

Project: Mustang
 Site: Y Section 07
 Well: Pioneer Y18-775
 Wellbore: Pioneer Y18-775
 Design: Plan #1

Northern Region - DJ Basin

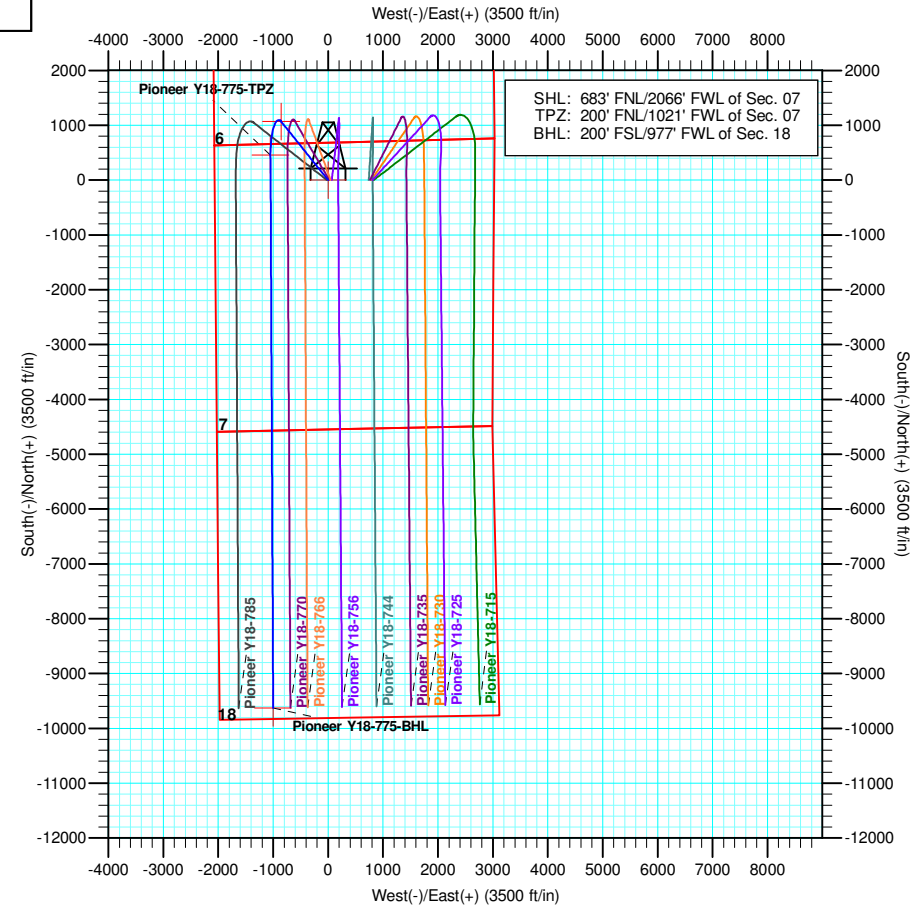
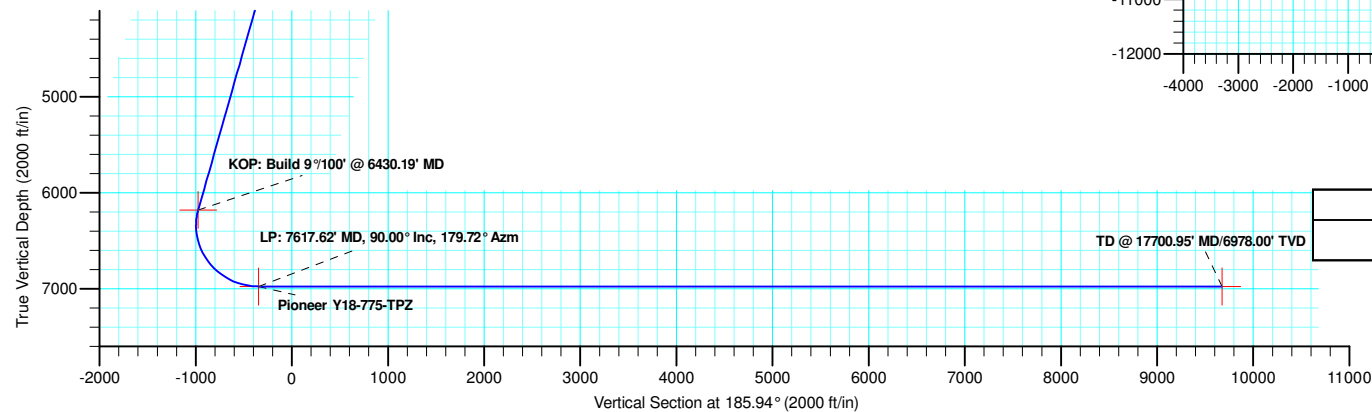
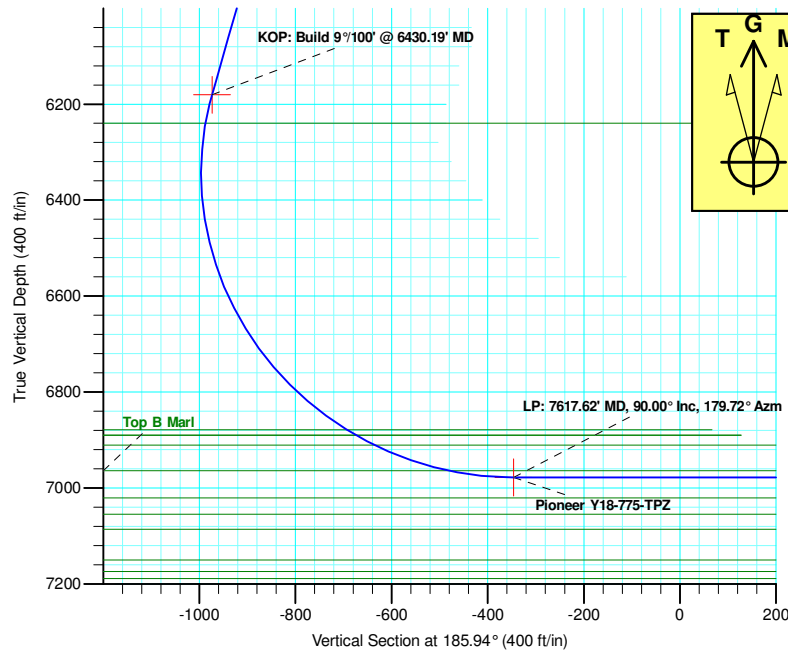
Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Colorado Northern Zone
 System Datum: Mean Sea Level

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	3286.93	21.74	321.30	3261.04	159.00	-127.38	2.00	321.30	-144.97	
4	6430.19	21.74	321.30	6180.76	1067.55	-855.29	0.00	0.00	-973.37	
5	7617.62	90.00	179.72	6978.00	457.37	-1049.87	9.00	-139.50	-346.34	Pioneer Y18-775-TPZ
6	17700.95	90.00	179.72	6978.00	-9625.85	-1000.90	0.00	0.00	9677.74	Pioneer Y18-775-BHL

WELL DETAILS: Pioneer Y18-775

+N/-S	+E/-W	Northing	Ground Level: Easting	4885.00 Latitude	Longitude	Slot
0.00	0.00	1301718.50	3252801.60	40.1580730	-104.5955200	



Plan: Plan #1 (Pioneer Y18-775/Pioneer Y18-775)

Created By: Keith Noack Date: 9:18, September 27 2018

Northern Region - DJ Basin

Mustang

Y Section 07

Pioneer Y18-775

Pioneer Y18-775

Plan: Plan #1

Standard Planning Report

26 September, 2018

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Pioneer Y18-775
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4915.00ft
Project:	Mustang	MD Reference:	Well @ 4915.00ft
Site:	Y Section 07	North Reference:	Grid
Well:	Pioneer Y18-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pioneer Y18-775		
Design:	Plan #1		

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		Y Section 07			
Site Position:		Northing:	1,301,764.67 usft	Latitude:	40.1582400
From:	Lat/Long	Easting:	3,251,358.82 usft	Longitude:	-104.6006800
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.58 °

Well	Pioneer Y18-775					
Well Position	+N/-S	-46.16 ft	Northing:	1,301,718.50 usft	Latitude:	40.1580730
	+E/-W	1,442.79 ft	Easting:	3,252,801.60 usft	Longitude:	-104.5955200
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,885.00 ft

Wellbore	Pioneer Y18-775				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/29/2018	7.97	66.66	52,146.85454025

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	185.94

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	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	
3,286.93	21.74	321.30	3,261.04	159.00	-127.38	2.00	2.00	0.00	321.30	
6,430.19	21.74	321.30	6,180.76	1,067.55	-855.29	0.00	0.00	0.00	0.00	
7,617.62	90.00	179.72	6,978.00	457.37	-1,049.87	9.00	5.75	-11.92	-139.50	Pioneer Y18-775-TI
17,700.95	90.00	179.72	6,978.00	-9,625.85	-1,000.90	0.00	0.00	0.00	0.00	Pioneer Y18-775-B

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Pioneer Y18-775
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4915.00ft
Project:	Mustang	MD Reference:	Well @ 4915.00ft
Site:	Y Section 07	North Reference:	Grid
Well:	Pioneer Y18-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pioneer Y18-775		
Design:	Plan #1		

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
728.00	0.00	0.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills - Pierre									
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
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,076.00	0.00	0.00	1,076.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Top									
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
1,885.00	0.00	0.00	1,885.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Base									
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
Build: 2°/100'									
2,300.00	2.00	321.30	2,299.98	1.36	-1.09	-1.24	2.00	2.00	0.00
2,400.00	4.00	321.30	2,399.84	5.45	-4.36	-4.97	2.00	2.00	0.00
2,500.00	6.00	321.30	2,499.45	12.25	-9.81	-11.17	2.00	2.00	0.00
2,600.00	8.00	321.30	2,598.70	21.76	-17.43	-19.84	2.00	2.00	0.00
2,700.00	10.00	321.30	2,697.47	33.97	-27.21	-30.97	2.00	2.00	0.00
2,800.00	12.00	321.30	2,795.62	48.86	-39.14	-44.55	2.00	2.00	0.00
2,900.00	14.00	321.30	2,893.06	66.41	-53.21	-60.55	2.00	2.00	0.00
3,000.00	16.00	321.30	2,989.64	86.61	-69.39	-78.97	2.00	2.00	0.00
3,100.00	18.00	321.30	3,085.27	109.43	-87.67	-99.77	2.00	2.00	0.00
3,200.00	20.00	321.30	3,179.82	134.83	-108.02	-122.94	2.00	2.00	0.00
3,286.93	21.74	321.30	3,261.04	159.00	-127.38	-144.97	2.00	2.00	0.00
Hold: 21.74° Inc, 321.30° Azm									
3,300.00	21.74	321.30	3,273.18	162.78	-130.41	-148.42	0.00	0.00	0.00
3,400.00	21.74	321.30	3,366.07	191.68	-153.57	-174.77	0.00	0.00	0.00
3,500.00	21.74	321.30	3,458.96	220.59	-176.73	-201.13	0.00	0.00	0.00
3,600.00	21.74	321.30	3,551.84	249.49	-199.88	-227.48	0.00	0.00	0.00
3,700.00	21.74	321.30	3,644.73	278.40	-223.04	-253.84	0.00	0.00	0.00
3,800.00	21.74	321.30	3,737.62	307.30	-246.20	-280.19	0.00	0.00	0.00
3,900.00	21.74	321.30	3,830.51	336.21	-269.36	-306.55	0.00	0.00	0.00
4,000.00	21.74	321.30	3,923.40	365.11	-292.51	-332.90	0.00	0.00	0.00
4,043.71	21.74	321.30	3,964.00	377.75	-302.64	-344.42	0.00	0.00	0.00
Parkman									
4,100.00	21.74	321.30	4,016.29	394.02	-315.67	-359.26	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

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Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4915.00ft
Project:	Mustang	MD Reference:	Well @ 4915.00ft
Site:	Y Section 07	North Reference:	Grid
Well:	Pioneer Y18-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pioneer Y18-775		
Design:	Plan #1		

