

# **Catamount Energy Partners**

**San Juan Basin  
La Plata County CO  
Lynch 34-6-18U #1**

**Lateral 1**

**Plan: Plan #1**

## **Standard Planning Report**

**01 July, 2015**





Project: San Juan Basin  
Site: La Plata County CO  
Well: Lynch 34-6-18U #1  
Wellbore: Lateral 1  
Design: Plan #1

#### WELL DETAILS Lynch 34-6-18U #1

Ground Level: 6858.0

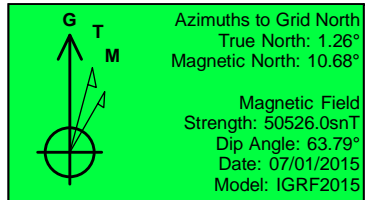
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1198387.29	2403024.38	37° 11' 36.665 N	107° 32' 58.432 W

#### SITE DETAILS: La Plata County CO

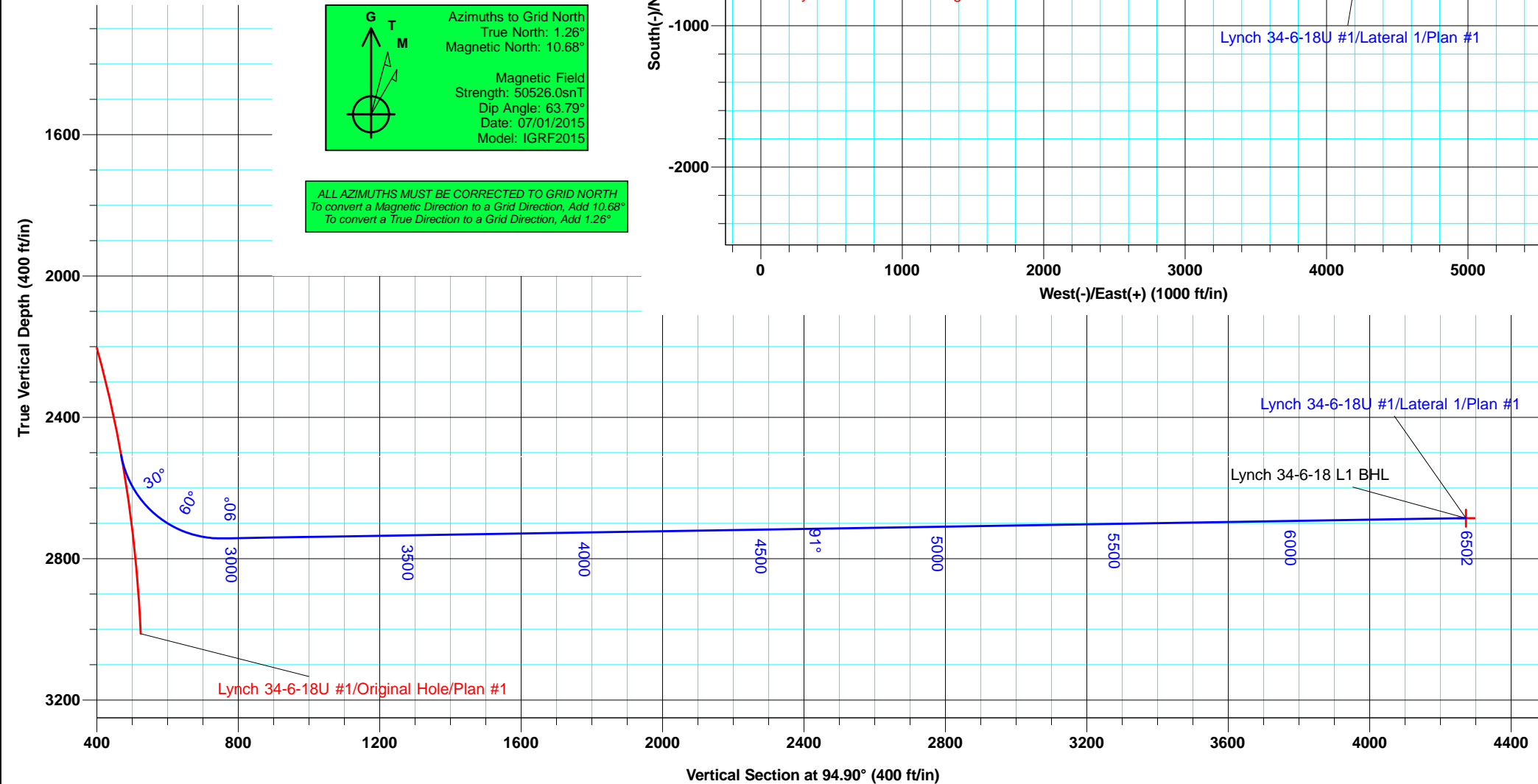
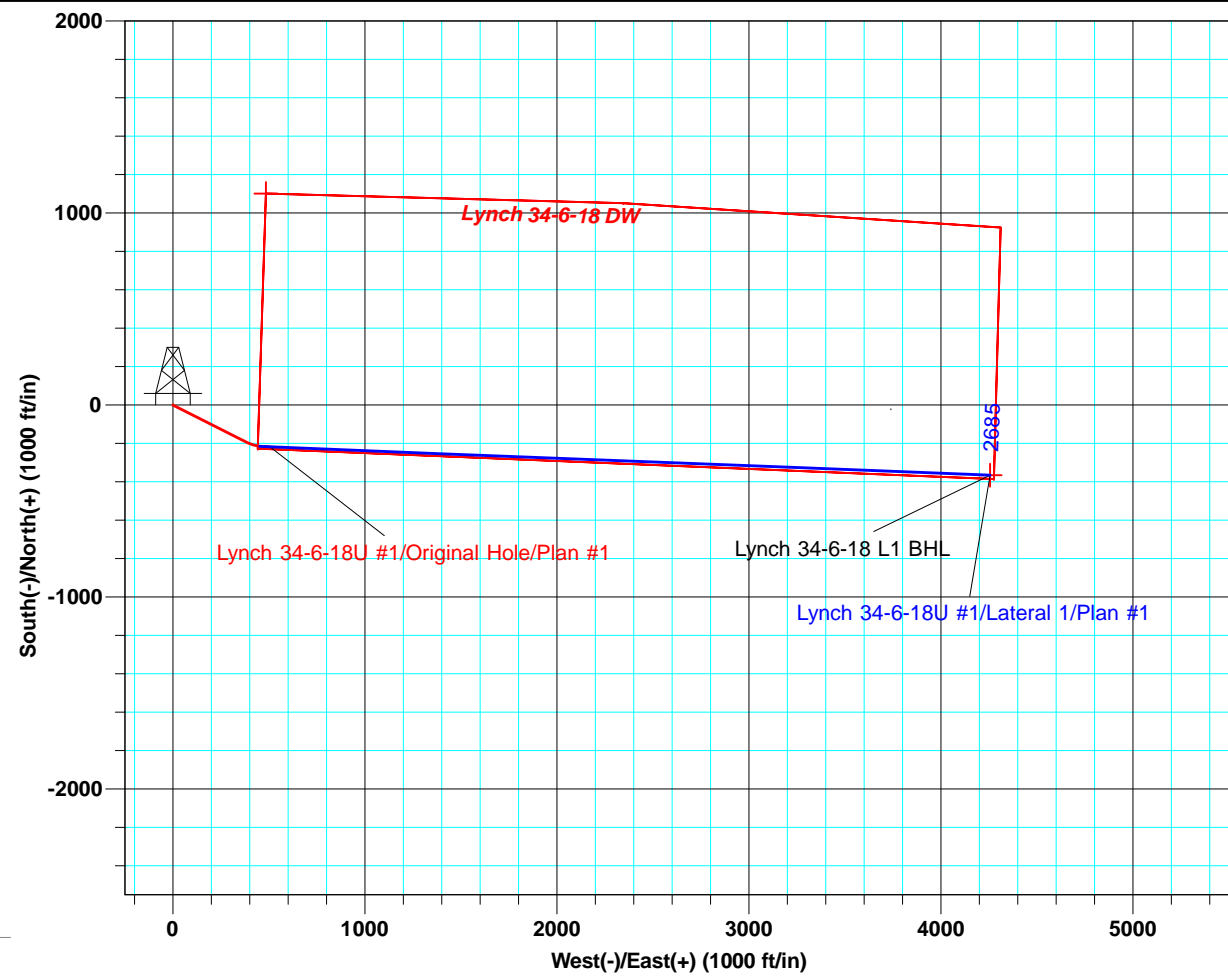
Site Centre Northing: 760788.19  
Easting: 2556100.64  
Positional Uncertainty: 0.0  
Local North: Grid

