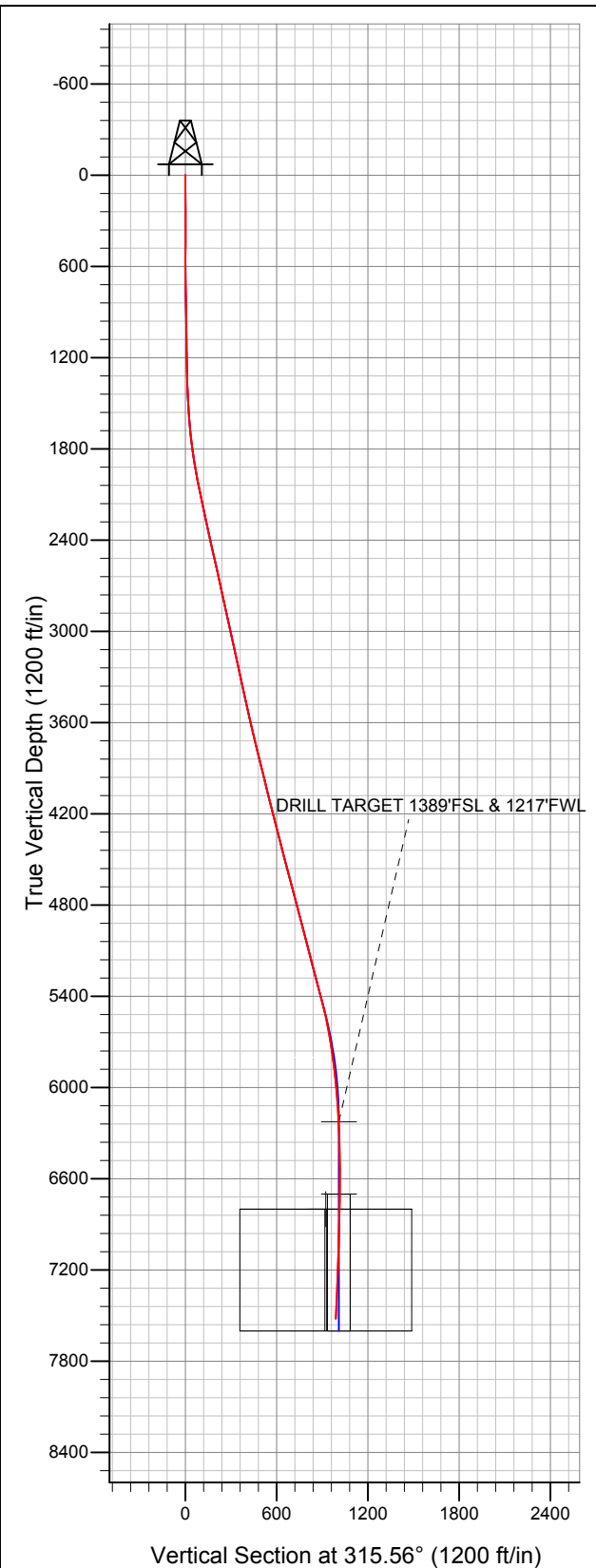


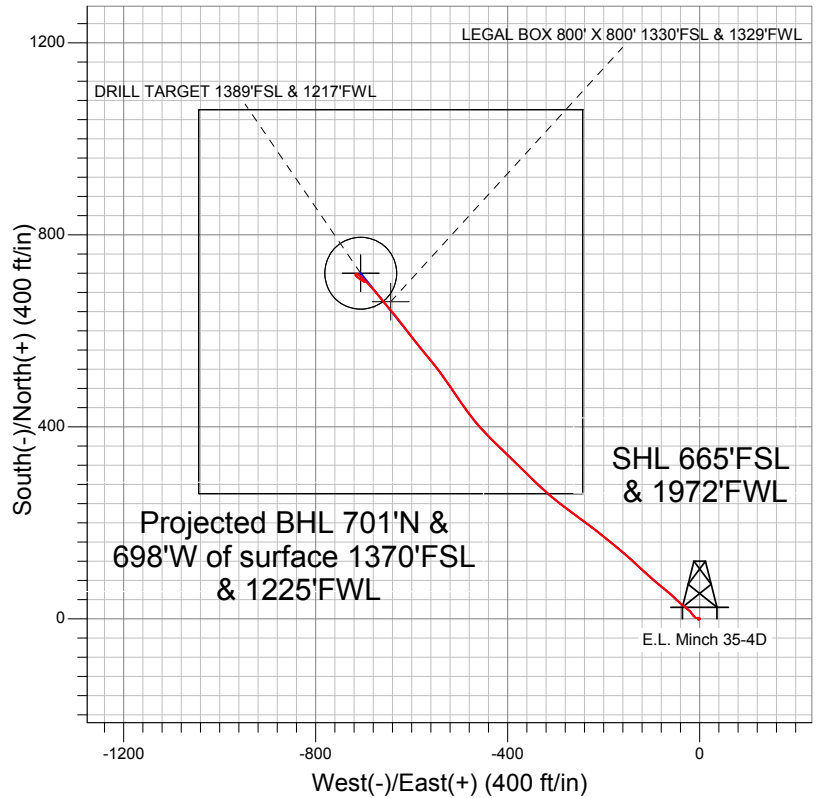
**Well Name: E.L. Minch 35-4D**

Surface Location: E.L. Minch 35-4D PAD Sec.4-T3N-R68W  
North American Datum 1983 US State Plane 1983 Colorado Northern Zone  
Ground Elevation: 5053.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1334107.83	3136596.51	40.249490	-105.010630	
		EST KB 13' RKB @ 5066.0ft (EST KB 13')				



**Apollo Operating, LLC.**



**LEGEND**

- Wellbore #1
- E.L. Minch 35-4D, Wellbore #1, Plan 2 (4-11-12) V0
- Survey #1

**Final Survey Plot**

Projected Final Survey -  
7634'MD & 7522'TVD @ 986°VS  
2.40 deg Inc 126.50 deg AZ

Project: SEC.4-T3N-R68W  
Site: E.L. Minch 35-4D PAD Sec.4-T3N-R68W  
Well: E.L. Minch 35-4D  
Plan: Wellbore #1



## **Apollo Operating, LLC.**

**SEC.4-T3N-R68W**

**E.L. Minch 35-4D PAD Sec.4-T3N-R68W**

**E.L. Minch 35-4D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**16 April, 2012**

<b>Company:</b>	Apollo Operating, LLC.	<b>Local Co-ordinate Reference:</b>	Well E.L. Minch 35-4D
<b>Project:</b>	SEC.4-T3N-R68W	<b>TVD Reference:</b>	RKB @ 5066.0ft (EST KB 13')
<b>Site:</b>	E.L. Minch 35-4D PAD Sec.4-T3N-R68W	<b>MD Reference:</b>	RKB @ 5066.0ft (EST KB 13')
<b>Well:</b>	E.L. Minch 35-4D	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

<b>Project</b>	SEC.4-T3N-R68W		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

<b>Site</b>	E.L. Minch 35-4D PAD Sec.4-T3N-R68W				
<b>Site Position:</b>		<b>Northing:</b>	1,334,107.83 ft	<b>Latitude:</b>	40.249490