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)
4,200.00	21.74	321.30	4,109.17	422.92	-338.83	-385.61	0.00	0.00	0.00
4,300.00	21.74	321.30	4,202.06	451.83	-361.99	-411.96	0.00	0.00	0.00
4,400.00	21.74	321.30	4,294.95	480.73	-385.14	-438.32	0.00	0.00	0.00
4,500.00	21.74	321.30	4,387.84	509.64	-408.30	-464.67	0.00	0.00	0.00
4,600.00	21.74	321.30	4,480.73	538.54	-431.46	-491.03	0.00	0.00	0.00
4,654.12	21.74	321.30	4,531.00	554.18	-443.99	-505.29	0.00	0.00	0.00
Sussex									
4,700.00	21.74	321.30	4,573.62	567.44	-454.62	-517.38	0.00	0.00	0.00
4,800.00	21.74	321.30	4,666.50	596.35	-477.77	-543.74	0.00	0.00	0.00
4,900.00	21.74	321.30	4,759.39	625.25	-500.93	-570.09	0.00	0.00	0.00
5,000.00	21.74	321.30	4,852.28	654.16	-524.09	-596.45	0.00	0.00	0.00
5,100.00	21.74	321.30	4,945.17	683.06	-547.25	-622.80	0.00	0.00	0.00
5,200.00	21.74	321.30	5,038.06	711.97	-570.40	-649.16	0.00	0.00	0.00
5,300.00	21.74	321.30	5,130.95	740.87	-593.56	-675.51	0.00	0.00	0.00
5,400.00	21.74	321.30	5,223.83	769.78	-616.72	-701.87	0.00	0.00	0.00
5,494.92	21.74	321.30	5,312.00	797.21	-638.70	-726.88	0.00	0.00	0.00
Shannon									
5,500.00	21.74	321.30	5,316.72	798.68	-639.88	-728.22	0.00	0.00	0.00
5,600.00	21.74	321.30	5,409.61	827.59	-663.03	-754.58	0.00	0.00	0.00
5,700.00	21.74	321.30	5,502.50	856.49	-686.19	-780.93	0.00	0.00	0.00
5,800.00	21.74	321.30	5,595.39	885.40	-709.35	-807.29	0.00	0.00	0.00
5,900.00	21.74	321.30	5,688.28	914.30	-732.51	-833.64	0.00	0.00	0.00
6,000.00	21.74	321.30	5,781.16	943.21	-755.66	-860.00	0.00	0.00	0.00
6,100.00	21.74	321.30	5,874.05	972.11	-778.82	-886.35	0.00	0.00	0.00
6,200.00	21.74	321.30	5,966.94	1,001.02	-801.98	-912.71	0.00	0.00	0.00
6,300.00	21.74	321.30	6,059.83	1,029.92	-825.14	-939.06	0.00	0.00	0.00
6,400.00	21.74	321.30	6,152.72	1,058.83	-848.29	-965.42	0.00	0.00	0.00
6,430.19	21.74	321.30	6,180.76	1,067.55	-855.29	-973.37	0.00	0.00	0.00
KOP: Build 9°/100' @ 6430.19' MD									
6,450.00	20.41	317.98	6,199.25	1,072.98	-859.89	-978.30	9.00	-6.69	-16.76
6,493.12	17.80	309.20	6,240.00	1,082.74	-870.04	-986.95	9.00	-6.07	-20.37
Teepee Buttes									
6,500.00	17.42	307.57	6,246.55	1,084.03	-871.67	-988.07	9.00	-5.46	-23.66
6,550.00	15.17	293.63	6,294.56	1,091.22	-883.60	-993.98	9.00	-4.51	-27.88
6,600.00	14.01	276.29	6,342.97	1,094.50	-895.61	-996.01	9.00	-2.32	-34.68
6,650.00	14.21	257.77	6,391.49	1,093.87	-907.63	-994.13	9.00	0.42	-37.03
6,700.00	15.73	241.31	6,439.81	1,089.31	-919.58	-988.36	9.00	3.04	-32.93
6,750.00	18.24	228.46	6,487.64	1,080.86	-931.39	-978.74	9.00	5.02	-25.69
6,800.00	21.40	218.95	6,534.69	1,068.57	-942.99	-965.31	9.00	6.30	-19.02
6,850.00	24.95	211.91	6,580.65	1,052.52	-954.30	-948.18	9.00	7.10	-14.09
6,900.00	28.75	206.57	6,625.26	1,032.80	-965.26	-927.43	9.00	7.61	-10.67
6,950.00	32.72	202.41	6,668.24	1,009.54	-975.80	-903.21	9.00	7.94	-8.32
7,000.00	36.80	199.07	6,709.31	982.88	-985.85	-875.65	9.00	8.16	-6.68
7,050.00	40.95	196.31	6,748.23	952.99	-995.34	-844.93	9.00	8.31	-5.51
7,100.00	45.16	193.98	6,784.76	920.04	-1,004.24	-811.25	9.00	8.42	-4.65
7,150.00	49.42	191.98	6,818.66	884.25	-1,012.46	-774.79	9.00	8.50	-4.02
7,200.00	53.70	190.21	6,849.75	845.82	-1,019.98	-735.80	9.00	8.56	-3.53
7,250.00	58.00	188.63	6,877.81	805.01	-1,026.73	-694.51	9.00	8.61	-3.16
7,252.26	58.20	188.56	6,879.00	803.12	-1,027.02	-692.59	9.00	8.63	-3.00
Sharon Springs									
7,273.69	60.05	187.93	6,890.00	784.91	-1,029.66	-674.21	9.00	8.64	-2.94
Top A Chalk - Top A Marl									
7,300.00	62.33	187.19	6,902.68	762.06	-1,032.69	-651.17	9.00	8.65	-2.82

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Pioneer Y18-775
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4915.00ft
Project:	Mustang	MD Reference:	Well @ 4915.00ft
Site:	Y Section 07	North Reference:	Grid
Well:	Pioneer Y18-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pioneer Y18-775		
Design:	Plan #1		

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)
7,318.41	63.92	186.69	6,911.00	745.76	-1,034.67	-634.75	9.00	8.67	-2.72
Top B Chalk									
7,350.00	66.66	185.86	6,924.20	717.24	-1,037.80	-606.06	9.00	8.68	-2.62
7,400.00	71.01	184.61	6,942.25	670.82	-1,042.05	-559.45	9.00	8.70	-2.49
7,450.00	75.37	183.43	6,956.71	623.08	-1,045.40	-511.62	9.00	8.71	-2.36
7,481.84	78.14	182.70	6,964.00	592.13	-1,047.06	-480.67	9.00	8.72	-2.29
Top B Marl									
7,500.00	79.73	182.30	6,967.48	574.33	-1,047.84	-462.88	9.00	8.73	-2.25
7,550.00	84.09	181.19	6,974.52	524.86	-1,049.34	-413.52	9.00	8.73	-2.21
7,600.00	88.46	180.10	6,977.76	474.99	-1,049.90	-363.86	9.00	8.73	-2.17
7,617.62	90.00	179.72	6,978.00	457.37	-1,049.87	-346.34	9.00	8.74	-2.17
LP: 7617.62' MD, 90.00° Inc, 179.72° Azm									
7,700.00	90.00	179.72	6,978.00	374.99	-1,049.47	-264.44	0.00	0.00	0.00
7,800.00	90.00	179.72	6,978.00	274.99	-1,048.99	-165.03	0.00	0.00	0.00
7,900.00	90.00	179.72	6,978.00	174.99	-1,048.50	-65.61	0.00	0.00	0.00
8,000.00	90.00	179.72	6,978.00	74.99	-1,048.02	33.80	0.00	0.00	0.00
8,100.00	90.00	179.72	6,978.00	-25.01	-1,047.53	133.21	0.00	0.00	0.00
8,200.00	90.00	179.72	6,978.00	-125.01	-1,047.04	232.62	0.00	0.00	0.00
8,300.00	90.00	179.72	6,978.00	-225.00	-1,046.56	332.04	0.00	0.00	0.00
8,400.00	90.00	179.72	6,978.00	-325.00	-1,046.07	431.45	0.00	0.00	0.00
8,500.00	90.00	179.72	6,978.00	-425.00	-1,045.59	530.86	0.00	0.00	0.00
8,600.00	90.00	179.72	6,978.00	-525.00	-1,045.10	630.27	0.00	0.00	0.00
8,700.00	90.00	179.72	6,978.00	-625.00	-1,044.62	729.68	0.00	0.00	0.00
8,800.00	90.00	179.72	6,978.00	-725.00	-1,044.13	829.10	0.00	0.00	0.00
8,900.00	90.00	179.72	6,978.00	-825.00	-1,043.64	928.51	0.00	0.00	0.00
9,000.00	90.00	179.72	6,978.00	-925.00	-1,043.16	1,027.92	0.00	0.00	0.00
9,100.00	90.00	179.72	6,978.00	-1,024.99	-1,042.67	1,127.33	0.00	0.00	0.00
9,200.00	90.00	179.72	6,978.00	-1,124.99	-1,042.19	1,226.75	0.00	0.00	0.00
9,300.00	90.00	179.72	6,978.00	-1,224.99	-1,041.70	1,326.16	0.00	0.00	0.00
9,400.00	90.00	179.72	6,978.00	-1,324.99	-1,041.22	1,425.57	0.00	0.00	0.00
9,500.00	90.00	179.72	6,978.00	-1,424.99	-1,040.73	1,524.98	0.00	0.00	0.00
9,600.00	90.00	179.72	6,978.00	-1,524.99	-1,040.24	1,624.40	0.00	0.00	0.00
9,700.00	90.00	179.72	6,978.00	-1,624.99	-1,039.76	1,723.81	0.00	0.00	0.00
9,800.00	90.00	179.72	6,978.00	-1,724.99	-1,039.27	1,823.22	0.00	0.00	0.00
9,900.00	90.00	179.72	6,978.00	-1,824.99	-1,038.79	1,922.63	0.00	0.00	0.00
10,000.00	90.00	179.72	6,978.00	-1,924.98	-1,038.30	2,022.05	0.00	0.00	0.00
10,100.00	90.00	179.72	6,978.00	-2,024.98	-1,037.82	2,121.46	0.00	0.00	0.00
10,200.00	90.00	179.72	6,978.00	-2,124.98	-1,037.33	2,220.87	0.00	0.00	0.00
10,300.00	90.00	179.72	6,978.00	-2,224.98	-1,036.84	2,320.28	0.00	0.00	0.00
10,400.00	90.00	179.72	6,978.00	-2,324.98	-1,036.36	2,419.69	0.00	0.00	0.00
10,500.00	90.00	179.72	6,978.00	-2,424.98	-1,035.87	2,519.11	0.00	0.00	0.00
10,600.00	90.00	179.72	6,978.00	-2,524.98	-1,035.39	2,618.52	0.00	0.00	0.00
10,700.00	90.00	179.72	6,978.00	-2,624.98	-1,034.90	2,717.93	0.00	0.00	0.00
10,800.00	90.00	179.72	6,978.00	-2,724.97	-1,034.42	2,817.34	0.00	0.00	0.00
10,900.00	90.00	179.72	6,978.00	-2,824.97	-1,033.93	2,916.76	0.00	0.00	0.00
11,000.00	90.00	179.72	6,978.00	-2,924.97	-1,033.44	3,016.17	0.00	0.00	0.00
11,100.00	90.00	179.72	6,978.00	-3,024.97	-1,032.96	3,115.58	0.00	0.00	0.00
11,200.00	90.00	179.72	6,978.00	-3,124.97	-1,032.47	3,214.99	0.00	0.00	0.00
11,300.00	90.00	179.72	6,978.00	-3,224.97	-1,031.99	3,314.41	0.00	0.00	0.00
11,400.00	90.00	179.72	6,978.00	-3,324.97	-1,031.50	3,413.82	0.00	0.00	0.00
11,500.00	90.00	179.72	6,978.00	-3,424.97	-1,031.02	3,513.23	0.00	0.00	0.00
11,600.00	90.00	179.72	6,978.00	-3,524.97	-1,030.53	3,612.64	0.00	0.00	0.00
11,700.00	90.00	179.72	6,978.00	-3,624.96	-1,030.04	3,712.06	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Pioneer Y18-775
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4915.00ft
Project:	Mustang	MD Reference:	Well @ 4915.00ft
Site:	Y Section 07	North Reference:	Grid
Well:	Pioneer Y18-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pioneer Y18-775		
Design:	Plan #1		

