Well:	Johnson C32-715	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDMP

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
2000	2000	0	0	Start Build 2.50
6813	6278	105	286	Start DLS 9.00 TFO 98.85
7870	6881	727	1979	TPZ/LP at 7869.55 MD
8879	6881	162	2425	Start 9141.45 hold at 8878.97 MD
18,020	6881	-842	2512	TD at 18020.42 MD

Checked By: _____ Approved By: _____ Date: _____

Northern Region - DJ Basin

Mustang
C Section 29
Johnson C32-715

Wellbore #1
Plan #1

Anticollision Summary Report

04 October, 2018

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Johnson C32-715
Project:	Mustang	**TVD Reference:**	KB @ 4804.00ft
Reference Site:	C Section 29	**MD Reference:**	KB @ 4804.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Johnson C32-715	**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** 10/4/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	18,020.42	Plan #1 (Wellbore #1)	2_MWD+IFR1	A005Mb: IFR declination correction only

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
C Section 20						
Agricultural Products Inc 20-4I4 - Wellbore #1 - Wellbore	2,161.38	2,154.78	5,171.25	5,156.42	348.528	CC
Agricultural Products Inc 20-4I4 - Wellbore #1 - Wellbore	2,400.00	2,384.84	5,171.72	5,155.24	313.823	ES
Agricultural Products Inc 20-4I4 - Wellbore #1 - Wellbore	7,150.00	6,642.37	5,809.27	5,749.52	97.214	SF
BALBOA #20-1(SI) - Wellbore #1 - No Surveys	6,991.17	6,375.18	342.20	250.95	3.750	CC
BALBOA #20-1(SI) - Wellbore #1 - No Surveys	7,000.00	6,382.72	342.29	250.78	3.741	ES
BALBOA #20-1(SI) - Wellbore #1 - No Surveys	7,050.00	6,424.93	346.19	253.28	3.726	SF
Balboa C #20-24D(PR) - Wellbore #1 - MWD Survey	436.51	412.44	490.75	488.70	239.908	CC
Balboa C #20-24D(PR) - Wellbore #1 - MWD Survey	500.00	471.18	491.02	488.48	193.657	ES
Balboa C #20-24D(PR) - Wellbore #1 - MWD Survey	6,100.00	5,755.10	1,778.76	1,722.60	31.674	SF
BALBOS #C20-4(TA) - Wellbore #1 - No Surveys	4,525.55	4,245.97	689.19	632.14	12.080	CC
BALBOS #C20-4(TA) - Wellbore #1 - No Surveys	4,600.00	4,310.51	690.19	632.08	11.877	ES
BALBOS #C20-4(TA) - Wellbore #1 - No Surveys	4,900.00	4,570.56	714.03	651.90	11.492	SF
Chenoweth 2 - Wellbore #1 - Wellbore #1 - As Drilled	0.00	3.64	2,097.21			
Chenoweth 2 - Wellbore #1 - Wellbore #1 - As Drilled	1,700.00	1,689.95	2,098.58	2,087.03	181.657	ES
