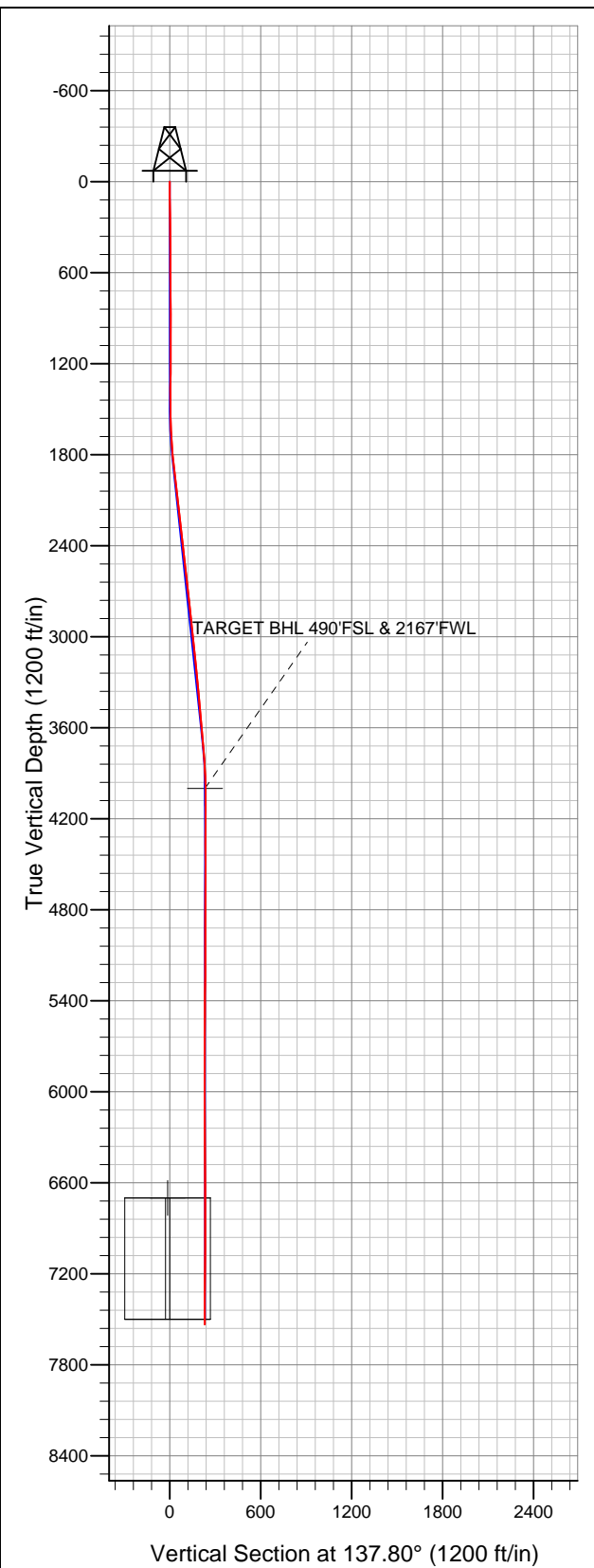


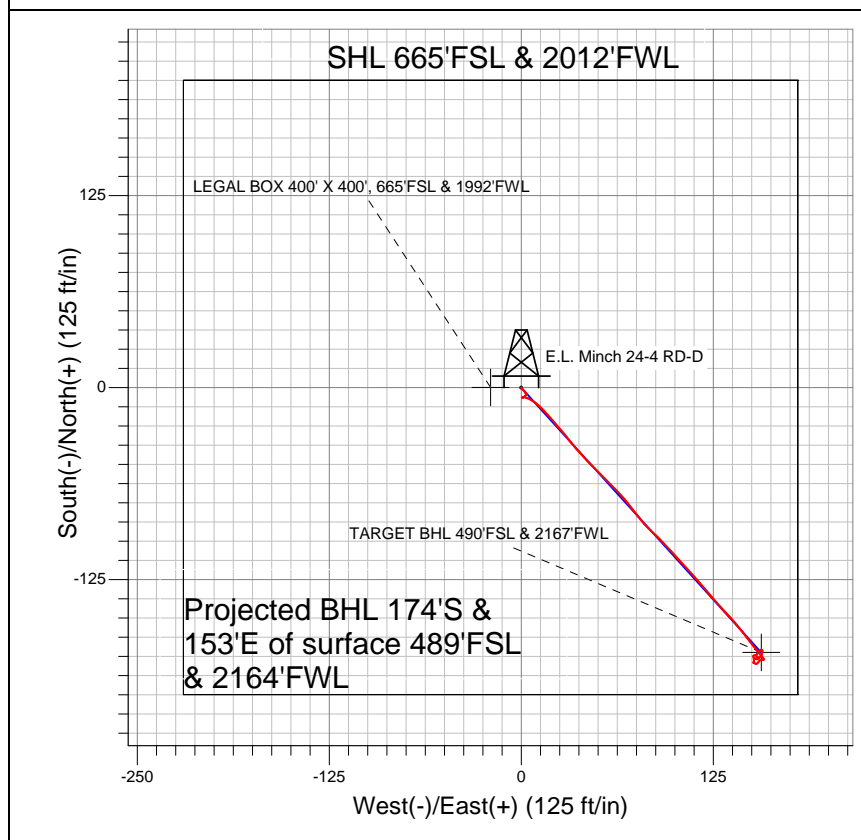
Well Name: E.L. Minch 24-4 RD-D

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

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1334108.03	3136635.59	40.249490	-105.010490	
Original Well Elev			WELL @ 5066.0ft (Original Well Elev)			



Apollo Operating, LLC.



- LEGEND
- Wellbore #1
 - E.L. Minch 24-4 RD-D, Wellbore #1, Plan #3 (4-17-12) V0
 - Survey #1

Final Survey Plot

Projected Final Survey -
 7546'MD & 7534'TVD @ 232°VS
 1.50 deg Inc 216.80 deg AZ

Project: SEC.4-T3N-R68W
 Site: E.L. Minch 35-4D PAD Sec.4-T3N-R68W
 Well: E.L. Minch 24-4 RD-D
 Plan: Wellbore #1



Apollo Operating, LLC.

SEC.4-T3N-R68W

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

E.L. Minch 24-4 RD-D

Wellbore #1

Survey: Survey #1

Standard Survey Report

27 April, 2012

Company:	Apollo Operating, LLC.	Local Co-ordinate Reference:	Well E.L. Minch 24-4 RD-D
Project:	SEC.4-T3N-R68W	TVD Reference:	WELL @ 5066.0ft (Original Well Elev)
Site:	E.L. Minch 35-4D PAD Sec.4-T3N-R68W	MD Reference:	WELL @ 5066.0ft (Original Well Elev)
Well:	E.L. Minch 24-4 RD-D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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

Well	E.L. Minch 24-4 RD-D		
Well Position	+N/-S	0.0 ft	Northing: 1,334,108.03 ft
	+E/-W	0.0 ft	Easting: 3,136,635.59 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	40.249490
		Longitude:	-105.010490
		Ground Level:	5,053.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/17/2012	8.87	66.86	52,935

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 (°)	
	4,000.0	0.0	0.0	137.80	

