

Project: Wells Ranch
 Site: AE Section 32
 Well: Wells Ranch State AA36-643
 Wellbore: Wells Ranch State AA36-643
 Design: Plan 1

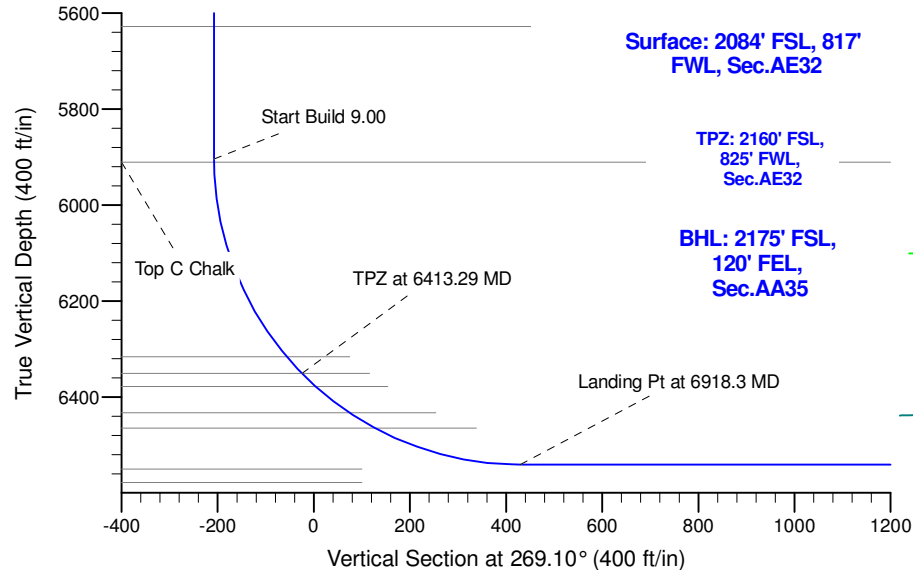
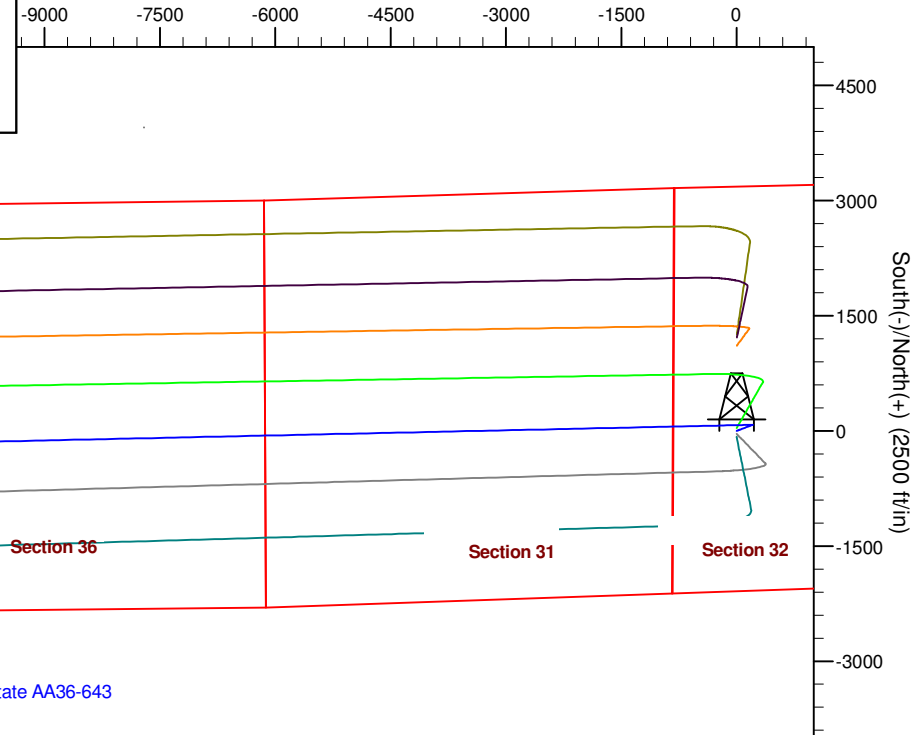
Northern Region - DJ Basin

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

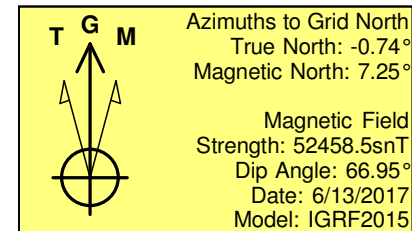
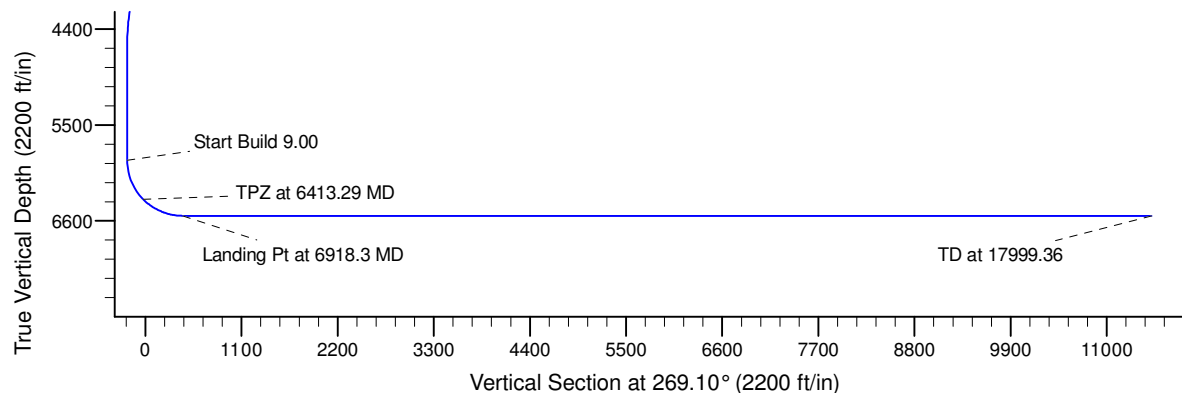
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	0.00	0.00	
3	2991.22	7.82	68.78	2990.00	9.66	24.86	2.00	68.78	-25.01	
4	4222.68	7.82	68.78	4210.00	70.34	181.14	0.00	0.00	-182.23	
5	4613.89	0.00	0.00	4600.00	80.00	206.00	2.00	180.00	-207.24	
6	5918.27	0.00	0.00	5904.38	80.00	206.00	0.00	0.00	-207.24	
7	6918.27	90.00	268.73	6541.00	65.94	-430.46	9.00	268.73	429.37	
8	17999.36	90.00	268.73	6541.00	-178.87	-11508.84	0.00	0.00	11510.23	Wells Ranch State AA36-643 BHL

West(-)/East(+) (2500 ft/in)



Wells Ranch State AA36-643



WELL DETAILS: Wells Ranch State AA36-643

0.00	0.00	Northings	Eastings	4726.00	Latitude	Longitude
		1405807.67	3319023.93	40.4416840		-104.3537981

Plan: Plan 1 (Wells Ranch State AA36-643/Wells Ranch State AA36-643)

Created By: Colby Baxter Date: 15:04, January 04 2018

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Northern Region - DJ Basin

Wells Ranch

AE Section 32

Wells Ranch State AA36-643

Wells Ranch State AA36-643

Plan: Plan 1

Standard Survey Report

04 January, 2018

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Wells Ranch State AA36-643
Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Site:	AE Section 32	MD Reference:	Well @ 4756.00ft
Well:	Wells Ranch State AA36-643	North Reference:	Grid
Wellbore:	Wells Ranch State AA36-643	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1	Database:	EDMP

Project	Wells Ranch, 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		AE Section 32					
Site Position:		Northing:	1,404,332.08	usft	Latitude:	40.4376400	
From:	Map	Easting:	3,318,849.41	usft	Longitude:	-104.3544935	
Position Uncertainty:	0.00	ft	Slot Radius:	13.200	in	Grid Convergence:	0.74 °

Well	Wells Ranch State AA36-643, NEI					
Well Position	+N/-S	0.00 ft	Northing:	1,405,807.67 usft	Latitude:	40.4416840
	+E/-W	0.00 ft	Easting:	3,319,023.93 usft	Longitude:	-104.3537981
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,726.00 ft

Wellbore	Wells Ranch State AA36-643				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/13/2017	7.99	66.95	52,458.46312546

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	269.10	

Survey Tool Program	Date	1/4/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,999.36	Plan 1 (Wells Ranch State AA36-643)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis	

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Wells Ranch State AA36-643
Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Site:	AE Section 32	MD Reference:	Well @ 4756.00ft
Well:	Wells Ranch State AA36-643	North Reference:	Grid
Wellbore:	Wells Ranch State AA36-643	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1	Database:	EDMP