#### PROJECT DETAILS: San Juan Basin

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



ALL AZIMUTHS MUST BE CORRECTED TO GRID NORTH  
To convert a Magnetic Direction to a Grid Direction, Add 10.68°  
To convert a True Direction to a Grid Direction, Add 1.26°



<b>Database:</b>	EDM 5000.1 Old	<b>Local Co-ordinate Reference:</b>	Well Lynch 34-6-18U #1
<b>Company:</b>	Catamount Energy Partners	<b>TVD Reference:</b>	GL 6858' + DFE 16' @ 6874.0ft (Original Well Elev)
<b>Project:</b>	San Juan Basin	<b>MD Reference:</b>	GL 6858' + DFE 16' @ 6874.0ft (Original Well Elev)
<b>Site:</b>	La Plata County CO	<b>North Reference:</b>	Grid
<b>Well:</b>	Lynch 34-6-18U #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 1		
<b>Design:</b>	Plan #1		

<b>Project</b>	San Juan Basin, Southern Colorado, Fruitland Coal HZ		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Southern Zone		Using geodetic scale factor

<b>Site</b>	La Plata County CO		
<b>Site Position:</b>		<b>Northing:</b>	760,788.19 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,556,100.64 usft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	6-1/8 "
		<b>Latitude:</b>	36° 0' 0.000 N
		<b>Longitude:</b>	107° 0' 0.000 W
		<b>Grid Convergence:</b>	-0.92 °

<b>Well</b>	Lynch 34-6-18U #1, FC HZ		
<b>Well Position</b>	<b>+N/-S</b>	437,402.4 ft	<b>Northing:</b> 1,198,387.29 usft
	<b>+E/-W</b>	-153,007.5 ft	<b>Easting:</b> 2,403,024.38 usft
<b>Position Uncertainty</b>	1.5 ft	<b>Wellhead Elevation:</b>	<b>Latitude:</b> 37° 11' 36.665 N
			<b>Longitude:</b> 107° 32' 58.432 W
			<b>Ground Level:</b> 6,858.0 ft

<b>Wellbore</b>	Lateral 1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	07/01/15	9.42	63.79	50,526

<b>Design</b>	Plan #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	2,576.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	94.90

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
2,576.0	10.09	94.52	2,506.0	-214.9	452.1	0.00	0.00	0.00	0.00	
2,980.3	90.93	92.24	2,742.3	-227.8	738.6	20.00	20.00	-0.57	-2.32	
6,501.9	90.93	92.24	2,685.0	-365.3	4,257.0	0.00	0.00	0.00	0.00	Lynch 34-6-18 L1 B