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)
11,800.00	90.00	179.72	6,978.00	-3,724.96	-1,029.56	3,811.47	0.00	0.00	0.00
11,900.00	90.00	179.72	6,978.00	-3,824.96	-1,029.07	3,910.88	0.00	0.00	0.00
12,000.00	90.00	179.72	6,978.00	-3,924.96	-1,028.59	4,010.29	0.00	0.00	0.00
12,100.00	90.00	179.72	6,978.00	-4,024.96	-1,028.10	4,109.70	0.00	0.00	0.00
12,200.00	90.00	179.72	6,978.00	-4,124.96	-1,027.62	4,209.12	0.00	0.00	0.00
12,300.00	90.00	179.72	6,978.00	-4,224.96	-1,027.13	4,308.53	0.00	0.00	0.00
12,400.00	90.00	179.72	6,978.00	-4,324.96	-1,026.65	4,407.94	0.00	0.00	0.00
12,500.00	90.00	179.72	6,978.00	-4,424.95	-1,026.16	4,507.35	0.00	0.00	0.00
12,600.00	90.00	179.72	6,978.00	-4,524.95	-1,025.67	4,606.77	0.00	0.00	0.00
12,700.00	90.00	179.72	6,978.00	-4,624.95	-1,025.19	4,706.18	0.00	0.00	0.00
12,800.00	90.00	179.72	6,978.00	-4,724.95	-1,024.70	4,805.59	0.00	0.00	0.00
12,900.00	90.00	179.72	6,978.00	-4,824.95	-1,024.22	4,905.00	0.00	0.00	0.00
13,000.00	90.00	179.72	6,978.00	-4,924.95	-1,023.73	5,004.42	0.00	0.00	0.00
13,100.00	90.00	179.72	6,978.00	-5,024.95	-1,023.25	5,103.83	0.00	0.00	0.00
13,200.00	90.00	179.72	6,978.00	-5,124.95	-1,022.76	5,203.24	0.00	0.00	0.00
13,300.00	90.00	179.72	6,978.00	-5,224.95	-1,022.27	5,302.65	0.00	0.00	0.00
13,400.00	90.00	179.72	6,978.00	-5,324.94	-1,021.79	5,402.07	0.00	0.00	0.00
13,500.00	90.00	179.72	6,978.00	-5,424.94	-1,021.30	5,501.48	0.00	0.00	0.00
13,600.00	90.00	179.72	6,978.00	-5,524.94	-1,020.82	5,600.89	0.00	0.00	0.00
13,700.00	90.00	179.72	6,978.00	-5,624.94	-1,020.33	5,700.30	0.00	0.00	0.00
13,800.00	90.00	179.72	6,978.00	-5,724.94	-1,019.85	5,799.71	0.00	0.00	0.00
13,900.00	90.00	179.72	6,978.00	-5,824.94	-1,019.36	5,899.13	0.00	0.00	0.00
14,000.00	90.00	179.72	6,978.00	-5,924.94	-1,018.87	5,998.54	0.00	0.00	0.00
14,100.00	90.00	179.72	6,978.00	-6,024.94	-1,018.39	6,097.95	0.00	0.00	0.00
14,200.00	90.00	179.72	6,978.00	-6,124.93	-1,017.90	6,197.36	0.00	0.00	0.00
14,300.00	90.00	179.72	6,978.00	-6,224.93	-1,017.42	6,296.78	0.00	0.00	0.00
14,400.00	90.00	179.72	6,978.00	-6,324.93	-1,016.93	6,396.19	0.00	0.00	0.00
14,500.00	90.00	179.72	6,978.00	-6,424.93	-1,016.45	6,495.60	0.00	0.00	0.00
14,600.00	90.00	179.72	6,978.00	-6,524.93	-1,015.96	6,595.01	0.00	0.00	0.00
14,700.00	90.00	179.72	6,978.00	-6,624.93	-1,015.47	6,694.43	0.00	0.00	0.00
14,800.00	90.00	179.72	6,978.00	-6,724.93	-1,014.99	6,793.84	0.00	0.00	0.00
14,900.00	90.00	179.72	6,978.00	-6,824.93	-1,014.50	6,893.25	0.00	0.00	0.00
15,000.00	90.00	179.72	6,978.00	-6,924.93	-1,014.02	6,992.66	0.00	0.00	0.00
15,100.00	90.00	179.72	6,978.00	-7,024.92	-1,013.53	7,092.07	0.00	0.00	0.00
15,200.00	90.00	179.72	6,978.00	-7,124.92	-1,013.05	7,191.49	0.00	0.00	0.00
15,300.00	90.00	179.72	6,978.00	-7,224.92	-1,012.56	7,290.90	0.00	0.00	0.00
15,400.00	90.00	179.72	6,978.00	-7,324.92	-1,012.07	7,390.31	0.00	0.00	0.00
15,500.00	90.00	179.72	6,978.00	-7,424.92	-1,011.59	7,489.72	0.00	0.00	0.00
15,600.00	90.00	179.72	6,978.00	-7,524.92	-1,011.10	7,589.14	0.00	0.00	0.00
15,700.00	90.00	179.72	6,978.00	-7,624.92	-1,010.62	7,688.55	0.00	0.00	0.00
15,800.00	90.00	179.72	6,978.00	-7,724.92	-1,010.13	7,787.96	0.00	0.00	0.00
15,900.00	90.00	179.72	6,978.00	-7,824.91	-1,009.65	7,887.37	0.00	0.00	0.00
16,000.00	90.00	179.72	6,978.00	-7,924.91	-1,009.16	7,986.79	0.00	0.00	0.00
16,100.00	90.00	179.72	6,978.00	-8,024.91	-1,008.67	8,086.20	0.00	0.00	0.00
16,200.00	90.00	179.72	6,978.00	-8,124.91	-1,008.19	8,185.61	0.00	0.00	0.00
16,300.00	90.00	179.72	6,978.00	-8,224.91	-1,007.70	8,285.02	0.00	0.00	0.00
16,400.00	90.00	179.72	6,978.00	-8,324.91	-1,007.22	8,384.44	0.00	0.00	0.00
16,500.00	90.00	179.72	6,978.00	-8,424.91	-1,006.73	8,483.85	0.00	0.00	0.00
16,600.00	90.00	179.72	6,978.00	-8,524.91	-1,006.25	8,583.26	0.00	0.00	0.00
16,700.00	90.00	179.72	6,978.00	-8,624.91	-1,005.76	8,682.67	0.00	0.00	0.00
16,800.00	90.00	179.72	6,978.00	-8,724.90	-1,005.27	8,782.08	0.00	0.00	0.00
16,900.00	90.00	179.72	6,978.00	-8,824.90	-1,004.79	8,881.50	0.00	0.00	0.00
17,000.00	90.00	179.72	6,978.00	-8,924.90	-1,004.30	8,980.91	0.00	0.00	0.00
17,100.00	90.00	179.72	6,978.00	-9,024.90	-1,003.82	9,080.32	0.00	0.00	0.00

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Pioneer Y18-775
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4915.00ft
Project:	Mustang	MD Reference:	Well @ 4915.00ft
Site:	Y Section 07	North Reference:	Grid
Well:	Pioneer Y18-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pioneer Y18-775		
Design:	Plan #1		

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)
17,200.00	90.00	179.72	6,978.00	-9,124.90	-1,003.33	9,179.73	0.00	0.00	0.00
17,300.00	90.00	179.72	6,978.00	-9,224.90	-1,002.85	9,279.15	0.00	0.00	0.00
17,400.00	90.00	179.72	6,978.00	-9,324.90	-1,002.36	9,378.56	0.00	0.00	0.00
17,500.00	90.00	179.72	6,978.00	-9,424.90	-1,001.87	9,477.97	0.00	0.00	0.00
17,600.00	90.00	179.72	6,978.00	-9,524.89	-1,001.39	9,577.38	0.00	0.00	0.00
17,700.95	90.00	179.72	6,978.00	-9,625.85	-1,000.90	9,677.74	0.00	0.00	0.00
TD @ 17700.95' MD/6978.00' TVD									

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
Pioneer Y18-775-SHL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,301,718.50	3,252,801.60	40.1580730	-104.5955200
Pioneer Y18-775-KOF - plan hits target center - Point	0.00	0.00	6,180.76	1,067.55	-855.29	1,302,786.05	3,251,946.32	40.1610273	-104.5985410
Pioneer Y18-775-TPZ - plan hits target center - Point	0.00	0.00	6,978.00	457.37	-1,049.87	1,302,175.87	3,251,751.73	40.1593578	-104.5992594
Pioneer Y18-775-BHL - plan hits target center - Point	0.00	0.01	6,978.00	-9,625.85	-1,000.90	1,292,092.67	3,251,800.70	40.1316781	-104.5994505

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
728.00	728.00	Fox Hills				
728.00	728.00	Pierre				
1,076.00	1,076.00	Upper Pierre Aquifer Top				
1,885.00	1,885.00	Upper Pierre Aquifer Base				
4,043.71	3,964.00	Parkman				
4,654.12	4,531.00	Sussex				
5,494.92	5,312.00	Shannon				
6,493.12	6,240.00	Teepee Buttes				
7,252.26	6,879.00	Sharon Springs				
7,273.69	6,890.00	Top A Chalk				
7,273.69	6,890.00	Top A Marl				
7,318.41	6,911.00	Top B Chalk				
7,481.84	6,964.00	Top B Marl				

Noble Energy, Inc.

Planning Report

Database:	EDMP	Local Co-ordinate Reference:	Well Pioneer Y18-775
Company:	Northern Region - DJ Basin	TVD Reference:	Well @ 4915.00ft
Project:	Mustang	MD Reference:	Well @ 4915.00ft
Site:	Y Section 07	North Reference:	Grid
Well:	Pioneer Y18-775	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pioneer Y18-775		
Design:	Plan #1		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
2,200.00	2,200.00	0.00	0.00	Build: 2°/100'	
3,286.93	3,261.04	159.00	-127.38	Hold: 21.74° Inc, 321.30° Azm	
6,430.19	6,180.76	1,067.55	-855.29	KOP: Build 9°/100' @ 6430.19' MD	
7,617.62	6,978.00	457.37	-1,049.87	LP: 7617.62' MD, 90.00° Inc, 179.72° Azm	
17,700.95	6,978.00	-9,625.85	-1,000.90	TD @ 17700.95' MD/6978.00' TVD	

Northern Region - DJ Basin

Mustang

Y Section 07

Pioneer Y18-775

Pioneer Y18-775

Plan #1

Anticollision Summary Report

26 September, 2018

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Pioneer Y18-775
Project:	Mustang	TVD Reference:	Well @ 4915.00ft
Reference Site:	Y Section 07	MD Reference:	Well @ 4915.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Pioneer Y18-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Pioneer Y18-775	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	9/26/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,700.95	Plan #1 (Pioneer Y18-775)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis	

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
D Section 30						
Adams D30-27D - Adams D30-27D - Adams D30-27D - /						Out of range
Adams D30-29D - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
Adams D30-30D - Adams D30-30D Gyros - Gyros						Out of range
Adams D30-30D - Adams D30-30D OH - As Drilled						Out of range
Adams D30-31D - Adams D30-31D Gyros - Gyros						Out of range
Adams D30-31D - Adams D30-31D OH - As-drilled						Out of range
Corbin D30-23D - Corbin D30-23D - Corbin D30-23D - A						Out of range
Corbin Red D30-04J - Corbin Red D30-04J - Corbin Red						Out of range
Corbin Red D30-09 - Corbin Red D30-09 - Corbin Red D						Out of range
Corbin Red D30-15 - Corbin Red D30-15 - Corbin Red D						Out of range
Corbin Red D30-16 - Corbin Red D30-16 - Corbin Red D						Out of range
Dechant D30-17D - Dechant D30-17D - Dechant D30-17						Out of range
Dechant D30-20D - Dechant D30-20D - Dechant D30-20						Out of range
Dechant D30-24D - Dechant D30-24D - Dechant D30-24						Out of range
Dechant D30-25D - Dechant D30-25D - Dechant D30-25						Out of range
Dechant D31-27D - Dechant D31-27D - Dechant D31-27						Out of range
Dechant D31-28D - Dechant D31-28D - Dechant D31-28						Out of range
Dechant D31-29D - Dechant D31-29D - Dechant D31-29						Out of range
Dechant D31-77HN - Original Drilling - Original Drilling - /	6,679.85	11,360.01	5,415.12	5,362.75	103.390	CC, ES
Dechant D31-77HN - Original Drilling - Original Drilling - /	6,800.00	11,360.01	5,427.72	5,375.06	103.067	SF
Hanson D30-11 - Hanson D30-11 - Hanson D30-11 - As						Out of range
Hanson D30-12 - Hanson D30-12 - Hanson D30-12 - As						Out of range
Hanson D30-13 - Hanson D30-13 - Hanson D30-13 - As						Out of range
Hanson D30-14 - Hanson D30-14 - Hanson D30-14 - As						Out of range
Hettinger C Unit 1 - Hettinger C Unit 1 - Hettinger C Unit						Out of range
Hettinger D30-02 - Hettinger D30-02 - Hettinger D30-02 -						Out of range
Hettinger D30-03 - Hettinger D30-03 - Hettinger D30-03 -						Out of range
Hettinger D30-04 - Hettinger D30-04 - Hettinger D30-04 -						Out of range
Hettinger D30-05 - Hettinger D30-05 - Hettinger D30-05 -						Out of range
Hettinger D30-06 - Hettinger D30-06 - Hettinger D30-06 -						Out of range
Hettinger D30-08 - Hettinger D30-08 - Hettinger D30-08 -						Out of range
Leslie E Hanson Gas Unit 1 - Leslie E Hanson Gas Unit						Out of range
McWilliams D29-32 - McWilliams D29-32 - McWilliams D						Out of range
McWilliams D30-07 - McWilliams D30-07 - McWilliams D						Out of range
McWilliams D30-18 - McWilliams D30-18 - McWilliams D						Out of range
McWilliams D30-19 - McWilliams D30-19 - McWilliams D						Out of range
McWilliams D30-21 - McWilliams D30-21 - McWilliams D						Out of range

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 Pioneer Y18-775
Project:	Mustang	TVD Reference:	Well @ 4915.00ft
Reference Site:	Y Section 07	MD Reference:	Well @ 4915.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Pioneer Y18-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Pioneer Y18-775	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						
D Section 30						
McWilliams D30-22 - McWilliams D30-22 - McWilliams D						Out of range

