

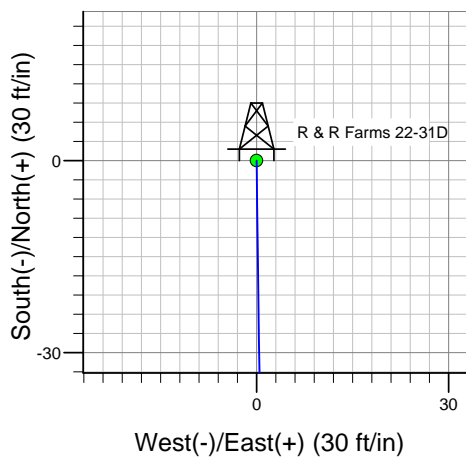
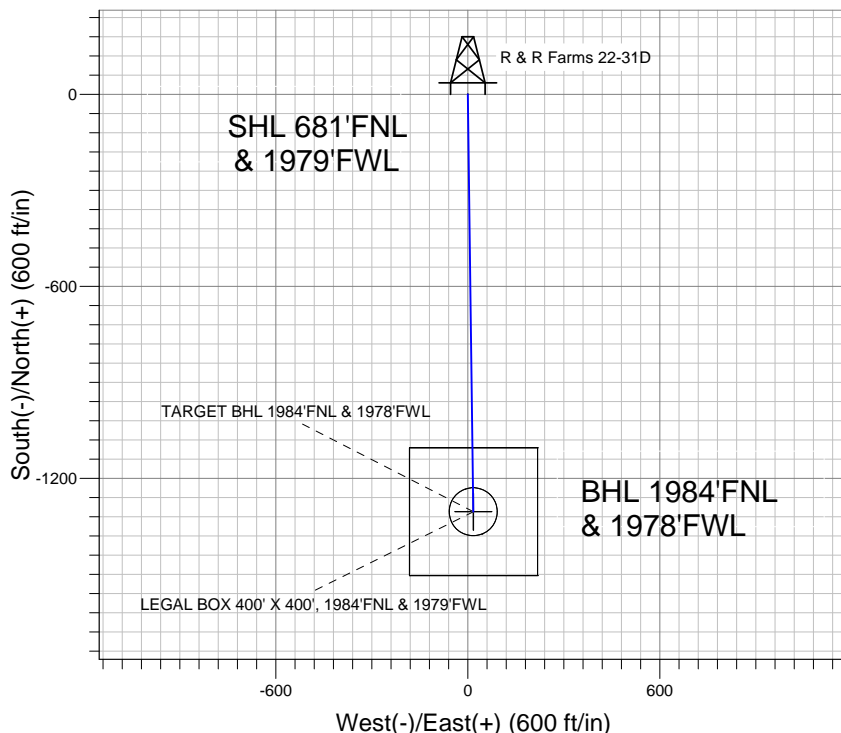
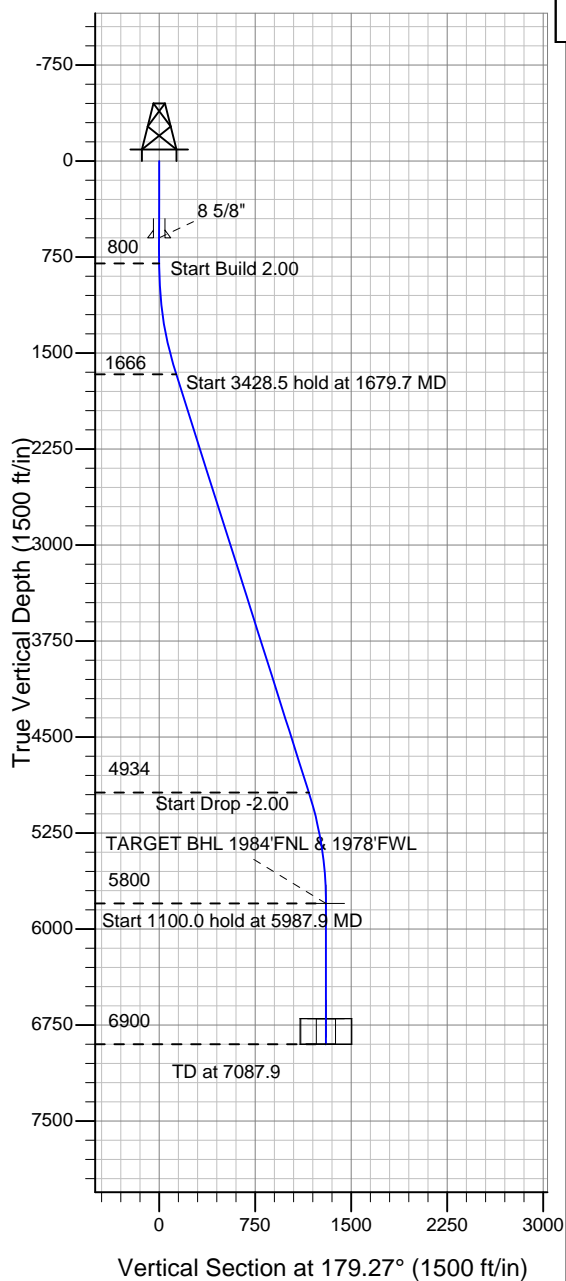
Well Name: R & R Farms 22-31D

