Project: Mustang
Site: D Section 23
Well: Guttersen State D23-721
Wellbore: Wellbore #1
Design: Plan #1

Northern Region - DJ Basin

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

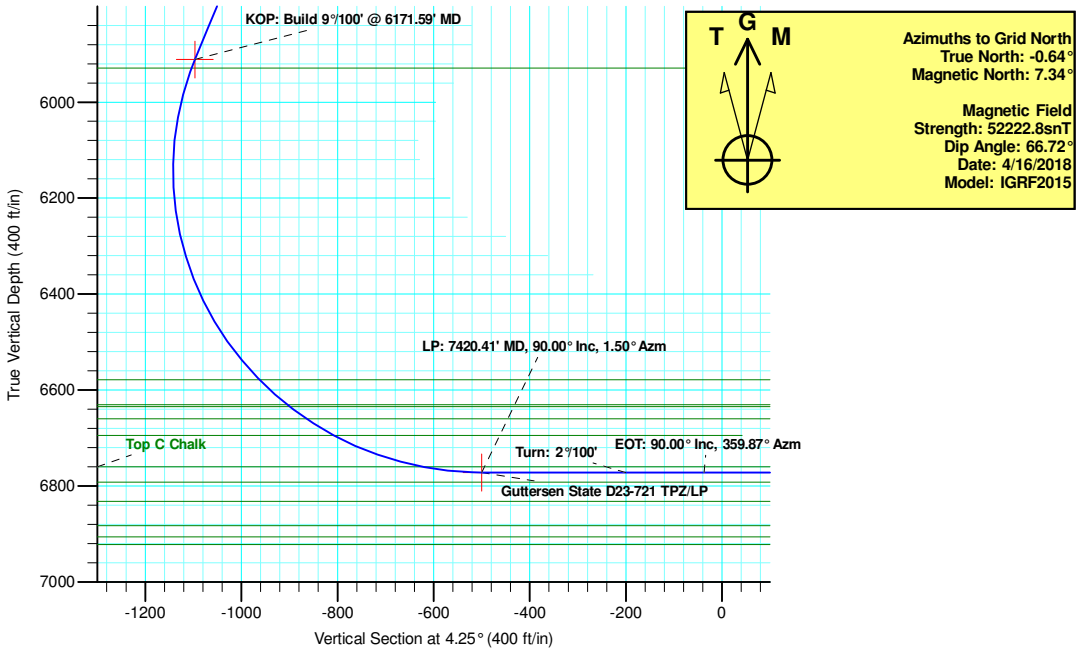
SECTION DETAILS

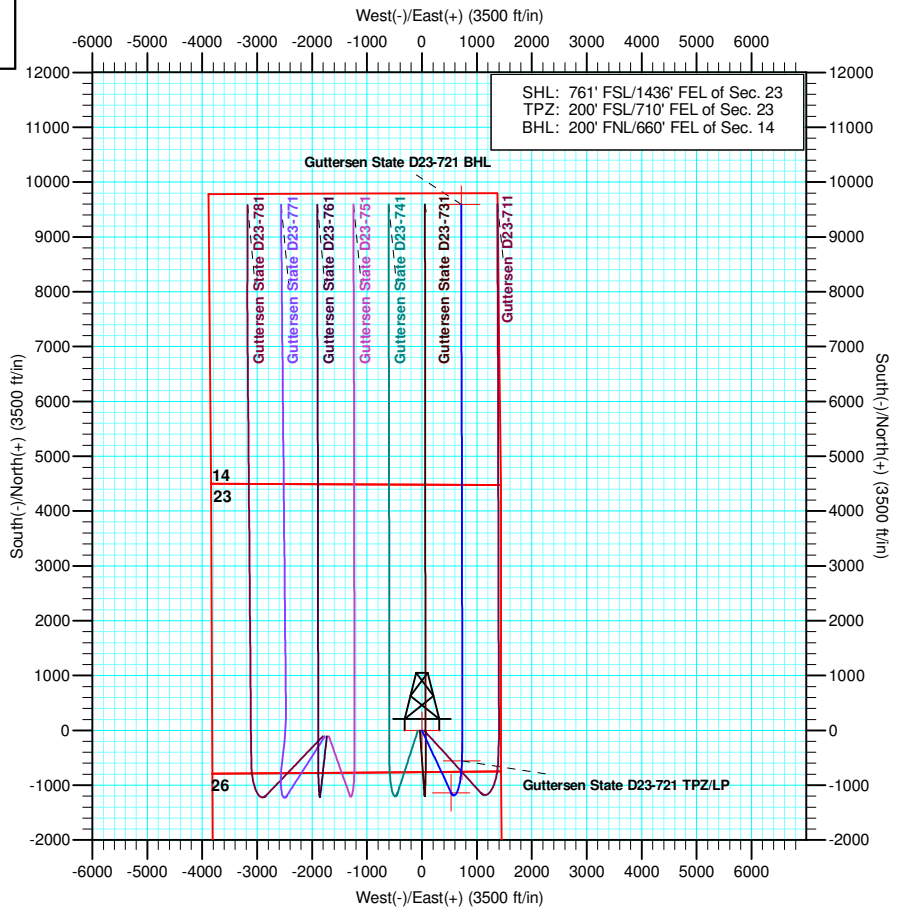
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2600.00	0.00	0.00	2600.00	0.00	0.00	0.00	0.00	0.00	
3	3859.43	25.19	155.03	3819.25	-246.94	115.01	2.00	155.03	-237.72	
4	6171.59	25.19	155.03	5911.56	-1138.99	530.47	0.00	0.00	-1096.49	
5	7420.41	90.00	1.50	6772.00	-555.30	726.21	9.00	-151.18	-499.89	Guttersen State D23-721 TPZ/LP
6	7720.41	90.00	1.50	6772.00	-255.41	734.06	0.00	0.00	-200.24	
7	7883.53	90.00	359.87	6772.00	-92.31	736.01	1.00	-90.00	-37.45	
8	17570.57	90.00	359.87	6772.00	9594.71	713.84	0.00	0.00	9621.23	Guttersen State D23-721 BHL

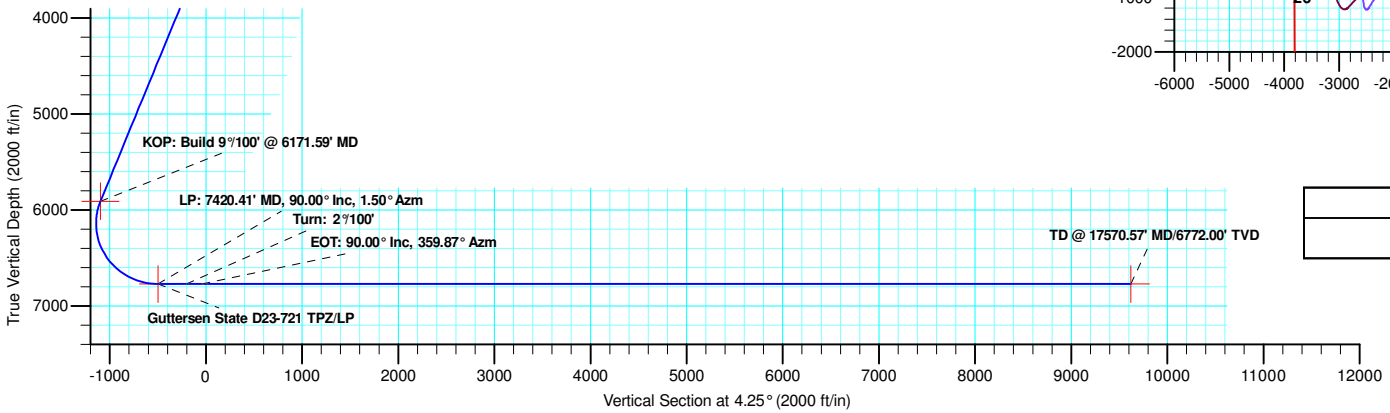
WELL DETAILS: Guttersen State D23-721

Ground Level: 4809.00

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.00	0.00	1319304.53	3275309.01	40.2056876	-104.5142994	







Plan: Plan #1 (Guttersen State D23-721/Wellbore #1)

Created By: Keith Noack Date: 15:12, August 15 2018

Northern Region - DJ Basin

Mustang
D Section 23
Guttersen State D23-721

Wellbore #1

Plan: Plan #1

Standard Planning Report

15 August, 2018

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen State D23-721
Company:	Northern Region - DJ Basin	**TVD Reference:**	KB @ 4839.00ft
Project:	Mustang	**MD Reference:**	KB @ 4839.00ft
Site:	D Section 23	**North Reference:**	Grid
Well:	Guttersen State D23-721	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Project Mustang, Weld County Colorado

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site 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 State D23-721

Well Position	**+N/-S**	233.35 ft	**Northing:**	1,319,304.53 usft	**Latitude:**	40.2056876
	+E/-W	391.15 ft	**Easting:**	3,275,309.01 usft	**Longitude:**	-104.5142994
Position Uncertainty		0.00 ft	**Wellhead Elevation:**		**Ground Level:**	4,809.00 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/16/2018	7.97	66.72	52,222.82231721

Design Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	4.25

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,859.43	25.19	155.03	3,819.25	-246.94	115.01	2.00	2.00	0.00	155.03	
6,171.59	25.19	155.03	5,911.56	-1,138.99	530.47	0.00	0.00	0.00	0.00	
7,420.41	90.00	1.50	6,772.00	-555.30	726.21	9.00	5.19	-12.29	-151.18	Guttersen State D2
7,720.41	90.00	1.50	6,772.00	-255.41	734.06	0.00	0.00	0.00	0.00	
7,883.53	90.00	359.87	6,772.00	-92.31	736.01	1.00	0.00	-1.00	-90.00	
17,570.57	90.00	359.87	6,772.00	9,594.71	713.84	0.00	0.00	0.00	0.00	Guttersen State D2