Survey Program	Date	4/27/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
98.0	7,546.0	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	
98.0	0.60	134.70	98.0	-0.4	0.4	0.5	0.61	0.61	0.00	
217.0	0.90	149.90	217.0	-1.6	1.3	2.0	0.30	0.25	12.77	
338.0	0.80	125.30	338.0	-2.9	2.4	3.8	0.31	-0.08	-20.33	
459.0	0.30	272.90	459.0	-3.4	2.8	4.4	0.88	-0.41	121.98	
583.0	0.50	133.20	583.0	-3.7	2.9	4.7	0.61	0.16	-112.66	
656.0	0.50	119.10	656.0	-4.1	3.4	5.3	0.17	0.00	-19.32	
765.0	0.10	153.00	765.0	-4.4	3.9	5.9	0.39	-0.37	31.10	
889.0	0.30	234.60	889.0	-4.7	3.6	5.9	0.24	0.16	65.81	
1,014.0	0.40	255.70	1,014.0	-5.0	2.9	5.7	0.13	0.08	16.88	
1,139.0	0.90	220.40	1,139.0	-5.9	1.9	5.6	0.49	0.40	-28.24	
1,264.0	0.10	307.50	1,263.9	-6.6	1.2	5.6	0.72	-0.64	69.68	
1,389.0	0.40	276.30	1,388.9	-6.4	0.6	5.2	0.25	0.24	-24.96	