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	2.00	68.78	2,699.98	0.63	1.63	-1.64	2.00	2.00	0.00
2,800.00	4.00	68.78	2,799.84	2.53	6.51	-6.54	2.00	2.00	0.00
2,900.00	6.00	68.78	2,899.45	5.68	14.63	-14.72	2.00	2.00	0.00
2,991.22	7.82	68.78	2,990.00	9.66	24.86	-25.01	2.00	2.00	0.00
3,000.00	7.82	68.78	2,998.70	10.09	25.98	-26.13	0.00	0.00	0.00
3,100.00	7.82	68.78	3,097.77	15.02	38.67	-38.90	0.00	0.00	0.00
3,200.00	7.82	68.78	3,196.84	19.94	51.36	-51.67	0.00	0.00	0.00
3,300.00	7.82	68.78	3,295.91	24.87	64.05	-64.43	0.00	0.00	0.00
3,400.00	7.82	68.78	3,394.98	29.80	76.74	-77.20	0.00	0.00	0.00
3,500.00	7.82	68.78	3,494.05	34.73	89.43	-89.97	0.00	0.00	0.00
3,600.00	7.82	68.78	3,593.12	39.66	102.12	-102.73	0.00	0.00	0.00
3,700.00	7.82	68.78	3,692.19	44.59	114.81	-115.50	0.00	0.00	0.00
3,800.00	7.82	68.78	3,791.26	49.51	127.50	-128.26	0.00	0.00	0.00
3,900.00	7.82	68.78	3,890.32	54.44	140.19	-141.03	0.00	0.00	0.00
4,000.00	7.82	68.78	3,989.39	59.37	152.88	-153.80	0.00	0.00	0.00
4,100.00	7.82	68.78	4,088.46	64.30	165.57	-166.56	0.00	0.00	0.00
4,200.00	7.82	68.78	4,187.53	69.23	178.26	-179.33	0.00	0.00	0.00
4,222.68	7.82	68.78	4,210.00	70.34	181.14	-182.23	0.00	0.00	0.00
4,300.00	6.28	68.78	4,286.73	73.78	189.99	-191.13	2.00	-2.00	0.00
4,400.00	4.28	68.78	4,386.30	77.11	198.56	-199.75	2.00	-2.00	0.00
4,500.00	2.28	68.78	4,486.14	79.18	203.89	-205.11	2.00	-2.00	0.00
4,600.00	0.28	68.78	4,586.11	79.99	205.97	-207.21	2.00	-2.00	0.00
4,613.89	0.00	0.00	4,600.00	80.00	206.00	-207.24	2.00	-2.00	0.00
4,700.00	0.00	0.00	4,686.11	80.00	206.00	-207.24	0.00	0.00	0.00
4,800.00	0.00	0.00	4,786.11	80.00	206.00	-207.24	0.00	0.00	0.00
4,900.00	0.00	0.00	4,886.11	80.00	206.00	-207.24	0.00	0.00	0.00
5,000.00	0.00	0.00	4,986.11	80.00	206.00	-207.24	0.00	0.00	0.00

Noble Energy, Inc.

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Wellbore:	Wells Ranch State AA36-643	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)
5,100.00	0.00	0.00	5,086.11	80.00	206.00	-207.24	0.00	0.00	0.00
5,200.00	0.00	0.00	5,186.11	80.00	206.00	-207.24	0.00	0.00	0.00
5,300.00	0.00	0.00	5,286.11	80.00	206.00	-207.24	0.00	0.00	0.00
5,400.00	0.00	0.00	5,386.11	80.00	206.00	-207.24	0.00	0.00	0.00
5,500.00	0.00	0.00	5,486.11	80.00	206.00	-207.24	0.00	0.00	0.00
5,600.00	0.00	0.00	5,586.11	80.00	206.00	-207.24	0.00	0.00	0.00
5,700.00	0.00	0.00	5,686.11	80.00	206.00	-207.24	0.00	0.00	0.00
5,800.00	0.00	0.00	5,786.11	80.00	206.00	-207.24	0.00	0.00	0.00
5,900.00	0.00	0.00	5,886.11	80.00	206.00	-207.24	0.00	0.00	0.00
5,918.27	0.00	0.00	5,904.38	80.00	206.00	-207.24	0.00	0.00	0.00
6,000.00	7.36	268.73	5,985.88	79.88	200.76	-202.00	9.00	9.00	0.00
6,100.00	16.36	268.73	6,083.65	79.43	180.24	-181.48	9.00	9.00	0.00
6,200.00	25.36	268.73	6,177.00	78.65	144.69	-145.91	9.00	9.00	0.00
6,300.00	34.36	268.73	6,263.64	77.55	94.97	-96.18	9.00	9.00	0.00
6,400.00	43.36	268.73	6,341.43	76.16	32.32	-33.51	9.00	9.00	0.00
6,500.00	52.36	268.73	6,408.46	74.53	-41.74	40.55	9.00	9.00	0.00
6,600.00	61.36	268.73	6,463.08	72.68	-125.36	124.20	9.00	9.00	0.00
6,700.00	70.36	268.73	6,503.95	70.66	-216.49	215.35	9.00	9.00	0.00
6,800.00	79.36	268.73	6,530.04	68.53	-312.90	311.78	9.00	9.00	0.00
6,900.00	88.36	268.73	6,540.74	66.34	-412.20	411.10	9.00	9.00	0.00
6,918.27	90.00	268.73	6,541.00	65.94	-430.46	429.37	9.00	9.00	0.00
7,000.00	90.00	268.73	6,541.00	64.13	-512.17	511.09	0.00	0.00	0.00
7,100.00	90.00	268.73	6,541.00	61.92	-612.15	611.09	0.00	0.00	0.00
7,200.00	90.00	268.73	6,541.00	59.71	-712.12	711.09	0.00	0.00	0.00
7,300.00	90.00	268.73	6,541.00	57.50	-812.10	811.09	0.00	0.00	0.00
7,400.00	90.00	268.73	6,541.00	55.29	-912.07	911.09	0.00	0.00	0.00
7,500.00	90.00	268.73	6,541.00	53.08	-1,012.05	1,011.08	0.00	0.00	0.00
7,600.00	90.00	268.73	6,541.00	50.87	-1,112.02	1,111.08	0.00	0.00	0.00
7,700.00	90.00	268.73	6,541.00	48.67	-1,212.00	1,211.08	0.00	0.00	0.00
7,800.00	90.00	268.73	6,541.00	46.46	-1,311.97	1,311.08	0.00	0.00	0.00
7,900.00	90.00	268.73	6,541.00	44.25	-1,411.95	1,411.08	0.00	0.00	0.00
8,000.00	90.00	268.73	6,541.00	42.04	-1,511.93	1,511.07	0.00	0.00	0.00
8,100.00	90.00	268.73	6,541.00	39.83	-1,611.90	1,611.07	0.00	0.00	0.00
8,200.00	90.00	268.73	6,541.00	37.62	-1,711.88	1,711.07	0.00	0.00	0.00
8,300.00	90.00	268.73	6,541.00	35.41	-1,811.85	1,811.07	0.00	0.00	0.00
8,400.00	90.00	268.73	6,541.00	33.20	-1,911.83	1,911.07	0.00	0.00	0.00
8,500.00	90.00	268.73	6,541.00	30.99	-2,011.80	2,011.06	0.00	0.00	0.00
8,600.00	90.00	268.73	6,541.00	28.78	-2,111.78	2,111.06	0.00	0.00	0.00
8,700.00	90.00	268.73	6,541.00	26.57	-2,211.75	2,211.06	0.00	0.00	0.00
8,800.00	90.00	268.73	6,541.00	24.36	-2,311.73	2,311.06	0.00	0.00	0.00
8,900.00	90.00	268.73	6,541.00	22.15	-2,411.71	2,411.06	0.00	0.00	0.00
9,000.00	90.00	268.73	6,541.00	19.95	-2,511.68	2,511.05	0.00	0.00	0.00
9,100.00	90.00	268.73	6,541.00	17.74	-2,611.66	2,611.05	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

