Project: Mustang
Site: D Section 23
Well: Guttersen D35-770
Wellbore: Guttersen D35-770 ST01
Design: Plan #4

Northern Region - DJ Basin

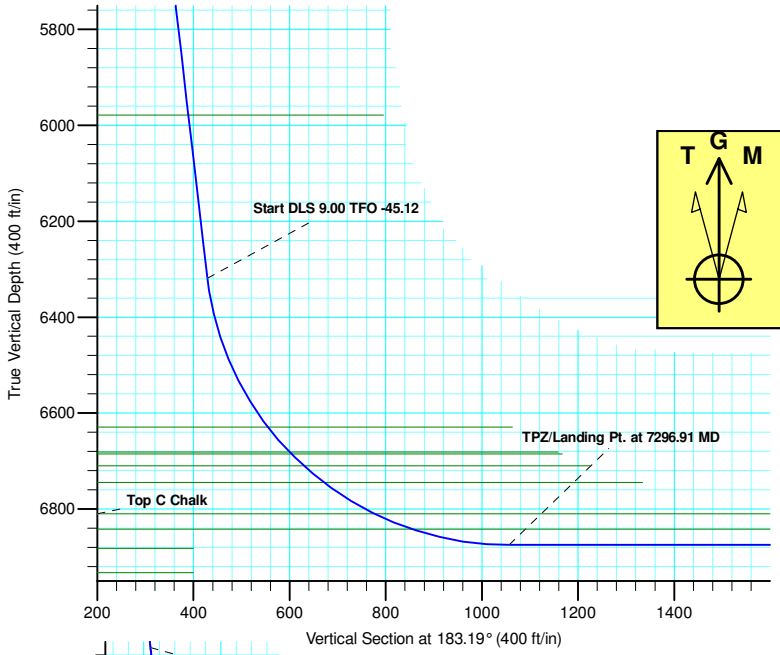
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

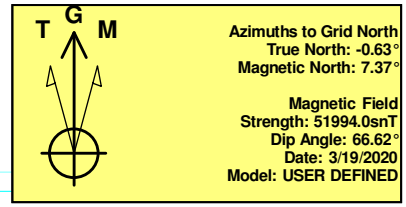
SECTION DETAILS

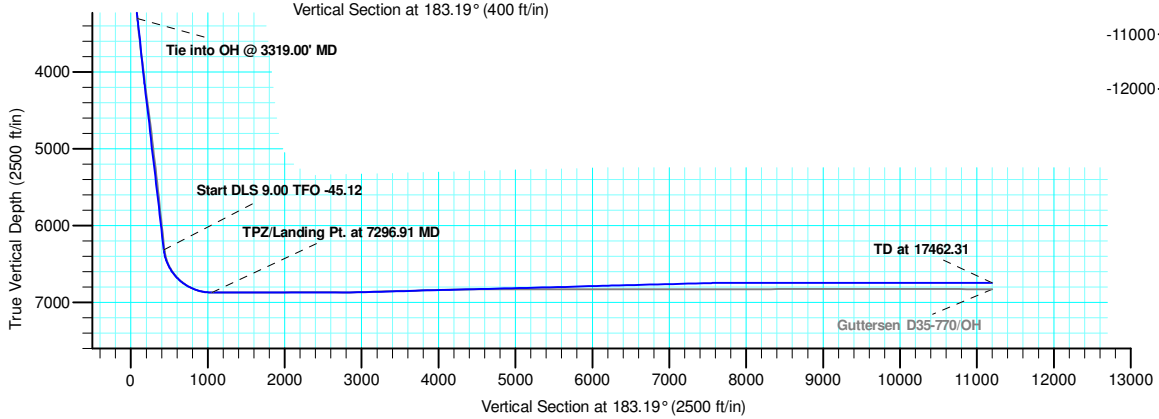
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	3319.00	9.80	238.35	3305.39	-80.32	-142.83	0.00	0.00	88.15
2	3369.00	8.41	225.15	3354.77	-85.14	-149.05	5.00	-130.00	93.30
3	3469.00	8.41	225.15	3453.69	-95.45	-159.42	0.00	0.00	104.18
4	3489.87	8.41	228.00	3474.34	-97.55	-161.63	2.00	91.65	106.40
5	4139.87	8.41	228.00	4117.35	-161.16	-232.28	0.00	0.00	173.85
6	4210.29	9.75	230.70	4186.88	-168.39	-240.72	2.00	18.96	181.53
7	6373.75	9.75	230.70	6319.08	-400.49	-524.33	0.00	0.00	429.06
8	7296.91	90.00	186.00	6875.00	-1021.99	-657.23	9.00	-45.12	1057.00
9	7816.39	90.00	186.00	6875.00	-1538.62	-711.53	0.00	0.00	1575.85
10	8147.89	90.00	179.37	6875.00	-1869.58	-727.05	2.00	-90.00	1907.16
11	8999.34	90.00	179.37	6875.00	-2720.97	-717.69	0.00	0.00	2756.71
12	9085.21	91.50	178.53	6873.88	-2806.82	-716.12	2.00	-29.13	2842.34
13	9699.62	91.50	178.53	6857.79	-3420.82	-700.40	0.00	0.00	3454.51
14	9789.48	91.50	180.33	6855.44	-3510.64	-699.51	2.00	89.99	3544.14
15	12385.37	91.50	180.33	6787.49	-6105.60	-714.53	0.00	0.00	6135.91
16	12455.64	91.50	178.93	6785.65	-6175.84	-714.07	2.00	-89.97	6206.02
17	13818.21	91.50	178.93	6749.98	-7537.71	-688.53	0.00	0.00	7564.35
18	13893.26	90.00	178.98	6749.00	-7612.74	-687.16	2.00	178.00	7639.19
19	17462.31	90.00	178.98	6749.00	-11181.21	-623.49	0.00	0.00	11198.58

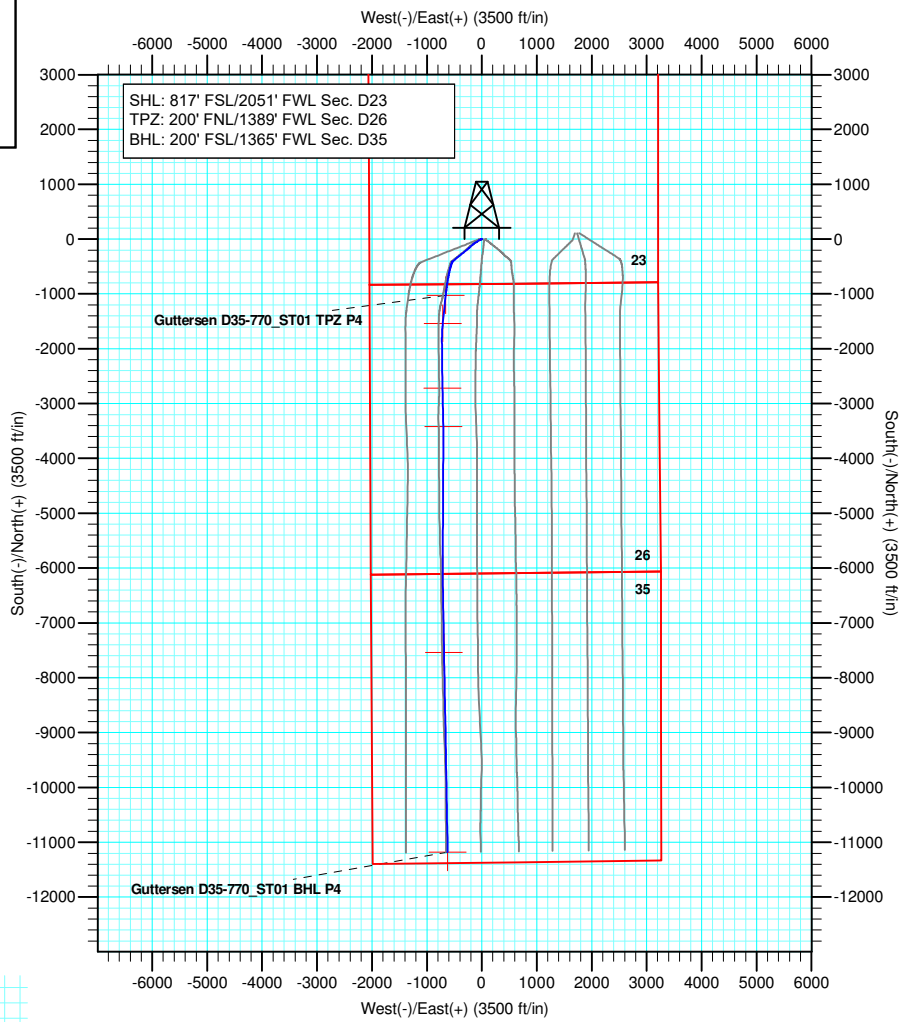
WELL DETAILS: Guttersen D35-770

+N/-S	+E/-W	Northing	Ground Level: 4829.00 Easting	Latittude	Longitude	Slot
0.00	0.00	1319345.54	3273539.84	40.2058540	-104.5206315	









Plan: Plan #4 (Guttersen D35-770/Guttersen D35-770 ST01)

Created By: Shelly C. Peterkin Date: 16:28, April 09 2020

Northern Region - DJ Basin

Mustang
D Section 23
Guttersen D35-770

Guttersen D35-770 ST01

Plan: Plan #4

Standard Planning Report

09 April, 2020

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen D35-770
Company:	Northern Region - DJ Basin	**TVD Reference:**	KB @ 4859.00ft
Project:	Mustang	**MD Reference:**	KB @ 4859.00ft
Site:	D Section 23	**North Reference:**	Grid
Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen D35-770 ST01		
Design:	Plan #4		

Project	Mustang, Weld County Colorado		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	D Section 23				
Site Position:		**Northing:**	1,319,071.18 usft	**Latitude:**	40.2050590
From:	Lat/Long	**Easting:**	3,274,917.86 usft	**Longitude:**	-104.5157090
Position Uncertainty:	0.00 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.64 °

Well	Guttersen D35-770				
Well Position	**+N/-S**	274.36 ft	**Northing:**	1,319,345.54 usft	**Latitude:**	40.2058540
	+E/-W	-1,378.02 ft	**Easting:**	3,273,539.84 usft	**Longitude:**	-104.5206315
Position Uncertainty		0.00 ft	**Wellhead Elevation:**		**Ground Level:**	4,829.00 ft

Wellbore	Guttersen D35-770 ST01				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	User Defined	3/19/2020	8.00	66.62	51,994.00000000

Design	Plan #4				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	3,319.00
Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**	
	0.00	0.00	0.00	183.19	

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen D35-770
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Site:	D Section 23	**North Reference:**	Grid
Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen D35-770 ST01		
Design:	Plan #4		

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
3,319.00	9.80	238.35	3,305.39	-80.32	-142.83	0.00	0.00	0.00	0.00	
3,369.00	8.41	225.15	3,354.77	-85.14	-149.05	5.00	-2.78	-26.41	-130.00	
3,469.00	8.41	225.15	3,453.69	-95.45	-159.42	0.00	0.00	0.00	0.00	
3,489.87	8.41	228.00	3,474.34	-97.55	-161.63	2.00	-0.01	13.67	91.65	
4,139.87	8.41	228.00	4,117.35	-161.16	-232.28	0.00	0.00	0.00	0.00	
4,210.29	9.75	230.70	4,186.88	-168.39	-240.72	2.00	1.91	3.84	18.96	
6,373.75	9.75	230.70	6,319.08	-400.49	-524.33	0.00	0.00	0.00	0.00	
7,296.91	90.00	186.00	6,875.00	-1,021.99	-657.23	9.00	8.69	-4.84	-45.12	Guttersen D35-770_S
7,816.39	90.00	186.00	6,875.00	-1,538.62	-711.53	0.00	0.00	0.00	0.00	Guttersen D35-770_S
8,147.89	90.00	179.37	6,875.00	-1,869.58	-727.05	2.00	0.00	-2.00	-90.00	
8,999.34	90.00	179.37	6,875.00	-2,720.97	-717.69	0.00	0.00	0.00	0.00	Guttersen D35-770_S
9,085.21	91.50	178.53	6,873.88	-2,806.82	-716.12	2.00	1.75	-0.97	-29.13	
9,699.62	91.50	178.53	6,857.79	-3,420.82	-700.40	0.00	0.00	0.00	0.00	Guttersen D35-770_S
9,789.48	91.50	180.33	6,855.44	-3,510.64	-699.51	2.00	0.00	2.00	89.99	
12,385.37	91.50	180.33	6,787.49	-6,105.60	-714.53	0.00	0.00	0.00	0.00	Guttersen D35-770_S
12,455.64	91.50	178.93	6,785.65	-6,175.84	-714.07	2.00	0.00	-2.00	-89.97	
13,818.21	91.50	178.93	6,749.98	-7,537.71	-688.53	0.00	0.00	0.00	0.00	Guttersen D35-770_S
13,893.26	90.00	178.98	6,749.00	-7,612.74	-687.16	2.00	-2.00	0.07	178.00	
17,462.31	90.00	178.98	6,749.00	-11,181.21	-623.49	0.00	0.00	0.00	0.00	Guttersen D35-770_S

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Site:	D Section 23	**North Reference:**	Grid
Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen D35-770 ST01		
Design:	Plan #4		

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)
3,319.00	9.80	238.35	3,305.39	-80.32	-142.83	88.15	0.21	-0.15	-0.83
Tie into OH @ 3319.00' MD									
3,369.00	8.41	225.15	3,354.77	-85.14	-149.05	93.30	5.00	-2.78	-26.41
Start 100.00 hold at 3369.00 MD									
3,400.00	8.41	225.15	3,385.44	-88.34	-152.26	96.68	0.00	0.00	0.00
3,469.00	8.41	225.15	3,453.69	-95.45	-159.42	104.18	0.00	0.00	0.00
Start DLS 2.00 TFO 91.65									
3,489.87	8.41	228.00	3,474.34	-97.55	-161.63	106.40	2.00	-0.01	13.67
Start 650.00 hold at 3489.87 MD									
3,500.00	8.41	228.00	3,484.36	-98.54	-162.73	107.45	0.00	0.00	0.00
3,600.00	8.41	228.00	3,583.28	-108.33	-173.60	117.83	0.00	0.00	0.00
3,700.00	8.41	228.00	3,682.21	-118.12	-184.47	128.20	0.00	0.00	0.00
3,783.69	8.41	228.00	3,765.00	-126.31	-193.57	136.89	0.00	0.00	0.00
Parkman									
3,800.00	8.41	228.00	3,781.13	-127.90	-195.34	138.58	0.00	0.00	0.00
3,900.00	8.41	228.00	3,880.06	-137.69	-206.21	148.96	0.00	0.00	0.00
4,000.00	8.41	228.00	3,978.98	-147.48	-217.08	159.33	0.00	0.00	0.00
4,100.00	8.41	228.00	4,077.91	-157.26	-227.95	169.71	0.00	0.00	0.00
4,139.87	8.41	228.00	4,117.35	-161.16	-232.28	173.85	0.00	0.00	0.00
Start DLS 2.00 TFO 18.96									
4,186.07	9.29	229.86	4,163.00	-165.83	-237.64	178.80	2.00	1.90	4.03
Sussex									
4,200.00	9.56	230.35	4,176.74	-167.29	-239.39	180.36	2.00	1.91	3.55
4,210.29	9.75	230.70	4,186.88	-168.39	-240.72	181.53	2.00	1.92	3.38
Start 2163.46 hold at 4210.29 MD									
4,300.00	9.75	230.70	4,275.30	-178.01	-252.48	191.79	0.00	0.00	0.00
4,400.00	9.75	230.70	4,373.85	-188.74	-265.59	203.24	0.00	0.00	0.00
4,500.00	9.75	230.70	4,472.41	-199.47	-278.70	214.68	0.00	0.00	0.00
4,600.00	9.75	230.70	4,570.96	-210.20	-291.81	226.12	0.00	0.00	0.00
4,700.00	9.75	230.70	4,669.52	-220.93	-304.92	237.56	0.00	0.00	0.00
4,800.00	9.75	230.70	4,768.07	-231.65	-318.03	249.00	0.00	0.00	0.00
4,900.00	9.75	230.70	4,866.63	-242.38	-331.14	260.44	0.00	0.00	0.00
4,946.04	9.75	230.70	4,912.00	-247.32	-337.17	265.71	0.00	0.00	0.00
Shannon									
5,000.00	9.75	230.70	4,965.18	-253.11	-344.25	271.89	0.00	0.00	0.00
5,100.00	9.75	230.70	5,063.74	-263.84	-357.36	283.33	0.00	0.00	0.00
5,200.00	9.75	230.70	5,162.29	-274.57	-370.46	294.77	0.00	0.00	0.00
5,300.00	9.75	230.70	5,260.85	-285.30	-383.57	306.21	0.00	0.00	0.00
5,400.00	9.75	230.70	5,359.40	-296.03	-396.68	317.65	0.00	0.00	0.00
5,500.00	9.75	230.70	5,457.96	-306.75	-409.79	329.09	0.00	0.00	0.00
5,600.00	9.75	230.70	5,556.51	-317.48	-422.90	340.53	0.00	0.00	0.00
5,700.00	9.75	230.70	5,655.07	-328.21	-436.01	351.98	0.00	0.00	0.00
5,800.00	9.75	230.70	5,753.62	-338.94	-449.12	363.42	0.00	0.00	0.00
5,900.00	9.75	230.70	5,852.18	-349.67	-462.23	374.86	0.00	0.00	0.00
6,000.00	9.75	230.70	5,950.73	-360.40	-475.33	386.30	0.00	0.00	0.00
6,028.68	9.75	230.70	5,979.00	-363.47	-479.09	389.58	0.00	0.00	0.00
Teepee Buttes									
6,100.00	9.75	230.70	6,049.29	-371.12	-488.44	397.74	0.00	0.00	0.00
6,200.00	9.75	230.70	6,147.84	-381.85	-501.55	409.18	0.00	0.00	0.00
6,300.00	9.75	230.70	6,246.40	-392.58	-514.66	420.63	0.00	0.00	0.00
6,373.75	9.75	230.70	6,319.08	-400.49	-524.33	429.06	0.00	0.00	0.00
Start DLS 9.00 TFO -45.12									
6,400.00	11.54	222.31	6,344.88	-403.84	-527.82	432.60	9.00	6.81	-31.98

