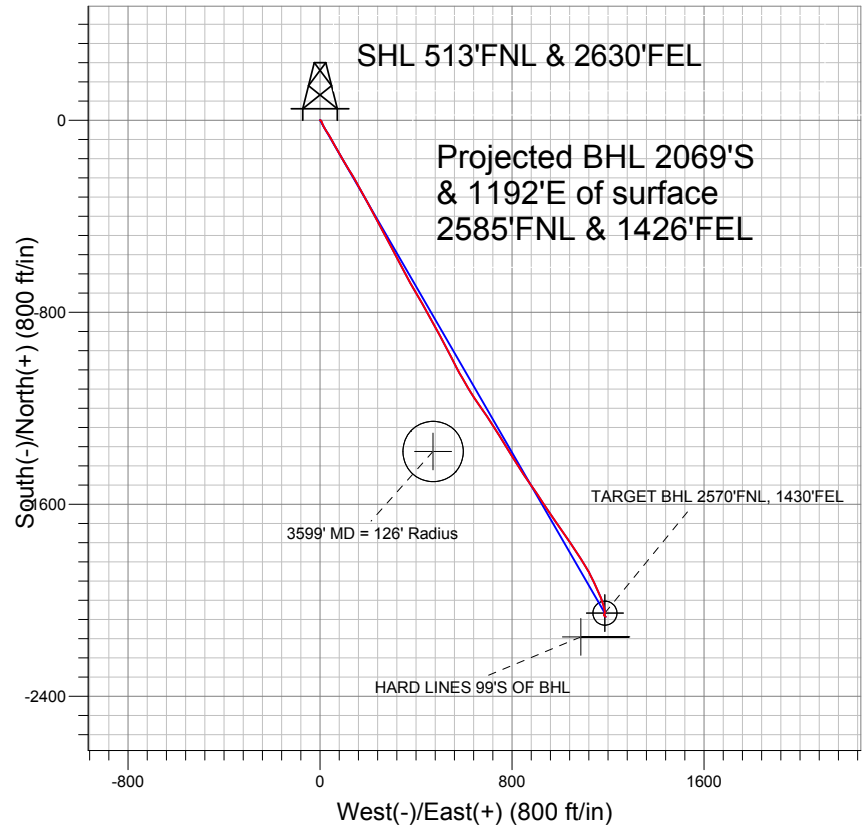


Anadarko, Weld County CO



LEGEND

- Nichols 24-8, Wellbore #1, Plan #1 (5-09-11) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
8397'MD & 7826'TVD @ 2388'VS
0.7 deg Inc 110.9 deg AZ

Project: SEC.8-T2N-R65W
Site: Nichols 28-8 Pad Sec.8-T2N-R65W
Well: Nichols 24-8
Plan: Wellbore #1



Directional

Anadarko, Weld County CO

SEC.8-T2N-R65W

Nichols 28-8 Pad Sec.8-T2N-R65W

Nichols 24-8

Wellbore #1

Survey: Survey #1

Standard Survey Report

27 June, 2011

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Nichols 24-8
Project:	SEC.8-T2N-R65W	TVD Reference:	WELL @ 4838.0ft (Original Well Elev)
Site:	Nichols 28-8 Pad Sec.8-T2N-R65W	MD Reference:	WELL @ 4838.0ft (Original Well Elev)
Well:	Nichols 24-8	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.8-T2N-R65W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Nichols 28-8 Pad Sec.8-T2N-R65W		
Site Position:		Northing:	1,301,878.60 ft
From:	Lat/Long	Easting:	3,227,041.06 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.159197
		Longitude:	-104.687676
		Grid Convergence:	0.52 °

Well	Nichols 24-8		
Well Position	+N/-S	0.0 ft	Northing: 1,301,846.53 ft
	+E/-W	0.0 ft	Easting: 3,227,041.08 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40.159109
		Longitude:	-104.687677
		Ground Level:	4,823.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/25/2011	8.81	66.87	53,019