<b>Database:</b>	EDM 5000.1 Old	<b>Local Co-ordinate Reference:</b>	Well Lynch 34-6-18U #1
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<b>Project:</b>	San Juan Basin	<b>MD Reference:</b>	GL 6858' + DFE 16' @ 6874.0ft (Original Well Elev)
<b>Site:</b>	La Plata County CO	<b>North Reference:</b>	Grid
<b>Well:</b>	Lynch 34-6-18U #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 1		
<b>Design:</b>	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	2.50	116.84	600.0	-1.0	1.9	2.0	2.50	2.50	0.00
700.0	5.00	116.84	699.7	-3.9	7.8	8.1	2.50	2.50	0.00
800.0	7.50	116.84	799.1	-8.9	17.5	18.2	2.50	2.50	0.00
900.0	10.00	116.84	898.0	-15.7	31.1	32.3	2.50	2.50	0.00
1,000.0	12.50	116.84	996.0	-24.5	48.5	50.4	2.50	2.50	0.00
1,100.0	15.00	116.84	1,093.2	-35.3	69.7	72.4	2.50	2.50	0.00
1,200.0	17.50	116.84	1,189.2	-47.9	94.6	98.4	2.50	2.50	0.00
1,212.5	17.81	116.84	1,201.1	-49.6	98.0	101.9	2.50	2.50	0.00
1,300.0	17.81	116.84	1,284.4	-61.7	121.9	126.7	0.00	0.00	0.00
1,400.0	17.81	116.84	1,379.6	-75.5	149.2	155.1	0.00	0.00	0.00
1,500.0	17.81	116.84	1,474.8	-89.3	176.5	183.5	0.00	0.00	0.00
1,600.0	17.81	116.84	1,570.0	-103.1	203.8	211.9	0.00	0.00	0.00
1,700.0	17.81	116.84	1,665.2	-116.9	231.1	240.2	0.00	0.00	0.00
1,800.0	17.81	116.84	1,760.4	-130.8	258.4	268.6	0.00	0.00	0.00
1,900.0	17.81	116.84	1,855.6	-144.6	285.7	297.0	0.00	0.00	0.00
2,000.0	17.81	116.84	1,950.8	-158.4	313.0	325.4	0.00	0.00	0.00
2,100.0	17.81	116.84	2,046.0	-172.2	340.3	353.7	0.00	0.00	0.00
2,204.7	17.81	116.84	2,145.8	-186.7	368.9	383.5	0.00	0.00	0.00
2,300.0	15.67	113.21	2,237.0	-198.3	393.7	409.2	2.50	-2.25	-3.82
2,400.0	13.51	108.20	2,333.7	-207.3	417.2	433.4	2.50	-2.16	-5.00
2,500.0	11.49	101.41	2,431.4	-212.9	438.1	454.7	2.50	-2.03	-6.79
2,551.8	10.52	96.91	2,482.2	-214.5	447.8	464.5	2.50	-1.87	-8.69
<b>Lynch 34-6-18 DW</b>									
2,576.0	10.09	94.52	2,506.0	-214.9	452.1	468.8	2.50	-1.77	-9.87
2,600.0	14.88	93.77	2,529.5	-215.3	457.3	474.0	20.00	19.99	-3.14
2,625.0	19.88	93.37	2,553.3	-215.8	464.7	481.5	20.00	19.99	-1.62
2,650.0	24.88	93.12	2,576.4	-216.3	474.3	491.0	20.00	20.00	-0.99
2,675.0	29.88	92.95	2,598.6	-216.9	485.7	502.5	20.00	20.00	-0.67
2,700.0	34.88	92.83	2,619.7	-217.6	499.1	515.9	20.00	20.00	-0.50
2,725.0	39.88	92.73	2,639.6	-218.3	514.3	531.0	20.00	20.00	-0.39
2,750.0	44.88	92.65	2,658.0	-219.1	531.1	547.9	20.00	20.00	-0.31
2,775.0	49.88	92.59	2,675.0	-219.9	549.5	566.2	20.00	20.00	-0.26
2,800.0	54.88	92.53	2,690.2	-220.8	569.2	586.0	20.00	20.00	-0.23
2,825.0	59.88	92.48	2,703.7	-221.7	590.3	607.1	20.00	20.00	-0.20
2,850.0	64.88	92.43	2,715.3	-222.7	612.4	629.2	20.00	20.00	-0.18
2,875.0	69.88	92.39	2,724.9	-223.7	635.4	652.2	20.00	20.00	-0.17
2,900.0	74.88	92.35	2,732.4	-224.7	659.2	676.0	20.00	20.00	-0.16
2,925.0	79.88	92.32	2,737.9	-225.6	683.6	700.4	20.00	20.00	-0.15
2,950.0	84.88	92.28	2,741.2	-226.6	708.3	725.1	20.00	20.00	-0.14
2,975.0	89.88	92.24	2,742.4	-227.6	733.3	750.1	20.00	20.00	-0.14
2,980.3	90.93	92.24	2,742.3	-227.8	738.6	755.3	20.00	20.00	-0.14
3,000.0	90.93	92.24	2,742.0	-228.6	758.3	775.0	0.00	0.00	0.00
3,100.0	90.93	92.24	2,740.4	-232.5	858.2	874.9	0.00	0.00	0.00
3,200.0	90.93	92.24	2,738.8	-236.4	958.1	974.8	0.00	0.00	0.00
3,300.0	90.93	92.24	2,737.1	-240.3	1,058.0	1,074.7	0.00	0.00	0.00
3,400.0	90.93	92.24	2,735.5	-244.2	1,157.9	1,174.6	0.00	0.00	0.00

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<b>Well:</b>	Lynch 34-6-18U #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 1		
<b>Design:</b>	Plan #1		

#### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,500.0	90.93	92.24	2,733.9	-248.1	1,257.8	1,274.4	0.00	0.00	0.00
3,600.0	90.93	92.24	2,732.2	-252.0	1,357.7	1,374.3	0.00	0.00	0.00
3,700.0	90.93	92.24	2,730.6	-255.9	1,457.6	1,474.2	0.00	0.00	0.00
3,800.0	90.93	92.24	2,729.0	-259.8	1,557.6	1,574.1	0.00	0.00	0.00
3,900.0	90.93	92.24	2,727.4	-263.7	1,657.5	1,673.9	0.00	0.00	0.00
4,000.0	90.93	92.24	2,725.7	-267.6	1,757.4	1,773.8	0.00	0.00	0.00
4,100.0	90.93	92.24	2,724.1	-271.5	1,857.3	1,873.7	0.00	0.00	0.00
4,200.0	90.93	92.24	2,722.5	-275.4	1,957.2	1,973.6	0.00	0.00	0.00
4,300.0	90.93	92.24	2,720.8	-279.3	2,057.1	2,073.5	0.00	0.00	0.00
4,400.0	90.93	92.24	2,719.2	-283.3	2,157.0	2,173.3	0.00	0.00	0.00
4,500.0	90.93	92.24	2,717.6	-287.2	2,256.9	2,273.2	0.00	0.00	0.00
4,600.0	90.93	92.24	2,716.0	-291.1	2,356.8	2,373.1	0.00	0.00	0.00
4,700.0	90.93	92.24	2,714.3	-295.0	2,456.8	2,473.0	0.00	0.00	0.00
4,800.0	90.93	92.24	2,712.7	-298.9	2,556.7	2,572.9	0.00	0.00	0.00
4,900.0	90.93	92.24	2,711.1	-302.8	2,656.6	2,672.7	0.00	0.00	0.00
5,000.0	90.93	92.24	2,709.4	-306.7	2,756.5	2,772.6	0.00	0.00	0.00
5,100.0	90.93	92.24	2,707.8	-310.6	2,856.4	2,872.5	0.00	0.00	0.00
5,200.0	90.93	92.24	2,706.2	-314.5	2,956.3	2,972.4	0.00	0.00	0.00
5,300.0	90.93	92.24	2,704.6	-318.4	3,056.2	3,072.2	0.00	0.00	0.00
5,400.0	90.93	92.24	2,702.9	-322.3	3,156.1	3,172.1	0.00	0.00	0.00
5,500.0	90.93	92.24	2,701.3	-326.2	3,256.0	3,272.0	0.00	0.00	0.00
5,600.0	90.93	92.24	2,699.7	-330.1	3,355.9	3,371.9	0.00	0.00	0.00
5,700.0	90.93	92.24	2,698.1	-334.0	3,455.9	3,471.8	0.00	0.00	0.00
5,800.0	90.93	92.24	2,696.4	-337.9	3,555.8	3,571.6	0.00	0.00	0.00
5,900.0	90.93	92.24	2,694.8	-341.8	3,655.7	3,671.5	0.00	0.00	0.00
6,000.0	90.93	92.24	2,693.2	-345.7	3,755.6	3,771.4	0.00	0.00	0.00
6,100.0	90.93	92.24	2,691.5	-349.6	3,855.5	3,871.3	0.00	0.00	0.00
6,200.0	90.93	92.24	2,689.9	-353.5	3,955.4	3,971.1	0.00	0.00	0.00
6,300.0	90.93	92.24	2,688.3	-357.4	4,055.3	4,071.0	0.00	0.00	0.00
6,400.0	90.93	92.24	2,686.7	-361.3	4,155.2	4,170.9	0.00	0.00	0.00
6,501.9	90.93	92.24	2,685.0	-365.3	4,257.0	4,272.6	0.00	0.00	0.00

**Lynch 34-6-18 L1 BHL**

#### Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Lynch 34-6-18 DW	0.00	360.00	2,511.0	1,101.5	484.4	1,199,488.84	2,403,508.81	37° 11' 47.658 N	107° 32' 52.745 W
- plan misses target center by 1316.8ft at 2563.1ft MD (2493.3 TVD, -214.7 N, 449.8 E)									
- Polygon									
Point 1			2,511.0	0.0	0.0	1,199,488.84	2,403,508.81		
Point 2			2,511.0	-49.8	1,863.4	1,199,439.04	2,405,372.22		
Point 3			2,511.0	-176.6	3,827.2	1,199,312.24	2,407,336.03		
Point 4			2,511.0	-1,486.9	3,792.5	1,198,001.93	2,407,301.33		
Point 5			2,511.0	-1,328.6	-41.7	1,198,160.23	2,403,467.11		
Lynch 34-6-18 L1 BHL	0.00	360.00	2,685.0	-365.3	4,257.0	1,198,021.98	2,407,281.41	37° 11' 33.974 N	107° 32' 5.735 W
- plan hits target center									
- Point									