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Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Site:	AE Section 32	MD Reference:	Well @ 4756.00ft
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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)
9,200.00	90.00	268.73	6,541.00	15.53	-2,711.63	2,711.05	0.00	0.00	0.00
9,300.00	90.00	268.73	6,541.00	13.32	-2,811.61	2,811.05	0.00	0.00	0.00
9,400.00	90.00	268.73	6,541.00	11.11	-2,911.58	2,911.05	0.00	0.00	0.00
9,500.00	90.00	268.73	6,541.00	8.90	-3,011.56	3,011.04	0.00	0.00	0.00
9,600.00	90.00	268.73	6,541.00	6.69	-3,111.54	3,111.04	0.00	0.00	0.00
9,700.00	90.00	268.73	6,541.00	4.48	-3,211.51	3,211.04	0.00	0.00	0.00
9,800.00	90.00	268.73	6,541.00	2.27	-3,311.49	3,311.04	0.00	0.00	0.00
9,900.00	90.00	268.73	6,541.00	0.06	-3,411.46	3,411.04	0.00	0.00	0.00
10,000.00	90.00	268.73	6,541.00	-2.15	-3,511.44	3,511.03	0.00	0.00	0.00
10,100.00	90.00	268.73	6,541.00	-4.36	-3,611.41	3,611.03	0.00	0.00	0.00
10,200.00	90.00	268.73	6,541.00	-6.57	-3,711.39	3,711.03	0.00	0.00	0.00
10,300.00	90.00	268.73	6,541.00	-8.77	-3,811.36	3,811.03	0.00	0.00	0.00
10,400.00	90.00	268.73	6,541.00	-10.98	-3,911.34	3,911.03	0.00	0.00	0.00
10,500.00	90.00	268.73	6,541.00	-13.19	-4,011.32	4,011.02	0.00	0.00	0.00
10,600.00	90.00	268.73	6,541.00	-15.40	-4,111.29	4,111.02	0.00	0.00	0.00
10,700.00	90.00	268.73	6,541.00	-17.61	-4,211.27	4,211.02	0.00	0.00	0.00
10,800.00	90.00	268.73	6,541.00	-19.82	-4,311.24	4,311.02	0.00	0.00	0.00
10,900.00	90.00	268.73	6,541.00	-22.03	-4,411.22	4,411.02	0.00	0.00	0.00
11,000.00	90.00	268.73	6,541.00	-24.24	-4,511.19	4,511.01	0.00	0.00	0.00
11,100.00	90.00	268.73	6,541.00	-26.45	-4,611.17	4,611.01	0.00	0.00	0.00
11,200.00	90.00	268.73	6,541.00	-28.66	-4,711.14	4,711.01	0.00	0.00	0.00
11,300.00	90.00	268.73	6,541.00	-30.87	-4,811.12	4,811.01	0.00	0.00	0.00
11,400.00	90.00	268.73	6,541.00	-33.08	-4,911.10	4,911.01	0.00	0.00	0.00
11,500.00	90.00	268.73	6,541.00	-35.29	-5,011.07	5,011.00	0.00	0.00	0.00
11,600.00	90.00	268.73	6,541.00	-37.49	-5,111.05	5,111.00	0.00	0.00	0.00
11,700.00	90.00	268.73	6,541.00	-39.70	-5,211.02	5,211.00	0.00	0.00	0.00
11,800.00	90.00	268.73	6,541.00	-41.91	-5,311.00	5,311.00	0.00	0.00	0.00
11,900.00	90.00	268.73	6,541.00	-44.12	-5,410.97	5,411.00	0.00	0.00	0.00
12,000.00	90.00	268.73	6,541.00	-46.33	-5,510.95	5,510.99	0.00	0.00	0.00
12,100.00	90.00	268.73	6,541.00	-48.54	-5,610.93	5,610.99	0.00	0.00	0.00
12,200.00	90.00	268.73	6,541.00	-50.75	-5,710.90	5,710.99	0.00	0.00	0.00
12,300.00	90.00	268.73	6,541.00	-52.96	-5,810.88	5,810.99	0.00	0.00	0.00
12,400.00	90.00	268.73	6,541.00	-55.17	-5,910.85	5,910.99	0.00	0.00	0.00
12,500.00	90.00	268.73	6,541.00	-57.38	-6,010.83	6,010.98	0.00	0.00	0.00
12,600.00	90.00	268.73	6,541.00	-59.59	-6,110.80	6,110.98	0.00	0.00	0.00
12,700.00	90.00	268.73	6,541.00	-61.80	-6,210.78	6,210.98	0.00	0.00	0.00
12,800.00	90.00	268.73	6,541.00	-64.01	-6,310.75	6,310.98	0.00	0.00	0.00
12,900.00	90.00	268.73	6,541.00	-66.22	-6,410.73	6,410.98	0.00	0.00	0.00
13,000.00	90.00	268.73	6,541.00	-68.42	-6,510.71	6,510.97	0.00	0.00	0.00
13,100.00	90.00	268.73	6,541.00	-70.63	-6,610.68	6,610.97	0.00	0.00	0.00
13,200.00	90.00	268.73	6,541.00	-72.84	-6,710.66	6,710.97	0.00	0.00	0.00
13,300.00	90.00	268.73	6,541.00	-75.05	-6,810.63	6,810.97	0.00	0.00	0.00
13,400.00	90.00	268.73	6,541.00	-77.26	-6,910.61	6,910.97	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Wells Ranch State AA36-643
Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Site:	AE Section 32	MD Reference:	Well @ 4756.00ft
Well:	Wells Ranch State AA36-643	North Reference:	Grid
Wellbore:	Wells Ranch State AA36-643	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1	Database:	EDMP

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,500.00	90.00	268.73	6,541.00	-79.47	-7,010.58	7,010.96	0.00	0.00	0.00
13,600.00	90.00	268.73	6,541.00	-81.68	-7,110.56	7,110.96	0.00	0.00	0.00
13,700.00	90.00	268.73	6,541.00	-83.89	-7,210.53	7,210.96	0.00	0.00	0.00
13,800.00	90.00	268.73	6,541.00	-86.10	-7,310.51	7,310.96	0.00	0.00	0.00
13,900.00	90.00	268.73	6,541.00	-88.31	-7,410.49	7,410.96	0.00	0.00	0.00
14,000.00	90.00	268.73	6,541.00	-90.52	-7,510.46	7,510.95	0.00	0.00	0.00
14,100.00	90.00	268.73	6,541.00	-92.73	-7,610.44	7,610.95	0.00	0.00	0.00
14,200.00	90.00	268.73	6,541.00	-94.94	-7,710.41	7,710.95	0.00	0.00	0.00
14,300.00	90.00	268.73	6,541.00	-97.14	-7,810.39	7,810.95	0.00	0.00	0.00
14,400.00	90.00	268.73	6,541.00	-99.35	-7,910.36	7,910.95	0.00	0.00	0.00
14,500.00	90.00	268.73	6,541.00	-101.56	-8,010.34	8,010.94	0.00	0.00	0.00
14,600.00	90.00	268.73	6,541.00	-103.77	-8,110.32	8,110.94	0.00	0.00	0.00
14,700.00	90.00	268.73	6,541.00	-105.98	-8,210.29	8,210.94	0.00	0.00	0.00
14,800.00	90.00	268.73	6,541.00	-108.19	-8,310.27	8,310.94	0.00	0.00	0.00
14,900.00	90.00	268.73	6,541.00	-110.40	-8,410.24	8,410.94	0.00	0.00	0.00
15,000.00	90.00	268.73	6,541.00	-112.61	-8,510.22	8,510.93	0.00	0.00	0.00
15,100.00	90.00	268.73	6,541.00	-114.82	-8,610.19	8,610.93	0.00	0.00	0.00
15,200.00	90.00	268.73	6,541.00	-117.03	-8,710.17	8,710.93	0.00	0.00	0.00
15,300.00	90.00	268.73	6,541.00	-119.24	-8,810.14	8,810.93	0.00	0.00	0.00
15,400.00	90.00	268.73	6,541.00	-121.45	-8,910.12	8,910.93	0.00	0.00	0.00
15,500.00	90.00	268.73	6,541.00	-123.66	-9,010.10	9,010.92	0.00	0.00	0.00
15,600.00	90.00	268.73	6,541.00	-125.86	-9,110.07	9,110.92	0.00	0.00	0.00
15,700.00	90.00	268.73	6,541.00	-128.07	-9,210.05	9,210.92	0.00	0.00	0.00
15,800.00	90.00	268.73	6,541.00	-130.28	-9,310.02	9,310.92	0.00	0.00	0.00
15,900.00	90.00	268.73	6,541.00	-132.49	-9,410.00	9,410.92	0.00	0.00	0.00
16,000.00	90.00	268.73	6,541.00	-134.70	-9,509.97	9,510.91	0.00	0.00	0.00
16,100.00	90.00	268.73	6,541.00	-136.91	-9,609.95	9,610.91	0.00	0.00	0.00
16,200.00	90.00	268.73	6,541.00	-139.12	-9,709.92	9,710.91	0.00	0.00	0.00
16,300.00	90.00	268.73	6,541.00	-141.33	-9,809.90	9,810.91	0.00	0.00	0.00
16,400.00	90.00	268.73	6,541.00	-143.54	-9,909.88	9,910.91	0.00	0.00	0.00
16,500.00	90.00	268.73	6,541.00	-145.75	-10,009.85	10,010.90	0.00	0.00	0.00
16,600.00	90.00	268.73	6,541.00	-147.96	-10,109.83	10,110.90	0.00	0.00	0.00
16,700.00	90.00	268.73	6,541.00	-150.17	-10,209.80	10,210.90	0.00	0.00	0.00
16,800.00	90.00	268.73	6,541.00	-152.38	-10,309.78	10,310.90	0.00	0.00	0.00
16,900.00	90.00	268.73	6,541.00	-154.58	-10,409.75	10,410.90	0.00	0.00	0.00
17,000.00	90.00	268.73	6,541.00	-156.79	-10,509.73	10,510.89	0.00	0.00	0.00
17,100.00	90.00	268.73	6,541.00	-159.00	-10,609.70	10,610.89	0.00	0.00	0.00
17,200.00	90.00	268.73	6,541.00	-161.21	-10,709.68	10,710.89	0.00	0.00	0.00
17,300.00	90.00	268.73	6,541.00	-163.42	-10,809.66	10,810.89	0.00	0.00	0.00
17,400.00	90.00	268.73	6,541.00	-165.63	-10,909.63	10,910.89	0.00	0.00	0.00
17,500.00	90.00	268.73	6,541.00	-167.84	-11,009.61	11,010.88	0.00	0.00	0.00
17,600.00	90.00	268.73	6,541.00	-170.05	-11,109.58	11,110.88	0.00	0.00	0.00
17,700.00	90.00	268.73	6,541.00	-172.26	-11,209.56	11,210.88	0.00	0.00	0.00
17,800.00	90.00	268.73	6,541.00	-174.47	-11,309.53	11,310.88	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Wells Ranch State AA36-643
Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Site:	AE Section 32	MD Reference:	Well @ 4756.00ft
Well:	Wells Ranch State AA36-643	North Reference:	Grid
Wellbore:	Wells Ranch State AA36-643	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)
17,900.00	90.00	268.73	6,541.00	-176.68	-11,409.51	11,410.88	0.00	0.00	0.00
17,999.36	90.00	268.73	6,541.00	-178.87	-11,508.84	11,510.23	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Wells Ranch State AA36	0.00	0.00	6,541.00	-178.87	-11,508.84	1,405,628.80	3,307,515.11	40.4415940	-104.3951511
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
6,413.29	6,351.00	5 1/2"	5.500	6.000	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
497.00	497.00	Pierre				
577.00	577.00	Upper Pierre Aquifer Top				
1,492.00	1,492.00	Upper Pierre Aquifer Base				
3,447.46	3,442.00	Parkman				
4,185.33	4,173.00	Sussex				
4,783.89	4,770.00	Shannon				
5,641.89	5,628.00	Teepee Buttes				
5,924.89	5,911.00	Top C Chalk				
6,365.87	6,316.00	Sharon Springs				
6,413.29	6,351.00	Top A Chalk				
6,452.38	6,378.00	Top A Marl				
6,542.00	6,433.00	Top B Chalk				
6,604.02	6,465.00	Top B Marl				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2600	2600	0	0	KOP - Start Build 2.00	
5918	5904	80	206	Start Build 9.00	
6413	6351	76	23	TPZ at 6413.29 MD	
6918	6541	66	-430	Landing Pt at 6918.3 MD	
17,999	6541	-179	-11,509	TD at 17999.36	