Surface Location: R & R Farms 22-31D Pad Sec.31-T5N-R63W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4582.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1376099.97	3283868.56	40.361320	-104.481320	
		RKB - 13'	WELL @ 4595.0ft (RKB - 13')			

Apollo Operating, LLC.



R & R Farms 22-31D Pad Sec.31-T5N-R63W
R & R Farms 22-31D
Plan #1 (11-08-12)
12:54, November 08 2012



Azimuths to True North
Magnetic North: 8.52°
Magnetic Field
Strength: 52995.5nT
Dip Angle: 67.02°
Date: 11/8/2012
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1984'FNL & 1978'FWL	5800.0	-1304.2	16.7	40.357740	-104.481260	Point
LEGAL BOX 400' X 400', 1984'FNL & 1979'FWL	6700.0	-1304.2	17.7	40.357740	-104.481256	Rectangle (Sides: L400.0 W400.0)
TARGET CIRCLE 1984'FNL & 1978'FWL	6700.0	-1304.2	16.7	40.357740	-104.481260	Circle (Radius: 75.0)

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	1679.7	17.59	179.27	1665.9	-134.0	1.7	2.00	179.27	134.0	
4	5108.2	17.59	179.27	4934.1	-1170.2	15.0	0.00	0.00	1170.3	
5	5987.9	0.00	0.00	5800.0	-1304.2	16.7	2.00	180.00	1304.3	TARGET BHL 1984'FNL & 1978'FWL
6	7087.9	0.00	0.00	6900.0	-1304.2	16.7	0.00	0.00	1304.3	



Apollo Operating, LLC.

SEC.31-T5N-R63W

R & R Farms 22-31D Pad Sec.31-T5N-R63W

R & R Farms 22-31D

Wellbore #1

Plan: Plan #1 (11-08-12)

Standard Planning Report

08 November, 2012

Database:	Landmark	Local Co-ordinate Reference:	Well R & R Farms 22-31D
Company:	Apollo Operating, LLC.	TVD Reference:	WELL @ 4595.0ft (RKB - 13')
Project:	SEC.31-T5N-R63W	MD Reference:	WELL @ 4595.0ft (RKB - 13')
Site:	R & R Farms 22-31D Pad Sec.31-T5N-R63W	North Reference:	True
Well:	R & R Farms 22-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-08-12)		

Project	SEC.31-T5N-R63W, Weld County, CO		
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	R & R Farms 22-31D Pad Sec.31-T5N-R63W				
Site Position:		Northing:	1,376,099.98ft	Latitude:	40.361320
From:	Lat/Long	Easting:	3,283,868.56ft	Longitude:	-104.481320
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.66 °

Well	R & R Farms 22-31D					
Well Position	+N-S	0.0 ft	Northing:	1,376,099.97 ft	Latitude:	40.361320
	+E-W	0.0 ft	Easting:	3,283,868.56 ft	Longitude:	-104.481320
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,582.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/8/2012	8.52	67.02	52,995

