

Project: Wells Ranch
Site: BB Section 03
Well: WELLS RANCH STATE BB03-659
Wellbore: Wellbore #1
Design: Plan 1

Northern Region - DJ Basin

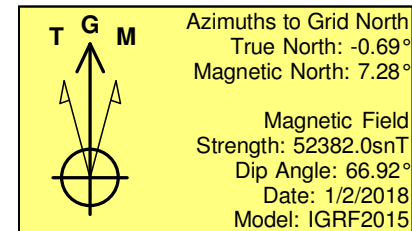
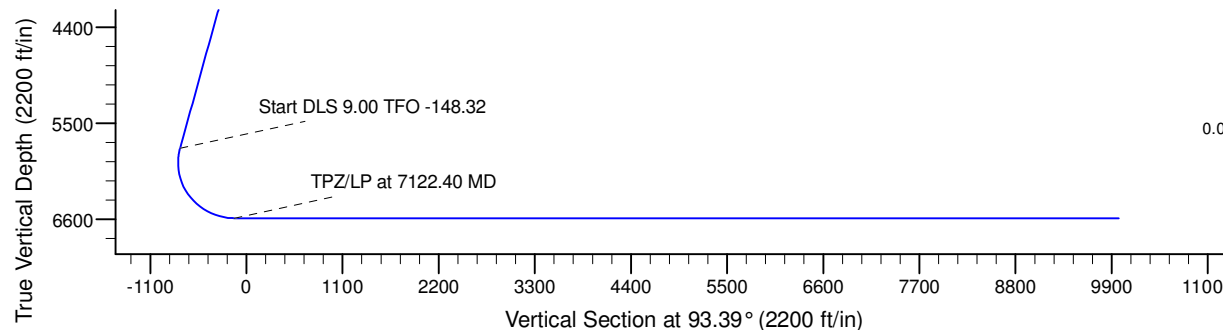
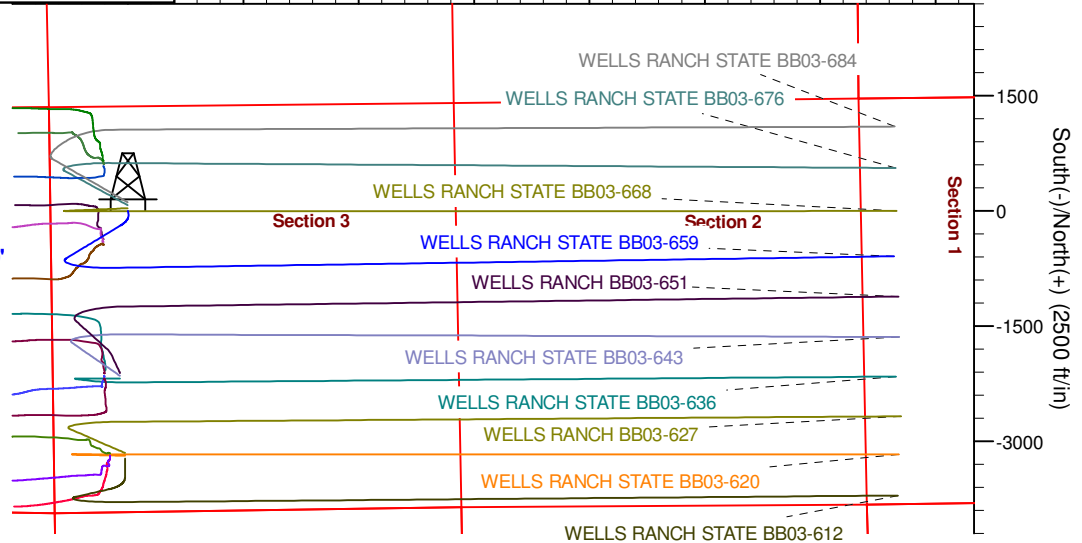
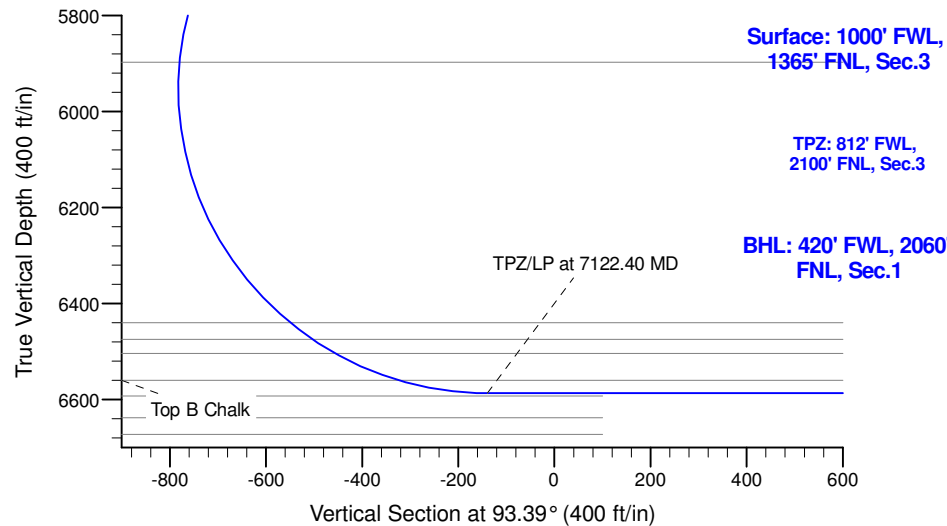
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	
3	2500.00	10.00	170.00	2497.47	-42.86	7.56	2.00	170.00	10.08	
4	3374.91	18.52	238.81	3349.70	-190.78	-98.97	2.00	99.88	-87.53	
5	5945.58	18.52	238.81	5787.20	-613.67	-797.63	0.00	0.00	-759.99	
6	7122.40	90.00	89.15	6587.00	-739.92	-183.47	9.00	-148.32	-139.44	WELLS RANCH BB03-659 TPZ/LP
7	17268.09	90.00	89.15	6587.00	-589.45	9961.11	0.00	0.00	9978.54	WELLS RANCH BB03-659 BHL

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

1500 3000 4500 6000 7500 9000 10500



WELL DETAILS: WELLS RANCH STATE BB03-659

	Northing	Easting	Latitude	Longitude
0.00	0.00	1401985.71	4747.00 40.4319099	-104.4289600

Plan: Plan 1 (WELLS RANCH STATE BB03-659/Wellbore #1)

Created By: Colby Baxter Date: 9:52, March 07 2018

Checked: _____ Date: _____

Reviewed: _____ Date: _____

Approved: _____ Date: _____

Northern Region - DJ Basin

Wells Ranch

BB Section 03

WELLS RANCH STATE BB03-659

Wellbore #1

Plan: Plan 1

Standard Survey Report

07 March, 2018

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-659
Project:	Wells Ranch	TVD Reference:	Well @ 4777.00ft
Site:	BB Section 03	MD Reference:	Well @ 4777.00ft
Well:	WELLS RANCH STATE BB03-659	North Reference:	Grid
Wellbore:	Wellbore #1	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		BB Section 03			
Site Position:		Northing:	11,793.94 usft	Latitude:	36.1509298
From:	Map	Easting:	1,597.09 usft	Longitude:	-115.6527898
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-6.56 °

Well	WELLS RANCH STATE BB03-659					
Well Position	+N/-S	0.00 ft	Northing:	1,401,985.71 usft	Latitude:	40.4319100
	+E/-W	0.00 ft	Easting:	3,298,148.08 usft	Longitude:	-104.4289600
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,747.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	1/2/2018	7.98	66.92	52,381.95961431

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	93.39	

Survey Tool Program	Date	2/16/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,267.71	Plan 1 (Wellbore #1)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis	

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

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Project:	Wells Ranch	TVD Reference:	Well @ 4777.00ft
Site:	BB Section 03	MD Reference:	Well @ 4777.00ft
Well:	WELLS RANCH STATE BB03-659	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1	Database:	EDMP

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,100.00	2.00	170.00	2,099.98	-1.72	0.30	0.40	2.00	2.00	0.00	
2,200.00	4.00	170.00	2,199.84	-6.87	1.21	1.62	2.00	2.00	0.00	
2,300.00	6.00	170.00	2,299.45	-15.46	2.73	3.63	2.00	2.00	0.00	
2,400.00	8.00	170.00	2,398.70	-27.46	4.84	6.45	2.00	2.00	0.00	
2,500.00	10.00	170.00	2,497.47	-42.86	7.56	10.08	2.00	2.00	0.00	
2,600.00	9.85	181.59	2,595.98	-59.97	8.83	12.35	2.00	-0.15	11.59	
2,700.00	10.11	193.06	2,694.47	-77.07	6.61	11.15	2.00	0.25	11.47	
2,800.00	10.73	203.59	2,792.84	-94.14	0.90	6.46	2.00	0.62	10.53	
2,900.00	11.66	212.73	2,890.94	-111.17	-8.29	-1.71	2.00	0.93	9.13	
3,000.00	12.83	220.37	2,988.67	-128.14	-20.94	-13.34	2.00	1.18	7.64	
3,100.00	14.19	226.67	3,085.90	-145.01	-37.06	-28.43	2.00	1.36	6.29	
3,200.00	15.69	231.83	3,182.53	-161.78	-56.60	-46.95	2.00	1.49	5.17	
3,300.00	17.28	236.10	3,278.42	-178.42	-79.56	-68.88	2.00	1.59	4.26	
3,374.91	18.52	238.81	3,349.70	-190.78	-98.97	-87.53	2.00	1.66	3.63	
3,400.00	18.52	238.81	3,373.49	-194.91	-105.79	-94.09	0.00	0.00	0.00	
3,500.00	18.52	238.81	3,468.31	-211.36	-132.97	-120.25	0.00	0.00	0.00	
3,600.00	18.52	238.81	3,563.13	-227.81	-160.15	-146.41	0.00	0.00	0.00	
3,700.00	18.52	238.81	3,657.95	-244.26	-187.33	-172.57	0.00	0.00	0.00	
3,800.00	18.52	238.81	3,752.77	-260.71	-214.50	-198.73	0.00	0.00	0.00	
3,900.00	18.52	238.81	3,847.59	-277.16	-241.68	-224.89	0.00	0.00	0.00	
4,000.00	18.52	238.81	3,942.41	-293.61	-268.86	-251.05	0.00	0.00	0.00	
4,100.00	18.52	238.81	4,037.23	-310.06	-296.04	-277.20	0.00	0.00	0.00	
4,200.00	18.52	238.81	4,132.05	-326.51	-323.22	-303.36	0.00	0.00	0.00	
4,300.00	18.52	238.81	4,226.87	-342.97	-350.39	-329.52	0.00	0.00	0.00	
4,400.00	18.52	238.81	4,321.69	-359.42	-377.57	-355.68	0.00	0.00	0.00	
4,500.00	18.52	238.81	4,416.51	-375.87	-404.75	-381.84	0.00	0.00	0.00	
4,600.00	18.52	238.81	4,511.33	-392.32	-431.93	-408.00	0.00	0.00	0.00	
4,700.00	18.52	238.81	4,606.15	-408.77	-459.11	-434.16	0.00	0.00	0.00	
4,800.00	18.52	238.81	4,700.97	-425.22	-486.28	-460.32	0.00	0.00	0.00	
4,900.00	18.52	238.81	4,795.78	-441.67	-513.46	-486.48	0.00	0.00	0.00	
5,000.00	18.52	238.81	4,890.60	-458.12	-540.64	-512.63	0.00	0.00	0.00	
5,100.00	18.52	238.81	4,985.42	-474.57	-567.82	-538.79	0.00	0.00	0.00	
5,200.00	18.52	238.81	5,080.24	-491.02	-595.00	-564.95	0.00	0.00	0.00	