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Wells Ranch State AA36-643
Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Site:	AE Section 32	MD Reference:	Well @ 4756.00ft
Well:	Wells Ranch State AA36-643	North Reference:	Grid
Wellbore:	Wells Ranch State AA36-643	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1	Database:	EDMP

Checked By: _____ Approved By: _____ Date: _____

Northern Region - DJ Basin

Wells Ranch

AE Section 32

Wells Ranch State AA36-643

Wells Ranch State AA36-643

Plan 1

Anticollision Summary Report

04 January, 2018

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Wells Ranch State AA36-643
Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Reference Site:	AE Section 32	MD Reference:	Well @ 4756.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Wells Ranch State AA36-643	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wells Ranch State AA36-643	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	1/4/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,999.36	Plan 1 (Wells Ranch State AA36-643)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
AA Section 35						
Wells Ranch 14-35 - Wellbore #1 - Wellbore #1- As Drille	17,999.36	6,562.49	4,742.57	4,666.90	62.670	CC, ES, SF
Wells Ranch USX AA35-01 - Wellbore #1 - Wellbore #1-	17,999.36	6,588.05	2,506.93	2,342.42	15.239	CC, ES, SF
Wells Ranch USX AA35-02 - Wellbore #1 - Wellbore #1-	17,999.36	6,599.11	3,015.74	2,876.69	21.688	CC, ES, SF
Wells Ranch USX AA35-03 - Wellbore #1 - Wellbore #1-	17,999.36	6,511.30	3,904.23	3,783.68	32.386	CC, ES, SF
Wells Ranch USX AA35-04 - Wellbore #1 - Wellbore #1-	17,999.36	6,622.72	5,161.82	5,064.97	53.300	CC, ES, SF
Wells Ranch USX AA35-05 - Wellbore #1 - Wellbore #1-	17,999.36	6,596.40	4,655.63	4,585.85	66.722	CC, ES, SF
Wells Ranch USX AA35-06 - Wellbore #1 - Wellbore #1-	17,999.36	6,542.38	3,333.42	3,252.52	41.203	CC, ES, SF
Wells Ranch USX AA35-07 - Wellbore #1 - Wellbore #1-	17,999.36	6,561.29	2,128.05	2,022.43	20.147	CC, ES, SF
Wells Ranch USX AA35-08 - Wellbore #1 - Wellbore #1-	17,999.36	6,563.74	1,198.49	1,041.52	7.635	CC, ES, SF
Wells Ranch USX AA35-09 - Wellbore #1 - Wellbore #1-	17,999.36	6,539.59	379.87	299.82	4.745	CC, ES, SF
Wells Ranch USX AA35-10 - Wellbore #1 - Wellbore #1-	17,999.36	6,534.04	1,850.54	1,796.85	34.468	CC, ES, SF
Wells Ranch USX AA35-11 - Wellbore #1 - Wellbore #1-	17,999.36	6,546.13	3,153.68	3,100.42	59.207	CC, ES, SF
Wells Ranch USX AA35-12 - Wellbore #1 - Wellbore #1-	17,999.36	6,609.29	4,544.95	4,493.29	87.978	CC, ES, SF
Wells Ranch USX AA35-15 - Wellbore #1 - Wellbore #1-	17,999.36	6,505.05	2,267.83	2,150.33	19.300	CC, ES, SF
Wells Ranch USX AA35-16 - Wellbore #1 - Wellbore #1-	17,999.36	6,507.22	1,583.05	1,419.67	9.689	CC, ES, SF
Wells Ranch USX AA35-19 - Wellbore #1 - Wellbore #1-	17,999.36	6,564.16	4,158.09	4,062.54	43.518	CC, ES, SF
Wells Ranch USX AA35-23 - Wellbore #1 - Wellbore #1-	17,999.36	6,549.64	1,338.29	1,225.11	11.824	CC, ES, SF
Wells Ranch USX AA35-65HN - Plan A - Original Drilling	17,999.36	10,987.02	678.06	469.71	3.254	CC, ES, SF
Wells Ranch USX AA35-65HN - Plan A - Plan A - Rev 1 P	17,999.36	11,007.27	662.84	546.51	5.698	CC, ES, SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Wells Ranch State AA36-643
Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Reference Site:	AE Section 32	MD Reference:	Well @ 4756.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Wells Ranch State AA36-643	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wells Ranch State AA36-643	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
AA Section 36						
Wells Ranch 11-36 - Wells Ranch 11-36 - Wells Ranch 11-36	17,115.08	6,571.72	2,464.24	2,306.50	15.622	CC, ES
Wells Ranch 11-36 - Wells Ranch 11-36 - Wells Ranch 11-36	17,400.00	6,570.30	2,480.66	2,320.28	15.468	SF
Wells Ranch 12-36 - Wells Ranch 12-36 - Wells Ranch 11-36	17,140.93	6,572.86	1,050.44	892.38	6.646	CC, ES
Wells Ranch 12-36 - Wells Ranch 12-36 - Wells Ranch 11-36	17,200.00	6,572.90	1,052.10	893.51	6.634	SF
Wells Ranch 13-36 - Wells Ranch 13-36 - Wells Ranch 11-36	17,202.60	6,644.70	173.99	15.00	1.094	Level 2, CC, ES, SF
Wells Ranch 14-36 - Wells Ranch 14-36 - Wells Ranch 11-36	17,438.48	6,523.22	1,642.49	1,480.93	10.166	CC, ES
Wells Ranch 14-36 - Wells Ranch 14-36 - Wells Ranch 11-36	17,500.00	6,523.21	1,643.64	1,481.43	10.133	SF
Wells Ranch 21-36 - Wells Ranch 21-36 - Wells Ranch 21-36	15,734.08	6,544.86	2,482.06	2,341.29	17.631	CC, ES
Wells Ranch 21-36 - Wells Ranch 21-36 - Wells Ranch 21-36	16,000.00	6,545.44	2,496.27	2,352.88	17.409	SF
Wells Ranch 22-36 - Wells Ranch 22-36 - Wells Ranch 21-36	15,684.15	6,531.43	1,215.66	1,075.52	8.674	CC
Wells Ranch 22-36 - Wells Ranch 22-36 - Wells Ranch 21-36	15,700.00	6,531.29	1,215.76	1,075.43	8.664	ES
Wells Ranch 22-36 - Wells Ranch 22-36 - Wells Ranch 21-36	15,800.00	6,530.43	1,221.17	1,080.10	8.657	SF
Wells Ranch 23-36 - Wells Ranch 23-36 - Wells Ranch 21-36	15,976.98	6,556.72	151.97	8.17	1.057	Level 2, CC, ES, SF
Wells Ranch 24-36 - Wells Ranch 24-36 - Wells Ranch 21-36	15,789.87	6,531.36	1,757.85	1,616.41	12.428	CC
Wells Ranch 24-36 - Wells Ranch 24-36 - Wells Ranch 21-36	15,800.00	6,531.44	1,757.88	1,616.32	12.418	ES
Wells Ranch 24-36 - Wells Ranch 24-36 - Wells Ranch 21-36	15,900.00	6,532.31	1,761.30	1,618.75	12.356	SF
Wells Ranch 31-36 - Wells Ranch 31-36 - Wells Ranch 31-36	14,405.38	6,526.38	2,464.50	2,339.92	19.783	CC, ES
Wells Ranch 31-36 - Wells Ranch 31-36 - Wells Ranch 31-36	14,700.00	6,524.84	2,482.05	2,354.58	19.472	SF
Wells Ranch 32-36 - Wells Ranch 32-36 - Wells Ranch 31-36	14,338.43	6,521.80	1,076.92	953.16	8.702	CC, ES
Wells Ranch 32-36 - Wells Ranch 32-36 - Wells Ranch 31-36	14,400.00	6,521.66	1,078.68	954.32	8.674	SF
Wells Ranch 33-36 - Wells Ranch 33-36 - Wells Ranch 31-36	14,600.48	6,506.60	222.16	95.26	1.751	CC, ES, SF
Wells Ranch 34-36 - Original Drilling - Original Drilling - A	14,534.54	6,513.30	1,592.99	1,466.86	12.630	CC, ES
Wells Ranch 34-36 - Original Drilling - Original Drilling - A	14,700.00	6,512.68	1,601.56	1,473.99	12.554	SF
Wells Ranch 36A - Wells Ranch 36A - Wells Ranch 36A	16,706.86	6,552.05	1,788.23	1,635.54	11.711	CC, ES
Wells Ranch 36A - Wells Ranch 36A - Wells Ranch 36A	16,800.00	6,551.17	1,790.65	1,636.98	11.653	SF
Wells Ranch 36B - Wells Ranch 36B - Wells Ranch 36B	16,592.24	6,557.84	866.07	714.77	5.724	CC
Wells Ranch 36B - Wells Ranch 36B - Wells Ranch 36B	16,600.00	6,557.87	866.11	714.72	5.721	ES, SF
Wells Ranch 36C - Wells Ranch 36C - Wells Ranch 36C	13,914.40	6,485.02	1,738.65	1,620.12	14.669	CC, ES
Wells Ranch 36C - Wells Ranch 36C - Wells Ranch 36C	14,100.00	6,481.54	1,748.52	1,628.26	14.539	SF
Wells Ranch 36D - Wells Ranch 36D - Wells Ranch 36D	13,835.61	6,502.84	792.72	675.06	6.738	CC, ES
Wells Ranch 36D - Wells Ranch 36D - Wells Ranch 36D	13,900.00	6,502.60	795.33	677.22	6.734	SF
Wells Ranch 36F - Wells Ranch 36F - Wells Ranch 36F	17,761.73	6,597.48	1,731.06	1,565.31	10.444	CC
Wells Ranch 36F - Wells Ranch 36F - Wells Ranch 36F	17,800.00	6,597.37	1,731.48	1,565.29	10.419	ES
Wells Ranch 36F - Wells Ranch 36F - Wells Ranch 36F	17,900.00	6,597.08	1,736.57	1,569.55	10.397	SF
Wells Ranch 36H - Wells Ranch 36H - Wells Ranch 36H	17,738.46	6,533.62	970.98	805.73	5.876	CC, ES
Wells Ranch 36H - Wells Ranch 36H - Wells Ranch 36H	17,800.00	6,533.14	972.93	807.22	5.871	SF
Wells Ranch 36J - Original Drilling - As Drilled	16,454.30	6,480.73	2,946.92	2,798.48	19.853	CC
Wells Ranch 36J - Original Drilling - As Drilled	16,500.00	6,480.41	2,947.27	2,798.29	19.782	ES
Wells Ranch 36J - Original Drilling - As Drilled	16,800.00	6,478.34	2,967.13	2,815.29	19.541	SF
Wells Ranch 36K - Wells Ranch 36K - Wells Ranch 36K	16,416.15	6,567.74	476.02	327.54	3.206	CC, ES, SF
Wells Ranch 36L - Wells Ranch 36L - Wells Ranch 36L	16,609.91	6,541.61	2,020.76	1,870.06	13.409	CC, ES
Wells Ranch 36L - Wells Ranch 36L - Wells Ranch 36L	16,800.00	6,542.31	2,029.68	1,877.22	13.313	SF
Wells Ranch 36N - Wells Ranch 36N - Wells Ranch 36N	15,188.71	6,496.48	1,731.90	1,548.88	9.463	CC
Wells Ranch 36N - Wells Ranch 36N - Wells Ranch 36N	15,200.00	6,496.54	1,731.93	1,548.78	9.456	ES
Wells Ranch 36N - Wells Ranch 36N - Wells Ranch 36N	15,300.00	6,497.14	1,735.47	1,551.29	9.423	SF
Wells Ranch 36O - Wells Ranch 36O - Wells Ranch 36O	15,118.52	6,514.53	581.89	449.45	4.393	CC, ES, SF
Wells Ranch 36P - Wells Ranch 36P - Wells Ranch 36P	14,995.79	6,509.58	928.67	797.76	7.094	CC
Wells Ranch 36P - Wells Ranch 36P - Wells Ranch 36P	15,000.00	6,509.55	928.68	797.73	7.092	ES, SF
Wells Ranch 36R - Wells Ranch 36R - Wells Ranch 36R	13,735.20	6,540.48	2,914.15	2,797.63	25.011	CC
Wells Ranch 36R - Wells Ranch 36R - Wells Ranch 36R	13,800.00	6,540.73	2,914.87	2,797.59	24.854	ES
Wells Ranch 36R - Wells Ranch 36R - Wells Ranch 36R	14,200.00	6,542.28	2,950.98	2,829.98	24.388	SF
Wells Ranch 36S - Wells Ranch 36S - Wells Ranch 36S	13,929.99	6,489.78	413.98	296.04	3.510	CC, ES, SF
Wells Ranch 36T - Wells Ranch 36T - Wells Ranch 36T	13,864.73	6,508.31	2,084.98	1,967.83	17.797	CC