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Pioneer Y18-775
Project:	Mustang	TVD Reference:	Well @ 4915.00ft
Reference Site:	Y Section 07	MD Reference:	Well @ 4915.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Pioneer Y18-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Pioneer Y18-775	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
D Section 31						
Dechant 1-31A (PR) - Wellbore #1 - Gyro Surveys	6,612.92	6,167.56	5,811.79	5,765.59	125.787	CC, ES
Dechant 1-31A (PR) - Wellbore #1 - Gyro Surveys	6,850.00	6,850.00	5,856.33	5,807.04	118.815	SF
Dechant D 31-22D (PR) - Wellbore #1 - Gyro Surveys	6,567.82	6,312.45	7,949.01	7,896.30	150.800	CC, ES
Dechant D 31-22D (PR) - Wellbore #1 - Gyro Surveys	6,950.00	6,810.64	8,052.47	7,997.41	146.240	SF
Dechant D31-18D (PR) - Wellbore #1 - As Drilled	104.00	0.00	8,157.92	8,157.78	10,000.000	CC
Dechant D31-18D (PR) - Wellbore #1 - As Drilled	400.00	255.66	8,158.80	8,156.90	4,290.890	ES
Dechant D31-18D (PR) - Wellbore #1 - As Drilled	6,900.00	3,976.20	8,747.51	8,702.89	196.075	SF
Dechant D31-24D (PR) - Wellbore #1 - Gyro Surveys	6,566.60	6,100.00	6,439.75	6,390.53	130.821	CC, ES
Dechant D31-24D (PR) - Wellbore #1 - Gyro Surveys	7,150.00	7,177.47	6,657.40	6,603.85	124.312	SF
Dechant D31-31D (SI) - Wellbore #1 - Gyro Surveys	6,482.97	4,100.00	8,702.17	8,662.49	219.290	CC, ES
Dechant D31-31D (SI) - Wellbore #1 - Gyro Surveys	7,100.00	6,764.31	8,906.44	8,856.32	177.719	SF
Dechant D31-31D(PR) - Wellbore #1 - As Drilled	6,588.99	6,314.79	7,768.33	7,718.87	157.066	CC, ES
Dechant D31-31D(PR) - Wellbore #1 - As Drilled	7,150.00	7,150.00	7,996.24	7,943.13	150.567	SF
Dechant State D31-32 (SI) - Wellbore #1 - Wellbore #1 -	6,640.94	6,371.86	7,721.87	7,685.59	212.877	CC, ES
Dechant State D31-32 (SI) - Wellbore #1 - Wellbore #1 -	7,400.00	7,400.00	8,127.69	8,088.49	207.328	SF
Dechant Y 06-27D (PR) - Wellbore #1 - As Drilled	6,532.90	6,252.63	5,581.68	5,529.85	107.687	CC, ES
Dechant Y 06-27D (PR) - Wellbore #1 - As Drilled	6,900.00	6,631.22	5,675.07	5,621.03	105.026	SF
Dechant Y 06-28D (PR) - Wellbore #1 - As Drilled	6,586.10	6,425.88	5,087.04	5,039.52	107.040	CC, ES
Dechant Y 06-28D (PR) - Wellbore #1 - As Drilled	7,000.00	6,909.54	5,210.05	5,159.91	103.915	SF
Riva Blue 31-15 (PR) - Wellbore #1 - Gyro Surveys	6,562.99	6,165.98	6,130.32	6,084.00	132.350	CC
Riva Blue 31-15 (PR) - Wellbore #1 - Gyro Surveys	6,600.00	6,600.00	6,131.29	6,083.29	127.753	ES, SF
Riva Blue 31-16 (PR) - Wellbore #1 - Gyro Surveys	6,529.87	6,110.62	6,328.37	6,282.30	137.359	CC, ES
Riva Blue 31-16 (PR) - Wellbore #1 - Gyro Surveys	6,950.00	6,533.75	6,448.01	6,399.30	132.375	SF
Riva Blue 31-9 (PR) - Wellbore #1 - Gyro Surveys	6,554.64	6,239.62	7,486.58	7,440.03	160.854	CC, ES
Riva Blue 31-9 (PR) - Wellbore #1 - Gyro Surveys	7,050.00	6,711.98	7,655.49	7,606.10	154.994	SF
Riva Blue D 31-04J (PR) - Wellbore #1 - Gyro Surveys	6,557.92	6,119.61	6,896.60	6,850.45	149.412	CC, ES
Riva Blue D 31-04J (PR) - Wellbore #1 - Gyro Surveys	7,100.00	6,995.85	7,094.45	7,044.07	140.798	SF
Riva Blue D 31-11 (PR) - Wellbore #1 - Gyro Surveys	6,587.60	6,110.45	7,063.83	7,017.22	151.576	CC, ES
Riva Blue D 31-11 (PR) - Wellbore #1 - Gyro Surveys	7,050.00	6,524.44	7,223.88	7,174.14	145.226	SF
Riva Blue D 31-12 (SI) - Wellbore #1 - Gyro Surveys	6,621.42	6,133.56	6,916.33	6,870.26	150.122	CC, ES
Riva Blue D 31-12 (SI) - Wellbore #1 - Gyro Surveys	7,350.00	7,350.00	7,277.98	7,226.60	141.655	SF
Riva D 31-10 (PR) - Wellbore #1 - No Surveys	6,578.52	6,214.14	7,255.65	7,106.44	48.627	CC
Riva D 31-10 (PR) - Wellbore #1 - No Surveys	6,600.00	6,234.97	7,256.00	7,106.29	48.468	ES
Riva D 31-10 (PR) - Wellbore #1 - No Surveys	7,100.00	6,676.76	7,451.94	7,292.31	46.682	SF
Riva Red D 31-2J (PA) - Wellbore #1 - Gyro Surveys	6,627.26	6,371.49	8,749.36	8,702.45	186.530	CC, ES
Riva Red D 31-2J (PA) - Wellbore #1 - Gyro Surveys	7,050.00	6,779.12	8,883.59	8,834.31	180.272	SF
Riva Red D 31-3 (PA) - Wellbore #1 - Gyro Surveys	6,597.14	6,100.00	9,806.55	9,760.46	212.778	CC
Riva Red D 31-3 (PA) - Wellbore #1 - Gyro Surveys	6,600.00	6,100.00	9,806.55	9,760.45	212.723	ES
Riva Red D 31-3 (PA) - Wellbore #1 - Gyro Surveys	7,100.00	6,897.32	9,984.48	9,934.64	200.348	SF
Riva Red D 31-6 (PA) - Wellbore #1 - No Surveys	6,602.92	6,238.80	8,067.86	7,918.20	53.909	CC, ES
Riva Red D 31-6 (PA) - Wellbore #1 - No Surveys	7,150.00	6,711.66	8,288.42	8,128.18	51.724	SF
Riva Red D31-06X (SI) - Wellbore #1 - Gyro Surveys	6,615.74	6,393.75	8,297.18	8,250.19	176.545	CC, ES
Riva Red D31-06X (SI) - Wellbore #1 - Gyro Surveys	6,850.00	6,850.00	8,338.52	8,289.29	169.390	SF
Riva White D 31-1 (PR) - Wellbore #1 - Gyro Surveys						Out of range
Riva White D 31-7 (PR) - Wellbore #1 - Gyro Surveys	6,578.70	6,193.33	8,516.01	8,469.62	183.585	CC
Riva White D 31-7 (PR) - Wellbore #1 - Gyro Surveys	6,600.00	6,270.64	8,516.31	8,469.59	182.298	ES
Riva White D 31-7 (PR) - Wellbore #1 - Gyro Surveys	7,100.00	7,100.00	8,711.72	8,661.03	171.872	SF
Riva White D 31-8 (PA) - Wellbore #1 - Gyro Surveys	6,600.38	6,772.05	8,671.04	8,622.71	179.408	CC, ES
Riva White D 31-8 (PA) - Wellbore #1 - Gyro Surveys	7,000.00	7,108.78	8,785.59	8,735.34	174.855	SF
River Blue d31-14 (PR) - Wellbore #1 - Gyro Surveys	6,603.26	6,312.55	5,263.10	5,216.31	112.483	CC, ES
River Blue d31-14 (PR) - Wellbore #1 - Gyro Surveys	6,900.00	6,500.00	5,333.28	5,284.95	110.348	SF
River Red D 31-4 (PA) - Wellbore #1 - Gyro Surveys	6,614.99	5,966.57	9,697.49	9,615.59	118.412	CC
River Red D 31-4 (PA) - Wellbore #1 - Gyro Surveys	6,650.00	6,001.12	9,698.45	9,615.48	116.890	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 Pioneer Y18-775
Project:	Mustang	TVD Reference:	Well @ 4915.00ft
Reference Site:	Y Section 07	MD Reference:	Well @ 4915.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Pioneer Y18-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Pioneer Y18-775	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
D Section 31						
River Red D 31-4 (PA) - Wellbore #1 - Gyro Surveys	7,250.00	6,489.98	9,987.79	9,890.35	102.504	SF
UPRR 53 Pan Am UT R 1 (PA) - Wellbore #1 - No Surve	6,573.64	6,203.42	9,187.08	9,038.08	61.658	CC
UPRR 53 Pan Am UT R 1 (PA) - Wellbore #1 - No Surve	6,600.00	6,228.97	9,187.61	9,037.99	61.410	ES
UPRR 53 Pan Am UT R 1 (PA) - Wellbore #1 - No Surve	7,150.00	6,704.66	9,421.91	9,261.67	58.798	SF
D Section 32						
HP D32-21D - Wellbore #1 - MWD Surveys						Out of range
HP D32-23D - Wellbore #1 - MWD Surveys						Out of range
HP Farms D 32-22D - Wellbore #1 - MWD Surveys						Out of range
HP Farms D32-03 - Wellbore #1 - Gyro Surveys						Out of range
HP Farms D32-18D - Wellbore #1 - MWD Surveys						Out of range
HP Farms D32-24D - Wellbore #1 - MWD Surveys	6,459.11	6,380.00	9,109.59	9,054.21	164.487	CC, ES
HP Farms D32-24D - Wellbore #1 - MWD Surveys	7,050.00	6,926.11	9,294.73	9,236.44	159.466	SF
Norris 14-32 - Wellbore #1 - Projection Survey	6,493.33	6,152.19	6,971.78	6,893.33	88.871	CC
Norris 14-32 - Wellbore #1 - Projection Survey	6,500.00	6,158.55	6,971.81	6,893.28	88.777	ES
Norris 14-32 - Wellbore #1 - Projection Survey	7,100.00	6,696.76	7,182.68	7,097.98	84.801	SF
Norris A Unit 2 - Wellbore #1 - As-Drilled	6,485.90	6,082.25	7,928.34	7,882.46	172.798	CC
Norris A Unit 2 - Wellbore #1 - As-Drilled	6,500.00	6,101.97	7,928.46	7,882.45	172.324	ES
Norris A Unit 2 - Wellbore #1 - As-Drilled	6,950.00	6,439.23	8,057.19	8,008.72	166.229	SF
Norris D32-1 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Norris D32-10 - Wellbore #1 - Gyro Surveys	6,453.00	6,000.00	9,879.39	9,833.99	217.603	CC, ES
Norris D32-10 - Wellbore #1 - Gyro Surveys	6,650.00	6,650.00	9,901.66	9,853.24	204.486	SF
Norris D32-15 - Wellbore #1 - Gyro Surveys	6,116.29	5,800.00	9,016.23	8,973.02	208.638	CC, ES
Norris D32-15 - Wellbore #1 - Gyro Surveys	7,200.00	6,499.69	9,312.12	9,263.28	190.677	SF
Norris D32-1J - Wellbore #1 - Gyro Surveys						Out of range
Norris D32-2 - Wellbore #1 - Gyro Surveys						Out of range
Norris D32-2J - Wellbore #1 - Gyro Surveys						Out of range
Norris D32-4 (P&A) - Wellbore #1 - No Surveys						Out of range
Norris D32-5 - Wellbore #1 - Gyro Surveys	6,517.24	5,956.11	9,346.29	9,300.80	205.456	CC, ES
Norris D32-5 - Wellbore #1 - Gyro Surveys	7,000.00	7,000.00	9,494.26	9,443.88	188.443	SF
Norris D32-6 - Wellbore #1 - Gyro Surveys	6,534.71	6,532.77	9,998.30	9,950.77	210.382	CC, ES
Norris D32-6 - Wellbore #1 - Gyro Surveys	6,550.00	6,545.34	9,998.45	9,950.82	209.918	SF
Norris D32-7 - Wellbore #1 - Gyro Surveys						Out of range
Norris D32-9 (SI) - Wellbore #1 - Gyro Surveys						Out of range

