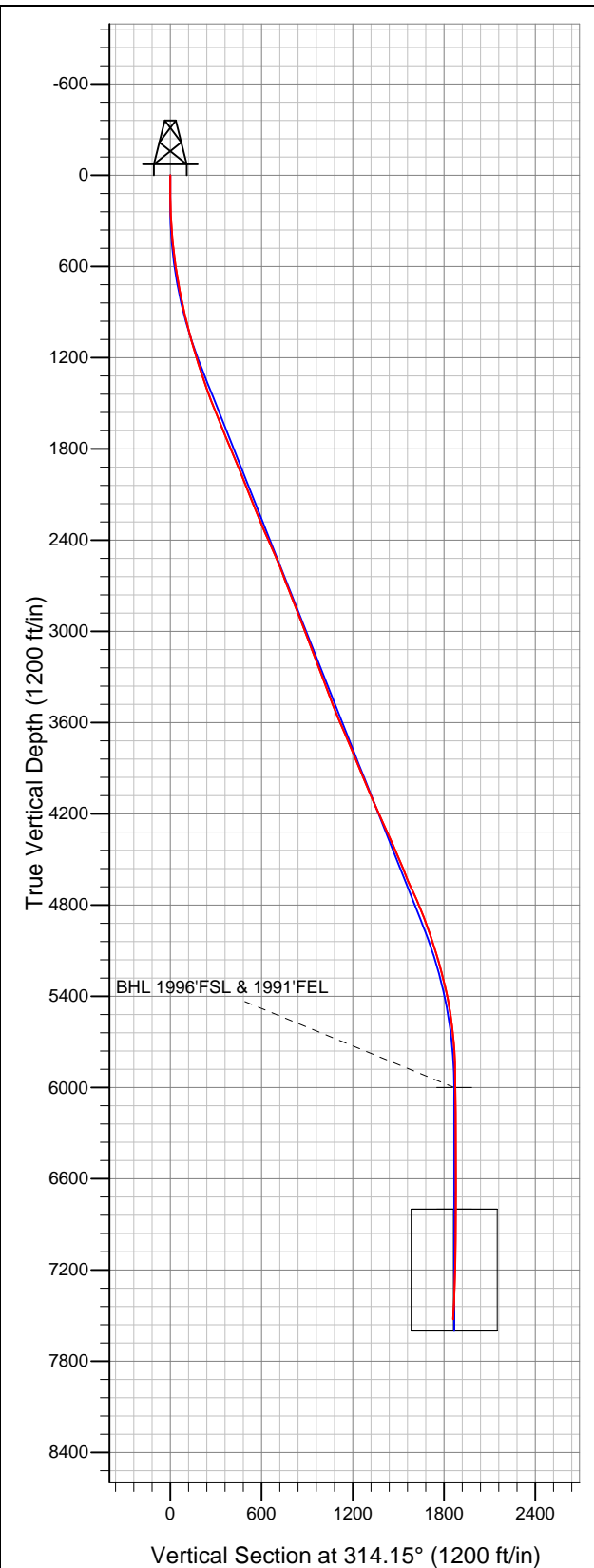


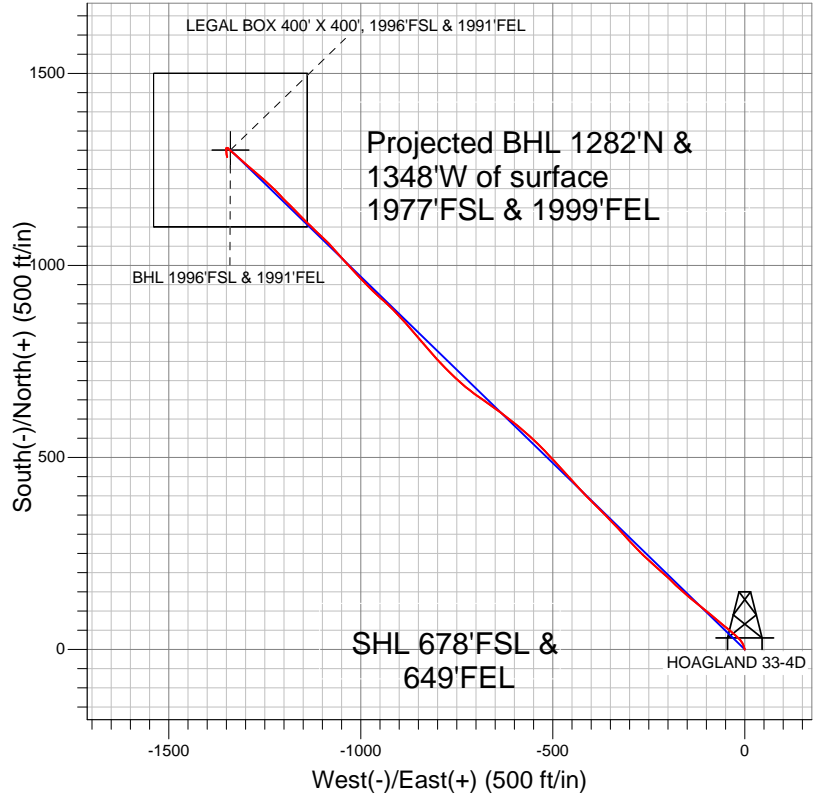
Well Name: HOAGLAND 33-4D

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	1334162.87	3139284.25	40.249600	-105.001000	
		EST KB 13'	RKB @ 5026.0ft (EST KB 13')			



Apollo Operating, LLC.



LEGEND

- Wellbore #1
- HOAGLAND 33-4D, Wellbore #1, PLAN 1 (5-14-12) R V0
- Survey #1

Final Survey Plot

Projected Final Survey -
 7863'MD & 7523'TVD @ 1860'VS
 4.20 deg Inc 169.00 deg AZ

Project: SEC.4-T3N-R68W
 Site: HOAGLAND 34-4D PAD 4-3N-68W
 Well: HOAGLAND 33-4D
 Plan: Wellbore #1



Apollo Operating, LLC.

SEC.4-T3N-R68W

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

HOAGLAND 33-4D

Wellbore #1

Survey: Survey #1

Standard Survey Report

21 May, 2012

Company:	Apollo Operating, LLC.	Local Co-ordinate Reference:	Well HOAGLAND 33-4D
Project:	SEC.4-T3N-R68W	TVD Reference:	RKB @ 5026.0ft (EST KB 13')
Site:	HOAGLAND 34-4D PAD 4-3N-68W	MD Reference:	RKB @ 5026.0ft (EST KB 13')
Well:	HOAGLAND 33-4D	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		HOAGLAND 34-4D PAD 4-3N-68W			
Site Position:		Northing:	1,334,118.93ft	Latitude:	40.249480
From:	Lat/Long	Easting:	3,139,242.63ft	Longitude:	-105.001150
