

Trilogy Resources LLC

Company: Trilogy Resources LLC

Site: Keto

Well: 7-34

Project: Weld County, Colorado

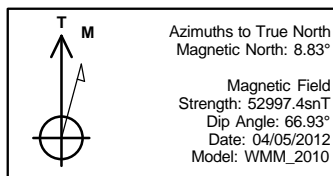
Rig Name: Cade 21



Planning: 936.442.2510 Fax: 936.442.2515
Operations: 936.442.2500 Fax: 936.442.2599

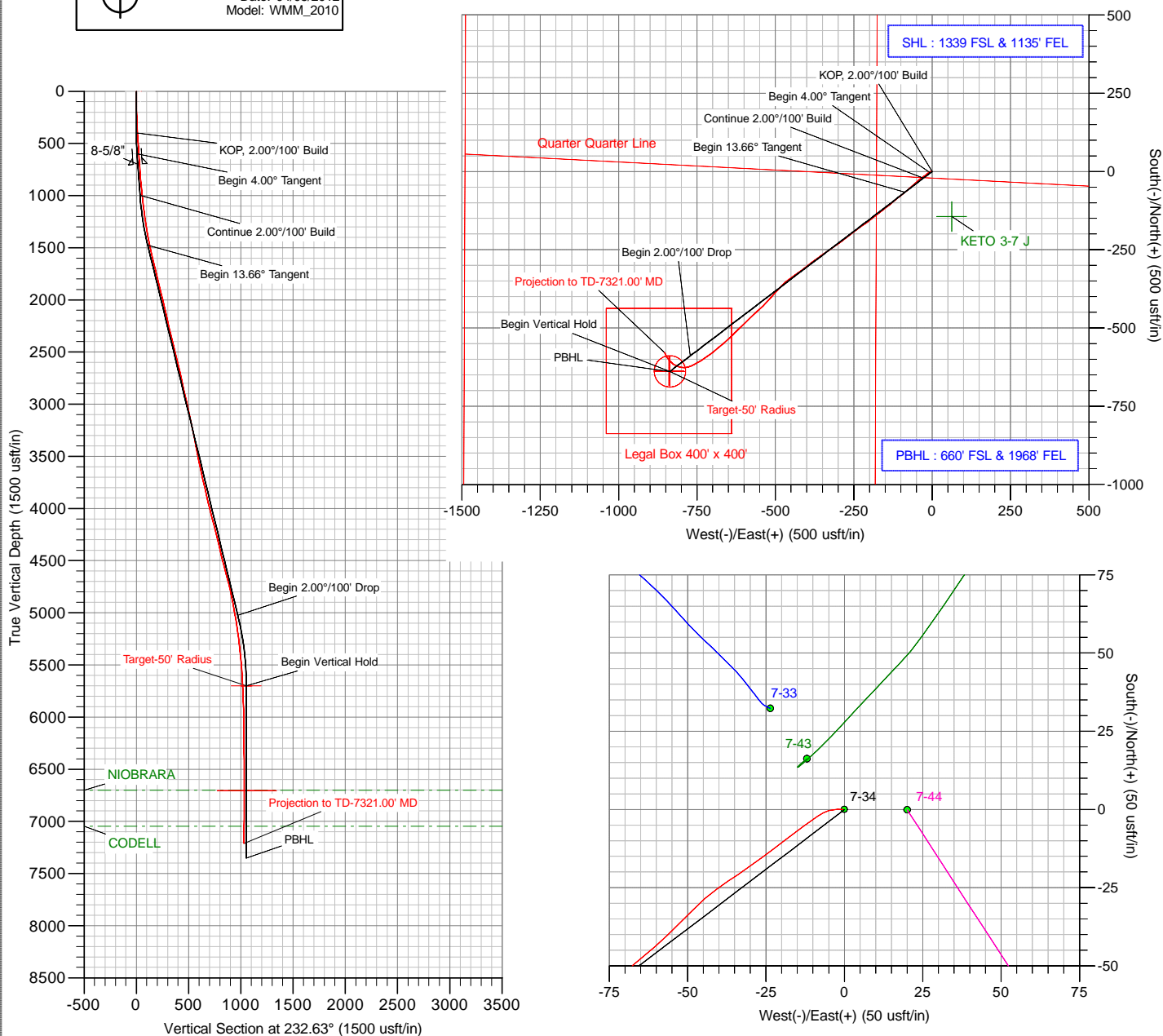
ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Departure	Annotation
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	KOP, 2.00°/100' Build
600.00	4.00	232.63	599.84	-4.24	-5.55	6.98	6.98	Begin 4.00° Tangent
1000.00	4.00	232.63	998.86	-21.17	-27.72	34.88	34.88	Continue 2.00°/100' Build
1482.77	13.66	232.63	1475.35	-66.08	-86.54	108.88	108.88	Begin 13.66° Tangent
5135.34	13.66	232.63	5024.67	-589.44	-771.87	971.19	971.19	Begin 2.00°/100' Drop
5818.11	0.00	0.00	5701.00	-638.59	-836.22	1052.17	1052.17	Begin Vertical Hold
7468.11	0.00	0.00	7351.00	-638.59	-836.22	1052.17	1052.17	PBHL



