

Catamount Energy Partners

**San Juan Basin
La Plata County CO
Elsa 34-6-19 #2**

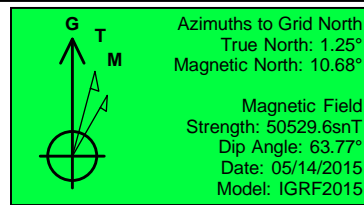
OH

Plan: Plan #1

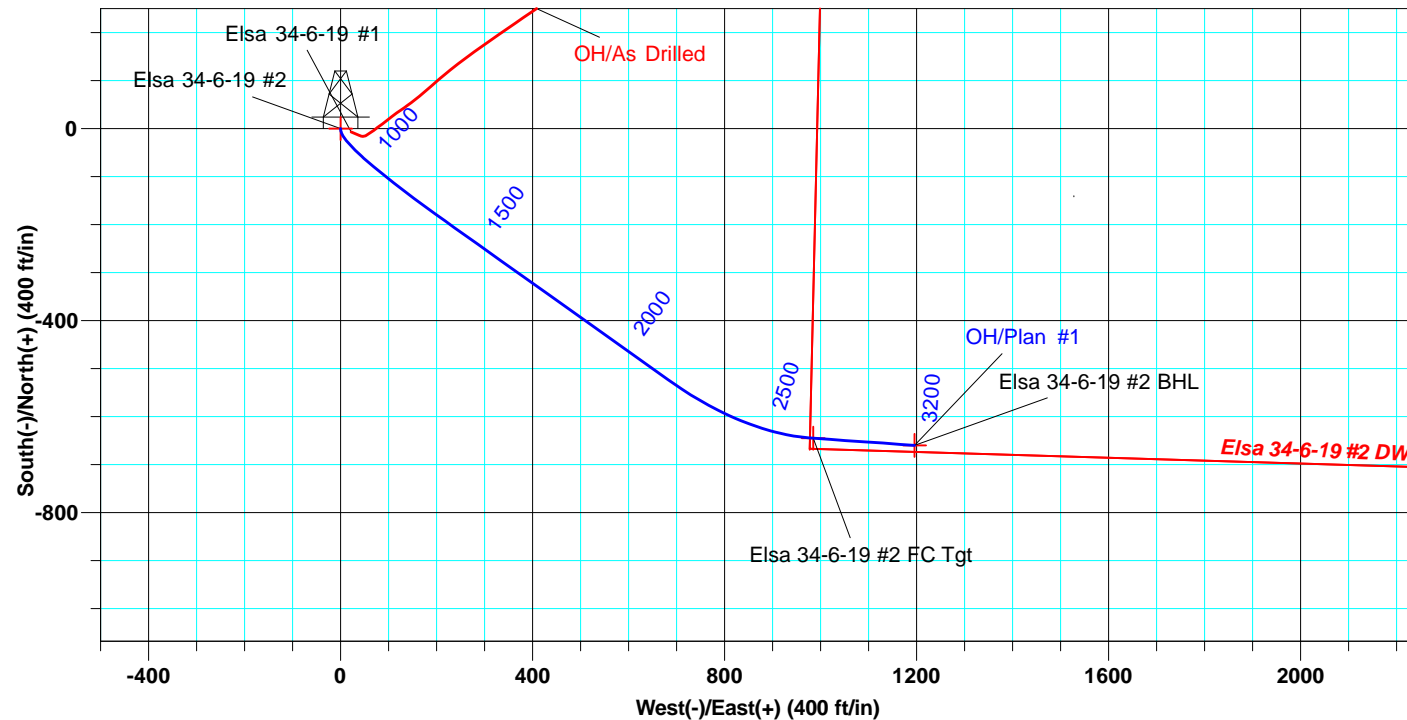
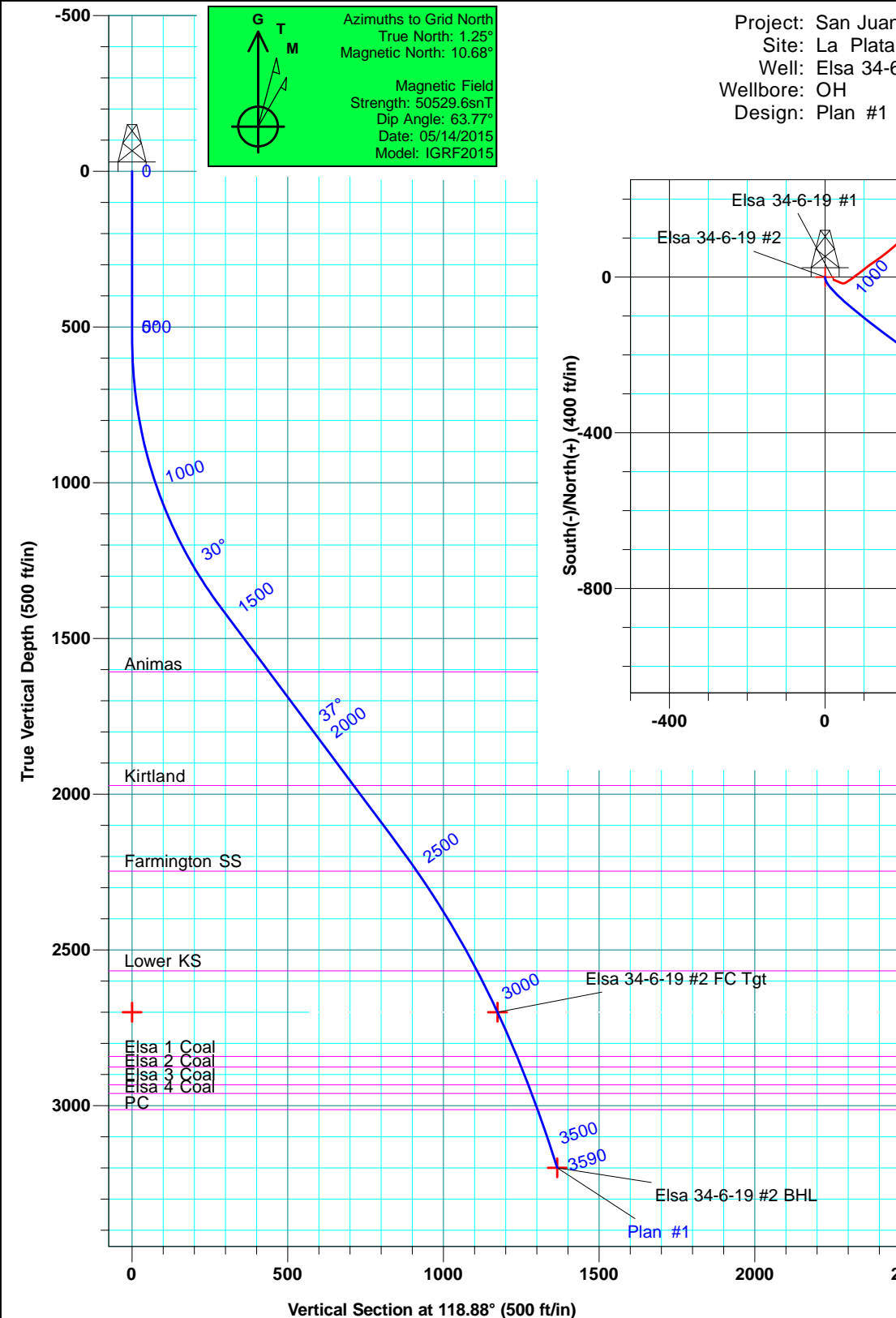
Standard Planning Report