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen State D23-721
Company:	Northern Region - DJ Basin	**TVD Reference:**	KB @ 4839.00ft
Project:	Mustang	**MD Reference:**	KB @ 4839.00ft
Site:	D Section 23	**North Reference:**	Grid
Well:	Guttersen State D23-721	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
529.00	0.00	0.00	529.00	0.00	0.00	0.00	0.00	0.00	0.00
Pierre									
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
731.00	0.00	0.00	731.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Top									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,619.00	0.00	0.00	1,619.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer Base									
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
Build: 2°/100'									
2,700.00	2.00	155.03	2,699.98	-1.58	0.74	-1.52	2.00	2.00	0.00
2,800.00	4.00	155.03	2,799.84	-6.33	2.95	-6.09	2.00	2.00	0.00
2,900.00	6.00	155.03	2,899.45	-14.23	6.63	-13.70	2.00	2.00	0.00
3,000.00	8.00	155.03	2,998.70	-25.27	11.77	-24.33	2.00	2.00	0.00
3,100.00	10.00	155.03	3,097.47	-39.45	18.37	-37.98	2.00	2.00	0.00
3,200.00	12.00	155.03	3,195.62	-56.75	26.43	-54.63	2.00	2.00	0.00
3,300.00	14.00	155.03	3,293.06	-77.14	35.93	-74.26	2.00	2.00	0.00
3,400.00	16.00	155.03	3,389.64	-100.60	46.85	-96.85	2.00	2.00	0.00
3,500.00	18.00	155.03	3,485.27	-127.10	59.20	-122.36	2.00	2.00	0.00
3,600.00	20.00	155.03	3,579.82	-156.62	72.94	-150.77	2.00	2.00	0.00
3,700.00	22.00	155.03	3,673.17	-189.10	88.07	-182.04	2.00	2.00	0.00
3,745.26	22.91	155.03	3,715.00	-204.77	95.37	-197.13	2.00	2.00	0.00
Parkman									
3,800.00	24.00	155.03	3,765.21	-224.52	104.57	-216.14	2.00	2.00	0.00
3,859.43	25.19	155.03	3,819.25	-246.94	115.01	-237.72	2.00	2.00	0.00
Hold: 25.19° Inc, 155.03° Azm									
3,900.00	25.19	155.03	3,855.96	-262.59	122.30	-252.79	0.00	0.00	0.00
4,000.00	25.19	155.03	3,946.46	-301.17	140.27	-289.94	0.00	0.00	0.00
4,100.00	25.19	155.03	4,036.95	-339.75	158.23	-327.08	0.00	0.00	0.00

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Project:	Mustang	**MD Reference:**	KB @ 4839.00ft
Site:	D Section 23	**North Reference:**	Grid
Well:	Guttersen State D23-721	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,184.04	25.19	155.03	4,113.00	-372.18	173.34	-358.29	0.00	0.00	0.00
Sussex									
4,200.00	25.19	155.03	4,127.44	-378.33	176.20	-364.22	0.00	0.00	0.00
4,300.00	25.19	155.03	4,217.93	-416.91	194.17	-401.36	0.00	0.00	0.00
4,400.00	25.19	155.03	4,308.42	-455.50	212.14	-438.50	0.00	0.00	0.00
4,500.00	25.19	155.03	4,398.91	-494.08	230.11	-475.64	0.00	0.00	0.00
4,600.00	25.19	155.03	4,489.40	-532.66	248.08	-512.78	0.00	0.00	0.00
4,700.00	25.19	155.03	4,579.89	-571.24	266.04	-549.92	0.00	0.00	0.00
4,800.00	25.19	155.03	4,670.39	-609.82	284.01	-587.07	0.00	0.00	0.00
4,900.00	25.19	155.03	4,760.88	-648.40	301.98	-624.21	0.00	0.00	0.00
5,000.00	25.19	155.03	4,851.37	-686.98	319.95	-661.35	0.00	0.00	0.00
5,011.75	25.19	155.03	4,862.00	-691.51	322.06	-665.71	0.00	0.00	0.00
Shannon									
5,100.00	25.19	155.03	4,941.86	-725.56	337.92	-698.49	0.00	0.00	0.00
5,200.00	25.19	155.03	5,032.35	-764.14	355.89	-735.63	0.00	0.00	0.00
5,300.00	25.19	155.03	5,122.84	-802.72	373.85	-772.77	0.00	0.00	0.00
5,400.00	25.19	155.03	5,213.33	-841.30	391.82	-809.91	0.00	0.00	0.00
5,500.00	25.19	155.03	5,303.82	-879.88	409.79	-847.05	0.00	0.00	0.00
5,600.00	25.19	155.03	5,394.32	-918.46	427.76	-884.20	0.00	0.00	0.00
5,700.00	25.19	155.03	5,484.81	-957.05	445.73	-921.34	0.00	0.00	0.00
5,800.00	25.19	155.03	5,575.30	-995.63	463.70	-958.48	0.00	0.00	0.00
5,900.00	25.19	155.03	5,665.79	-1,034.21	481.66	-995.62	0.00	0.00	0.00
6,000.00	25.19	155.03	5,756.28	-1,072.79	499.63	-1,032.76	0.00	0.00	0.00
6,100.00	25.19	155.03	5,846.77	-1,111.37	517.60	-1,069.90	0.00	0.00	0.00
6,171.59	25.19	155.03	5,911.56	-1,138.99	530.47	-1,096.49	0.00	0.00	0.00
KOP: Build 9°/100' @ 6171.59' MD									
6,190.75	23.69	152.96	5,929.00	-1,146.11	533.94	-1,103.34	9.00	-7.81	-10.80
Teepee Buttes									
6,200.00	22.98	151.87	5,937.49	-1,149.36	535.63	-1,106.45	9.00	-7.70	-11.77
6,250.00	19.29	144.70	5,984.13	-1,164.72	545.01	-1,121.07	9.00	-7.38	-14.34
6,300.00	16.00	134.51	6,031.78	-1,176.29	554.70	-1,131.89	9.00	-6.58	-20.37
6,350.00	13.41	119.92	6,080.16	-1,184.02	564.65	-1,138.86	9.00	-5.18	-29.18
6,400.00	11.98	100.39	6,128.95	-1,187.85	574.78	-1,141.93	9.00	-2.86	-39.08
6,450.00	12.13	78.73	6,177.88	-1,187.76	585.04	-1,141.08	9.00	0.30	-43.31
6,500.00	13.81	60.02	6,226.62	-1,183.75	595.37	-1,136.31	9.00	3.36	-37.43
6,550.00	16.56	46.33	6,274.88	-1,175.84	605.70	-1,127.66	9.00	5.50	-27.37
6,600.00	19.94	36.80	6,322.37	-1,164.08	615.97	-1,115.17	9.00	6.76	-19.06
6,650.00	23.69	30.05	6,368.79	-1,148.55	626.11	-1,098.93	9.00	7.49	-13.50
6,700.00	27.64	25.10	6,413.86	-1,129.35	636.06	-1,079.04	9.00	7.92	-9.91
6,750.00	31.74	21.31	6,457.29	-1,106.58	645.77	-1,055.62	9.00	8.19	-7.56
6,800.00	35.92	18.32	6,498.81	-1,080.39	655.16	-1,028.80	9.00	8.36	-5.98
6,850.00	40.16	15.88	6,538.19	-1,050.95	664.19	-998.77	9.00	8.48	-4.88
6,900.00	44.45	13.84	6,575.16	-1,018.42	672.80	-965.70	9.00	8.57	-4.09
6,905.40	44.91	13.64	6,579.00	-1,014.73	673.70	-961.95	9.00	8.61	-3.74
Sharon Springs									
6,950.00	48.76	12.09	6,609.50	-983.02	680.93	-929.79	9.00	8.64	-3.48
6,983.60	51.68	11.04	6,631.00	-957.73	686.10	-904.18	9.00	8.67	-3.13
Top A Chalk									
6,990.09	52.24	10.84	6,635.00	-952.71	687.07	-899.10	9.00	8.69	-2.98
Top A Marl									
7,000.00	53.10	10.56	6,641.01	-944.97	688.53	-891.28	9.00	8.70	-2.92
7,032.73	55.95	9.64	6,660.00	-918.72	693.20	-864.76	9.00	8.71	-2.79
Top B Chalk									