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 Wells Ranch State AA36-643
Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Reference Site:	AE Section 32	MD Reference:	Well @ 4756.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Wells Ranch State AA36-643	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wells Ranch State AA36-643	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
AA Section 36						
Wells Ranch 36T - Wells Ranch 36T - Wells Ranch 36T	13,900.00	6,508.41	2,085.28	1,967.72	17.738	ES
Wells Ranch 36T - Wells Ranch 36T - Wells Ranch 36T	14,100.00	6,508.99	2,098.21	1,978.82	17.575	SF
Wells Ranch 36V - Wells Ranch 36V - Wells Ranch 36V	12,745.15	6,481.06	1,703.43	1,599.94	16.460	CC, ES
Wells Ranch 36V - Wells Ranch 36V - Wells Ranch 36V	12,900.00	6,479.61	1,710.45	1,605.41	16.284	SF
Wells Ranch 41-36 - Wells Ranch 41-36 - Wells Ranch 4	13,200.16	6,505.49	2,401.95	2,291.96	21.837	CC, ES
Wells Ranch 41-36 - Wells Ranch 41-36 - Wells Ranch 4	13,600.00	6,505.19	2,435.00	2,321.33	21.421	SF
Wells Ranch 42-36 - Wells Ranch 42-36 - Wells Ranch 4	13,241.58	6,481.62	1,147.58	1,037.11	10.389	CC, ES
Wells Ranch 42-36 - Wells Ranch 42-36 - Wells Ranch 4	13,300.00	6,481.65	1,149.06	1,037.99	10.345	SF
Wells Ranch 43-36 - Wells Ranch 43-36 - Wells Ranch 4	13,267.98	6,481.34	174.65	63.87	1.577	CC, ES, SF
Wells Ranch 44-36 - Wells Ranch 44-36 - Wells Ranch 4	13,102.46	6,505.05	1,727.72	1,618.88	15.874	CC, ES
Wells Ranch 44-36 - Wells Ranch 44-36 - Wells Ranch 4	13,300.00	6,504.76	1,738.98	1,628.33	15.717	SF
Wells Ranch AA35-62-1AHNC - Original Drilling - APD -	17,999.36	6,574.00	1,682.15	1,536.69	11.564	CC, ES, SF
Wells Ranch AA35-62-1AHNC - Original Drilling - Origina	17,999.36	6,552.52	1,687.98	1,520.98	10.108	CC, ES, SF
Wells Ranch AA35-62-1BHNC - Original Drilling - APD -	17,999.36	6,609.54	2,014.13	1,868.57	13.838	CC, ES, SF
Wells Ranch AA35-62-1BHNC - Original Drilling - Origina	17,999.36	6,562.00	1,993.38	1,826.48	11.943	CC, ES, SF
Wells Ranch AA35-62-1HNA - Original Drilling - APD - Re	17,999.36	6,530.72	1,855.41	1,710.41	12.796	CC, ES, SF
Wells Ranch AA35-62-1HNA - Original Drilling - Original	17,999.36	6,514.00	1,846.00	1,679.64	11.097	CC, ES, SF
Wells Ranch AA35-63-1AHNA - Original Drilling - APD - R	17,999.36	6,636.92	1,046.03	902.34	7.280	CC, ES, SF
Wells Ranch AA35-63-1AHNA - Original Drilling - Origina	17,999.36	6,571.67	1,001.59	836.10	6.052	CC, ES, SF
Wells Ranch AA35-63-1BHNA - Original Drilling - APD - R	17,999.36	6,505.89	1,365.10	1,220.75	9.457	CC, ES, SF
Wells Ranch AA35-63-1BHNA - Original Drilling - Origina	17,915.90	6,259.51	1,412.57	1,250.86	8.735	CC, ES
Wells Ranch AA35-63-1BHNA - Original Drilling - Origina	17,999.36	6,272.04	1,414.88	1,252.14	8.694	SF
Wells Ranch AA35-63-1HNC - Original Drilling - APD - R	17,999.36	6,724.98	1,189.15	1,043.85	8.184	CC, ES, SF
Wells Ranch AA35-63-1HNC - Original Drilling - Original	17,999.36	6,572.80	1,175.49	1,008.63	7.045	CC, ES, SF
Wells Ranch AA35-64-1AHNA - Original Drilling - APD - R	17,999.36	6,564.58	482.78	345.74	3.523	CC, ES, SF
Wells Ranch AA35-64-1AHNA - Original Drilling - Origina	17,999.36	6,531.87	495.33	339.70	3.183	CC, ES, SF
Wells Ranch AA35-64-1BHNC - Original Drilling - APD -	17,999.36	6,639.33	621.39	477.19	4.309	CC, ES, SF
Wells Ranch AA35-64-1BHNC - Original Drilling - Origina	17,999.36	6,591.80	625.84	461.72	3.813	CC, ES, SF
Wells Ranch AA35-65-1AHNA - Original Drilling - APD - R	17,999.36	6,575.84	282.29	158.69	2.284	CC, ES, SF
Wells Ranch AA35-65-1AHNA - Original Drilling - Origina	17,999.36	6,530.24	269.25	125.52	1.873	CC, ES, SF
Wells Ranch AA35-65-1BHNC - Original Drilling - APD -	17,999.36	6,618.50	102.34	5.28	1.054	Level 2, CC, ES, SF
Wells Ranch AA35-65-1BHNC - Original Drilling - Origina	17,999.36	6,574.57	125.01	19.04	1.180	Level 2, CC, ES, SF
Wells Ranch AA35-66-1AHNC - Original Drilling - APD -	17,999.36	6,616.34	980.16	834.65	6.736	CC, ES, SF
Wells Ranch AA35-66-1AHNC - Original Drilling - Origina	17,999.36	6,606.10	976.41	810.20	5.875	CC, ES, SF
Wells Ranch AA35-67-1AHNA - Original Drilling - APD - R	17,999.36	6,582.30	1,646.35	1,501.10	11.335	CC, ES, SF
Wells Ranch AA35-67-1AHNA - Original Drilling - Origina	17,999.36	6,542.00	1,710.07	1,543.81	10.286	CC, ES, SF
Wells Ranch AA35-67-1BHNA - Original Drilling - APD - R	17,999.36	6,547.77	1,322.77	1,177.97	9.135	CC, ES, SF
Wells Ranch AA35-67-1BHNA - Original Drilling - Origina	17,999.36	6,540.00	1,310.20	1,144.90	7.926	CC, ES, SF
Wells Ranch AA35-67-1HNC - Original Drilling - APD - R	17,999.36	6,638.62	1,471.62	1,325.90	10.099	CC, ES, SF
Wells Ranch AA35-67-1HNC - Original Drilling - Original	17,999.36	6,579.54	1,466.74	1,300.12	8.803	CC, ES, SF
Wells Ranch AA35-68-1AHNA - Original Drilling - APD - R	17,999.36	6,586.98	2,222.31	2,076.71	15.264	CC, ES, SF
Wells Ranch AA35-68-1AHNA - Original Drilling - Origina	17,994.28	6,527.00	2,212.53	2,046.55	13.330	CC
Wells Ranch AA35-68-1AHNA - Original Drilling - Origina	17,999.36	6,527.00	2,212.53	2,046.49	13.325	ES, SF
Wells Ranch AA35-68-1BHNC - Original Drilling - APD -	17,999.36	6,679.35	2,046.08	1,900.27	14.033	CC, ES, SF
Wells Ranch AA35-68-1BHNC - Original Drilling - Origina	17,997.23	17,997.23	2,040.71	1,838.48	10.091	CC, ES, SF
Wells Ranch AA35-69-1AHNC - Original Drilling - APD -	17,999.36	6,686.76	2,955.05	2,809.22	20.264	CC, ES, SF
Wells Ranch AA35-69-1AHNC - Original Drilling - Origina	17,923.36	6,553.36	2,945.52	2,779.77	17.770	CC
Wells Ranch AA35-69-1AHNC - Original Drilling - Origina	17,999.36	6,574.00	2,946.48	2,779.75	17.671	ES, SF
Wells Ranch AA35-69-1BHNC - Original Drilling - APD -	17,999.36	6,658.97	2,627.11	2,481.29	18.016	CC, ES, SF
Wells Ranch AA35-69-1BHNC - Original Drilling - Origina	17,959.35	6,641.79	2,622.40	2,456.08	15.767	CC
Wells Ranch AA35-69-1BHNC - Original Drilling - Origina	17,999.36	6,653.14	2,622.64	2,455.80	15.720	ES, SF
Wells Ranch AA35-69-1HNB - Original Drilling - APD - R	17,999.36	6,639.12	2,792.59	2,646.79	19.154	CC, ES, SF
Wells Ranch AA35-69-1HNB - Original Drilling - Original	17,917.73	6,507.72	2,793.55	2,628.23	16.898	CC