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 Pioneer Y18-775
Project:	Mustang	TVD Reference:	Well @ 4915.00ft
Reference Site:	Y Section 07	MD Reference:	Well @ 4915.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Pioneer Y18-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Pioneer Y18-775	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
H Section 36						
Offset Well - Wellbore - Design						
Dechant 07-36 - Original Drilling - Original Drilling - As D	6,692.02	6,451.31	8,593.51	8,546.55	183.003	CC
Dechant 07-36 - Original Drilling - Original Drilling - As D	6,700.00	6,459.63	8,593.56	8,546.55	182.789	ES
Dechant 07-36 - Original Drilling - Original Drilling - As D	7,150.00	6,817.65	8,741.81	8,692.64	177.796	SF
Dechant 13N-1HZ - Production Hole - Production Hole -	7,369.81	11,468.00	5,653.82	5,538.56	49.052	CC, ES
Dechant 13N-1HZ - Production Hole - Production Hole -	7,400.00	11,468.00	5,654.09	5,538.81	49.045	SF
Dechant 13N-1HZ - Surface Hole - Surface Hole - As Dri	100.00	0.00	8,607.63	8,607.50	10,000.000	CC
Dechant 13N-1HZ - Surface Hole - Surface Hole - As Dri	200.00	51.42	8,608.01	8,607.44	10,000.000	ES
Dechant 13N-1HZ - Surface Hole - Surface Hole - As Dri	7,800.00	600.00	9,940.77	9,912.94	357.178	SF
Dechant 14C-1HZ - Production Hole - Production Hole -	7,300.00	11,731.00	4,454.75	4,370.99	53.181	SF
Dechant 14C-1HZ - Production Hole - Production Hole -	7,373.73	11,731.00	4,452.81	4,369.10	53.193	CC, ES
Dechant 14C-1HZ - Surface Hole - Surface Hole - As Dri	100.00	0.00	8,545.30	8,545.18	10,000.000	CC
Dechant 14C-1HZ - Surface Hole - Surface Hole - As Dri	700.00	606.20	8,548.15	8,543.93	2,022.975	ES
Dechant 14C-1HZ - Surface Hole - Surface Hole - As Dri	7,900.00	610.00	9,949.53	9,921.34	352.952	SF
Dechant 15-36 - Original Drilling - Original Drilling - As D	6,716.41	6,408.22	6,410.18	6,358.67	124.454	CC
Dechant 15-36 - Original Drilling - Original Drilling - As D	6,750.00	6,440.26	6,410.95	6,358.49	122.222	ES
Dechant 15-36 - Original Drilling - Original Drilling - As D	7,450.00	6,910.63	6,744.49	6,678.69	102.500	SF
Dechant 24-36 - Original Drilling - Original Drilling - As D	6,667.24	6,361.48	8,019.99	7,967.76	153.561	CC, ES
Dechant 24-36 - Original Drilling - Original Drilling - As D	7,100.00	6,756.40	8,155.08	8,100.67	149.864	SF
Dechant 35N-E1HZ - Production Hole - Production Hole	7,300.00	11,619.00	4,656.75	4,540.61	40.096	SF
Dechant 35N-E1HZ - Production Hole - Production Hole	7,350.00	11,619.00	4,655.92	4,539.86	40.116	ES
Dechant 35N-E1HZ - Production Hole - Production Hole	7,350.76	11,619.00	4,655.92	4,539.86	40.117	CC
Dechant 35N-E1HZ - Surface Hole - Surface Hole - As D	100.00	12.27	8,566.01	8,565.87	10,000.000	CC
Dechant 35N-E1HZ - Surface Hole - Surface Hole - As D	700.00	612.00	8,566.83	8,562.59	2,020.355	ES
Dechant 35N-E1HZ - Surface Hole - Surface Hole - As D	7,900.00	612.00	9,960.96	9,932.75	353.198	SF
Dechant 35N-W1HZ - Original Drilling - Original Drilling	7,350.00	11,494.00	5,120.05	5,004.93	44.474	SF
Dechant 35N-W1HZ - Original Drilling - Original Drilling	7,363.69	11,494.00	5,119.99	5,004.87	44.476	CC, ES
Dechant 36N-W1HZ - Original Drilling - Original Drilling	7,200.00	11,651.36	3,974.46	3,858.35	34.230	SF
Dechant 36N-W1HZ - Original Drilling - Original Drilling	7,347.29	11,651.36	3,966.92	3,851.35	34.324	CC, ES
Dechant 37N-E1HZ - Production Hole - Production Hole	7,100.00	11,723.00	2,162.70	2,048.51	18.939	SF
Dechant 37N-E1HZ - Production Hole - Production Hole	7,250.00	11,723.00	2,151.85	2,039.20	19.102	ES
Dechant 37N-E1HZ - Production Hole - Production Hole	7,251.94	11,723.00	2,151.85	2,039.22	19.107	CC
Dechant 37N-E1HZ - Surface Hole - Surface Hole - As D	735.99	648.00	7,716.84	7,712.34	1,715.503	CC, ES
Dechant 37N-E1HZ - Surface Hole - Surface Hole - As D	8,800.00	648.00	9,963.87	9,932.53	317.960	SF
Dechant 37N-W1HZ - Production Hole - Production Hole	7,200.00	12,384.00	2,723.28	2,604.29	22.887	SF
Dechant 37N-W1HZ - Production Hole - Production Hole	7,298.90	12,384.00	2,719.09	2,600.63	22.952	CC, ES
Dechant 37N-W1HZ - Surface Hole - Surface Hole - As C	425.76	337.77	7,688.62	7,686.32	3,343.207	CC
Dechant 37N-W1HZ - Surface Hole - Surface Hole - As C	800.00	655.00	7,689.14	7,684.40	1,619.891	ES
Dechant 37N-W1HZ - Surface Hole - Surface Hole - As C	8,800.00	655.00	9,938.89	9,907.55	317.175	SF
Dechant State 15C-1HZ - Wellbore #1 - As Drilled	7,300.00	16,665.00	3,145.20	3,011.34	23.496	SF
Dechant State 15C-1HZ - Wellbore #1 - As Drilled	7,350.00	16,665.00	3,143.96	3,010.24	23.511	ES
Dechant State 15C-1HZ - Wellbore #1 - As Drilled	7,352.52	16,665.00	3,143.96	3,010.24	23.512	CC
Dechant State 16C-1HZ - Original Drilling - Original Drilling	7,250.00	16,839.03	2,024.50	1,826.83	10.242	SF
Dechant State 16C-1HZ - Original Drilling - Original Drilling	7,300.00	16,839.03	2,022.74	1,825.27	10.243	ES
Dechant State 16C-1HZ - Original Drilling - Original Drilling	7,305.71	16,839.03	2,022.72	1,825.29	10.245	CC
Dechant State 36N-E1HZ - Wellbore #1 - Wellbore #1	7,300.00	16,517.00	3,580.19	3,446.23	26.726	SF
Dechant State 36N-E1HZ - Wellbore #1 - Wellbore #1	7,336.34	16,517.00	3,579.68	3,445.77	26.733	CC, ES
Dechant State 37N-E36HZ - Wellbore #1 - As Drilled	6,735.12	11,466.00	5,778.14	5,722.27	103.421	CC, ES
Dechant State 37N-E36HZ - Wellbore #1 - As Drilled	6,850.00	11,466.00	5,788.93	5,732.77	103.080	SF
Dechant State 37N-W36HZ - Wellbore #1 - As Drilled	6,758.69	11,490.00	6,013.05	5,956.09	105.565	CC, ES
Dechant State 37N-W36HZ - Wellbore #1 - As Drilled	6,850.00	11,490.00	6,019.66	5,962.59	105.476	SF
Dechant State 38N-1HZ - Wellbore #1 - As Drilled	7,200.00	16,675.00	1,420.76	1,286.97	10.619	SF
Dechant State 38N-1HZ - Wellbore #1 - As Drilled	7,243.57	16,675.00	1,419.48	1,286.05	10.638	CC, ES
Dechant State H36-11D - Original Drilling - Original Drilling	6,713.47	6,286.39	8,087.85	8,041.45	174.313	CC, ES