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.32 °

Well	HOAGLAND 33-4D					
Well Position	+N/-S	0.0 ft	Northing:	1,334,162.87 ft	Latitude:	40.249600
	+E/-W	0.0 ft	Easting:	3,139,284.25 ft	Longitude:	-105.001000
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	5/14/2012	8.85	66.86	52,929

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	314.15	

Survey Program		Date	5/21/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
99.0	7,863.0	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
	99.0	0.40	261.70	99.0	0.0	-0.3	0.2	0.40	0.40	0.00
	220.0	2.10	346.90	220.0	2.0	-1.3	2.3	1.74	1.40	70.41
	342.0	4.20	342.90	341.8	8.5	-3.1	8.1	1.73	1.72	-3.28
	464.0	6.60	329.50	463.2	18.8	-8.0	18.8	2.21	1.97	-10.98
	588.0	8.10	313.20	586.2	30.9	-17.9	34.4	2.06	1.21	-13.15
	698.0	9.80	309.10	694.9	42.1	-30.9	51.5	1.65	1.55	-3.73
	768.0	10.30	310.00	763.8	49.9	-40.3	63.7	0.75	0.71	1.29
	893.0	12.60	311.10	886.3	66.1	-59.1	88.4	1.85	1.84	0.88
	1,017.0	15.10	308.40	1,006.7	85.0	-82.0	118.0	2.08	2.02	-2.18
	1,142.0	16.50	307.70	1,127.0	106.0	-108.8	151.9	1.13	1.12	-0.56
	1,267.0	17.60	311.10	1,246.5	129.2	-137.1	188.4	1.19	0.88	2.72
	1,392.0	18.50	313.20	1,365.3	155.2	-165.8	227.1	0.89	0.72	1.68

