

Catamount Energy Partners

Standard Planning Report

IGW 123B

Sec 6 T33N R8W

La Plata County CO

September 28, 2017



Catamount Energy Partners

DIRECTIONAL DRILLING PLAN

Well: IGW 123B
 STR: Sec 6 T33N R8W
 Location (Ft.): 1184FSL, 1561FWL
 Field: Ignacio Blanco Field
 Co, State: La Plata County, Colorado

SECTION DETAILS

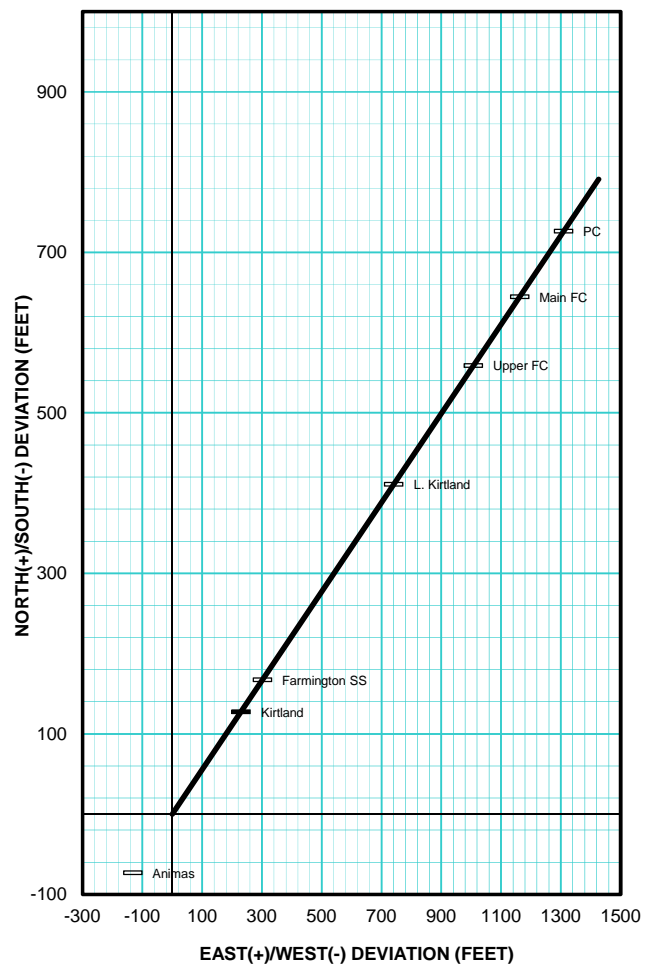
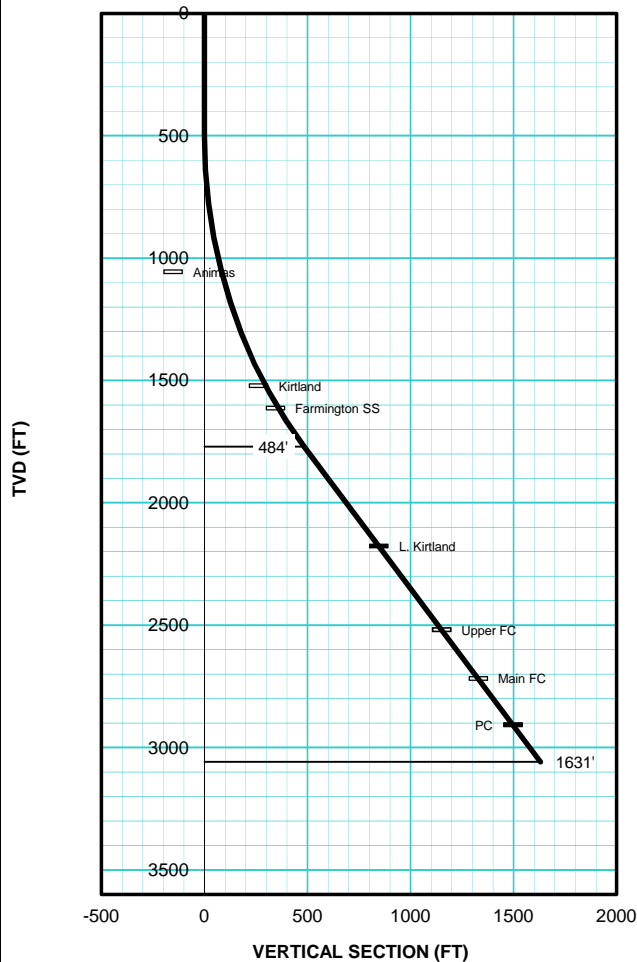
Section	MD	Incl	Azi	TVD	+N/-S	+E/-W	VSec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	500.00	0.00	0.00	500.00	0.00	0.00	0.00
3	1889.74	41.69	60.98	1770.30	234.63	422.99	483.71
4	3614.19	41.69	60.98	3058.00	791.00	1426.00	1630.69 PBHL