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Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Pioneer Y18-775
Project:	Mustang	TVD Reference:	Well @ 4915.00ft
Reference Site:	Y Section 07	MD Reference:	Well @ 4915.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Pioneer Y18-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Pioneer Y18-775	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
H Section 36						
Dechant State H36-11D - Original Drilling - Original Drillir	7,100.00	6,619.90	8,184.75	8,136.36	169.144	SF
Dechant State H36-18D - Dechant State H36-18D Gyros	6,694.42	6,637.66	9,634.77	9,554.82	120.522	CC
Dechant State H36-18D - Dechant State H36-18D Gyros	6,700.00	6,646.41	9,634.79	9,554.81	120.470	ES
Dechant State H36-18D - Dechant State H36-18D Gyros	7,000.00	7,188.31	9,696.65	9,614.99	118.739	SF
Dechant State H36-18D - Dechant State H36-18D OH - /	6,694.42	6,650.66	9,634.78	9,554.84	120.522	CC
Dechant State H36-18D - Dechant State H36-18D OH - /	6,700.00	6,659.41	9,634.81	9,554.83	120.470	ES
Dechant State H36-18D - Dechant State H36-18D OH - /	7,000.00	7,201.31	9,696.67	9,615.01	118.739	SF
Dechant State H36-19 - Original Drilling - Original Drilling						Out of range
Dechant State H36-20D - Dechant State H36-20D Gyros	6,717.17	6,399.72	8,949.94	8,884.80	137.400	CC, ES
Dechant State H36-20D - Dechant State H36-20D Gyros	7,050.00	6,638.97	9,022.45	8,955.94	135.662	SF
Dechant State H36-20D - Dechant State H36-20D OH - /	6,717.17	6,412.72	8,949.93	8,884.79	137.400	CC, ES
Dechant State H36-20D - Dechant State H36-20D OH - /	7,050.00	6,651.97	9,022.44	8,955.93	135.662	SF
Dechant State H36-21D - Dechant State H36-21D Gyros	6,698.18	6,400.00	8,331.34	8,273.38	143.743	CC
Dechant State H36-21D - Dechant State H36-21D Gyros	6,700.00	6,400.00	8,331.34	8,273.37	143.726	ES
Dechant State H36-21D - Dechant State H36-21D Gyros	7,100.00	6,819.25	8,440.66	8,380.96	141.370	SF
Dechant State H36-21D - Dechant State H36-21D OH - /	6,698.18	6,413.00	8,331.33	8,273.37	143.743	CC
Dechant State H36-21D - Dechant State H36-21D OH - /	6,700.00	6,413.00	8,331.34	8,273.37	143.726	ES
Dechant State H36-21D - Dechant State H36-21D OH - /	7,100.00	6,832.25	8,440.66	8,380.95	141.370	SF
Dechant State H36-24 - Original Drilling - Original Drilling	6,705.32	6,423.41	7,259.39	7,206.77	137.976	CC, ES
Dechant State H36-24 - Original Drilling - Original Drilling	6,900.00	6,900.00	7,284.97	7,230.36	133.389	SF
Dechant State H36-31D - Dechant State H36-31D OH - /						Out of range
Dechant State H36-32D - Dechant State H36-32D Gyros	6,741.83	6,411.45	9,850.16	9,803.29	210.155	CC
Dechant State H36-32D - Dechant State H36-32D Gyros	6,750.00	6,417.10	9,850.20	9,803.29	209.953	ES
Dechant State H36-32D - Dechant State H36-32D Gyros	7,200.00	6,900.00	9,973.58	9,924.31	202.433	SF
Dechant State H36-32D - Dechant State H36-32D OH - /	6,741.83	6,424.45	9,850.13	9,803.26	210.154	CC
Dechant State H36-32D - Dechant State H36-32D OH - /	6,750.00	6,430.10	9,850.17	9,803.25	209.952	ES
Dechant State H36-32D - Dechant State H36-32D OH - /	7,200.00	6,913.00	9,973.54	9,924.28	202.432	SF
Dechant State H36-33 - Dechant State H36-33D Gyros -	6,768.77	6,597.77	8,913.21	8,845.23	131.119	CC, ES
Dechant State H36-33 - Dechant State H36-33D Gyros -	7,250.00	6,830.45	9,045.52	8,975.16	128.544	SF
Dechant State H36-33 - Dechant State H36-33D OH - As	6,768.77	6,610.77	8,913.19	8,845.21	131.118	CC, ES
Dechant State H36-33 - Dechant State H36-33D OH - As	7,250.00	6,843.45	9,045.50	8,975.13	128.544	SF
HSR Dechant State 01-36 - Wellbore #1 - As Drilled	6,659.32	6,528.16	9,784.24	9,736.83	206.362	CC, ES
HSR Dechant State 01-36 - Wellbore #1 - As Drilled	7,100.00	6,768.47	9,933.35	9,884.09	201.636	SF
HSR Dechant State 02-36 - Original Drilling - Original Dri						Out of range
HSR Dechant/State 07-36 (PA) - Original Drilling - Origin	6,668.91	6,303.80	8,920.52	8,769.78	59.178	CC, ES
HSR Dechant/State 07-36 (PA) - Original Drilling - Origin	7,200.00	6,743.75	9,121.09	8,960.53	56.810	SF
Spike State GWS H36-03 - Original Drilling - Original Dri						Out of range
Spike State GWS H36-04 - Original Drilling - Original Dri						Out of range
Spike State GWS H36-13 - Original Drilling - Original Dri	6,789.32	6,481.51	8,001.32	7,954.18	169.754	CC, ES
Spike State GWS H36-13 - Original Drilling - Original Dri	7,200.00	6,828.77	8,091.57	8,042.36	164.447	SF
Spike State GWS H36-14 - Original Drilling - Original Dri	6,723.34	6,236.90	6,828.86	6,782.60	147.610	CC, ES
Spike State GWS H36-14 - Original Drilling - Original Dri	7,100.00	6,525.97	6,916.59	6,868.48	143.773	SF
Spike State H36-02J - Original Drilling - Original Drilling -	6,719.86	6,557.65	9,763.76	9,694.93	141.855	CC
Spike State H36-02J - Original Drilling - Original Drilling -	6,750.00	6,586.42	9,764.39	9,694.56	139.826	ES
Spike State H36-02J - Original Drilling - Original Drilling -	7,300.00	7,005.76	9,983.17	9,899.19	118.871	SF
Spike State H36-05 - Original Drilling - Original Drilling - /						Out of range
Spike State H36-11J - Original Drilling - Original Drilling -	6,745.06	6,400.01	7,962.64	7,915.86	170.225	CC
Spike State H36-11J - Original Drilling - Original Drilling -	6,750.00	6,400.01	7,962.65	7,915.86	170.159	ES
Spike State H36-11J - Original Drilling - Original Drilling -	7,200.00	6,704.40	8,089.31	8,040.57	165.975	SF
Spike State H36-12 - Original Drilling - Original Drilling - /	6,750.72	6,448.13	9,209.50	9,162.57	196.216	CC, ES
Spike State H36-12 - Original Drilling - Original Drilling - /	7,150.00	6,636.35	9,308.03	9,259.58	192.083	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 Pioneer Y18-775
Project:	Mustang	TVD Reference:	Well @ 4915.00ft
Reference Site:	Y Section 07	MD Reference:	Well @ 4915.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Pioneer Y18-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Pioneer Y18-775	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
Y Section 05						
Olsen Red Y05-02D - Olsen Red Y05-02D - Olsen Red Y	5,297.49	5,000.00	6,748.00	6,711.09	182.812	CC
Olsen Red Y05-02D - Olsen Red Y05-02D - Olsen Red Y	5,500.00	5,155.38	6,748.88	6,710.57	176.188	ES
Olsen Red Y05-02D - Olsen Red Y05-02D - Olsen Red Y	8,000.00	8,000.00	7,553.83	7,500.02	140.385	SF
Olsen Y5-05JI - Olsen Y5-05JI - Olsen Y5-05JI - As Drille	5,280.71	5,028.03	5,360.36	5,332.04	189.242	CC
Olsen Y5-05JI - Olsen Y5-05JI - Olsen Y5-05JI - As Drille	5,500.00	5,231.72	5,360.98	5,331.37	181.104	ES
Olsen Y5-05JI - Olsen Y5-05JI - Olsen Y5-05JI - As Drille	6,950.00	6,583.24	5,509.57	5,472.09	146.988	SF
Perkins 32-05 - Perkins 32-05 - Perkins 32-05 - As Drille	2,200.00	2,167.00	7,515.21	7,488.64	282.908	CC
Perkins 32-05 - Perkins 32-05 - Perkins 32-05 - As Drille	2,600.00	2,565.70	7,517.95	7,486.49	238.966	ES
Perkins 32-05 - Perkins 32-05 - Perkins 32-05 - As Drille	7,250.00	6,844.81	8,029.92	7,943.98	93.435	SF
Perkins 42-05 - Perkins 42-05 - Perkins 42-05 - As Drille	2,200.00	2,184.00	8,641.99	8,615.28	323.518	CC
Perkins 42-05 - Perkins 42-05 - Perkins 42-05 - As Drille	2,400.00	2,383.84	8,643.23	8,614.06	296.342	ES
Perkins 42-05 - Perkins 42-05 - Perkins 42-05 - As Drille	7,350.00	6,908.20	9,280.62	9,194.11	107.282	SF
Perkins 43-05 - Perkins 43-05 - Perkins 43-05 - As Drille	2,200.00	2,189.00	8,107.95	8,081.19	303.031	CC
Perkins 43-05 - Perkins 43-05 - Perkins 43-05 - As Drille	2,300.00	2,288.98	8,108.50	8,080.51	289.747	ES
Perkins 43-05 - Perkins 43-05 - Perkins 43-05 - As Drille	7,400.00	6,931.25	8,907.73	8,821.10	102.815	SF
Perkins USX Y05-16 - Perkins USX Y05-16 - Perkins US	2,201.88	2,180.89	7,343.84	7,328.72	485.943	CC, ES
Perkins USX Y05-16 - Perkins USX Y05-16 - Perkins US	11,800.00	6,876.45	9,857.12	9,796.50	162.600	SF
Pioneer Y17-715 - Pioneer Y17-715 - Plan #1	2,200.00	2,185.00	6,193.71	6,178.45	406.066	CC, ES
Pioneer Y17-715 - Pioneer Y17-715 - Plan #1	17,700.95	17,666.60	9,056.42	8,877.78	50.698	SF
Pioneer Y17-725 - Pioneer Y17-725 - Plan #1	2,200.00	2,184.00	6,171.74	6,156.49	404.721	CC, ES
Pioneer Y17-725 - Pioneer Y17-725 - Plan #1	17,700.95	17,649.38	8,399.93	8,221.05	46.959	SF
Pioneer Y17-735 - Pioneer Y17-735 - Plan #1	2,200.00	2,182.00	6,149.57	6,134.32	403.456	CC, ES
Pioneer Y17-735 - Pioneer Y17-735 - Plan #1	17,700.95	17,230.79	7,742.02	7,565.11	43.762	SF
Pioneer Y17-740 - Pioneer Y17-740 - Plan #1	2,200.00	2,181.00	6,127.60	6,112.36	402.110	CC, ES
Pioneer Y17-740 - Pioneer Y17-740 - Plan #1	17,700.95	17,587.51	7,416.39	7,238.16	41.611	SF
Pioneer Y17-745 - Pioneer Y17-745 - Plan #1	2,200.00	2,180.00	6,105.44	6,090.20	400.750	CC, ES
Pioneer Y17-745 - Pioneer Y17-745 - Plan #1	17,700.95	17,446.55	7,087.40	6,909.60	39.862	SF
Pioneer Y17-755 - Pioneer Y17-755 - Plan #1	2,200.00	2,171.00	4,393.97	4,378.77	289.024	CC, ES
Pioneer Y17-755 - Pioneer Y17-755 - Plan #1	17,700.95	17,471.02	6,431.97	6,253.39	36.018	SF
Pioneer Y17-765 - Pioneer Y17-765 - Plan #1	2,200.00	2,171.00	4,372.11	4,356.90	287.586	CC
Pioneer Y17-765 - Pioneer Y17-765 - Plan #1	2,300.00	2,270.98	4,372.79	4,356.87	274.720	ES
Pioneer Y17-765 - Pioneer Y17-765 - Plan #1	17,700.95	17,506.58	5,775.02	5,596.73	32.391	SF
Pioneer Y17-775 - Pioneer Y17-775 - Plan #1	2,200.00	2,171.00	4,350.61	4,335.41	286.172	CC
Pioneer Y17-775 - Pioneer Y17-775 - Plan #1	2,300.00	2,270.98	4,351.29	4,335.38	273.370	ES
Pioneer Y17-775 - Pioneer Y17-775 - Plan #1	17,700.95	17,357.35	5,119.43	4,941.97	28.847	SF
Pioneer Y17-780 - Pioneer Y17-780 - Plan #1	2,200.00	2,171.00	4,328.85	4,313.65	284.741	CC
Pioneer Y17-780 - Pioneer Y17-780 - Plan #1	2,300.00	2,270.98	4,329.53	4,313.62	272.003	ES
Pioneer Y17-780 - Pioneer Y17-780 - Plan #1	17,700.95	17,616.46	4,792.93	4,614.35	26.840	SF
Pioneer Y17-785 - Pioneer Y17-785 - Plan #1	3,272.18	3,908.18	4,207.16	4,182.24	168.823	CC
Pioneer Y17-785 - Pioneer Y17-785 - Plan #1	3,500.00	4,126.05	4,208.18	4,181.63	158.527	ES
Pioneer Y17-785 - Pioneer Y17-785 - Plan #1	17,700.95	17,564.41	4,462.89	4,284.32	24.992	SF
Y Section 06						
Gray 10-6 (PA) - Wellbore #1 - Gyro Surveys	6,434.80	6,106.96	2,575.64	2,529.96	56.379	CC, ES
Gray 10-6 (PA) - Wellbore #1 - Gyro Surveys	6,750.00	6,394.11	2,628.09	2,580.28	54.977	SF
Norris 14-6 (PA) - Wellbore #1 - Gyro Surveys	6,652.37	6,344.15	632.14	585.42	13.531	CC, ES
Norris 14-6 (PA) - Wellbore #1 - Gyro Surveys	6,700.00	6,392.25	633.91	586.86	13.474	SF
Norris 41-6 (PA) - Wellbore #1 - Gyro Surveys	6,496.40	6,113.66	4,905.60	4,859.65	106.755	CC
Norris 41-6 (PA) - Wellbore #1 - Gyro Surveys	6,500.00	6,115.55	4,905.61	4,859.64	106.705	ES
Norris 41-6 (PA) - Wellbore #1 - Gyro Surveys	6,850.00	6,522.42	4,980.95	4,932.47	102.746	SF
Norris Y 6-5 (PA) - Wellbore #1 - Gyro Surveys	6,641.44	6,344.71	3,345.44	3,298.71	71.596	CC, ES
Norris Y 6-5 (PA) - Wellbore #1 - Gyro Surveys	6,900.00	6,576.55	3,398.50	3,350.23	70.407	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 Pioneer Y18-775
Project:	Mustang	TVD Reference:	Well @ 4915.00ft
Reference Site:	Y Section 07	MD Reference:	Well @ 4915.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Pioneer Y18-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Pioneer Y18-775	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
Y Section 07						
Harkis 11-7 (PA) - Wellbore #1 - Gyro Surveys	8,051.45	6,962.58	379.48	329.01	7.519	CC, ES, SF
Harkis 1-7 (PA) - Wellbore #1 - Gyro Surveys	8,829.00	7,019.00	11.18	-41.05	0.214	Level 1, CC, ES, SF
HP Farms Y 7-15JL (PR) - Wellbore #1 - No Surveys	12,058.21	6,974.00	1,910.35	1,725.97	10.361	CC, ES
HP Farms Y 7-15JL (PR) - Wellbore #1 - No Surveys	12,100.00	6,974.00	1,910.81	1,726.23	10.352	SF
HP Y07-09 (PR) - Wellbore #1 - No Surveys	10,705.52	6,923.00	3,476.88	3,302.00	19.881	CC, ES
HP Y07-09 (PR) - Wellbore #1 - No Surveys	11,000.00	6,923.00	3,489.33	3,313.05	19.795	SF
HP Y07-10D (SI) - Wellbore #1 - Gyro Surveys	10,558.35	7,169.95	1,966.85	1,904.94	31.768	CC
HP Y07-10D (SI) - Wellbore #1 - Gyro Surveys	10,600.00	7,170.04	1,967.29	1,904.92	31.541	ES
HP Y07-10D (SI) - Wellbore #1 - Gyro Surveys	11,500.00	7,171.86	2,180.65	2,103.72	28.346	SF
Perkins 31-7 (SI) - Wellbore #1 - No Surveys	2,200.00	2,150.00	1,057.39	1,006.73	20.875	CC
Perkins 31-7 (SI) - Wellbore #1 - No Surveys	2,300.00	2,249.98	1,058.41	1,005.40	19.967	ES
Perkins 31-7 (SI) - Wellbore #1 - No Surveys	8,031.80	6,928.00	2,103.92	1,939.09	12.764	SF
Perkins USX Y 7-17 (SI) - Wellbore #1 - Gyro Surveys	2,237.61	2,220.67	1,791.67	1,776.28	116.374	CC, ES
Perkins USX Y 7-17 (SI) - Wellbore #1 - Gyro Surveys	9,000.00	6,964.77	2,831.70	2,779.30	54.039	SF
Pioneer 22-7 (SI) - Wellbore #1 - No Surveys	9,542.48	6,950.00	952.03	782.51	5.616	CC, ES, SF
Pioneer D31-716 - Pioneer D31-716 - Plan #1	2,200.00	2,195.00	948.69	933.41	62.052	CC, ES
Pioneer D31-716 - Pioneer D31-716 - Plan #1	2,800.00	2,639.42	1,032.98	1,014.22	55.045	SF
Pioneer D31-725 - Pioneer D31-725 - Plan #1	2,200.00	2,196.00	926.05	910.76	60.556	CC, ES
Pioneer D31-725 - Pioneer D31-725 - Plan #1	2,800.00	2,646.63	1,009.59	990.79	53.693	SF
Pioneer D31-735 - Pioneer D31-735 - Plan #1	2,200.00	2,196.00	903.69	888.40	59.094	CC, ES
Pioneer D31-735 - Pioneer D31-735 - Plan #1	6,900.00	7,275.81	2,371.66	2,321.15	46.960	SF
Pioneer D31-744 - Pioneer D31-744 - Plan #1	2,200.00	2,204.00	881.05	865.73	57.506	CC, ES
Pioneer D31-744 - Pioneer D31-744 - Plan #1	7,050.00	7,384.31	1,779.00	1,727.72	34.693	SF
Pioneer D31-756 - Pioneer D31-756 - Plan #1	2,715.41	2,713.64	60.71	41.73	3.200	CC, ES, SF
Pioneer D31-761 - Pioneer D31-761 - Plan #1	2,796.78	2,806.53	77.17	57.58	3.938	CC, ES, SF
Pioneer D31-775 - Pioneer D31-775 - Plan #1	7,385.32	7,248.60	57.36	5.13	1.098	Level 2, CC, ES, SF
Pioneer D31-785 - Pioneer D31-785 - Plan #1	2,200.00	2,202.00	142.55	127.24	9.309	CC
Pioneer D31-785 - Pioneer D31-785 - Plan #1	2,300.00	2,297.20	143.18	127.18	8.951	ES
Pioneer D31-785 - Pioneer D31-785 - Plan #1	2,600.00	2,582.20	152.69	134.77	8.520	SF
Pioneer USX Y07-08D (PR) - Wellbore #1 - As Drilled	2,842.57	3,587.16	3,206.67	3,182.91	134.968	CC, ES
Pioneer USX Y07-08D (PR) - Wellbore #1 - As Drilled	10,000.00	7,084.86	3,456.38	3,393.46	54.937	SF
Pioneer Y07-07D (PR) - Wellbore #1 - Gyro Surveys	9,247.12	7,368.82	2,097.10	2,009.06	23.818	CC
Pioneer Y07-07D (PR) - Wellbore #1 - Gyro Surveys	9,300.00	7,368.93	2,097.77	2,008.44	23.484	ES
Pioneer Y07-07D (PR) - Wellbore #1 - Gyro Surveys	9,900.00	7,429.84	2,196.38	2,095.09	21.684	SF
Pioneer Y18-715 - Pioneer Y18-715 - Plan #1	2,200.00	2,197.00	828.50	813.21	54.165	CC, ES
Pioneer Y18-715 - Pioneer Y18-715 - Plan #1	17,700.95	17,954.18	3,762.37	3,588.84	21.681	SF
Pioneer Y18-725 - Pioneer Y18-725 - Plan #1	2,200.00	2,198.00	806.14	790.84	52.690	CC, ES
Pioneer Y18-725 - Pioneer Y18-725 - Plan #1	17,700.95	17,897.41	3,136.65	2,962.98	18.061	SF
Pioneer Y18-730 - Pioneer Y18-730 - Plan #1	2,200.00	2,199.00	783.78	768.47	51.217	CC, ES
Pioneer Y18-730 - Pioneer Y18-730 - Plan #1	17,700.95	17,871.13	2,826.79	2,653.03	16.268	SF
Pioneer Y18-735 - Pioneer Y18-735 - Plan #1	2,200.00	2,200.00	761.14	745.83	49.726	CC, ES
Pioneer Y18-735 - Pioneer Y18-735 - Plan #1	17,700.95	17,666.62	2,508.26	2,334.65	14.448	SF
Pioneer Y18-744 - Pioneer Y18-744 - Plan #1	2,200.00	2,200.00	738.77	723.47	48.265	CC, ES
Pioneer Y18-744 - Pioneer Y18-744 - Plan #1	17,700.95	17,711.08	1,884.11	1,710.01	10.822	SF
Pioneer Y18-756 - Pioneer Y18-756 - Plan #1	2,200.00	2,198.00	66.25	50.95	4.330	CC, ES
Pioneer Y18-756 - Pioneer Y18-756 - Plan #1	2,300.00	2,297.73	67.53	51.52	4.217	SF
Pioneer Y18-766 - Pioneer Y18-766 - Plan #1	2,200.00	2,199.00	43.60	28.30	2.849	CC
Pioneer Y18-766 - Pioneer Y18-766 - Plan #1	2,300.00	2,299.51	44.12	28.10	2.754	ES
Pioneer Y18-766 - Pioneer Y18-766 - Plan #1	2,400.00	2,400.00	45.63	28.91	2.728	SF
Pioneer Y18-770 - Pioneer Y18-770 - Plan #1	2,200.00	2,199.00	21.25	5.94	1.388	Level 3, CC
Pioneer Y18-770 - Pioneer Y18-770 - Plan #1	2,400.00	2,399.75	22.12	5.40	1.323	Level 3, ES, SF
Pioneer Y18-785 - Pioneer Y18-785 - Plan #1	2,200.00	2,200.00	23.76	8.45	1.552	CC
Pioneer Y18-785 - Pioneer Y18-785 - Plan #1	2,300.00	2,299.35	24.03	8.02	1.501	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 Pioneer Y18-775
Project:	Mustang	TVD Reference:	Well @ 4915.00ft
Reference Site:	Y Section 07	MD Reference:	Well @ 4915.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Pioneer Y18-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Pioneer Y18-775	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
Y Section 07						
Pioneer Y18-785 - Pioneer Y18-785 - Plan #1	2,400.00	2,398.69	24.87	8.17	1.489	Level 3, SF
UPRC 7-10Q (PR) - Wellbore #1 - No Surveys	11,290.31	6,933.00	2,448.54	2,269.95	13.710	CC
UPRC 7-10Q (PR) - Wellbore #1 - No Surveys	11,300.00	6,933.00	2,448.56	2,269.92	13.707	ES
UPRC 7-10Q (PR) - Wellbore #1 - No Surveys	11,400.00	6,933.00	2,451.00	2,271.89	13.685	SF
UPRR 53 PAN AM E 1 (PA) - Wellbore #1 - Gyro Survey	11,315.11	7,002.91	46.05	-18.35	0.715	Level 1, CC, ES, SF
Y Section 08						
Alfred Krough 1 (PA) - Wellbore #1 - No Surveys	11,615.83	6,934.00	5,015.44	4,834.76	27.759	CC, ES
Alfred Krough 1 (PA) - Wellbore #1 - No Surveys	12,300.00	6,934.00	5,061.89	4,877.46	27.446	SF
Lazy 15-8 (PR) - Wellbore #1 - Gyro Surveys	770.71	731.74	7,539.41	7,534.49	1,532.929	CC
Lazy 15-8 (PR) - Wellbore #1 - Gyro Surveys	2,218.66	2,224.33	7,542.19	7,526.87	492.143	ES
Lazy 15-8 (PR) - Wellbore #1 - Gyro Surveys	14,900.00	7,201.74	8,482.22	8,398.27	101.040	SF
Norris C Unit 01 (SI) - Wellbore #1 - Gyro Surveys	2,204.72	2,189.70	7,378.37	7,363.21	486.832	CC, ES
Norris C Unit 01 (SI) - Wellbore #1 - Gyro Surveys	13,600.00	6,907.26	9,879.85	9,808.58	138.623	SF
Norris C Unit 02 (PA) - Wellbore #1 - Gyro Surveys	2,299.94	2,337.33	3,910.82	3,894.81	244.204	CC
Norris C Unit 02 (PA) - Wellbore #1 - Gyro Surveys	2,300.00	2,337.39	3,910.82	3,894.80	244.197	ES
Norris C Unit 02 (PA) - Wellbore #1 - Gyro Surveys	10,000.00	10,000.00	5,224.89	5,158.96	79.249	SF
Pioneer Y 08-02 (PR) - Wellbore #1 - Gyro Surveys	100.00	41.06	6,163.13	6,162.93	10,000.000	CC
Pioneer Y 08-02 (PR) - Wellbore #1 - Gyro Surveys	2,232.09	2,225.87	6,172.92	6,157.55	401.515	ES
Pioneer Y 08-02 (PR) - Wellbore #1 - Gyro Surveys	12,000.00	6,816.61	8,203.41	8,140.41	130.214	SF
Pioneer Y 08-03 (SI) - Wellbore #1 - Gyro Surveys	2,166.28	2,106.30	5,103.96	5,089.25	346.901	CC
Pioneer Y 08-03 (SI) - Wellbore #1 - Gyro Surveys	2,200.00	2,131.67	5,103.99	5,089.07	342.034	ES
Pioneer Y 08-03 (SI) - Wellbore #1 - Gyro Surveys	10,600.00	6,890.87	6,706.45	6,649.34	117.431	SF
Pioneer Y 08-05 (SI) - Wellbore #1 - Gyro Surveys	296.16	250.17	3,723.91	3,722.37	2,430.054	CC
Pioneer Y 08-05 (SI) - Wellbore #1 - Gyro Surveys	2,200.00	2,138.65	3,727.19	3,712.24	249.381	ES
Pioneer Y 08-05 (SI) - Wellbore #1 - Gyro Surveys	14,200.00	14,200.00	6,702.05	6,609.62	72.506	SF
Pioneer Y 08-08 (PR) - Wellbore #1 - No Surveys	2,200.00	2,197.00	7,722.84	7,671.24	149.686	CC
Pioneer Y 08-08 (PR) - Wellbore #1 - No Surveys	2,300.00	2,296.98	7,724.14	7,670.19	143.174	ES
Pioneer Y 08-08 (PR) - Wellbore #1 - No Surveys	11,600.00	6,975.00	8,936.71	8,756.94	49.712	SF
Y Section 09						
Perkins 34-09 - Wellbore #1 - Wellbore #1 - As Drilled						Out of range
Perkins USX Y09-23 - Original Drilling - Original Drilling -						Out of range
Y Section 16						
Hullabaloo State Y21-716 - Original Drilling - Original Dril						Out of range
Hullabaloo State Y21-726 - Original Drilling - Original Dril						Out of range
Hullabaloo State Y21-736 - Original Drilling - Original Dril						Out of range
Hullabaloo State Y21-746 - Original Drilling - Original Dril						Out of range
Hullabaloo State Y21-756 - Original Drilling - Original Dril						Out of range
Hullabaloo State Y21-763 - Original Drilling - Original Drilli						Out of range
Hullabaloo State Y21-769 - Original Drilling - Original Dril						Out of range
Hullabaloo State Y21-775 - Original Drilling - Original Dril						Out of range
Hullabaloo State Y21-781 - Original Drilling - Original Dril	13,076.94	7,386.59	9,883.10	9,811.84	138.692	CC
Hullabaloo State Y21-781 - Original Drilling - Original Dril	13,900.00	13,900.00	9,894.38	9,799.75	104.561	ES
Hullabaloo State Y21-781 - Original Drilling - Original Dril	17,700.95	11,805.00	9,986.34	9,855.95	76.588	SF
Hullabaloo State Y21-787 - Original Drilling - Original Dril	12,906.05	7,173.00	9,447.26	9,377.51	135.436	CC
Hullabaloo State Y21-787 - Original Drilling - Original Dril	13,000.00	7,211.75	9,447.34	9,376.87	134.058	ES
Hullabaloo State Y21-787 - Original Drilling - Original Dril	17,700.95	12,297.75	9,550.10	9,415.42	70.906	SF
State 01 - Original Drilling - Original Drilling - As Drilled						Out of range
State 21 (PA) - Original Drilling - Original Drilling - As Dril						Out of range
State Y16-05D - Wellbore #1 - Wellbore #1 - As Drilled						Out of range