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	149.97	

Survey Program	Date	6/27/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
144.0	8,397.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
144.0	0.60	48.60	144.0	0.5	0.6	-0.1	0.42	0.42	0.00	
233.0	0.90	131.30	233.0	0.3	1.4	0.4	1.14	0.34	92.92	
324.0	1.90	132.80	324.0	-1.2	3.1	2.5	1.10	1.10	1.65	
415.0	3.00	149.80	414.9	-4.2	5.4	6.4	1.44	1.21	18.68	
507.0	4.10	156.70	506.7	-9.3	7.9	12.0	1.28	1.20	7.50	
599.0	5.30	157.00	598.4	-16.3	10.9	19.5	1.30	1.30	0.33	
691.0	6.60	154.10	689.9	-24.9	14.8	29.0	1.45	1.41	-3.15	
798.0	7.70	148.50	796.1	-36.6	21.3	42.3	1.22	1.03	-5.23	
882.0	8.70	147.20	879.2	-46.7	27.6	54.3	1.21	1.19	-1.55	
977.0	10.40	147.50	972.9	-60.0	36.1	70.0	1.79	1.79	0.32	
1,072.0	13.00	151.60	1,065.9	-76.6	45.8	89.3	2.87	2.74	4.32	
1,168.0	15.00	150.20	1,159.0	-96.9	57.1	112.5	2.11	2.08	-1.46	

