



Company: Anadarko
Site: Northglenn State
Well: 33-36

Project: Weld County, Colorado (NAD83)
Rig Name: Xtreme 11



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
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	KOP, 2.00°/100' Build
500.00	6.00	267.55	499.45	-0.67	-15.68	15.66	15.69	Hold 6.00° Inc
1118.94	6.00	267.55	1115.00	-3.44	-80.32	80.21	80.39	Begin 2.50°/100' Build
2022.94	28.60	267.55	1972.52	-14.85	-347.16	346.68	347.48	Begin 28.60° Tangent
5272.94	28.60	267.55	4825.96	-81.36	-1901.49	1898.85	1903.23	Begin 2.50°/100' Turn
5531.94	28.60	281.10	5053.61	-72.06	-2024.38	2021.94	2026.82	Hold 281.10° Azm
6476.17	28.60	281.10	5882.62	14.96	-2467.92	2467.52	2478.81	Begin 2.50°/100' Drop
7620.16	0.00	0.00	6979.70	68.81	-2742.33	2743.19	2758.45	Begin Vertical Hold
9133.46	0.00	0.00	8493.00	68.81	-2742.33	2743.19	2758.45	PBHL



Azimuths to True North
Magnetic North: 8.84°
Magnetic Field
Strength: 52842.0nT
Dip Angle: 66.67°
Date: 1/31/2012
Model: WMM_2010

US State Plane 1983
Colorado Northern Zone

Created By: Cindy Darland
Date: 15:54, January 30 2012
Plan: Design #1

DESIGN TARGET DETAILS

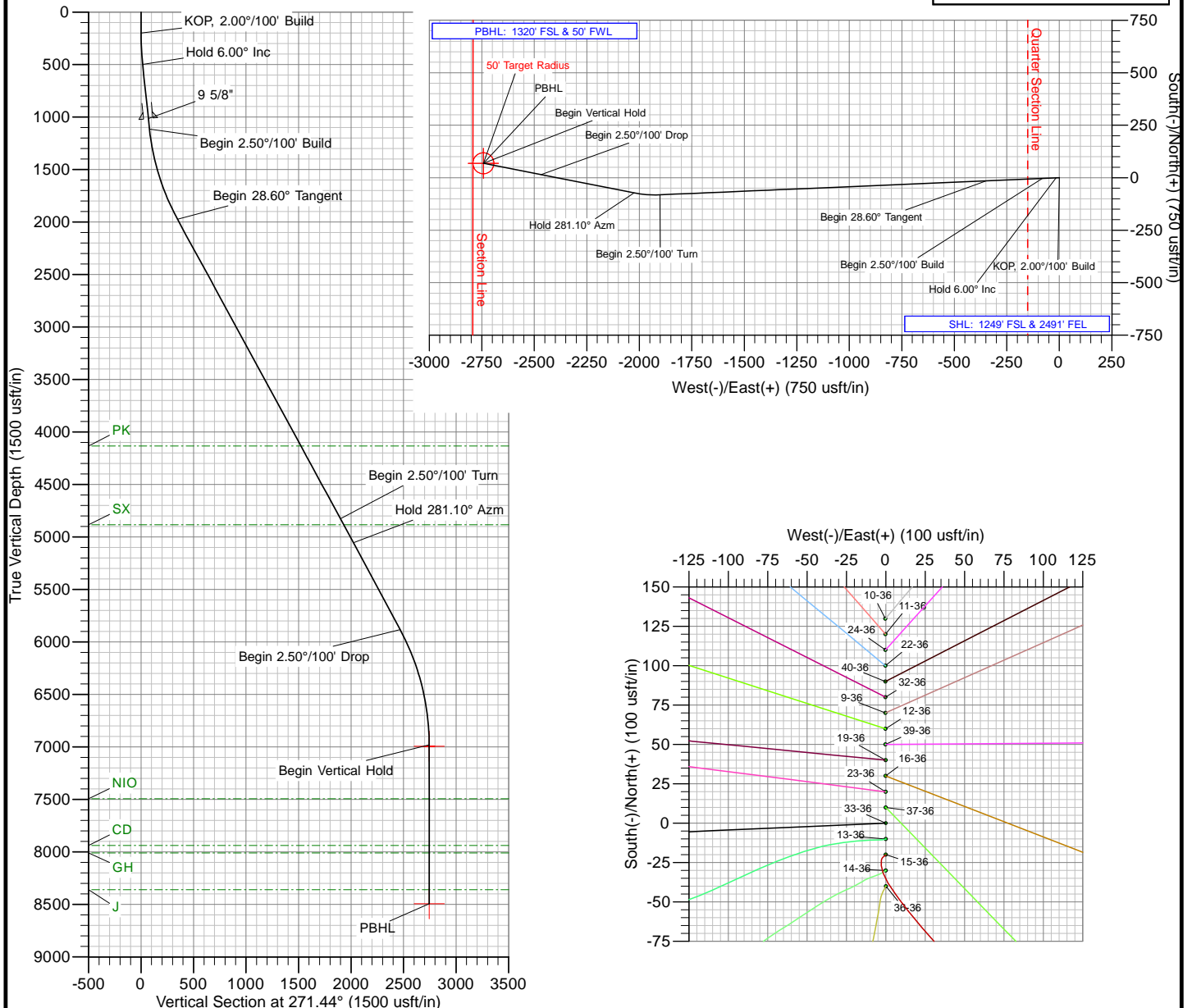
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
Vertical v1-Northglenn State 33-36	6993.00	68.81	-2742.33	40° 0' 14.2312 N	104° 57' 40.415 W
PBHL v1-Northglenn State 33-36	8493.00	68.81	-2742.33	40° 0' 14.2312 N	104° 57' 40.415 W