Company:	Apollo Operating, LLC.	Local Co-ordinate Reference:	Well HOAGLAND 33-4D
Project:	SEC.4-T3N-R68W	TVD Reference:	RKB @ 5026.0ft (EST KB 13')
Site:	HOAGLAND 34-4D PAD 4-3N-68W	MD Reference:	RKB @ 5026.0ft (EST KB 13')
Well:	HOAGLAND 33-4D	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)
1,516.0	21.30	312.50	1,481.9	183.9	-196.7	269.3	2.27	2.26	-0.56
1,641.0	22.00	311.40	1,598.1	214.8	-231.0	315.3	0.65	0.56	-0.88
1,766.0	22.20	314.00	1,713.9	246.6	-265.6	362.3	0.80	0.16	2.08
1,891.0	23.00	317.90	1,829.3	281.2	-298.9	410.3	1.36	0.64	3.12
2,016.0	22.00	317.20	1,944.8	316.5	-331.2	458.1	0.83	-0.80	-0.56
2,140.0	21.70	314.60	2,059.9	349.6	-363.3	504.2	0.82	-0.24	-2.10
2,265.0	22.70	314.90	2,175.6	382.9	-396.8	551.4	0.81	0.80	0.24
2,390.0	22.20	317.90	2,291.2	417.4	-429.8	599.1	1.00	-0.40	2.40
2,515.0	24.10	317.70	2,406.1	453.8	-462.8	648.1	1.52	1.52	-0.16
2,639.0	23.70	317.40	2,519.5	490.9	-496.7	698.3	0.34	-0.32	-0.24
2,764.0	20.00	315.80	2,635.5	524.7	-528.6	744.8	3.00	-2.96	-1.28
2,889.0	21.20	310.90	2,752.5	554.8	-560.6	788.7	1.68	0.96	-3.92
3,014.0	21.50	311.10	2,868.9	584.7	-594.9	834.1	0.25	0.24	0.16
3,138.0	22.20	306.70	2,984.0	613.6	-630.8	880.1	1.44	0.56	-3.55
3,263.0	21.70	303.50	3,099.9	640.5	-669.1	926.2	1.04	-0.40	-2.56
3,388.0	19.30	307.40	3,217.0	665.8	-704.7	969.4	2.21	-1.92	3.12
3,513.0	21.20	310.70	3,334.3	693.1	-738.3	1,012.5	1.77	1.52	2.64
3,637.0	20.80	315.50	3,450.1	723.4	-770.7	1,056.9	1.42	-0.32	3.87
3,762.0	23.00	318.10	3,566.0	757.4	-802.6	1,103.5	1.92	1.76	2.08
3,887.0	23.00	318.40	3,681.1	793.9	-835.1	1,152.2	0.09	0.00	0.24
4,012.0	23.00	319.00	3,796.2	830.6	-867.3	1,200.9	0.19	0.00	0.48
4,136.0	22.40	319.10	3,910.6	866.7	-898.7	1,248.5	0.48	-0.48	0.08
4,261.0	22.50	311.20	4,026.1	900.5	-932.3	1,296.2	2.41	0.08	-6.32
4,386.0	23.80	313.90	4,141.0	933.7	-968.5	1,345.3	1.34	1.04	2.16
4,511.0	25.60	317.20	4,254.6	971.0	-1,005.0	1,397.5	1.81	1.44	2.64
4,635.0	24.00	317.60	4,367.2	1,009.3	-1,040.2	1,449.4	1.30	-1.29	0.32
4,760.0	22.20	318.10	4,482.1	1,045.7	-1,073.1	1,498.3	1.45	-1.44	0.40
4,885.0	22.30	312.60	4,597.9	1,079.3	-1,106.4	1,545.6	1.67	0.08	-4.40
5,010.0	25.00	315.30	4,712.3	1,114.1	-1,142.4	1,595.7	2.33	2.16	2.16