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5,300.00	18.52	238.81	5,175.06	-507.47	-622.17	-591.11	0.00	0.00	0.00	
5,400.00	18.52	238.81	5,269.88	-523.92	-649.35	-617.27	0.00	0.00	0.00	
5,500.00	18.52	238.81	5,364.70	-540.37	-676.53	-643.43	0.00	0.00	0.00	
5,600.00	18.52	238.81	5,459.52	-556.82	-703.71	-669.59	0.00	0.00	0.00	
5,700.00	18.52	238.81	5,554.34	-573.27	-730.89	-695.75	0.00	0.00	0.00	
5,800.00	18.52	238.81	5,649.16	-589.72	-758.06	-721.90	0.00	0.00	0.00	
5,900.00	18.52	238.81	5,743.98	-606.17	-785.24	-748.06	0.00	0.00	0.00	
5,945.58	18.52	238.81	5,787.20	-613.67	-797.63	-759.99	0.00	0.00	0.00	
6,000.00	14.58	228.55	5,839.36	-622.68	-810.17	-771.97	9.00	-7.25	-18.86	
6,100.00	9.81	191.06	5,937.23	-639.41	-821.25	-782.05	9.00	-4.76	-37.49	
6,200.00	11.86	142.86	6,035.63	-656.00	-816.68	-776.50	9.00	2.04	-48.20	
6,300.00	18.58	119.37	6,132.15	-672.03	-796.55	-755.46	9.00	6.73	-23.49	
6,400.00	26.66	108.85	6,224.42	-687.13	-761.36	-719.44	9.00	8.07	-10.52	
6,500.00	35.16	103.05	6,310.16	-700.90	-711.98	-669.34	9.00	8.50	-5.80	
6,600.00	43.84	99.30	6,387.27	-713.03	-649.63	-606.38	9.00	8.68	-3.75	
6,700.00	52.61	96.58	6,453.83	-723.20	-575.84	-532.11	9.00	8.77	-2.72	
6,800.00	61.43	94.44	6,508.22	-731.17	-492.42	-448.37	9.00	8.82	-2.14	
6,900.00	70.28	92.63	6,549.09	-736.73	-401.44	-357.22	9.00	8.85	-1.81	
7,000.00	79.14	91.01	6,575.43	-739.76	-305.13	-260.90	9.00	8.86	-1.62	
7,100.00	88.01	89.49	6,586.61	-740.18	-205.86	-161.78	9.00	8.87	-1.52	
7,122.40	90.00	89.15	6,587.00	-739.92	-183.47	-139.44	9.00	8.87	-1.50	
7,200.00	90.00	89.15	6,587.00	-738.77	-105.87	-62.05	0.00	0.00	0.00	
7,300.00	90.00	89.15	6,587.00	-737.28	-5.89	37.68	0.00	0.00	0.00	
7,400.00	90.00	89.15	6,587.00	-735.80	94.10	137.41	0.00	0.00	0.00	
7,500.00	90.00	89.15	6,587.00	-734.32	194.09	237.13	0.00	0.00	0.00	
7,600.00	90.00	89.15	6,587.00	-732.83	294.08	336.86	0.00	0.00	0.00	
7,700.00	90.00	89.15	6,587.00	-731.35	394.07	436.59	0.00	0.00	0.00	
7,800.00	90.00	89.15	6,587.00	-729.87	494.06	536.31	0.00	0.00	0.00	
7,900.00	90.00	89.15	6,587.00	-728.38	594.05	636.04	0.00	0.00	0.00	
8,000.00	90.00	89.15	6,587.00	-726.90	694.04	735.77	0.00	0.00	0.00	
8,100.00	90.00	89.15	6,587.00	-725.42	794.03	835.49	0.00	0.00	0.00	
8,200.00	90.00	89.15	6,587.00	-723.94	894.02	935.22	0.00	0.00	0.00	
8,300.00	90.00	89.15	6,587.00	-722.45	994.01	1,034.95	0.00	0.00	0.00	
8,400.00	90.00	89.15	6,587.00	-720.97	1,093.99	1,134.67	0.00	0.00	0.00	
8,500.00	90.00	89.15	6,587.00	-719.49	1,193.98	1,234.40	0.00	0.00	0.00	
8,600.00	90.00	89.15	6,587.00	-718.00	1,293.97	1,334.13	0.00	0.00	0.00	
8,700.00	90.00	89.15	6,587.00	-716.52	1,393.96	1,433.85	0.00	0.00	0.00	
8,800.00	90.00	89.15	6,587.00	-715.04	1,493.95	1,533.58	0.00	0.00	0.00	
8,900.00	90.00	89.15	6,587.00	-713.55	1,593.94	1,633.31	0.00	0.00	0.00	
9,000.00	90.00	89.15	6,587.00	-712.07	1,693.93	1,733.03	0.00	0.00	0.00	
9,100.00	90.00	89.15	6,587.00	-710.59	1,793.92	1,832.76	0.00	0.00	0.00	
9,200.00	90.00	89.15	6,587.00	-709.10	1,893.91	1,932.49	0.00	0.00	0.00	
9,300.00	90.00	89.15	6,587.00	-707.62	1,993.90	2,032.21	0.00	0.00	0.00	

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
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Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,400.00	90.00	89.15	6,587.00	-706.14	2,093.88	2,131.94	0.00	0.00	0.00
9,500.00	90.00	89.15	6,587.00	-704.66	2,193.87	2,231.67	0.00	0.00	0.00
9,600.00	90.00	89.15	6,587.00	-703.17	2,293.86	2,331.39	0.00	0.00	0.00
9,700.00	90.00	89.15	6,587.00	-701.69	2,393.85	2,431.12	0.00	0.00	0.00
9,800.00	90.00	89.15	6,587.00	-700.21	2,493.84	2,530.85	0.00	0.00	0.00
9,900.00	90.00	89.15	6,587.00	-698.72	2,593.83	2,630.57	0.00	0.00	0.00
10,000.00	90.00	89.15	6,587.00	-697.24	2,693.82	2,730.30	0.00	0.00	0.00
10,100.00	90.00	89.15	6,587.00	-695.76	2,793.81	2,830.03	0.00	0.00	0.00
10,200.00	90.00	89.15	6,587.00	-694.27	2,893.80	2,929.76	0.00	0.00	0.00
10,300.00	90.00	89.15	6,587.00	-692.79	2,993.79	3,029.48	0.00	0.00	0.00
10,400.00	90.00	89.15	6,587.00	-691.31	3,093.77	3,129.21	0.00	0.00	0.00
10,500.00	90.00	89.15	6,587.00	-689.83	3,193.76	3,228.94	0.00	0.00	0.00
10,600.00	90.00	89.15	6,587.00	-688.34	3,293.75	3,328.66	0.00	0.00	0.00
10,700.00	90.00	89.15	6,587.00	-686.86	3,393.74	3,428.39	0.00	0.00	0.00
10,800.00	90.00	89.15	6,587.00	-685.38	3,493.73	3,528.12	0.00	0.00	0.00
10,900.00	90.00	89.15	6,587.00	-683.89	3,593.72	3,627.84	0.00	0.00	0.00
11,000.00	90.00	89.15	6,587.00	-682.41	3,693.71	3,727.57	0.00	0.00	0.00
11,100.00	90.00	89.15	6,587.00	-680.93	3,793.70	3,827.30	0.00	0.00	0.00
11,200.00	90.00	89.15	6,587.00	-679.44	3,893.69	3,927.02	0.00	0.00	0.00
11,300.00	90.00	89.15	6,587.00	-677.96	3,993.68	4,026.75	0.00	0.00	0.00
11,400.00	90.00	89.15	6,587.00	-676.48	4,093.66	4,126.48	0.00	0.00	0.00
11,500.00	90.00	89.15	6,587.00	-674.99	4,193.65	4,226.20	0.00	0.00	0.00
11,600.00	90.00	89.15	6,587.00	-673.51	4,293.64	4,325.93	0.00	0.00	0.00
11,700.00	90.00	89.15	6,587.00	-672.03	4,393.63	4,425.66	0.00	0.00	0.00
11,800.00	90.00	89.15	6,587.00	-670.55	4,493.62	4,525.38	0.00	0.00	0.00
11,900.00	90.00	89.15	6,587.00	-669.06	4,593.61	4,625.11	0.00	0.00	0.00
12,000.00	90.00	89.15	6,587.00	-667.58	4,693.60	4,724.84	0.00	0.00	0.00
12,100.00	90.00	89.15	6,587.00	-666.10	4,793.59	4,824.56	0.00	0.00	0.00
12,200.00	90.00	89.15	6,587.00	-664.61	4,893.58	4,924.29	0.00	0.00	0.00
12,300.00	90.00	89.15	6,587.00	-663.13	4,993.57	5,024.02	0.00	0.00	0.00
12,400.00	90.00	89.15	6,587.00	-661.65	5,093.55	5,123.74	0.00	0.00	0.00
12,500.00	90.00	89.15	6,587.00	-660.16	5,193.54	5,223.47	0.00	0.00	0.00
12,600.00	90.00	89.15	6,587.00	-658.68	5,293.53	5,323.20	0.00	0.00	0.00
12,700.00	90.00	89.15	6,587.00	-657.20	5,393.52	5,422.92	0.00	0.00	0.00
12,800.00	90.00	89.15	6,587.00	-655.72	5,493.51	5,522.65	0.00	0.00	0.00
12,900.00	90.00	89.15	6,587.00	-654.23	5,593.50	5,622.38	0.00	0.00	0.00
13,000.00	90.00	89.15	6,587.00	-652.75	5,693.49	5,722.11	0.00	0.00	0.00
13,100.00	90.00	89.15	6,587.00	-651.27	5,793.48	5,821.83	0.00	0.00	0.00
13,200.00	90.00	89.15	6,587.00	-649.78	5,893.47	5,921.56	0.00	0.00	0.00
13,300.00	90.00	89.15	6,587.00	-648.30	5,993.46	6,021.29	0.00	0.00	0.00
13,400.00	90.00	89.15	6,587.00	-646.82	6,093.44	6,121.01	0.00	0.00	0.00
13,500.00	90.00	89.15	6,587.00	-645.33	6,193.43	6,220.74	0.00	0.00	0.00
13,600.00	90.00	89.15	6,587.00	-643.85	6,293.42	6,320.47	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-659
Project:	Wells Ranch	TVD Reference:	Well @ 4777.00ft
Site:	BB Section 03	MD Reference:	Well @ 4777.00ft
Well:	WELLS RANCH STATE BB03-659	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1	Database:	EDMP

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,700.00	90.00	89.15	6,587.00	-642.37	6,393.41	6,420.19	0.00	0.00	0.00
13,800.00	90.00	89.15	6,587.00	-640.88	6,493.40	6,519.92	0.00	0.00	0.00
13,900.00	90.00	89.15	6,587.00	-639.40	6,593.39	6,619.65	0.00	0.00	0.00
14,000.00	90.00	89.15	6,587.00	-637.92	6,693.38	6,719.37	0.00	0.00	0.00
14,100.00	90.00	89.15	6,587.00	-636.44	6,793.37	6,819.10	0.00	0.00	0.00
14,200.00	90.00	89.15	6,587.00	-634.95	6,893.36	6,918.83	0.00	0.00	0.00
14,300.00	90.00	89.15	6,587.00	-633.47	6,993.35	7,018.55	0.00	0.00	0.00
14,400.00	90.00	89.15	6,587.00	-631.99	7,093.33	7,118.28	0.00	0.00	0.00
14,500.00	90.00	89.15	6,587.00	-630.50	7,193.32	7,218.01	0.00	0.00	0.00
14,600.00	90.00	89.15	6,587.00	-629.02	7,293.31	7,317.73	0.00	0.00	0.00
14,700.00	90.00	89.15	6,587.00	-627.54	7,393.30	7,417.46	0.00	0.00	0.00
14,800.00	90.00	89.15	6,587.00	-626.05	7,493.29	7,517.19	0.00	0.00	0.00
14,900.00	90.00	89.15	6,587.00	-624.57	7,593.28	7,616.91	0.00	0.00	0.00
15,000.00	90.00	89.15	6,587.00	-623.09	7,693.27	7,716.64	0.00	0.00	0.00
15,100.00	90.00	89.15	6,587.00	-621.60	7,793.26	7,816.37	0.00	0.00	0.00
15,200.00	90.00	89.15	6,587.00	-620.12	7,893.25	7,916.09	0.00	0.00	0.00
15,300.00	90.00	89.15	6,587.00	-618.64	7,993.24	8,015.82	0.00	0.00	0.00
15,400.00	90.00	89.15	6,587.00	-617.16	8,093.22	8,115.55	0.00	0.00	0.00
15,500.00	90.00	89.15	6,587.00	-615.67	8,193.21	8,215.27	0.00	0.00	0.00
15,600.00	90.00	89.15	6,587.00	-614.19	8,293.20	8,315.00	0.00	0.00	0.00
15,700.00	90.00	89.15	6,587.00	-612.71	8,393.19	8,414.73	0.00	0.00	0.00
15,800.00	90.00	89.15	6,587.00	-611.22	8,493.18	8,514.46	0.00	0.00	0.00
15,900.00	90.00	89.15	6,587.00	-609.74	8,593.17	8,614.18	0.00	0.00	0.00
16,000.00	90.00	89.15	6,587.00	-608.26	8,693.16	8,713.91	0.00	0.00	0.00
16,100.00	90.00	89.15	6,587.00	-606.77	8,793.15	8,813.64	0.00	0.00	0.00
16,200.00	90.00	89.15	6,587.00	-605.29	8,893.14	8,913.36	0.00	0.00	0.00
16,300.00	90.00	89.15	6,587.00	-603.81	8,993.13	9,013.09	0.00	0.00	0.00
16,400.00	90.00	89.15	6,587.00	-602.33	9,093.11	9,112.82	0.00	0.00	0.00
16,500.00	90.00	89.15	6,587.00	-600.84	9,193.10	9,212.54	0.00	0.00	0.00
16,600.00	90.00	89.15	6,587.00	-599.36	9,293.09	9,312.27	0.00	0.00	0.00
16,700.00	90.00	89.15	6,587.00	-597.88	9,393.08	9,412.00	0.00	0.00	0.00
16,800.00	90.00	89.15	6,587.00	-596.39	9,493.07	9,511.72	0.00	0.00	0.00
16,900.00	90.00	89.15	6,587.00	-594.91	9,593.06	9,611.45	0.00	0.00	0.00
17,000.00	90.00	89.15	6,587.00	-593.43	9,693.05	9,711.18	0.00	0.00	0.00
17,100.00	90.00	89.15	6,587.00	-591.94	9,793.04	9,810.90	0.00	0.00	0.00
17,200.00	90.00	89.15	6,587.00	-590.46	9,893.03	9,910.63	0.00	0.00	0.00
17,268.09	90.00	89.15	6,587.00	-589.45	9,961.11	9,978.54	0.00	0.00	0.00

Noble Energy, Inc.