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4133.00	4483.67	PK
4883.00	5337.86	SX
7493.00	8133.46	NIO
7939.00	8579.46	CD
8009.00	8649.46	GH
8360.00	9000.46	J

SURFACE LOCATION

Northing: 1244693.52
Easting: 3153672.36
Latitude: 40° 0' 13.5527 N
Longitude: 104° 57' 5.174 W
Ground Elevation: 5118.00
WELL @ 5133.00usft (Xtreme 11)



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.



Job Number: DDOK120091
Company: Anadarko Petroleum
Lease/Well: Northglenn State 33-36
Location: Weld County
Rig Name: Xtreme 11
RKB: 15'
G.L. or M.S.L.: MSL

State/Country: Colorado
Declination: 8.84°
Grid: True
File name: C:\WINSERVE\JOBS\NORTHG~2\33-36.SVY
Date/Time: 05-Feb-12 / 11:11
Curve Name: Northglenn State 33-36 Design #1

Northglenn State 33-36 Design #1

WINSERVE SURVEY CALCULATIONS
Minimum Curvature Method
Vertical Section Plane 271.44
Vertical Section Referenced to Wellhead
Rectangular Coordinates Referenced to Wellhead

<i>Measured Depth FT</i>	<i>Incl Angle Deg</i>	<i>Drift Direction Deg</i>	<i>True Vertical Depth</i>	<i>N-S FT</i>	<i>E-W FT</i>	<i>Vertical Section FT</i>	<i>C L O S U R E Distance FT</i>	<i>Direction Deg</i>	<i>Dogleg Severity Deg/100</i>
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
110.00	1.70	250.50	109.98	-.54	-1.54	1.52	1.63	250.50	1.55
199.00	2.40	272.30	198.93	-.91	-4.64	4.62	4.73	258.91	1.16
286.00	3.30	280.90	285.82	-.36	-8.92	8.91	8.93	267.66	1.14
377.00	4.50	269.50	376.61	.10	-15.07	15.06	15.07	270.38	1.56
468.00	4.90	269.00	467.30	.00	-22.52	22.51	22.52	270.00	.44
559.00	6.20	268.50	557.87	-.20	-31.32	31.31	31.32	269.64	1.43
650.00	6.30	267.60	648.33	-.53	-41.22	41.19	41.22	269.26	.15
741.00	7.10	267.90	738.71	-.95	-51.83	51.79	51.84	268.95	.88
832.00	8.20	266.20	828.90	-1.58	-63.93	63.87	63.94	268.58	1.23
968.00	9.00	265.70	963.37	-3.02	-84.21	84.11	84.27	267.94	.59
1074.00	8.10	261.30	1068.19	-4.78	-99.86	99.71	99.97	267.26	1.05
1165.00	10.30	267.20	1158.02	-6.14	-114.33	114.14	114.49	266.92	2.63
1256.00	14.10	272.00	1246.95	-6.15	-133.54	133.34	133.68	267.36	4.32
1346.00	17.20	276.70	1333.60	-4.22	-157.72	157.56	157.77	268.47	3.72
1437.00	19.70	269.30	1419.93	-2.84	-186.42	186.29	186.45	269.13	3.76
1528.00	21.50	270.40	1505.11	-2.91	-218.44	218.30	218.46	269.24	2.02
1619.00	24.60	269.70	1588.84	-2.89	-254.06	253.91	254.08	269.35	3.42
1710.00	25.90	271.50	1671.14	-2.47	-292.87	292.72	292.88	269.52	1.66
1800.00	27.20	267.20	1751.65	-2.96	-333.07	332.89	333.09	269.49	2.58
1891.00	28.00	268.50	1832.30	-4.53	-375.20	374.97	375.23	269.31	1.10
1982.00	28.20	264.40	1912.58	-7.19	-417.96	417.64	418.02	269.01	2.13
2073.00	30.00	265.80	1992.09	-10.96	-462.05	461.63	462.18	268.64	2.11
2164.00	30.40	265.00	2070.74	-14.63	-507.68	507.15	507.89	268.35	.62
2254.00	30.20	265.10	2148.45	-18.55	-552.91	552.27	553.22	268.08	.23