Created By: Megan Pope
Date: 10:35, April 10 2012
Plan: Design #1

US State Plane 1983
Colorado Northern Zone



The customer should only rely on this document after independently verifying all paths, targets, coordinates, lease and hard lines represented. Any decisions made or wells drilled utilizing this or any other information supplied by MS Energy are at the sole risk and responsibility of the customer. MS Energy is not responsible for the accuracy of this schematic or the information contained herein.

Trilogy Resources LLC

Weld County, Colorado

Keto

7-34

Wellbore #1

Survey: MS MWD

Standard Survey Report

10 April, 2012

Company:	Trilogy Resources LLC	Local Co-ordinate Reference:	Well 7-34
Project:	Weld County, Colorado	TVD Reference:	Well @ 4851.00usft (Cade 21)
Site:	Keto	MD Reference:	Well @ 4851.00usft (Cade 21)
Well:	7-34	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	Southern Region

Project	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		

Well	7-34				
Well Position	+N/-S	0.00 usft	Northing:	1,361,484.20 usft	Latitude: 40° 19' 27.3439 N
	+E/-W	0.00 usft	Easting:	3,159,522.41 usft	Longitude: 104° 55' 40.314 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level: 4,838.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM_2010	04/05/12	8.83	66.93	52,997

Design	Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	232.63	

Survey Program	Date	04/10/12			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
178.00	7,321.00	MS MWD (Wellbore #1)	MWD	MWD - Standard	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
178.00	1.40	272.00	177.98	0.08	-2.17	1.68	0.79	0.79	0.00	
270.00	2.10	255.30	269.94	-0.31	-4.93	4.11	0.93	0.76	-18.15	
361.00	3.00	234.80	360.85	-2.11	-8.49	8.02	1.39	0.99	-22.53	
453.00	3.90	234.10	452.68	-5.33	-12.99	13.56	0.98	0.98	-0.76	
544.00	4.00	231.50	543.47	-9.12	-17.98	19.82	0.23	0.11	-2.86	
639.00	4.00	234.00	638.24	-13.13	-23.25	26.45	0.18	0.00	2.63	
691.00	4.00	232.80	690.11	-15.29	-26.16	30.08	0.16	0.00	-2.31	
829.00	4.00	237.10	827.77	-20.82	-34.04	39.69	0.22	0.00	3.12	
925.00	5.50	234.40	923.44	-25.32	-40.59	47.62	1.58	1.56	-2.81	
1,021.00	7.00	223.90	1,018.87	-32.21	-48.39	58.01	1.96	1.56	-10.94	
1,116.00	6.50	226.30	1,113.21	-40.10	-56.29	69.07	0.60	-0.53	2.53	
1,211.00	7.70	230.80	1,207.48	-47.83	-65.11	80.78	1.39	1.26	4.74	
1,307.00	9.50	229.20	1,302.40	-57.08	-76.09	95.12	1.89	1.88	-1.67	
1,402.00	10.60	230.60	1,395.94	-67.74	-88.78	111.67	1.19	1.16	1.47	