Survey Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-659
Project:	Wells Ranch	TVD Reference:	Well @ 4777.00ft
Site:	BB Section 03	MD Reference:	Well @ 4777.00ft
Well:	WELLS RANCH STATE BB03-659	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan 1	Database:	EDMP

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
WELLS RANCH BB03-6 - plan hits target center - Point	0.00	0.00	6,587.00	-589.45	9,961.11	1,401,396.26	3,308,109.17	40.4299563	-104.3932067
WELLS RANCH BB03-6 - plan hits target center - Point	0.00	0.00	6,587.00	-739.92	-183.47	1,401,245.80	3,297,964.61	40.4298851	-104.4296511

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
510.00	510.00	Pierre				
563.00	563.00	Upper Pierre Aquifer Top				
1,621.00	1,621.00	Upper Pierre Aquifer Base				
3,555.57	3,521.00	Parkman				
4,323.34	4,249.00	Sussex				
4,969.83	4,862.00	Shannon				
6,059.10	5,897.00	Teepee Buttes				
6,677.72	6,440.00	Sharon Springs				
6,736.20	6,475.00	Top A Chalk				
6,791.29	6,504.00	Top A Marl				
6,935.00	6,560.00	Top B Chalk				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2000	2000	0	0	Start Build 2.00	
2500	2497	-43	8	Start DLS 2.00 TFO 99.88	
5946	5787	-191	-99	Start DLS 9.00 TFO -148.32	
7122	6587	-614	-798	TPZ/LP at 7122.40 MD	
17,268	6587	-740	-183	TD at 17268.09 MD	