5,135.0	22.90	314.60	4,826.6	1,150.0	-1,178.3	1,646.5	1.70	-1.68	-0.56
5,259.0	19.30	316.90	4,942.2	1,181.9	-1,209.5	1,691.1	2.98	-2.90	1.85
5,384.0	18.00	312.60	5,060.7	1,210.0	-1,237.8	1,731.0	1.51	-1.04	-3.44
5,509.0	15.70	310.50	5,180.3	1,234.1	-1,264.9	1,767.2	1.90	-1.84	-1.68
5,634.0	14.20	311.60	5,301.1	1,255.3	-1,289.2	1,799.4	1.22	-1.20	0.88
5,758.0	11.00	310.70	5,422.1	1,273.1	-1,309.6	1,826.4	2.59	-2.58	-0.73
5,883.0	7.90	311.40	5,545.4	1,286.6	-1,325.1	1,846.9	2.48	-2.48	0.56
6,008.0	5.70	308.80	5,669.5	1,296.1	-1,336.4	1,861.7	1.78	-1.76	-2.08
6,133.0	2.80	317.00	5,794.1	1,302.2	-1,343.3	1,870.9	2.36	-2.32	6.56
6,257.0	0.70	320.90	5,918.1	1,305.1	-1,345.8	1,874.7	1.70	-1.69	3.15
6,338.9	0.56	306.48	5,999.9	1,305.7	-1,346.5	1,875.6	0.26	-0.18	-17.61
BHL 1996'FSL & 1991'FEL									
6,382.0	0.50	295.90	6,043.1	1,305.9	-1,346.8	1,875.9	0.26	-0.13	-24.53
6,507.0	0.50	293.10	6,168.0	1,306.3	-1,347.8	1,877.0	0.02	0.00	-2.24
6,632.0	0.40	235.10	6,293.0	1,306.3	-1,348.6	1,877.6	0.36	-0.08	-46.40
6,756.0	0.20	269.60	6,417.0	1,306.0	-1,349.2	1,877.8	0.21	-0.16	27.82
6,881.0	0.40	244.10	6,542.0	1,305.9	-1,349.8	1,878.1	0.19	0.16	-20.40
7,006.0	0.40	226.30	6,667.0	1,305.4	-1,350.5	1,878.3	0.10	0.00	-14.24
7,131.0	1.00	204.20	6,792.0	1,304.1	-1,351.3	1,877.9	0.52	0.48	-17.68
7,139.0	0.92	203.48	6,800.0	1,303.9	-1,351.4	1,877.9	1.01	-1.00	-8.96
LEGAL BOX 400' X 400', 1996'FSL & 1991'FEL									
7,255.0	0.30	60.70	6,916.0	1,303.2	-1,351.5	1,877.5	1.01	-0.53	-123.07
7,380.0	0.80	156.90	7,041.0	1,302.6	-1,350.8	1,876.6	0.71	0.40	76.96
7,505.0	1.60	178.90	7,166.0	1,300.0	-1,350.5	1,874.5	0.73	0.64	17.60
7,630.0	2.50	177.60	7,290.9	1,295.6	-1,350.3	1,871.3	0.72	0.72	-1.04

Company:	Apollo Operating, LLC.	Local Co-ordinate Reference:	Well HOAGLAND 33-4D
Project:	SEC.4-T3N-R68W	TVD Reference:	RKB @ 5026.0ft (EST KB 13')
Site:	HOAGLAND 34-4D PAD 4-3N-68W	MD Reference:	RKB @ 5026.0ft (EST KB 13')
Well:	HOAGLAND 33-4D	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)	
7,755.0	3.30	171.00	7,415.7	1,289.3	-1,349.6	1,866.4	0.69	0.64	-5.28	
7,817.0	4.20	169.00	7,477.6	1,285.3	-1,348.9	1,863.1	1.47	1.45	-3.23	
7,863.0	4.20	169.00	7,523.5	1,282.0	-1,348.3	1,860.4	0.00	0.00	0.00	

Checked By: _____ Approved By: _____ Date: _____