

Well Name: **Walters 21-18**

Surface Location: Walters 17-18 Pad Sec.18-T2N-R65W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

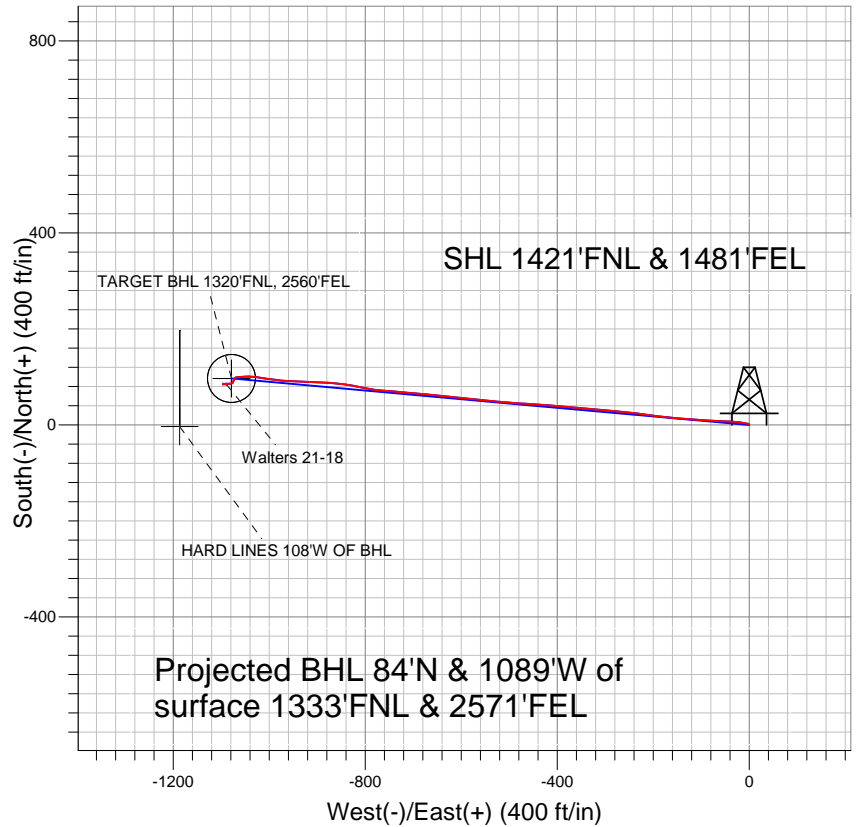
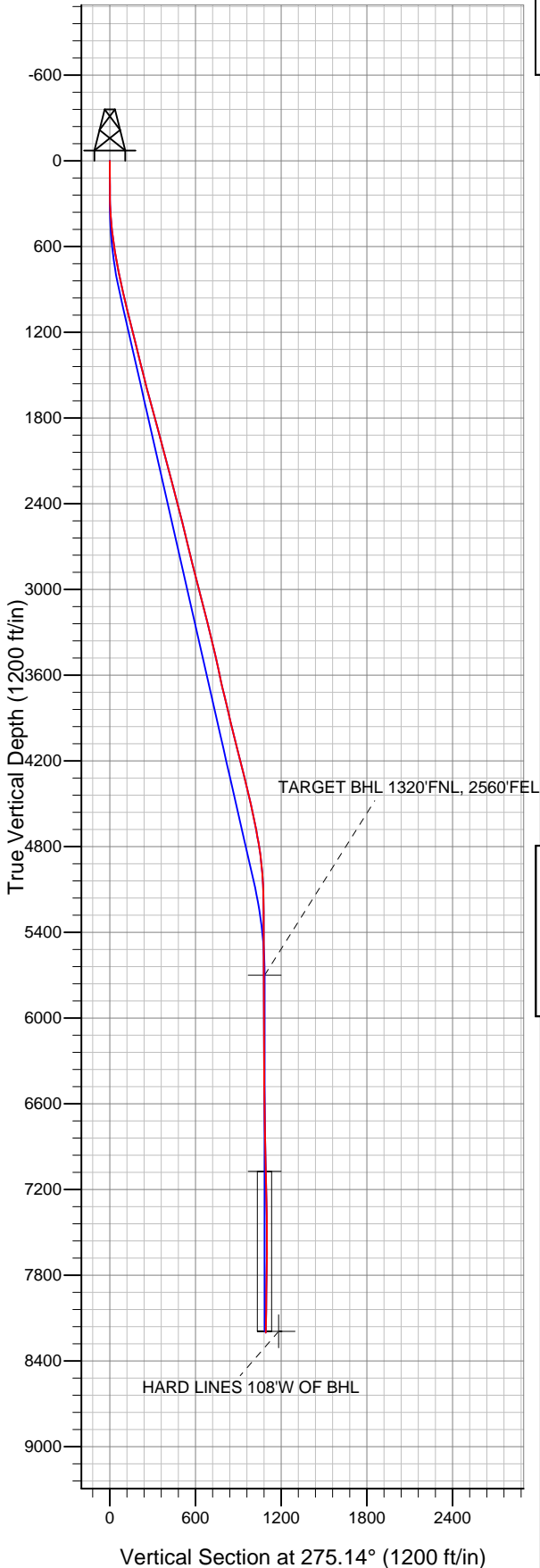
Ground Elevation: 4963.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1295592.09	3222923.66	40.142043	-104.702609