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 Pioneer Y18-775
Project:	Mustang	TVD Reference:	Well @ 4915.00ft
Reference Site:	Y Section 07	MD Reference:	Well @ 4915.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Pioneer Y18-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Pioneer Y18-775	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
Y Section 17						
UPRC 17-15Q (PA) - Wellbore #1 - No Surveys	16,831.07	6,938.00	7,749.06	7,530.15	35.399	CC
UPRC 17-15Q (PA) - Wellbore #1 - No Surveys	16,900.00	6,938.00	7,749.37	7,529.97	35.320	ES
UPRC 17-15Q (PA) - Wellbore #1 - No Surveys	17,700.95	6,938.00	7,797.74	7,573.01	34.698	SF
UPRC 17-5Q (PR) - Wellbore #1 - No Surveys	14,105.26	6,938.00	5,033.89	4,835.72	25.401	CC, ES
UPRC 17-5Q (PR) - Wellbore #1 - No Surveys	14,800.00	6,938.00	5,081.60	4,879.31	25.120	SF
HP Farms Y 17-03 (PR) - Wellbore #1 - No Surveys	13,109.22	6,933.00	6,103.90	5,913.06	31.984	CC, ES
HP Farms Y 17-03 (PR) - Wellbore #1 - No Surveys	14,200.00	6,933.00	6,200.60	6,003.28	31.425	SF
HP Farms Y 17-04 (PR) - Wellbore #1 - Gyro Surveys	13,017.08	7,035.94	4,922.50	4,846.41	64.693	CC, ES
HP Farms Y 17-04 (PR) - Wellbore #1 - Gyro Surveys	14,300.00	7,000.00	5,086.80	5,004.16	61.558	SF
HP Farms Y 17-06 (PR) - Wellbore #1 - Gyro Surveys	14,542.18	6,779.28	6,236.48	6,150.50	72.533	CC
HP Farms Y 17-06 (PR) - Wellbore #1 - Gyro Surveys	14,600.00	6,779.14	6,236.75	6,150.38	72.206	ES
HP Farms Y 17-06 (PR) - Wellbore #1 - Gyro Surveys	16,400.00	6,775.12	6,507.32	6,411.10	67.633	SF
Lana Y 17-14JI (SI) - Wellbore #1 - Gyro Surveys	17,317.48	6,874.43	5,966.03	5,858.34	55.402	CC
Lana Y 17-14JI (SI) - Wellbore #1 - Gyro Surveys	17,400.00	6,874.08	5,966.60	5,858.33	55.111	ES
Lana Y 17-14JI (SI) - Wellbore #1 - Gyro Surveys	17,700.95	6,872.80	5,978.34	5,868.09	54.225	SF
Semmen USX Y 17-07 (PR) - Wellbore #1 - Gyro Survey	14,082.05	6,907.62	7,775.83	7,692.67	93.495	CC
Semmen USX Y 17-07 (PR) - Wellbore #1 - Gyro Survey	14,100.00	6,907.87	7,775.85	7,692.56	93.356	ES
Semmen USX Y 17-07 (PR) - Wellbore #1 - Gyro Survey	16,900.00	6,943.66	8,270.60	8,171.48	83.441	SF
Sloan 41-17 - Wellbore #1 - Wellbore #1 - As Drilled	13,071.60	6,936.52	8,791.55	8,715.56	115.690	CC
Sloan 41-17 - Wellbore #1 - Wellbore #1 - As Drilled	13,100.00	6,935.92	8,791.59	8,715.42	115.408	ES
Sloan 41-17 - Wellbore #1 - Wellbore #1 - As Drilled	16,900.00	6,894.94	9,588.79	9,491.71	98.770	SF
UPRC 17-12Q (SI) - Wellbore #1 - Gyro Surveys	15,789.45	6,761.00	5,179.16	5,083.85	54.339	CC
UPRC 17-12Q (SI) - Wellbore #1 - Gyro Surveys	15,800.00	6,760.86	5,179.17	5,083.79	54.299	ES
UPRC 17-12Q (SI) - Wellbore #1 - Gyro Surveys	16,900.00	6,747.54	5,296.87	5,195.46	52.232	SF
UPRC 17-13Q (SI) - Wellbore #1 - Wellbore #1	16,845.24	6,950.00	5,199.12	4,979.86	23.712	CC
UPRC 17-13Q (SI) - Wellbore #1 - Wellbore #1	16,900.00	6,950.00	5,199.40	4,979.77	23.673	ES
UPRC 17-13Q (SI) - Wellbore #1 - Wellbore #1	17,500.00	6,950.00	5,240.18	5,016.95	23.475	SF
UPRR USX Y 17-02 (PR) - Wellbore #1 - Gyro Surveys	13,023.83	6,949.23	7,128.11	7,052.42	94.165	CC
UPRR USX Y 17-02 (PR) - Wellbore #1 - Gyro Surveys	13,100.00	6,950.21	7,128.52	7,052.32	93.550	ES
UPRR USX Y 17-02 (PR) - Wellbore #1 - Gyro Surveys	15,700.00	6,981.44	7,613.84	7,523.48	84.254	SF
Y Section 18						
ADA Harkins Unit A1 (PA) - Wellbore #1 - Gyro Surveys	13,946.91	7,024.97	183.60	100.77	2.216	CC, ES, SF
Charles R Milliken Unit 1 (PR) - Wellbore #1 - Gyro Surveys	16,418.78	7,032.74	11.23	-89.86	0.111	Level 1, CC, ES, SF
HSR Harkis 15-18 (PR) - Wellbore #1 - No Surveys	16,601.30	6,988.00	2,638.82	2,420.70	12.098	CC, ES
HSR Harkis 15-18 (PR) - Wellbore #1 - No Surveys	16,700.00	6,988.00	2,640.67	2,421.99	12.075	SF
Lyle V Cooksey Gas Unit 1 (PR) - Wellbore #1 - Gyro Su	14,332.95	6,928.05	3,035.39	2,950.37	35.701	CC, ES
Lyle V Cooksey Gas Unit 1 (PR) - Wellbore #1 - Gyro Su	14,700.00	6,920.16	3,057.50	2,970.64	35.200	SF