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
2345.00	29.50	264.60	2227.37	-22.61	-598.02	597.27	598.45	267.83	.82
2436.00	29.60	266.70	2306.54	-26.01	-642.77	641.91	643.29	267.68	1.14
2527.00	29.30	266.00	2385.78	-28.86	-687.42	686.48	688.02	267.60	.50
2617.00	28.70	265.00	2464.50	-32.28	-730.91	729.87	731.63	267.47	.86
2708.00	29.20	266.90	2544.13	-35.38	-774.85	773.71	775.66	267.39	1.15
2799.00	29.50	268.30	2623.45	-37.25	-819.41	818.21	820.26	267.40	.82
2890.00	28.20	266.00	2703.15	-39.41	-863.26	861.99	864.16	267.39	1.88
2981.00	27.90	266.50	2783.46	-42.21	-905.96	904.61	906.94	267.33	.42
3072.00	26.60	266.40	2864.36	-44.79	-947.54	946.12	948.60	267.29	1.43
3162.00	26.70	269.50	2944.81	-46.23	-987.87	986.40	988.95	267.32	1.55
3253.00	27.70	268.30	3025.74	-47.04	-1029.46	1027.95	1030.53	267.38	1.25
3344.00	31.00	271.50	3105.06	-47.05	-1074.04	1072.52	1075.07	267.49	4.01
3435.00	30.60	268.50	3183.23	-47.05	-1120.62	1119.09	1121.61	267.60	1.74
3525.00	29.50	267.10	3261.13	-48.77	-1165.65	1164.06	1166.67	267.60	1.45
3616.00	29.00	269.00	3340.53	-50.29	-1210.09	1208.44	1211.13	267.62	1.16
3707.00	28.80	263.70	3420.21	-53.08	-1253.94	1252.21	1255.06	267.58	2.82
3798.00	28.60	262.70	3500.03	-58.25	-1297.33	1295.46	1298.64	267.43	.57
3889.00	27.50	262.50	3580.34	-63.76	-1339.76	1337.74	1341.28	267.28	1.21
3980.00	26.50	263.20	3661.42	-68.91	-1380.75	1378.59	1382.47	267.14	1.15
4070.00	26.40	262.30	3742.00	-73.97	-1420.52	1418.21	1422.45	267.02	.46
4161.00	25.60	266.40	3823.79	-77.91	-1460.19	1457.78	1462.27	266.95	2.16
4252.00	28.50	271.50	3904.84	-78.58	-1501.53	1499.08	1503.59	267.00	4.08
4343.00	28.50	273.40	3984.82	-76.72	-1544.91	1542.49	1546.81	267.16	1.00
4433.00	25.90	272.30	4064.86	-74.66	-1585.99	1583.61	1587.75	267.30	2.94
4524.00	23.90	275.10	4147.40	-72.22	-1624.22	1621.89	1625.82	267.45	2.55
4615.00	25.10	281.30	4230.22	-66.80	-1661.51	1659.31	1662.85	267.70	3.12
4705.00	25.80	273.20	4311.51	-61.96	-1699.80	1697.70	1700.93	267.91	3.94
4796.00	25.60	270.10	4393.51	-60.82	-1739.23	1737.15	1740.30	268.00	1.49
4887.00	27.90	267.20	4474.77	-61.83	-1780.16	1778.05	1781.24	268.01	2.91
4978.00	31.90	267.90	4553.64	-63.75	-1825.48	1823.30	1826.59	268.00	4.41
5068.00	30.40	267.40	4630.66	-65.66	-1871.99	1869.75	1873.14	267.99	1.69
5159.00	30.20	265.50	4709.23	-68.50	-1917.81	1915.48	1919.03	267.95	1.08
5250.00	28.50	266.40	4788.55	-71.66	-1962.30	1959.88	1963.61	267.91	1.93
5341.00	27.50	268.50	4868.90	-73.57	-2004.97	2002.49	2006.32	267.90	1.54
5432.00	27.10	266.40	4949.76	-75.42	-2046.66	2044.12	2048.05	267.89	1.15
5522.00	27.50	271.10	5029.75	-76.31	-2087.90	2085.32	2089.29	267.91	2.44
5613.00	27.30	277.10	5110.55	-73.33	-2129.62	2127.11	2130.88	268.03	3.04
5704.00	26.90	283.00	5191.58	-66.12	-2170.40	2168.05	2171.40	268.26	2.98
5795.00	26.70	285.50	5272.81	-56.02	-2210.16	2208.05	2210.87	268.55	1.26
5885.00	24.20	283.40	5354.07	-46.34	-2247.59	2245.72	2248.07	268.82	2.95
5976.00	23.20	282.90	5437.39	-38.02	-2283.21	2281.53	2283.52	269.05	1.12
6067.00	23.80	282.70	5520.84	-29.98	-2318.59	2317.11	2318.79	269.26	.67
6158.00	21.70	281.30	5604.76	-22.64	-2353.01	2351.69	2353.11	269.45	2.38
6249.00	19.70	278.10	5689.89	-17.19	-2384.69	2383.51	2384.75	269.59	2.52
6339.00	17.90	273.60	5775.08	-14.18	-2413.52	2412.40	2413.56	269.66	2.57