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,136,596.51 ft	<b>Longitude:</b>	-105.010630
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"	<b>Grid Convergence:</b>	0.32 °

<b>Well</b>	E.L. Minch 35-4D				
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	1,334,107.83 ft	<b>Latitude:</b> 40.249490
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	3,136,596.51 ft	<b>Longitude:</b> -105.010630
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b> 5,053.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/29/2012	8.88	66.86	52,941

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 (°)	
	6,225.0	0.0	0.0	315.56	

Survey Program		Date	4/16/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
98.0	7,634.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

Survey	Wellbore Data									
	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)
Main Survey	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	98.0	0.40	285.40	98.0	0.1	-0.3	0.3	0.41	0.41	0.00
	217.0	0.80	230.70	217.0	-0.3	-1.4	0.7	0.55	0.34	-45.97
	338.0	0.90	275.20	338.0	-0.8	-3.0	1.5	0.54	0.08	36.78
	459.0	0.90	119.80	459.0	-1.2	-3.1	1.3	1.45	0.00	-128.43
	583.0	1.80	69.90	582.9	-1.0	-0.4	-0.4	1.13	0.73	-40.24
	685.0	1.20	320.60	684.9	0.4	0.4	0.0	2.42	-0.59	-107.16
	731.0	1.20	320.60	730.9	1.1	-0.2	1.0	0.00	0.00	0.00
	764.0	1.80	288.00	763.9	1.6	-0.9	1.8	3.09	1.82	-98.79
	889.0	1.10	258.50	888.9	1.9	-4.0	4.2	0.80	-0.56	-23.60
	1,013.0	1.10	266.20	1,012.8	1.6	-6.3	5.6	0.12	0.00	6.21
	1,138.0	0.80	296.10	1,137.8	1.9	-8.3	7.2	0.46	-0.24	23.92
	1,263.0	1.50	325.80	1,262.8	3.7	-10.0	9.6	0.72	0.56	23.76