ESTIMATED FORMATION TOP DETAILS

Formation	TVD Path	MD Path	+N/-S	+E/-W
Animas	1057.00	1065.26	-73.56	-132.61
Kirtland Shale	1522.00	1578.50	127.35	229.59
Farmington Sandstone	1614.00	1689.48	167.10	301.25
Lower Kirtland Shale	2178.00	2435.72	410.79	740.56
Upper Fruitland Coal	2520.00	2893.71	558.55	1006.94
Main Fruitland Coal	2719.00	3160.21	644.53	1161.95
Pictured Cliffs	2908.00	3413.31	726.19	1309.16

GL: 6456'

KB: 6467'



IGW 123B, Plan 1

Operator	Catamount Energy Partners	Units	feet, °/100ft	11:10 Friday, September 29, 2017	Page 1 of 3
Field	Ignacio Blanco	County	La Plata	Vertical Section Azimuth	60.98
Well Name	IGW 123B	State	CO	Survey Calculation Method	Minimum Curvature
Plan	1	Country		Database	Access

Location	SESW S6 T33N R8W	Map Zone	UTM	Lat Long Ref	NAD83
Site		Surface X		Surface Long	-107.76314
Slot Name		Surface Y		Surface Lat	37.12885
Well Number		Surface Z		Global Z Ref	Sea Level
Project		Ground Level	6456	Local North Ref	Grid
	UWI				
	API				
	MD/TVD Ref	KB			

DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
*** RKB (at MD = 0.00)										
0.00	0.00	0.0	0.00	0.00	0.00		0.00	0.00	0.00	
50.00	0.00	0.0	50.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.0	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
150.00	0.00	0.0	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.0	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
250.00	0.00	0.0	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.0	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
350.00	0.00	0.0	350.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.0	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
450.00	0.00	0.0	450.00	0.00	0.00	0.00	0.00	0.00	0.00	
*** KOP (at MD = 500.00)										
500.00	0.00	0.0	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
550.00	1.50	61.0	549.99	0.32	0.57	3.00	0.65	0.00	0.00	
600.00	3.00	61.0	599.95	1.27	2.29	3.00	2.62	0.00	0.00	
650.00	4.50	61.0	649.85	2.86	5.15	3.00	5.89	0.00	0.00	
700.00	6.00	61.0	699.63	5.08	9.15	3.00	10.46	0.00	0.00	
750.00	7.50	61.0	749.29	7.93	14.29	3.00	16.34	0.00	0.00	
800.00	9.00	61.0	798.77	11.41	20.56	3.00	23.51	0.00	0.00	
850.00	10.50	61.0	848.04	15.51	27.97	3.00	31.98	0.00	0.00	
900.00	12.00	61.0	897.08	20.24	36.50	3.00	41.74	0.00	0.00	
950.00	13.50	61.0	945.85	25.60	46.15	3.00	52.77	0.00	0.00	
1000.00	15.00	61.0	994.31	31.57	56.91	3.00	65.08	0.00	0.00	
1050.00	16.50	61.0	1042.43	38.15	68.78	3.00	78.65	0.00	0.00	
1100.00	18.00	61.0	1090.18	45.34	81.74	3.00	93.48	0.00	0.00	
1150.00	19.50	61.0	1137.52	53.14	95.80	3.00	109.55	0.00	0.00	
1200.00	21.00	61.0	1184.43	61.53	110.93	3.00	126.85	0.00	0.00	
1250.00	22.50	61.0	1230.87	70.52	127.13	3.00	145.38	0.00	0.00	
1300.00	24.00	61.0	1276.81	80.09	144.39	3.00	165.12	0.00	0.00	
1350.00	25.50	61.0	1322.22	90.25	162.69	3.00	186.05	0.00	0.00	
1400.00	27.00	61.0	1367.06	100.97	182.03	3.00	208.16	0.00	0.00	
1450.00	28.50	61.0	1411.31	112.27	202.39	3.00	231.44	0.00	0.00	
1500.00	30.00	61.0	1454.93	124.12	223.75	3.00	255.87	0.00	0.00	
1550.00	31.50	61.0	1497.90	136.52	246.11	3.00	281.44	0.00	0.00	
1600.00	33.00	61.0	1540.18	149.46	269.44	3.00	308.12	0.00	0.00	
1650.00	34.50	61.0	1581.76	162.93	293.73	3.00	335.89	0.00	0.00	
1700.00	36.00	61.0	1622.59	176.93	318.97	3.00	364.75	0.00	0.00	
1750.00	37.50	61.0	1662.65	191.44	345.13	3.00	394.67	0.00	0.00	