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Site:	Keto	MD Reference:	Well @ 4851.00usft (Cade 21)
Well:	7-34	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Surveys	Database:	Southern Region

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
1,498.00	12.40	232.20	1,490.01	-79.67	-103.75	130.81	1.90	1.88	1.67	
1,593.00	13.50	228.40	1,582.59	-93.28	-120.10	152.07	1.46	1.16	-4.00	
1,689.00	13.00	233.00	1,676.04	-107.22	-137.10	174.04	1.22	-0.52	4.79	
1,784.00	14.10	231.50	1,768.39	-120.85	-154.69	196.29	1.22	1.16	-1.58	
1,879.00	14.20	232.20	1,860.51	-135.20	-172.96	219.52	0.21	0.11	0.74	
1,974.00	13.80	232.10	1,952.69	-149.30	-191.10	242.50	0.42	-0.42	-0.11	
2,070.00	12.70	232.20	2,046.13	-162.80	-208.48	264.50	1.15	-1.15	0.10	
2,165.00	12.70	236.50	2,138.81	-174.97	-225.44	285.36	0.99	0.00	4.53	
2,261.00	12.40	231.30	2,232.52	-187.24	-242.28	306.19	1.22	-0.31	-5.42	
2,356.00	14.00	233.50	2,325.01	-200.45	-259.48	327.88	1.76	1.68	2.32	
2,451.00	13.80	233.30	2,417.23	-214.06	-277.80	350.70	0.22	-0.21	-0.21	
2,547.00	14.40	232.10	2,510.33	-228.23	-296.40	374.09	0.70	0.63	-1.25	
2,642.00	12.40	235.10	2,602.74	-241.33	-314.09	396.09	2.23	-2.11	3.16	
2,737.00	13.20	237.00	2,695.38	-253.07	-331.55	417.10	0.95	0.84	2.00	
2,832.00	13.00	233.60	2,787.91	-265.32	-349.25	438.60	0.84	-0.21	-3.58	
2,928.00	12.20	234.00	2,881.60	-277.69	-366.15	459.54	0.84	-0.83	0.42	
3,023.00	12.40	234.70	2,974.42	-289.48	-382.59	479.76	0.26	0.21	0.74	
3,118.00	12.00	227.90	3,067.28	-302.00	-398.25	499.80	1.57	-0.42	-7.16	
3,213.00	12.60	236.20	3,160.10	-314.38	-414.19	519.99	1.96	0.63	8.74	
3,309.00	12.40	232.90	3,253.83	-326.43	-431.11	540.74	0.77	-0.21	-3.44	
3,404.00	11.30	234.40	3,346.80	-338.00	-446.81	560.25	1.20	-1.16	1.58	
3,499.00	10.20	233.70	3,440.13	-348.40	-461.16	577.96	1.17	-1.16	-0.74	
3,595.00	11.50	225.60	3,534.42	-360.13	-474.85	595.96	2.08	1.35	-8.44	
3,689.00	12.00	223.50	3,626.45	-373.77	-488.27	614.91	0.70	0.53	-2.23	
3,784.00	13.30	221.50	3,719.14	-389.12	-502.31	635.38	1.44	1.37	-2.11	
3,878.00	13.60	222.30	3,810.57	-405.39	-516.91	656.86	0.38	0.32	0.85	
3,973.00	12.90	223.60	3,903.04	-421.33	-531.74	678.32	0.80	-0.74	1.37	
4,067.00	14.50	226.40	3,994.36	-437.05	-547.50	700.39	1.84	1.70	2.98	
4,161.00	14.50	226.30	4,085.37	-453.29	-564.53	723.78	0.03	0.00	-0.11	
4,255.00	14.30	227.60	4,176.41	-469.25	-581.61	747.04	0.40	-0.21	1.38	
4,349.00	13.50	225.00	4,267.66	-484.84	-597.94	769.48	1.08	-0.85	-2.77	
4,444.00	13.70	225.80	4,360.00	-500.52	-613.85	791.64	0.29	0.21	0.84	
4,538.00	13.50	225.90	4,451.36	-515.92	-629.71	813.59	0.21	-0.21	0.11	
4,633.00	15.20	227.30	4,543.39	-532.08	-646.83	837.01	1.83	1.79	1.47	
4,727.00	15.40	228.50	4,634.06	-548.71	-665.23	861.72	0.40	0.21	1.28	
4,821.00	14.00	230.10	4,724.98	-564.27	-683.30	885.53	1.55	-1.49	1.70	
4,916.00	11.50	231.50	4,817.64	-577.54	-699.53	906.48	2.65	-2.63	1.47	
5,010.00	10.40	233.70	4,909.92	-588.40	-713.70	924.34	1.25	-1.17	2.34	
5,104.00	10.40	236.60	5,002.38	-598.09	-727.62	941.28	0.56	0.00	3.09	
5,198.00	8.80	239.50	5,095.06	-606.41	-740.90	956.89	1.78	-1.70	3.09	
5,291.00	8.30	240.90	5,187.03	-613.29	-752.90	970.59	0.58	-0.54	1.51	
5,385.00	6.80	242.90	5,280.21	-619.12	-763.78	982.78	1.62	-1.60	2.13	
5,480.00	6.20	251.80	5,374.60	-623.29	-773.66	993.16	1.23	-0.63	9.37	
5,574.00	5.80	262.30	5,468.09	-625.51	-783.19	1,002.09	1.24	-0.43	11.17	