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Site:	D Section 23	**North Reference:**	Grid
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Wellbore:	Guttersen D35-770 ST01		
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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)
6,450.00	15.38	212.08	6,393.50	-413.16	-534.71	442.29	9.00	7.67	-20.45
6,500.00	19.49	205.97	6,441.20	-426.29	-541.89	455.80	9.00	8.23	-12.22
6,550.00	23.74	201.95	6,487.67	-443.13	-549.31	473.03	9.00	8.50	-8.04
6,600.00	28.07	199.10	6,532.64	-463.60	-556.92	493.88	9.00	8.65	-5.70
6,650.00	32.44	196.97	6,575.82	-487.55	-564.69	518.24	9.00	8.74	-4.28
6,700.00	36.84	195.29	6,616.95	-514.85	-572.56	545.93	9.00	8.80	-3.36
6,715.19	38.18	194.84	6,629.00	-523.78	-574.96	554.98	9.00	8.82	-2.91
Sharon Springs									
6,750.00	41.26	193.92	6,655.77	-545.33	-580.48	576.80	9.00	8.84	-2.65
6,784.38	44.30	193.12	6,681.00	-568.03	-585.93	599.77	9.00	8.86	-2.34
Top A Chalk									
6,789.99	44.80	192.99	6,685.00	-571.86	-586.82	603.65	9.00	8.87	-2.20
Top A Marl									
6,800.00	45.69	192.78	6,692.05	-578.79	-588.41	610.65	9.00	8.87	-2.14
6,826.25	48.02	192.25	6,710.00	-597.49	-592.56	629.55	9.00	8.88	-2.03
Top B Chalk									
6,850.00	50.13	191.80	6,725.56	-615.04	-596.29	647.28	9.00	8.89	-1.89
6,881.25	52.91	191.25	6,745.00	-639.00	-601.18	671.48	9.00	8.89	-1.76
Top B Marl									
6,900.00	54.58	190.93	6,756.09	-653.84	-604.08	686.46	9.00	8.90	-1.66
6,950.00	59.03	190.16	6,783.46	-694.96	-611.73	727.94	9.00	8.91	-1.54
7,000.00	63.49	189.46	6,807.50	-738.15	-619.19	771.48	9.00	8.92	-1.41
7,005.65	63.99	189.38	6,810.00	-743.15	-620.02	776.52	9.00	8.92	-1.34
Top C Chalk									
7,050.00	67.95	188.81	6,828.06	-783.14	-626.42	816.80	9.00	8.92	-1.30
7,090.28	71.54	188.31	6,842.00	-820.50	-632.04	854.42	9.00	8.93	-1.23
Top C Marl									
7,100.00	72.41	188.20	6,845.01	-829.65	-633.37	863.62	9.00	8.93	-1.19
7,150.00	76.88	187.62	6,858.25	-877.39	-640.00	911.66	9.00	8.93	-1.16
7,200.00	81.34	187.05	6,867.69	-926.08	-646.26	960.62	9.00	8.93	-1.12
7,250.00	85.81	186.51	6,873.28	-975.40	-652.13	1,010.20	9.00	8.93	-1.09
7,296.91	90.00	186.00	6,875.00	-1,021.99	-657.23	1,057.00	9.00	8.93	-1.08
TPZ/Landing Pt. at 7296.91 MD									
7,300.00	90.00	186.00	6,875.00	-1,025.06	-657.56	1,060.08	0.00	0.00	0.00
7,400.00	90.00	186.00	6,875.00	-1,124.52	-668.01	1,159.96	0.00	0.00	0.00
7,500.00	90.00	186.00	6,875.00	-1,223.97	-678.46	1,259.84	0.00	0.00	0.00
7,600.00	90.00	186.00	6,875.00	-1,323.42	-688.91	1,359.72	0.00	0.00	0.00
7,700.00	90.00	186.00	6,875.00	-1,422.87	-699.37	1,459.60	0.00	0.00	0.00
7,800.00	90.00	186.00	6,875.00	-1,522.33	-709.82	1,559.48	0.00	0.00	0.00
7,816.39	90.00	186.00	6,875.00	-1,538.62	-711.53	1,575.85	0.00	0.00	0.00
Start DLS 2.00 TFO -90.00									
7,900.00	90.00	184.33	6,875.00	-1,621.89	-719.06	1,659.41	2.00	0.00	-2.00
8,000.00	90.00	182.33	6,875.00	-1,721.72	-724.86	1,759.41	2.00	0.00	-2.00
8,100.00	90.00	180.33	6,875.00	-1,821.69	-727.18	1,859.35	2.00	0.00	-2.00
8,147.89	90.00	179.37	6,875.00	-1,869.58	-727.05	1,907.16	2.00	0.00	-2.00
Start 851.44 hold at 8147.89 MD									
8,200.00	90.00	179.37	6,875.00	-1,921.68	-726.48	1,959.15	0.00	0.00	0.00
8,300.00	90.00	179.37	6,875.00	-2,021.68	-725.38	2,058.93	0.00	0.00	0.00
8,400.00	90.00	179.37	6,875.00	-2,121.67	-724.28	2,158.71	0.00	0.00	0.00
8,500.00	90.00	179.37	6,875.00	-2,221.67	-723.18	2,258.48	0.00	0.00	0.00
8,600.00	90.00	179.37	6,875.00	-2,321.66	-722.08	2,358.26	0.00	0.00	0.00
8,700.00	90.00	179.37	6,875.00	-2,421.65	-720.98	2,458.04	0.00	0.00	0.00

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen D35-770
Company:	Northern Region - DJ Basin	**TVD Reference:**	KB @ 4859.00ft
Project:	Mustang	**MD Reference:**	KB @ 4859.00ft
Site:	D Section 23	**North Reference:**	Grid
Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen D35-770 ST01		
Design:	Plan #4		

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)
8,800.00	90.00	179.37	6,875.00	-2,521.65	-719.88	2,557.82	0.00	0.00	0.00
8,900.00	90.00	179.37	6,875.00	-2,621.64	-718.78	2,657.59	0.00	0.00	0.00
8,999.34	90.00	179.37	6,875.00	-2,720.97	-717.69	2,756.71	0.00	0.00	0.00
Start DLS 2.00 TFO -29.13									
9,085.21	91.50	178.53	6,873.88	-2,806.82	-716.12	2,842.34	2.00	1.75	-0.97
Start 614.41 hold at 9085.21 MD									
9,100.00	91.50	178.53	6,873.49	-2,821.60	-715.74	2,857.07	0.00	0.00	0.00
9,200.00	91.50	178.53	6,870.87	-2,921.53	-713.18	2,956.71	0.00	0.00	0.00
9,300.00	91.50	178.53	6,868.25	-3,021.47	-710.62	3,056.35	0.00	0.00	0.00
9,400.00	91.50	178.53	6,865.63	-3,121.40	-708.07	3,155.98	0.00	0.00	0.00
9,500.00	91.50	178.53	6,863.02	-3,221.33	-705.51	3,255.62	0.00	0.00	0.00
9,600.00	91.50	178.53	6,860.40	-3,321.27	-702.95	3,355.25	0.00	0.00	0.00
9,699.62	91.50	178.53	6,857.79	-3,420.82	-700.40	3,454.51	0.00	0.00	0.00
Start DLS 2.00 TFO 89.99									
9,789.48	91.50	180.33	6,855.44	-3,510.64	-699.51	3,544.14	2.00	0.00	2.00
Start 2595.89 hold at 9789.48 MD									
9,800.00	91.50	180.33	6,855.16	-3,521.16	-699.57	3,554.64	0.00	0.00	0.00
9,900.00	91.50	180.33	6,852.54	-3,621.12	-700.15	3,654.49	0.00	0.00	0.00
10,000.00	91.50	180.33	6,849.93	-3,721.08	-700.73	3,754.33	0.00	0.00	0.00
10,100.00	91.50	180.33	6,847.31	-3,821.05	-701.31	3,854.17	0.00	0.00	0.00
10,200.00	91.50	180.33	6,844.69	-3,921.01	-701.89	3,954.01	0.00	0.00	0.00
10,300.00	91.50	180.33	6,842.07	-4,020.98	-702.47	4,053.85	0.00	0.00	0.00
10,400.00	91.50	180.33	6,839.46	-4,120.94	-703.04	4,153.69	0.00	0.00	0.00
10,500.00	91.50	180.33	6,836.84	-4,220.91	-703.62	4,253.53	0.00	0.00	0.00
10,600.00	91.50	180.33	6,834.22	-4,320.87	-704.20	4,353.37	0.00	0.00	0.00
10,700.00	91.50	180.33	6,831.60	-4,420.83	-704.78	4,453.22	0.00	0.00	0.00
10,800.00	91.50	180.33	6,828.99	-4,520.80	-705.36	4,553.06	0.00	0.00	0.00
10,900.00	91.50	180.33	6,826.37	-4,620.76	-705.94	4,652.90	0.00	0.00	0.00
11,000.00	91.50	180.33	6,823.75	-4,720.73	-706.51	4,752.74	0.00	0.00	0.00
11,100.00	91.50	180.33	6,821.13	-4,820.69	-707.09	4,852.58	0.00	0.00	0.00
11,200.00	91.50	180.33	6,818.52	-4,920.65	-707.67	4,952.42	0.00	0.00	0.00
11,300.00	91.50	180.33	6,815.90	-5,020.62	-708.25	5,052.26	0.00	0.00	0.00
11,400.00	91.50	180.33	6,813.28	-5,120.58	-708.83	5,152.10	0.00	0.00	0.00
11,500.00	91.50	180.33	6,810.66	-5,220.55	-709.41	5,251.94	0.00	0.00	0.00
11,600.00	91.50	180.33	6,808.05	-5,320.51	-709.98	5,351.79	0.00	0.00	0.00
11,700.00	91.50	180.33	6,805.43	-5,420.47	-710.56	5,451.63	0.00	0.00	0.00
11,800.00	91.50	180.33	6,802.81	-5,520.44	-711.14	5,551.47	0.00	0.00	0.00
11,900.00	91.50	180.33	6,800.19	-5,620.40	-711.72	5,651.31	0.00	0.00	0.00
12,000.00	91.50	180.33	6,797.58	-5,720.37	-712.30	5,751.15	0.00	0.00	0.00
12,100.00	91.50	180.33	6,794.96	-5,820.33	-712.88	5,850.99	0.00	0.00	0.00
12,200.00	91.50	180.33	6,792.34	-5,920.29	-713.46	5,950.83	0.00	0.00	0.00
12,300.00	91.50	180.33	6,789.72	-6,020.26	-714.03	6,050.67	0.00	0.00	0.00
12,385.37	91.50	180.33	6,787.49	-6,105.60	-714.53	6,135.91	0.00	0.00	0.00
Start DLS 2.00 TFO -89.97									
12,400.00	91.50	180.04	6,787.11	-6,120.22	-714.57	6,150.51	2.00	0.00	-2.00
12,455.64	91.50	178.93	6,785.65	-6,175.84	-714.07	6,206.02	2.00	0.00	-2.00
Start 1362.57 hold at 12455.64 MD									
12,500.00	91.50	178.93	6,784.49	-6,220.18	-713.24	6,250.24	0.00	0.00	0.00
12,600.00	91.50	178.93	6,781.87	-6,320.13	-711.37	6,349.93	0.00	0.00	0.00
12,700.00	91.50	178.93	6,779.25	-6,420.07	-709.49	6,449.62	0.00	0.00	0.00
12,800.00	91.50	178.93	6,776.64	-6,520.02	-707.62	6,549.31	0.00	0.00	0.00
12,900.00	91.50	178.93	6,774.02	-6,619.97	-705.74	6,648.99	0.00	0.00	0.00
13,000.00	91.50	178.93	6,771.40	-6,719.92	-703.87	6,748.68	0.00	0.00	0.00

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen D35-770
Company:	Northern Region - DJ Basin	**TVD Reference:**	KB @ 4859.00ft
Project:	Mustang	**MD Reference:**	KB @ 4859.00ft
Site:	D Section 23	**North Reference:**	Grid
Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen D35-770 ST01		
Design:	Plan #4		