<b>Company:</b>	Apollo Operating, LLC.	<b>Local Co-ordinate Reference:</b>	Well E.L. Minch 35-4D
<b>Project:</b>	SEC.4-T3N-R68W	<b>TVD Reference:</b>	RKB @ 5066.0ft (EST KB 13')
<b>Site:</b>	E.L. Minch 35-4D PAD Sec.4-T3N-R68W	<b>MD Reference:</b>	RKB @ 5066.0ft (EST KB 13')
<b>Well:</b>	E.L. Minch 35-4D	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)	
1,387.0	1.90	309.10	1,386.7	6.3	-12.5	13.3	0.51	0.32	-13.47	
1,512.0	3.10	327.80	1,511.6	10.5	-15.9	18.6	1.15	0.96	14.96	
1,637.0	5.00	314.60	1,636.3	17.2	-21.6	27.4	1.68	1.52	-10.56	
1,762.0	7.00	306.70	1,760.6	25.5	-31.6	40.3	1.73	1.60	-6.32	
1,886.0	9.30	313.30	1,883.4	36.9	-44.9	57.8	2.00	1.85	5.32	
2,011.0	10.80	310.70	2,006.4	51.5	-61.2	79.6	1.25	1.20	-2.08	
2,136.0	12.30	310.20	2,128.9	67.7	-80.2	104.5	1.20	1.20	-0.40	
2,260.0	11.60	310.00	2,250.2	84.3	-99.9	130.1	0.57	-0.56	-0.16	
2,385.0	12.80	313.30	2,372.4	101.8	-119.6	156.4	1.11	0.96	2.64	
2,510.0	13.50	313.00	2,494.1	121.3	-140.3	184.8	0.56	0.56	-0.24	
2,635.0	11.70	309.00	2,616.1	139.2	-160.8	212.0	1.60	-1.44	-3.20	
2,759.0	12.40	310.40	2,737.4	155.8	-180.7	237.7	0.61	0.56	1.13	
2,884.0	13.20	308.90	2,859.3	173.4	-202.1	265.3	0.69	0.64	-1.20	
3,009.0	12.30	305.40	2,981.2	190.1	-224.0	292.6	0.95	-0.72	-2.80	
3,133.0	12.50	308.40	3,102.3	206.1	-245.3	318.9	0.54	0.16	2.42	
3,258.0	12.10	305.30	3,224.4	222.0	-266.6	345.2	0.62	-0.32	-2.48	
3,384.0	12.50	307.40	3,347.5	238.0	-288.2	371.7	0.48	0.32	1.67	
3,508.0	12.50	310.50	3,468.6	254.8	-309.1	398.3	0.54	0.00	2.50	
3,633.0	12.80	313.00	3,590.6	273.1	-329.5	425.7	0.50	0.24	2.00	
3,758.0	13.80	314.40	3,712.2	292.9	-350.3	454.4	0.84	0.80	1.12	
3,882.0	14.40	314.40	3,832.5	314.1	-371.9	484.6	0.48	0.48	0.00	
4,007.0	13.50	314.60	3,953.8	335.2	-393.4	514.7	0.72	-0.72	0.16	
4,132.0	13.50	312.80	4,075.3	355.3	-414.4	543.9	0.34	0.00	-1.44	
4,257.0	14.50	315.30	4,196.6	376.4	-436.2	574.1	0.93	0.80	2.00	
4,381.0	15.20	318.30	4,316.5	399.6	-457.9	605.9	0.84	0.56	2.42	
4,506.0	13.70	323.50	4,437.5	423.7	-477.6	636.9	1.59	-1.20	4.16	
4,631.0	14.90	324.40	4,558.6	448.7	-495.8	667.4	0.98	0.96	0.72	
4,755.0	16.10	326.00	4,678.1	475.9	-514.7	700.1	1.03	0.97	1.29	
4,880.0	14.90	325.10	4,798.6	503.4	-533.5	733.0	0.98	-0.96	-0.72	
5,005.0	13.60	321.30	4,919.7	528.1	-551.9	763.5	1.28	-1.04	-3.04	
5,130.0	14.60	319.70	5,041.0	551.6	-571.3	793.8	0.86	0.80	-1.28	
5,254.0	15.00	322.30	5,160.9	576.2	-591.2	825.3	0.63	0.32	2.10	
5,379.0	15.10	322.00	5,281.6	601.8	-611.1	857.6	0.10	0.08	-0.24	
5,504.0	15.10	322.30	5,402.3	627.5	-631.1	889.9	0.06	0.00	0.24	
5,629.0	12.80	319.80	5,523.6	651.0	-650.0	919.9	1.90	-1.84	-2.00	
5,753.0	10.10	318.30	5,645.1	669.6	-666.1	944.5	2.19	-2.18	-1.21	
5,878.0	8.20	321.30	5,768.5	684.7	-679.0	964.3	1.57	-1.52	2.40	
5,885.9	8.11	321.14	5,776.3	685.6	-679.7	965.4	1.16	-1.13	-2.01	
TARGET BHL 1179'FSL & 1364'FWL										
6,003.0	6.80	318.30	5,892.4	697.2	-689.5	980.6	1.16	-1.12	-2.43	
6,127.0	5.00	314.60	6,015.8	706.5	-698.2	993.3	1.48	-1.45	-2.98	
6,253.0	3.40	311.40	6,141.4	712.8	-704.9	1,002.5	1.28	-1.27	-2.54	
6,336.7	2.72	304.45	6,225.0	715.6	-708.4	1,006.9	0.93	-0.82	-8.30	
DRILL TARGET 1389'FSL & 1217'FWL										
6,378.0	2.40	299.60	6,266.3	716.6	-710.0	1,008.7	0.93	-0.77	-11.75	
6,503.0	1.50	294.90	6,391.2	718.5	-713.7	1,012.8	0.73	-0.72	-3.76	
6,628.0	0.70	262.70	6,516.2	719.1	-716.0	1,014.8	0.79	-0.64	-25.76	
6,752.0	0.60	194.00	6,640.2	718.4	-716.9	1,014.9	0.60	-0.08	-55.40	
6,811.8	0.74	184.49	6,700.0	717.7	-717.0	1,014.5	0.29	0.23	-15.90	
TARGET CIRCLE 1389'FSL & 1217'FWL										
6,877.0	0.90	177.60	6,765.1	716.8	-717.0	1,013.8	0.29	0.25	-10.57	
6,913.1	0.90	167.76	6,801.2	716.2	-716.9	1,013.4	0.43	-0.01	-27.26	
LEGAL BOX 800' X 800' 1330'FSL & 1329'FWL										
7,002.0	1.00	145.50	6,890.1	714.9	-716.4	1,012.0	0.43	0.11	-25.04	