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 Wells Ranch State AA36-643
Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Reference Site:	AE Section 32	MD Reference:	Well @ 4756.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Wells Ranch State AA36-643	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wells Ranch State AA36-643	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
AA Section 36						
Wells Ranch AA35-69-1HNB - Original Drilling - Original	17,999.36	6,571.24	2,794.16	2,627.58	16.774	ES, SF
Wells Ranch USX AA35-14 - Wellbore #1 - Wellbore #1 -	17,999.36	6,543.01	3,537.40	3,456.83	43.903	CC, ES, SF
AE Section 31						
UPRR-Wells 1 - UPRR-Wells 1 - UPRR-Wells 1 - As Drill	11,953.54	6,471.00	1,543.21	1,414.09	11.952	CC, ES
UPRR-Wells 1 - UPRR-Wells 1 - UPRR-Wells 1 - As Drill	12,100.00	6,471.00	1,550.14	1,419.62	11.877	SF
Wells Ranch USX AE31-01P - Wells Ranch USX AE31-0	7,815.28	6,518.60	2,326.30	2,274.69	45.076	CC, ES
Wells Ranch USX AE31-01P - Wells Ranch USX AE31-0	8,500.00	6,519.94	2,424.99	2,368.34	42.811	SF
Wells Ranch USX AE31-02P - Wells Ranch USX AE31-0	9,218.08	6,531.74	2,357.85	2,293.34	36.551	CC, ES
Wells Ranch USX AE31-02P - Wells Ranch USX AE31-0	9,800.00	6,531.03	2,428.60	2,358.93	34.859	SF
Wells Ranch USX AE31-03P - Wells Ranch USX AE31-0	10,557.26	6,578.48	2,394.76	2,315.51	30.215	CC
Wells Ranch USX AE31-03P - Wells Ranch USX AE31-0	10,600.00	6,578.47	2,395.14	2,315.41	30.038	ES
Wells Ranch USX AE31-03P - Wells Ranch USX AE31-0	11,100.00	6,578.34	2,455.50	2,371.32	29.171	SF
Wells Ranch USX AE31-04 - Wells Ranch USX AE31-04	11,898.11	6,409.59	2,387.47	2,293.24	25.336	CC
Wells Ranch USX AE31-04 - Wells Ranch USX AE31-04	11,900.00	6,409.53	2,387.48	2,293.22	25.330	ES
Wells Ranch USX AE31-04 - Wells Ranch USX AE31-04	12,300.00	6,396.94	2,421.02	2,323.01	24.701	SF
Wells Ranch USX AE31-05P - Wells Ranch USX AE31-0	11,993.46	6,473.00	1,082.44	952.84	8.352	CC
Wells Ranch USX AE31-05P - Wells Ranch USX AE31-0	12,000.00	6,473.00	1,082.46	952.78	8.347	ES
Wells Ranch USX AE31-05P - Wells Ranch USX AE31-0	12,100.00	6,473.00	1,087.67	957.11	8.331	SF
Wells Ranch USX AE31-06 - Wells Ranch USX AE31-06	10,490.88	6,434.18	1,057.75	979.75	13.560	CC
Wells Ranch USX AE31-06 - Wells Ranch USX AE31-06	10,500.00	6,433.96	1,057.79	979.68	13.543	ES
Wells Ranch USX AE31-06 - Wells Ranch USX AE31-06	10,600.00	6,431.58	1,063.36	984.36	13.460	SF
Wells Ranch USX AE31-07P - Wells Ranch USX AE31-0	9,221.04	6,489.86	1,187.88	1,123.49	18.448	CC, ES
Wells Ranch USX AE31-07P - Wells Ranch USX AE31-0	9,400.00	6,490.51	1,201.28	1,135.34	18.217	SF
Wells Ranch USX AE31-09P - Wells Ranch USX AE31-0	8,016.92	6,485.56	63.30	10.24	1.193	Level 2, CC, ES, SF
Wells Ranch USX AE31-10P - Wells Ranch USX AE31-1	9,198.87	6,483.77	178.47	114.33	2.782	CC
Wells Ranch USX AE31-10P - Wells Ranch USX AE31-1	9,200.00	6,483.76	178.47	114.32	2.782	ES, SF
Wells Ranch USX AE31-11P - Wells Ranch USX AE31-1	10,828.28	6,473.30	271.60	189.60	3.312	CC, ES, SF
Wells Ranch USX AE31-12 - Wells Ranch USX AE31-12	11,994.24	6,469.26	223.77	128.21	2.342	CC, ES
Wells Ranch USX AE31-12 - Wells Ranch USX AE31-12	12,000.00	6,469.29	223.85	128.25	2.341	SF
Wells Ranch USX AE31-14 - Wells Ranch USX AE31-14	10,611.28	6,434.25	1,541.39	1,462.04	19.424	CC, ES
Wells Ranch USX AE31-14 - Wells Ranch USX AE31-14	10,800.00	6,433.06	1,552.90	1,471.80	19.148	SF
Wells Ranch USX AE31-15 - Wells Ranch USX AE31-15	9,318.71	6,454.98	1,539.56	1,474.25	23.572	CC, ES
Wells Ranch USX AE31-15 - Wells Ranch USX AE31-15	9,600.00	6,451.56	1,565.04	1,497.35	23.121	SF
Wells Ranch USX AE31-16P - Wells Ranch USX AE31-1	7,937.62	6,480.60	1,373.49	1,321.08	26.206	CC, ES
Wells Ranch USX AE31-16P - Wells Ranch USX AE31-1	8,200.00	6,480.75	1,398.33	1,344.07	25.773	SF
Wells Ranch USX AE31-98HZ - Wellbore #1 - Original D	8,869.21	7,523.33	90.77	55.82	2.597	CC
Wells Ranch USX AE31-98HZ - Wellbore #1 - Original D	8,900.00	7,545.32	93.32	54.25	2.388	ES
Wells Ranch USX AE31-98HZ - Wellbore #1 - Original D	9,000.00	7,616.27	129.15	70.70	2.209	SF
Wells Ranch USX AE31-99HZ - Wellbore #1 - Original D	10,161.03	8,496.23	50.70	-0.33	0.994	Level 1, CC
Wells Ranch USX AE31-99HZ - Wellbore #1 - Original D	10,200.00	8,468.42	57.53	-11.86	0.829	Level 1, ES, 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 Wells Ranch State AA36-643
Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Reference Site:	AE Section 32	MD Reference:	Well @ 4756.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Wells Ranch State AA36-643	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wells Ranch State AA36-643	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						
AE Section 32						
Wells Ranch AE32-05 - Wells Ranch AE32-05 - Wells Ra	3,669.31	3,602.82	1,131.73	1,106.43	44.733	CC
Wells Ranch AE32-05 - Wells Ranch AE32-05 - Wells Ra	4,000.00	3,929.83	1,132.78	1,105.16	41.013	ES
Wells Ranch AE32-05 - Wells Ranch AE32-05 - Wells Ra	6,650.00	6,478.16	1,172.39	1,126.77	25.700	SF
Wells Ranch AE32-615 - Original Drilling - APD - Rev 0	1,500.00	1,492.00	1,449.66	1,444.52	281.801	CC, ES
Wells Ranch AE32-615 - Original Drilling - APD - Rev 0	7,600.00	6,200.79	1,984.80	1,958.32	74.945	SF
Wells Ranch AE32-615 - Original Drilling - Original Drillin	100.00	85.58	1,449.67	1,449.41	5,436.703	CC
Wells Ranch AE32-615 - Original Drilling - Original Drillin	1,500.00	1,463.00	1,452.43	1,443.92	170.530	ES
Wells Ranch AE32-615 - Original Drilling - Original Drillin	6,550.00	6,823.47	1,804.20	1,757.01	38.238	SF
Wells Ranch AE32-620 - Original Drilling - APD - Rev 0	1,800.00	1,793.00	1,409.95	1,403.73	226.692	CC
Wells Ranch AE32-620 - Original Drilling - APD - Rev 0	1,900.00	1,883.19	1,410.28	1,403.70	214.392	ES
Wells Ranch AE32-620 - Original Drilling - APD - Rev 0	7,300.00	6,358.81	1,559.78	1,534.53	61.795	SF
Wells Ranch AE32-620 - Original Drilling - Original Drillin	2,217.44	2,206.59	1,403.73	1,390.27	104.234	CC, ES
Wells Ranch AE32-620 - Original Drilling - Original Drillin	6,800.00	6,665.72	1,484.75	1,439.15	32.560	SF
Wells Ranch AE32-625 - Original Drilling - APD - Rev 0	6,541.87	6,691.07	1,175.51	1,152.65	51.426	CC
Wells Ranch AE32-625 - Original Drilling - APD - Rev 0	6,550.00	6,685.57	1,175.53	1,152.65	51.374	ES
Wells Ranch AE32-625 - Original Drilling - APD - Rev 0	6,800.00	6,526.71	1,189.87	1,166.41	50.728	SF
Wells Ranch AE32-625 - Original Drilling - Original Drillin	6,500.00	6,767.66	1,186.36	1,139.70	25.424	CC, ES, SF
Wells Ranch AE32-630 - Original Drilling - APD - Rev 0	6,576.01	6,733.03	848.68	825.73	36.984	CC, ES
Wells Ranch AE32-630 - Original Drilling - APD - Rev 0	6,700.00	6,661.74	854.58	831.28	36.675	SF
Wells Ranch AE32-630 - Original Drilling - Original Drillin	6,513.09	6,862.64	806.93	760.38	17.337	CC, ES, SF
Wells Ranch AE32-635 - Original Drilling - APD - Rev 0	1,200.00	1,190.00	184.79	180.72	45.416	CC, ES
Wells Ranch AE32-635 - Original Drilling - APD - Rev 0	6,550.00	6,648.66	513.70	490.83	22.465	SF
Wells Ranch AE32-635 - Original Drilling - Original Drillin	100.00	89.85	184.83	184.55	658.532	CC
Wells Ranch AE32-635 - Original Drilling - Original Drillin	800.00	788.46	187.69	183.43	44.044	ES
Wells Ranch AE32-635 - Original Drilling - Original Drillin	6,520.24	6,718.70	496.09	449.10	10.556	SF
Wells Ranch AE32-640 - Original Drilling - APD - Rev 0	1,800.00	1,790.00	172.61	166.39	27.752	CC
Wells Ranch AE32-640 - Original Drilling - APD - Rev 0	6,608.21	6,636.16	187.92	164.86	8.150	ES, SF
Wells Ranch AE32-640 - Original Drilling - Original Drillin	100.00	89.83	172.65	172.37	615.132	CC
Wells Ranch AE32-640 - Original Drilling - Original Drillin	6,639.57	6,640.38	195.59	149.14	4.211	ES, SF
Wells Ranch AE32-645 - Original Drilling - APD - Rev 0	6,525.71	6,630.80	142.81	120.00	6.261	CC, ES, SF
Wells Ranch AE32-645 - Original Drilling - Original Drillin	6,530.91	6,643.20	146.65	100.01	3.145	CC, ES, SF
Wells Ranch AE32-650 - Original Drilling - APD - Rev 0	1,200.00	1,190.00	168.42	164.35	41.392	CC, ES
Wells Ranch AE32-650 - Original Drilling - APD - Rev 0	6,650.00	6,593.15	462.64	439.52	20.008	SF
Wells Ranch AE32-650 - Original Drilling - Original Drillin	634.78	624.78	168.41	165.28	53.939	CC
Wells Ranch AE32-650 - Original Drilling - Original Drillin	2,100.00	2,088.96	173.25	159.78	12.860	ES
Wells Ranch AE32-650 - Original Drilling - Original Drillin	2,800.00	2,791.76	183.12	164.68	9.931	SF
Wells Ranch AE32-655 - Original Drilling - APD - Rev 0	6,512.98	6,622.23	797.00	774.22	34.999	CC, ES
Wells Ranch AE32-655 - Original Drilling - APD - Rev 0	6,600.00	6,574.59	800.06	777.07	34.810	SF
Wells Ranch AE32-655 - Original Drilling - Original Drillin	6,450.00	6,734.55	767.67	720.83	16.389	SF
Wells Ranch AE32-655 - Original Drilling - Original Drillin	6,500.00	6,701.87	766.29	719.60	16.410	ES
Wells Ranch AE32-655 - Original Drilling - Original Drillin	6,511.82	6,691.07	766.25	719.63	16.436	CC
Wells Ranch AE32-665 - Original Drilling - APD - Rev 0	1,500.00	1,502.00	1,187.79	1,182.64	230.895	CC, ES
Wells Ranch AE32-665 - Original Drilling - APD - Rev 0	7,100.00	6,313.43	1,518.48	1,494.15	62.407	SF
Wells Ranch AE32-665 - Original Drilling - Original Drillin	1,494.17	1,497.42	1,186.20	1,177.41	134.872	CC, ES
Wells Ranch AE32-665 - Original Drilling - Original Drillin	6,600.00	6,612.23	1,440.41	1,394.73	31.533	SF
Wells Ranch AE32-670 - Original Drilling - APD - Rev 0	1,115.64	1,118.64	1,223.95	1,220.18	324.963	CC
Wells Ranch AE32-670 - Original Drilling - APD - Rev 0	1,200.00	1,200.00	1,223.95	1,219.89	300.811	ES
Wells Ranch AE32-670 - Original Drilling - APD - Rev 0	7,500.00	6,127.59	1,880.02	1,854.05	72.394	SF
Wells Ranch AE32-670 - Original Drilling - Original Drillin	2,247.04	2,247.62	1,218.38	1,203.93	84.280	CC, ES
Wells Ranch AE32-670 - Original Drilling - Original Drillin	7,300.00	5,980.84	1,747.28	1,702.62	39.125	SF
Wells Ranch AE32-675 - Original Drilling - APD - Rev 0	6,510.62	6,600.86	2,116.61	2,093.84	92.977	CC, ES
Wells Ranch AE32-675 - Original Drilling - APD - Rev 0	7,800.00	6,151.57	2,352.02	2,324.24	84.681	SF
Wells Ranch AE32-675 - Original Drilling - Original Drillin	6,583.82	6,687.32	2,086.22	2,039.94	45.077	CC, ES