Chenoweth 2 - Wellbore #1 - Wellbore #1 - As Drilled	7,050.00	6,508.32	3,975.05	3,924.27	78.271	SF
Chenoweth C20-25D(SI) - Wellbore #1 - MWD Surveys	975.48	953.02	493.47	488.52	99.671	CC, ES
Chenoweth C20-25D(SI) - Wellbore #1 - MWD Surveys	2,600.00	2,370.65	809.00	793.22	51.267	SF
HANSCOME C #28-30D(SI) - Wellbore #1 - No Surveys	7,033.31	6,414.93	317.30	226.53	3.496	CC
HANSCOME C #28-30D(SI) - Wellbore #1 - No Surveys	7,050.00	6,428.93	317.62	226.31	3.478	ES
HANSCOME C #28-30D(SI) - Wellbore #1 - No Surveys	7,100.00	6,470.19	322.63	229.72	3.473	SF
HANSCOME C #29-27D(SI) - Wellbore #1 - No Surveys	7,017.48	6,401.57	327.48	236.52	3.600	CC, ES
HANSCOME C #29-27D(SI) - Wellbore #1 - No Surveys	7,050.00	6,428.93	328.72	236.74	3.574	SF
Highland 12-20 - Wellbore #1 - Wellbore #1 - As Drilled	2,071.73	2,086.49	2,950.62	2,936.32	206.375	CC
Highland 12-20 - Wellbore #1 - Wellbore #1 - As Drilled	2,100.00	2,114.94	2,950.69	2,936.19	203.535	ES
Highland 12-20 - Wellbore #1 - Wellbore #1 - As Drilled	7,000.00	6,426.36	4,238.54	4,184.76	78.812	SF
JOHNSON C #29-28(PR) - Wellbore #1 - No Surveys	2,723.57	2,673.61	467.38	434.52	14.223	CC
JOHNSON C #29-28(PR) - Wellbore #1 - No Surveys	2,800.00	2,745.85	468.04	434.26	13.854	ES
JOHNSON C #29-28(PR) - Wellbore #1 - No Surveys	3,100.00	3,020.25	489.56	452.14	13.083	SF
Klingenberg C20-780 - Original Drilling - Original Drilling	1,317.75	1,319.87	2,055.14	2,047.45	266.967	CC
Klingenberg C20-780 - Original Drilling - Original Drilling	2,012.57	2,023.94	2,058.56	2,046.82	175.360	ES
Klingenberg C20-780 - Original Drilling - Original Drilling	7,050.00	6,485.13	4,092.68	4,045.82	87.331	SF
Klingenberg C20-780 - Original Drilling - ST01 - ST01 - A	1,317.75	1,319.87	2,055.14	2,047.45	266.967	CC
Klingenberg C20-780 - Original Drilling - ST01 - ST01 - A	2,012.57	2,023.94	2,058.56	2,046.82	175.360	ES
Klingenberg C20-780 - Original Drilling - ST01 - ST01 - A	6,950.00	6,408.89	4,042.32	3,996.06	87.375	SF
Klingenberg C20-780 - Original Drilling - ST02 - ST02 - A	1,317.75	1,319.87	2,055.14	2,047.45	266.967	CC
Klingenberg C20-780 - Original Drilling - ST02 - ST02 - A	2,012.57	2,023.94	2,058.56	2,046.82	175.360	ES
Klingenberg C20-780 - Original Drilling - ST02 - ST02 - A	6,950.00	6,408.89	4,042.32	3,996.06	87.375	SF

