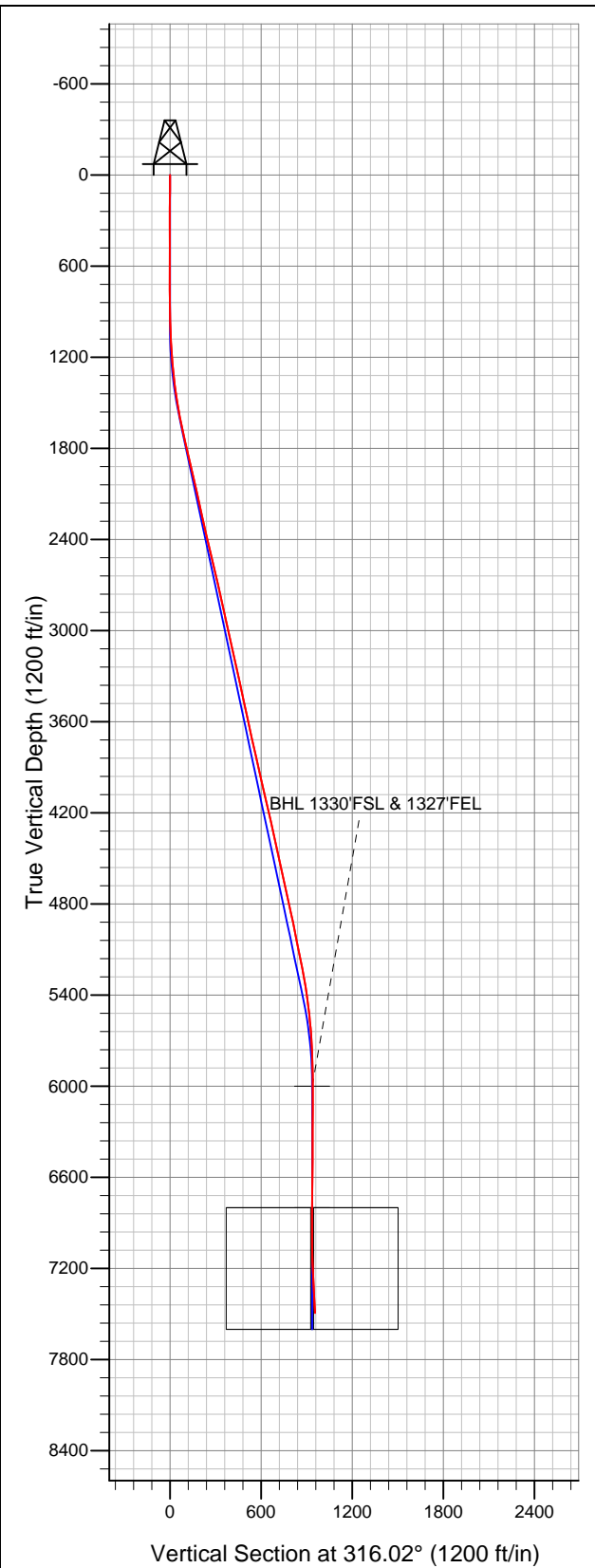


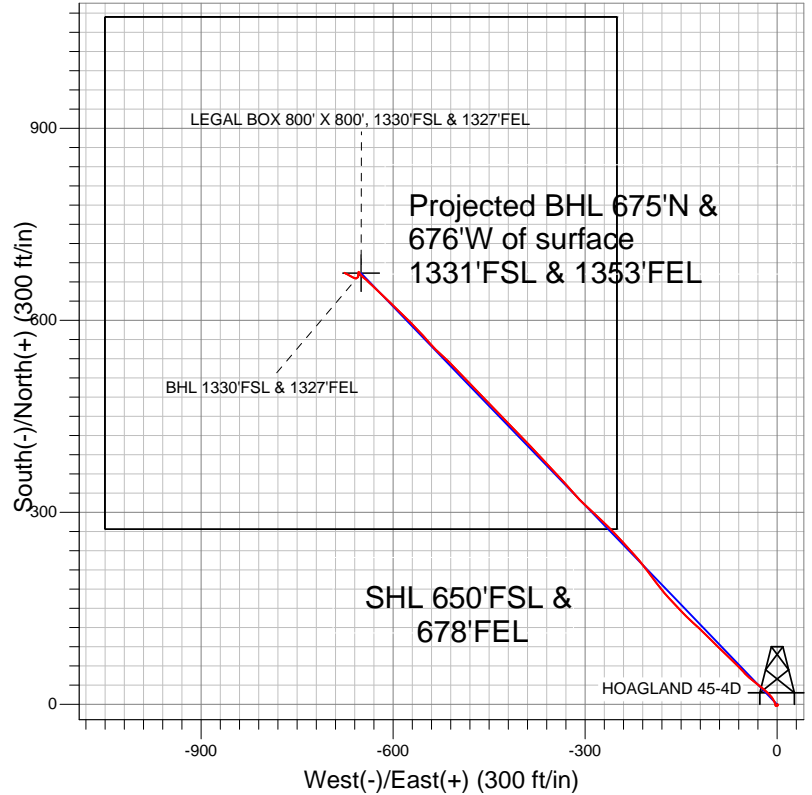
**Well Name: HOAGLAND 45-4D**

Surface Location: HOAGLAND 34-4D PAD 4-3N-68W  
North American Datum 1983 US State Plane 1983 Colorado Northern Zone  
Ground Elevation: 5013.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1334133.56	3139256.50	40.249520	-105.001100	
		EST KB 13'		RKB @ 5026.0ft (EST KB 13')		



**Apollo Operating, LLC.**



**LEGEND**

- Wellbore #1
- HOAGLAND 45-4D, Wellbore #1, PLAN 1 (4-30-12) R V0
- Survey #1

**Final Survey Plot**

Projected Final Survey -  
7590'MD & 7492'TVD @ 955'VS  
2.70 deg Inc 304.20 deg AZ

Project: SEC.4-T3N-R68W  
Site: HOAGLAND 34-4D PAD 4-3N-68W  
Well: HOAGLAND 45-4D  
Plan: Wellbore #1



## **Apollo Operating, LLC.**

**SEC.4-T3N-R68W**

**HOAGLAND 34-4D PAD 4-3N-68W**

**HOAGLAND 45-4D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**08 May, 2012**

<b>Company:</b>	Apollo Operating, LLC.	<b>Local Co-ordinate Reference:</b>	Well HOAGLAND 45-4D
<b>Project:</b>	SEC.4-T3N-R68W	<b>TVD Reference:</b>	RKB @ 5026.0ft (EST KB 13')
<b>Site:</b>	HOAGLAND 34-4D PAD 4-3N-68W	<b>MD Reference:</b>	RKB @ 5026.0ft (EST KB 13')
<b>Well:</b>	HOAGLAND 45-4D	<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

Site		HOAGLAND 34-4D PAD 4-3N-68W			
Site Position:		Northing:	1,334,118.93 ft	Latitude:	40.249480
From:	Lat/Long	Easting:	3,139,242.63 ft	Longitude:	-105.001150
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.32 °

Well	HOAGLAND 45-4D					
Well Position	+N/-S	0.0 ft	Northing:	1,334,133.56 ft	Latitude:	40.249520
	+E/-W	0.0 ft	Easting:	3,139,256.50 ft	Longitude:	-105.001100
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,013.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/30/2012	8.86	66.86	52,933

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 (°)	
	6,000.0	0.0	0.0	316.02	