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

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well Wells Ranch State AA36-643
Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Reference Site:	AE Section 32	MD Reference:	Well @ 4756.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Wells Ranch State AA36-643	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wells Ranch State AA36-643	Database:	EDMP
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name Offset Well - Wellbore - Design	Reference	Offset	Distance		Separation Factor	Warning
	Measured Depth (ft)	Measured Depth (ft)	Between Centres (ft)	Between Ellipses (ft)		
AE Section 32						
Wells Ranch AE32-675 - Original Drilling - Original Drillin	6,750.00	6,654.00	2,091.69	2,045.25	45.039	SF
Wells Ranch AE32-685 - Original Drilling - APD - Rev 0	1,710.32	1,726.32	2,613.34	2,607.44	443.075	CC
Wells Ranch AE32-685 - Original Drilling - APD - Rev 0	1,800.00	1,810.26	2,613.36	2,607.14	420.176	ES
Wells Ranch AE32-685 - Original Drilling - APD - Rev 0	8,600.00	6,053.15	3,304.87	3,272.25	101.319	SF
Wells Ranch AE32-685 - Original Drilling - Original Drillin	0.00	15.61	2,613.34			
Wells Ranch AE32-685 - Original Drilling - Original Drillin	900.00	900.36	2,616.89	2,611.92	526.897	ES
Wells Ranch AE32-685 - Original Drilling - Original Drillin	8,000.00	6,182.00	3,003.40	2,952.22	58.685	SF
Wells Ranch AE32-690 - Original Drilling - APD - Rev 0	1,110.32	1,126.32	2,649.73	2,645.99	707.092	CC
Wells Ranch AE32-690 - Original Drilling - APD - Rev 0	1,200.00	1,200.00	2,649.78	2,645.71	651.242	ES
Wells Ranch AE32-690 - Original Drilling - APD - Rev 0	8,900.00	6,003.94	3,679.33	3,644.71	106.289	SF
Wells Ranch AE32-690 - Original Drilling - Original Drillin	1,425.56	1,441.57	2,648.17	2,639.53	306.417	CC
Wells Ranch AE32-690 - Original Drilling - Original Drillin	1,500.00	1,483.00	2,648.49	2,639.44	292.648	ES
Wells Ranch AE32-690 - Original Drilling - Original Drillin	8,900.00	8,900.00	3,512.14	3,440.36	48.929	SF
Wells Ranch AF05-690 - Original Drilling - APD - Rev 0	1,200.00	1,190.00	1,485.78	1,481.71	365.158	CC, ES
Wells Ranch AF05-690 - Original Drilling - APD - Rev 0	8,000.00	6,053.15	2,351.62	2,323.05	82.334	SF
Wells Ranch AF05-690 - Original Drilling - Original Drillin	1,054.48	1,038.49	1,484.94	1,479.14	256.095	CC
Wells Ranch AF05-690 - Original Drilling - Original Drillin	2,300.00	2,272.26	1,489.64	1,475.66	106.532	ES
Wells Ranch AF05-690 - Original Drilling - Original Drillin	7,600.00	5,868.00	2,091.12	2,046.25	46.602	SF
Wells Ranch State AA36-622 - Wells Ranch State AA36-	2,000.00	1,999.00	74.92	61.05	5.402	CC, ES
Wells Ranch State AA36-622 - Wells Ranch State AA36-	17,999.36	18,083.74	1,366.87	1,076.00	4.699	SF
Wells Ranch State AA36-633 - Wells Ranch State AA36-	2,200.00	2,200.00	37.47	22.16	2.448	CC, ES
Wells Ranch State AA36-633 - Wells Ranch State AA36-	17,900.00	17,957.07	673.51	386.55	2.347	SF
Wells Ranch State AA36-654 - Wells Ranch State AA36-	2,000.00	2,001.00	37.45	23.58	2.699	CC, ES
Wells Ranch State AA36-654 - Wells Ranch State AA36-	17,999.36	18,109.71	745.22	452.98	2.550	SF
Wells Ranch State AA36-664 - Wells Ranch State AA36-	2,600.00	2,605.00	1,111.64	1,093.45	61.105	CC
Wells Ranch State AA36-664 - Wells Ranch State AA36-	17,999.36	17,934.37	1,378.35	1,087.07	4.732	ES, SF
Wells Ranch State AA36-673 - Wells Ranch State AA36-	2,200.00	2,205.00	1,216.58	1,201.26	79.387	CC, ES
Wells Ranch State AA36-673 - Wells Ranch State AA36-	17,900.00	17,738.38	1,971.37	1,683.15	6.840	SF
Wells Ranch State AA36-683 - Wells Ranch State AA36-	2,000.00	2,006.00	1,254.21	1,240.32	90.268	CC, ES
Wells Ranch State AA36-683 - Wells Ranch State AA36-	17,999.36	17,992.81	2,653.22	2,363.41	9.155	SF