Original Well Elev WELL @ 4977.0ft (Original Well Elev)

Slot

Anadarko, Weld County CO



LEGEND

- ◆ Walters 21-18, Wellbore #1, Plan #1 (4-01-11) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
8328'MD & 8202'TVD @ 1092'VS
0.7 deg Inc 118.2 deg AZ

Project: SEC.18-T2N-R65W
Site: Walters 17-18 Pad Sec.18-T2N-R65W
Well: Walters 21-18
Plan: Wellbore #1



Directional

Anadarko, Weld County CO

SEC.18-T2N-R65W

Walters 17-18 Pad Sec.18-T2N-R65W

Walters 21-18

Wellbore #1

Survey: Survey #1

Standard Survey Report

01 August, 2011

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Walters 21-18
Project:	SEC.18-T2N-R65W	TVD Reference:	WELL @ 4977.0ft (Original Well Elev)
Site:	Walters 17-18 Pad Sec.18-T2N-R65W	MD Reference:	WELL @ 4977.0ft (Original Well Elev)
Well:	Walters 21-18	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.18-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	Walters 17-18 Pad Sec.18-T2N-R65W				
Site Position:		Northing:	1,295,602.30 ft	Latitude:	40.142071
From:	Lat/Long	Easting:	3,222,923.57 ft	Longitude:	-104.702609
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.52 °

Well	Walters 21-18					
Well Position	+N/-S	0.0 ft	Northing:	1,295,592.09 ft	Latitude:	40.142043
	+E/-W	0.0 ft	Easting:	3,222,923.66 ft	Longitude:	-104.702609
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,963.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/1/2011	8.84	66.86	53,023

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	275.14	

Survey Program	Date	8/1/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
84.0	8,328.0	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	
84.0	0.60	356.00	84.0	0.4	0.0	0.1	0.71	0.71	0.00	
176.0	0.50	321.10	176.0	1.2	-0.3	0.4	0.37	-0.11	-37.93	
269.0	0.80	298.70	269.0	1.9	-1.1	1.3	0.42	0.32	-24.09	
365.0	3.30	285.40	364.9	2.9	-4.4	4.6	2.63	2.60	-13.85	
454.0	5.70	278.80	453.6	4.3	-11.2	11.6	2.75	2.70	-7.42	
542.0	7.40	276.80	541.1	5.6	-21.2	21.6	1.95	1.93	-2.27	
631.0	8.70	274.40	629.2	6.8	-33.6	34.1	1.51	1.46	-2.70	
720.0	10.50	273.00	716.9	7.7	-48.4	48.9	2.04	2.02	-1.57	
808.0	12.70	272.70	803.1	8.6	-66.1	66.6	2.50	2.50	-0.34	
897.0	13.10	272.20	889.9	9.5	-85.9	86.4	0.47	0.45	-0.56	
997.0	13.40	274.20	987.2	10.8	-108.8	109.3	0.55	0.30	2.00	
1,086.0	13.30	273.50	1,073.8	12.1	-129.3	129.9	0.21	-0.11	-0.79	