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)
13,100.00	91.50	178.93	6,768.78	-6,819.87	-701.99	6,848.37	0.00	0.00	0.00
13,200.00	91.50	178.93	6,766.16	-6,919.81	-700.12	6,948.06	0.00	0.00	0.00
13,300.00	91.50	178.93	6,763.55	-7,019.76	-698.24	7,047.75	0.00	0.00	0.00
13,400.00	91.50	178.93	6,760.93	-7,119.71	-696.37	7,147.44	0.00	0.00	0.00
13,500.00	91.50	178.93	6,758.31	-7,219.66	-694.50	7,247.13	0.00	0.00	0.00
13,600.00	91.50	178.93	6,755.69	-7,319.61	-692.62	7,346.82	0.00	0.00	0.00
13,700.00	91.50	178.93	6,753.07	-7,419.56	-690.75	7,446.50	0.00	0.00	0.00
13,800.00	91.50	178.93	6,750.46	-7,519.50	-688.87	7,546.19	0.00	0.00	0.00
13,818.21	91.50	178.93	6,749.98	-7,537.71	-688.53	7,564.35	0.00	0.00	0.00
Start DLS 2.00 TFO 178.00									
13,893.26	90.00	178.98	6,749.00	-7,612.74	-687.16	7,639.19	2.00	-2.00	0.07
Start 3569.05 hold at 13893.26 MD									
13,900.00	90.00	178.98	6,749.00	-7,619.47	-687.04	7,645.90	0.00	0.00	0.00
14,000.00	90.00	178.98	6,749.00	-7,719.46	-685.25	7,745.63	0.00	0.00	0.00
14,100.00	90.00	178.98	6,749.00	-7,819.44	-683.47	7,845.36	0.00	0.00	0.00
14,200.00	90.00	178.98	6,749.00	-7,919.42	-681.69	7,945.09	0.00	0.00	0.00
14,300.00	90.00	178.98	6,749.00	-8,019.41	-679.90	8,044.82	0.00	0.00	0.00
14,400.00	90.00	178.98	6,749.00	-8,119.39	-678.12	8,144.55	0.00	0.00	0.00
14,500.00	90.00	178.98	6,749.00	-8,219.38	-676.33	8,244.28	0.00	0.00	0.00
14,600.00	90.00	178.98	6,749.00	-8,319.36	-674.55	8,344.01	0.00	0.00	0.00
14,700.00	90.00	178.98	6,749.00	-8,419.34	-672.77	8,443.74	0.00	0.00	0.00
14,800.00	90.00	178.98	6,749.00	-8,519.33	-670.98	8,543.47	0.00	0.00	0.00
14,900.00	90.00	178.98	6,749.00	-8,619.31	-669.20	8,643.20	0.00	0.00	0.00
15,000.00	90.00	178.98	6,749.00	-8,719.30	-667.42	8,742.93	0.00	0.00	0.00
15,100.00	90.00	178.98	6,749.00	-8,819.28	-665.63	8,842.66	0.00	0.00	0.00
15,200.00	90.00	178.98	6,749.00	-8,919.26	-663.85	8,942.39	0.00	0.00	0.00
15,300.00	90.00	178.98	6,749.00	-9,019.25	-662.06	9,042.12	0.00	0.00	0.00
15,400.00	90.00	178.98	6,749.00	-9,119.23	-660.28	9,141.85	0.00	0.00	0.00
15,500.00	90.00	178.98	6,749.00	-9,219.22	-658.50	9,241.58	0.00	0.00	0.00
15,600.00	90.00	178.98	6,749.00	-9,319.20	-656.71	9,341.31	0.00	0.00	0.00
15,700.00	90.00	178.98	6,749.00	-9,419.19	-654.93	9,441.04	0.00	0.00	0.00
15,800.00	90.00	178.98	6,749.00	-9,519.17	-653.14	9,540.77	0.00	0.00	0.00
15,900.00	90.00	178.98	6,749.00	-9,619.15	-651.36	9,640.50	0.00	0.00	0.00
16,000.00	90.00	178.98	6,749.00	-9,719.14	-649.58	9,740.23	0.00	0.00	0.00
16,100.00	90.00	178.98	6,749.00	-9,819.12	-647.79	9,839.96	0.00	0.00	0.00
16,200.00	90.00	178.98	6,749.00	-9,919.11	-646.01	9,939.69	0.00	0.00	0.00
16,300.00	90.00	178.98	6,749.00	-10,019.09	-644.22	10,039.42	0.00	0.00	0.00
16,400.00	90.00	178.98	6,749.00	-10,119.07	-642.44	10,139.15	0.00	0.00	0.00
16,500.00	90.00	178.98	6,749.00	-10,219.06	-640.66	10,238.88	0.00	0.00	0.00
16,600.00	90.00	178.98	6,749.00	-10,319.04	-638.87	10,338.61	0.00	0.00	0.00
16,700.00	90.00	178.98	6,749.00	-10,419.03	-637.09	10,438.34	0.00	0.00	0.00
16,800.00	90.00	178.98	6,749.00	-10,519.01	-635.31	10,538.07	0.00	0.00	0.00
16,900.00	90.00	178.98	6,749.00	-10,618.99	-633.52	10,637.79	0.00	0.00	0.00
17,000.00	90.00	178.98	6,749.00	-10,718.98	-631.74	10,737.52	0.00	0.00	0.00
17,100.00	90.00	178.98	6,749.00	-10,818.96	-629.95	10,837.25	0.00	0.00	0.00
17,200.00	90.00	178.98	6,749.00	-10,918.95	-628.17	10,936.98	0.00	0.00	0.00
17,300.00	90.00	178.98	6,749.00	-11,018.93	-626.39	11,036.71	0.00	0.00	0.00
17,400.00	90.00	178.98	6,749.00	-11,118.91	-624.60	11,136.44	0.00	0.00	0.00
17,462.31	90.00	178.98	6,749.00	-11,181.21	-623.49	11,198.58	0.00	0.00	0.00
TD at 17462.31									

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen D35-770
Company:	Northern Region - DJ Basin	**TVD Reference:**	KB @ 4859.00ft
Project:	Mustang	**MD Reference:**	KB @ 4859.00ft
Site:	D Section 23	**North Reference:**	Grid
Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen D35-770 ST01		
Design:	Plan #4		

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
Guttersen D35-770_STC - plan hits target center - Point	0.00	0.00	6,749.00	-11,181.21	-623.49	1,308,164.35	3,272,916.35	40.1751810	-104.5233045
Guttersen D35-770_STC - plan hits target center - Point	0.00	0.00	6,749.98	-7,537.71	-688.53	1,311,807.85	3,272,851.31	40.1851843	-104.5233937
Guttersen D35-770_STC - plan hits target center - Point	0.00	0.00	6,787.49	-6,105.60	-714.53	1,313,239.96	3,272,825.32	40.1891161	-104.5234302
Guttersen D35-770_STC - plan hits target center - Point	0.00	0.00	6,857.79	-3,420.82	-700.40	1,315,924.73	3,272,839.44	40.1964853	-104.5232738
Guttersen D35-770_STC - plan hits target center - Point	0.00	0.00	6,875.00	-2,720.97	-717.69	1,316,624.57	3,272,822.16	40.1984068	-104.5233081
Guttersen D35-770_STC - plan hits target center - Point	0.00	0.00	6,875.00	-1,021.99	-657.23	1,318,323.55	3,272,882.61	40.2030686	-104.5230247
Guttersen D35-770_STC - plan hits target center - Point	0.00	0.00	6,875.00	-1,538.62	-711.53	1,317,806.92	3,272,828.31	40.2016521	-104.5232395

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
579.01	579.00	Pierre			
781.01	781.00	Upper Pierre Aquifer Top			
1,669.03	1,669.00	Upper Pierre Aquifer Base			
3,783.69	3,765.00	Parkman			
4,186.07	4,163.00	Sussex			
4,946.04	4,912.00	Shannon			
6,028.68	5,979.00	Teepee Buttes			
6,715.19	6,629.00	Sharon Springs			
6,784.38	6,681.00	Top A Chalk			
6,789.99	6,685.00	Top A Marl			
6,826.25	6,710.00	Top B Chalk			
6,881.25	6,745.00	Top B Marl			
7,005.65	6,810.00	Top C Chalk			
7,090.28	6,842.00	Top C Marl			

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen D35-770
Company:	Northern Region - DJ Basin	**TVD Reference:**	KB @ 4859.00ft
Project:	Mustang	**MD Reference:**	KB @ 4859.00ft
Site:	D Section 23	**North Reference:**	Grid
Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Guttersen D35-770 ST01		
Design:	Plan #4		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
3,319.00	3,305.39	-80.32	-142.83	Tie into OH @ 3319.00' MD
3,369.00	3,354.77	-85.14	-149.05	Start 100.00 hold at 3369.00 MD
3,469.00	3,453.69	-95.45	-159.42	Start DLS 2.00 TFO 91.65
3,489.87	3,474.34	-97.55	-161.63	Start 650.00 hold at 3489.87 MD
4,139.87	4,117.35	-161.16	-232.28	Start DLS 2.00 TFO 18.96
4,210.29	4,186.88	-168.39	-240.72	Start 2163.46 hold at 4210.29 MD
6,373.75	6,319.08	-400.49	-524.33	Start DLS 9.00 TFO -45.12
7,296.91	6,875.00	-1,021.99	-657.23	TPZ/Landing Pt. at 7296.91 MD
7,816.39	6,875.00	-1,538.62	-711.53	Start DLS 2.00 TFO -90.00
8,147.89	6,875.00	-1,869.58	-727.05	Start 851.44 hold at 8147.89 MD
8,999.34	6,875.00	-2,720.97	-717.69	Start DLS 2.00 TFO -29.13
9,085.21	6,873.88	-2,806.82	-716.12	Start 614.41 hold at 9085.21 MD
9,699.62	6,857.79	-3,420.82	-700.40	Start DLS 2.00 TFO 89.99
9,789.48	6,855.44	-3,510.64	-699.51	Start 2595.89 hold at 9789.48 MD
12,385.37	6,787.49	-6,105.60	-714.53	Start DLS 2.00 TFO -89.97
12,455.64	6,785.65	-6,175.84	-714.07	Start 1362.57 hold at 12455.64 MD
13,818.21	6,749.98	-7,537.71	-688.53	Start DLS 2.00 TFO 178.00
13,893.26	6,749.00	-7,612.74	-687.16	Start 3569.05 hold at 13893.26 MD
17,462.31	6,749.00	-11,181.21	-623.49	TD at 17462.31

Northern Region - DJ Basin

Mustang
D Section 23
Guttersen D35-770

Guttersen D35-770 ST01
Plan #4

Anticollision Summary Report

09 April, 2020

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D35-770
Project:	Mustang	**TVD Reference:**	KB @ 4859.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4859.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D35-770 ST01	**Database:**	EDMP
Reference Design:	Plan #4	**Offset TVD Reference:**	Offset Datum

Reference	Plan #4		
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** 4/9/2020

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
86.00	1,931.00	Gyro (Guttersen D35-770 OH)	2_Gyro-NS-GC_OWSG	A020Ga: North seeking (gyrocompass) in casing
1,995.00	3,319.00	MWD+IFR1+MS (Guttersen D35-770 OH)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis
3,319.00	17,462.31	Plan #4 (Guttersen D35-770 ST01)	2_MWD+IFR1+MS	A008Mb: IFR dec & multi-station analysis

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 15						
Cally Blue D 15-12 (PR) - Wellbore #1 - Gyro Surveys	6,395.22	6,390.98	9,377.45	9,340.76	255.584	CC
Cally Blue D 15-12 (PR) - Wellbore #1 - Gyro Surveys	6,400.00	6,395.85	9,377.46	9,340.74	255.361	ES
Cally Blue D 15-12 (PR) - Wellbore #1 - Gyro Surveys	7,300.00	6,852.79	9,759.04	9,717.57	235.362	SF
Cally Blue D 15-14 (PR) - Wellbore #1 - Gyro Surveys	5,954.95	5,794.17	7,165.79	7,132.52	215.409	CC
Cally Blue D 15-14 (PR) - Wellbore #1 - Gyro Surveys	6,377.64	6,254.04	7,166.15	7,129.99	198.162	ES
Cally Blue D 15-14 (PR) - Wellbore #1 - Gyro Surveys	7,150.00	6,802.11	7,457.63	7,416.82	182.718	SF
Cally Blue D15-04J - Wellbore #1 - Wellbore #1- As Drille	2,718.27	2,720.32	6,231.03	6,214.52	377.364	CC, ES
Cally Blue D15-04J - Wellbore #1 - Wellbore #1- As Drille	6,800.00	6,800.00	6,525.51	6,486.07	165.427	SF
Cally Blue D15-09 - Wellbore #1 - Wellbore #1- As Drilled	1,986.74	1,933.96	6,916.53	6,903.30	523.138	CC
Cally Blue D15-09 - Wellbore #1 - Wellbore #1- As Drilled	2,090.00	2,033.47	6,916.63	6,903.04	508.690	ES
Cally Blue D15-09 - Wellbore #1 - Wellbore #1- As Drilled	6,950.00	6,821.72	7,383.64	7,343.67	184.738	SF
Cally Blue D15-10 - Wellbore #1 - Wellbore #1- As Drilled	0.00	0.00	7,595.10			
Cally Blue D15-10 - Wellbore #1 - Wellbore #1- As Drilled	1,944.57	1,821.02	7,600.21	7,587.44	595.309	ES
Cally Blue D15-10 - Wellbore #1 - Wellbore #1- As Drilled	7,100.00	6,778.01	8,066.09	8,025.72	199.772	SF
Cally Blue D15-11 (PA) - Wellbore #1 - Gyro Surveys	3,342.83	3,260.20	8,413.21	8,393.65	430.094	CC, ES
Cally Blue D15-11 (PA) - Wellbore #1 - Gyro Surveys	7,150.00	6,865.28	8,806.03	8,765.11	215.193	SF
Cally Blue D15-15 - Wellbore #1 - Wellbore #1- As Drilled	3,335.21	3,239.20	6,478.33	6,458.84	332.500	CC, ES
Cally Blue D15-15 - Wellbore #1 - Wellbore #1- As Drilled	7,000.00	6,721.84	6,815.97	6,776.04	170.721	SF
Cally D15-02 - Wellbore #1 - Wellbore #1-As Drilled	2,581.23	2,578.97	9,935.58	9,919.72	626.429	CC, ES
Cally D15-02 - Wellbore #1 - Wellbore #1-As Drilled	4,139.87	4,100.01	9,997.86	9,974.70	431.729	SF
Cally White D15-01 - Wellbore #1 - Wellbore #1- As Drille	2,284.44	2,288.74	9,480.05	9,465.47	650.293	CC, ES
Cally White D15-01 - Wellbore #1 - Wellbore #1- As Drille	6,950.00	6,815.21	9,961.00	9,921.11	249.691	SF
Cally White D15-07 - Wellbore #1 - Wellbore #1- As Drille	0.00	0.00	8,793.11			
Cally White D15-07 - Wellbore #1 - Wellbore #1- As Drille	86.00	22.52	8,793.24	8,793.10	10,000.000	ES
Cally White D15-07 - Wellbore #1 - Wellbore #1- As Drille	7,050.00	6,863.09	9,266.31	9,225.84	228.947	SF
Cally White D15-08 - Wellbore #1 - Wellbore #1- As Drille	2,614.09	2,710.94	8,209.60	8,193.23	501.715	CC, ES
Cally White D15-08 - Wellbore #1 - Wellbore #1- As Drille	6,950.00	6,820.87	8,706.68	8,666.78	218.179	SF
Chandler State D15-72-1HN - Original Drilling - Original D	6,406.88	11,640.00	5,312.83	5,268.87	120.859	CC, ES
Chandler State D15-72-1HN - Original Drilling - Original D	6,600.00	11,640.00	5,342.40	5,297.96	120.217	SF
Chandler State D15-73-1HN - Original Drilling - Original D	6,407.40	11,629.00	5,508.81	5,462.35	118.575	CC, ES
Chandler State D15-73-1HN - Original Drilling - Original D	6,600.00	11,629.00	5,536.83	5,489.87	117.921	SF
Chandler State D15-74-1HN - Original Drilling - Original D	6,426.24	11,785.00	5,885.43	5,804.89	73.075	CC, ES
Chandler State D15-74-1HN - Original Drilling - Original D	6,500.00	11,785.00	5,889.26	5,808.59	73.002	SF
Chandler State D23-79HN - Original Drilling - Original Dr	6,800.00	12,200.02	1,437.61	1,331.25	13.517	SF