14 May, 2015





Project: San Juan Basin
 Site: La Plata County CO
 Well: Elsa 34-6-19 #2
 Wellbore: OH
 Design: Plan #1



DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
Elsa 34-6-19 #2 DW	2700.0	0.0	0.0	1190690.45	2407448.89	Polygon
Elsa 34-6-19 #2 FC Tgt	2700.0	-645.0	985.0	1190045.44	2408433.90	Point
Elsa 34-6-19 #2 BHL	3200.0	-659.8	1196.0	1190030.69	2408644.85	Point

WELL DETAILS Elsa 34-6-19 #2			
6971' GL + 16' DFE @ 6987.0ft (D&J #1)			
Northing	Easting	Latitude	Longitude
1190690.45	2407448.89	37° 10' 21.540 N	107° 32' 1.693 W

SITE DETAILS: La Plata County CO	PROJECT DETAILS: San Juan Basin
Site Centre Northing: 760788.19	Geodetic System: US State Plane 1983
Easting: 2556100.64	Datum: North American Datum 1983
Positional Uncertainty: 0.0	Ellipsoid: GRS 1980
Local North: Grid	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 1.25°

Database:	EDM 5000.1 Old	Local Co-ordinate Reference:	Well Elsa 34-6-19 #2
Company:	Catamount Energy Partners	TVD Reference:	6971' GL + 16' DFE @ 6987.0ft (D&J #1)
Project:	San Juan Basin	MD Reference:	6971' GL + 16' DFE @ 6987.0ft (D&J #1)
Site:	La Plata County CO	North Reference:	Grid
Well:	Elsa 34-6-19 #2	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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

