

Catamount Energy Partners

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

Original Hole

Plan: Plan #1

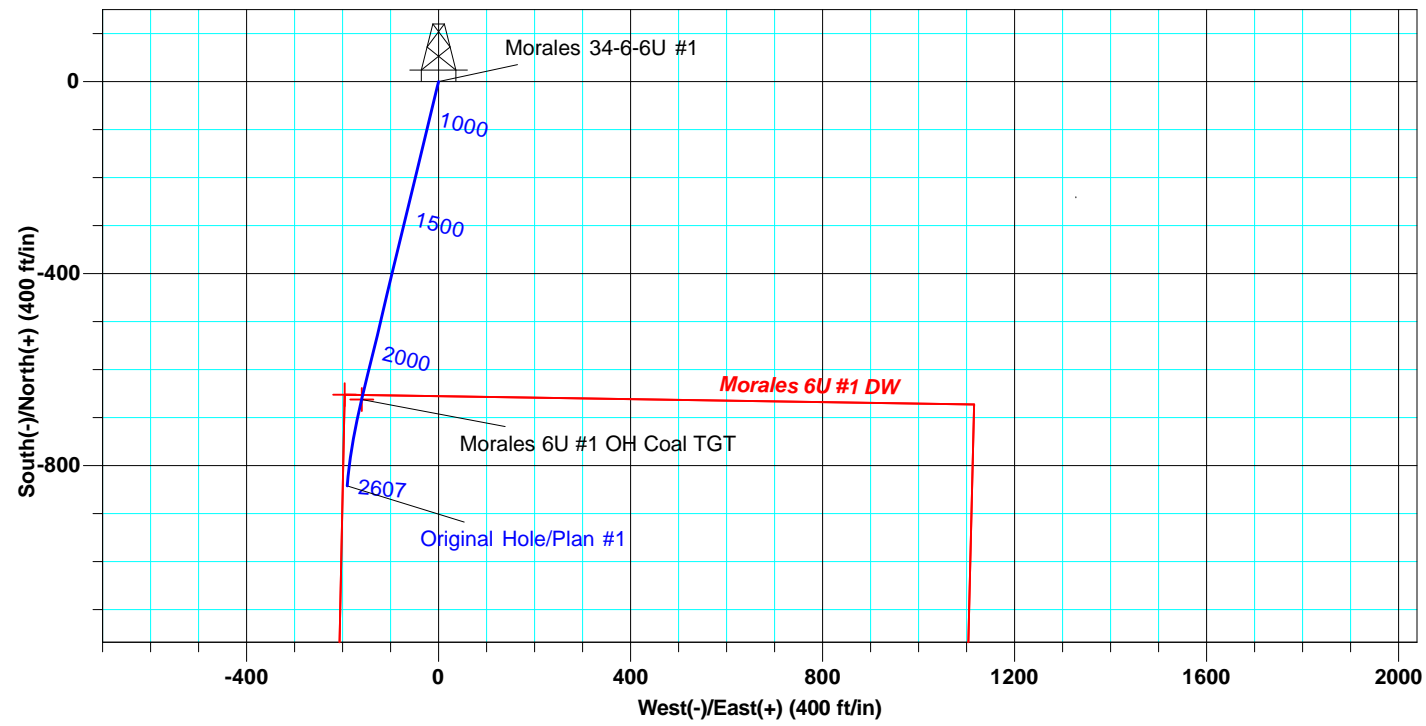
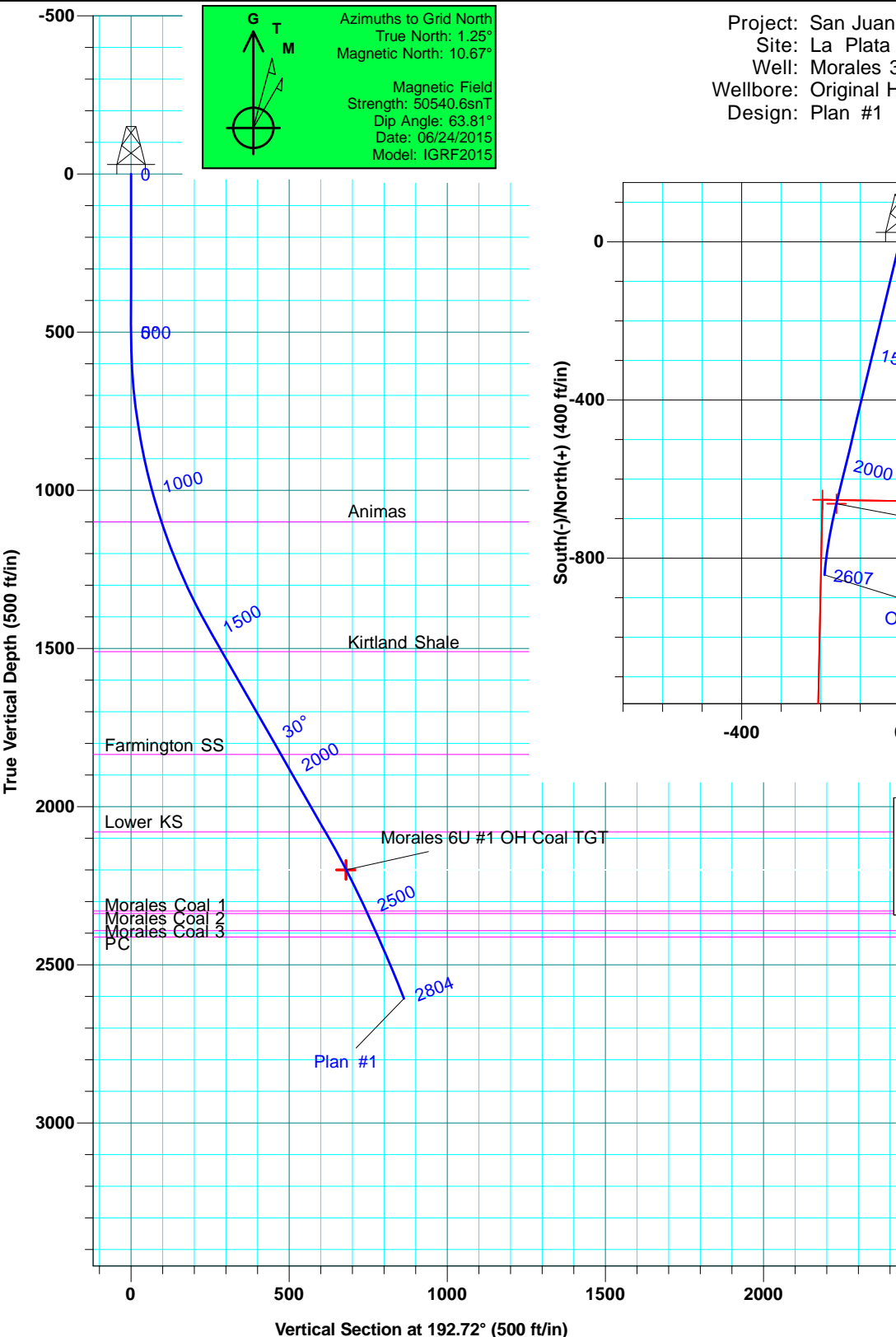
Standard Planning Report