CC - Min centre to center distance or covergent 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 C32-715
Project:	Mustang	**TVD Reference:**	KB @ 4804.00ft
Reference Site:	C Section 29	**MD Reference:**	KB @ 4804.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Johnson C32-715	**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)	Distance Between Ellipses (ft)	Separation Factor	Warning
C Section 20						
Prebish 2 - Wellbore #1 - Wellbore #1 - As Drilled	1,286.83	1,286.92	3,931.93	3,923.24	452.642	CC
Prebish 2 - Wellbore #1 - Wellbore #1 - As Drilled	1,400.00	1,370.47	3,932.34	3,922.96	419.132	ES
Prebish 2 - Wellbore #1 - Wellbore #1 - As Drilled	7,100.00	6,523.47	4,892.64	4,834.96	84.828	SF
Prebish C20-19 - Wellbore #1 - Wellbore #1 - As Drilled	3,582.09	3,500.01	4,453.77	4,427.95	172.494	CC
Prebish C20-19 - Wellbore #1 - Wellbore #1 - As Drilled	3,700.00	3,567.47	4,454.53	4,427.75	166.382	ES
Prebish C20-19 - Wellbore #1 - Wellbore #1 - As Drilled	7,100.00	6,515.35	4,866.91	4,807.42	81.810	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Johnson C32-715
Project:	Mustang	**TVD Reference:**	KB @ 4804.00ft
Reference Site:	C Section 29	**MD Reference:**	KB @ 4804.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Johnson C32-715	**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)	Distance Between Ellipses (ft)	Separation Factor	Warning
C Section 29						
CPC-JOHNSON #29-1(SI) - Wellbore #1 - No Surveys	8,166.83	6,845.00	222.12	132.94	2.491	CC, ES, SF
JOHNSON #19-29(SI) - Wellbore #1 - No Surveys	11,674.22	6,883.00	3,690.03	3,576.53	32.511	CC
JOHNSON #19-29(SI) - Wellbore #1 - No Surveys	11,700.00	6,883.00	3,690.12	3,576.45	32.464	ES
JOHNSON #19-29(SI) - Wellbore #1 - No Surveys	12,300.00	6,883.00	3,742.71	3,625.48	31.925	SF
JOHNSON #20-29(SI) - Wellbore #1 - No Surveys	11,759.15	6,867.00	859.12	744.98	7.527	CC, ES, SF
JOHNSON #29-13(SI) - Wellbore #1 - No Surveys	9,683.71	6,868.00	1,706.54	1,609.67	17.618	CC, ES
JOHNSON #29-13(SI) - Wellbore #1 - No Surveys	9,800.00	6,868.00	1,710.50	1,613.25	17.589	SF
JOHNSON #29-15(SI) - Wellbore #1 - No Surveys	9,053.87	6,864.00	1,110.70	1,017.82	11.959	CC, ES, SF
JOHNSON C #29-18(SI) - Wellbore #1 - No Surveys	2,000.00	1,987.00	1,045.59	1,021.31	43.070	CC
JOHNSON C #29-18(SI) - Wellbore #1 - No Surveys	2,100.00	2,086.97	1,046.29	1,020.79	41.028	ES
JOHNSON C #29-18(SI) - Wellbore #1 - No Surveys	9,400.00	6,868.00	2,508.25	2,413.86	26.574	SF
JOHNSON C #29-19(SI) - Wellbore #1 - Gyro Surveys	2,064.58	2,110.24	1,756.82	1,742.45	122.247	CC, ES
JOHNSON C #29-19(SI) - Wellbore #1 - Gyro Surveys	10,300.00	6,823.45	4,127.44	4,064.80	65.887	SF
JOHNSON C #29-29(SI) - Wellbore #1 - No Surveys	2,000.00	1,981.00	1,242.98	1,218.76	51.312	CC, ES
JOHNSON C #29-29(SI) - Wellbore #1 - No Surveys	3,100.00	3,039.25	1,479.55	1,442.26	39.676	SF
Johnson C32-725 - Wellbore #1 - Plan #1	2,000.00	2,000.00	22.60	8.72	1.629	CC, ES, SF
Johnson C32-730 - Wellbore #1 - Plan #1	2,000.00	2,001.00	45.19	31.32	3.257	CC, ES
Johnson C32-730 - Wellbore #1 - Plan #1	2,100.00	2,100.97	47.25	32.67	3.239	SF
Johnson C32-735 - Wellbore #1 - Plan #1	2,000.00	2,001.00	67.51	53.63	4.865	CC, ES