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Site:	D Section 23	**North Reference:**	Grid
Well:	Guttersen State D23-721	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
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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)
7,050.00	57.46	9.19	6,669.48	-904.49	695.56	-850.39	9.00	8.72	-2.64
7,100.00	61.83	7.95	6,694.74	-861.83	701.98	-807.37	9.00	8.74	-2.48
7,100.55	61.88	7.93	6,695.00	-861.35	702.05	-806.88	9.00	8.75	-2.38
Top B Marl									
7,150.00	66.21	6.80	6,716.63	-817.27	707.74	-762.50	9.00	8.76	-2.29
7,200.00	70.60	5.73	6,735.03	-771.06	712.81	-716.05	9.00	8.78	-2.14
7,250.00	75.00	4.72	6,749.81	-723.51	717.15	-668.31	9.00	8.79	-2.03
7,295.25	78.98	3.84	6,760.00	-679.56	720.44	-624.23	9.00	8.80	-1.95
Top C Chalk									
7,300.00	79.40	3.75	6,760.89	-674.90	720.75	-619.56	9.00	8.80	-1.91
7,350.00	83.80	2.81	6,768.20	-625.53	723.57	-570.12	9.00	8.80	-1.89
7,400.00	88.20	1.88	6,771.68	-575.71	725.61	-520.28	9.00	8.81	-1.86
7,420.41	90.00	1.50	6,772.00	-555.30	726.21	-499.89	9.00	8.81	-1.85
LP: 7420.41' MD, 90.00° Inc, 1.50° Azm									
7,500.00	90.00	1.50	6,772.00	-475.74	728.29	-420.40	0.00	0.00	0.00
7,600.00	90.00	1.50	6,772.00	-375.78	730.91	-320.51	0.00	0.00	0.00
7,700.00	90.00	1.50	6,772.00	-275.81	733.53	-220.63	0.00	0.00	0.00
7,720.41	90.00	1.50	6,772.00	-255.41	734.06	-200.24	0.00	0.00	0.00
Turn: 2°/100'									
7,800.00	90.00	0.70	6,772.00	-175.84	735.59	-120.77	1.00	0.00	-1.00
7,883.53	90.00	359.87	6,772.00	-92.31	736.01	-37.45	1.00	0.00	-1.00
EOT: 90.00° Inc, 359.87° Azm									
7,900.00	90.00	359.87	6,772.00	-75.84	735.97	-21.02	0.00	0.00	0.00
8,000.00	90.00	359.87	6,772.00	24.16	735.75	78.68	0.00	0.00	0.00
8,100.00	90.00	359.87	6,772.00	124.16	735.52	178.39	0.00	0.00	0.00
8,200.00	90.00	359.87	6,772.00	224.16	735.29	278.10	0.00	0.00	0.00
8,300.00	90.00	359.87	6,772.00	324.16	735.06	377.81	0.00	0.00	0.00
8,400.00	90.00	359.87	6,772.00	424.16	734.83	477.51	0.00	0.00	0.00
8,500.00	90.00	359.87	6,772.00	524.16	734.60	577.22	0.00	0.00	0.00
8,600.00	90.00	359.87	6,772.00	624.16	734.37	676.93	0.00	0.00	0.00
8,700.00	90.00	359.87	6,772.00	724.16	734.14	776.63	0.00	0.00	0.00
8,800.00	90.00	359.87	6,772.00	824.16	733.91	876.34	0.00	0.00	0.00
8,900.00	90.00	359.87	6,772.00	924.16	733.69	976.05	0.00	0.00	0.00
9,000.00	90.00	359.87	6,772.00	1,024.16	733.46	1,075.76	0.00	0.00	0.00
9,100.00	90.00	359.87	6,772.00	1,124.16	733.23	1,175.46	0.00	0.00	0.00
9,200.00	90.00	359.87	6,772.00	1,224.16	733.00	1,275.17	0.00	0.00	0.00
9,300.00	90.00	359.87	6,772.00	1,324.16	732.77	1,374.88	0.00	0.00	0.00
9,400.00	90.00	359.87	6,772.00	1,424.16	732.54	1,474.58	0.00	0.00	0.00
9,500.00	90.00	359.87	6,772.00	1,524.16	732.31	1,574.29	0.00	0.00	0.00
9,600.00	90.00	359.87	6,772.00	1,624.16	732.08	1,674.00	0.00	0.00	0.00
9,700.00	90.00	359.87	6,772.00	1,724.16	731.86	1,773.71	0.00	0.00	0.00
9,800.00	90.00	359.87	6,772.00	1,824.16	731.63	1,873.41	0.00	0.00	0.00
9,900.00	90.00	359.87	6,772.00	1,924.16	731.40	1,973.12	0.00	0.00	0.00
10,000.00	90.00	359.87	6,772.00	2,024.16	731.17	2,072.83	0.00	0.00	0.00
10,100.00	90.00	359.87	6,772.00	2,124.16	730.94	2,172.53	0.00	0.00	0.00
10,200.00	90.00	359.87	6,772.00	2,224.16	730.71	2,272.24	0.00	0.00	0.00
10,300.00	90.00	359.87	6,772.00	2,324.16	730.48	2,371.95	0.00	0.00	0.00
10,400.00	90.00	359.87	6,772.00	2,424.16	730.25	2,471.66	0.00	0.00	0.00
10,500.00	90.00	359.87	6,772.00	2,524.16	730.02	2,571.36	0.00	0.00	0.00
10,600.00	90.00	359.87	6,772.00	2,624.16	729.80	2,671.07	0.00	0.00	0.00
10,700.00	90.00	359.87	6,772.00	2,724.16	729.57	2,770.78	0.00	0.00	0.00
10,800.00	90.00	359.87	6,772.00	2,824.15	729.34	2,870.48	0.00	0.00	0.00
10,900.00	90.00	359.87	6,772.00	2,924.15	729.11	2,970.19	0.00	0.00	0.00

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen State D23-721
Company:	Northern Region - DJ Basin	**TVD Reference:**	KB @ 4839.00ft
Project:	Mustang	**MD Reference:**	KB @ 4839.00ft
Site:	D Section 23	**North Reference:**	Grid
Well:	Guttersen State D23-721	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,000.00	90.00	359.87	6,772.00	3,024.15	728.88	3,069.90	0.00	0.00	0.00
11,100.00	90.00	359.87	6,772.00	3,124.15	728.65	3,169.61	0.00	0.00	0.00
11,200.00	90.00	359.87	6,772.00	3,224.15	728.42	3,269.31	0.00	0.00	0.00
11,300.00	90.00	359.87	6,772.00	3,324.15	728.19	3,369.02	0.00	0.00	0.00
11,400.00	90.00	359.87	6,772.00	3,424.15	727.96	3,468.73	0.00	0.00	0.00
11,500.00	90.00	359.87	6,772.00	3,524.15	727.74	3,568.43	0.00	0.00	0.00
11,600.00	90.00	359.87	6,772.00	3,624.15	727.51	3,668.14	0.00	0.00	0.00
11,700.00	90.00	359.87	6,772.00	3,724.15	727.28	3,767.85	0.00	0.00	0.00
11,800.00	90.00	359.87	6,772.00	3,824.15	727.05	3,867.56	0.00	0.00	0.00
11,900.00	90.00	359.87	6,772.00	3,924.15	726.82	3,967.26	0.00	0.00	0.00
12,000.00	90.00	359.87	6,772.00	4,024.15	726.59	4,066.97	0.00	0.00	0.00
12,100.00	90.00	359.87	6,772.00	4,124.15	726.36	4,166.68	0.00	0.00	0.00
12,200.00	90.00	359.87	6,772.00	4,224.15	726.13	4,266.38	0.00	0.00	0.00
12,300.00	90.00	359.87	6,772.00	4,324.15	725.91	4,366.09	0.00	0.00	0.00
12,400.00	90.00	359.87	6,772.00	4,424.15	725.68	4,465.80	0.00	0.00	0.00
12,500.00	90.00	359.87	6,772.00	4,524.15	725.45	4,565.51	0.00	0.00	0.00
12,600.00	90.00	359.87	6,772.00	4,624.15	725.22	4,665.21	0.00	0.00	0.00
12,700.00	90.00	359.87	6,772.00	4,724.15	724.99	4,764.92	0.00	0.00	0.00
12,800.00	90.00	359.87	6,772.00	4,824.15	724.76	4,864.63	0.00	0.00	0.00
12,900.00	90.00	359.87	6,772.00	4,924.15	724.53	4,964.33	0.00	0.00	0.00
13,000.00	90.00	359.87	6,772.00	5,024.15	724.30	5,064.04	0.00	0.00	0.00
13,100.00	90.00	359.87	6,772.00	5,124.15	724.07	5,163.75	0.00	0.00	0.00
13,200.00	90.00	359.87	6,772.00	5,224.15	723.85	5,263.46	0.00	0.00	0.00
13,300.00	90.00	359.87	6,772.00	5,324.15	723.62	5,363.16	0.00	0.00	0.00
13,400.00	90.00	359.87	6,772.00	5,424.15	723.39	5,462.87	0.00	0.00	0.00
13,500.00	90.00	359.87	6,772.00	5,524.15	723.16	5,562.58	0.00	0.00	0.00
13,600.00	90.00	359.87	6,772.00	5,624.15	722.93	5,662.28	0.00	0.00	0.00
13,700.00	90.00	359.87	6,772.00	5,724.15	722.70	5,761.99	0.00	0.00	0.00
13,800.00	90.00	359.87	6,772.00	5,824.15	722.47	5,861.70	0.00	0.00	0.00
13,900.00	90.00	359.87	6,772.00	5,924.15	722.24	5,961.41	0.00	0.00	0.00
14,000.00	90.00	359.87	6,772.00	6,024.15	722.02	6,061.11	0.00	0.00	0.00
14,100.00	90.00	359.87	6,772.00	6,124.15	721.79	6,160.82	0.00	0.00	0.00
14,200.00	90.00	359.87	6,772.00	6,224.15	721.56	6,260.53	0.00	0.00	0.00
14,300.00	90.00	359.87	6,772.00	6,324.15	721.33	6,360.23	0.00	0.00	0.00
14,400.00	90.00	359.87	6,772.00	6,424.15	721.10	6,459.94	0.00	0.00	0.00
14,500.00	90.00	359.87	6,772.00	6,524.15	720.87	6,559.65	0.00	0.00	0.00
14,600.00	90.00	359.87	6,772.00	6,624.15	720.64	6,659.36	0.00	0.00	0.00
14,700.00	90.00	359.87	6,772.00	6,724.14	720.41	6,759.06	0.00	0.00	0.00
14,800.00	90.00	359.87	6,772.00	6,824.14	720.18	6,858.77	0.00	0.00	0.00
14,900.00	90.00	359.87	6,772.00	6,924.14	719.96	6,958.48	0.00	0.00	0.00
15,000.00	90.00	359.87	6,772.00	7,024.14	719.73	7,058.18	0.00	0.00	0.00
15,100.00	90.00	359.87	6,772.00	7,124.14	719.50	7,157.89	0.00	0.00	0.00
15,200.00	90.00	359.87	6,772.00	7,224.14	719.27	7,257.60	0.00	0.00	0.00
15,300.00	90.00	359.87	6,772.00	7,324.14	719.04	7,357.31	0.00	0.00	0.00
15,400.00	90.00	359.87	6,772.00	7,424.14	718.81	7,457.01	0.00	0.00	0.00
15,500.00	90.00	359.87	6,772.00	7,524.14	718.58	7,556.72	0.00	0.00	0.00
15,600.00	90.00	359.87	6,772.00	7,624.14	718.35	7,656.43	0.00	0.00	0.00
15,700.00	90.00	359.87	6,772.00	7,724.14	718.12	7,756.13	0.00	0.00	0.00
15,800.00	90.00	359.87	6,772.00	7,824.14	717.90	7,855.84	0.00	0.00	0.00
15,900.00	90.00	359.87	6,772.00	7,924.14	717.67	7,955.55	0.00	0.00	0.00
16,000.00	90.00	359.87	6,772.00	8,024.14	717.44	8,055.26	0.00	0.00	0.00
16,100.00	90.00	359.87	6,772.00	8,124.14	717.21	8,154.96	0.00	0.00	0.00
16,200.00	90.00	359.87	6,772.00	8,224.14	716.98	8,254.67	0.00	0.00	0.00
16,300.00	90.00	359.87	6,772.00	8,324.14	716.75	8,354.38	0.00	0.00	0.00