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Walters 21-18
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Site:	Walters 17-18 Pad Sec.18-T2N-R65W	MD Reference:	WELL @ 4977.0ft (Original Well Elev)
Well:	Walters 21-18	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)
1,175.0	13.70	275.50	1,160.4	13.8	-150.0	150.6	0.69	0.45	2.25
1,263.0	14.10	277.00	1,245.8	16.1	-171.0	171.8	0.61	0.45	1.70
1,352.0	13.30	277.30	1,332.2	18.7	-191.9	192.8	0.90	-0.90	0.34
1,441.0	14.30	277.30	1,418.7	21.4	-213.0	214.1	1.12	1.12	0.00
1,529.0	14.20	276.60	1,504.0	24.0	-234.5	235.7	0.23	-0.11	-0.80
1,618.0	15.00	276.30	1,590.1	26.5	-256.8	258.1	0.90	0.90	-0.34
1,707.0	15.10	274.70	1,676.0	28.7	-279.8	281.2	0.48	0.11	-1.80
1,795.0	14.90	275.90	1,761.0	30.9	-302.5	304.0	0.42	-0.23	1.36
1,884.0	15.10	275.40	1,847.0	33.1	-325.4	327.0	0.27	0.22	-0.56
1,973.0	14.80	274.10	1,933.0	35.0	-348.3	350.0	0.51	-0.34	-1.46
2,061.0	15.60	275.00	2,017.9	36.9	-371.3	373.1	0.95	0.91	1.02
2,150.0	14.80	275.90	2,103.8	39.1	-394.5	396.4	0.94	-0.90	1.01
2,238.0	14.50	274.70	2,188.9	41.1	-416.7	418.7	0.48	-0.34	-1.36
2,327.0	14.50	272.50	2,275.1	42.5	-438.9	440.9	0.62	0.00	-2.47
2,416.0	14.50	274.20	2,361.3	43.8	-461.1	463.2	0.48	0.00	1.91
2,504.0	14.70	274.00	2,446.4	45.4	-483.3	485.4	0.23	0.23	-0.23
2,593.0	14.40	274.70	2,532.6	47.1	-505.6	507.7	0.39	-0.34	0.79
2,682.0	13.50	275.20	2,619.0	49.0	-526.9	529.2	1.02	-1.01	0.56
2,770.0	13.80	277.20	2,704.5	51.2	-547.6	550.0	0.64	0.34	2.27
2,859.0	13.50	274.00	2,791.0	53.3	-568.5	571.0	0.91	-0.34	-3.60
2,948.0	14.00	276.30	2,877.4	55.2	-589.5	592.1	0.83	0.56	2.58
3,036.0	14.50	276.10	2,962.7	57.5	-611.1	613.8	0.57	0.57	-0.23
3,125.0	14.00	276.40	3,049.0	59.9	-632.8	635.7	0.57	-0.56	0.34
3,213.0	14.90	275.50	3,134.2	62.2	-654.7	657.6	1.05	1.02	-1.02
3,302.0	14.30	274.60	3,220.3	64.1	-677.0	680.1	0.72	-0.67	-1.01
3,391.0	13.40	274.10	3,306.7	65.8	-698.3	701.4	1.02	-1.01	-0.56
3,479.0	14.00	275.60	3,392.2	67.5	-719.0	722.2	0.79	0.68	1.70
3,568.0	12.60	275.90	3,478.8	69.6	-739.4	742.7	1.57	-1.57	0.34
3,657.0	11.70	275.10	3,565.8	71.4	-758.1	761.4	1.03	-1.01	-0.90
3,745.0	12.70	274.80	3,651.8	73.0	-776.6	780.0	1.14	1.14	-0.34
3,834.0	13.70	282.00	3,738.5	76.0	-796.6	800.2	2.16	1.12	8.09
3,923.0	13.90	280.70	3,824.9	80.2	-817.5	821.3	0.41	0.22	-1.46
4,011.0	13.00	279.50	3,910.5	83.8	-837.6	841.7	1.07	-1.02	-1.36
4,100.0	13.70	276.00	3,997.1	86.5	-858.0	862.3	1.20	0.79	-3.93
4,189.0	13.80	272.50	4,083.6	88.1	-879.0	883.4	0.94	0.11	-3.93
4,277.0	14.50	272.30	4,168.9	89.0	-900.5	904.9	0.80	0.80	-0.23
4,366.0	14.50	273.00	4,255.1	90.0	-922.8	927.1	0.20	0.00	0.79
4,454.0	13.60	272.30	4,340.4	91.0	-944.1	948.5	1.04	-1.02	-0.80
4,543.0	13.40	272.60	4,427.0	91.9	-964.9	969.2	0.24	-0.22	0.34
4,632.0	12.60	278.00	4,513.7	93.7	-984.8	989.2	1.63	-0.90	6.07
4,720.0	11.80	277.60	4,599.7	96.2	-1,003.2	1,007.8	0.91	-0.91	-0.45
4,809.0	11.00	278.80	4,686.9	98.7	-1,020.6	1,025.4	0.94	-0.90	1.35
4,898.0	9.60	275.40	4,774.5	100.7	-1,036.4	1,041.3	1.71	-1.57	-3.82
4,986.0	7.40	264.00	4,861.5	100.8	-1,049.4	1,054.2	3.14	-2.50	-12.95
5,075.0	5.20	267.20	4,950.0	100.0	-1,059.1	1,063.8	2.50	-2.47	3.60
5,164.0	3.70	265.50	5,038.7	99.6	-1,066.0	1,070.6	1.69	-1.69	-1.91
5,252.0	1.60	244.30	5,126.6	98.9	-1,069.9	1,074.5	2.59	-2.39	-24.09
5,385.0	1.30	191.50	5,259.6	96.6	-1,071.9	1,076.2	0.99	-0.23	-39.70
5,518.0	0.20	220.00	5,392.6	94.9	-1,072.4	1,076.5	0.85	-0.83	21.43
5,651.0	0.60	221.10	5,525.6	94.2	-1,073.0	1,077.1	0.30	0.30	0.83
5,784.0	0.40	223.70	5,658.6	93.3	-1,073.7	1,077.8	0.15	-0.15	1.95
5,825.4	0.42	215.72	5,700.0	93.1	-1,073.9	1,078.0	0.15	0.06	-19.27
TARGET BHL 1320'FNL, 2560'FEL									
5,917.0	0.50	201.50	5,791.6	92.5	-1,074.3	1,078.2	0.15	0.08	-15.53