Survey Program		Date	5/8/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
98.0	7,590.0	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)
Survey Data	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	98.0	0.20	103.10	98.0	0.0	0.2	-0.1	0.20	0.20	0.00
	217.0	0.30	85.40	217.0	-0.1	0.7	-0.5	0.11	0.08	-14.87
	338.0	0.50	181.90	338.0	-0.6	1.0	-1.1	0.51	0.17	79.75
	459.0	0.10	207.20	459.0	-1.2	0.9	-1.5	0.34	-0.33	20.91
	583.0	0.40	226.30	583.0	-1.6	0.5	-1.5	0.25	0.24	15.40
	691.0	0.50	235.10	691.0	-2.1	-0.1	-1.4	0.11	0.09	8.15
	737.0	0.50	235.10	737.0	-2.3	-0.4	-1.4	0.00	0.00	0.00
	765.0	0.90	246.90	765.0	-2.5	-0.7	-1.3	1.51	1.43	42.14
	889.0	0.70	308.20	889.0	-2.4	-2.2	-0.2	0.67	-0.16	49.44
	1,014.0	2.10	352.90	1,013.9	0.3	-3.1	2.4	1.34	1.12	35.76
	1,139.0	4.10	331.40	1,138.8	6.5	-5.5	8.5	1.82	1.60	-17.20
	1,264.0	5.60	317.60	1,263.3	15.0	-11.8	19.0	1.51	1.20	-11.04

<b>Company:</b>	Apollo Operating, LLC.	<b>Local Co-ordinate Reference:</b>	Well HOAGLAND 45-4D
<b>Project:</b>	SEC.4-T3N-R68W	<b>TVD Reference:</b>	RKB @ 5026.0ft (EST KB 13')
<b>Site:</b>	HOAGLAND 34-4D PAD 4-3N-68W	<b>MD Reference:</b>	RKB @ 5026.0ft (EST KB 13')
<b>Well:</b>	HOAGLAND 45-4D	<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)
1,388.0	7.50	308.20	1,386.5	24.4	-22.2	33.0	1.75	1.53	-7.58
1,513.0	9.20	309.50	1,510.2	35.8	-36.4	51.0	1.37	1.36	1.04
1,638.0	11.60	315.50	1,633.1	51.2	-52.9	73.5	2.10	1.92	4.80
1,763.0	12.70	313.90	1,755.3	69.6	-71.6	99.8	0.92	0.88	-1.28
1,887.0	13.50	314.20	1,876.1	89.2	-91.8	127.9	0.65	0.65	0.24
2,012.0	12.90	315.30	1,997.8	109.3	-112.1	156.5	0.52	-0.48	0.88
2,137.0	12.30	311.60	2,119.8	128.0	-131.8	183.7	0.80	-0.48	-2.96
2,262.0	12.40	316.70	2,241.9	146.6	-151.0	210.4	0.88	0.08	4.08
2,386.0	13.20	317.00	2,362.8	166.7	-169.8	237.8	0.65	0.65	0.24
2,511.0	13.60	323.50	2,484.4	188.9	-188.3	266.7	1.25	0.32	5.20
2,636.0	12.80	322.70	2,606.1	211.8	-205.4	295.0	0.66	-0.64	-0.64
2,761.0	12.90	317.60	2,728.0	233.1	-223.2	322.7	0.91	0.08	-4.08
2,885.0	13.00	318.60	2,848.8	253.8	-241.7	350.5	0.20	0.08	0.81
3,010.0	12.40	315.80	2,970.8	273.9	-260.4	377.9	0.69	-0.48	-2.24
3,135.0	12.10	311.90	3,092.9	292.3	-279.5	404.4	0.70	-0.24	-3.12
3,260.0	12.60	313.50	3,215.0	310.5	-299.1	431.1	0.48	0.40	1.28
3,384.0	12.60	319.00	3,336.0	330.0	-317.8	458.1	0.97	0.00	4.44
3,509.0	12.30	315.80	3,458.1	349.8	-336.1	485.1	0.60	-0.24	-2.56
3,634.0	12.00	318.60	3,580.3	369.1	-353.9	511.4	0.53	-0.24	2.24
3,759.0	12.50	317.70	3,702.5	388.8	-371.6	537.9	0.43	0.40	-0.72
3,884.0	13.20	314.70	3,824.3	408.9	-390.9	565.7	0.77	0.56	-2.40
4,008.0	12.50	317.60	3,945.2	428.8	-410.0	593.2	0.77	-0.56	2.34