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen State D23-721
Company:	Northern Region - DJ Basin	**TVD Reference:**	KB @ 4839.00ft
Project:	Mustang	**MD Reference:**	KB @ 4839.00ft
Site:	D Section 23	**North Reference:**	Grid
Well:	Guttersen State D23-721	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
16,400.00	90.00	359.87	6,772.00	8,424.14	716.52	8,454.08	0.00	0.00	0.00
16,500.00	90.00	359.87	6,772.00	8,524.14	716.29	8,553.79	0.00	0.00	0.00
16,600.00	90.00	359.87	6,772.00	8,624.14	716.07	8,653.50	0.00	0.00	0.00
16,700.00	90.00	359.87	6,772.00	8,724.14	715.84	8,753.21	0.00	0.00	0.00
16,800.00	90.00	359.87	6,772.00	8,824.14	715.61	8,852.91	0.00	0.00	0.00
16,900.00	90.00	359.87	6,772.00	8,924.14	715.38	8,952.62	0.00	0.00	0.00
17,000.00	90.00	359.87	6,772.00	9,024.14	715.15	9,052.33	0.00	0.00	0.00
17,100.00	90.00	359.87	6,772.00	9,124.14	714.92	9,152.03	0.00	0.00	0.00
17,200.00	90.00	359.87	6,772.00	9,224.14	714.69	9,251.74	0.00	0.00	0.00
17,300.00	90.00	359.87	6,772.00	9,324.14	714.46	9,351.45	0.00	0.00	0.00
17,400.00	90.00	359.87	6,772.00	9,424.14	714.23	9,451.16	0.00	0.00	0.00
17,500.00	90.00	359.87	6,772.00	9,524.14	714.01	9,550.86	0.00	0.00	0.00
17,570.57	90.00	359.87	6,772.00	9,594.71	713.84	9,621.23	0.00	0.00	0.00
TD @ 17570.57' MD/6772.00' TVD									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Guttersen State D23-7 - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,319,304.53	3,275,309.01	40.2056876	-104.5142994
Guttersen State D23-7 - plan hits target center - Point	0.00	0.00	5,911.55	-1,138.99	530.47	1,318,165.54	3,275,839.48	40.2025450	-104.5124457
Guttersen State D23-7 - plan hits target center - Point	0.00	0.00	6,772.00	9,594.71	713.84	1,328,899.22	3,276,022.86	40.2320027	-104.5113608
Guttersen State D23-7 - plan hits target center - Point	0.00	0.00	6,772.00	-555.30	726.21	1,318,749.23	3,276,035.22	40.2041412	-104.5117217

Database:	EDMP	**Local Co-ordinate Reference:**	Well Guttersen State D23-721
Company:	Northern Region - DJ Basin	**TVD Reference:**	KB @ 4839.00ft
Project:	Mustang	**MD Reference:**	KB @ 4839.00ft
Site:	D Section 23	**North Reference:**	Grid
Well:	Guttersen State D23-721	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
529.00	529.00	Pierre			
731.00	731.00	Upper Pierre Aquifer Top			
1,619.00	1,619.00	Upper Pierre Aquifer Base			
3,745.26	3,715.00	Parkman			
4,184.04	4,113.00	Sussex			
5,011.75	4,862.00	Shannon			
6,190.75	5,929.00	Teepee Buttes			
6,905.40	6,579.00	Sharon Springs			
6,983.60	6,631.00	Top A Chalk			
6,990.09	6,635.00	Top A Marl			
7,032.73	6,660.00	Top B Chalk			
7,100.55	6,695.00	Top B Marl			
7,295.25	6,760.00	Top C Chalk			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
2,600.00	2,600.00	0.00	0.00	Build: 2°/100'
3,859.43	3,819.25	-246.94	115.01	Hold: 25.19° Inc, 155.03° Azm
6,171.59	5,911.56	-1,138.99	530.47	KOP: Build 9°/100' @ 6171.59' MD
7,420.41	6,772.00	-555.30	726.21	LP: 7420.41' MD, 90.00° Inc, 1.50° Azm
7,720.41	6,772.00	-255.41	734.06	Turn: 2°/100'
7,883.53	6,772.00	-92.31	736.01	EOT: 90.00° Inc, 359.87° Azm
17,570.57	6,772.00	9,594.71	713.84	TD @ 17570.57' MD/6772.00' TVD

Northern Region - DJ Basin

Mustang
D Section 23
Guttersen State D23-721

Wellbore #1
Plan #1

Anticollision Summary Report

15 August, 2018

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen State D23-721
Project:	Mustang	**TVD Reference:**	KB @ 4839.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4839.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen State D23-721	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