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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)	
6,050.0	0.60	189.70	5,924.6	91.2	-1,074.6	1,078.5	0.11	0.08	-8.87	
6,183.0	0.90	193.30	6,057.5	89.5	-1,075.0	1,078.7	0.23	0.23	2.71	
6,316.0	0.70	223.80	6,190.5	87.9	-1,075.8	1,079.3	0.35	-0.15	22.93	
6,449.0	0.40	250.70	6,323.5	87.2	-1,076.8	1,080.2	0.29	-0.23	20.23	
6,582.0	0.50	249.00	6,456.5	86.8	-1,077.7	1,081.2	0.08	0.08	-1.28	
6,715.0	0.50	252.10	6,589.5	86.5	-1,078.8	1,082.2	0.02	0.00	2.33	
6,848.0	1.30	258.90	6,722.5	86.0	-1,080.9	1,084.2	0.61	0.60	5.11	
6,981.0	1.40	268.00	6,855.5	85.6	-1,084.0	1,087.3	0.18	0.08	6.84	
7,114.0	1.30	278.00	6,988.4	85.8	-1,087.1	1,090.4	0.19	-0.08	7.52	
7,198.4	1.10	268.15	7,072.8	85.9	-1,088.8	1,092.2	0.34	-0.24	-11.67	
TARGET CIRCLE 1320'FNL & 2560'FEL										
7,247.0	1.00	260.80	7,121.4	85.8	-1,089.7	1,093.0	0.34	-0.20	-15.13	
7,380.0	2.00	257.80	7,254.4	85.1	-1,093.1	1,096.4	0.75	0.75	-2.26	
7,513.0	0.50	261.90	7,387.3	84.6	-1,096.0	1,099.2	1.13	-1.13	3.08	
7,645.0	0.40	348.00	7,519.3	84.9	-1,096.7	1,099.9	0.47	-0.08	65.23	
7,778.0	0.70	80.00	7,652.3	85.5	-1,095.9	1,099.2	0.62	0.23	69.17	
7,911.0	0.90	98.80	7,785.3	85.5	-1,094.1	1,097.4	0.25	0.15	14.14	
8,044.0	0.60	85.50	7,918.3	85.4	-1,092.4	1,095.7	0.26	-0.23	-10.00	
8,177.0	0.80	115.70	8,051.3	85.1	-1,090.9	1,094.1	0.31	0.15	22.71	
8,282.0	0.70	118.20	8,156.3	84.4	-1,089.6	1,092.8	0.10	-0.10	2.38	
8,318.2	0.70	118.20	8,192.5	84.2	-1,089.2	1,092.4	0.00	0.00	0.00	
HARD LINES 108'W OF BHL										
8,328.0	0.70	118.20	8,202.3	84.2	-1,089.1	1,092.3	0.00	0.00	0.00	

Checked By: _____ Approved By: _____ Date: _____