Johnson C32-735 - Wellbore #1 - Plan #1	2,100.00	2,100.97	69.57	54.98	4.769	SF
Johnson C32-745 - Wellbore #1 - Plan #1	2,000.00	2,000.00	90.11	76.23	6.495	CC, ES
Johnson C32-745 - Wellbore #1 - Plan #1	2,200.00	2,203.22	94.68	79.39	6.194	SF
Johnson C32-755 - Wellbore #1 - Plan #1	2,000.00	2,013.00	1,364.74	1,350.82	98.045	CC, ES
Johnson C32-755 - Wellbore #1 - Plan #1	18,020.42	17,700.89	2,612.33	2,375.22	11.017	SF
Johnson C32-765 - Wellbore #1 - Plan #1	2,019.43	2,043.95	1,387.05	1,372.95	98.387	CC
Johnson C32-765 - Wellbore #1 - Plan #1	2,100.00	2,153.09	1,387.61	1,372.84	93.976	ES
Johnson C32-765 - Wellbore #1 - Plan #1	18,020.42	17,468.65	3,265.59	3,028.51	13.774	SF
Johnson C32-770 - Wellbore #1 - Plan #1	2,000.00	2,012.00	1,409.20	1,395.29	101.266	CC, ES
Johnson C32-770 - Wellbore #1 - Plan #1	18,020.42	17,631.86	3,593.64	3,355.41	15.085	SF
Johnson C32-775 - Wellbore #1 - Plan #1	2,000.00	2,012.00	1,431.59	1,417.67	102.875	CC, ES
Johnson C32-775 - Wellbore #1 - Plan #1	18,020.42	17,516.48	3,918.01	3,680.07	16.467	SF
Johnson C32-785 - Wellbore #1 - Plan #1	1,912.12	1,924.12	1,453.98	1,440.69	109.438	CC
Johnson C32-785 - Wellbore #1 - Plan #1	2,000.00	2,009.91	1,453.98	1,440.08	104.542	ES
Johnson C32-785 - Wellbore #1 - Plan #1	18,020.42	17,479.06	4,571.39	4,333.75	19.236	SF
JOHNSON PM C #29-8(SI) - Wellbore #1 - No Surveys	9,637.63	6,864.00	580.21	483.69	6.012	CC, ES, SF
JOHNSON R C #29-2(SI) - Wellbore #1 - No Surveys	3,900.02	3,726.73	545.42	497.12	11.294	CC, ES
JOHNSON R C #29-2(SI) - Wellbore #1 - No Surveys	4,200.00	3,986.77	565.55	513.13	10.789	SF
UPRC #29-4H(SI) - Wellbore #1 - No Surveys	2,000.00	1,989.00	2,007.74	1,983.45	82.644	CC, ES
UPRC #29-4H(SI) - Wellbore #1 - No Surveys	9,500.00	6,870.00	4,621.20	4,526.57	48.834	SF
UPRC #29-6H(SI) - Wellbore #1 - No Surveys	2,000.00	1,997.00	1,599.90	1,575.54	65.668	CC, ES
UPRC #29-6H(SI) - Wellbore #1 - No Surveys	10,000.00	6,878.00	3,185.66	3,087.47	32.442	SF
VICTOR #C29-16(SI) - Wellbore #1 - No Surveys	12,400.00	6,856.00	253.98	133.54	2.109	ES, SF
VICTOR #C29-16(SI) - Wellbore #1 - No Surveys	12,408.65	6,856.00	253.83	133.64	2.112	CC
VICTOR C #29-10(SI) - Wellbore #1 - No Surveys	11,051.09	6,894.00	1,714.82	1,606.83	15.879	CC, ES
VICTOR C #29-10(SI) - Wellbore #1 - No Surveys	11,100.00	6,894.00	1,715.52	1,607.36	15.862	SF
VICTOR C #29-11(SI) - Wellbore #1 - No Surveys	11,064.49	6,901.00	3,065.66	2,957.49	28.342	CC, ES
VICTOR C #29-11(SI) - Wellbore #1 - No Surveys	11,500.00	6,901.00	3,096.44	2,985.91	28.015	SF
VICTOR C #29-12(SI) - Wellbore #1 - No Surveys	2,000.00	2,025.00	3,509.01	3,484.40	142.596	CC, ES
VICTOR C #29-12(SI) - Wellbore #1 - No Surveys	12,000.00	6,906.00	4,450.79	4,336.84	39.060	SF
VICTOR C #29-13(SI) - Wellbore #1 - No Surveys	12,540.73	6,880.00	4,311.34	4,189.68	35.436	CC
VICTOR C #29-13(SI) - Wellbore #1 - No Surveys	12,600.00	6,880.00	4,311.75	4,189.66	35.316	ES
VICTOR C #29-13(SI) - Wellbore #1 - No Surveys	13,400.00	6,880.00	4,396.14	4,269.05	34.592	SF
VICTOR C #29-14(SI) - Wellbore #1 - No Surveys	12,500.77	6,867.00	3,017.38	2,896.22	24.903	CC, ES