Checked By: _____ Approved By: _____ Date: _____

Northern Region - DJ Basin

Wells Ranch

BB Section 03

WELLS RANCH STATE BB03-659

Wellbore #1

Plan 1

Anticollision Summary Report

07 March, 2018

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-659
Project:	Wells Ranch	TVD Reference:	Well @ 4777.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4777.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-659	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Reference	Plan 1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date 3/7/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,267.71	Plan 1 (Wellbore #1)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
AA Section 34						
Wells Ranch 34E-232 - Original Drilling - Original Drilling	141.14	168.15	5,517.32	5,516.67	8,542.773	CC
Wells Ranch 34E-232 - Original Drilling - Original Drilling	200.00	214.00	5,517.62	5,516.60	5,428.958	ES
Wells Ranch 34E-232 - Original Drilling - Original Drilling	12,700.00	11,175.00	7,320.41	7,118.45	36.246	SF
AA Section 35						
Wells Ranch 14-35 - Wellbore #1 - Wellbore #1- As Drille	12,238.96	6,581.85	2,737.60	2,642.33	28.735	CC, ES
Wells Ranch 14-35 - Wellbore #1 - Wellbore #1- As Drille	12,700.00	6,584.31	2,776.15	2,676.75	27.929	SF
Wells Ranch USX AA35-01 - Wellbore #1 - Wellbore #1-	16,120.00	6,630.67	6,670.56	6,529.23	47.199	CC
Wells Ranch USX AA35-01 - Wellbore #1 - Wellbore #1-	16,200.00	6,631.51	6,671.04	6,528.78	46.893	ES
Wells Ranch USX AA35-01 - Wellbore #1 - Wellbore #1-	17,268.09	6,642.22	6,768.63	6,615.58	44.226	SF
Wells Ranch USX AA35-02 - Wellbore #1 - Wellbore #1-	14,865.78	6,732.16	6,605.51	6,478.80	52.132	CC
Wells Ranch USX AA35-02 - Wellbore #1 - Wellbore #1-	14,900.00	6,731.90	6,605.59	6,478.49	51.971	ES
Wells Ranch USX AA35-02 - Wellbore #1 - Wellbore #1-	16,900.00	6,716.87	6,911.62	6,766.53	47.637	SF
Wells Ranch USX AA35-03 - Wellbore #1 - Wellbore #1-	13,770.42	6,613.62	6,781.05	6,667.75	59.854	CC
Wells Ranch USX AA35-03 - Wellbore #1 - Wellbore #1-	13,800.00	6,612.82	6,781.11	6,667.48	59.677	ES
Wells Ranch USX AA35-03 - Wellbore #1 - Wellbore #1-	16,100.00	6,564.90	7,169.84	7,035.57	53.396	SF
Wells Ranch USX AA35-04 - Wellbore #1 - Wellbore #1-	12,186.27	12,186.27	6,677.09	6,562.88	58.462	CC
Wells Ranch USX AA35-04 - Wellbore #1 - Wellbore #1-	12,300.00	12,300.00	6,678.06	6,562.17	57.626	ES
Wells Ranch USX AA35-04 - Wellbore #1 - Wellbore #1-	15,100.00	15,100.00	7,285.14	7,135.44	48.663	SF
Wells Ranch USX AA35-05 - Wellbore #1 - Wellbore #1-	12,235.50	6,595.57	5,429.25	5,333.97	56.983	CC
Wells Ranch USX AA35-05 - Wellbore #1 - Wellbore #1-	12,300.00	6,595.90	5,429.63	5,333.63	56.558	ES
Wells Ranch USX AA35-05 - Wellbore #1 - Wellbore #1-	14,100.00	6,608.35	5,740.47	5,628.57	51.299	SF
Wells Ranch USX AA35-06 - Wellbore #1 - Wellbore #1-	13,614.13	6,574.79	5,407.42	5,296.14	48.594	CC
Wells Ranch USX AA35-06 - Wellbore #1 - Wellbore #1-	13,700.00	6,574.52	5,408.10	5,295.85	48.178	ES
Wells Ranch USX AA35-06 - Wellbore #1 - Wellbore #1-	15,200.00	6,569.81	5,635.17	5,509.63	44.888	SF
Wells Ranch USX AA35-07 - Wellbore #1 - Wellbore #1-	14,945.40	6,605.88	5,389.45	5,262.26	42.372	CC
Wells Ranch USX AA35-07 - Wellbore #1 - Wellbore #1-	15,000.00	6,605.81	5,389.73	5,261.90	42.166	ES
Wells Ranch USX AA35-07 - Wellbore #1 - Wellbore #1-	16,300.00	6,604.16	5,557.08	5,417.56	39.830	SF
Wells Ranch USX AA35-08 - Wellbore #1 - Wellbore #1-	16,253.83	6,602.43	5,337.59	5,194.76	37.372	CC
Wells Ranch USX AA35-08 - Wellbore #1 - Wellbore #1-	16,300.00	6,602.55	5,337.78	5,194.43	37.234	ES
Wells Ranch USX AA35-08 - Wellbore #1 - Wellbore #1-	17,268.09	6,605.18	5,433.10	5,280.61	35.631	SF
Wells Ranch USX AA35-09 - Wellbore #1 - Wellbore #1-	16,381.60	6,619.82	4,106.20	3,961.72	28.421	CC
Wells Ranch USX AA35-09 - Wellbore #1 - Wellbore #1-	16,400.00	6,619.86	4,106.24	3,961.55	28.379	ES
Wells Ranch USX AA35-09 - Wellbore #1 - Wellbore #1-	17,100.00	6,621.45	4,168.57	4,017.61	27.615	SF
Wells Ranch USX AA35-10 - Wellbore #1 - Wellbore #1-	14,894.04	6,543.58	4,072.46	3,946.13	32.235	CC
Wells Ranch USX AA35-10 - Wellbore #1 - Wellbore #1-	14,900.00	6,543.59	4,072.47	3,946.06	32.218	ES
Wells Ranch USX AA35-10 - Wellbore #1 - Wellbore #1-	15,700.00	6,545.19	4,151.45	4,017.84	31.072	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 BB03-659
Project:	Wells Ranch	TVD Reference:	Well @ 4777.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4777.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-659	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
AA Section 35						
Wells Ranch USX AA35-11 - Wellbore #1 - Wellbore #1-	13,593.84	6,600.67	3,979.66	3,868.51	35.803	CC
Wells Ranch USX AA35-11 - Wellbore #1 - Wellbore #1-	13,600.00	6,600.65	3,979.67	3,868.44	35.780	ES
Wells Ranch USX AA35-11 - Wellbore #1 - Wellbore #1-	14,500.00	6,596.63	4,081.52	3,962.33	34.244	SF
Wells Ranch USX AA35-12 - Wellbore #1 - Wellbore #1-	12,192.84	6,621.07	4,320.98	4,225.97	45.479	CC
Wells Ranch USX AA35-12 - Wellbore #1 - Wellbore #1-	12,200.00	6,621.13	4,320.99	4,225.90	45.440	ES
Wells Ranch USX AA35-12 - Wellbore #1 - Wellbore #1-	13,400.00	6,630.96	4,486.43	4,380.65	42.412	SF
Wells Ranch USX AA35-15 - Wellbore #1 - Wellbore #1-	14,989.74	6,525.35	2,795.06	2,667.62	21.932	CC
Wells Ranch USX AA35-15 - Wellbore #1 - Wellbore #1-	15,000.00	6,525.37	2,795.08	2,667.52	21.913	ES
Wells Ranch USX AA35-15 - Wellbore #1 - Wellbore #1-	15,400.00	6,526.20	2,825.01	2,694.00	21.564	SF
Wells Ranch USX AA35-16 - Wellbore #1 - Wellbore #1-	16,327.58	6,541.40	2,711.59	2,568.10	18.897	CC, ES
Wells Ranch USX AA35-16 - Wellbore #1 - Wellbore #1-	16,600.00	6,540.73	2,725.24	2,579.24	18.667	SF
Wells Ranch USX AA35-19 - Wellbore #1 - Wellbore #1-	13,052.39	6,642.40	6,168.51	6,063.55	58.768	CC
Wells Ranch USX AA35-19 - Wellbore #1 - Wellbore #1-	13,100.00	6,642.16	6,168.69	6,063.19	58.468	ES
Wells Ranch USX AA35-19 - Wellbore #1 - Wellbore #1-	15,200.00	6,631.25	6,531.67	6,407.50	52.604	SF
Wells Ranch USX AA35-23 - Wellbore #1 - Wellbore #1-	15,670.96	6,566.02	3,431.82	3,296.09	25.284	CC
Wells Ranch USX AA35-23 - Wellbore #1 - Wellbore #1-	15,700.00	6,566.21	3,431.94	3,295.88	25.224	ES
Wells Ranch USX AA35-23 - Wellbore #1 - Wellbore #1-	16,200.00	6,569.51	3,472.35	3,331.86	24.715	SF
Wells Ranch USX AA35-65HN - Plan A - Original Drilling	14,300.00	14,300.00	4,768.33	4,475.96	16.309	ES, SF
Wells Ranch USX AA35-65HN - Plan A - Original Drilling	15,356.44	10,021.63	4,742.72	4,544.02	23.869	CC
BB Section 01						
Wells Ranch 14-01 - Original Drilling - Original Drilling - A	17,268.09	6,476.58	2,498.73	2,345.52	16.309	CC, ES, SF
Wells Ranch 23-01 - Original Drilling - Original Drilling - A	17,268.09	6,393.52	2,032.92	1,927.43	19.272	CC, ES, SF
Wells Ranch 24-01 - Original Drilling - Original Drilling - A	17,268.09	6,465.16	3,015.30	2,879.87	22.264	CC, ES, SF
Wells Ranch USX BB01-01 - Original Drilling - Original D	17,268.09	6,445.34	4,505.34	4,434.31	63.423	CC, ES, SF
Wells Ranch USX BB01-02 - Original Drilling - Original D	17,268.09	6,542.09	3,214.38	3,127.25	36.888	CC, ES, SF
Wells Ranch USX BB01-03 - Original Drilling - Original D	17,268.09	6,565.63	2,057.99	1,947.47	18.620	CC, ES, SF
Wells Ranch USX BB01-04 - Original Drilling - Original D	17,268.09	6,600.01	1,333.15	1,183.99	8.938	CC, ES, SF
Wells Ranch USX BB01-05 - Original Drilling - Original D	17,268.09	6,527.97	281.95	172.87	2.585	CC, ES, SF
Wells Ranch USX BB01-06 - Original Drilling - Original D	17,268.09	6,520.21	1,619.76	1,569.52	32.241	CC, ES, SF
Wells Ranch USX BB01-07 - Original Drilling - Original D	17,268.09	6,510.21	2,979.35	2,923.99	53.820	CC, ES, SF
Wells Ranch USX BB01-08 - Original Drilling - Original D	17,268.09	6,530.84	4,357.13	4,306.37	85.841	CC, ES, SF
Wells Ranch USX BB01-09 - Original Drilling - Original D	17,268.09	6,416.84	4,501.65	4,435.82	68.381	CC, ES, SF
Wells Ranch USX BB01-10 - Original Drilling - Original D	17,268.09	6,403.71	3,142.09	3,063.06	39.758	CC, ES, SF
Wells Ranch USX BB01-12 - Original Drilling - Original D	17,268.09	6,468.92	1,289.43	1,138.43	8.539	CC, ES, SF
Wells Ranch USX BB01-15 - Original Drilling - Original D	17,268.09	6,462.37	3,852.44	3,742.87	35.160	CC, ES, SF
Wells Ranch USX BB01-16 - Original Drilling - Original D	17,268.09	6,521.79	4,858.08	4,762.68	50.926	CC, ES, SF
Wells Ranch USX BB01-17 - Original Drilling - Original D	17,268.09	6,540.50	3,819.82	3,761.34	65.312	CC, ES, SF
Wells Ranch USX BB01-19 - Original Drilling - Original D	17,268.09	6,548.15	1,356.00	1,249.27	12.705	CC, ES, SF
Wells Ranch USX BB01-23 - Original Drilling - Original D	17,268.09	6,460.90	4,243.63	4,160.65	51.138	CC, 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 BB03-659
Project:	Wells Ranch	TVD Reference:	Well @ 4777.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4777.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-659	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
BB Section 02						
Wells Ranch 11-2 - Wellbore #1 - Gyro Surveys	12,443.12	6,532.37	1,233.56	1,136.10	12.658	CC, ES
Wells Ranch 11-2 - Wellbore #1 - Gyro Surveys	12,500.00	6,532.17	1,234.87	1,136.90	12.605	SF
Wells Ranch 12-2 SI - Wellbore #1 - No Surveys	12,253.72	6,510.00	119.29	-10.14	0.922	Level 1, CC, ES, SF
Wells Ranch 13-2 - No Surveys - No Surveys	12,225.38	6,520.00	1,166.62	1,037.44	9.030	CC, ES
Wells Ranch 13-2 - No Surveys - No Surveys	12,300.00	6,520.00	1,169.01	1,039.00	8.992	SF
Wells Ranch 14-2 - Wellbore #1 - Gyro Surveys	12,214.46	6,385.80	2,524.71	2,430.34	26.752	CC, ES
Wells Ranch 14-2 - Wellbore #1 - Gyro Surveys	12,700.00	6,388.50	2,570.97	2,471.90	25.951	SF
Wells Ranch 21-2 SI - Wellbore #1 - Gyro Surveys	13,671.13	6,521.77	1,273.15	1,161.35	11.388	CC, ES
Wells Ranch 21-2 SI - Wellbore #1 - Gyro Surveys	13,800.00	6,522.21	1,279.65	1,166.91	11.351	SF
Wells Ranch 22-2 SI - Wellbore #1 - No Surveys	13,760.24	6,510.00	297.64	150.60	2.024	CC, ES, SF
Wells Ranch 23-2 - Wellbore #1 - No Surveys	13,564.34	6,500.00	1,228.30	1,083.66	8.492	CC, ES
Wells Ranch 23-2 - Wellbore #1 - No Surveys	13,700.00	6,500.00	1,235.77	1,089.85	8.469	SF
Wells Ranch 24-2 - Wellbore #1 - No Surveys	13,383.34	6,490.00	2,353.53	2,256.11	24.159	CC
Wells Ranch 24-2 - Wellbore #1 - No Surveys	13,400.00	6,490.00	2,353.59	2,255.97	24.108	ES
Wells Ranch 24-2 - Wellbore #1 - No Surveys	13,800.00	6,490.00	2,390.13	2,288.80	23.589	SF
Wells Ranch 31-2 - Wellbore #1 - Gyro Surveys	15,087.57	6,516.71	1,244.36	1,115.80	9.680	CC
Wells Ranch 31-2 - Wellbore #1 - Gyro Surveys	15,100.00	6,516.61	1,244.42	1,115.74	9.671	ES
Wells Ranch 31-2 - Wellbore #1 - Gyro Surveys	15,200.00	6,515.77	1,249.43	1,120.09	9.660	SF
Wells Ranch 32-2 - Wellbore #1 - No Surveys	14,881.75	6,524.00	141.86	-18.60	0.884	Level 1, CC, ES, SF
Wells Ranch 33-2 - Wellbore #1 - Gyro Surveys	15,072.67	6,100.00	1,499.27	1,374.51	12.018	CC
Wells Ranch 33-2 - Wellbore #1 - Gyro Surveys	15,100.00	6,100.00	1,499.52	1,374.41	11.986	ES
Wells Ranch 33-2 - Wellbore #1 - Gyro Surveys	15,200.00	6,100.00	1,504.67	1,378.55	11.931	SF
Wells Ranch 34-2 SI - Wellbore #1 - No Surveys	15,084.40	6,500.00	2,375.95	2,213.28	14.606	CC