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
				FT	FT	FT	Distance FT	Direction Deg	
6430.00	16.40	271.30	5862.04	-13.01	-2440.32	2439.22	2440.35	269.69	1.81
6521.00	17.90	278.70	5949.00	-10.60	-2466.99	2465.95	2467.01	269.75	2.91
6612.00	16.70	275.10	6035.88	-7.32	-2493.84	2492.87	2493.85	269.83	1.77
6702.00	16.70	279.20	6122.09	-4.11	-2519.49	2518.59	2519.49	269.91	1.31
6794.00	14.50	278.00	6210.70	-.39	-2543.94	2543.13	2543.94	269.99	2.42
6884.00	12.00	273.60	6298.29	1.77	-2564.44	2563.68	2564.44	270.04	2.99
6975.00	13.30	278.10	6387.09	3.83	-2584.25	2583.53	2584.25	270.09	1.79
7066.00	12.70	282.70	6475.76	7.51	-2604.37	2603.73	2604.38	270.17	1.31
7157.00	11.30	279.20	6564.77	11.13	-2622.93	2622.38	2622.95	270.24	1.73
7248.00	9.40	283.60	6654.28	14.31	-2638.95	2638.48	2638.99	270.31	2.26
7338.00	8.80	287.00	6743.15	18.05	-2652.68	2652.30	2652.74	270.39	.89
7429.00	7.80	285.00	6833.20	21.68	-2665.30	2665.01	2665.39	270.47	1.14
7520.00	6.60	278.10	6923.48	24.02	-2676.45	2676.20	2676.55	270.51	1.62
7611.00	4.60	269.90	7014.04	24.75	-2685.27	2685.05	2685.39	270.53	2.36
7702.00	1.70	247.90	7104.90	24.23	-2690.17	2689.93	2690.28	270.52	3.40
7838.00	4.70	346.30	7240.73	28.89	-2693.37	2693.24	2693.52	270.61	3.84
7974.00	4.00	332.80	7376.34	38.52	-2696.85	2696.97	2697.13	270.82	.91
8110.00	2.30	343.50	7512.13	45.36	-2699.80	2700.08	2700.18	270.96	1.32
8246.00	1.30	335.80	7648.07	49.38	-2701.20	2701.59	2701.66	271.05	.75
8383.00	1.30	308.90	7785.03	51.78	-2703.05	2703.50	2703.55	271.10	.44
8519.00	1.80	286.20	7920.98	53.34	-2706.30	2706.79	2706.83	271.13	.58
8655.00	1.80	284.10	8056.92	54.46	-2710.43	2710.94	2710.97	271.15	.05
8791.00	1.10	287.60	8192.87	55.37	-2713.74	2714.28	2714.31	271.17	.52
8927.00	1.10	263.00	8328.85	55.61	-2716.28	2716.82	2716.85	271.17	.34
9067.00	1.10	260.20	8468.82	55.22	-2718.94	2719.47	2719.50	271.16	.04
Projection To Bit.									
9127.00	1.10	260.20	8528.81	55.02	-2720.07	2720.60	2720.63	271.16	.00