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

Well	Elsa 34-6-19 #2, FC Horizontal Well		
Well Position	+N/-S	429,709.1 ft	Northing: 1,190,690.45 usft
	+E/-W	-148,584.9 ft	Easting: 2,407,448.89 usft
Position Uncertainty		1.0 ft	Wellhead Elevation:
			Ground Level: 6,971.0 ft

Wellbore	OH		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	05/14/15	9.43	63.77	50,530

Design	Plan #1		
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Audit Notes:			
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Version:	Phase:	PLAN	Tie On Depth:	0.0
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Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	118.88

Plan Sections										
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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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
625.0	5.00	170.00	624.8	-5.4	0.9	4.00	4.00	0.00	170.00	
1,463.0	36.92	125.45	1,399.4	-192.7	218.6	4.00	3.81	-5.32	-49.74	
2,410.5	36.92	125.45	2,156.9	-522.9	682.3	0.00	0.00	0.00	0.00	
3,047.1	27.00	94.00	2,700.0	-645.0	985.0	3.00	-1.56	-4.94	-133.61	Elsa 34-6-19 #2 FC
3,590.4	18.85	94.00	3,200.0	-659.8	1,196.0	1.50	-1.50	0.00	180.00	Elsa 34-6-19 #2 BH

Database:	EDM 5000.1 Old	Local Co-ordinate Reference:	Well Elsa 34-6-19 #2
Company:	Catamount Energy Partners	TVD Reference:	6971' GL + 16' DFE @ 6987.0ft (D&J #1)
Project:	San Juan Basin	MD Reference:	6971' GL + 16' DFE @ 6987.0ft (D&J #1)
Site:	La Plata County CO	North Reference:	Grid
Well:	Elsa 34-6-19 #2	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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	4.00	170.00	599.9	-3.4	0.6	2.2	4.00	4.00	0.00
625.0	5.00	170.00	624.8	-5.4	0.9	3.4	4.00	4.00	0.00
700.0	7.31	151.69	699.4	-12.8	3.8	9.5	4.00	3.07	-24.41
800.0	10.92	140.58	798.1	-25.7	12.8	23.6	4.00	3.61	-11.11
900.0	14.73	135.05	895.6	-42.0	27.8	44.6	4.00	3.81	-5.53
1,000.0	18.62	131.78	991.4	-61.7	48.7	72.4	4.00	3.89	-3.28
1,100.0	22.54	129.60	1,085.0	-84.5	75.4	106.8	4.00	3.93	-2.17
1,200.0	26.49	128.05	1,176.0	-110.5	107.7	147.7	4.00	3.95	-1.55
1,300.0	30.45	126.87	1,263.9	-139.5	145.6	194.8	4.00	3.96	-1.18
1,400.0	34.42	125.95	1,348.3	-171.3	188.8	248.0	4.00	3.97	-0.93
1,463.0	36.92	125.45	1,399.4	-192.7	218.6	284.5	4.00	3.97	-0.78
1,500.0	36.92	125.45	1,429.0	-205.6	236.7	306.6	0.00	0.00	0.00
1,600.0	36.92	125.45	1,508.9	-240.4	285.6	366.2	0.00	0.00	0.00
1,700.0	36.92	125.45	1,588.9	-275.3	334.6	425.9	0.00	0.00	0.00
1,722.7	36.92	125.45	1,607.0	-283.2	345.7	439.4	0.00	0.00	0.00
Animas									
1,800.0	36.92	125.45	1,668.8	-310.1	383.5	485.6	0.00	0.00	0.00
1,900.0	36.92	125.45	1,748.8	-345.0	432.4	545.3	0.00	0.00	0.00
2,000.0	36.92	125.45	1,828.7	-379.8	481.4	605.0	0.00	0.00	0.00
2,100.0	36.92	125.45	1,908.7	-414.7	530.3	664.6	0.00	0.00	0.00
2,179.2	36.92	125.45	1,972.0	-442.3	569.1	711.9	0.00	0.00	0.00
Kirtland									
2,200.0	36.92	125.45	1,988.6	-449.5	579.3	724.3	0.00	0.00	0.00
2,300.0	36.92	125.45	2,068.6	-484.4	628.2	784.0	0.00	0.00	0.00
2,328.6	36.92	125.45	2,091.4	-494.3	642.2	801.1	0.00	0.00	0.00
Elsa 34-6-19 #2 DW									
2,400.0	36.92	125.45	2,148.5	-519.2	677.1	843.7	0.00	0.00	0.00
2,410.5	36.92	125.45	2,156.9	-522.9	682.3	850.0	0.00	0.00	0.00
2,500.0	35.12	122.07	2,229.3	-552.1	726.0	902.4	3.00	-2.02	-3.78
2,521.6	34.70	121.21	2,247.0	-558.6	736.5	914.7	3.00	-1.95	-3.98
Farmington SS									
2,600.0	33.22	117.93	2,312.0	-580.3	774.6	958.5	3.00	-1.88	-4.19
2,700.0	31.48	113.37	2,396.5	-603.4	822.8	1,011.9	3.00	-1.74	-4.56
2,800.0	29.91	108.35	2,482.5	-621.7	870.4	1,062.4	3.00	-1.57	-5.02
2,896.8	28.59	103.05	2,567.0	-634.5	915.9	1,108.4	3.00	-1.36	-5.47
Lower KS									
2,900.0	28.55	102.87	2,569.8	-634.8	917.4	1,109.9	3.00	-1.25	-5.70
3,000.0	27.44	96.94	2,658.1	-642.9	963.6	1,154.3	3.00	-1.12	-5.93
3,047.1	27.00	94.00	2,700.0	-645.0	985.0	1,174.0	3.00	-0.92	-6.24
Elsa 34-6-19 #2 FC Tgt									
3,100.0	26.21	94.00	2,747.3	-646.7	1,008.6	1,195.5	1.50	-1.50	0.00
3,200.0	24.71	94.00	2,837.6	-649.7	1,051.5	1,234.5	1.50	-1.50	0.00
3,204.9	24.63	94.00	2,842.0	-649.8	1,053.5	1,236.3	1.50	-1.50	0.00
Elsa 1 Coal									
3,242.2	24.07	94.00	2,876.0	-650.9	1,068.9	1,250.3	1.50	-1.50	0.00
Elsa 2 Coal									
3,300.0	23.21	94.00	2,929.0	-652.5	1,092.0	1,271.3	1.50	-1.50	0.00