IGW 123B, Plan 1

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Field	Ignacio Blanco	County	La Plata	Vertical Section Azimuth	60.98
Well Name	IGW 123B	State	CO	Survey Calculation Method	Minimum Curvature
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DIRECTIONAL WELL PLAN

MD*	INC*	AZI*	TVD*	N*	E*	DLS*	V. S.*	MapE*	MapN*	SysTVD*
ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
1800.00	39.00	61.0	1701.91	206.46	372.19	3.00	425.62	0.00	0.00	
1850.00	40.50	61.0	1740.35	221.96	400.15	3.00	457.59	0.00	0.00	
1889.74	41.69	61.0	1770.30	234.63	422.99	3.00	483.71	0.00	0.00	
1900.00	41.69	61.0	1777.96	237.94	428.96	0.00	490.54	0.00	0.00	
1950.00	41.69	61.0	1815.30	254.08	458.04	0.00	523.79	0.00	0.00	
2000.00	41.69	61.0	1852.64	270.21	487.13	0.00	557.05	0.00	0.00	
2050.00	41.69	61.0	1889.97	286.34	516.21	0.00	590.31	0.00	0.00	
2100.00	41.69	61.0	1927.31	302.47	545.29	0.00	623.56	0.00	0.00	
2150.00	41.69	61.0	1964.65	318.60	574.37	0.00	656.82	0.00	0.00	
2200.00	41.69	61.0	2001.98	334.73	603.45	0.00	690.08	0.00	0.00	
2250.00	41.69	61.0	2039.32	350.87	632.54	0.00	723.33	0.00	0.00	
2300.00	41.69	61.0	2076.66	367.00	661.62	0.00	756.59	0.00	0.00	
2350.00	41.69	61.0	2113.99	383.13	690.70	0.00	789.84	0.00	0.00	
2400.00	41.69	61.0	2151.33	399.26	719.78	0.00	823.10	0.00	0.00	
2450.00	41.69	61.0	2188.66	415.39	748.86	0.00	856.36	0.00	0.00	
2500.00	41.69	61.0	2226.00	431.52	777.94	0.00	889.61	0.00	0.00	
2550.00	41.69	61.0	2263.34	447.66	807.03	0.00	922.87	0.00	0.00	
2600.00	41.69	61.0	2300.67	463.79	836.11	0.00	956.13	0.00	0.00	
2650.00	41.69	61.0	2338.01	479.92	865.19	0.00	989.38	0.00	0.00	
2700.00	41.69	61.0	2375.35	496.05	894.27	0.00	1022.64	0.00	0.00	
2750.00	41.69	61.0	2412.68	512.18	923.35	0.00	1055.90	0.00	0.00	
2800.00	41.69	61.0	2450.02	528.31	952.44	0.00	1089.15	0.00	0.00	
2850.00	41.69	61.0	2487.36	544.45	981.52	0.00	1122.41	0.00	0.00	
2900.00	41.69	61.0	2524.69	560.58	1010.60	0.00	1155.66	0.00	0.00	
2950.00	41.69	61.0	2562.03	576.71	1039.68	0.00	1188.92	0.00	0.00	
3000.00	41.69	61.0	2599.37	592.84	1068.76	0.00	1222.18	0.00	0.00	
3050.00	41.69	61.0	2636.70	608.97	1097.85	0.00	1255.43	0.00	0.00	
3100.00	41.69	61.0	2674.04	625.11	1126.93	0.00	1288.69	0.00	0.00	
3150.00	41.69	61.0	2711.38	641.24	1156.01	0.00	1321.95	0.00	0.00	
3200.00	41.69	61.0	2748.71	657.37	1185.09	0.00	1355.20	0.00	0.00	
3250.00	41.69	61.0	2786.05	673.50	1214.17	0.00	1388.46	0.00	0.00	
3300.00	41.69	61.0	2823.39	689.63	1243.26	0.00	1421.72	0.00	0.00	
3350.00	41.69	61.0	2860.72	705.76	1272.34	0.00	1454.97	0.00	0.00	
3400.00	41.69	61.0	2898.06	721.90	1301.42	0.00	1488.23	0.00	0.00	
3450.00	41.69	61.0	2935.39	738.03	1330.50	0.00	1521.48	0.00	0.00	
3500.00	41.69	61.0	2972.73	754.16	1359.58	0.00	1554.74	0.00	0.00	
3550.00	41.69	61.0	3010.07	770.29	1388.66	0.00	1588.00	0.00	0.00	

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ft	deg	deg	ft	ft	ft	°/100ft	ft	ft	ft	ft
3600.00	41.69	61.0	3047.40	786.42	1417.75	0.00	1621.25	0.00	0.00	
3614.19	41.69	61.0	3058.00	791.00	1426.00	0.00	1630.69	0.00	0.00	