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

Survey Tool Program **Date** 7/31/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	17,570.57	Plan #1 (Wellbore #1)	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 14						
Spike D 14-09 (SI) - Wellbore #1 - Gyro Surveys	14,652.37	6,693.33	202.50	113.62	2.278	CC, ES, SF
Spike State D 14-13 (SI) - Wellbore #1 - Gyro Surveys	13,037.89	6,806.82	3,945.46	3,868.17	51.046	CC, ES
Spike State D 14-13 (SI) - Wellbore #1 - Gyro Surveys	13,900.00	6,807.43	4,038.55	3,956.49	49.216	SF
Dalbey D 14-1 (SI) - Wellbore #1 - Gyro Surveys	17,075.06	6,693.07	84.97	-22.60	0.790	Level 1, CC, ES, SF
Dalbey D 14-2 (SI) - Wellbore #1 - Gyro Surveys	16,828.55	6,696.33	1,000.33	894.66	9.466	CC, ES, SF
Dalbey D 14-3 (SI) - Wellbore #1 - Gyro Surveys	17,044.37	6,746.20	2,434.93	2,327.35	22.632	CC, ES
Dalbey D 14-3 (SI) - Wellbore #1 - Gyro Surveys	17,300.00	6,747.46	2,448.32	2,339.39	22.476	SF
Dalbey D 14-6 (SI) - Wellbore #1 - Gyro Surveys	15,879.73	6,723.23	2,642.00	2,543.68	26.870	CC
Dalbey D 14-6 (SI) - Wellbore #1 - Gyro Surveys	15,900.00	6,723.27	2,642.08	2,543.62	26.833	ES
Dalbey D 14-6 (SI) - Wellbore #1 - Gyro Surveys	16,200.00	6,723.82	2,661.35	2,561.29	26.598	SF
Dalbey D 14-7 (SI) - Wellbore #1 - Gyro Surveys	15,748.01	6,719.80	1,384.09	1,286.69	14.211	CC, ES
Dalbey D 14-7 (SI) - Wellbore #1 - Gyro Surveys	15,800.00	6,719.98	1,385.07	1,287.40	14.181	SF
Dalbey D 14-8 (SI) - Wellbore #1 - Gyro Surveys	15,788.48	6,689.76	131.84	34.26	1.351	Level 3, CC, ES, SF
Guttersen State D 14-23 (SI) - Wellbore #1 - Gyro Survey	13,711.63	6,738.48	584.53	502.34	7.113	CC, ES, SF
Guttersen State D 14-24 (PR) - Wellbore #1 - Gyro Surve	13,826.36	6,736.01	2,046.26	1,963.48	24.720	CC, ES
Guttersen State D 14-24 (PR) - Wellbore #1 - Gyro Surve	14,000.00	6,735.64	2,053.61	1,969.90	24.530	SF
Guttersen State D 14-33 (PR) - Wellbore #1 - Gyro Surve	13,893.87	6,854.79	4,307.27	4,223.45	51.386	CC
Guttersen State D 14-33 (PR) - Wellbore #1 - Gyro Surve	13,900.00	6,854.77	4,307.28	4,223.41	51.361	ES
Guttersen State D 14-33 (PR) - Wellbore #1 - Gyro Surve	14,800.00	6,852.05	4,401.55	4,312.60	49.484	SF
HSR-Guttersen State 4-14 (PA) - Wellbore #1 - Gyro Sur	17,016.25	6,755.50	3,908.76	3,801.88	36.573	CC, ES
HSR-Guttersen State 4-14 (PA) - Wellbore #1 - Gyro Sur	17,570.57	6,753.34	3,947.87	3,837.75	35.851	SF
HSR-Guttersen State 5-14 (PA) - Wellbore #1 - Gyro Sur	15,820.31	6,727.12	3,878.19	3,780.86	39.846	CC, ES
HSR-Guttersen State 5-14 (PA) - Wellbore #1 - Gyro Sur	16,500.00	6,725.43	3,937.30	3,836.13	38.917	SF
Spike D 14-16 (SI) - Wellbore #1 - Gyro Surveys	13,019.99	6,714.43	149.09	72.20	1.939	CC, ES, SF
Spike State D 14-11 (PR) - Wellbore #1 - Gyro Surveys	14,655.08	6,752.98	2,415.24	2,326.16	27.113	CC, ES
Spike State D 14-11 (PR) - Wellbore #1 - Gyro Surveys	14,900.00	6,751.17	2,427.62	2,337.19	26.846	SF
Spike State D 14-12 (PR) - Wellbore #1 - Gyro Surveys	14,614.72	6,750.79	3,945.25	3,856.45	44.429	CC, ES
Spike State D 14-12 (PR) - Wellbore #1 - Gyro Surveys	15,400.00	6,749.40	4,022.64	3,929.46	43.172	SF
Spike State D 14-14 (SI) - Wellbore #1 - Gyro Surveys	12,960.65	6,753.03	2,448.97	2,372.49	32.021	CC, ES
Spike State D 14-14 (SI) - Wellbore #1 - Gyro Surveys	13,300.00	6,754.80	2,472.37	2,394.09	31.585	SF
Spike State D 14-15 (SI) - Wellbore #1 - Gyro Surveys	13,070.36	6,789.07	1,125.48	1,047.84	14.495	CC, ES
Spike State D 14-15 (SI) - Wellbore #1 - Gyro Surveys	13,100.00	6,788.63	1,125.87	1,048.09	14.474	SF
Spike State D14-13J (SI) - Wellbore #1 - Gyro Surveys	13,826.88	6,775.31	3,490.94	3,407.93	42.057	CC, ES
Spike State D14-13J (SI) - Wellbore #1 - Gyro Surveys	14,400.00	6,775.13	3,537.67	3,451.41	41.012	SF
Spike State GWS D 14-10 (SI) - Wellbore #1 - Gyro Surv	14,312.98	6,726.96	1,237.06	1,150.61	14.310	CC, ES
Spike State GWS D 14-10 (SI) - Wellbore #1 - Gyro Surv	14,400.00	6,725.06	1,240.12	1,153.31	14.286	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen State D23-721
Project:	Mustang	**TVD Reference:**	KB @ 4839.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4839.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen State D23-721	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 15						
Cally Blue D 15-12 (PR) - Wellbore #1 - Gyro Surveys	14,575.69	6,756.42	9,316.40	9,227.91	105.285	CC
Cally Blue D 15-12 (PR) - Wellbore #1 - Gyro Surveys	14,600.00	6,756.34	9,316.43	9,227.76	105.074	ES
Cally Blue D 15-12 (PR) - Wellbore #1 - Gyro Surveys	17,570.57	6,746.87	9,785.93	9,678.78	91.329	SF
Cally Blue D 15-14 (PR) - Wellbore #1 - Gyro Surveys	12,994.96	6,757.70	7,774.37	7,697.62	101.294	CC
Cally Blue D 15-14 (PR) - Wellbore #1 - Gyro Surveys	13,000.00	6,757.70	7,774.37	7,697.59	101.248	ES
Cally Blue D 15-14 (PR) - Wellbore #1 - Gyro Surveys	16,100.00	6,759.18	8,371.51	8,276.92	88.506	SF
Cally Blue D15-04J - Wellbore #1 - Wellbore #1- As Drille	13,490.90	6,811.11	5,547.16	5,466.54	68.805	CC
Cally Blue D15-04J - Wellbore #1 - Wellbore #1- As Drille	13,500.00	6,811.06	5,547.16	5,466.48	68.751	ES
Cally Blue D15-04J - Wellbore #1 - Wellbore #1- As Drille	15,100.00	6,803.33	5,775.82	5,686.08	64.363	SF
Cally Blue D15-09 - Wellbore #1 - Wellbore #1- As Drilled	14,369.36	6,828.69	5,342.20	5,254.96	61.233	CC
Cally Blue D15-09 - Wellbore #1 - Wellbore #1- As Drilled	14,400.00	6,828.56	5,342.29	5,254.83	61.082	ES
Cally Blue D15-09 - Wellbore #1 - Wellbore #1- As Drilled	15,700.00	6,822.57	5,505.42	5,410.49	57.993	SF
Cally Blue D15-10 - Wellbore #1 - Wellbore #1- As Drilled	14,486.19	6,763.81	6,588.53	6,500.70	75.009	CC
Cally Blue D15-10 - Wellbore #1 - Wellbore #1- As Drilled	14,500.00	6,763.87	6,588.55	6,500.61	74.924	ES
Cally Blue D15-10 - Wellbore #1 - Wellbore #1- As Drilled	16,500.00	6,773.14	6,889.42	6,789.80	69.156	SF
Cally Blue D15-11 (PA) - Wellbore #1 - Gyro Surveys	14,623.30	6,789.81	7,800.27	7,711.29	87.662	CC
Cally Blue D15-11 (PA) - Wellbore #1 - Gyro Surveys	14,700.00	6,789.42	7,800.65	7,711.11	87.122	ES
Cally Blue D15-11 (PA) - Wellbore #1 - Gyro Surveys	17,400.00	6,775.45	8,279.74	8,174.60	78.747	SF
Cally Blue D15-15 - Wellbore #1 - Wellbore #1- As Drilled	13,181.89	6,731.61	6,545.35	6,467.33	83.894	CC
Cally Blue D15-15 - Wellbore #1 - Wellbore #1- As Drilled	13,200.00	6,731.70	6,545.38	6,467.23	83.758	ES
Cally Blue D15-15 - Wellbore #1 - Wellbore #1- As Drilled	15,400.00	6,744.08	6,910.97	6,820.16	76.105	SF
Cally D15-02 - Wellbore #1 - Wellbore #1-As Drilled	17,120.10	6,721.20	6,521.21	6,413.24	60.402	CC
Cally D15-02 - Wellbore #1 - Wellbore #1-As Drilled	17,200.00	6,720.87	6,521.70	6,413.14	60.077	ES
Cally D15-02 - Wellbore #1 - Wellbore #1-As Drilled	17,570.57	6,719.39	6,536.75	6,425.59	58.809	SF
Cally White D15-01 - Wellbore #1 - Wellbore #1- As Drille	17,066.25	6,768.86	5,217.68	5,109.91	48.417	CC
Cally White D15-01 - Wellbore #1 - Wellbore #1- As Drille	17,100.00	6,768.64	5,217.78	5,109.77	48.308	ES
Cally White D15-01 - Wellbore #1 - Wellbore #1- As Drille	17,570.57	6,765.66	5,241.99	5,130.87	47.174	SF
Cally White D15-07 - Wellbore #1 - Wellbore #1- As Drille	15,809.68	6,789.67	6,661.80	6,563.74	67.938	CC
Cally White D15-07 - Wellbore #1 - Wellbore #1- As Drille	15,900.00	6,788.41	6,662.41	6,563.70	67.493	ES
Cally White D15-07 - Wellbore #1 - Wellbore #1- As Drille	17,570.57	6,765.65	6,890.55	6,782.07	63.516	SF
Cally White D15-08 - Wellbore #1 - Wellbore #1- As Drille	15,786.04	6,794.59	5,187.37	5,089.42	52.962	CC
Cally White D15-08 - Wellbore #1 - Wellbore #1- As Drille	15,800.00	6,794.53	5,187.39	5,089.34	52.907	ES
Cally White D15-08 - Wellbore #1 - Wellbore #1- As Drille	16,900.00	6,788.82	5,305.62	5,201.17	50.796	SF
Chandler State D15-72-1HN - Original Drilling - Original D	14,012.34	10,186.75	4,894.13	4,798.54	51.201	CC
Chandler State D15-72-1HN - Original Drilling - Original D	15,200.00	15,200.00	4,919.20	4,788.40	37.608	ES, SF
Chandler State D15-73-1HN - Original Drilling - Original D	12,549.38	11,629.00	5,446.88	5,351.81	57.293	CC
Chandler State D15-73-1HN - Original Drilling - Original D	12,900.00	12,900.00	5,457.85	5,351.41	51.276	ES
Chandler State D15-73-1HN - Original Drilling - Original D	15,500.00	15,500.00	5,520.97	5,387.77	41.450	SF
Chandler State D15-74-1HN - Original Drilling - Original D	15,500.00	15,500.00	6,234.70	6,026.10	29.888	SF
Chandler State D15-74-1HN - Original Drilling - Original D	17,570.57	5,463.00	6,063.40	5,958.31	57.697	CC, ES
Chandler State D23-79HN - Original Drilling - Original Dr	5,900.00	12,200.02	4,465.69	4,355.21	40.418	ES
Chandler State D23-79HN - Original Drilling - Original Dr	7,602.67	12,200.02	4,491.01	4,371.52	37.585	SF
Chandler State D23-79HN - Original Drilling - Original Dr	12,677.40	7,248.00	4,455.00	4,381.30	60.450	CC
Duff D15-5 (PR) - Wellbore #1 - Gyro Surveys	15,765.90	7,005.41	9,249.57	9,151.65	94.457	CC
Duff D15-5 (PR) - Wellbore #1 - Gyro Surveys	15,800.00	7,004.51	9,249.63	9,151.46	94.214	ES
Duff D15-5 (PR) - Wellbore #1 - Gyro Surveys	17,570.57	6,957.94	9,423.86	9,313.83	85.644	SF
Guttersen D 15-21 (PR) - Wellbore #1 - Gyro Surveys	15,035.34	6,815.79	7,135.05	7,042.88	77.413	CC
Guttersen D 15-21 (PR) - Wellbore #1 - Gyro Surveys	15,100.00	6,815.44	7,135.34	7,042.70	77.022	ES
Guttersen D 15-21 (PR) - Wellbore #1 - Gyro Surveys	17,300.00	6,796.48	7,485.81	7,380.41	71.017	SF
Guttersen D 15-24 (PR) - Wellbore #1 - Gyro Surveys	13,815.78	6,761.16	7,235.29	7,152.48	87.377	CC
Guttersen D 15-24 (PR) - Wellbore #1 - Gyro Surveys	13,900.00	6,761.43	7,235.78	7,152.37	86.753	ES
Guttersen D 15-24 (PR) - Wellbore #1 - Gyro Surveys	16,400.00	6,768.90	7,682.94	7,585.16	78.573	SF
Guttersen D 15-29 (SI) - Wellbore #1 - Gyro Surveys	17,570.57	6,668.26	8,535.88	8,424.57	76.689	CC, ES, SF