CC - Min centre to center distance or covergent 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 C32-715
Project:	Mustang	**TVD Reference:**	KB @ 4804.00ft
Reference Site:	C Section 29	**MD Reference:**	KB @ 4804.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Johnson C32-715	**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)	Distance Between Ellipses (ft)	Separation Factor	Warning
C Section 29						
VICTOR C #29-14(SI) - Wellbore #1 - No Surveys	12,900.00	6,867.00	3,043.68	2,920.37	24.683	SF
VICTOR C #29-15(SI) - Wellbore #1 - No Surveys	12,290.59	6,883.00	1,692.84	1,573.55	14.191	CC
VICTOR C #29-15(SI) - Wellbore #1 - No Surveys	12,300.00	6,883.00	1,692.87	1,573.54	14.187	ES
VICTOR C #29-15(SI) - Wellbore #1 - No Surveys	12,400.00	6,883.00	1,696.37	1,576.77	14.184	SF
VICTOR C #29-3(PA) - Wellbore #1 - Gyro Surveys	767.96	753.97	872.77	867.79	175.161	CC
VICTOR C #29-3(PA) - Wellbore #1 - Gyro Surveys	2,006.63	1,995.11	874.97	861.22	63.632	ES
VICTOR C #29-3(PA) - Wellbore #1 - Gyro Surveys	2,900.00	2,866.79	1,043.73	1,023.81	52.407	SF
VICTOR C #29-4(PA) - Wellbore #1 - No Surveys	2,000.00	1,990.00	1,879.31	1,855.01	77.330	CC, ES
VICTOR C #29-4(PA) - Wellbore #1 - No Surveys	5,300.00	4,956.30	3,223.03	3,160.68	51.692	SF
VICTOR C #29-5(PA) - Wellbore #1 - Gyro Surveys	0.00	7.76	2,486.52			
VICTOR C #29-5(PA) - Wellbore #1 - Gyro Surveys	2,000.00	2,000.97	2,491.48	2,477.73	181.154	ES
VICTOR C #29-5(PA) - Wellbore #1 - Gyro Surveys	11,200.00	6,931.91	4,615.03	4,545.41	66.282	SF
VICTOR C #29-6(PA) - Wellbore #1 - No Surveys	2,000.00	1,998.00	1,755.28	1,730.91	72.019	CC, ES
VICTOR C #29-6(PA) - Wellbore #1 - No Surveys	5,300.00	4,964.30	2,800.88	2,736.51	43.516	SF
VICTOR C #29-9(SI) - Wellbore #1 - No Surveys	10,944.10	6,852.00	223.37	116.68	2.094	CC, ES, SF
C Section 32						
HENNINGTON C #32-10(PR) - Wellbore #1 - No Surveys	16,260.91	6,847.00	1,633.89	1,474.82	10.271	CC, ES
HENNINGTON C #32-10(PR) - Wellbore #1 - No Surveys	16,300.00	6,847.00	1,634.36	1,475.19	10.268	SF
HENNINGTON C #32-2(PR) - Wellbore #1 - No Surveys	13,492.87	6,848.00	1,696.14	1,565.40	12.973	CC
HENNINGTON C #32-2(PR) - Wellbore #1 - No Surveys	13,500.00	6,848.00	1,696.16	1,565.39	12.971	ES, SF
HENNINGTON C #32-7(PA) - Wellbore #1 - Gyro Survey	14,844.69	6,718.39	1,842.61	1,735.71	17.237	CC, ES
HENNINGTON C #32-7(PA) - Wellbore #1 - Gyro Survey	14,900.00	6,717.43	1,843.44	1,736.36	17.215	SF
HOWELL #1(SI) - Wellbore #1 - No Surveys	17,235.31	6,877.00	3,736.47	3,566.93	22.039	CC, ES