Wells Ranch 34-2 SI - Wellbore #1 - No Surveys	15,100.00	6,500.00	2,376.00	2,213.14	14.589	ES
Wells Ranch 34-2 SI - Wellbore #1 - No Surveys	15,400.00	6,500.00	2,396.82	2,231.07	14.460	SF
Wells Ranch 41-2 - Wellbore #1 - Gyro Surveys	16,017.63	6,534.75	1,195.09	1,055.31	8.550	CC, ES
Wells Ranch 41-2 - Wellbore #1 - Gyro Surveys	16,100.00	6,534.75	1,197.92	1,057.54	8.534	SF
Wells Ranch 42-2 SI - Wellbore #1 - No Surveys	16,003.96	6,510.00	270.29	96.54	1.556	CC, ES, SF
Wells Ranch 43-2 TA - Wellbore #1 - Gyro Surveys	15,987.08	6,450.53	1,463.47	1,324.35	10.519	CC
Wells Ranch 43-2 TA - Wellbore #1 - Gyro Surveys	16,000.00	6,450.30	1,463.53	1,324.24	10.507	ES
Wells Ranch 43-2 TA - Wellbore #1 - Gyro Surveys	16,100.00	6,448.55	1,467.82	1,327.55	10.464	SF
Wells Ranch 44-2 - Wellbore #1 - No Surveys	16,014.32	6,500.00	2,370.92	2,197.13	13.642	CC, ES
Wells Ranch 44-2 - Wellbore #1 - No Surveys	16,300.00	6,500.00	2,388.07	2,211.47	13.523	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-659
Project:	Wells Ranch	TVD Reference:	Well @ 4777.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4777.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-659	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
BB Section 03						
U P R R PAN AM 1 PA - Wellbore #1 - No Surveys	2,000.00	1,982.00	799.19	774.95	32.980	CC, ES
U P R R PAN AM 1 PA - Wellbore #1 - No Surveys	7,100.00	6,568.61	1,478.57	1,396.36	17.985	SF
Wells 43-3 PA - Wellbore #1 - No Surveys	11,047.08	6,510.00	1,099.47	983.77	9.503	CC, ES
Wells 43-3 PA - Wellbore #1 - No Surveys	11,100.00	6,510.00	1,100.74	984.44	9.465	SF
Wells 34-3 - Wellbore #1 - Gyro Surveys	9,513.98	6,600.00	2,506.37	2,441.12	38.414	CC
Wells 34-3 - Wellbore #1 - Gyro Surveys	9,700.00	9,700.00	2,513.24	2,435.35	32.265	ES
Wells 34-3 - Wellbore #1 - Gyro Surveys	10,100.00	10,100.00	2,573.96	2,491.17	31.091	SF
Wells Rach USX BB 3-14 - Wellbore #1 - Gyro Surveys	8,220.35	6,474.58	2,619.64	2,566.28	49.099	CC, ES
Wells Rach USX BB 3-14 - Wellbore #1 - Gyro Surveys	9,100.00	6,472.58	2,763.38	2,703.41	46.075	SF
Wells Ranch 12-03 - Original Drilling - Original Drilling - A	7,048.13	6,556.85	83.07	35.64	1.751	CC
Wells Ranch 12-03 - Original Drilling - Original Drilling - A	7,050.00	6,557.09	83.09	35.64	1.751	ES, SF
Wells Ranch 21-3 TA - Wellbore #1 - No Surveys	2,000.00	1,973.00	1,190.36	1,166.21	49.282	CC
Wells Ranch 21-3 TA - Wellbore #1 - No Surveys	2,100.00	2,072.98	1,191.15	1,165.78	46.957	ES
Wells Ranch 21-3 TA - Wellbore #1 - No Surveys	8,400.00	6,560.00	1,438.79	1,349.40	16.094	SF
Wells Ranch 32-3 SI - Wellbore #1 - No Surveys	9,731.54	6,520.00	125.85	24.25	1.239	Level 3, CC, ES, SF
Wells Ranch 41-3 - Wellbore #1 - No Surveys	10,918.08	6,875.00	2,304.83	2,219.77	27.096	CC, ES
Wells Ranch 41-3 - Wellbore #1 - No Surveys	11,600.00	6,875.00	2,403.59	2,311.13	25.997	SF
WELLS RANCH BB03-627 - Wellbore #1 - Plan 1	7,113.11	7,002.41	2,006.13	1,956.40	40.339	CC
WELLS RANCH BB03-627 - Wellbore #1 - Plan 1	17,268.09	17,146.62	2,084.12	1,819.91	7.888	ES, SF
WELLS RANCH BB03-651 - Wellbore #1 - Plan 3	7,221.27	7,159.58	513.62	463.44	10.235	CC
WELLS RANCH BB03-651 - Wellbore #1 - Plan 3	17,268.09	17,205.45	531.99	270.08	2.031	ES, SF
WELLS RANCH STATE BB03-612 - Wellbore #1 - Plan #	6,902.48	6,613.36	3,049.49	3,001.87	64.038	CC
WELLS RANCH STATE BB03-612 - Wellbore #1 - Plan #	17,268.09	17,129.57	3,116.76	2,852.82	11.809	ES, SF
WELLS RANCH STATE BB03-620 - Wellbore #1 - Plan 1	7,065.93	6,862.97	2,427.28	2,378.43	49.690	CC
WELLS RANCH STATE BB03-620 - Wellbore #1 - Plan 1	17,268.09	17,065.85	2,581.35	2,318.07	9.805	ES, SF
WELLS RANCH STATE BB03-636 - Wellbore #1 - Plan 1	6,862.87	6,512.76	1,481.24	1,433.97	31.337	CC
WELLS RANCH STATE BB03-636 - Wellbore #1 - Plan 1	17,268.09	17,029.93	1,568.38	1,305.90	5.975	ES, SF
WELLS RANCH STATE BB03-643 - Wellbore #1 - Plan 1	7,119.94	6,951.72	868.09	818.55	17.522	CC
WELLS RANCH STATE BB03-643 - Wellbore #1 - Plan 1	17,268.09	17,083.18	1,050.79	787.12	3.985	ES, SF
WELLS RANCH STATE BB03-668 - Wellbore #1 - Plan 1	2,000.00	2,001.00	36.43	22.55	2.625	CC, ES
WELLS RANCH STATE BB03-668 - Wellbore #1 - Plan 1	17,268.09	17,270.12	593.95	330.17	2.252	SF
WELLS RANCH STATE BB03-676 - Wellbore #1 - Plan 1	2,000.00	2,003.00	76.51	62.62	5.511	CC, ES
WELLS RANCH STATE BB03-676 - Wellbore #1 - Plan 1	17,268.09	17,269.20	1,149.96	884.86	4.338	SF
WELLS RANCH STATE BB03-684 - Wellbore #1 - Plan 1	2,000.00	2,005.00	112.93	99.04	8.130	CC, ES
WELLS RANCH STATE BB03-684 - Wellbore #1 - Plan 1	17,268.09	17,647.39	1,696.70	1,431.11	6.388	SF
Wells Ranch State BB05-613 - Original Drilling - Original	6,904.14	6,424.00	2,973.60	2,931.57	70.755	CC, ES
Wells Ranch State BB05-613 - Original Drilling - Original	8,100.00	6,102.09	3,220.97	3,174.70	69.612	SF
Wells Ranch State BB05-617 - Original Drilling - Original	6,909.40	6,395.04	2,703.89	2,662.36	65.112	CC, ES
Wells Ranch State BB05-617 - Original Drilling - Original	8,100.00	8,100.00	2,975.47	2,923.45	57.198	SF
Wells Ranch State BB05-625 - Original Drilling - Original	6,761.94	6,599.75	2,250.34	2,208.31	53.550	CC, ES
Wells Ranch State BB05-625 - Original Drilling - Original	7,000.00	7,000.00	2,270.80	2,226.58	51.348	SF
Wells Ranch State BB05-630 - Original Drilling - Original	6,938.28	6,331.00	1,917.84	1,876.03	45.871	CC, ES
Wells Ranch State BB05-630 - Original Drilling - Original	7,122.40	6,289.55	1,926.79	1,884.62	45.692	SF
Wells Ranch State BB05-635 - Original Drilling - Original	6,750.00	6,750.00	1,558.95	1,517.14	37.281	SF
Wells Ranch State BB05-635 - Original Drilling - Original	6,886.88	6,492.61	1,551.33	1,509.88	37.428	CC, ES
Wells Ranch State BB05-644 - Original Drilling - Original	6,751.85	6,614.00	967.11	925.21	23.078	CC, ES
Wells Ranch State BB05-644 - Original Drilling - Original	6,800.00	6,604.05	968.70	926.67	23.048	SF
Wells Ranch State BB05-650 - Original Drilling - Original	6,762.32	6,624.91	654.84	612.58	15.497	CC, ES
Wells Ranch State BB05-650 - Original Drilling - Original	6,800.00	6,614.16	656.10	613.75	15.493	SF
Wells Ranch State BB05-656 - Original Drilling - Original	6,386.50	6,242.74	170.73	130.32	4.225	CC, ES, SF
Wells Ranch State BB05-665 - Original Drilling - Original	4,161.37	4,098.76	61.29	36.60	2.483	CC, ES, SF
Wells Ranch State BB05-669 - Original Drilling - Original	4,027.28	3,965.40	133.54	109.82	5.628	CC, ES
Wells Ranch State BB05-669 - Original Drilling - Original	4,100.00	4,034.65	135.25	111.06	5.590	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 BB03-659
Project:	Wells Ranch	TVD Reference:	Well @ 4777.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4777.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-659	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
BB Section 03						
Wells Ranch State BB05-678 - Original Drilling - Original	0.00	32.56	662.95			
Wells Ranch State BB05-678 - Original Drilling - Original	2,003.90	2,037.78	665.98	652.37	48.921	ES
Wells Ranch State BB05-678 - Original Drilling - Original	6,750.00	6,638.31	1,160.01	1,118.41	27.880	SF
Wells Ranch State BB05-685 - Original Drilling - Original	2,006.60	2,042.15	690.32	676.92	51.492	CC, ES
Wells Ranch State BB05-685 - Original Drilling - Original	6,550.00	6,481.83	1,729.99	1,688.67	41.864	SF
Wells Ranch State BB05-690 - Original Drilling - Original	0.00	31.79	728.23			
Wells Ranch State BB05-690 - Original Drilling - Original	2,000.00	2,028.95	732.27	718.70	53.978	ES
Wells Ranch State BB05-690 - Original Drilling - Original	6,900.00	6,305.26	2,029.52	1,988.37	49.320	SF
Wells Ranch USX BB 3-10 - Wellbore #1 - Gyro Surveys	9,476.87	6,529.75	1,196.25	1,131.52	18.480	CC
Wells Ranch USX BB 3-10 - Wellbore #1 - Gyro Surveys	9,500.00	6,530.18	1,196.47	1,131.49	18.414	ES
Wells Ranch USX BB 3-10 - Wellbore #1 - Gyro Surveys	9,600.00	6,532.04	1,202.57	1,136.65	18.244	SF
Wells Ranch USX BB 3-11 SI - Wellbore #1 - Gyro Surve	8,377.73	6,524.64	1,263.26	1,208.56	23.096	CC, ES
Wells Ranch USX BB 3-11 SI - Wellbore #1 - Gyro Surve	8,600.00	6,520.09	1,282.65	1,226.28	22.752	SF
Wells Ranch USX BB 3-16 SI - Wellbore #1 - Gyro Surve	10,849.30	6,456.33	2,619.79	2,540.68	33.113	CC
Wells Ranch USX BB 3-16 SI - Wellbore #1 - Gyro Surve	10,900.00	6,456.67	2,620.28	2,540.59	32.878	ES
Wells Ranch USX BB 3-16 SI - Wellbore #1 - Gyro Surve	11,500.00	6,460.72	2,699.39	2,614.23	31.699	SF
Wells Ranch USX BB 3-2 SI - Wellbore #1 - No Surveys	9,505.68	6,529.00	1,556.33	1,456.95	15.660	CC, ES
Wells Ranch USX BB 3-2 SI - Wellbore #1 - No Surveys	9,700.00	6,529.00	1,568.42	1,467.44	15.533	SF
Wells Ranch USX BB 3-4 - Wellbore #1 - No Surveys	2,000.00	2,003.00	927.01	902.60	37.967	CC, ES
Wells Ranch USX BB 3-4 - Wellbore #1 - No Surveys	7,000.00	6,578.43	1,579.99	1,497.96	19.261	SF
Wells Ranch USX BB 3-6 SI - Wellbore #1 - Gyro Survey	2,736.87	4,778.94	1,173.27	1,147.36	45.288	CC, ES
Wells Ranch USX BB 3-6 SI - Wellbore #1 - Gyro Survey	4,600.00	6,581.58	1,517.50	1,478.58	38.992	SF
Wells Ranch USX BB 3-8 - Wellbore #1 - Gyro Surveys	10,797.83	6,515.48	72.74	-6.01	0.924	Level 1, CC, ES, SF
Wells Ranch USX BB03-04 - Original Drilling - Original D	0.00	2.79	926.99			
Wells Ranch USX BB03-04 - Original Drilling - Original D	2,020.14	2,029.54	934.97	921.05	67.147	ES
Wells Ranch USX BB03-04 - Original Drilling - Original D	7,100.00	6,602.84	1,616.51	1,568.71	33.821	SF
Wells Ranch USX BB03-12 - Original Drilling - Original D	6,909.43	6,484.76	1,155.78	1,108.96	24.684	CC, ES
Wells Ranch USX BB03-12 - Original Drilling - Original D	6,950.00	6,496.73	1,156.64	1,109.69	24.638	SF
Wells Ranch USX BB03-13 - Original Drilling - Original D	7,053.34	6,390.44	2,392.07	2,345.07	50.898	CC, ES
Wells Ranch USX BB03-13 - Original Drilling - Original D	7,600.00	6,400.17	2,459.83	2,410.83	50.196	SF
Wells Ranch USX BB03-25 PA - Original Drilling - Gyro S	7,768.35	6,447.12	1,897.64	1,847.36	37.742	CC, ES
Wells Ranch USX BB03-25 PA - Original Drilling - Gyro S	8,200.00	6,460.03	1,946.06	1,893.05	36.709	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-659
Project:	Wells Ranch	TVD Reference:	Well @ 4777.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4777.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-659	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
BB Section 04						
State 11-04 - Original Drilling - Original Drilling - As Drille	6,080.42	5,847.60	4,778.11	4,735.72	112.721	CC, ES
State 11-04 - Original Drilling - Original Drilling - As Drille	6,450.00	6,197.15	4,877.41	4,832.79	109.317	SF
State 12-04 - Original Drilling - Original Drilling - As Drille	6,138.38	6,118.17	4,587.31	4,544.05	106.037	CC, ES
State 12-04 - Original Drilling - Original Drilling - As Drille	6,400.00	6,278.29	4,642.87	4,598.27	104.116	SF
State 13-04 - Original Drilling - Original Drilling - As Drille	6,138.69	5,876.09	4,953.29	4,911.00	117.153	CC, ES
State 13-04 - Original Drilling - Original Drilling - As Drille	6,500.00	6,172.72	5,052.28	5,008.05	114.232	SF
State 21-04 - Original Drilling - Original Drilling - As Drille	6,080.73	5,915.72	3,719.22	3,676.54	87.144	CC, ES