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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen State D23-721
Project:	Mustang	**TVD Reference:**	KB @ 4839.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4839.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen State D23-721	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 15						
Guttersen D 22-28 (PR) - Wellbore #1 - Gyro Surveys	12,601.50	6,779.05	7,325.59	7,251.56	98.944	CC
Guttersen D 22-28 (PR) - Wellbore #1 - Gyro Surveys	12,700.00	6,779.14	7,326.26	7,251.55	98.062	ES
Guttersen D 22-28 (PR) - Wellbore #1 - Gyro Surveys	15,500.00	6,781.77	7,878.17	7,787.68	87.054	SF
Guttersen D14-32 - Wellbore #1 - Wellbore #1- As Drillec	15,233.67	6,797.02	4,731.07	4,637.40	50.507	CC
Guttersen D14-32 - Wellbore #1 - Wellbore #1- As Drillec	15,300.00	6,798.12	4,731.54	4,637.39	50.257	ES
Guttersen D14-32 - Wellbore #1 - Wellbore #1- As Drillec	16,200.00	6,810.37	4,828.73	4,729.38	48.602	SF
Guttersen D15-17 - Wellbore #1 - Wellbore #1- As Drillec	16,512.68	6,811.52	5,897.31	5,793.67	56.903	CC, ES
Guttersen D15-17 - Wellbore #1 - Wellbore #1- As Drillec	17,570.57	6,822.61	5,991.43	5,881.12	54.314	SF
Guttersen D15-18 (SI) - Wellbore #1 - Gyro Surveys	16,649.05	6,803.56	7,051.70	6,947.06	67.394	CC
Guttersen D15-18 (SI) - Wellbore #1 - Gyro Surveys	16,700.00	6,803.91	7,051.88	6,946.87	67.152	ES
Guttersen D15-18 (SI) - Wellbore #1 - Gyro Surveys	17,570.57	6,809.61	7,111.65	7,000.74	64.119	SF
Guttersen D15-20 (PR) - Wellbore #1 - Gyro Surveys	15,198.74	6,821.84	8,606.54	8,513.06	92.068	CC
Guttersen D15-20 (PR) - Wellbore #1 - Gyro Surveys	15,300.00	6,821.85	8,607.14	8,512.91	91.345	ES
Guttersen D15-20 (PR) - Wellbore #1 - Gyro Surveys	17,570.57	6,822.05	8,927.38	8,818.92	82.310	SF
Guttersen D15-22 - Wellbore #1 - Wellbore #1- As Drillec	14,918.67	6,797.72	5,906.78	5,815.51	64.717	CC
Guttersen D15-22 - Wellbore #1 - Wellbore #1- As Drillec	15,000.00	6,798.37	5,907.34	5,815.49	64.309	ES
Guttersen D15-22 - Wellbore #1 - Wellbore #1- As Drillec	16,500.00	6,814.51	6,114.78	6,014.23	60.814	SF
Guttersen D15-28 (SI) - Wellbore #1 - Gyro Surveys	17,570.57	6,816.09	7,237.58	7,125.65	64.658	CC, ES, SF
Guttersen D15-30 (SI) - Wellbore #1 - Gyro Surveys	17,387.84	6,684.25	9,574.93	9,464.99	87.096	CC
Guttersen D15-30 (SI) - Wellbore #1 - Gyro Surveys	17,500.00	6,684.49	9,575.59	9,464.80	86.432	ES
Guttersen D15-30 (SI) - Wellbore #1 - Gyro Surveys	17,570.57	6,684.64	9,576.67	9,465.36	86.031	SF
Guttersen D22-27 - Wellbore #1 - Wellbore #1- As Drillec	12,691.77	6,786.16	5,937.92	5,863.19	79.459	CC
Guttersen D22-27 - Wellbore #1 - Wellbore #1- As Drillec	12,700.00	6,786.18	5,937.92	5,863.14	79.400	ES
Guttersen D22-27 - Wellbore #1 - Wellbore #1- As Drillec	14,600.00	6,789.34	6,237.00	6,151.45	72.898	SF
Guttersen D23-69HN - Plan A - Plan A	12,300.00	11,273.02	95.89	-47.01	0.671	Level 1, ES
Guttersen D23-69HN - Plan A - Plan A	12,381.62	11,272.83	50.33	-31.56	0.615	Level 1, CC
Guttersen D23-69HN - Plan A - Plan A	12,400.00	11,272.78	53.58	-41.70	0.562	Level 1, SF
HSR Guttersen 03-15 (SI) - Wellbore #1 - Gyro Surveys	17,097.88	6,742.76	7,891.58	7,783.70	73.151	CC
HSR Guttersen 03-15 (SI) - Wellbore #1 - Gyro Surveys	17,200.00	6,743.76	7,892.24	7,783.59	72.639	ES
HSR Guttersen 03-15 (SI) - Wellbore #1 - Gyro Surveys	17,570.57	6,747.32	7,905.72	7,794.39	71.007	SF
HSR Guttersen 6-15 (SI) - Wellbore #1 - Gyro Surveys	15,644.49	6,808.86	7,718.23	7,621.37	79.686	CC
HSR Guttersen 6-15 (SI) - Wellbore #1 - Gyro Surveys	15,700.00	6,808.73	7,718.43	7,621.16	79.352	ES
HSR Guttersen 6-15 (SI) - Wellbore #1 - Gyro Surveys	17,570.57	6,804.47	7,954.93	7,845.99	73.021	SF
Mills UPRC D 15-04 (SI) - Wellbore #1 - Gyro Surveys	16,795.84	6,707.38	8,862.12	8,756.74	84.092	CC
Mills UPRC D 15-04 (SI) - Wellbore #1 - Gyro Surveys	16,900.00	6,708.09	8,862.73	8,756.56	83.475	ES
Mills UPRC D 15-04 (SI) - Wellbore #1 - Gyro Surveys	17,570.57	6,712.40	8,895.92	8,784.93	80.153	SF
Two E Ranch 1-15B (SI) - Wellbore #1 - Gyro Surveys	13,441.57	6,688.01	8,867.42	8,787.94	111.563	CC
Two E Ranch 1-15B (SI) - Wellbore #1 - Gyro Surveys	13,500.00	6,687.98	8,867.62	8,787.72	110.986	ES
Two E Ranch 1-15B (SI) - Wellbore #1 - Gyro Surveys	17,200.00	6,685.76	9,631.05	9,529.72	95.048	SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen State D23-721
Project:	Mustang	**TVD Reference:**	KB @ 4839.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4839.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen State D23-721	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 23						
Guttersen 23-20 (SI) - Wellbore #1 - Gyro Surveys	1,662.34	1,669.45	3,219.09	3,207.70	282.570	CC
Guttersen 23-20 (SI) - Wellbore #1 - Gyro Surveys	2,000.00	1,979.40	3,220.06	3,206.38	235.288	ES
Guttersen 23-20 (SI) - Wellbore #1 - Gyro Surveys	10,700.00	6,790.40	3,342.81	3,282.24	55.192	SF
Guttersen 23-32 (SI) - Wellbore #1 - Gyro Surveys	10,493.81	6,760.67	1,110.14	1,049.95	18.444	CC
Guttersen 23-32 (SI) - Wellbore #1 - Gyro Surveys	10,500.00	6,760.64	1,110.15	1,049.94	18.436	ES
Guttersen 23-32 (SI) - Wellbore #1 - Gyro Surveys	10,600.00	6,760.16	1,115.20	1,054.62	18.409	SF
Guttersen 23-41 (PR) - Wellbore #1 - Gyro Surveys	11,805.18	6,704.49	45.34	-23.02	0.663	Level 1, CC, ES, SF
Guttersen 31-23 (PR) - Wellbore #1 - Gyro Surveys	11,790.54	6,799.66	1,294.99	1,226.44	18.890	CC
Guttersen 31-23 (PR) - Wellbore #1 - Gyro Surveys	11,800.00	6,799.50	1,295.03	1,226.43	18.877	ES
Guttersen 31-23 (PR) - Wellbore #1 - Gyro Surveys	11,900.00	6,797.82	1,299.61	1,230.59	18.830	SF
Guttersen 42-23 (PR) - Wellbore #1 - Gyro Surveys	10,468.35	6,742.34	23.02	-36.86	0.384	Level 1, CC, ES, SF
Guttersen D23-711 - Wellbore #1 - Plan #1	2,600.00	2,601.00	37.50	19.32	2.063	CC, ES
Guttersen D23-711 - Wellbore #1 - Plan #1	2,700.00	2,699.67	38.54	19.69	2.045	SF
Guttersen D35-720 - Wellbore #1 - Plan #1	7,274.12	6,997.84	52.20	1.39	1.027	Level 2, CC, ES, SF
Guttersen D35-730 - Wellbore #1 - Plan #1	2,992.34	3,011.25	125.54	104.91	6.085	CC
Guttersen D35-730 - Wellbore #1 - Plan #1	3,000.00	3,018.91	125.55	104.86	6.070	ES
Guttersen D35-730 - Wellbore #1 - Plan #1	3,100.00	3,118.85	127.56	106.21	5.975	SF
Guttersen D35-740 - Wellbore #1 - Plan #1	2,691.14	2,701.66	155.17	136.46	8.291	CC
Guttersen D35-740 - Wellbore #1 - Plan #1	2,700.00	2,707.10	155.19	136.43	8.270	ES
Guttersen D35-740 - Wellbore #1 - Plan #1	2,800.00	2,806.05	157.93	138.50	8.129	SF
Guttersen D35-750 - Wellbore #1 - Plan #1	3,358.10	3,570.90	1,614.70	1,590.87	67.751	CC
Guttersen D35-750 - Wellbore #1 - Plan #1	3,400.00	3,612.33	1,614.85	1,590.73	66.950	ES
Guttersen D35-750 - Wellbore #1 - Plan #1	6,800.00	7,380.18	1,859.85	1,808.97	36.555	SF
Guttersen D35-760 - Wellbore #1 - Plan #1	2,400.00	2,420.00	1,732.16	1,715.35	103.029	CC
Guttersen D35-760 - Wellbore #1 - Plan #1	2,600.00	2,611.33	1,732.65	1,714.49	95.408	ES
Guttersen D35-760 - Wellbore #1 - Plan #1	6,900.00	6,902.81	2,507.28	2,458.12	51.006	SF
Guttersen D35-770 - Wellbore #1 - Plan #1	2,308.33	2,328.33	1,769.65	1,753.49	109.541	CC
Guttersen D35-770 - Wellbore #1 - Plan #1	2,400.00	2,413.06	1,769.69	1,752.90	105.429	ES
Guttersen D35-770 - Wellbore #1 - Plan #1	6,800.00	7,661.77	3,155.86	3,104.75	61.754	SF
Guttersen D35-780 - Wellbore #1 - Plan #1	2,108.33	2,128.33	1,807.13	1,792.41	122.757	CC
Guttersen D35-780 - Wellbore #1 - Plan #1	2,200.00	2,212.63	1,807.18	1,791.83	117.729	ES
Guttersen D35-780 - Wellbore #1 - Plan #1	8,200.00	5,861.73	3,648.39	3,602.49	79.489	SF
Guttersen State D23-731 - Wellbore #1 - Plan #1	2,518.42	2,518.46	37.43	19.87	2.131	CC
Guttersen State D23-731 - Wellbore #1 - Plan #1	2,600.00	2,599.85	37.70	19.59	2.081	ES, SF
Guttersen State D23-741 - Wellbore #1 - Plan #1	2,600.00	2,601.00	75.01	56.83	4.126	CC, ES
Guttersen State D23-741 - Wellbore #1 - Plan #1	2,800.00	2,800.84	78.18	58.62	3.997	SF
Guttersen State D23-751 - Wellbore #1 - Plan #1	3,220.56	3,365.49	1,671.15	1,648.45	73.639	CC
Guttersen State D23-751 - Wellbore #1 - Plan #1	3,300.00	3,444.55	1,671.48	1,648.23	71.897	ES
Guttersen State D23-751 - Wellbore #1 - Plan #1	17,570.57	17,576.94	1,961.55	1,784.14	11.056	SF
Guttersen State D23-761 - Wellbore #1 - Plan #1	2,508.85	2,527.85	1,734.86	1,717.27	98.633	CC
Guttersen State D23-761 - Wellbore #1 - Plan #1	2,600.00	2,617.20	1,734.87	1,716.64	95.150	ES
Guttersen State D23-761 - Wellbore #1 - Plan #1	17,570.57	17,485.76	2,620.32	2,443.47	14.817	SF
Guttersen State D23-771 - Wellbore #1 - Plan #1	2,309.35	2,327.35	1,772.30	1,756.14	109.704	CC
Guttersen State D23-771 - Wellbore #1 - Plan #1	2,400.00	2,413.20	1,772.32	1,755.54	105.586	ES
Guttersen State D23-771 - Wellbore #1 - Plan #1	17,570.57	17,642.68	3,281.01	3,104.65	18.604	SF
Guttersen State D23-781 - Wellbore #1 - Plan #1	2,108.85	2,127.85	1,809.74	1,795.02	122.933	CC
Guttersen State D23-781 - Wellbore #1 - Plan #1	2,200.00	2,212.98	1,809.77	1,794.42	117.892	ES
Guttersen State D23-781 - Wellbore #1 - Plan #1	17,570.57	17,665.94	3,890.21	3,713.86	22.059	SF
Guttersen State D35-790 - Wellbore #1 - Plan #1	2,509.82	2,514.45	153.96	136.47	8.803	CC
Guttersen State D35-790 - Wellbore #1 - Plan #1	2,600.00	2,603.75	154.38	136.26	8.521	ES
Guttersen State D35-790 - Wellbore #1 - Plan #1	2,700.00	2,702.05	157.31	138.52	8.371	SF
Guttersen USX D 23-17 (PR) - Wellbore #1 - Gyro Surve	11,145.96	6,761.05	700.09	635.94	10.913	CC, ES, SF
Parker Blue D 23-09 (SI) - Wellbore #1 - Gyro Surveys	8,831.30	6,713.05	288.17	236.50	5.576	CC, ES, SF