Design	Plan #1 (11-08-12)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	179.27

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,679.7	17.59	179.27	1,665.9	-134.0	1.7	2.00	2.00	0.00	179.27	
5,108.2	17.59	179.27	4,934.1	-1,170.2	15.0	0.00	0.00	0.00	0.00	
5,987.9	0.00	0.00	5,800.0	-1,304.2	16.7	2.00	-2.00	0.00	180.00	TARGET BHL 1984
7,087.9	0.00	0.00	6,900.0	-1,304.2	16.7	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well R & R Farms 22-31D
Company:	Apollo Operating, LLC.	TVD Reference:	WELL @ 4595.0ft (RKB - 13')
Project:	SEC.31-T5N-R63W	MD Reference:	WELL @ 4595.0ft (RKB - 13')
Site:	R & R Farms 22-31D Pad Sec.31-T5N-R63W	North Reference:	True
Well:	R & R Farms 22-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-08-12)		

Planned 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
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
840.0	0.80	179.27	840.0	-0.3	0.0	0.3	2.00	2.00	0.00
880.0	1.60	179.27	880.0	-1.1	0.0	1.1	2.00	2.00	0.00
920.0	2.40	179.27	920.0	-2.5	0.0	2.5	2.00	2.00	0.00
960.0	3.20	179.27	959.9	-4.5	0.1	4.5	2.00	2.00	0.00
1,000.0	4.00	179.27	999.8	-7.0	0.1	7.0	2.00	2.00	0.00
1,040.0	4.80	179.27	1,039.7	-10.0	0.1	10.0	2.00	2.00	0.00
1,080.0	5.60	179.27	1,079.6	-13.7	0.2	13.7	2.00	2.00	0.00
1,120.0	6.40	179.27	1,119.3	-17.9	0.2	17.9	2.00	2.00	0.00
1,160.0	7.20	179.27	1,159.1	-22.6	0.3	22.6	2.00	2.00	0.00
1,200.0	8.00	179.27	1,198.7	-27.9	0.4	27.9	2.00	2.00	0.00
1,240.0	8.80	179.27	1,238.3	-33.7	0.4	33.7	2.00	2.00	0.00
1,280.0	9.60	179.27	1,277.8	-40.1	0.5	40.1	2.00	2.00	0.00
1,320.0	10.40	179.27	1,317.1	-47.1	0.6	47.1	2.00	2.00	0.00
1,360.0	11.20	179.27	1,356.4	-54.6	0.7	54.6	2.00	2.00	0.00
1,400.0	12.00	179.27	1,395.6	-62.6	0.8	62.6	2.00	2.00	0.00
1,440.0	12.80	179.27	1,434.7	-71.2	0.9	71.2	2.00	2.00	0.00
1,480.0	13.60	179.27	1,473.6	-80.3	1.0	80.3	2.00	2.00	0.00
1,520.0	14.40	179.27	1,512.4	-90.0	1.2	90.0	2.00	2.00	0.00
1,560.0	15.20	179.27	1,551.1	-100.2	1.3	100.2	2.00	2.00	0.00
1,600.0	16.00	179.27	1,589.6	-111.0	1.4	111.0	2.00	2.00	0.00
1,640.0	16.80	179.27	1,628.0	-122.3	1.6	122.3	2.00	2.00	0.00
1,679.7	17.59	179.27	1,665.9	-134.0	1.7	134.0	2.00	2.00	0.00
1,680.0	17.59	179.27	1,666.2	-134.1	1.7	134.1	0.00	0.00	0.00
1,720.0	17.59	179.27	1,704.4	-146.2	1.9	146.2	0.00	0.00	0.00
1,760.0	17.59	179.27	1,742.5	-158.3	2.0	158.3	0.00	0.00	0.00
1,800.0	17.59	179.27	1,780.6	-170.4	2.2	170.4	0.00	0.00	0.00
1,840.0	17.59	179.27	1,818.7	-182.4	2.3	182.5	0.00	0.00	0.00
1,880.0	17.59	179.27	1,856.9	-194.5	2.5	194.6	0.00	0.00	0.00
1,920.0	17.59	179.27	1,895.0	-206.6	2.6	206.6	0.00	0.00	0.00
1,960.0	17.59	179.27	1,933.1	-218.7	2.8	218.7	0.00	0.00	0.00
2,000.0	17.59	179.27	1,971.3	-230.8	3.0	230.8	0.00	0.00	0.00
2,040.0	17.59	179.27	2,009.4	-242.9	3.1	242.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well R & R Farms 22-31D
Company:	Apollo Operating, LLC.	TVD Reference:	WELL @ 4595.0ft (RKB - 13')
Project:	SEC.31-T5N-R63W	MD Reference:	WELL @ 4595.0ft (RKB - 13')
Site:	R & R Farms 22-31D Pad Sec.31-T5N-R63W	North Reference:	True
Well:	R & R Farms 22-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-08-12)		