24 June, 2015



Azimuths to Grid North
 True North: 1.25°
 Magnetic North: 10.67°
 Magnetic Field
 Strength: 50540.6snT
 Dip Angle: 63.81°
 Date: 06/24/2015
 Model: IGRF2015

Project: San Juan Basin
 Site: La Plata County CO
 Well: Morales 34-6-6U #1
 Wellbore: Original Hole
 Design: Plan #1



DESIGN TARGET DETAILS					
Name	TVD	+N/-S	+E/-W	Northing	Easting
Morales 6U #1 DW	2200.0	-652.3	-195.6	1205278.64	2406165.89
Morales 6U #1 OH Coal TGT	2200.0	-662.0	-160.0	1205268.94	2406201.46

WELL DETAILS Morales 34-6-6U #1			
6952' GL + 16' DFE @ 6968.0ft (D&J #1)			
6952.0			
Northing	Easting	Latitude	Longitude
1205930.94	2406361.46	37° 12' 51.953 N	107° 32' 19.234 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 10.67°
 To convert a True Direction to a Grid Direction, Add 1.25°

Database:	EDM 5000.1 Old	Local Co-ordinate Reference:	Well Morales 34-6-6U #1
Company:	Catamount Energy Partners	TVD Reference:	6952' GL + 16' DFE @ 6968.0ft (D&J #1)
Project:	San Juan Basin	MD Reference:	6952' GL + 16' DFE @ 6968.0ft (D&J #1)
Site:	La Plata County CO	North Reference:	Grid
Well:	Morales 34-6-6U #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
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	Morales 34-6-6U #1, FC HZ					
Well Position	+N/-S	444,942.7 ft	Northing:	1,205,930.94 usft	Latitude:	37° 12' 51.953 N
	+E/-W	-149,671.9 ft	Easting:	2,406,361.46 usft	Longitude:	107° 32' 19.234 W
Position Uncertainty	1.5 ft		Wellhead Elevation:		Ground Level:	6,952.0 ft

Wellbore	Original Hole		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	06/24/15	9.42	63.81	50,541

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	192.72

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	
1,495.8	29.87	193.59	1,451.3	-246.7	-59.6	3.00	3.00	0.00	193.59	
2,262.1	29.87	193.59	2,115.8	-617.7	-149.3	0.00	0.00	0.00	0.00	
2,357.9	27.00	193.59	2,200.0	-662.0	-160.0	3.00	-3.00	0.00	180.00	Morales 6U #1 OH
2,804.2	21.45	184.41	2,607.0	-842.0	-190.1	1.50	-1.24	-2.06	210.00	