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Project:	San Juan Basin	MD Reference:	6971' GL + 16' DFE @ 6987.0ft (D&J #1)
Site:	La Plata County CO	North Reference:	Grid
Well:	Elsa 34-6-19 #2	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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)	
3,304.4	23.14	94.00	2,933.0	-652.6	1,093.7	1,272.9	1.50	-1.50	0.00	
Elsa 3 Coal										
3,334.8	22.68	94.00	2,961.0	-653.4	1,105.5	1,283.6	1.50	-1.50	0.00	
Elsa 4 Coal										
3,391.0	21.84	94.00	3,013.0	-654.9	1,126.8	1,303.0	1.50	-1.50	0.00	
PC										
3,400.0	21.71	94.00	3,021.4	-655.1	1,130.1	1,306.0	1.50	-1.50	0.00	
3,500.0	20.21	94.00	3,114.8	-657.6	1,165.8	1,338.4	1.50	-1.50	0.00	
3,590.4	18.85	94.00	3,200.0	-659.8	1,196.0	1,365.9	1.50	-1.50	0.00	
Elsa 34-6-19 #2 BHL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Elsa 34-6-19 #2 DW	0.00	0.00	2,700.0	0.0	0.0	1,190,690.45	2,407,448.89	37° 10' 21.540 N	107° 32' 1.693 W	
- plan misses target center by 1013.5ft at 2328.6ft MD (2091.4 TVD, -494.3 N, 642.2 E)										
- Polygon										
Point 1			2,700.0	644.9	1,008.3	1,191,335.35	2,408,457.20			
Point 2			2,700.0	546.9	4,972.9	1,191,237.35	2,412,421.84			
Point 3			2,700.0	-785.2	4,936.0	1,189,905.24	2,412,384.94			
Point 4			2,700.0	-667.1	977.2	1,190,023.34	2,408,426.10			
Elsa 34-6-19 #2 FC T ₁	0.00	360.00	2,700.0	-645.0	985.0	1,190,045.44	2,408,433.90	37° 10' 15.376 N	107° 31' 49.352 W	
- plan hits target center										
- Point										
Elsa 34-6-19 #2 BHL	0.00	360.00	3,200.0	-659.8	1,196.0	1,190,030.69	2,408,644.86	37° 10' 15.276 N	107° 31' 46.743 W	
- plan hits target center										
- Point										

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,722.7	1,607.0	Animas		0.00		
2,179.2	1,972.0	Kirtland		0.00		
2,521.6	2,247.0	Farmington SS		0.00		
2,896.8	2,567.0	Lower KS		0.00		
3,204.9	2,842.0	Elsa 1 Coal		0.00		
3,242.2	2,876.0	Elsa 2 Coal		0.00		
3,304.4	2,933.0	Elsa 3 Coal		0.00		
3,334.8	2,961.0	Elsa 4 Coal		0.00		
3,391.0	3,013.0	PC		0.00		