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

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D35-770
Project:	Mustang	**TVD Reference:**	KB @ 4859.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4859.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D35-770 ST01	**Database:**	EDMP
Reference Design:	Plan #4	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 15						
Chandler State D23-79HN - Original Drilling - Original Dr	6,889.50	12,200.02	1,433.35	1,327.56	13.549	CC, ES
Duff D15-5 (PR) - Wellbore #1 - Gyro Surveys						Out of range
Guttersen D 15-21 (PR) - Wellbore #1 - Gyro Surveys	0.00	0.00	8,380.51			
Guttersen D 15-21 (PR) - Wellbore #1 - Gyro Surveys	3,333.56	3,325.72	8,393.50	8,373.71	424.141	ES
Guttersen D 15-21 (PR) - Wellbore #1 - Gyro Surveys	7,100.00	6,828.72	8,799.90	8,759.39	217.268	SF
Guttersen D 15-24 (PR) - Wellbore #1 - Gyro Surveys	3,333.95	3,200.00	7,408.57	7,389.22	382.904	CC, ES
Guttersen D 15-24 (PR) - Wellbore #1 - Gyro Surveys	7,150.00	6,797.82	7,822.58	7,781.90	192.316	SF
Guttersen D 15-29 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Guttersen D 22-28 (PR) - Wellbore #1 - Gyro Surveys	3,803.68	3,688.14	6,551.10	6,529.77	307.207	CC
Guttersen D 22-28 (PR) - Wellbore #1 - Gyro Surveys	4,700.00	4,512.54	6,555.09	6,529.53	256.427	ES
Guttersen D 22-28 (PR) - Wellbore #1 - Gyro Surveys	7,150.00	6,828.27	6,871.33	6,830.42	167.963	SF
Guttersen D14-32 - Wellbore #1 - Wellbore #1- As Drilled	455.35	411.98	7,541.35	7,538.69	2,834.170	CC
Guttersen D14-32 - Wellbore #1 - Wellbore #1- As Drilled	1,931.00	1,791.59	7,547.23	7,534.59	596.918	ES
Guttersen D14-32 - Wellbore #1 - Wellbore #1- As Drilled	7,000.00	6,685.77	8,107.33	8,067.77	204.922	SF
Guttersen D15-17 - Wellbore #1 - Wellbore #1- As Drilled	2,294.68	2,278.98	9,135.71	9,121.17	628.159	CC
Guttersen D15-17 - Wellbore #1 - Wellbore #1- As Drilled	2,373.00	2,332.26	9,135.90	9,121.11	618.022	ES
Guttersen D15-17 - Wellbore #1 - Wellbore #1- As Drilled	7,000.00	6,739.00	9,633.53	9,593.73	242.045	SF
Guttersen D15-18 (SI) - Wellbore #1 - Gyro Surveys	2,716.42	2,769.97	9,734.96	9,718.26	583.109	CC
Guttersen D15-18 (SI) - Wellbore #1 - Gyro Surveys	3,325.89	3,438.01	9,738.17	9,718.01	482.890	ES
Guttersen D15-18 (SI) - Wellbore #1 - Gyro Surveys	6,750.00	6,538.68	9,989.36	9,950.99	260.336	SF
Guttersen D15-20 (PR) - Wellbore #1 - Gyro Surveys	3,354.50	3,307.26	9,386.57	9,366.83	475.516	CC, ES
Guttersen D15-20 (PR) - Wellbore #1 - Gyro Surveys	7,100.00	6,873.07	9,692.62	9,651.85	237.769	SF
Guttersen D15-22 - Wellbore #1 - Wellbore #1- As Drilled	0.00	0.00	7,667.97			
Guttersen D15-22 - Wellbore #1 - Wellbore #1- As Drilled	2,703.33	2,748.92	7,670.15	7,653.52	461.233	ES
Guttersen D15-22 - Wellbore #1 - Wellbore #1- As Drilled	7,000.00	6,748.33	8,123.46	8,083.57	203.658	SF
Guttersen D15-28 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Guttersen D15-30 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Guttersen D22-27 - Wellbore #1 - Wellbore #1- As Drilled	0.00	0.00	5,669.89			
Guttersen D22-27 - Wellbore #1 - Wellbore #1- As Drilled	1,931.81	1,823.73	5,677.32	5,664.57	445.141	ES
Guttersen D22-27 - Wellbore #1 - Wellbore #1- As Drilled	8,400.00	8,400.00	7,307.35	7,258.76	150.393	SF
Guttersen D23-69HN - Guttersen D23-69HN OH - As-Dri	6,368.92	8,265.10	4,790.07	4,728.76	78.124	CC
Guttersen D23-69HN - Guttersen D23-69HN OH - As-Dri	6,373.75	8,264.78	4,790.08	4,728.75	78.108	ES
Guttersen D23-69HN - Guttersen D23-69HN OH - As-Dri	6,450.00	8,259.58	4,795.29	4,733.77	77.946	SF
HSR Guttersen 03-15 (SI) - Wellbore #1 - Gyro Surveys						Out of range
HSR Guttersen 6-15 (SI) - Wellbore #1 - Gyro Surveys	2,091.22	2,046.87	9,230.29	9,216.64	676.130	CC, ES
HSR Guttersen 6-15 (SI) - Wellbore #1 - Gyro Surveys	7,050.00	6,867.82	9,572.96	9,532.45	236.278	SF
Mills UPRC D 15-04 (SI) - Wellbore #1 - Gyro Surveys						Out of range
Two E Ranch 1-15B (SI) - Wellbore #1 - Gyro Surveys	6,388.88	6,245.50	8,240.52	8,204.46	228.550	CC
Two E Ranch 1-15B (SI) - Wellbore #1 - Gyro Surveys	6,400.00	6,256.41	8,240.58	8,204.45	228.105	ES
Two E Ranch 1-15B (SI) - Wellbore #1 - Gyro Surveys	7,300.00	6,787.42	8,604.06	8,563.00	209.568	SF

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D35-770
Project:	Mustang	**TVD Reference:**	KB @ 4859.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4859.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D35-770 ST01	**Database:**	EDMP
Reference Design:	Plan #4	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 22						
Dalbey D22-05 (SI) - Wellbore #1 - Gyro Surveys	6,533.10	6,485.77	6,831.37	6,793.91	182.389	CC
Dalbey D22-05 (SI) - Wellbore #1 - Gyro Surveys	6,550.00	6,499.59	6,831.45	6,793.88	181.868	ES
Dalbey D22-05 (SI) - Wellbore #1 - Gyro Surveys	9,100.00	6,916.34	7,982.71	7,932.90	160.275	SF
O'SH D 22-11 (SI) - Wellbore #1 - No Surveys	6,736.55	6,615.57	5,276.44	5,128.45	35.656	CC
O'SH D 22-11 (SI) - Wellbore #1 - No Surveys	6,800.00	6,662.05	5,277.20	5,128.04	35.379	ES
O'SH D 22-11 (SI) - Wellbore #1 - No Surveys	7,250.00	6,843.28	5,331.46	5,176.77	34.466	SF
Dalbey D 22-04 (PR) - Wellbore #1 - Gyro Surveys	6,445.63	6,400.00	7,587.16	7,550.26	205.624	CC
Dalbey D 22-04 (PR) - Wellbore #1 - Gyro Surveys	6,450.00	6,400.00	7,587.17	7,550.26	205.543	ES
Dalbey D 22-04 (PR) - Wellbore #1 - Gyro Surveys	8,200.00	6,791.97	8,398.05	8,353.72	189.439	SF
Dalbey D 22-3 (SI) - Wellbore #1 - Gyro Surveys	6,400.98	6,303.16	6,352.83	6,316.42	174.489	CC, ES
Dalbey D 22-3 (SI) - Wellbore #1 - Gyro Surveys	7,200.00	6,831.97	6,633.62	6,592.46	161.148	SF
Dalbey D22-6 (SI) - Wellbore #1 - Gyro Surveys	6,432.08	6,234.09	6,074.44	6,038.18	167.539	CC, ES
Dalbey D22-6 (SI) - Wellbore #1 - Gyro Surveys	11,500.00	11,500.00	9,434.95	9,363.40	131.874	SF
Guttersen D 22-18 (SI) - Wellbore #1 - Gyro Surveys	6,397.13	6,249.83	5,432.56	5,396.33	149.952	CC
Guttersen D 22-18 (SI) - Wellbore #1 - Gyro Surveys	6,400.00	6,253.18	5,432.56	5,396.31	149.866	ES
Guttersen D 22-18 (SI) - Wellbore #1 - Gyro Surveys	11,500.00	11,500.00	9,237.63	9,169.26	135.111	SF
Guttersen D34-719 - Wellbore #1 - Plan #1	12,421.61	12,469.79	1,926.84	1,817.05	17.551	CC
Guttersen D34-719 - Wellbore #1 - Plan #1	17,462.31	17,509.75	1,979.21	1,789.94	10.457	ES, SF
Guttersen D34-729 - Wellbore #1 - Plan #2	12,415.80	12,401.70	2,574.50	2,464.69	23.444	CC
Guttersen D34-729 - Wellbore #1 - Plan #2	17,462.31	17,447.39	2,637.92	2,448.44	13.922	ES, SF
Guttersen D34-739 - Wellbore #1 - Plan #3	12,418.28	12,417.61	3,232.92	3,123.13	29.445	CC
Guttersen D34-739 - Wellbore #1 - Plan #3	17,462.31	17,460.85	3,295.33	3,106.06	17.411	ES, SF
Guttersen D34-749 - Guttersen D34-749 OH - BHI-Rev A	8,121.89	8,231.08	3,932.76	3,881.05	76.053	CC
Guttersen D34-749 - Guttersen D34-749 OH - BHI-Rev A	12,455.64	12,564.11	3,938.26	3,827.88	35.681	ES
Guttersen D34-749 - Guttersen D34-749 OH - BHI-Rev A	17,462.31	17,569.74	4,019.42	3,830.32	21.255	SF
Guttersen D34-759 - Guttersen D34-759 OH - As-Drilled	16,009.72	16,076.00	4,513.97	4,348.46	27.275	CC, ES
Guttersen D34-759 - Guttersen D34-759 OH - As-Drilled	17,462.31	17,446.35	4,546.60	4,358.36	24.153	SF
Guttersen D34-769 - Guttersen D34-769 OH - As-Drilled	12,449.37	12,452.78	5,177.29	5,068.08	47.406	CC
Guttersen D34-769 - Guttersen D34-769 OH - As-Drilled	17,462.31	17,435.00	5,207.66	5,018.66	27.554	ES, SF
Guttersen D34-779 - Guttersen D34-779 OH - As-Drilled	3,359.59	2,712.62	5,797.06	5,781.57	374.263	CC
Guttersen D34-779 - Guttersen D34-779 OH - As-Drilled	16,300.00	16,356.69	5,844.56	5,675.30	34.530	ES
Guttersen D34-779 - Guttersen D34-779 OH - As-Drilled	17,462.31	17,533.83	5,869.46	5,681.39	31.208	SF
Guttersen State D 22-22 (SI) - Wellbore #1 - Gyro Survey	6,414.12	6,319.21	3,564.58	3,528.06	97.615	CC, ES
Guttersen State D 22-22 (SI) - Wellbore #1 - Gyro Survey	7,000.00	6,845.43	3,711.69	3,671.25	91.783	SF
Guttersen State D 22-24 (SI) - Wellbore #1 - Gyro Survey	6,673.85	6,567.48	4,165.67	4,127.36	108.734	CC
Guttersen State D 22-24 (SI) - Wellbore #1 - Gyro Survey	6,700.00	6,591.11	4,165.80	4,127.31	108.225	ES
Guttersen State D 22-24 (SI) - Wellbore #1 - Gyro Survey	7,900.00	6,842.34	4,474.63	4,430.06	100.397	SF
Guttersen State D22-750 - Guttersen State D22-750 OH	7,838.60	7,000.00	3,961.46	3,919.41	94.199	CC, ES
Guttersen State D22-750 - Guttersen State D22-750 OH	9,300.00	6,905.00	4,339.30	4,289.82	87.710	SF
Guttersen State D22-760 - Guttersen State D22-760 OH	7,494.32	7,453.19	4,693.72	4,653.66	117.162	CC
Guttersen State D22-760 - Guttersen State D22-760 OH	7,700.00	7,249.59	4,694.31	4,653.39	114.740	ES
Guttersen State D22-760 - Guttersen State D22-760 OH	8,800.00	8,800.00	4,887.03	4,837.98	99.648	SF
Guttersen State D22-770 - Guttersen State D22-770 OH	7,913.00	6,648.88	5,327.60	5,286.50	129.608	CC, ES
Guttersen State D22-770 - Guttersen State D22-770 OH	10,700.00	6,515.00	6,182.42	6,125.57	108.754	SF
Guttersen State D22-780 - Guttersen State D22-780 OH	3,368.74	2,747.00	5,827.02	5,811.35	371.908	CC
Guttersen State D22-780 - Guttersen State D22-780 OH	3,369.00	2,747.00	5,827.02	5,811.35	371.901	ES
Guttersen State D22-780 - Guttersen State D22-780 OH	8,600.00	8,600.00	5,975.87	5,920.55	108.024	SF
Guttersen State D34-790 - Wellbore #1 - Plan #3	12,418.88	12,552.59	1,303.32	1,193.40	11.857	CC
Guttersen State D34-790 - Wellbore #1 - Plan #3	17,462.31	17,595.24	1,365.87	1,176.59	7.216	ES, SF
O'SH D 22-12 (SI) - Wellbore #1 - Gyros	6,683.85	6,579.58	6,463.87	6,425.55	168.671	CC
O'SH D 22-12 (SI) - Wellbore #1 - Gyros	6,700.00	6,589.89	6,463.92	6,425.50	168.244	ES
O'SH D 22-12 (SI) - Wellbore #1 - Gyros	9,900.00	6,830.96	7,809.83	7,755.70	144.277	SF
O'SH D 22-13 (SI) - Wellbore #1 - Gyros	7,244.57	6,845.48	6,253.33	6,211.87	150.828	CC

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

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D35-770
Project:	Mustang	**TVD Reference:**	KB @ 4859.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4859.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D35-770 ST01	**Database:**	EDMP
Reference Design:	Plan #4	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 22						
O'SH D 22-13 (SI) - Wellbore #1 - Gyros	7,250.00	6,845.85	6,253.34	6,211.85	150.741	ES
O'SH D 22-13 (SI) - Wellbore #1 - Gyros	10,700.00	6,773.07	7,435.46	7,375.69	124.397	SF
O'SH D 22-14 (SI) - Wellbore #1 - Gyros	7,140.23	6,851.72	4,690.14	4,648.96	113.885	CC
O'SH D 22-14 (SI) - Wellbore #1 - Gyros	7,150.00	6,853.54	4,690.16	4,648.93	113.753	ES
O'SH D 22-14 (SI) - Wellbore #1 - Gyros	9,085.21	6,861.76	5,245.05	5,193.92	102.584	SF
Sevendust State D 22-1 (SI) - Wellbore #1 - Gyro Survey	0.00	0.00	4,703.80			
Sevendust State D 22-1 (SI) - Wellbore #1 - Gyro Survey	3,225.00	3,144.96	4,714.62	4,695.66	248.691	ES
Sevendust State D 22-1 (SI) - Wellbore #1 - Gyro Survey	6,900.00	6,709.85	5,025.11	4,985.60	127.169	SF
Spike ST GWS D 22-07 (SI) - Wellbore #1 - No Surveys	6,428.05	6,335.25	4,571.18	4,429.81	32.336	CC
Spike ST GWS D 22-07 (SI) - Wellbore #1 - No Surveys	6,450.00	6,356.50	4,571.37	4,429.51	32.224	ES
Spike ST GWS D 22-07 (SI) - Wellbore #1 - No Surveys	6,950.00	6,746.46	4,682.41	4,530.88	30.900	SF
Spike ST GWS D 22-08 (SI) - Wellbore #1 - Gyro Survey	5,150.78	5,080.52	3,375.91	3,347.34	118.187	CC
Spike ST GWS D 22-08 (SI) - Wellbore #1 - Gyro Survey	5,600.00	5,524.48	3,378.32	3,347.02	107.932	ES
Spike ST GWS D 22-08 (SI) - Wellbore #1 - Gyro Survey	6,850.00	6,665.39	3,530.17	3,490.92	89.944	SF
Spike ST GWS D 22-09 (PA) - Wellbore #1 - No Surveys	6,411.82	6,333.44	2,587.06	2,445.78	18.312	CC
Spike ST GWS D 22-09 (PA) - Wellbore #1 - No Surveys	6,450.00	6,370.50	2,587.71	2,445.57	18.205	ES
Spike ST GWS D 22-09 (PA) - Wellbore #1 - No Surveys	6,750.00	6,632.77	2,639.80	2,491.32	17.779	SF
Spike ST GWS D 22-15 (PR) - Wellbore #1 - Gyro Surve	6,981.16	6,793.28	3,546.31	3,506.13	88.261	CC
Spike ST GWS D 22-15 (PR) - Wellbore #1 - Gyro Surve	7,000.00	6,800.03	3,546.39	3,506.11	88.036	ES
Spike ST GWS D 22-15 (PR) - Wellbore #1 - Gyro Surve	8,000.00	6,870.08	3,747.61	3,702.40	82.895	SF
Spike ST GWS D 22-4J (PR) - Wellbore #1 - Gyro Surve	6,668.56	6,523.58	2,547.95	2,509.93	67.019	CC, ES
Spike ST GWS D 22-4J (PR) - Wellbore #1 - Gyro Surve	7,200.00	6,804.91	2,622.52	2,581.30	63.623	SF
Spike State D22-1J (PA) - Wellbore #1 - Gyro Surveys	6,377.83	6,282.98	4,648.07	4,611.81	128.183	CC, ES
Spike State D22-1J (PA) - Wellbore #1 - Gyro Surveys	7,050.00	6,806.98	4,880.89	4,840.41	120.577	SF
Spike State GWS D 22-10 (PA) - Wellbore #1 - Gyro Sur	6,546.20	6,482.61	3,944.05	3,906.58	105.257	CC
Spike State GWS D 22-10 (PA) - Wellbore #1 - Gyro Sur	6,550.00	6,485.67	3,944.05	3,906.56	105.189	ES
Spike State GWS D 22-10 (PA) - Wellbore #1 - Gyro Sur	7,200.00	6,862.39	4,072.52	4,031.97	100.447	SF
Spike State GWS D 22-2 (PR) - Wellbore #1 - Gyro Surv	3,641.74	3,537.85	5,701.32	5,680.64	275.669	CC
Spike State GWS D 22-2 (PR) - Wellbore #1 - Gyro Surv	4,400.00	4,231.67	5,702.61	5,678.62	237.688	ES
Spike State GWS D 22-2 (PR) - Wellbore #1 - Gyro Surv	7,050.00	6,754.61	5,964.00	5,923.72	148.042	SF