HOWELL #1(SI) - Wellbore #1 - No Surveys	17,600.00	6,877.00	3,754.22	3,582.48	21.859	SF
HOWELL #32-1(SI) - Wellbore #1 - No Surveys	15,213.07	6,861.00	2,994.18	2,845.85	20.186	CC, ES
HOWELL #32-1(SI) - Wellbore #1 - No Surveys	15,500.00	6,861.00	3,007.90	2,858.05	20.073	SF
HOWELL #32-2(SI) - Wellbore #1 - NoSurveys	13,818.75	6,855.00	2,948.20	2,814.13	21.990	CC, ES
HOWELL #32-2(SI) - Wellbore #1 - NoSurveys	14,100.00	6,855.00	2,961.59	2,826.00	21.842	SF
HOWELL #32-23(PR) - Wellbore #1 - No Surveys	14,930.80	6,888.00	4,172.71	4,027.05	28.646	CC, ES
HOWELL #32-23(PR) - Wellbore #1 - No Surveys	15,500.00	6,888.00	4,211.36	4,062.07	28.209	SF
HOWELL #C 32-12(SI) - Wellbore #1 - No Surveys	16,451.66	6,902.00	4,312.42	4,150.87	26.694	CC
HOWELL #C 32-12(SI) - Wellbore #1 - No Surveys	16,500.00	6,902.00	4,312.69	4,150.77	26.636	ES
HOWELL #C 32-12(SI) - Wellbore #1 - No Surveys	17,000.00	6,902.00	4,347.14	4,182.08	26.337	SF
MCGUIRK-HOWELL C #32-11(SI) - Wellbore #1 - No Su	16,234.68	6,860.00	2,991.64	2,832.72	18.825	CC, ES
MCGUIRK-HOWELL C #32-11(SI) - Wellbore #1 - No Su	16,500.00	6,860.00	3,003.38	2,843.08	18.735	SF
MCGUIRK-HOWELL C #32-14(TA) - Wellbore #1 - No Su	17,608.94	6,866.00	3,087.55	2,914.18	17.808	CC, ES
MCGUIRK-HOWELL C #32-14(TA) - Wellbore #1 - No Su	17,800.00	6,866.00	3,093.46	2,919.01	17.732	SF
MCGUIRK-HOWELL C #32-4(SI) - Wellbore #1 - No Sur	13,544.50	6,903.00	4,227.03	4,095.29	32.087	CC
MCGUIRK-HOWELL C #32-4(SI) - Wellbore #1 - No Sur	13,600.00	6,903.00	4,227.39	4,095.25	31.991	ES
MCGUIRK-HOWELL C #32-4(SI) - Wellbore #1 - No Sur	14,200.00	6,903.00	4,277.55	4,141.60	31.465	SF
NELSON #32-25(PR) - Wellbore #1 - No Surveys	14,330.84	6,892.00	3,662.55	3,522.98	26.242	CC, ES
NELSON #32-25(PR) - Wellbore #1 - No Surveys	14,800.00	6,892.00	3,692.48	3,550.09	25.934	SF
PLUSS #32-43(PA) - Wellbore #1 - Gyro Surveys	17,743.26	6,734.93	1,935.75	1,798.42	14.095	CC, ES
PLUSS #32-43(PA) - Wellbore #1 - Gyro Surveys	17,800.00	6,733.44	1,936.58	1,799.06	14.082	SF
PTF #C 32-1(SI) - Wellbore #1 - No Surveys	13,766.46	6,840.00	373.77	240.36	2.802	CC, ES, SF
PTF #C 32-16(SI) - Wellbore #1 - No Surveys	17,627.69	6,841.00	332.41	159.05	1.917	CC, ES, SF
PTF #C 32-8(SI) - Wellbore #1 - No Surveys	15,139.65	6,830.00	351.49	204.19	2.386	CC, ES, SF
PTF #C 32-9(SI) - Wellbore #1 - No Surveys	16,500.00	6,832.00	315.40	153.90	1.953	ES, SF
PTF #C 32-9(SI) - Wellbore #1 - No Surveys	16,501.75	6,832.00	315.40	153.94	1.953	CC