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Nichols 24-8
Project:	SEC.8-T2N-R65W	TVD Reference:	WELL @ 4838.0ft (Original Well Elev)
Site:	Nichols 28-8 Pad Sec.8-T2N-R65W	MD Reference:	WELL @ 4838.0ft (Original Well Elev)
Well:	Nichols 24-8	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,263.0	17.40	151.00	1,250.3	-120.0	70.1	139.0	2.54	2.53	0.84
1,358.0	19.70	150.00	1,340.3	-146.3	85.0	169.2	2.44	2.42	-1.05
1,453.0	23.00	149.70	1,428.8	-176.2	102.4	203.8	3.48	3.47	-0.32
1,548.0	25.40	147.70	1,515.4	-209.4	122.7	242.7	2.67	2.53	-2.11
1,643.0	27.80	150.60	1,600.4	-246.0	144.4	285.2	2.87	2.53	3.05
1,738.0	29.50	151.10	1,683.7	-285.8	166.6	330.8	1.81	1.79	0.53
1,833.0	29.70	151.20	1,766.4	-326.9	189.3	377.7	0.22	0.21	0.11
1,929.0	30.30	151.60	1,849.5	-369.0	212.2	425.7	0.66	0.63	0.42
2,024.0	31.10	151.50	1,931.2	-411.6	235.3	474.2	0.84	0.84	-0.11
2,119.0	29.90	152.20	2,013.0	-454.2	258.1	522.4	1.32	-1.26	0.74
2,214.0	29.30	152.70	2,095.6	-495.8	279.8	569.2	0.68	-0.63	0.53
2,310.0	29.60	152.30	2,179.2	-537.6	301.6	616.4	0.37	0.31	-0.42
2,407.0	28.60	151.50	2,264.0	-579.2	323.8	663.5	1.11	-1.03	-0.82
2,502.0	28.80	152.50	2,347.3	-619.5	345.2	709.1	0.55	0.21	1.05
2,597.0	28.10	151.80	2,430.8	-659.5	366.4	754.3	0.82	-0.74	-0.74
2,692.0	27.30	149.70	2,514.9	-698.1	387.9	798.5	1.33	-0.84	-2.21
2,788.0	28.00	150.10	2,600.0	-736.6	410.3	843.0	0.75	0.73	0.42
2,883.0	28.20	150.50	2,683.8	-775.5	432.4	887.8	0.29	0.21	0.42
2,978.0	29.30	151.10	2,767.1	-815.4	454.7	933.5	1.20	1.16	0.63
3,073.0	30.90	150.80	2,849.3	-857.0	477.9	981.1	1.69	1.68	-0.32
3,168.0	31.80	152.00	2,930.4	-900.4	501.5	1,030.5	1.15	0.95	1.26
3,264.0	31.40	153.30	3,012.2	-945.1	524.6	1,080.8	0.82	-0.42	1.35
3,359.0	31.70	152.10	3,093.1	-989.2	547.4	1,130.4	0.73	0.32	-1.26
3,454.0	30.00	152.70	3,174.7	-1,032.4	570.0	1,179.1	1.82	-1.79	0.63
3,549.0	29.90	150.00	3,257.0	-1,074.0	592.7	1,226.5	1.42	-0.11	-2.84
3,644.0	30.60	149.40	3,339.1	-1,115.3	616.9	1,274.3	0.80	0.74	-0.63
3,740.0	29.60	146.10	3,422.1	-1,156.1	642.5	1,322.4	2.01	-1.04	-3.44
3,834.0	29.50	145.70	3,503.9	-1,194.4	668.5	1,368.7	0.24	-0.11	-0.43
3,929.0	30.20	146.20	3,586.3	-1,233.6	695.0	1,415.8	0.78	0.74	0.53
3,950.5	30.16	146.29	3,604.9	-1,242.6	701.0	1,426.6	0.30	-0.21	0.41
3599' MD = 126' Radius									
4,025.0	30.00	146.60	3,669.3	-1,273.7	721.6	1,463.9	0.30	-0.21	0.42
4,120.0	30.10	148.00	3,751.6	-1,313.8	747.3	1,511.4	0.75	0.11	1.47
4,215.0	30.80	148.60	3,833.5	-1,354.7	772.6	1,559.5	0.80	0.74	0.63
4,310.0	30.20	148.30	3,915.3	-1,395.8	797.9	1,607.7	0.65	-0.63	-0.32
4,405.0	30.70	147.70	3,997.2	-1,436.6	823.4	1,655.9	0.62	0.53	-0.63
4,501.0	31.60	146.20	4,079.4	-1,478.3	850.5	1,705.4	1.24	0.94	-1.56
4,596.0	30.50	145.80	4,160.8	-1,518.9	877.9	1,754.3	1.18	-1.16	-0.42
4,691.0	29.50	145.40	4,243.0	-1,558.1	904.7	1,801.7	1.07	-1.05	-0.42
4,786.0	29.30	146.50	4,325.8	-1,596.7	930.8	1,848.2	0.61	-0.21	1.16
4,881.0	30.40	145.80	4,408.2	-1,636.0	957.2	1,895.4	1.21	1.16	-0.74
4,976.0	28.50	145.60	4,490.9	-1,674.6	983.5	1,942.0	2.00	-2.00	-0.21
5,072.0	28.70	144.70	4,575.2	-1,712.3	1,009.7	1,987.7	0.49	0.21	-0.94
5,167.0	29.60	146.70	4,658.2	-1,750.5	1,035.8	2,033.9	1.40	0.95	2.11
5,261.0	29.20	146.80	4,740.1	-1,789.1	1,061.1	2,080.0	0.43	-0.43	0.11
5,356.0	26.10	146.00	4,824.2	-1,825.8	1,085.5	2,124.0	3.29	-3.26	-0.84
5,451.0	24.60	149.50	4,910.1	-1,860.2	1,107.2	2,164.6	2.23	-1.58	3.68
5,547.0	22.50	152.70	4,998.1	-1,893.7	1,125.8	2,202.9	2.56	-2.19	3.33
5,642.0	19.70	153.20	5,086.7	-1,924.2	1,141.3	2,237.1	2.95	-2.95	0.53
5,737.0	17.60	156.70	5,176.7	-1,951.7	1,154.2	2,267.3	2.50	-2.21	3.68
5,832.0	14.60	158.60	5,268.0	-1,976.0	1,164.3	2,293.4	3.21	-3.16	2.00
5,927.0	12.80	158.20	5,360.3	-1,996.9	1,172.6	2,315.7	1.90	-1.89	-0.42
6,022.0	9.80	159.90	5,453.4	-2,014.3	1,179.3	2,334.1	3.18	-3.16	1.79
6,117.0	7.80	166.10	5,547.3	-2,028.1	1,183.6	2,348.2	2.33	-2.11	6.53