4,133.0	12.60	313.70	4,067.2	448.2	-429.0	620.4	0.68	0.08	-3.12
4,258.0	13.20	316.70	4,189.1	468.0	-448.6	648.3	0.72	0.48	2.40
4,383.0	13.10	317.20	4,310.8	488.8	-468.0	676.7	0.12	-0.08	0.40
4,507.0	11.90	314.20	4,431.9	508.0	-486.7	703.5	1.10	-0.97	-2.42
4,632.0	12.00	317.60	4,554.2	526.6	-504.7	729.4	0.57	0.08	2.72
4,757.0	12.80	311.60	4,676.2	545.4	-523.9	756.2	1.21	0.64	-4.80
4,882.0	13.00	318.30	4,798.1	565.0	-543.6	784.1	1.21	0.16	5.36
5,006.0	11.10	317.40	4,919.4	584.2	-560.9	809.9	1.54	-1.53	-0.73
5,131.0	11.20	314.70	5,042.0	601.6	-577.7	834.1	0.43	0.08	-2.16
5,256.0	11.90	313.50	5,164.5	619.1	-595.7	859.1	0.59	0.56	-0.96
5,381.0	10.30	313.90	5,287.1	635.7	-613.1	883.2	1.28	-1.28	0.32
5,505.0	8.00	314.00	5,409.5	649.4	-627.3	902.9	1.85	-1.85	0.08
5,630.0	6.10	312.30	5,533.6	659.9	-638.5	918.2	1.53	-1.52	-1.36
5,755.0	4.10	309.70	5,658.1	667.2	-646.8	929.2	1.61	-1.60	-2.08
5,880.0	2.60	325.50	5,782.9	672.4	-651.8	936.5	1.40	-1.20	12.64
6,004.0	0.50	352.90	5,906.8	675.2	-653.5	939.7	1.75	-1.69	22.10
6,097.2	0.38	311.58	6,000.0	675.9	-653.8	940.3	0.35	-0.13	-44.35
<b>BHL 1330'FSL &amp; 1327'FEL</b>									
6,129.0	0.40	295.20	6,031.8	676.0	-654.0	940.5	0.35	0.06	-51.46
6,254.0	0.40	145.10	6,156.8	675.8	-654.1	940.5	0.62	0.00	-120.08
6,379.0	0.40	202.60	6,281.8	675.0	-654.0	939.9	0.31	0.00	46.00
6,503.0	0.60	187.00	6,405.8	674.0	-654.3	939.3	0.19	0.16	-12.58
6,628.0	1.00	197.50	6,530.8	672.3	-654.7	938.4	0.34	0.32	8.40
6,753.0	0.50	176.80	6,655.8	670.7	-655.0	937.5	0.45	-0.40	-16.56
6,878.0	0.70	158.00	6,780.8	669.5	-654.7	936.3	0.22	0.16	-15.04
6,897.1	0.71	170.43	6,799.9	669.2	-654.6	936.1	0.80	0.07	64.95
<b>LEGAL BOX 800' X 800', 1330'FSL &amp; 1327'FEL</b>									
7,002.0	1.20	213.90	6,904.8	667.7	-655.1	935.4	0.80	0.46	41.45
7,127.0	1.50	249.40	7,029.7	666.0	-657.4	935.7	0.70	0.24	28.40
7,252.0	2.40	294.20	7,154.7	666.5	-661.3	938.8	1.36	0.72	35.84
7,377.0	3.10	297.70	7,279.5	669.2	-666.7	944.5	0.58	0.56	2.80
7,502.0	3.00	297.70	7,404.3	672.3	-672.6	950.8	0.08	-0.08	0.00

<b>Company:</b>	Apollo Operating, LLC.	<b>Local Co-ordinate Reference:</b>	Well HOAGLAND 45-4D
<b>Project:</b>	SEC.4-T3N-R68W	<b>TVD Reference:</b>	RKB @ 5026.0ft (EST KB 13')
<b>Site:</b>	HOAGLAND 34-4D PAD 4-3N-68W	<b>MD Reference:</b>	RKB @ 5026.0ft (EST KB 13')
<b>Well:</b>	HOAGLAND 45-4D	<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)	
7,544.0	2.70	304.20	7,446.3	673.3	-674.3	952.8	1.05	-0.71	15.48	
7,590.0	2.70	304.20	7,492.2	674.5	-676.1	954.9	0.00	0.00	0.00	

Checked By: _____	Approved By: _____	Date: _____
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