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

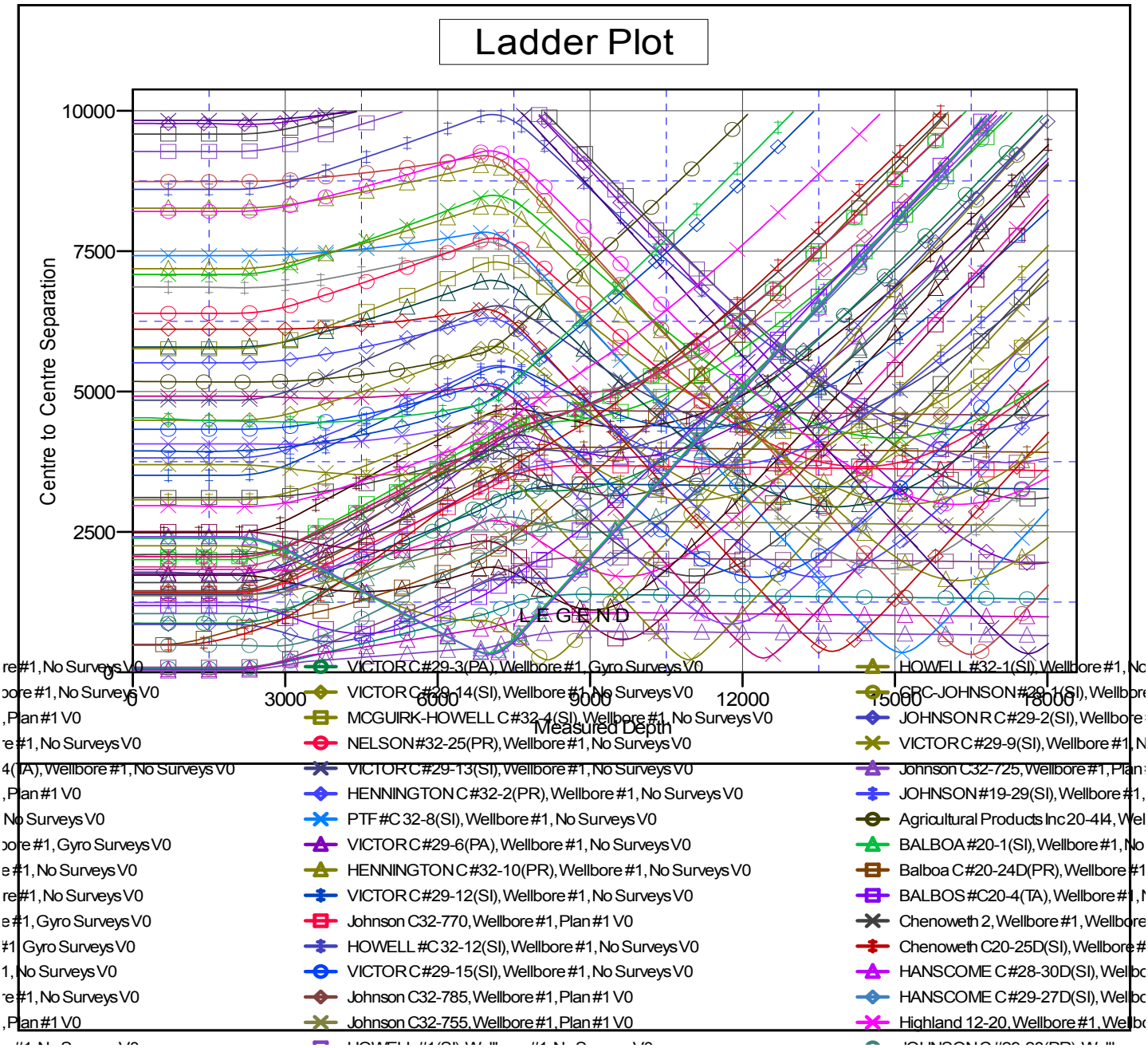
Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Johnson C32-715
Project:	Mustang	**TVD Reference:**	KB @ 4804.00ft
Reference Site:	C Section 29	**MD Reference:**	KB @ 4804.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Johnson C32-715	**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 @ 4804.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Johnson C32-715
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.60°