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D35-770
Project:	Mustang	**TVD Reference:**	KB @ 4859.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4859.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D35-770 ST01	**Database:**	EDMP
Reference Design:	Plan #4	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 23						
Guttersen 23-32 (SI) - Wellbore #1 - Gyro Surveys	86.00	14.78	2,898.21	2,898.09	10,000.000	CC
Guttersen 23-32 (SI) - Wellbore #1 - Gyro Surveys	2,184.00	2,112.41	2,905.68	2,891.77	208.839	ES
Guttersen 23-32 (SI) - Wellbore #1 - Gyro Surveys	6,650.00	6,512.07	3,546.69	3,509.13	94.415	SF
Guttersen 23-41 (PR) - Wellbore #1 - Gyro Surveys	86.00	0.00	4,574.53	4,574.43	10,000.000	CC
Guttersen 23-41 (PR) - Wellbore #1 - Gyro Surveys	2,223.60	2,197.32	4,587.19	4,572.96	322.322	ES
Guttersen 23-41 (PR) - Wellbore #1 - Gyro Surveys	6,850.00	6,632.33	5,406.98	5,368.43	140.271	SF
Guttersen 31-23 (PR) - Wellbore #1 - Gyro Surveys	2,039.77	2,022.70	3,992.76	3,979.21	294.712	CC
Guttersen 31-23 (PR) - Wellbore #1 - Gyro Surveys	2,184.00	2,160.49	3,993.10	3,979.03	283.838	ES
Guttersen 31-23 (PR) - Wellbore #1 - Gyro Surveys	6,800.00	6,715.03	4,704.29	4,665.52	121.341	SF
Guttersen 42-23 (PR) - Wellbore #1 - Gyro Surveys	86.00	30.44	3,576.54	3,576.39	10,000.000	CC
Guttersen 42-23 (PR) - Wellbore #1 - Gyro Surveys	2,184.00	2,140.23	3,587.69	3,573.69	256.225	ES
Guttersen 42-23 (PR) - Wellbore #1 - Gyro Surveys	6,800.00	6,629.36	4,342.43	4,304.02	113.061	SF
Guttersen D 23-20 (SI) - Wellbore #1 - Gyro Surveys	1,990.70	1,977.69	2,097.19	2,083.79	156.495	CC
Guttersen D 23-20 (SI) - Wellbore #1 - Gyro Surveys	1,995.00	1,981.08	2,097.19	2,083.77	156.269	ES
Guttersen D 23-20 (SI) - Wellbore #1 - Gyro Surveys	6,600.00	6,563.46	2,429.54	2,391.72	64.233	SF
Guttersen D23-711 - Guttersen D23-711 OH - As-Drilled	274.74	258.35	1,806.19	1,804.73	1,231.678	CC
Guttersen D23-711 - Guttersen D23-711 OH - As-Drilled	903.00	876.65	1,806.29	1,800.47	310.519	ES
Guttersen D23-711 - Guttersen D23-711 OH - As-Drilled	8,400.00	8,400.00	3,758.65	3,706.63	72.254	SF
Guttersen D35-720 - Wellbore #1 - Plan #2	240.39	222.38	1,772.39	1,771.19	1,471.960	CC
Guttersen D35-720 - Wellbore #1 - Plan #2	2,184.00	2,165.95	1,778.00	1,763.77	124.936	ES
Guttersen D35-720 - Wellbore #1 - Plan #2	17,462.31	17,407.36	3,228.39	3,040.26	17.161	SF
Guttersen D35-730 - Wellbore #1 - Plan #2	240.26	220.26	1,734.94	1,733.75	1,450.568	CC
Guttersen D35-730 - Wellbore #1 - Plan #2	2,184.00	2,163.95	1,740.54	1,726.32	122.366	ES
Guttersen D35-730 - Wellbore #1 - Plan #2	17,462.31	17,360.27	2,568.53	2,379.85	13.613	SF
Guttersen D35-740 - Wellbore #1 - Plan #2	240.13	220.12	1,697.51	1,696.31	1,420.380	CC
Guttersen D35-740 - Wellbore #1 - Plan #2	2,184.00	2,163.95	1,703.10	1,688.88	119.734	ES
Guttersen D35-740 - Wellbore #1 - Plan #2	17,462.31	17,385.56	1,908.55	1,720.29	10.138	SF
Guttersen D35-750 - Guttersen D35-750 OH - As-Drilled	918.80	919.78	73.85	67.83	12.273	CC
Guttersen D35-750 - Guttersen D35-750 OH - As-Drilled	2,184.00	2,185.30	78.62	65.24	5.874	ES, SF
Guttersen D35-760 - Guttersen D35-760 OH - As-Drilled	86.84	86.65	37.50	37.30	184.765	CC
Guttersen D35-760 - Guttersen D35-760 OH - As-Drilled	2,011.76	2,011.70	45.54	32.22	3.420	ES
Guttersen D35-760 - Guttersen D35-760 OH - As-Drilled	17,462.31	17,409.91	607.33	420.43	3.249	SF
Guttersen D35-770 - Guttersen D35-770 OH - As-Drilled	3,700.00	3,700.00	13.74	12.40	10.232	CC
Guttersen D35-770 - Guttersen D35-770 OH - As-Drilled	17,400.00	17,409.04	86.36	-72.30	0.544	Level 1, SF
Guttersen D35-770 - Guttersen D35-770 OH - As-Drilled	17,462.31	17,471.26	87.05	-72.59	0.545	Level 1, ES
Guttersen D35-780 - Wellbore #1 - As-Drilled	1,933.88	1,933.73	29.64	16.71	2.292	CC, ES, SF
Guttersen D35-780 - Wellbore #1 - Plan #4	1,966.68	1,966.54	29.53	16.49	2.264	CC
Guttersen D35-780 - Wellbore #1 - Plan #4	1,995.00	2,005.15	29.61	16.46	2.252	ES, SF
Guttersen State D23-721 - Guttersen State D23-721 OH	239.95	219.18	1,768.31	1,767.10	1,459.929	CC
Guttersen State D23-721 - Guttersen State D23-721 OH	2,257.57	2,285.31	1,768.55	1,755.06	131.060	ES
Guttersen State D23-721 - Guttersen State D23-721 OH	8,300.00	6,569.52	3,287.18	3,246.05	79.917	SF
Guttersen State D23-731 - Guttersen State D23-731 OH	2,346.88	2,414.66	1,729.87	1,716.27	127.128	CC, ES
Guttersen State D23-731 - Guttersen State D23-731 OH	7,150.00	7,224.98	2,483.32	2,445.59	65.828	SF
Guttersen State D23-741 - Guttersen State D23-741 OH	951.37	936.70	1,690.97	1,684.77	272.709	CC
Guttersen State D23-741 - Guttersen State D23-741 OH	2,188.80	2,174.28	1,693.20	1,679.79	126.233	ES
Guttersen State D23-741 - Guttersen State D23-741 OH	6,800.00	7,538.17	1,741.35	1,704.57	47.343	SF
Guttersen State D23-751 - Guttersen State D23-751 OH	939.58	940.24	164.60	158.43	26.693	CC
Guttersen State D23-751 - Guttersen State D23-751 OH	997.00	996.60	164.81	158.24	25.111	ES
Guttersen State D23-751 - Guttersen State D23-751 OH	2,090.00	2,089.33	172.69	159.35	12.951	SF
Guttersen State D23-761 - Guttersen State D23-761 OH	2,582.24	2,579.53	147.70	133.68	10.536	CC, ES
Guttersen State D23-761 - Guttersen State D23-761 OH	2,657.00	2,650.83	148.67	134.48	10.480	SF
Guttersen State D23-771 - Guttersen State D23-771 OH	596.70	594.20	147.13	143.37	39.074	CC
Guttersen State D23-771 - Guttersen State D23-771 OH	2,503.48	2,495.54	149.78	135.96	10.833	ES

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

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D35-770
Project:	Mustang	**TVD Reference:**	KB @ 4859.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4859.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D35-770 ST01	**Database:**	EDMP
Reference Design:	Plan #4	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 23						
Guttersen State D23-771 - Guttersen State D23-771 OH	7,142.32	7,231.25	184.16	145.58	4.773	SF
Guttersen State D23-781 - Guttersen State D23-781 OH	687.91	686.94	149.52	145.11	33.882	CC
Guttersen State D23-781 - Guttersen State D23-781 OH	1,995.00	1,993.21	156.80	143.50	11.787	ES, SF
Guttersen State D35-790 - Wellbore #1 - Plan #2	240.51	224.50	1,809.83	1,808.62	1,493.106	CC
Guttersen State D35-790 - Wellbore #1 - Plan #2	2,184.00	2,167.95	1,815.44	1,801.20	127.503	ES
Guttersen State D35-790 - Wellbore #1 - Plan #2	17,462.31	17,435.32	3,888.45	3,700.22	20.657	SF
Guttersen USX D 23-17 (PR) - Wellbore #1 - Gyro Surve	2,030.92	1,988.63	3,632.00	3,618.55	270.011	CC
Guttersen USX D 23-17 (PR) - Wellbore #1 - Gyro Surve	2,090.00	2,035.82	3,632.14	3,618.51	266.587	ES
Guttersen USX D 23-17 (PR) - Wellbore #1 - Gyro Surve	6,850.00	6,625.52	4,441.92	4,403.40	115.314	SF
Parker Blue D 23-09 (SI) - Wellbore #1 - Gyro Surveys	2,162.20	2,086.65	2,953.26	2,939.43	213.557	CC
Parker Blue D 23-09 (SI) - Wellbore #1 - Gyro Surveys	2,184.00	2,107.04	2,953.27	2,939.36	212.355	ES
Parker Blue D 23-09 (SI) - Wellbore #1 - Gyro Surveys	6,950.00	6,726.96	3,722.91	3,683.53	94.525	SF
Parker Blue D 23-10 (SI) - Wellbore #1 - Gyro Surveys	2,196.76	2,155.15	1,866.00	1,851.94	132.686	CC, ES
Parker Blue D 23-10 (SI) - Wellbore #1 - Gyro Surveys	6,650.00	6,510.66	2,555.69	2,518.12	68.023	SF
Parker Blue D 23-11 (SI) - Wellbore #1 - Gyro Surveys	299.78	284.28	1,408.86	1,407.19	844.037	CC
Parker Blue D 23-11 (SI) - Wellbore #1 - Gyro Surveys	1,281.00	1,243.84	1,410.67	1,402.23	167.159	ES
Parker Blue D 23-11 (SI) - Wellbore #1 - Gyro Surveys	6,500.00	6,425.39	1,910.53	1,873.71	51.887	SF
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	6,431.98	6,347.01	1,114.72	1,078.06	30.407	CC, ES
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	6,650.00	6,548.61	1,135.07	1,096.92	29.758	SF
Parker Blue D 23-14 (SI) - Wellbore #1 - Gyro Surveys	2,208.40	2,178.44	121.50	107.36	8.593	CC, ES
Parker Blue D 23-14 (SI) - Wellbore #1 - Gyro Surveys	2,373.00	2,342.92	125.28	110.46	8.457	SF
Parker Blue D 23-15 (SI) - Wellbore #1 - Gyro Surveys	105.15	46.86	1,404.50	1,404.26	5,653.494	CC
Parker Blue D 23-15 (SI) - Wellbore #1 - Gyro Surveys	2,228.78	2,195.44	1,416.34	1,402.12	99.586	ES
Parker Blue D 23-15 (SI) - Wellbore #1 - Gyro Surveys	6,850.00	6,686.88	1,928.50	1,889.42	49.354	SF
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	3,341.35	3,331.71	1,532.65	1,512.83	77.333	CC, ES
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	6,550.00	6,471.79	1,705.60	1,665.58	42.616	SF
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	1,973.34	1,957.41	2,784.04	2,770.76	209.661	CC
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	3,319.00	3,326.69	2,790.16	2,770.38	141.109	ES
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	6,700.00	6,596.48	3,055.23	3,016.85	79.604	SF
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	1,985.28	1,969.75	2,826.36	2,813.02	211.843	CC
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	1,995.00	1,978.08	2,826.37	2,812.98	211.111	ES
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	6,600.00	6,487.22	3,247.80	3,210.32	86.641	SF
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	1,988.79	1,951.22	3,791.19	3,777.88	284.902	CC
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	1,995.00	1,954.69	3,791.19	3,777.86	284.409	ES
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	6,750.00	6,716.97	4,351.52	4,312.67	112.032	SF
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	0.00	0.00	4,000.21			
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	1,932.78	1,868.28	4,000.95	3,988.05	310.227	ES
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	6,750.00	6,611.42	4,313.05	4,274.49	111.851	SF
Two E Ranch 1-23 (SI) - Wellbore #1 - Gyro Surveys	2,210.17	2,179.70	2,335.85	2,321.69	164.911	CC, ES
Two E Ranch 1-23 (SI) - Wellbore #1 - Gyro Surveys	6,900.00	6,698.67	3,058.89	3,019.73	78.104	SF