Planned 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)
2,080.0	17.59	179.27	2,047.5	-255.0	3.3	255.0	0.00	0.00	0.00
2,120.0	17.59	179.27	2,085.6	-267.1	3.4	267.1	0.00	0.00	0.00
2,160.0	17.59	179.27	2,123.8	-279.2	3.6	279.2	0.00	0.00	0.00
2,200.0	17.59	179.27	2,161.9	-291.3	3.7	291.3	0.00	0.00	0.00
2,240.0	17.59	179.27	2,200.0	-303.3	3.9	303.4	0.00	0.00	0.00
2,280.0	17.59	179.27	2,238.2	-315.4	4.0	315.5	0.00	0.00	0.00
2,320.0	17.59	179.27	2,276.3	-327.5	4.2	327.5	0.00	0.00	0.00
2,360.0	17.59	179.27	2,314.4	-339.6	4.4	339.6	0.00	0.00	0.00
2,400.0	17.59	179.27	2,352.5	-351.7	4.5	351.7	0.00	0.00	0.00
2,440.0	17.59	179.27	2,390.7	-363.8	4.7	363.8	0.00	0.00	0.00
2,480.0	17.59	179.27	2,428.8	-375.9	4.8	375.9	0.00	0.00	0.00
2,520.0	17.59	179.27	2,466.9	-388.0	5.0	388.0	0.00	0.00	0.00
2,560.0	17.59	179.27	2,505.1	-400.1	5.1	400.1	0.00	0.00	0.00
2,600.0	17.59	179.27	2,543.2	-412.1	5.3	412.2	0.00	0.00	0.00
2,640.0	17.59	179.27	2,581.3	-424.2	5.4	424.3	0.00	0.00	0.00
2,680.0	17.59	179.27	2,619.5	-436.3	5.6	436.4	0.00	0.00	0.00
2,720.0	17.59	179.27	2,657.6	-448.4	5.7	448.5	0.00	0.00	0.00
2,760.0	17.59	179.27	2,695.7	-460.5	5.9	460.5	0.00	0.00	0.00
2,800.0	17.59	179.27	2,733.8	-472.6	6.1	472.6	0.00	0.00	0.00
2,840.0	17.59	179.27	2,772.0	-484.7	6.2	484.7	0.00	0.00	0.00
2,880.0	17.59	179.27	2,810.1	-496.8	6.4	496.8	0.00	0.00	0.00
2,920.0	17.59	179.27	2,848.2	-508.9	6.5	508.9	0.00	0.00	0.00
2,960.0	17.59	179.27	2,886.4	-521.0	6.7	521.0	0.00	0.00	0.00
3,000.0	17.59	179.27	2,924.5	-533.0	6.8	533.1	0.00	0.00	0.00
3,040.0	17.59	179.27	2,962.6	-545.1	7.0	545.2	0.00	0.00	0.00
3,080.0	17.59	179.27	3,000.7	-557.2	7.1	557.3	0.00	0.00	0.00
3,120.0	17.59	179.27	3,038.9	-569.3	7.3	569.4	0.00	0.00	0.00
3,160.0	17.59	179.27	3,077.0	-581.4	7.5	581.5	0.00	0.00	0.00
3,200.0	17.59	179.27	3,115.1	-593.5	7.6	593.5	0.00	0.00	0.00
3,240.0	17.59	179.27	3,153.3	-605.6	7.8	605.6	0.00	0.00	0.00
3,280.0	17.59	179.27	3,191.4	-617.7	7.9	617.7	0.00	0.00	0.00
3,320.0	17.59	179.27	3,229.5	-629.8	8.1	629.8	0.00	0.00	0.00
3,360.0	17.59	179.27	3,267.6	-641.9	8.2	641.9	0.00	0.00	0.00