State 21-04 - Original Drilling - Original Drilling - As Drille	6,400.00	6,217.16	3,791.49	3,746.84	84.909	SF
State 22-04 - Original Drilling - Original Drilling - As Drille	6,120.56	5,930.49	3,466.57	3,325.96	24.654	CC, ES
State 22-04 - Original Drilling - Original Drilling - As Drille	6,450.00	6,241.25	3,550.28	3,402.58	24.038	SF
State 23-04 - Original Drilling - Original Drilling - As Drille	6,164.44	5,965.63	3,722.27	3,679.72	87.470	CC, ES
State 23-04 - Original Drilling - Original Drilling - As Drille	6,450.00	6,283.89	3,779.52	3,735.17	85.206	SF
State 24-04 - Original Drilling - Original Drilling - As Drille	6,189.89	5,907.93	4,245.68	4,203.23	100.016	CC
State 24-04 - Original Drilling - Original Drilling - As Drille	6,200.00	5,920.88	4,245.74	4,203.22	99.839	ES
State 24-04 - Original Drilling - Original Drilling - As Drille	6,550.00	6,286.79	4,324.56	4,279.96	96.957	SF
State 31-04 (SI) - Original Drilling - Original Drilling - As D	6,051.80	5,887.88	2,497.51	2,454.89	58.589	CC, ES
State 31-04 (SI) - Original Drilling - Original Drilling - As D	6,300.00	6,130.98	2,536.73	2,492.46	57.306	SF
State 32-04 - Original Drilling - Original Drilling - As Drille	6,120.63	5,930.56	2,035.50	1,894.89	14.476	CC, ES
State 32-04 - Original Drilling - Original Drilling - As Drille	6,300.00	6,105.15	2,060.80	1,916.15	14.247	SF
State 33-04 - Original Drilling - Original Drilling - As Drille	6,184.53	5,978.46	2,474.06	2,332.56	17.485	CC
State 33-04 - Original Drilling - Original Drilling - As Drille	6,200.00	5,993.63	2,474.22	2,332.37	17.443	ES
State 33-04 - Original Drilling - Original Drilling - As Drille	6,450.00	6,226.25	2,522.49	2,375.36	17.144	SF
State 41-04 (SI) - Original Drilling - Original Drilling - As D	5,973.00	5,827.80	1,612.44	1,570.28	38.241	CC, ES
State 41-04 (SI) - Original Drilling - Original Drilling - As D	6,250.00	6,095.28	1,646.02	1,601.96	37.357	SF
State 42-04 (SI) - Original Drilling - Original Drilling - As D	6,108.01	5,908.12	890.67	750.45	6.352	CC, ES
State 42-04 (SI) - Original Drilling - Original Drilling - As D	6,200.00	5,998.63	897.36	755.02	6.304	SF
State Lease 34-04 (PA) - Original Drilling - Original Drillin	6,248.55	6,036.87	3,259.46	3,116.55	22.808	CC
State Lease 34-04 (PA) - Original Drilling - Original Drillin	6,250.00	6,038.28	3,259.46	3,116.52	22.802	ES
State Lease 34-04 (PA) - Original Drilling - Original Drillin	6,600.00	6,341.27	3,324.71	3,174.92	22.195	SF
State Wells 14-04 - Original Drilling - Original Drilling - As	6,179.58	5,975.61	5,260.19	5,118.77	37.194	CC
State Wells 14-04 - Original Drilling - Original Drilling - As	6,200.00	5,995.63	5,260.48	5,118.59	37.074	ES
State Wells 14-04 - Original Drilling - Original Drilling - As	6,600.00	6,347.27	5,380.15	5,230.35	35.916	SF
State Wells 44-04 - Original Drilling - Original Drilling - As	6,395.84	6,152.23	2,755.99	2,711.83	62.412	CC
State Wells 44-04 - Original Drilling - Original Drilling - As	6,400.00	6,156.07	2,755.99	2,711.81	62.378	ES
State Wells 44-04 - Original Drilling - Original Drilling - As	6,700.00	6,377.48	2,788.85	2,743.24	61.157	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 BB03-659
Project:	Wells Ranch	TVD Reference:	Well @ 4777.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4777.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-659	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
BB Section 05						
UPV 05-03H3 - Original Drilling - Original Drilling - As Dri	6,098.61	5,751.86	8,796.84	8,754.86	209.578	CC
UPV 05-03H3 - Original Drilling - Original Drilling - As Dri	6,100.00	5,752.73	8,796.84	8,754.85	209.537	ES
UPV 05-03H3 - Original Drilling - Original Drilling - As Dri	6,550.00	6,072.03	8,950.89	8,906.68	202.494	SF
UPV 05-04H3 - Original Drilling - Original Drilling - As Dri	6,157.07	6,650.01	9,956.67	9,911.43	220.120	CC, ES
UPV 05-04H3 - Original Drilling - Original Drilling - As Dri	6,350.00	6,783.06	9,986.35	9,940.09	215.876	SF
UPV 05-05H3 - Original Drilling - Original Drilling - As Dri	6,141.96	6,161.08	9,937.17	9,893.87	229.522	CC, ES
UPV 05-05H3 - Original Drilling - Original Drilling - As Dri	6,400.00	6,400.00	9,988.85	9,944.02	222.807	SF
UPV 05-06H3 - Original Drilling - Original Drilling - As Dri	6,133.94	6,051.15	8,627.62	8,584.69	200.986	CC, ES
UPV 05-06H3 - Original Drilling - Original Drilling - As Dri	6,550.00	6,400.00	8,757.77	8,712.64	194.049	SF
Wells Ranch 31-05 - Original Drilling - Original Drilling - A	6,127.00	6,200.01	7,334.60	7,291.01	168.282	CC, ES
Wells Ranch 31-05 - Original Drilling - Original Drilling - A	6,500.00	6,373.15	7,442.95	7,397.76	164.687	SF
Wells Ranch 32-05 - Original Drilling - Original Drilling - A	6,132.21	6,040.40	7,306.18	7,263.26	170.238	CC, ES
Wells Ranch 32-05 - Original Drilling - Original Drilling - A	6,550.00	6,400.01	7,438.99	7,393.83	164.700	SF
Wells Ranch 41-05 - Original Drilling - Original Drilling - A	6,103.32	5,953.03	6,147.68	6,104.98	143.979	CC, ES
Wells Ranch 41-05 - Original Drilling - Original Drilling - A	6,500.00	6,314.57	6,264.94	6,219.96	139.292	SF
Wells Ranch 42-05 - Original Drilling - Original Drilling - A	6,123.92	5,934.70	6,043.08	6,000.52	141.989	CC, ES
Wells Ranch 42-05 - Original Drilling - Original Drilling - A	6,550.00	6,358.94	6,180.08	6,135.05	137.231	SF
Wells Ranch BB01-611 - Original Drilling - Original Drilling	17,268.09	16,278.00	3,224.31	2,967.32	12.547	CC, ES, SF
Wells Ranch BB01-615 - Original Drilling - Original Drilling	17,268.09	16,386.00	2,632.74	2,403.17	11.468	CC, ES, SF
Wells Ranch BB01-624 - Original Drilling - Original Drilling	17,268.09	6,931.00	9,810.56	9,754.88	176.209	CC, ES, SF
Wells Ranch BB01-624 - Original Drilling - ST01 - ST01 -	17,268.09	16,377.00	2,091.40	1,866.03	9.280	CC, ES, SF
Wells Ranch BB01-638 - Original Drilling - Original Drilling	17,268.09	16,495.00	1,437.75	1,181.28	5.606	CC, ES, SF
Wells Ranch BB01-649 - Original Drilling - Original Drilling	17,268.09	16,403.00	774.05	518.05	3.024	CC, ES, SF
Wells Ranch BB01-655 - Original Drilling - Original Drilling	17,268.09	16,335.00	220.27	16.56	1.081	Level 2, CC, ES, SF
Wells Ranch BB01-669 - Original Drilling - Original Drilling	17,268.09	16,351.00	486.74	246.93	2.030	CC, ES, SF
Wells Ranch BB01-675 - Original Drilling - Original Drilling	17,268.09	16,379.00	1,135.34	891.47	4.656	CC, ES, SF
Wells Ranch State AA32-717 - Wellbore #1 - Plan 1	6,122.26	6,300.00	6,149.50	6,104.66	137.147	CC, ES
Wells Ranch State AA32-717 - Wellbore #1 - Plan 1	6,350.00	6,350.00	6,191.15	6,145.42	135.385	SF
Wells Ranch State AA32-724 - Wellbore #1 - Plan 1	6,118.42	6,227.17	6,581.63	6,537.30	148.466	CC, ES
Wells Ranch State AA32-724 - Wellbore #1 - Plan 1	6,450.00	6,300.00	6,669.27	6,623.70	146.368	SF
Wells Ranch State AA32-731 - Wellbore #1 - Plan 1	6,052.93	5,475.66	7,011.78	6,970.16	168.476	CC, ES
Wells Ranch State AA32-731 - Wellbore #1 - Plan 1	6,550.00	5,904.75	7,191.87	7,147.37	161.628	SF
Wells Ranch State AA32-737 - Wellbore #1 - Plan 1	6,012.88	4,888.98	7,283.03	7,243.76	185.475	CC, ES
Wells Ranch State AA32-737 - Wellbore #1 - Plan 1	6,500.00	5,314.65	7,458.03	7,415.85	176.815	SF
Wells Ranch State AA32-745 - Wellbore #1 - Plan 1	6,122.34	6,250.00	7,900.61	7,856.35	178.525	CC, ES
Wells Ranch State AA32-745 - Wellbore #1 - Plan 1	6,350.00	6,300.00	7,942.37	7,897.27	176.103	SF
Wells Ranch State AA32-751 - Wellbore #1 - Plan 1	6,119.97	6,172.83	8,275.98	8,232.22	189.146	CC, ES
Wells Ranch State AA32-751 - Wellbore #1 - Plan 1	6,450.00	6,250.00	8,362.67	8,317.72	186.070	SF
Wells Ranch State AA32-759 - Wellbore #1 - Plan 1	6,090.77	5,703.76	8,692.65	8,650.68	207.149	CC, ES
Wells Ranch State AA32-759 - Wellbore #1 - Plan 1	6,450.00	6,000.00	8,790.12	8,746.12	199.748	SF
Wells Ranch State AA32-763 - Wellbore #1 - Plan 1	6,043.82	5,014.94	8,963.35	8,923.77	226.451	CC
Wells Ranch State AA32-763 - Wellbore #1 - Plan 1	6,050.00	5,021.05	8,963.38	8,923.75	226.187	ES
Wells Ranch State AA32-763 - Wellbore #1 - Plan 1	6,600.00	5,503.12	9,187.96	9,145.27	215.267	SF
Wells Ranch State AA32-770 - Wellbore #1 - Plan 1	6,123.19	6,227.26	9,520.42	9,476.38	216.174	CC, ES
Wells Ranch State AA32-770 - Wellbore #1 - Plan 1	6,500.00	6,300.00	9,632.55	9,587.28	212.826	SF
Wells Ranch State AA32-775 - Wellbore #1 - Plan 1	6,118.61	6,124.99	9,873.61	9,830.08	226.819	CC, ES
Wells Ranch State AA32-775 - Wellbore #1 - Plan 1	6,400.00	6,200.00	9,936.87	9,892.26	222.736	SF
Wells Ranch State AA32-783 - Wellbore #1 - Plan 1						Out of range
Wells Ranch State AA32-789 - Wellbore #1 - Plan 1						Out of range
Wells Ranch State BB01-690 - Original Drilling - Original	17,268.09	16,119.00	2,098.05	1,844.50	8.275	CC, ES, SF
Wells Ranch USX BB05-09 - Original Drilling - Original D	6,148.32	5,988.38	5,956.28	5,913.61	139.596	CC
Wells Ranch USX BB05-09 - Original Drilling - Original D	6,150.00	5,989.78	5,956.28	5,913.60	139.560	ES
Wells Ranch USX BB05-09 - Original Drilling - Original D	6,550.00	6,326.76	6,078.95	6,034.15	135.696	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 BB03-659
Project:	Wells Ranch	TVD Reference:	Well @ 4777.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4777.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-659	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
BB Section 05						
Wells Ranch USX BB05-10 - Original Drilling - Original D	6,148.89	6,021.07	7,333.10	7,290.34	171.508	CC
Wells Ranch USX BB05-10 - Original Drilling - Original D	6,150.00	6,022.00	7,333.10	7,290.34	171.480	ES
Wells Ranch USX BB05-10 - Original Drilling - Original D	6,400.00	6,400.00	7,380.94	7,336.20	164.978	SF
Wells Ranch USX BB05-11 - Original Drilling - Original D	6,135.11	5,894.39	8,635.22	8,592.87	203.887	CC, ES
Wells Ranch USX BB05-11 - Original Drilling - Original D	6,500.00	6,206.27	8,738.11	8,693.76	197.025	SF
Wells Ranch USX BB05-12 - Original Drilling - Original D						Out of range
Wells Ranch USX BB05-13 - Original Drilling - Original D						Out of range
Wells Ranch USX BB05-14 - Original Drilling - Original D	6,152.90	5,979.00	8,961.95	8,919.33	210.307	CC, ES
Wells Ranch USX BB05-14 - Original Drilling - Original D	6,550.00	6,147.96	9,081.10	9,036.91	205.514	SF
Wells Ranch USX BB05-15 - Original Drilling - Original D	6,196.40	6,433.52	7,766.58	7,722.52	176.275	CC
Wells Ranch USX BB05-15 - Original Drilling - Original D	6,200.00	6,435.17	7,766.59	7,722.51	176.200	ES
Wells Ranch USX BB05-15 - Original Drilling - Original D	6,550.00	6,600.01	7,861.87	7,816.33	172.652	SF
Wells Ranch USX BB05-16 - Original Drilling - Original D	6,178.08	6,110.56	6,520.23	6,477.17	151.410	CC, ES
Wells Ranch USX BB05-16 - Original Drilling - Original D	6,600.00	6,530.57	6,647.88	6,602.45	146.332	SF
Wells Ranch USX BB05-23 - Original Drilling - Original D	6,158.92	6,026.08	6,713.69	6,670.89	156.849	CC, ES
Wells Ranch USX BB05-23 - Original Drilling - Original D	6,550.00	6,382.37	6,826.75	6,781.79	151.848	SF
Wells Ranch USX BB05-25 - Original Drilling - Original D	6,135.52	5,773.59	9,632.18	9,590.25	229.746	CC, ES
Wells Ranch USX BB05-25 - Original Drilling - Original D	6,600.00	6,138.42	9,792.74	9,748.50	221.325	SF