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D35-770
Project:	Mustang	**TVD Reference:**	KB @ 4859.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4859.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D35-770 ST01	**Database:**	EDMP
Reference Design:	Plan #4	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 24						
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	164.11	44.94	6,885.32	6,884.86	10,000.000	CC
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	2,200.29	2,143.00	6,894.79	6,880.77	491.801	ES
Dalbey D 24-10 (PR) - Wellbore #1 - Gyro Surveys	11,400.00	6,745.79	9,655.17	9,597.84	168.395	SF
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	160.90	31.62	6,362.08	6,361.66	10,000.000	CC
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	2,208.13	2,153.61	6,374.00	6,359.93	453.090	ES
Dalbey D 24-15 (SI) - Wellbore #1 - Gyro Surveys	11,200.00	6,700.00	8,574.76	8,516.87	148.120	SF
Glazier 2-24 (PR) - Wellbore #1 - Gyro Surveys	132.91	22.57	8,056.03	8,055.73	10,000.000	CC
Glazier 2-24 (PR) - Wellbore #1 - Gyro Surveys	2,187.19	2,110.92	8,061.52	8,047.61	579.867	ES
Glazier 2-24 (PR) - Wellbore #1 - Gyro Surveys	8,900.00	6,733.80	9,988.08	9,942.84	220.788	SF
Guttersen 11-24 (SI) - Wellbore #1 - Gyro Surveys	2,185.05	2,100.00	5,457.02	5,443.15	393.377	CC, ES
Guttersen 11-24 (SI) - Wellbore #1 - Gyro Surveys	6,950.00	6,615.78	6,325.51	6,286.72	163.088	SF
Guttersen 12-24 (SI) - Wellbore #1 - Gyro Surveys	225.71	136.65	4,625.04	4,624.15	5,183.773	CC
Guttersen 12-24 (SI) - Wellbore #1 - Gyro Surveys	1,755.00	1,624.10	4,627.55	4,616.13	404.961	ES
Guttersen 12-24 (SI) - Wellbore #1 - Gyro Surveys	6,950.00	6,650.46	5,463.77	5,424.79	140.171	SF
Guttersen 21-24 (SI) - Wellbore #1 - Gyro Surveys	2,183.14	2,088.17	6,421.87	6,408.04	464.069	CC
Guttersen 21-24 (SI) - Wellbore #1 - Gyro Surveys	2,184.00	2,088.84	6,421.87	6,408.03	463.981	ES
Guttersen 21-24 (SI) - Wellbore #1 - Gyro Surveys	7,000.00	6,713.37	7,351.67	7,312.38	187.124	SF
Guttersen 22-24 (PR) - Wellbore #1 - Gyro Surveys	967.19	872.09	5,827.20	5,821.15	963.286	CC
Guttersen 22-24 (PR) - Wellbore #1 - Gyro Surveys	2,192.16	2,109.86	5,828.76	5,814.86	419.389	ES
Guttersen 22-24 (PR) - Wellbore #1 - Gyro Surveys	7,050.00	6,703.47	6,730.37	6,690.90	170.517	SF
Guttersen 24A (SI) - Wellbore #1 - Gyro Surveys	111.59	2.13	5,517.97	5,517.78	10,000.000	CC
Guttersen 24A (SI) - Wellbore #1 - Gyro Surveys	1,755.00	1,617.97	5,525.23	5,513.82	484.111	ES
Guttersen 24A (SI) - Wellbore #1 - Gyro Surveys	7,000.00	6,623.86	6,442.23	6,403.26	165.339	SF
Guttersen 24J (PR) - Wellbore #1 - Gyro Surveys	103.66	0.00	6,402.20	6,402.04	10,000.000	CC
Guttersen 24J (PR) - Wellbore #1 - Gyro Surveys	272.00	145.89	6,402.87	6,401.78	5,880.100	ES
Guttersen 24J (PR) - Wellbore #1 - Gyro Surveys	7,050.00	6,772.76	7,402.23	7,362.66	187.069	SF
Guttersen 24N (SI) - Wellbore #1 - MWD Surveys	2,189.92	2,106.93	6,611.86	6,599.10	518.546	CC, ES
Guttersen 24N (SI) - Wellbore #1 - MWD Surveys	7,100.00	6,820.68	7,537.47	7,498.55	193.655	SF
Guttersen 24S (PR) - Wellbore #1 - As-Drilled	193.39	92.31	7,430.02	7,429.38	10,000.000	CC
Guttersen 24S (PR) - Wellbore #1 - As-Drilled	272.00	166.05	7,430.16	7,429.12	7,130.411	ES
Guttersen 24S (PR) - Wellbore #1 - As-Drilled	10,600.00	6,725.75	9,958.55	9,906.20	190.209	SF
Guttersen 43-24 (PR) - Wellbore #1 - Gyro Surveys	248.64	156.07	7,910.82	7,909.78	7,607.758	CC
Guttersen 43-24 (PR) - Wellbore #1 - Gyro Surveys	2,287.29	2,447.36	7,915.37	7,900.26	523.613	ES
Guttersen 43-24 (PR) - Wellbore #1 - Gyro Surveys	10,500.00	6,804.30	9,991.24	9,936.85	183.699	SF
Guttersen 44-24 (PR) - Wellbore #1 - Gyro Surveys	907.86	800.00	7,816.41	7,810.82	1,397.461	CC
Guttersen 44-24 (PR) - Wellbore #1 - Gyro Surveys	2,187.68	2,107.11	7,820.57	7,806.68	563.173	ES
Guttersen 44-24 (PR) - Wellbore #1 - Gyro Surveys	11,600.00	6,631.65	9,992.00	9,930.79	163.229	SF
Karch Blue D 24-11 (PA) - Wellbore #1 - Gyro Surveys	624.56	537.71	5,464.48	5,460.79	1,480.649	CC
Karch Blue D 24-11 (PA) - Wellbore #1 - Gyro Surveys	2,184.00	2,076.09	5,467.54	5,453.77	396.986	ES
Karch Blue D 24-11 (PA) - Wellbore #1 - Gyro Surveys	7,200.00	6,787.68	6,342.11	6,294.80	134.060	SF
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	1,441.58	1,360.13	4,134.55	4,125.15	439.472	CC
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	1,755.00	1,652.34	4,135.53	4,124.01	358.884	ES
Karch Blue D 24-12 (PA) - Wellbore #1 - Gyro Surveys	6,900.00	6,655.08	4,889.71	4,850.78	125.606	SF
Karch Blue D 24-14 (PA) - Wellbore #1 - No Surveys	248.70	154.69	5,422.29	5,418.53	1,441.024	CC
Karch Blue D 24-14 (PA) - Wellbore #1 - No Surveys	2,279.00	2,184.94	5,429.55	5,379.11	107.629	ES
Karch Blue D 24-14 (PA) - Wellbore #1 - No Surveys	7,200.00	6,773.69	6,116.88	5,964.23	40.071	SF
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	384.33	327.97	7,534.66	7,532.54	3,557.238	CC
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	808.00	639.42	7,535.17	7,530.48	1,607.500	ES
Koerner 31-24 (SI) - Wellbore #1 - Gyro Surveys	6,950.00	6,714.11	8,425.40	8,386.19	214.887	SF
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	296.70	221.05	6,964.38	6,962.95	4,844.403	CC
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	1,849.00	1,744.26	6,968.98	6,956.81	572.588	ES
Koerner 32-24 (SI) - Wellbore #1 - Gyro Surveys	10,100.00	6,500.00	9,538.65	9,490.16	196.712	SF
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	166.19	58.43	8,203.84	8,203.35	10,000.000	CC

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

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D35-770
Project:	Mustang	**TVD Reference:**	KB @ 4859.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4859.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D35-770 ST01	**Database:**	EDMP
Reference Design:	Plan #4	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 24						
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	903.00	722.72	8,208.03	8,202.72	1,545.100	ES
Koerner 42-24 (SI) - Wellbore #1 - Gyro Surveys	9,100.00	6,825.83	9,999.87	9,953.37	215.028	SF
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	239.25	161.83	4,175.91	4,174.88	4,065.582	CC
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	1,755.00	1,663.47	4,180.45	4,168.89	361.533	ES
LF Ranch 1-24 (SI) - Wellbore #1 - Gyro Surveys	14,700.00	14,700.00	9,950.86	9,864.18	114.802	SF

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D35-770
Project:	Mustang	**TVD Reference:**	KB @ 4859.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4859.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D35-770 ST01	**Database:**	EDMP
Reference Design:	Plan #4	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 25						
Coors Energy 13-25D (TA) - Wellbore #1 - MWD Surveys	10,323.11	7,052.77	4,591.06	4,523.39	67.836	CC, ES
Coors Energy 13-25D (TA) - Wellbore #1 - MWD Surveys	11,800.00	7,007.97	4,822.53	4,744.73	61.987	SF
Coors Energy 14-25D (TA) - Wellbore #1 - MWD Surveys	11,614.96	6,792.09	4,606.18	4,536.82	66.410	CC, ES
Coors Energy 14-25D (TA) - Wellbore #1 - MWD Surveys	12,900.00	6,755.37	4,770.53	4,694.46	62.709	SF
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Survey	11,185.50	6,001.00	4,076.82	4,015.65	66.653	CC
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Survey	11,200.00	6,001.00	4,076.84	4,015.59	66.552	ES
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Survey	12,200.00	6,001.00	4,201.15	4,134.59	63.122	SF
Coors Energy 23-25D (TA) - Wellbore #1 - MWD Surveys	10,290.56	6,980.50	5,918.10	5,852.39	90.059	CC
Coors Energy 23-25D (TA) - Wellbore #1 - MWD Surveys	10,300.00	6,980.28	5,918.11	5,852.34	89.980	ES
Coors Energy 23-25D (TA) - Wellbore #1 - MWD Surveys	12,200.00	6,935.93	6,218.32	6,143.03	82.582	SF
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	11,867.96	6,715.94	6,094.55	6,022.98	85.157	CC
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	11,900.00	6,714.78	6,094.64	6,022.85	84.896	ES
Coors Energy 24-25 (PR) - Wellbore #1 - Gyro Surveys	14,000.00	6,661.30	6,419.87	6,336.40	76.911	SF
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	10,987.36	6,980.50	4,130.67	4,062.64	60.715	CC
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	11,000.00	6,980.23	4,130.69	4,062.55	60.623	ES
Coors Energy 25HD (PR) - Wellbore #1 - MWD Surveys	12,385.37	6,951.35	4,360.73	4,282.80	55.960	SF
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	12,107.70	6,671.07	5,306.83	5,232.19	71.096	CC, ES
Coors Energy 25LD (PR) - Wellbore #1 - MWD Surveys	13,500.00	6,629.53	5,460.52	5,378.51	66.578	SF
Coors Energy 25TD (TA) - Wellbore #1 - MWD Surveys	12,158.71	6,810.59	8,016.28	7,941.55	107.272	CC
Coors Energy 25TD (TA) - Wellbore #1 - MWD Surveys	12,200.00	6,809.27	8,016.38	7,941.36	106.844	ES
Coors Energy 25TD (TA) - Wellbore #1 - MWD Surveys	15,500.00	6,739.92	8,615.62	8,521.47	91.509	SF
Coors Energy 25XD (TA) - Wellbore #1 - MWD Surveys	877.30	867.87	8,895.33	8,890.94	2,025.551	CC, ES
Coors Energy 25XD (TA) - Wellbore #1 - MWD Surveys	15,400.00	15,400.00	9,911.68	9,784.85	78.149	SF
Coors Energy 25YD (TA) - Wellbore #1 - MWD Surveys	875.51	966.89	8,921.73	8,917.17	1,956.281	CC, ES
Coors Energy 25YD (TA) - Wellbore #1 - MWD Surveys	13,200.00	13,200.00	9,176.43	9,057.48	77.150	SF
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Survey	10,296.17	7,012.53	7,227.68	7,159.54	106.068	CC
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Survey	10,400.00	7,009.68	7,228.43	7,159.50	104.866	ES
Coors Energy 33-25D (PR) - Wellbore #1 - MWD Survey	13,500.00	6,921.69	7,881.12	7,793.29	89.735	SF
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	11,866.62	6,765.16	7,090.95	7,019.21	98.841	CC
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	11,900.00	6,764.38	7,091.03	7,019.05	98.518	ES
Coors Energy 34-25 (PR) - Wellbore #1 - Gyro Surveys	14,700.00	6,710.60	7,584.36	7,496.54	86.366	SF
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Survey	10,251.34	7,033.51	8,521.74	8,454.17	126.118	CC
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Survey	10,300.00	7,031.49	8,521.88	8,454.02	125.577	ES
Coors Energy 43-25D (PR) - Wellbore #1 - MWD Survey	14,100.00	6,901.89	9,312.04	9,225.47	107.564	SF
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Survey	11,560.61	6,773.80	8,578.26	8,509.50	124.745	CC
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Survey	11,600.00	6,772.97	8,578.35	8,509.30	124.238	ES
Coors Energy 44-25D (PR) - Wellbore #1 - MWD Survey	15,800.00	6,727.65	9,495.57	9,402.05	101.541	SF
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	168.88	68.78	5,204.83	5,204.32	10,000.000	CC
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	2,202.69	2,157.29	5,214.47	5,200.40	370.439	ES
Dalbey D 25-03 (SI) - Wellbore #1 - Gyro Surveys	16,000.00	16,000.00	9,664.11	9,561.56	94.237	SF
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	9,111.18	6,646.39	4,409.35	4,358.71	87.070	CC, ES
Dalbey D 25-05 (SI) - Wellbore #1 - Gyro Surveys	10,600.00	6,725.99	4,678.65	4,620.05	79.839	SF
Guttersen 11-25 (PR) - Wellbore #1 - As-Drilled	2,281.13	2,311.03	4,180.87	4,167.27	307.567	CC, ES
Guttersen 11-25 (PR) - Wellbore #1 - As-Drilled	9,699.62	6,747.77	5,017.80	4,967.07	98.923	SF
Guttersen 22-25 (PA) - Wellbore #1 - As-Drilled	1,206.01	1,163.28	5,952.13	5,945.39	883.964	CC
Guttersen 22-25 (PA) - Wellbore #1 - As-Drilled	1,376.00	1,307.76	5,952.64	5,944.81	760.292	ES
Guttersen 22-25 (PA) - Wellbore #1 - As-Drilled	11,700.00	6,775.41	6,639.98	6,576.16	104.049	SF
Guttersen 25E (PR) - Wellbore #1 - As-Drilled	910.26	864.42	3,628.50	3,623.89	786.528	CC
Guttersen 25E (PR) - Wellbore #1 - As-Drilled	2,230.31	2,227.97	3,629.22	3,616.01	274.636	ES
Guttersen 25E (PR) - Wellbore #1 - As-Drilled	8,800.00	6,835.10	4,539.53	4,493.33	98.249	SF
Guttersen 25KD (PA) - Wellbore #1 - MWD Surveys	9,692.65	6,798.98	5,267.60	5,212.35	95.339	CC
Guttersen 25KD (PA) - Wellbore #1 - MWD Surveys	9,699.62	6,798.81	5,267.60	5,212.31	95.270	ES
Guttersen 25KD (PA) - Wellbore #1 - MWD Surveys	11,800.00	6,742.66	5,732.62	5,666.03	86.088	SF