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
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Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,213.0	5.70	174.40	5,642.6	-2,039.2	1,185.6	2,358.8	2.41	-2.19	8.65
6,308.0	3.30	171.20	5,737.3	-2,046.6	1,186.5	2,365.7	2.54	-2.53	-3.37
6,403.0	1.40	143.60	5,832.2	-2,050.2	1,187.6	2,369.4	2.27	-2.00	-29.05
6,498.0	0.70	212.70	5,927.2	-2,051.7	1,188.0	2,370.8	1.39	-0.74	72.74
6,593.0	0.60	193.80	6,022.2	-2,052.6	1,187.5	2,371.4	0.25	-0.11	-19.89
6,670.8	0.35	210.34	6,100.0	-2,053.2	1,187.3	2,371.8	0.36	-0.32	21.26
TARGET BHL 2570'FNL, 1430'FEL									
6,689.0	0.30	218.00	6,118.2	-2,053.3	1,187.3	2,371.9	0.36	-0.27	42.06
6,784.0	0.40	255.90	6,213.2	-2,053.6	1,186.8	2,371.9	0.26	0.11	39.89
6,879.0	0.40	251.20	6,308.2	-2,053.8	1,186.2	2,371.7	0.03	0.00	-4.95
6,974.0	0.50	222.00	6,403.2	-2,054.2	1,185.6	2,371.8	0.26	0.11	-30.74
7,069.0	0.70	205.80	6,498.2	-2,055.0	1,185.0	2,372.2	0.27	0.21	-17.05
7,164.0	0.80	195.10	6,593.2	-2,056.2	1,184.6	2,373.0	0.18	0.11	-11.26
7,259.0	0.90	190.80	6,688.2	-2,057.6	1,184.3	2,374.1	0.12	0.11	-4.53
7,355.0	1.00	185.80	6,784.2	-2,059.1	1,184.1	2,375.3	0.14	0.10	-5.21
7,450.0	0.90	180.10	6,879.2	-2,060.7	1,184.0	2,376.6	0.14	-0.11	-6.00
7,463.8	0.81	184.56	6,892.9	-2,060.9	1,184.0	2,376.8	0.82	-0.67	32.38
TARGET CIRCLE 2570'FNL & 1430'FEL									
7,545.0	0.50	240.20	6,974.1	-2,061.7	1,183.6	2,377.3	0.82	-0.38	68.50
7,640.0	0.80	145.50	7,069.1	-2,062.4	1,183.6	2,377.9	1.03	0.32	-99.68
7,735.0	0.90	137.90	7,164.1	-2,063.5	1,184.5	2,379.3	0.16	0.11	-8.00
7,830.0	0.80	125.80	7,259.1	-2,064.5	1,185.6	2,380.7	0.22	-0.11	-12.74
7,926.0	0.90	136.70	7,355.1	-2,065.4	1,186.6	2,382.0	0.20	0.10	11.35
8,021.0	0.70	137.20	7,450.1	-2,066.4	1,187.5	2,383.3	0.21	-0.21	0.53
8,116.0	0.70	128.50	7,545.1	-2,067.2	1,188.4	2,384.4	0.11	0.00	-9.16
8,212.0	0.90	127.60	7,641.1	-2,068.0	1,189.4	2,385.6	0.21	0.21	-0.94
8,306.0	0.80	116.70	7,735.1	-2,068.7	1,190.6	2,386.9	0.20	-0.11	-11.60
8,343.1	0.71	111.52	7,772.2	-2,068.9	1,191.0	2,387.3	0.31	-0.24	-13.96
HARD LINES 99'S OF BHL									
8,347.0	0.70	110.90	7,776.1	-2,068.9	1,191.1	2,387.3	0.31	-0.23	-15.93
8,397.0	0.70	110.90	7,826.1	-2,069.2	1,191.7	2,387.8	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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