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

Noble Energy, Inc.

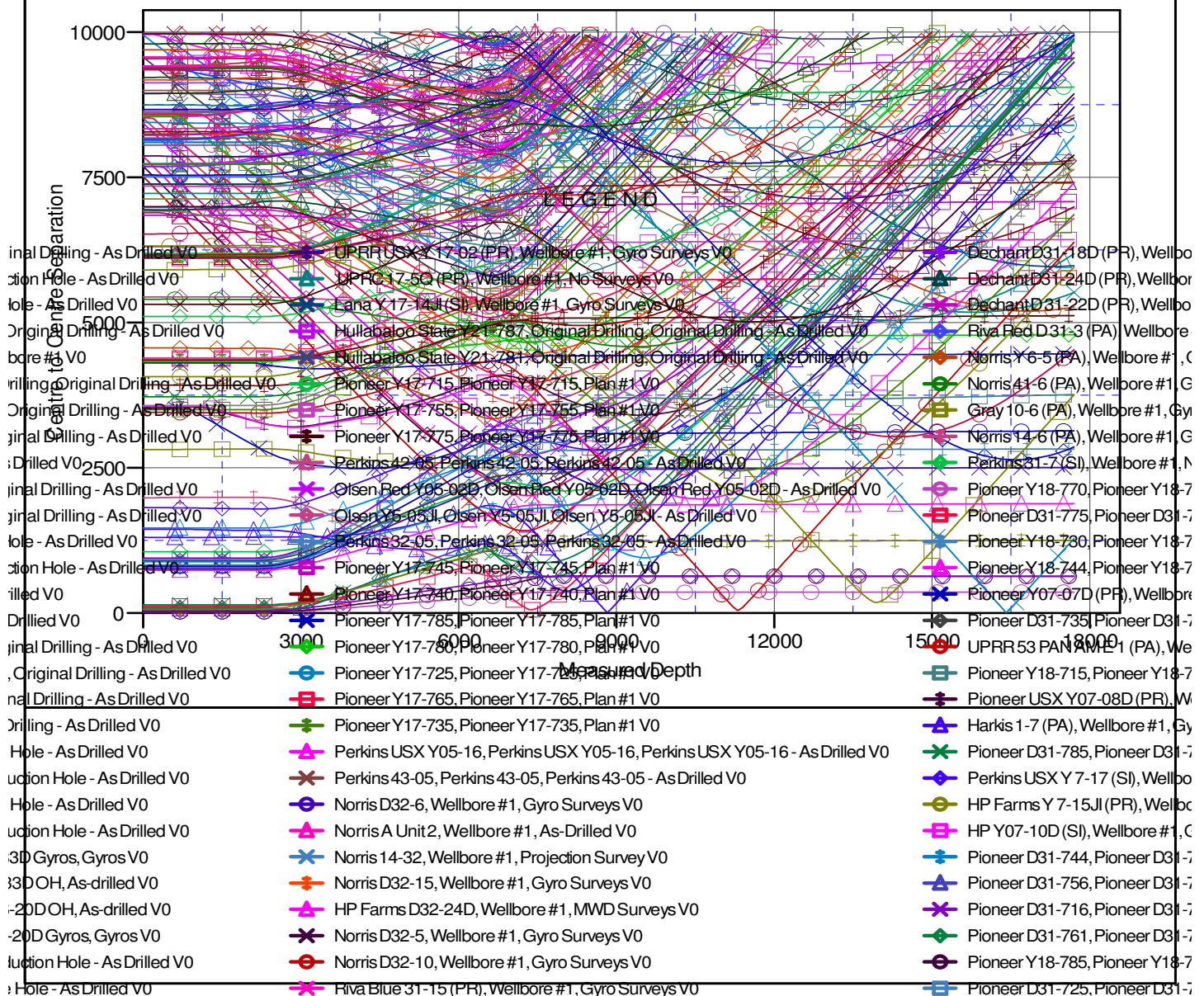
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Pioneer Y18-775
Project:	Mustang	TVD Reference:	Well @ 4915.00ft
Reference Site:	Y Section 07	MD Reference:	Well @ 4915.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Pioneer Y18-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Pioneer Y18-775	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 4915.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Pioneer Y18-775
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.58°

Ladder Plot



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

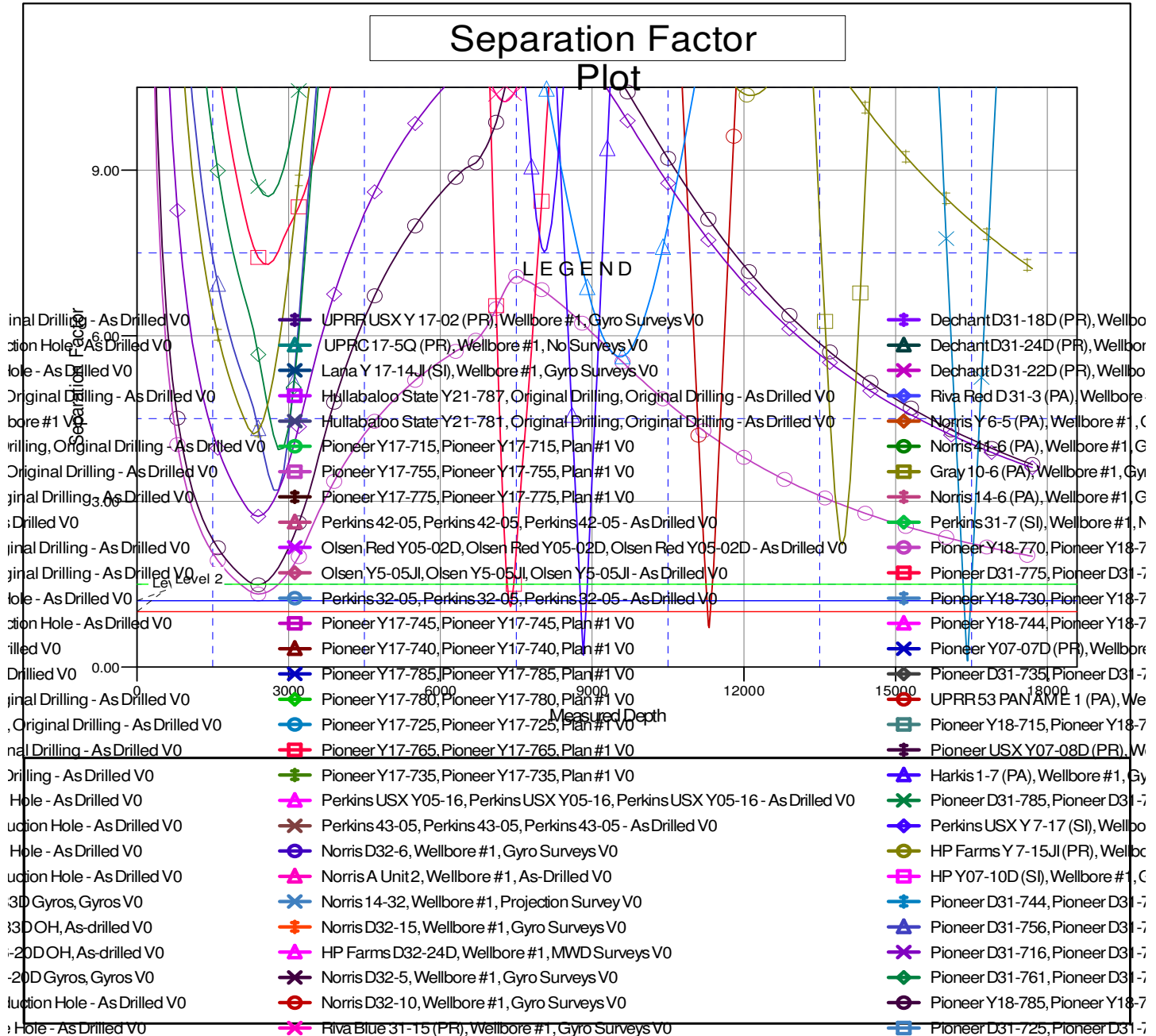
Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Pioneer Y18-775
Project:	Mustang	TVD Reference:	Well @ 4915.00ft
Reference Site:	Y Section 07	MD Reference:	Well @ 4915.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Pioneer Y18-775	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Pioneer Y18-775	Database:	EDMP
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 4915.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Pioneer Y18-775
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.58°



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