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

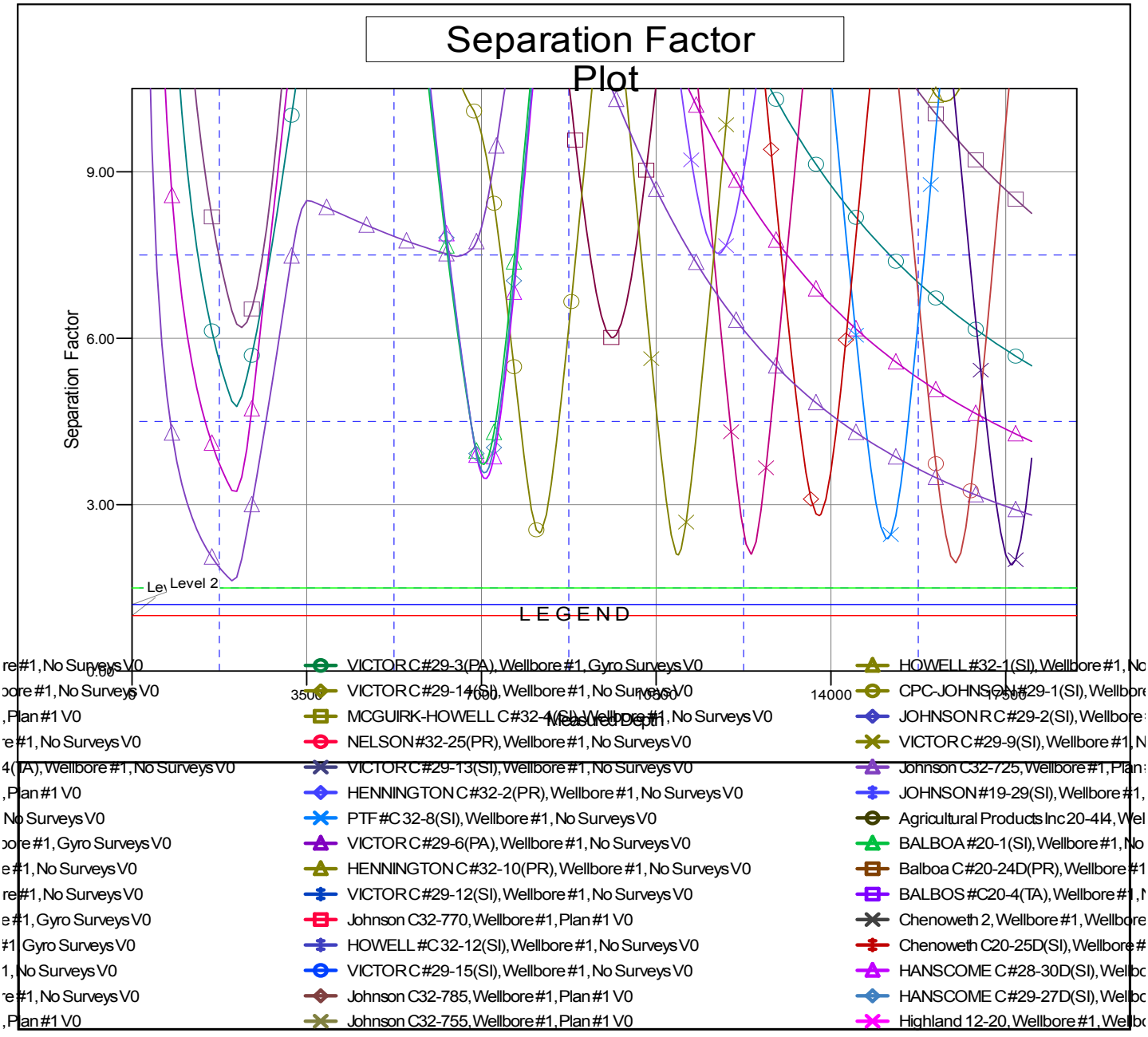
Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Johnson C32-715
Project:	Mustang	**TVD Reference:**	KB @ 4804.00ft
Reference Site:	C Section 29	**MD Reference:**	KB @ 4804.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Johnson C32-715	**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 @ 4804.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Johnson C32-715
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.60°



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