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5,668.00	4.90	268.70	5,561.68	-626.24	-791.91	1,009.46	1.15	-0.96	6.81	
5,763.00	5.00	278.50	5,656.33	-625.72	-800.06	1,015.62	0.90	0.11	10.32	
5,857.00	4.20	282.90	5,750.02	-624.34	-807.47	1,020.67	0.93	-0.85	4.68	
5,951.00	3.20	297.60	5,843.83	-622.36	-813.15	1,023.98	1.46	-1.06	15.64	
6,045.00	3.50	307.10	5,937.67	-619.41	-817.76	1,025.86	0.67	0.32	10.11	
6,139.00	3.10	284.10	6,031.52	-617.06	-822.52	1,028.21	1.46	-0.43	-24.47	
6,233.00	2.50	306.70	6,125.41	-615.22	-826.63	1,030.36	1.32	-0.64	24.04	
6,329.00	3.10	325.00	6,221.29	-611.84	-829.79	1,030.83	1.11	0.63	19.06	
6,423.00	2.90	309.10	6,315.17	-608.26	-833.10	1,031.28	0.91	-0.21	-16.91	
6,518.00	2.10	312.80	6,410.07	-605.56	-836.24	1,032.14	0.86	-0.84	3.89	
6,613.00	1.00	325.40	6,505.04	-603.69	-837.99	1,032.39	1.21	-1.16	13.26	
6,708.00	1.20	322.30	6,600.02	-602.22	-839.07	1,032.36	0.22	0.21	-3.26	
6,802.00	1.90	321.60	6,693.99	-600.22	-840.64	1,032.39	0.74	0.74	-0.74	
6,897.00	2.30	321.20	6,788.92	-597.50	-842.81	1,032.47	0.42	0.42	-0.42	
6,991.00	2.50	330.00	6,882.84	-594.26	-845.02	1,032.25	0.45	0.21	9.36	
7,086.00	2.90	330.50	6,977.73	-590.37	-847.24	1,031.66	0.42	0.42	0.53	
7,180.00	3.60	331.50	7,071.58	-585.71	-849.82	1,030.88	0.75	0.74	1.06	
7,274.00	3.50	335.70	7,165.40	-580.50	-852.40	1,029.77	0.30	-0.11	4.47	
7,321.00	3.50	335.70	7,212.31	-577.89	-853.58	1,029.13	0.00	0.00	0.00	
Projection to TD-7321.00' MD										

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
7,321.00	7,212.31	-577.89	-853.58	Projection to TD-7321.00' MD	