Database:	EDM 5000.1 Old	Local Co-ordinate Reference:	Well Morales 34-6-6U #1
Company:	Catamount Energy Partners	TVD Reference:	6952' GL + 16' DFE @ 6968.0ft (D&J #1)
Project:	San Juan Basin	MD Reference:	6952' GL + 16' DFE @ 6968.0ft (D&J #1)
Site:	La Plata County CO	North Reference:	Grid
Well:	Morales 34-6-6U #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
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	3.00	193.59	600.0	-2.5	-0.6	2.6	3.00	3.00	0.00
700.0	6.00	193.59	699.6	-10.2	-2.5	10.5	3.00	3.00	0.00
800.0	9.00	193.59	798.8	-22.9	-5.5	23.5	3.00	3.00	0.00
900.0	12.00	193.59	897.1	-40.6	-9.8	41.7	3.00	3.00	0.00
1,000.0	15.00	193.59	994.3	-63.3	-15.3	65.1	3.00	3.00	0.00
1,100.0	18.00	193.59	1,090.2	-90.9	-22.0	93.5	3.00	3.00	0.00
1,110.3	18.31	193.59	1,100.0	-94.0	-22.7	96.7	3.00	3.00	0.00
Animas									
1,200.0	21.00	193.59	1,184.4	-123.3	-29.8	126.8	3.00	3.00	0.00
1,300.0	24.00	193.59	1,276.8	-160.5	-38.8	165.1	3.00	3.00	0.00
1,400.0	27.00	193.59	1,367.1	-202.3	-48.9	208.1	3.00	3.00	0.00
1,495.8	29.87	193.59	1,451.3	-246.7	-59.6	253.7	3.00	3.00	0.00
1,500.0	29.87	193.59	1,454.9	-248.7	-60.1	255.8	0.00	0.00	0.00
1,563.5	29.87	193.59	1,510.0	-279.5	-67.5	287.5	0.00	0.00	0.00
Kirtland Shale									
1,600.0	29.87	193.59	1,541.6	-297.1	-71.8	305.6	0.00	0.00	0.00
1,700.0	29.87	193.59	1,628.4	-345.5	-83.5	355.4	0.00	0.00	0.00
1,800.0	29.87	193.59	1,715.1	-393.9	-95.2	405.2	0.00	0.00	0.00
1,900.0	29.87	193.59	1,801.8	-442.4	-106.9	455.0	0.00	0.00	0.00
1,938.3	29.87	193.59	1,835.0	-460.9	-111.4	474.1	0.00	0.00	0.00
Farmington SS									
2,000.0	29.87	193.59	1,888.5	-490.8	-118.6	504.8	0.00	0.00	0.00
2,100.0	29.87	193.59	1,975.2	-539.2	-130.3	554.6	0.00	0.00	0.00
2,200.0	29.87	193.59	2,061.9	-587.6	-142.0	604.5	0.00	0.00	0.00
2,220.8	29.87	193.59	2,080.0	-597.7	-144.5	614.8	0.00	0.00	0.00
Lower KS									
2,262.1	29.87	193.59	2,115.8	-617.7	-149.3	635.4	0.00	0.00	0.00
2,300.0	28.74	193.59	2,148.8	-635.7	-153.6	653.9	3.00	-3.00	0.00
2,357.4	27.02	193.59	2,199.6	-661.8	-159.9	680.8	3.00	-3.00	0.00
Morales 6U #1 DW									
2,357.9	27.00	193.59	2,200.0	-662.0	-160.0	681.0	3.00	-3.00	0.00
Morales 6U #1 OH Coal TGT									
2,400.0	26.45	192.88	2,237.6	-680.4	-164.3	699.9	1.50	-1.29	-1.68
2,500.0	25.17	191.08	2,327.6	-723.0	-173.4	743.5	1.50	-1.28	-1.80
2,502.6	25.14	191.03	2,330.0	-724.1	-173.6	744.6	1.50	-1.27	-1.88
Morales Coal 1									
2,511.5	25.03	190.86	2,338.0	-727.8	-174.3	748.3	1.50	-1.27	-1.89
Morales Coal 2									
2,570.9	24.28	189.70	2,392.0	-752.2	-178.7	773.1	1.50	-1.26	-1.96
Morales Coal 3									
2,592.8	24.01	189.26	2,412.0	-761.0	-180.2	782.0	1.50	-1.25	-2.04
PC									
2,600.0	23.92	189.11	2,418.6	-763.9	-180.7	785.0	1.50	-1.24	-2.06
2,700.0	22.69	186.93	2,510.4	-803.1	-186.2	824.4	1.50	-1.23	-2.18
2,804.2	21.45	184.41	2,607.0	-842.0	-190.1	863.2	1.50	-1.19	-2.41

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Project:	San Juan Basin	MD Reference:	6952' GL + 16' DFE @ 6968.0ft (D&J #1)
Site:	La Plata County CO	North Reference:	Grid
Well:	Morales 34-6-6U #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Plan #1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
Morales 6U #1 OH Cc	0.00	360.00	2,200.0	-662.0	-160.0	1,205,268.94	2,406,201.46	37° 12' 45.375 N	107° 32' 21.033 W
- plan hits target center									
- Point									
Morales 6U #1 DW	0.00	360.00	2,200.0	-652.3	-195.6	1,205,278.64	2,406,165.89	37° 12' 45.463 N	107° 32' 21.475 W
- plan misses target center by 36.9ft at 2357.4ft MD (2199.6 TVD, -661.8 N, -159.9 E)									
- Polygon									
Point 1			2,200.0	0.0	0.0	1,205,278.64	2,406,165.89		
Point 2			2,200.0	-20.4	1,311.3	1,205,258.24	2,407,477.20		
Point 3			2,200.0	-4,645.7	1,201.1	1,200,632.93	2,407,367.00		
Point 4			2,200.0	-4,562.2	-92.1	1,200,716.43	2,406,073.79		

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
1,110.3	1,100.0	Animas		0.00		
1,563.5	1,510.0	Kirtland Shale		0.00		
1,938.3	1,835.0	Farmington SS		0.00		
2,220.8	2,080.0	Lower KS		0.00		
2,502.6	2,330.0	Morales Coal 1		0.00		
2,511.5	2,338.0	Morales Coal 2		0.00		
2,570.9	2,392.0	Morales Coal 3		0.00		
2,592.8	2,412.0	PC		0.00		