<b>Company:</b>	Apollo Operating, LLC.	<b>Local Co-ordinate Reference:</b>	Well E.L. Minch 35-4D
<b>Project:</b>	SEC.4-T3N-R68W	<b>TVD Reference:</b>	RKB @ 5066.0ft (EST KB 13')
<b>Site:</b>	E.L. Minch 35-4D PAD Sec.4-T3N-R68W	<b>MD Reference:</b>	RKB @ 5066.0ft (EST KB 13')
<b>Well:</b>	E.L. Minch 35-4D	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)	
7,127.0	1.70	126.00	7,015.1	712.9	-714.2	1,009.1	0.66	0.56	-15.60	
7,251.0	2.20	132.50	7,139.0	710.2	-711.0	1,004.9	0.44	0.40	5.24	
7,376.0	2.40	123.50	7,263.9	707.2	-707.0	1,000.0	0.33	0.16	-7.20	
7,501.0	2.60	115.60	7,388.8	704.5	-702.3	994.7	0.32	0.16	-6.32	
7,588.0	2.40	126.50	7,475.7	702.6	-699.1	991.1	0.59	-0.23	12.53	
7,634.0	2.40	126.50	7,521.7	701.4	-697.5	989.2	0.00	0.00	0.00	

Checked By: _____	Approved By: _____	Date: _____
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