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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen State D23-721
Project:	Mustang	**TVD Reference:**	KB @ 4839.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4839.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen State D23-721	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 23						
Parker Blue D 23-10 (SI) - Wellbore #1 - Gyro Surveys	8,999.45	6,739.56	975.21	922.80	18.606	CC
Parker Blue D 23-10 (SI) - Wellbore #1 - Gyro Surveys	9,000.00	6,739.56	975.21	922.79	18.606	ES
Parker Blue D 23-10 (SI) - Wellbore #1 - Gyro Surveys	9,100.00	6,739.07	980.38	927.67	18.600	SF
Parker Blue D 23-11 (SI) - Wellbore #1 - Gyro Surveys	457.97	454.98	2,184.54	2,181.71	772.928	CC
Parker Blue D 23-11 (SI) - Wellbore #1 - Gyro Surveys	1,000.00	979.50	2,186.29	2,179.69	331.398	ES
Parker Blue D 23-11 (SI) - Wellbore #1 - Gyro Surveys	9,800.00	6,783.47	2,478.11	2,422.15	44.285	SF
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	0.00	0.95	3,218.75			
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	1,200.00	1,184.98	3,222.41	3,214.38	400.947	ES
Parker Blue D 23-13 (SI) - Wellbore #1 - Gyro Surveys	9,300.00	6,728.53	4,125.57	4,072.54	77.798	SF
Parker Blue D 23-14 (SI) - Wellbore #1 - Gyro Surveys	0.00	0.00	1,711.66			
Parker Blue D 23-14 (SI) - Wellbore #1 - Gyro Surveys	2,000.00	1,980.27	1,717.17	1,703.48	125.397	ES
Parker Blue D 23-14 (SI) - Wellbore #1 - Gyro Surveys	8,400.00	6,772.44	2,497.78	2,447.32	49.502	SF
Parker Blue D 23-15 (SI) - Wellbore #1 - Gyro Surveys	688.01	658.06	449.25	444.88	102.902	CC
Parker Blue D 23-15 (SI) - Wellbore #1 - Gyro Surveys	900.00	865.82	450.29	444.44	76.967	ES
Parker Blue D 23-15 (SI) - Wellbore #1 - Gyro Surveys	3,700.00	3,629.15	507.73	482.47	20.100	SF
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	2,063.68	2,069.80	3,017.22	3,002.98	211.918	CC
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	2,500.00	2,485.09	3,019.26	3,002.02	175.106	ES
Parker Blue D 23-3J (SI) - Wellbore #1 - Gyro Surveys	10,000.00	6,820.27	3,544.89	3,484.72	58.919	SF
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	10,449.95	6,754.12	3,908.61	3,848.92	65.481	CC, ES
Parker Red D 23-05 (PR) - Wellbore #1 - Gyro Surveys	11,500.00	6,755.73	4,047.20	3,982.27	62.333	SF
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	10,811.42	6,684.56	3,077.74	3,016.23	50.040	CC, ES
Parker Red D 23-2J (SI) - Wellbore #1 - Gyro Surveys	11,500.00	6,699.73	3,153.79	3,088.77	48.506	SF
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	11,802.18	6,710.04	2,602.20	2,534.13	38.225	CC, ES
Parker Red D 23-3 (PR) - Wellbore #1 - Gyro Surveys	12,200.00	6,699.85	2,632.42	2,562.29	37.538	SF
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	11,707.85	6,757.91	3,937.08	3,869.33	58.114	CC, ES
Parker Red D 23-4 (SI) - Wellbore #1 - Gyro Surveys	12,700.00	6,764.77	4,060.16	3,987.09	55.564	SF
Two E Ranch 1-23 (SI) - Wellbore #1 - Gyro Surveys	8,333.28	6,742.75	207.06	156.84	4.123	CC, ES, SF