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

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D35-770
Project:	Mustang	**TVD Reference:**	KB @ 4859.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4859.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D35-770 ST01	**Database:**	EDMP
Reference Design:	Plan #4	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 25						
Guttersen 25O (PR) - Wellbore #1 - As-Drilled	9,560.10	6,814.84	6,465.13	6,411.58	120.733	CC
Guttersen 25O (PR) - Wellbore #1 - As-Drilled	9,600.00	6,813.83	6,465.25	6,411.45	120.172	ES
Guttersen 25O (PR) - Wellbore #1 - As-Drilled	12,385.37	6,743.34	7,130.58	7,061.90	103.829	SF
Guttersen D 25-17 (SI) - Wellbore #1 - Gyro Surveys	2,220.13	2,196.76	7,343.93	7,329.68	515.565	CC, ES
Guttersen D 25-17 (SI) - Wellbore #1 - Gyro Surveys	12,900.00	6,990.81	8,954.03	8,883.37	126.725	SF
Guttersen D25-715 - Guttersen D25-715 OH - As-Drilled	162.02	59.27	7,844.31	7,843.87	10,000.000	CC
Guttersen D25-715 - Guttersen D25-715 OH - As-Drilled	1,755.00	1,701.82	7,850.65	7,838.97	672.143	ES
Guttersen D25-715 - Guttersen D25-715 OH - As-Drilled	11,900.00	11,900.00	9,481.28	9,401.33	118.598	SF
Guttersen D25-724 - Guttersen D25-724 OH - As-Drilled	224.39	144.42	7,808.66	7,807.76	8,687.035	CC
Guttersen D25-724 - Guttersen D25-724 OH - As-Drilled	1,849.00	1,824.98	7,816.44	7,804.00	628.294	ES
Guttersen D25-724 - Guttersen D25-724 OH - As-Drilled	13,700.00	5,039.88	9,994.15	9,930.56	157.167	SF
Guttersen D25-734 - Guttersen D25-734 OH - As-Drilled	5,895.27	7,466.00	7,417.39	7,380.50	201.051	CC
Guttersen D25-734 - Guttersen D25-734 OH - As-Drilled	5,900.00	7,466.00	7,417.39	7,380.49	200.975	ES
Guttersen D25-734 - Guttersen D25-734 OH - As-Drilled	12,900.00	6,427.00	9,267.47	9,203.27	144.353	SF
Guttersen D25-743 - Guttersen D25-743 OH - As-Drilled	5,845.51	8,179.71	6,803.16	6,762.01	165.309	CC, ES
Guttersen D25-743 - Guttersen D25-743 OH - As-Drilled	12,000.00	6,710.00	8,274.89	8,213.16	134.048	SF
Guttersen D25-753 - Guttersen D25-753 OH - As-Drilled	1,071.60	1,052.25	5,640.49	5,633.47	803.744	CC
Guttersen D25-753 - Guttersen D25-753 OH - As-Drilled	1,281.00	1,229.60	5,641.29	5,632.92	674.102	ES
Guttersen D25-753 - Guttersen D25-753 OH - As-Drilled	13,400.00	13,400.00	8,339.75	8,254.69	98.048	SF
Guttersen D25-762 - Guttersen D25-762 OH - As-Drilled	6,069.95	7,432.50	5,587.80	5,553.02	160.654	CC
Guttersen D25-762 - Guttersen D25-762 OH - As-Drilled	6,100.00	7,431.41	5,587.88	5,553.01	160.227	ES
Guttersen D25-762 - Guttersen D25-762 OH - As-Drilled	13,400.00	13,400.00	8,018.63	7,935.15	96.055	SF
Guttersen D25-772 - Guttersen D25-772 OH - As-Drilled	6,218.35	7,926.89	4,951.71	4,913.76	130.469	CC, ES
Guttersen D25-772 - Guttersen D25-772 OH - As-Drilled	10,300.00	6,526.00	5,718.27	5,668.29	114.402	SF
Guttersen D25-781 - Guttersen D25-781 OH - As-Drilled	6,209.17	8,281.24	4,337.28	4,296.61	106.642	CC, ES
Guttersen D25-781 - Guttersen D25-781 OH - As-Drilled	10,000.00	6,620.00	5,036.44	4,987.12	102.122	SF
Guttersen State D36-714 - Wellbore #1 - Plan #2	268.57	211.57	7,793.27	7,792.01	6,168.765	CC
Guttersen State D36-714 - Wellbore #1 - Plan #2	1,755.00	1,702.03	7,797.37	7,785.57	661.006	ES
Guttersen State D36-714 - Wellbore #1 - Plan #2	17,462.31	15,010.93	8,860.20	8,692.82	52.935	SF
Guttersen State D36-724 - Wellbore #1 - Plan #2	268.66	212.65	7,757.84	7,756.57	6,120.331	CC
Guttersen State D36-724 - Wellbore #1 - Plan #2	1,755.00	1,701.03	7,761.94	7,750.15	658.203	ES
Guttersen State D36-724 - Wellbore #1 - Plan #2	17,462.31	14,510.37	8,235.14	8,067.46	49.113	SF
Guttersen State D36-733 - Wellbore #1 - Plan #2	17,462.31	14,618.51	7,610.09	7,442.51	45.412	CC, ES, SF
Guttersen State D36-743 - Wellbore #1 - Plan #2	17,462.31	14,707.67	6,985.03	6,817.78	41.765	CC, ES, SF
Guttersen State D36-752 - Wellbore #1 - Plan #2	271.47	229.46	5,697.69	5,696.35	4,259.647	CC
Guttersen State D36-752 - Wellbore #1 - Plan #2	1,755.00	1,712.97	5,701.85	5,690.01	481.760	ES
Guttersen State D36-752 - Wellbore #1 - Plan #2	17,462.31	14,726.84	6,388.23	6,217.40	37.395	SF
Guttersen State D36-762 - Wellbore #1 - Plan #2	271.33	229.32	5,663.19	5,661.86	4,236.947	CC
Guttersen State D36-762 - Wellbore #1 - Plan #2	17,462.31	14,720.24	5,763.20	5,592.05	33.674	ES, SF
Guttersen State D36-771 - Wellbore #1 - Plan #2	17,462.31	14,796.83	5,138.23	4,967.33	30.066	CC, ES, SF
Guttersen State D36-781 - Wellbore #1 - Plan #2	17,462.31	15,163.18	4,513.37	4,342.79	26.459	CC, ES, SF
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	262.35	164.34	6,660.56	6,656.55	1,663.754	CC
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	2,279.00	2,180.94	6,668.14	6,617.77	132.390	ES
Karch Blue D 25-02 (DA) - Wellbore #1 - No Surveys	9,600.00	6,762.40	7,456.37	7,291.56	45.243	SF
Karch Blue D 25-07 (SI) - Wellbore #1 - Gyro Surveys	2,229.99	2,208.46	7,066.04	7,051.76	494.842	CC, ES
Karch Blue D 25-07 (SI) - Wellbore #1 - Gyro Surveys	12,800.00	6,696.75	8,143.66	8,072.69	114.754	SF
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	1,384.67	1,330.83	8,279.48	8,270.37	908.979	CC
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	2,227.96	2,219.73	8,280.81	8,266.51	578.879	ES
Karch Blue D 25-08 (SI) - Wellbore #1 - Gyro Surveys	14,000.00	7,059.18	9,865.50	9,786.93	125.561	SF
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	199.32	75.78	7,911.53	7,910.90	10,000.000	CC
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	903.00	769.96	7,915.19	7,909.71	1,446.038	ES
L F Ranch 2-25 (PR) - Wellbore #1 - Gyro Surveys	13,000.00	6,843.26	9,990.62	9,920.03	141.536	SF
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	263.17	169.16	7,699.22	7,695.12	1,876.676	CC

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

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D35-770
Project:	Mustang	**TVD Reference:**	KB @ 4859.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4859.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D35-770 ST01	**Database:**	EDMP
Reference Design:	Plan #4	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 25						
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	2,279.00	2,184.94	7,706.81	7,656.37	152.769 ES	
LF Ranches 1 (PA) - Wellbore #1 - No Surveys	10,200.00	6,750.69	8,486.32	8,317.65	50.313 SF	

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D35-770
Project:	Mustang	**TVD Reference:**	KB @ 4859.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4859.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D35-770 ST01	**Database:**	EDMP
Reference Design:	Plan #4	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 26						
Adam Red D 26-11 (PR) - Wellbore #1 - Gyro Surveys	10,375.40	6,833.13	484.14	423.62	7.999	CC, ES, SF
Adam Red D 26-12 (PR) - Wellbore #1 - Gyro Surveys	10,380.83	6,843.77	718.44	650.55	10.583	CC, ES
Adam Red D 26-12 (PR) - Wellbore #1 - Gyro Surveys	10,400.00	6,843.18	718.69	650.57	10.551	SF
Adam Red D 26-13 (PR) - Wellbore #1 - Gyro Surveys	11,524.73	6,830.02	524.63	455.26	7.563	CC, ES
Adam Red D 26-13 (PR) - Wellbore #1 - Gyro Surveys	11,600.00	6,825.09	529.98	459.85	7.557	SF
Adam Red D 26-14 (PR) - Wellbore #1 - Gyro Surveys	11,523.54	6,811.51	843.59	769.73	11.422	CC, ES, SF
Heyde 1-26 (PA) - Wellbore #1 - Gyro Surveys	237.60	179.13	2,852.84	2,851.76	2,636.001	CC
Heyde 1-26 (PA) - Wellbore #1 - Gyro Surveys	1,755.00	1,704.28	2,859.91	2,848.20	244.328	ES
Heyde 1-26 (PA) - Wellbore #1 - Gyro Surveys	8,800.00	6,864.73	3,067.77	3,019.56	63.630	SF
Heyde 26ND (SI) - Wellbore #1 - MWD Surveys	8,413.32	6,995.30	1,419.31	1,369.86	28.703	CC, ES
Heyde 26ND (SI) - Wellbore #1 - MWD Surveys	8,700.00	6,994.52	1,447.97	1,396.57	28.168	SF
Heyde 26RD (SI) - Wellbore #1 - MWD Surveys	4,358.98	4,590.95	2,331.69	2,304.44	85.575	CC
Heyde 26RD (SI) - Wellbore #1 - MWD Surveys	4,400.00	4,613.36	2,331.86	2,304.44	85.049	ES
Heyde 26RD (SI) - Wellbore #1 - MWD Surveys	7,400.00	6,894.19	2,623.77	2,579.71	59.546	SF
Heyde 26VD (SI) - Wellbore #1 - MWD Surveys	245.94	207.95	2,682.16	2,681.13	2,609.511	CC
Heyde 26VD (SI) - Wellbore #1 - MWD Surveys	335.00	294.11	2,682.40	2,680.91	1,798.355	ES
Heyde 26VD (SI) - Wellbore #1 - MWD Surveys	9,900.00	7,049.70	4,154.36	4,095.22	70.245	SF
Heyde 31-26 (SI) - Wellbore #1 - Gyro Surveys	7,582.73	6,831.53	1,688.84	1,646.12	39.534	CC, ES
Heyde 31-26 (SI) - Wellbore #1 - Gyro Surveys	7,816.39	6,831.55	1,704.92	1,661.35	39.126	SF
Heyde 32-26 (PA) - Wellbore #1 - Gyro Surveys	9,105.27	6,813.56	1,879.10	1,827.85	36.665	CC, ES
Heyde 32-26 (PA) - Wellbore #1 - Gyro Surveys	9,300.00	6,809.88	1,889.16	1,837.13	36.309	SF
Heyde 41-26 (SI) - Wellbore #1 - Gyro Surveys	2,250.31	2,240.06	2,989.09	2,974.70	207.701	CC
Heyde 41-26 (SI) - Wellbore #1 - Gyro Surveys	2,279.00	2,267.69	2,989.17	2,974.67	206.116	ES
Heyde 41-26 (SI) - Wellbore #1 - Gyro Surveys	8,600.00	6,860.53	3,509.55	3,462.79	75.057	SF
Heyde 42-26 (PA) - Wellbore #1 - Gyro Surveys	9,079.91	6,939.30	3,279.89	3,228.30	63.566	CC
Heyde 42-26 (PA) - Wellbore #1 - Gyro Surveys	9,100.00	6,940.04	3,279.94	3,228.23	63.431	ES
Heyde 42-26 (PA) - Wellbore #1 - Gyro Surveys	9,800.00	6,842.12	3,359.06	3,304.22	61.262	SF
HSR-Waste Services 10-26 (PA) - Wellbore #1 - Gyro Su	10,580.13	6,842.62	2,174.08	2,111.92	34.972	CC
HSR-Waste Services 10-26 (PA) - Wellbore #1 - Gyro Su	10,600.00	6,841.90	2,174.17	2,111.90	34.911	ES
HSR-Waste Services 10-26 (PA) - Wellbore #1 - Gyro Su	10,900.00	6,831.17	2,197.46	2,133.83	34.538	SF
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	11,567.41	6,811.90	1,956.16	1,793.07	11.994	CC, ES
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	11,700.00	6,808.43	1,960.65	1,796.96	11.978	SF
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Su	11,563.34	6,843.27	3,207.40	3,137.71	46.020	CC
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Su	11,600.00	6,842.14	3,207.61	3,137.68	45.871	ES
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Su	12,100.00	6,826.69	3,251.95	3,179.39	44.822	SF
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	10,289.15	6,811.78	3,377.41	3,317.58	56.452	CC
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	10,300.00	6,812.01	3,377.42	3,317.53	56.389	ES
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	11,100.00	6,773.82	3,473.35	3,409.41	54.320	SF
Waste Management 11-26 (PA) - Wellbore #1 - Gyro Sur	7,916.11	6,848.40	716.98	672.49	16.114	CC, ES
Waste Management 11-26 (PA) - Wellbore #1 - Gyro Sur	8,000.00	6,850.72	723.09	677.94	16.015	SF
Waste Management 12-26 (PA) - Wellbore #1 - Gyro Sur	9,146.71	6,860.23	765.39	713.56	14.769	CC, ES
Waste Management 12-26 (PA) - Wellbore #1 - Gyro Sur	9,200.00	6,861.28	767.24	714.81	14.634	SF
Waste Management 12-26A (TA) - Wellbore #1 - Gyro Su	8,602.65	6,867.95	116.89	68.60	2.420	CC, ES, SF
Waste Management 21-26 (PA) - Wellbore #1 - Gyro Sur	7,561.68	6,845.02	724.94	682.42	17.050	CC, ES
Waste Management 21-26 (PA) - Wellbore #1 - Gyro Sur	7,600.00	6,845.32	725.95	683.35	17.038	SF
Waste Management 22-26 (PA) - Wellbore #1 - Gyro Sur	9,113.13	6,855.04	642.83	591.51	12.526	CC, ES, SF
Waste Management 26FD (PA) - Wellbore #1 - MWD Su	8,446.58	7,018.54	1,256.35	1,207.83	25.896	CC, ES
Waste Management 26FD (PA) - Wellbore #1 - MWD Su	8,700.00	7,016.58	1,281.65	1,231.13	25.369	SF
Waste Management 26KD (PA) - Wellbore #1 - MWD Su	9,698.71	7,010.20	29.99	-32.72	0.478	Level 1, CC
Waste Management 26KD (PA) - Wellbore #1 - MWD Su	9,699.62	7,010.19	30.00	-32.79	0.478	Level 1, ES, SF
Waste Management D 26-25 (SI) - Wellbore #1 - Gyro S	11,043.23	6,832.99	165.31	99.77	2.523	CC, ES, SF
Waste Mangement 26JD (PA) - Wellbore #1 - MWD Surv	7,173.09	6,961.66	88.69	44.14	1.991	CC, ES, SF