Noble Energy, Inc.
Anticollision Summary Report

Company:	Northern Region - DJ Basin	Local Co-ordinate Reference:	Well WELLS RANCH STATE BB03-659
Project:	Wells Ranch	TVD Reference:	Well @ 4777.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4777.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-659	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
BB Section 10						
Wells Ranch 10A - Original Drilling - Original Drilling - As	7,601.03	6,607.55	4,497.61	4,448.31	91.227	CC, ES
Wells Ranch 10A - Original Drilling - Original Drilling - As	10,100.00	6,631.52	5,145.17	5,078.22	76.853	SF
Wells Ranch 10B - Original Drilling - Original Drilling - As	7,775.98	6,509.33	7,295.82	7,245.43	144.805	CC
Wells Ranch 10B - Original Drilling - Original Drilling - As	7,800.00	6,509.43	7,295.86	7,245.33	144.400	ES
Wells Ranch 10B - Original Drilling - Original Drilling - As	12,900.00	6,521.75	8,915.40	8,824.86	98.466	SF
Wells Ranch 10C - Original Drilling - Original Drilling - As	10,397.58	6,489.18	4,369.45	4,295.13	58.788	CC
Wells Ranch 10C - Original Drilling - Original Drilling - As	10,400.00	6,489.18	4,369.45	4,295.10	58.767	ES
Wells Ranch 10C - Original Drilling - Original Drilling - As	12,000.00	6,489.62	4,654.01	4,564.97	52.267	SF
Wells Ranch 10F - Original Drilling - Original Drilling - As	6,876.92	6,705.87	4,589.44	4,542.17	97.098	CC, ES
Wells Ranch 10F - Original Drilling - Original Drilling - As	9,400.00	6,779.28	5,415.10	5,354.37	89.160	SF
Wells Ranch 10H - Original Drilling - Original Drilling - As	6,850.00	6,850.00	7,199.19	7,151.25	150.180	ES
Wells Ranch 10H - Original Drilling - Original Drilling - As	6,904.34	6,429.23	7,198.61	7,152.02	154.485	CC
Wells Ranch 10H - Original Drilling - Original Drilling - As	12,300.00	6,490.65	9,234.52	9,152.20	112.182	SF
Wells Ranch 10J - Original Drilling - Original Drilling - As	7,537.18	6,517.93	3,192.43	3,144.16	66.138	CC, ES
Wells Ranch 10J - Original Drilling - Original Drilling - As	8,900.00	6,529.46	3,471.14	3,414.22	60.988	SF
Wells Ranch 10K - Original Drilling - Original Drilling - As	7,853.20	6,408.76	5,987.29	5,936.71	118.372	CC
Wells Ranch 10K - Original Drilling - Original Drilling - As	7,900.00	6,408.88	5,987.47	5,936.60	117.689	ES
Wells Ranch 10K - Original Drilling - Original Drilling - As	11,700.00	6,507.94	7,115.74	7,035.16	88.311	SF
Wells Ranch 11-10 - Original Drilling - Original Drilling - A	7,051.32	6,497.00	3,862.16	3,814.92	81.752	CC, ES
Wells Ranch 11-10 - Original Drilling - Original Drilling - A	9,000.00	6,548.19	4,356.95	4,298.99	75.171	SF
Wells Ranch 12-10 - Original Drilling - Original Drilling - A	7,088.90	6,200.00	5,383.71	5,337.29	115.974	CC
Wells Ranch 12-10 - Original Drilling - Original Drilling - A	7,100.00	6,200.00	5,383.73	5,337.28	115.900	ES
Wells Ranch 12-10 - Original Drilling - Original Drilling - A	10,700.00	6,200.00	6,499.85	6,429.95	92.991	SF
Wells Ranch 13-10 - Original Drilling - Original Drilling - A	7,036.30	6,464.13	6,665.61	6,618.48	141.412	CC
Wells Ranch 13-10 - Original Drilling - Original Drilling - A	7,050.00	6,465.03	6,665.65	6,618.47	141.295	ES
Wells Ranch 13-10 - Original Drilling - Original Drilling - A	11,900.00	6,400.00	8,335.85	8,256.02	104.424	SF
Wells Ranch 14-10 - Original Drilling - Original Drilling - A	7,043.06	6,441.06	7,753.18	7,706.15	164.846	CC
Wells Ranch 14-10 - Original Drilling - Original Drilling - A	7,050.00	6,441.67	7,753.19	7,706.14	164.775	ES
Wells Ranch 14-10 - Original Drilling - Original Drilling - A	13,000.00	6,444.58	9,872.24	9,783.33	111.030	SF
Wells Ranch 21-10 - Original Drilling - Original Drilling - A	8,316.63	6,623.31	3,724.04	3,669.64	68.449	CC, ES
Wells Ranch 21-10 - Original Drilling - Original Drilling - A	9,900.00	6,594.17	4,046.58	3,979.68	60.492	SF
Wells Ranch 22-10 - Original Drilling - Original Drilling - A	8,345.76	6,527.17	5,113.87	5,059.43	93.950	CC
Wells Ranch 22-10 - Original Drilling - Original Drilling - A	8,400.00	6,526.40	5,114.15	5,059.29	93.215	ES
Wells Ranch 22-10 - Original Drilling - Original Drilling - A	11,100.00	6,497.03	5,808.36	5,731.61	75.683	SF
Wells Ranch 23-10 - Original Drilling - Original Drilling - A	8,221.86	6,532.33	6,617.24	6,563.76	123.732	CC
Wells Ranch 23-10 - Original Drilling - Original Drilling - A	8,300.00	6,532.78	6,617.70	6,563.62	122.363	ES
Wells Ranch 23-10 - Original Drilling - Original Drilling - A	13,600.00	13,600.00	8,526.98	8,408.40	71.908	SF
Wells Ranch 24-10 - Original Drilling - Original Drilling - A	8,420.17	6,400.00	7,862.19	7,807.55	143.869	CC
Wells Ranch 24-10 - Original Drilling - Original Drilling - A	8,500.00	6,400.00	7,862.60	7,807.29	142.160	ES
Wells Ranch 24-10 - Original Drilling - Original Drilling - A	13,700.00	6,337.06	9,470.16	9,371.59	96.071	SF
Wells Ranch 31-10 - Original Drilling - Original Drilling - A	9,670.84	6,486.65	3,825.07	3,758.46	57.424	CC
Wells Ranch 31-10 - Original Drilling - Original Drilling - A	9,700.00	6,486.77	3,825.18	3,758.27	57.164	ES
Wells Ranch 31-10 - Original Drilling - Original Drilling - A	11,100.00	6,492.73	4,083.34	4,003.98	51.455	SF
Wells Ranch 32-10 - Original Drilling - Original Drilling - A	9,889.43	6,483.24	5,179.58	5,108.70	73.078	CC
Wells Ranch 32-10 - Original Drilling - Original Drilling - A	9,900.00	6,483.34	5,179.59	5,108.60	72.962	ES
Wells Ranch 32-10 - Original Drilling - Original Drilling - A	12,200.00	6,506.16	5,671.53	5,579.67	61.744	SF
Wells Ranch 33-10 - Original Drilling - Original Drilling - A	9,633.44	6,529.89	6,543.59	6,477.29	98.691	CC
Wells Ranch 33-10 - Original Drilling - Original Drilling - A	9,700.00	6,531.71	6,543.93	6,476.93	97.675	ES
Wells Ranch 33-10 - Original Drilling - Original Drilling - A	13,200.00	6,625.73	7,451.85	7,353.87	76.052	SF
Wells Ranch 34-10 - Original Drilling - Original Drilling - A	9,887.91	6,484.88	7,639.88	7,570.10	109.475	CC
Wells Ranch 34-10 - Original Drilling - Original Drilling - A	10,000.00	6,486.29	7,640.70	7,569.72	107.641	ES
Wells Ranch 34-10 - Original Drilling - Original Drilling - A	14,300.00	6,540.17	8,822.21	8,712.97	80.763	SF
Wells Ranch 41-10 - Original Drilling - Original Drilling - A	10,975.28	6,469.11	3,885.05	3,804.46	48.207	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 BB03-659
Project:	Wells Ranch	TVD Reference:	Well @ 4777.00ft
Reference Site:	BB Section 03	MD Reference:	Well @ 4777.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-659	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
BB Section 10						
Wells Ranch 41-10 - Original Drilling - Original Drilling - A	11,000.00	6,469.09	3,885.13	3,804.25	48.039	ES
Wells Ranch 41-10 - Original Drilling - Original Drilling - A	12,200.00	6,468.30	4,073.52	3,981.53	44.286	SF
Wells Ranch 42-10 - Original Drilling - Original Drilling - A	10,850.77	6,456.23	5,135.90	5,056.81	64.933	CC
Wells Ranch 42-10 - Original Drilling - Original Drilling - A	10,900.00	6,456.21	5,136.14	5,056.49	64.483	ES
Wells Ranch 42-10 - Original Drilling - Original Drilling - A	12,900.00	6,455.26	5,529.63	5,431.70	56.462	SF
Wells Ranch 43-10 - Original Drilling - Original Drilling - A	10,943.62	6,395.11	6,517.28	6,437.33	81.519	CC
Wells Ranch 43-10 - Original Drilling - Original Drilling - A	11,000.00	6,395.14	6,517.52	6,436.94	80.878	ES
Wells Ranch 43-10 - Original Drilling - Original Drilling - A	14,000.00	6,396.89	7,198.36	7,090.52	66.754	SF
Wells Ranch 44-10 - Original Drilling - Original Drilling - A	10,908.76	6,425.79	7,735.56	7,655.91	97.123	CC
Wells Ranch 44-10 - Original Drilling - Original Drilling - A	11,000.00	6,425.06	7,736.10	7,655.43	95.896	ES
Wells Ranch 44-10 - Original Drilling - Original Drilling - A	14,900.00	6,386.66	8,704.46	8,588.58	75.116	SF

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Reference Site:	BB Section 03	MD Reference:	Well @ 4777.00ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	WELLS RANCH STATE BB03-659	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
BB Section 11						
Wells 12-11 - Original Drilling - Original Drilling - As Drille	12,409.98	6,480.00	5,096.45	4,892.42	24.980	CC
Wells 12-11 - Original Drilling - Original Drilling - As Drille	12,500.00	6,480.00	5,097.24	4,892.16	24.854	ES
Wells 12-11 - Original Drilling - Original Drilling - As Drille	13,500.00	6,480.00	5,211.71	4,996.39	24.204	SF
Wells Ranch 13-11 - Original Drilling - Original Drilling - A	12,237.50	6,424.46	6,497.42	6,402.71	68.608	CC
Wells Ranch 13-11 - Original Drilling - Original Drilling - A	12,300.00	6,424.69	6,497.72	6,402.28	68.083	ES
Wells Ranch 13-11 - Original Drilling - Original Drilling - A	14,900.00	6,434.83	7,021.76	6,902.34	58.794	SF
Wells Ranch 14-11 - Original Drilling - Original Drilling - A	11,610.52	6,516.33	8,462.68	8,342.55	70.449	CC
Wells Ranch 14-11 - Original Drilling - Original Drilling - A	11,700.00	6,515.19	8,463.15	8,342.01	69.863	ES
Wells Ranch 14-11 - Original Drilling - Original Drilling - A	15,300.00	6,469.51	9,231.85	9,077.03	59.630	SF
Wells Ranch 23-11 - Original Drilling - Original Drilling - A	13,537.09	6,506.03	6,255.74	6,145.58	56.789	CC
Wells Ranch 23-11 - Original Drilling - Original Drilling - A	13,600.00	6,505.33	6,256.05	6,145.14	56.407	ES
Wells Ranch 23-11 - Original Drilling - Original Drilling - A	15,700.00	6,481.26	6,619.06	6,488.59	50.735	SF
Wells Ranch 24-11 - Original Drilling - Original Drilling - A	13,581.29	6,516.33	7,768.77	7,658.11	70.203	CC
Wells Ranch 24-11 - Original Drilling - Original Drilling - A	13,700.00	6,515.94	7,769.67	7,657.60	69.326	ES
Wells Ranch 24-11 - Original Drilling - Original Drilling - A	16,800.00	6,511.10	8,409.15	8,268.63	59.844	SF
Wells Ranch BB11-618 - Original Drilling - Original Drillin	11,443.81	6,328.00	7,837.25	7,756.75	97.354	CC
Wells Ranch BB11-618 - Original Drilling - Original Drillin	16,900.00	11,712.52	7,930.92	7,735.31	40.545	ES
Wells Ranch BB11-618 - Original Drilling - Original Drillin	17,268.09	12,324.00	7,943.86	7,736.54	38.318	SF
Wells Ranch BB11-627 - Original Drilling - Original Drillin	13,940.17	8,883.00	7,372.95	7,245.32	57.767	CC
Wells Ranch BB11-627 - Original Drilling - Original Drillin	17,100.00	11,910.00	7,377.79	7,177.51	36.836	ES
Wells Ranch BB11-627 - Original Drilling - Original Drillin	17,268.09	12,017.35	7,381.49	7,177.92	36.259	SF
Wells Ranch BB11-635 - Original Drilling - Original Drillin	15,081.59	10,148.83	6,855.86	6,701.72	44.478	CC
Wells Ranch BB11-635 - Original Drilling - Original Drillin	17,268.09	12,623.31	6,880.82	6,671.44	32.863	ES, SF
Wells Ranch BB11-643 - Original Drilling - Original Drillin	12,490.85	7,461.00	6,344.18	6,246.99	65.276	CC
Wells Ranch BB11-643 - Original Drilling - Original Drillin	17,268.09	12,730.00	6,390.23	6,179.06	30.261	ES, SF
Wells Ranch BB11-650 - Original Drilling - Original Drillin	16,700.00	16,700.00	5,861.86	5,611.21	23.387	ES, SF
Wells Ranch BB11-650 - Original Drilling - Original Drillin	17,268.09	12,428.26	5,843.79	5,637.05	28.265	CC
Wells Ranch BB11-658 - Original Drilling - Original Drillin	17,268.09	12,756.00	5,339.70	5,128.63	25.298	CC, ES, SF
Wells Ranch BB11-667 - Original Drilling - Original Drillin	11,349.91	5,540.24	4,774.02	4,696.41	61.507	CC
Wells Ranch BB11-667 - Original Drilling - Original Drillin	17,268.09	12,381.00	4,837.63	4,646.35	25.291	ES, SF
Wells Ranch BB11-674 - Original Drilling - Original Drillin	11,322.29	6,045.00	4,305.40	4,226.77	54.753	CC
Wells Ranch BB11-674 - Original Drilling - Original Drillin	16,200.00	16,200.00	4,317.40	4,077.27	17.979	ES, SF
Wells Ranch BB11-682 - Original Drilling - Original Drillin	16,341.35	11,435.00	3,685.48	3,501.66	20.049	CC
Wells Ranch BB11-682 - Original Drilling - Original Drillin	17,000.00	17,000.00	3,702.87	3,444.55	14.334	ES, SF
Wells Ranch State BB09-683 - Original Drilling - APD - R	7,050.00	11,765.49	3,571.39	3,477.94	38.218	ES
Wells Ranch State BB09-683 - Original Drilling - APD - R	7,076.22	11,739.39	3,571.29	3,478.07	38.313	CC
Wells Ranch State BB09-683 - Original Drilling - APD - R	13,200.00	6,300.00	3,762.38	3,657.96	36.031	SF
Wells Ranch USX BB11-01 - Original Drilling - Original D	16,108.73	6,527.72	3,831.07	3,690.27	27.210	CC
Wells Ranch USX BB11-01 - Original Drilling - Original D	16,200.00	6,528.19	3,832.15	3,690.26	27.006	ES
Wells Ranch USX BB11-01 - Original Drilling - Original D	16,800.00	6,531.32	3,892.93	3,745.44	26.395	SF
Wells Ranch USX BB11-02 - Original Drilling - Original D	14,766.56	6,543.12	3,837.49	3,712.66	30.741	CC
Wells Ranch USX BB11-02 - Original Drilling - Original D	14,800.00	6,542.95	3,837.64	3,712.40	30.642	ES
Wells Ranch USX BB11-02 - Original Drilling - Original D	15,600.00	6,539.05	3,926.95	3,794.26	29.594	SF
Wells Ranch USX BB11-03 - Original Drilling - Original D	13,540.12	6,499.32	3,758.65	3,648.46	34.109	CC
Wells Ranch USX BB11-03 - Original Drilling - Original D	13,600.00	6,498.35	3,759.13	3,648.22	33.893	ES
Wells Ranch USX BB11-03 - Original Drilling - Original D	14,400.00	6,483.55	3,855.74	3,737.35	32.567	SF
Wells Ranch USX BB11-04 - Original Drilling - Original D	12,264.72	6,502.39	3,860.99	3,765.71	40.524	CC
Wells Ranch USX BB11-04 - Original Drilling - Original D	12,300.00	6,502.62	3,861.15	3,765.45	40.349	ES
Wells Ranch USX BB11-04 - Original Drilling - Original D	13,300.00	6,509.00	3,997.37	3,892.25	38.028	SF
Wells Ranch USX BB11-06 - Original Drilling - Original D	13,476.55	6,512.93	5,037.28	4,927.83	46.023	CC
Wells Ranch USX BB11-06 - Original Drilling - Original D	13,500.00	6,512.37	5,037.33	4,927.60	45.906	ES
Wells Ranch USX BB11-06 - Original Drilling - Original D	15,000.00	6,522.90	5,262.49	5,138.71	42.516	SF
Wells Ranch USX BB11-07 - Original Drilling - Original D	14,904.18	6,543.76	5,164.27	5,037.66	40.789	CC