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen State D23-721
Project:	Mustang	**TVD Reference:**	KB @ 4839.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4839.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen State D23-721	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 26						
Adam Red D 26-11 (PR) - Wellbore #1 - Gyro Surveys	6,291.86	5,944.66	3,853.03	3,809.02	87.544	CC
Adam Red D 26-11 (PR) - Wellbore #1 - Gyro Surveys	6,300.00	5,954.14	3,853.07	3,808.99	87.412	ES
Adam Red D 26-11 (PR) - Wellbore #1 - Gyro Surveys	6,700.00	6,556.52	3,939.34	3,892.04	83.276	SF
Adam Red D 26-12 (PR) - Wellbore #1 - Gyro Surveys	6,261.87	6,013.44	4,722.11	4,672.89	95.953	CC, ES
Adam Red D 26-12 (PR) - Wellbore #1 - Gyro Surveys	6,850.00	6,556.08	4,887.33	4,833.14	90.198	SF
Adam Red D 26-13 (PR) - Wellbore #1 - Gyro Surveys	6,315.28	6,113.53	5,376.93	5,332.28	120.427	CC, ES
Adam Red D 26-13 (PR) - Wellbore #1 - Gyro Surveys	6,850.00	6,667.54	5,543.71	5,495.76	115.617	SF
Adam Red D 26-14 (PR) - Wellbore #1 - Gyro Surveys	6,349.00	6,080.78	4,584.28	4,536.58	96.116	CC
Adam Red D 26-14 (PR) - Wellbore #1 - Gyro Surveys	6,350.00	6,081.75	4,584.28	4,536.57	96.098	ES
Adam Red D 26-14 (PR) - Wellbore #1 - Gyro Surveys	6,750.00	6,458.67	4,693.57	4,642.73	92.318	SF
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Survey	6,426.37	5,969.00	3,798.52	3,756.37	90.121	CC, ES
Coors Energy 14-25H (PR) - Wellbore #1 - MWD Survey	6,650.00	6,062.00	3,839.53	3,796.36	88.950	SF
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	6,397.38	6,095.66	530.81	486.57	11.999	CC
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	6,400.00	6,098.12	530.81	486.56	11.994	ES
Heyde 1-26 (PR) - Wellbore #1 - Gyro Surveys	6,450.00	6,145.83	533.13	488.50	11.946	SF
Heyde 26ND (PR) - Wellbore #1 - MWD Surveys	6,214.30	6,103.35	1,880.38	1,830.31	37.560	CC, ES
Heyde 26ND (PR) - Wellbore #1 - MWD Surveys	6,500.00	6,397.05	1,914.26	1,862.43	36.936	SF
Heyde 26RD (PR) - Wellbore #1 - MWD Surveys	5,115.59	5,002.30	181.82	142.61	4.637	CC, ES, SF
Heyde 26VD (PR) - Wellbore #1 - MWD Surveys	6,530.78	6,361.65	1,199.89	1,154.09	26.198	CC, ES
Heyde 26VD (PR) - Wellbore #1 - MWD Surveys	6,650.00	6,468.79	1,208.97	1,162.38	25.947	SF
Heyde 31-26 (PR) - Wellbore #1 - No Surveys	5,452.24	5,227.34	1,316.24	1,278.25	34.643	CC
Heyde 31-26 (PR) - Wellbore #1 - No Surveys	5,500.00	5,274.61	1,316.34	1,277.97	34.306	ES
Heyde 31-26 (PR) - Wellbore #1 - No Surveys	6,450.00	6,153.96	1,386.84	1,341.38	30.510	SF
Heyde 32-26 (SI) - Wellbore #1 - Gyro Surveys	6,333.87	6,083.69	1,948.34	1,903.78	43.724	CC, ES
Heyde 32-26 (SI) - Wellbore #1 - Gyro Surveys	6,550.00	6,285.45	1,978.65	1,932.64	43.004	SF
Heyde 41-26 (PR) - Wellbore #1 - Gyro Surveys	6,707.68	6,390.40	232.71	186.34	5.019	CC, ES, SF
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	6,444.71	6,159.86	1,507.41	1,463.16	34.071	CC
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	6,450.00	6,165.03	1,507.43	1,463.15	34.043	ES
Heyde 42-26 (PR) - Wellbore #1 - Gyro Surveys	6,550.00	6,258.74	1,516.22	1,471.30	33.747	SF
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	6,387.89	6,124.11	3,189.60	3,043.93	21.897	CC
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	6,400.00	6,135.95	3,189.71	3,043.77	21.855	ES
HSR-Waste Services 10-26 (SI) - Wellbore #1 - No Surve	6,700.00	6,420.86	3,262.78	3,110.31	21.399	SF
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	6,388.93	6,141.13	4,215.69	4,069.69	28.875	CC
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	6,400.00	6,151.95	4,215.79	4,069.53	28.825	ES
HSR-Waste Services 15-26 (SI) - Wellbore #1 - No Surve	6,750.00	6,480.29	4,312.99	4,159.26	28.055	SF
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Su	6,438.51	6,236.07	4,084.66	4,040.09	91.650	CC, ES
HSR-Waste Services 16-26 (SI) - Wellbore #1 - Gyro Su	6,750.00	6,523.38	4,160.25	4,113.89	89.744	SF
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	6,442.06	6,179.35	2,838.22	2,793.85	63.968	CC
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	6,450.00	6,186.08	2,838.27	2,793.84	63.894	ES
HSR-Waste Services 9-26 (PA) - Wellbore #1 - Gyro Sur	6,650.00	6,377.33	2,872.05	2,826.40	62.920	SF
Waste Management 11-26 (PR) - Wellbore #1 - Gyro Sur	3,929.12	3,994.86	3,573.12	3,545.75	130.558	CC
Waste Management 11-26 (PR) - Wellbore #1 - Gyro Sur	4,000.00	4,053.16	3,573.29	3,545.46	128.367	ES
Waste Management 11-26 (PR) - Wellbore #1 - Gyro Sur	7,000.00	6,513.51	3,929.48	3,881.76	82.335	SF
Waste Management 12-26 (PR) - Wellbore #1 - Gyro Sur	5,877.95	5,639.59	4,125.90	4,084.62	99.948	CC
Waste Management 12-26 (PR) - Wellbore #1 - Gyro Sur	6,000.00	5,747.32	4,126.30	4,084.10	97.769	ES
Waste Management 12-26 (PR) - Wellbore #1 - Gyro Sur	6,750.00	6,381.51	4,254.94	4,207.90	90.458	SF
Waste Management 12-26A (PR) - Wellbore #1 - Gyro S	5,397.90	5,219.07	3,292.79	3,255.10	87.361	CC
Waste Management 12-26A (PR) - Wellbore #1 - Gyro S	5,500.00	5,297.93	3,293.27	3,254.86	85.731	ES
Waste Management 12-26A (PR) - Wellbore #1 - Gyro S	6,700.00	6,320.60	3,430.04	3,383.33	73.442	SF
Waste Management 21-26 (PR) - Wellbore #1 - Gyro Sur	4,557.41	4,500.05	2,140.90	2,109.29	67.735	CC
Waste Management 21-26 (PR) - Wellbore #1 - Gyro Sur	4,700.00	4,635.24	2,141.53	2,108.86	65.561	ES
Waste Management 21-26 (PR) - Wellbore #1 - Gyro Sur	6,800.00	6,507.52	2,403.17	2,355.70	50.623	SF
Waste Management 22-26 (PR) - Wellbore #1 - Gyro Sur	6,236.29	5,964.72	2,881.93	2,837.92	65.482	CC

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

Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen State D23-721
Project:	Mustang	**TVD Reference:**	KB @ 4839.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4839.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen State D23-721	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
D Section 26						
Waste Management 22-26 (PR) - Wellbore #1 - Gyro Sur	6,250.00	5,979.10	2,882.02	2,837.90	65.321	ES
Waste Management 22-26 (PR) - Wellbore #1 - Gyro Sur	6,650.00	6,381.64	2,959.46	2,912.62	63.186	SF
Waste Management 26FD (PR) - Wellbore #1 - MWD Su	797.41	822.22	3,492.61	3,487.49	681.591	CC, ES
Waste Management 26FD (PR) - Wellbore #1 - MWD Su	6,950.00	6,789.47	4,574.88	4,524.65	91.079	SF
Waste Management 26KD (PR) - Wellbore #1 - MWD Su	952.38	956.67	3,479.11	3,472.96	565.040	CC, ES
Waste Management 26KD (PR) - Wellbore #1 - MWD Su	6,600.00	6,447.48	3,820.93	3,768.25	72.527	SF
Waste Management D 26-25 (SI) - Wellbore #1 - Gyro S	6,337.26	6,200.00	4,569.06	4,524.08	101.574	CC, ES
Waste Management D 26-25 (SI) - Wellbore #1 - Gyro S	6,800.00	6,581.19	4,701.63	4,654.07	98.840	SF
Waste Mangement 26JD (PR) - Wellbore #1 - MWD Surv	3,569.52	3,665.79	2,631.46	2,603.87	95.362	CC
Waste Mangement 26JD (PR) - Wellbore #1 - MWD Surv	3,600.00	3,675.42	2,631.61	2,603.86	94.826	ES
Waste Mangement 26JD (PR) - Wellbore #1 - MWD Surv	7,300.00	6,834.12	3,215.68	3,163.24	61.322	SF

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

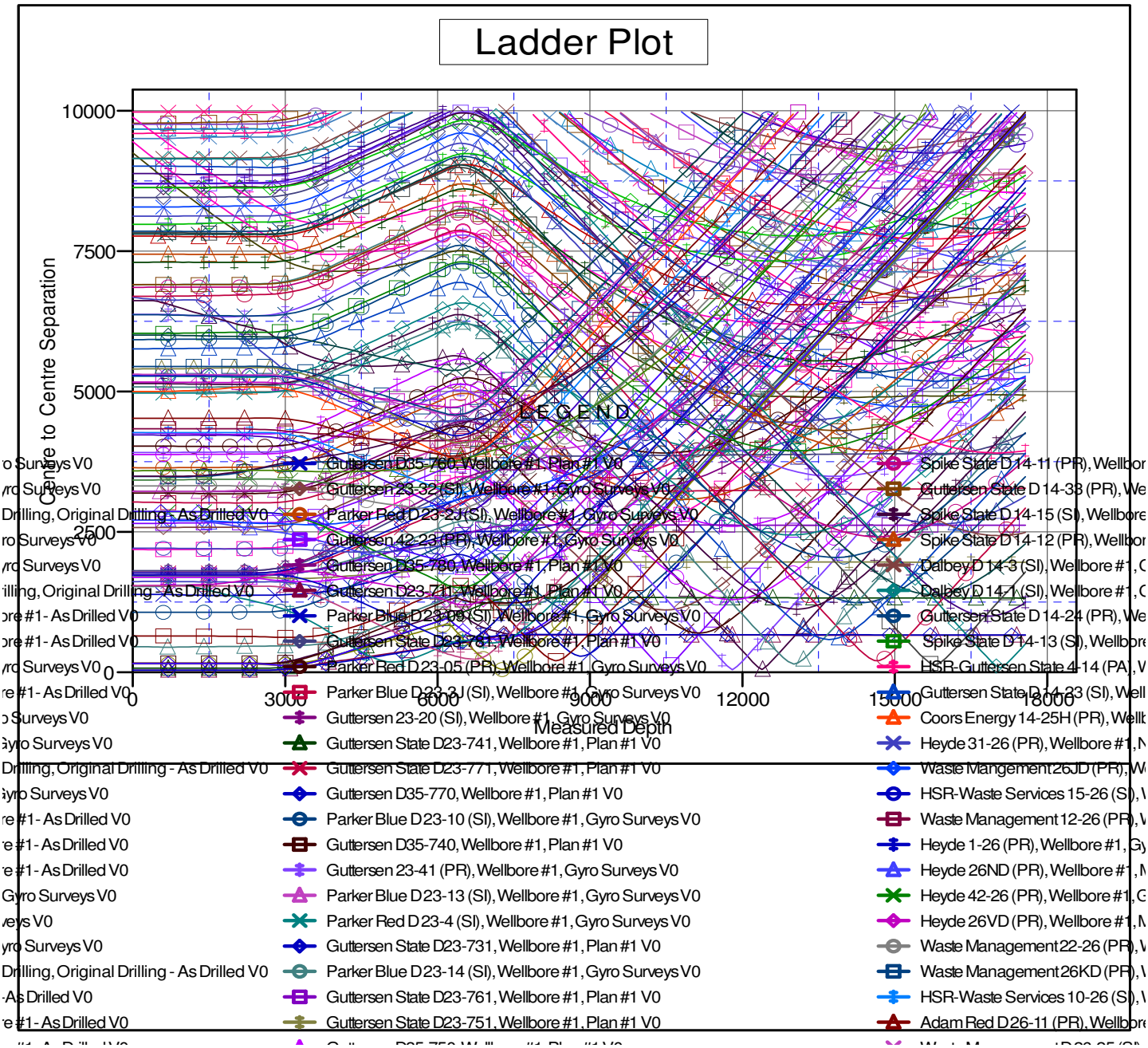
Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen State D23-721
Project:	Mustang	**TVD Reference:**	KB @ 4839.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4839.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen State D23-721	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB @ 4839.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -105.5000000

Coordinates are relative to: Guttersen State D23-721
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.64°



Noble Energy, Inc.

Anticollision Summary Report

Company:	Northern Region - DJ Basin	**Local Co-ordinate Reference:**	Well Guttersen State D23-721
Project:	Mustang	**TVD Reference:**	KB @ 4839.00ft
Reference Site:	D Section 23	**MD Reference:**	KB @ 4839.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Guttersen State D23-721	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDMP
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB @ 4839.00ft	Coordinates are relative to: Guttersen State D23-721
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.5000000	Grid Convergence at Surface is: 0.64°