Noble Energy, Inc.
Anticollision Summary Report

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Project:	Wells Ranch	TVD Reference:	Well @ 4756.00ft
Reference Site:	AE Section 32	MD Reference:	Well @ 4756.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Wells Ranch State AA36-643	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wells Ranch State AA36-643	Database:	EDMP
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 4756.00ft

Offset Depths are relative to Offset Datum

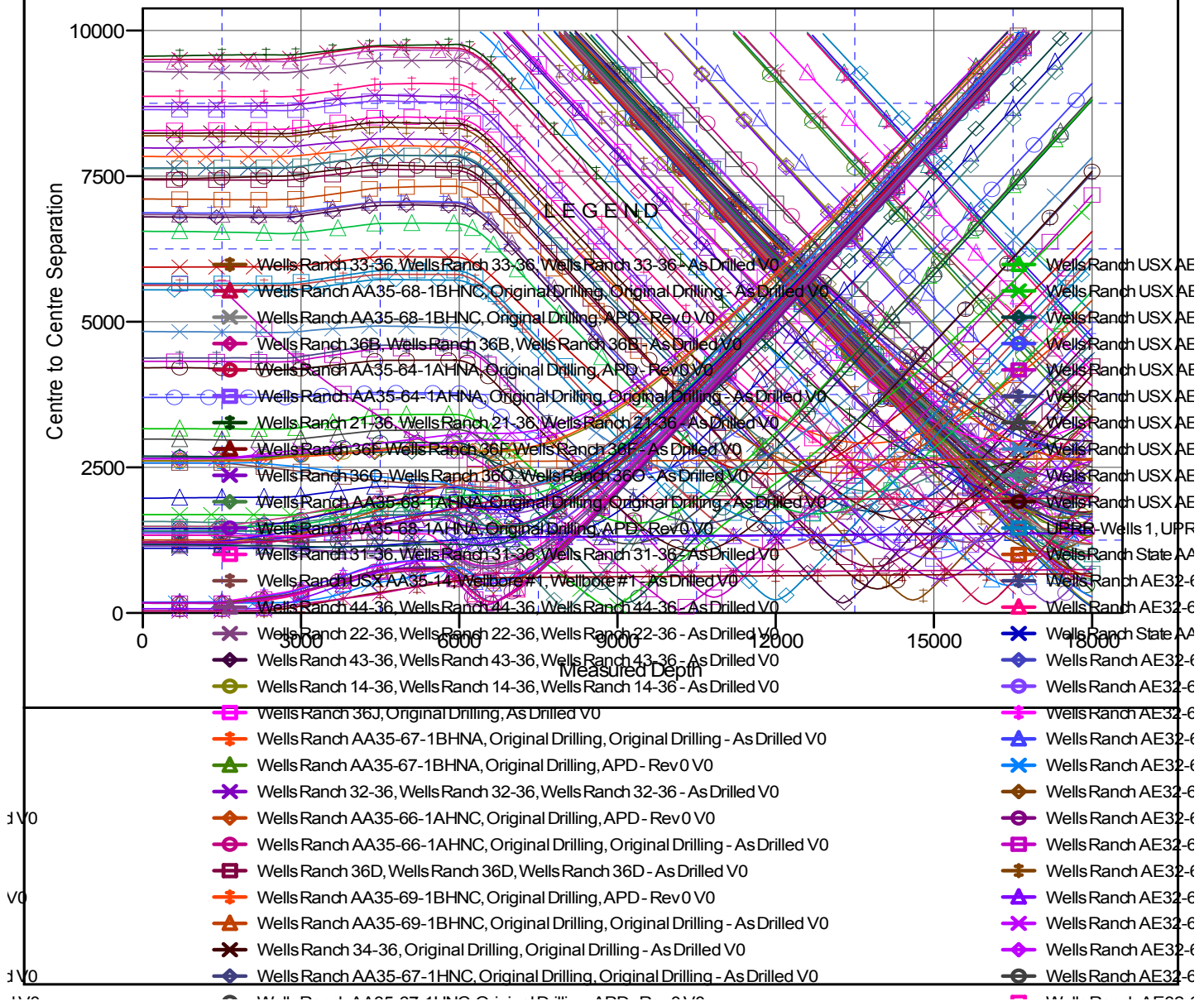
Central Meridian is -105.5000000

Coordinates are relative to: Wells Ranch State AA36-643

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.74°

Ladder Plot



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

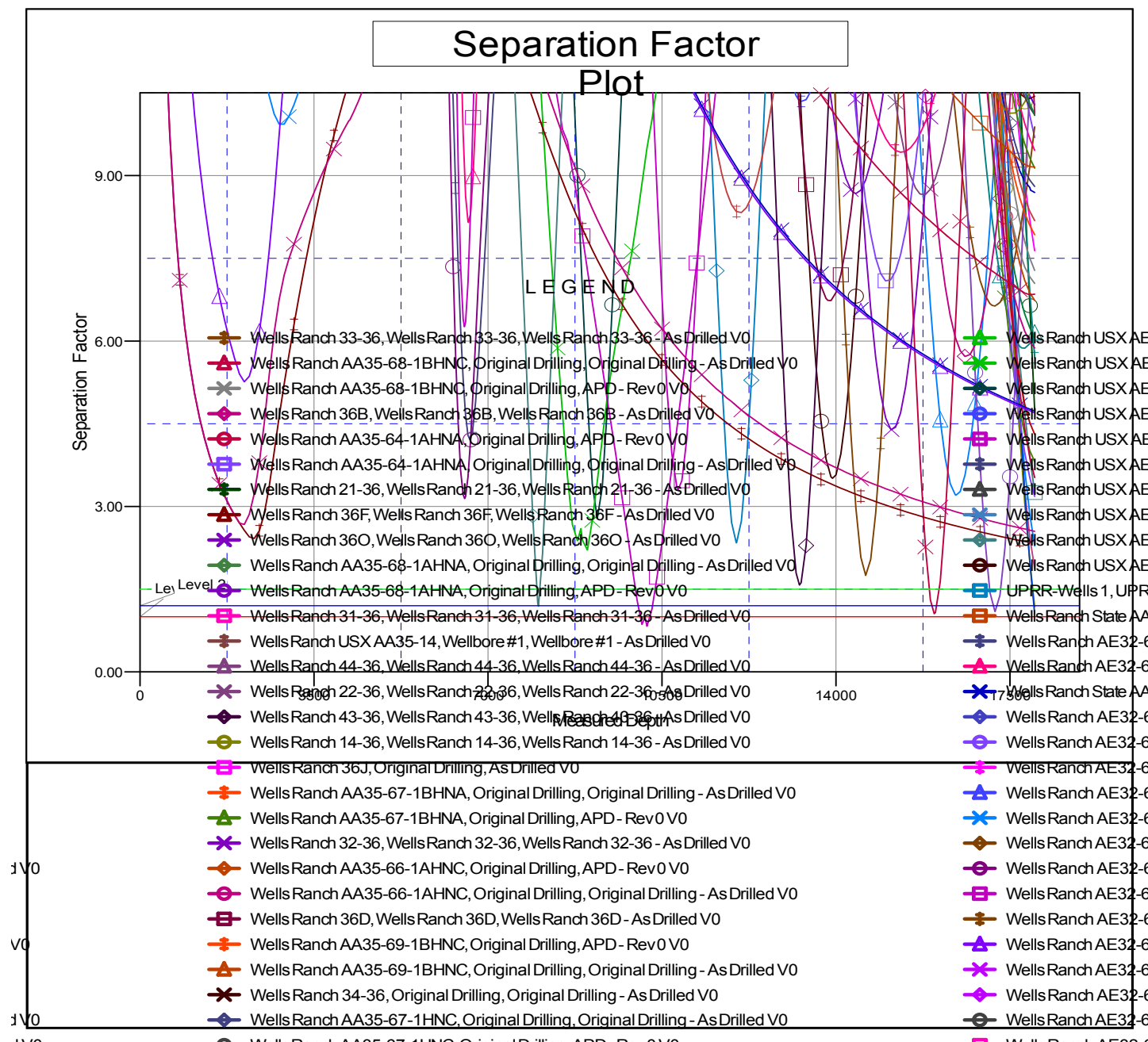
Anticollision Summary Report

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