Company:	Apollo Operating, LLC.	Local Co-ordinate Reference:	Well E.L. Minch 24-4 RD-D
Project:	SEC.4-T3N-R68W	TVD Reference:	WELL @ 5066.0ft (Original Well Elev)
Site:	E.L. Minch 35-4D PAD Sec.4-T3N-R68W	MD Reference:	WELL @ 5066.0ft (Original Well Elev)
Well:	E.L. Minch 24-4 RD-D	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)
1,513.0	1.00	83.10	1,512.9	-6.3	1.3	5.5	1.12	0.48	134.52
1,638.0	2.90	114.90	1,637.9	-7.5	5.2	9.0	1.69	1.52	25.44
1,763.0	4.10	132.30	1,762.6	-11.8	11.4	16.4	1.27	0.96	13.92
1,888.0	6.30	138.80	1,887.1	-20.0	19.2	27.7	1.82	1.76	5.20
2,013.0	7.20	140.40	2,011.2	-31.2	28.8	42.4	0.74	0.72	1.28
2,137.0	7.00	138.60	2,134.3	-42.8	38.7	57.7	0.24	-0.16	-1.45
2,262.0	6.50	136.30	2,258.4	-53.6	48.6	72.4	0.45	-0.40	-1.84
2,387.0	6.00	132.60	2,382.7	-63.2	58.3	86.0	0.51	-0.40	-2.96
2,512.0	6.50	140.90	2,506.9	-73.1	67.6	99.6	0.83	0.40	6.64
2,637.0	6.00	142.80	2,631.2	-83.8	76.0	113.1	0.43	-0.40	1.52
2,761.0	5.90	132.80	2,754.5	-93.3	84.6	125.9	0.84	-0.08	-8.06
2,886.0	6.80	137.20	2,878.8	-103.1	94.3	139.7	0.82	0.72	3.52
3,011.0	6.20	137.40	3,003.0	-113.5	103.9	153.9	0.48	-0.48	0.16
3,136.0	6.10	138.40	3,127.2	-123.4	112.9	167.3	0.12	-0.08	0.80
3,261.0	5.00	140.70	3,251.7	-132.6	120.8	179.4	0.90	-0.88	1.84
3,382.0	5.50	137.20	3,372.2	-140.9	128.1	190.4	0.49	0.41	-2.89
3,507.0	5.10	138.10	3,496.6	-149.5	135.8	202.0	0.33	-0.32	0.72
3,632.0	4.90	140.00	3,621.1	-157.7	143.0	212.9	0.21	-0.16	1.52
3,757.0	4.60	143.40	3,745.7	-165.8	149.4	223.2	0.33	-0.24	2.72
3,882.0	3.30	142.30	3,870.4	-172.7	154.6	231.8	1.04	-1.04	-0.88
4,006.0	1.00	132.30	3,994.3	-176.2	157.6	236.4	1.87	-1.85	-8.06
4,011.6	0.95	133.06	4,000.0	-176.3	157.6	236.5	0.88	-0.85	13.51
TARGET BHL 490' FSL & 2167' FWL									
4,134.0	0.30	239.00	4,122.3	-177.1	158.1	237.4	0.88	-0.53	86.58
4,256.0	0.70	269.90	4,244.3	-177.3	157.1	236.9	0.38	0.33	25.33
4,381.0	0.80	255.90	4,369.3	-177.5	155.5	236.0	0.17	0.08	-11.20
4,506.0	0.90	195.40	4,494.3	-178.7	154.4	236.1	0.69	0.08	-48.40
4,630.0	0.40	261.70	4,618.3	-179.7	153.7	236.4	0.67	-0.40	53.47
4,755.0	0.60	259.40	4,743.3	-179.9	152.6	235.8	0.16	0.16	-1.84
4,880.0	0.80	344.10	4,868.3	-179.2	151.7	234.6	0.76	0.16	67.76
5,005.0	0.40	155.80	4,993.3	-178.7	151.7	234.3	0.96	-0.32	137.36
5,130.0	0.40	227.40	5,118.3	-179.4	151.5	234.7	0.37	0.00	57.28
5,254.0	0.50	0.50	5,242.3	-179.2	151.2	234.3	0.67	0.08	107.34
5,379.0	0.90	18.00	5,367.2	-177.7	151.5	233.4	0.36	0.32	14.00
5,504.0	0.40	308.40	5,492.2	-176.5	151.5	232.5	0.68	-0.40	-55.68
5,629.0	0.40	16.10	5,617.2	-175.8	151.3	231.8	0.36	0.00	54.16
5,754.0	0.40	310.20	5,742.2	-175.1	151.1	231.2	0.35	0.00	-52.72
5,878.0	0.80	68.30	5,866.2	-174.5	151.5	231.0	0.85	0.32	95.24
6,003.0	0.30	70.40	5,991.2	-174.1	152.6	231.5	0.40	-0.40	1.68
6,128.0	0.40	204.90	6,116.2	-174.3	152.8	231.8	0.52	0.08	107.60
6,252.0	0.60	93.30	6,240.2	-174.8	153.2	232.4	0.67	0.16	-90.00
6,377.0	0.40	157.20	6,365.2	-175.2	154.1	233.3	0.44	-0.16	51.12
6,502.0	0.60	217.50	6,490.2	-176.1	153.8	233.8	0.42	0.16	48.24
6,627.0	0.30	330.40	6,615.2	-176.4	153.3	233.6	0.61	-0.24	90.32
6,712.9	0.37	265.28	6,701.1	-176.2	152.9	233.2	0.43	0.09	-75.83
LEGAL BOX 400' X 400', 665' FSL & 1992' FWL									
6,751.0	0.50	251.30	6,739.2	-176.3	152.6	233.1	0.43	0.33	-36.68
6,876.0	0.40	91.90	6,864.2	-176.4	152.5	233.2	0.71	-0.08	-127.52
7,001.0	0.40	148.30	6,989.2	-176.8	153.2	233.9	0.30	0.00	45.12
7,126.0	2.10	50.70	7,114.2	-175.7	155.2	234.4	1.75	1.36	-78.08
7,251.0	1.90	4.00	7,239.1	-172.2	157.1	233.1	1.28	-0.16	-37.36
7,375.0	1.10	242.70	7,363.1	-170.7	156.2	231.4	2.13	-0.65	-97.82
7,500.0	1.50	216.80	7,488.1	-172.6	154.1	231.4	0.56	0.32	-20.72
7,546.0	1.50	216.80	7,534.0	-173.6	153.4	231.6	0.00	0.00	0.00

Company:	Apollo Operating, LLC.	Local Co-ordinate Reference:	Well E.L. Minch 24-4 RD-D
Project:	SEC.4-T3N-R68W	TVD Reference:	WELL @ 5066.0ft (Original Well Elev)
Site:	E.L. Minch 35-4D PAD Sec.4-T3N-R68W	MD Reference:	WELL @ 5066.0ft (Original Well Elev)
Well:	E.L. Minch 24-4 RD-D	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------