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

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Reference Well:	WELLS RANCH STATE BB03-659	Survey Calculation Method:	Minimum Curvature
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Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
BB Section 11						
Wells Ranch USX BB11-07 - Original Drilling - Original D	15,000.00	6,542.89	5,165.16	5,037.40	40.429	ES
Wells Ranch USX BB11-07 - Original Drilling - Original D	16,300.00	6,531.09	5,349.57	5,209.88	38.296	SF
Wells Ranch USX BB11-08 - Original Drilling - Original D	16,181.05	6,553.05	5,213.03	5,071.27	36.775	CC
Wells Ranch USX BB11-08 - Original Drilling - Original D	16,200.00	6,553.04	5,213.06	5,071.07	36.715	ES
Wells Ranch USX BB11-08 - Original Drilling - Original D	17,268.09	6,552.57	5,325.16	5,172.65	34.916	SF
Wells Ranch USX BB11-09 - Original Drilling - Original D	16,249.58	6,449.21	6,667.33	6,525.07	46.869	CC
Wells Ranch USX BB11-09 - Original Drilling - Original D	16,300.00	6,449.47	6,667.52	6,524.65	46.668	ES
Wells Ranch USX BB11-09 - Original Drilling - Original D	17,268.09	6,454.83	6,744.67	6,591.34	43.988	SF
Wells Ranch USX BB11-10 - Original Drilling - Original D	14,845.20	6,400.58	6,588.51	6,463.21	52.583	CC
Wells Ranch USX BB11-10 - Original Drilling - Original D	14,900.00	6,400.13	6,588.74	6,462.78	52.309	ES
Wells Ranch USX BB11-10 - Original Drilling - Original D	17,000.00	6,386.61	6,931.91	6,786.40	47.639	SF
Wells Ranch USX BB11-15 - Original Drilling - Original D	14,898.67	6,551.47	7,809.14	7,682.73	61.773	CC
Wells Ranch USX BB11-15 - Original Drilling - Original D	15,000.00	6,551.02	7,809.80	7,682.16	61.188	ES
Wells Ranch USX BB11-15 - Original Drilling - Original D	17,268.09	6,541.01	8,160.69	8,010.85	54.463	SF
Wells Ranch USX BB11-16 - Original Drilling - Original D	16,262.01	6,670.76	7,790.32	7,647.23	54.445	CC
Wells Ranch USX BB11-16 - Original Drilling - Original D	16,400.00	6,665.13	7,791.54	7,646.80	53.832	ES
Wells Ranch USX BB11-16 - Original Drilling - Original D	17,268.09	6,629.69	7,854.91	7,700.66	50.926	SF
Wells Ranch USX BB11-17 - Original Drilling - Original D	15,549.72	6,490.00	4,526.46	4,285.16	18.758	CC
Wells Ranch USX BB11-17 - Original Drilling - Original D	15,600.00	6,490.00	4,526.74	4,284.83	18.712	ES
Wells Ranch USX BB11-17 - Original Drilling - Original D	16,300.00	6,490.00	4,588.22	4,339.19	18.424	SF
Wells Ranch USX BB11-23 - Original Drilling - Original D	15,542.47	6,555.78	7,153.58	7,019.47	53.342	CC
Wells Ranch USX BB11-23 - Original Drilling - Original D	15,600.00	6,555.47	7,153.81	7,019.01	53.068	ES
Wells Ranch USX BB11-23 - Original Drilling - Original D	17,268.09	6,553.47	7,358.76	7,207.05	48.506	SF

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Reference Well:	WELLS RANCH STATE BB03-659	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDMP
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 4777.00ft

Offset Depths are relative to Offset Datum

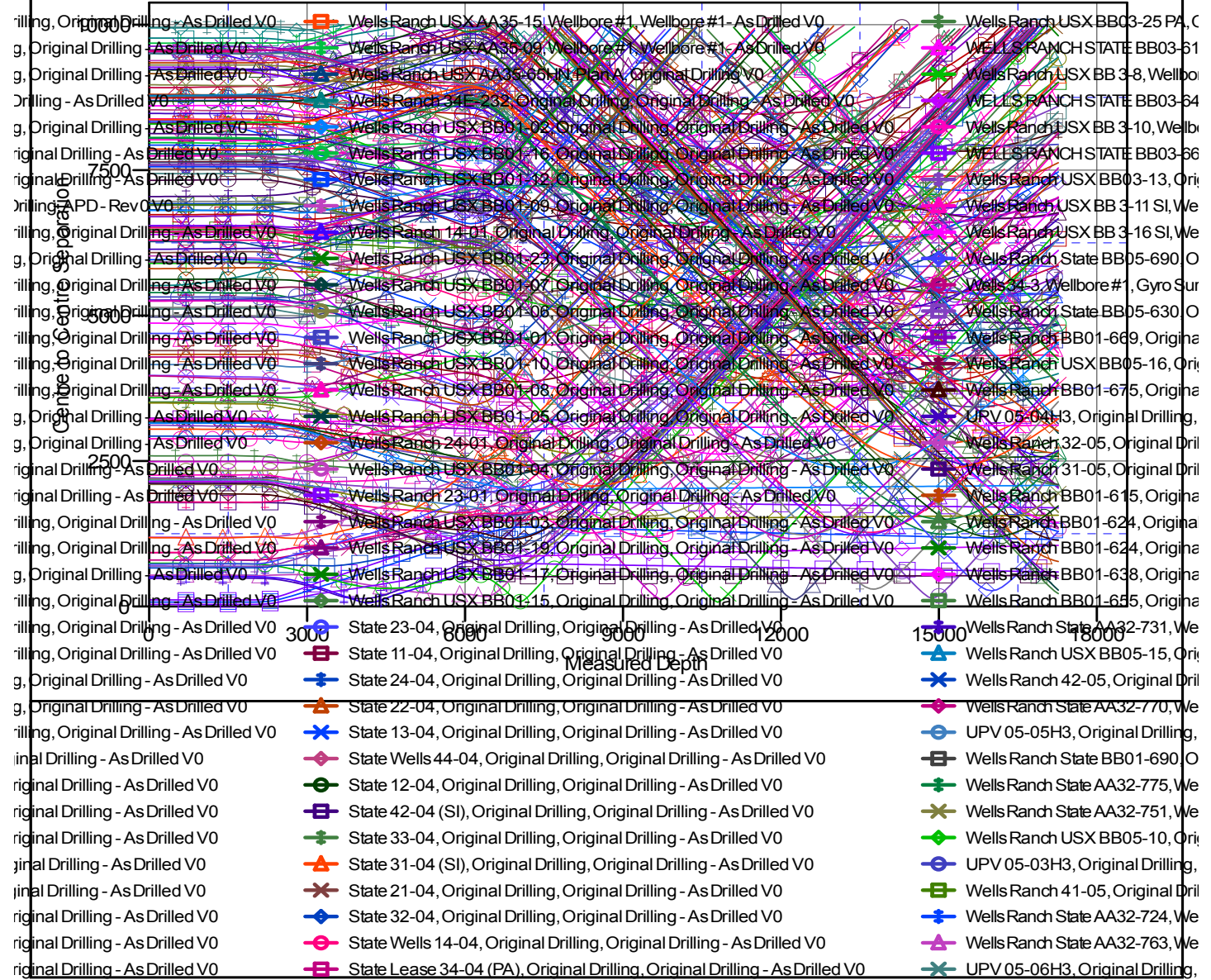
Central Meridian is -105.5000000

Coordinates are relative to: WELLS RANCH STATE BB03-659

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.69°

Ladder Plot



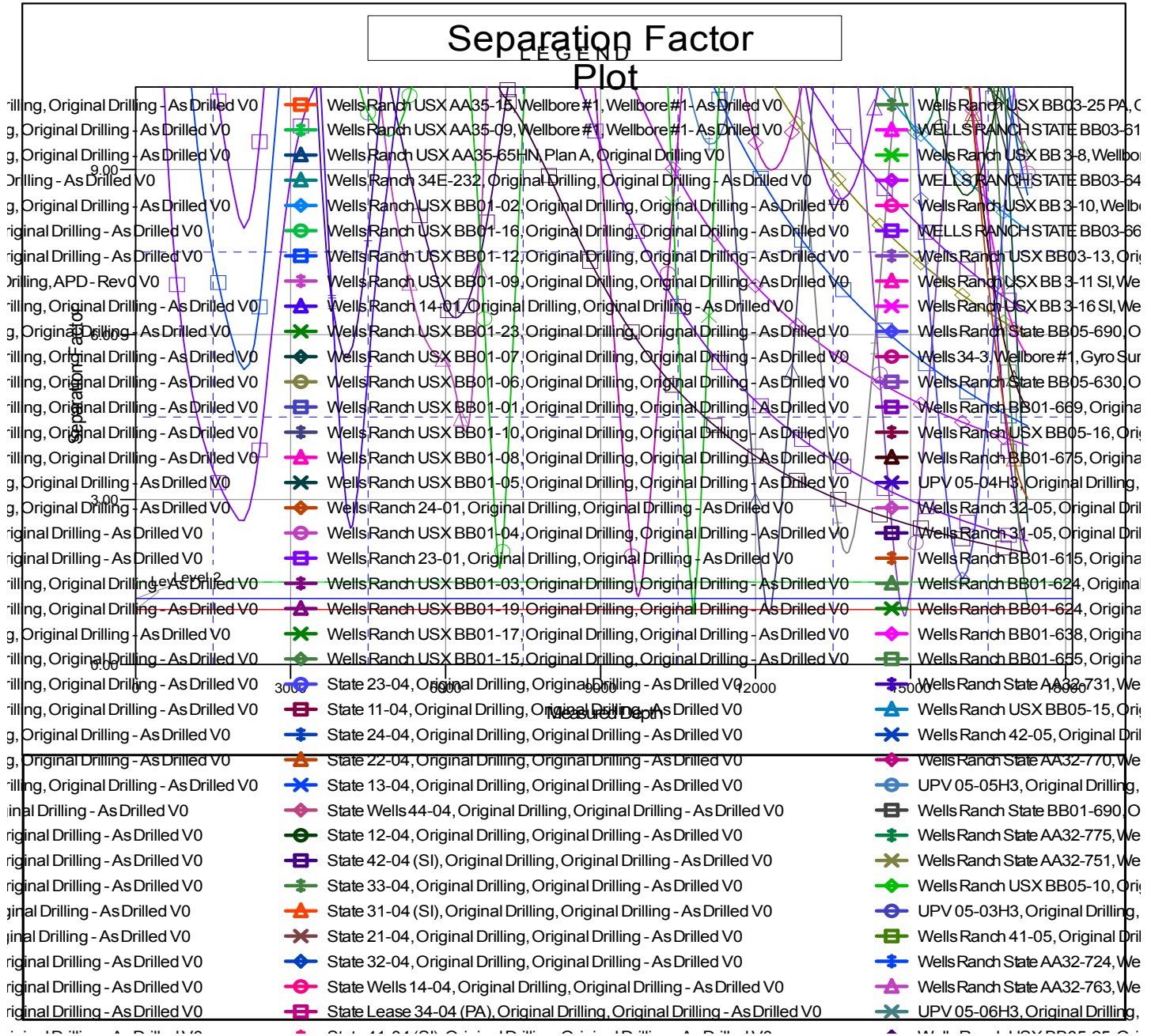
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Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

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Coordinate System is US State Plane 1983, Colorado Northern Zone
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