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D35-770
Project:	Mustang	**TVD Reference:**	KB @ 4859.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4859.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D35-770 ST01	**Database:**	EDMP
Reference Design:	Plan #4	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 34						
HSR Waste Services 4-34 (SI) - Wellbore #1 - Gyro Surv	12,882.10	6,819.65	5,702.28	5,622.59	71.550	CC
HSR Waste Services 4-34 (SI) - Wellbore #1 - Gyro Surv	12,900.00	6,818.71	5,702.31	5,622.46	71.411	ES
HSR Waste Services 4-34 (SI) - Wellbore #1 - Gyro Surv	14,800.00	6,725.02	6,014.58	5,921.53	64.642	SF
HSR Waste Services 5-34 (SI) - Wellbore #1 - Gyro Surv	14,109.01	6,806.85	6,128.42	6,039.02	68.547	CC
HSR Waste Services 5-34 (SI) - Wellbore #1 - Gyro Surv	14,200.00	6,806.40	6,129.10	6,038.89	67.947	ES
HSR Waste Services 5-34 (SI) - Wellbore #1 - Gyro Surv	16,100.00	6,796.31	6,443.72	6,340.35	62.340	SF
Liam D 34-11 (PR) - Wellbore #1 - Gyro Surveys	15,722.25	6,790.30	4,613.32	4,511.02	45.098	CC
Liam D 34-11 (PR) - Wellbore #1 - Gyro Surveys	15,800.00	6,789.94	4,613.97	4,510.97	44.794	ES
Liam D 34-11 (PR) - Wellbore #1 - Gyro Surveys	16,800.00	6,785.61	4,737.53	4,627.42	43.026	SF
Liam D 34-12 (PR) - Wellbore #1 - Gyro Surveys	15,498.29	6,777.89	6,007.87	5,907.41	59.801	CC
Liam D 34-12 (PR) - Wellbore #1 - Gyro Surveys	15,600.00	6,777.37	6,008.73	5,907.37	59.278	ES
Liam D 34-12 (PR) - Wellbore #1 - Gyro Surveys	17,200.00	6,768.97	6,244.22	6,131.72	55.507	SF
Liam D 34-13 (PR) - Wellbore #1 - Gyro Surveys	15,300.00	15,300.00	6,181.26	6,056.39	49.499	SF
Liam D 34-13 (PR) - Wellbore #1 - Gyro Surveys	16,880.90	6,777.66	5,975.80	5,864.20	53.545	CC
Liam D 34-13 (PR) - Wellbore #1 - Gyro Surveys	16,900.00	6,777.24	5,975.83	5,864.06	53.463	ES
Liam D 34-14 (PR) - Wellbore #1 - Gyro Surveys	17,045.12	6,779.18	4,612.41	4,499.45	40.832	CC
Liam D 34-14 (PR) - Wellbore #1 - Gyro Surveys	17,100.00	6,778.52	4,612.73	4,499.27	40.654	ES
Liam D 34-14 (PR) - Wellbore #1 - Gyro Surveys	17,462.31	6,774.24	4,631.23	4,514.76	39.762	SF
Liam D 34-25 (SI) - Wellbore #1 - Gyro Surveys	16,283.96	6,828.62	5,303.40	5,196.47	49.599	CC
Liam D 34-25 (SI) - Wellbore #1 - Gyro Surveys	16,300.00	6,828.60	5,303.42	5,196.35	49.532	ES
Liam D 34-25 (SI) - Wellbore #1 - Gyro Surveys	17,462.31	6,827.45	5,432.73	5,317.12	46.994	SF
Liam D 34-33 (SI) - Wellbore #1 - Gyro Surveys	16,269.57	6,748.90	6,455.20	6,348.62	60.563	CC
Liam D 34-33 (SI) - Wellbore #1 - Gyro Surveys	16,300.00	6,748.95	6,455.28	6,348.42	60.410	ES
Liam D 34-33 (SI) - Wellbore #1 - Gyro Surveys	17,462.31	6,750.95	6,564.47	6,448.66	56.684	SF
D Section 35						
UPRR 1 (DA) - Wellbore #1 - No Surveys	13,042.82	6,816.28	658.49	464.81	3.400	CC, ES, SF
Waste Management 22-35 (PR) - Wellbore #1 - Gyro Sur	14,449.05	6,793.72	716.18	624.01	7.771	CC, ES, SF
Waste Management 31-35 (TA) - Wellbore #1 - Gyro Sur	12,941.84	6,801.61	1,751.68	1,671.78	21.923	CC, ES
Waste Management 31-35 (TA) - Wellbore #1 - Gyro Sur	13,100.00	6,796.33	1,758.80	1,678.36	21.865	SF
Waste Management 41-35 (SI) - Wellbore #1 - Gyro Surv	13,072.82	6,788.38	3,318.80	3,237.60	40.873	CC
Waste Management 41-35 (SI) - Wellbore #1 - Gyro Surv	13,100.00	6,787.52	3,318.91	3,237.54	40.791	ES
Waste Management 41-35 (SI) - Wellbore #1 - Gyro Surv	13,600.00	6,771.03	3,360.36	3,276.59	40.116	SF
Waste Management D 35-15 (PR) - Wellbore #1 - Gyro S	17,131.31	6,758.74	1,850.81	1,737.25	16.297	CC, ES
Waste Management D 35-15 (PR) - Wellbore #1 - Gyro S	17,200.00	6,757.64	1,852.09	1,738.23	16.267	SF
Waste Management USX D 35-07 (PR) - Wellbore #1 - G	14,304.67	6,753.64	1,922.91	1,832.10	21.175	CC, ES
Waste Management USX D 35-07 (PR) - Wellbore #1 - G	14,400.00	6,752.50	1,925.27	1,834.05	21.107	SF
Waste Management USX D 35-09 (PA) - Wellbore #1 - G	15,793.90	6,724.71	3,259.40	3,156.76	31.757	CC
Waste Management USX D 35-09 (PA) - Wellbore #1 - G	15,800.00	6,724.78	3,259.40	3,156.73	31.745	ES
Waste Management USX D 35-09 (PA) - Wellbore #1 - G	16,200.00	6,729.57	3,284.60	3,179.94	31.384	SF
Waste Management USX D 35-11 (PA) - Wellbore #1 - G	15,769.88	6,784.16	593.22	490.56	5.778	CC, ES, SF
Waste Management USX D 35-14 (SI) - Wellbore #1 - Gy	16,883.71	6,817.29	760.06	648.30	6.801	CC, ES, SF
Waste Services 21-35 (PA) - Wellbore #1 - Gyro Surveys	12,860.84	6,801.85	787.31	707.77	9.899	CC, ES, SF

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D35-770
Project:	Mustang	**TVD Reference:**	KB @ 4859.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4859.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D35-770 ST01	**Database:**	EDMP
Reference Design:	Plan #4	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 36						
Kanga State D 36-1JI (SI) - Wellbore #1 - Gyro Surveys	13,173.43	6,723.77	8,585.33	8,503.62	105.069	CC
Kanga State D 36-1JI (SI) - Wellbore #1 - Gyro Surveys	13,200.00	6,722.91	8,585.37	8,503.47	104.826	ES
Kanga State D 36-1JI (SI) - Wellbore #1 - Gyro Surveys	16,500.00	6,631.97	9,208.51	9,107.84	91.470	SF
Kanga State D 36-2JI - Wellbore #1 - Gyro Surveys	12,794.00	6,721.07	7,145.94	7,067.13	90.668	CC
Kanga State D 36-2JI - Wellbore #1 - Gyro Surveys	12,800.00	6,720.86	7,145.95	7,067.09	90.620	ES
Kanga State D 36-2JI - Wellbore #1 - Gyro Surveys	15,300.00	6,641.79	7,573.58	7,480.89	81.703	SF
Kanga State D36-11JI (PR) - Wellbore #1 - Gyro Surveys	15,793.87	6,817.32	5,961.31	5,813.66	40.375	CC
Kanga State D36-11JI (PR) - Wellbore #1 - Gyro Surveys	15,800.00	6,817.34	5,961.31	5,813.62	40.363	ES
Kanga State D36-11JI (PR) - Wellbore #1 - Gyro Surveys	16,900.00	6,820.18	6,063.06	5,908.83	39.312	SF
Rhoo State D36-07JI (SI) - Wellbore #1 - Gyro Surveys	14,219.65	6,830.17	7,133.89	7,043.43	78.859	CC
Rhoo State D36-07JI (SI) - Wellbore #1 - Gyro Surveys	14,300.00	6,828.27	7,134.34	7,043.31	78.371	ES
Rhoo State D36-07JI (SI) - Wellbore #1 - Gyro Surveys	16,700.00	16,700.00	7,551.77	7,412.62	54.271	SF
Spike State D 36-03 (SI) - Wellbore #1 - No Surveys	13,222.12	6,731.58	5,782.68	5,589.27	29.899	CC, ES
Spike State D 36-03 (SI) - Wellbore #1 - No Surveys	14,100.00	6,715.00	5,849.12	5,650.57	29.459	SF
Spike State D 36-04 (SI) - Gyro Surveys - Wellbore #1	13,024.16	6,674.34	4,584.80	4,504.52	57.111	CC, ES
Spike State D 36-04 (SI) - Gyro Surveys - Wellbore #1	14,000.00	6,633.33	4,687.50	4,602.08	54.872	SF
Spike State D36-05 (SI) - Wellbore #1 - Gyro Surveys	14,370.81	6,700.00	4,462.58	4,371.38	48.934	CC
Spike State D36-05 (SI) - Wellbore #1 - Gyro Surveys	14,400.00	6,700.00	4,462.67	4,371.28	48.831	ES
Spike State D36-05 (SI) - Wellbore #1 - Gyro Surveys	15,200.00	6,691.45	4,538.95	4,443.31	47.460	SF
Spike State D36-06 (PA) - Wellbore #1 - Gyro Surveys	14,409.49	6,810.77	5,732.21	5,640.22	62.317	CC, ES
Spike State D36-06 (PA) - Wellbore #1 - Gyro Surveys	15,800.00	6,700.00	5,897.70	5,798.37	59.374	SF
State 09 (SI) - Wellbore #1 - Gyro Surveys	13,710.00	6,655.70	7,893.32	7,807.62	92.111	CC
State 09 (SI) - Wellbore #1 - Gyro Surveys	13,800.00	6,653.48	7,893.83	7,807.49	91.432	ES
State 09 (SI) - Wellbore #1 - Gyro Surveys	16,500.00	6,600.00	8,374.19	8,272.70	82.513	SF
State 30 (SI) - Wellbore #1 - Gyro Surveys	16,390.95	6,814.87	5,499.64	5,391.63	50.917	CC
State 30 (SI) - Wellbore #1 - Gyro Surveys	16,400.00	6,814.79	5,499.65	5,391.58	50.887	ES
State 30 (SI) - Wellbore #1 - Gyro Surveys	17,462.31	6,806.27	5,603.02	5,489.03	49.155	SF
Y Section 02						
Waste Management 2I-221 (PA) - Wellbore #1 - Wellbore	17,462.31	11,210.00	1,124.43	984.43	8.031	CC, ES, SF
Waste Management 2I-401 (PR) - Wellbore #1 - Wellbor	17,462.31	11,425.00	1,418.24	1,264.21	9.207	CC, ES, SF
Waste Management 2L-201 (PR) - Wellbore #1 - Wellbor	17,462.31	11,213.00	737.34	671.60	11.215	CC, ES, SF
Waste Management 2L-301 - Wellbore #1 - Wellbore #1	17,462.31	11,326.02	715.98	651.34	11.077	CC, ES, SF
Waste Management 2L-421 - Wellbore #1 - Wellbore #1	17,462.31	11,433.02	883.59	768.37	7.669	CC, ES, SF
Waste Management 2L-441 - Wellbore #1 - Wellbore #1	17,462.31	11,379.02	893.46	785.89	8.306	CC, ES, SF
Waste Management 2Q-201 - Wellbore #1 - Wellbore #1	17,462.31	11,274.02	1,607.93	1,449.77	10.166	CC, ES, SF
Waste Management 2Q-321 - Wellbore #1 - Wellbore #1	17,462.31	11,347.02	1,906.82	1,741.23	11.515	CC, ES, SF
Waste Management 2Q-341 - Wellbore #1 - Wellbore #1	17,462.31	11,345.02	1,107.20	962.27	7.640	CC, ES, SF
Waste Management 2Q-401 - Wellbore #1 - Wellbore #1	17,462.31	11,502.02	1,373.61	1,213.79	8.595	CC, ES, SF
Waste Management 2T-221 - Wellbore #1 - Wellbore #1	17,462.31	11,189.02	3,211.04	3,035.35	18.277	CC, ES, SF
Waste Management 2T-241 - Wellbore #1 - Wellbore #1	17,462.31	11,213.02	2,226.16	2,056.46	13.118	CC, ES, SF
Waste Management 2T-301 - Wellbore #1 - Wellbore #1	17,462.31	11,316.02	2,515.83	2,343.14	14.569	CC, ES, SF
Waste Management 2T-401 - Wellbore #1 - Wellbore #1	17,462.31	11,385.02	2,892.72	2,718.09	16.565	CC, ES, SF
Waste Management 2Y-201 (PR) - Wellbore #1 - Wellbo	17,462.31	11,229.00	3,807.97	3,630.00	21.397	CC, ES, SF
Waste Management 2Y-441 (PR) - Wellbore #1 - Wellbo	17,462.31	11,403.00	3,502.24	3,325.29	19.792	CC, ES, SF

Noble Energy

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen D35-770
Project:	Mustang	**TVD Reference:**	KB @ 4859.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4859.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen D35-770	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Guttersen D35-770 ST01	**Database:**	EDMP
Reference Design:	Plan #4	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Y Section 10						
Bison Ridge State Y22-786 - Original Drilling - As-Drilled						Out of range
Bison Ridge Y22-711 - Original Drilling - As-Drilled	17,462.31	6,802.00	8,569.95	8,520.64	173.796	CC, ES, SF
Bison Ridge Y22-719 - Original Drilling - Original Drilling	17,462.31	6,391.00	8,625.41	8,575.96	174.441	CC, ES, SF
Bison Ridge Y22-726 - Original Drilling - As-Drilled	17,462.31	6,422.00	8,713.66	8,663.12	172.399	CC, ES, SF
Bison Ridge Y22-734 - Original Drilling - As-Drilled	17,462.31	6,327.00	8,796.70	8,744.15	167.397	CC, ES, SF
Bison Ridge Y22-741 - Original Drilling - As-Drilled	17,462.31	6,329.00	9,253.70	9,199.64	171.195	CC, ES, SF
Bison Ridge Y22-749 - Original Drilling - As-Drilled	17,462.31	6,234.00	9,135.71	9,077.42	156.726	CC, ES, SF
Bison Ridge Y22-756 - Original Drilling - As-Drilled	17,462.31	6,424.00	9,282.13	9,219.48	148.140	CC, ES, SF
Bison Ridge Y22-764 - Original Drilling - As-Drilled	17,462.31	6,328.00	9,657.58	9,593.11	149.795	CC, ES, SF
Bison Ridge Y22-771 - Original Drilling - As-Drilled	17,462.31	6,142.00	9,841.82	9,774.67	146.574	CC, ES, SF
Bison Ridge Y22-779 - Original Drilling - As-Drilled						Out of range
Oscar Y10-72-1HC - Original Drilling - Original Drilling - A	17,462.31	14,600.03	1,829.18	1,673.20	11.727	CC, ES, SF
Oscar Y10-72-1HN - Original Drilling - Original Drilling - A	17,462.31	14,333.03	1,671.29	1,509.14	10.307	CC, ES, SF
Oscar Y10-72HN - Original Drilling - Original Drilling - As	17,462.31	14,445.03	1,912.08	1,749.17	11.737	CC, ES, SF
Oscar Y10-73-1HC - Original Drilling - Original Drilling - A	17,462.31	14,335.96	2,479.21	2,317.05	15.289	CC, ES, SF
Oscar Y10-73-1HN - Original Drilling - Original Drilling - A	17,462.31	14,398.03	2,298.29	2,133.72	13.965	CC, ES, SF
Oscar Y10-73HN - Original Drilling - Original Drilling - As	17,462.31	14,549.00	2,606.62	2,442.31	15.864	CC, ES, SF
Oscar Y10-74-1HC - Original Drilling - Original Drilling- A	17,462.31	14,684.00	3,147.09	2,989.08	19.918	CC, ES, SF
Oscar Y10-74-1HN - Original Drilling - Original Drilling - A	17,462.31	14,377.03	2,952.91	2,794.94	18.693	CC, ES, SF
Oscar Y10-74HN - Original Drilling - Original Drilling - As	17,462.31	12,678.03	3,855.54	3,730.79	30.907	CC, ES, SF
Oscar Y10-75-1HC - Original Drilling - Original Drilling - A	17,462.31	14,440.00	3,764.41	3,605.67	23.714	CC, ES, SF
Oscar Y10-75-1HN - Original Drilling - Original Drilling - A	17,462.31	14,437.03	3,627.67	3,469.15	22.884	CC, ES, SF
Oscar Y10-75HN - Original Drilling - Original Drilling - As	17,462.31	14,544.00	3,958.13	3,799.09	24.887	CC, ES, SF
Oscar Y10-76-1HN - Original Drilling - Original Drilling - A	17,462.31	14,399.00	4,221.05	4,062.64	26.647	CC, ES, SF
Oscar Y10-76HN - Original Drilling - Original Drilling - As	17,462.31	14,574.99	4,564.23	4,405.22	28.704	CC, ES, SF
Oscar Y10-77-1HC - Original Drilling - Original Drilling - A	17,462.31	14,740.00	4,885.10	4,720.18	29.621	CC, ES, SF
Oscar Y10-77HN - Original Drilling - Original Drilling - As	17,462.31	14,430.00	5,240.15	5,082.64	33.267	CC, ES, SF
Oscar Y10-78-1HC - Original Drilling - Original Drilling - A	17,462.31	14,759.00	5,556.01	5,323.22	23.867	CC, ES, SF
Oscar Y10-78-1HN - Orignal Drilling - Orignal Drilling - As	17,462.31	14,469.00	5,552.46	5,320.05	23.890	CC, ES, SF
Oscar Y10-78HN - Original Drilling - Original Drilling - As	17,462.31	13,936.00	5,964.89	5,807.80	37.972	CC, ES, SF
Oscar Y10-79-1HC - Original Drilling - Original Drilling - A	17,462.31	14,740.00	6,206.77	5,973.82	26.645	CC, ES, SF
Oscar Y10-79-1HN - Original Drilling - Original Drilling - A	17,462.31	14,437.00	6,199.67	5,966.55	26.594	CC, ES, SF
Oscar Y10-79HN - Original Drilling - Original Drilling - As	17,462.31	7,926.00	9,560.52	9,467.28	102.530	CC, ES, SF
Oscar Y10-79HN - Original Drilling - ST01 - ST01 - As Dr	17,462.31	14,611.00	6,456.69	6,224.09	27.759	CC, ES, SF
Oscar Y11-79HN - Original Drilling - Original Drilling - As	17,462.31	8,396.02	6,500.63	6,448.47	124.633	CC, ES, SF
Oscar Y11-79HN - ST01 Original Drilling - ST01 Original	17,462.31	14,458.03	1,384.87	1,225.20	8.673	CC, ES, SF