3,400.0	17.59	179.27	3,305.8	-653.9	8.4	654.0	0.00	0.00	0.00
3,440.0	17.59	179.27	3,343.9	-666.0	8.5	666.1	0.00	0.00	0.00
3,480.0	17.59	179.27	3,382.0	-678.1	8.7	678.2	0.00	0.00	0.00
3,520.0	17.59	179.27	3,420.2	-690.2	8.8	690.3	0.00	0.00	0.00
3,560.0	17.59	179.27	3,458.3	-702.3	9.0	702.4	0.00	0.00	0.00
3,600.0	17.59	179.27	3,496.4	-714.4	9.2	714.4	0.00	0.00	0.00
3,640.0	17.59	179.27	3,534.5	-726.5	9.3	726.5	0.00	0.00	0.00
3,680.0	17.59	179.27	3,572.7	-738.6	9.5	738.6	0.00	0.00	0.00
3,720.0	17.59	179.27	3,610.8	-750.7	9.6	750.7	0.00	0.00	0.00
3,760.0	17.59	179.27	3,648.9	-762.7	9.8	762.8	0.00	0.00	0.00
3,800.0	17.59	179.27	3,687.1	-774.8	9.9	774.9	0.00	0.00	0.00
3,840.0	17.59	179.27	3,725.2	-786.9	10.1	787.0	0.00	0.00	0.00
3,880.0	17.59	179.27	3,763.3	-799.0	10.2	799.1	0.00	0.00	0.00
3,920.0	17.59	179.27	3,801.4	-811.1	10.4	811.2	0.00	0.00	0.00
3,960.0	17.59	179.27	3,839.6	-823.2	10.6	823.3	0.00	0.00	0.00
4,000.0	17.59	179.27	3,877.7	-835.3	10.7	835.4	0.00	0.00	0.00
4,040.0	17.59	179.27	3,915.8	-847.4	10.9	847.4	0.00	0.00	0.00
4,080.0	17.59	179.27	3,954.0	-859.5	11.0	859.5	0.00	0.00	0.00
4,120.0	17.59	179.27	3,992.1	-871.6	11.2	871.6	0.00	0.00	0.00
4,160.0	17.59	179.27	4,030.2	-883.6	11.3	883.7	0.00	0.00	0.00
4,200.0	17.59	179.27	4,068.4	-895.7	11.5	895.8	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well R & R Farms 22-31D
Company:	Apollo Operating, LLC.	TVD Reference:	WELL @ 4595.0ft (RKB - 13')
Project:	SEC.31-T5N-R63W	MD Reference:	WELL @ 4595.0ft (RKB - 13')
Site:	R & R Farms 22-31D Pad Sec.31-T5N-R63W	North Reference:	True
Well:	R & R Farms 22-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-08-12)		

Planned 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)
4,240.0	17.59	179.27	4,106.5	-907.8	11.6	907.9	0.00	0.00	0.00
4,280.0	17.59	179.27	4,144.6	-919.9	11.8	920.0	0.00	0.00	0.00
4,320.0	17.59	179.27	4,182.7	-932.0	11.9	932.1	0.00	0.00	0.00
4,360.0	17.59	179.27	4,220.9	-944.1	12.1	944.2	0.00	0.00	0.00
4,400.0	17.59	179.27	4,259.0	-956.2	12.3	956.3	0.00	0.00	0.00
4,440.0	17.59	179.27	4,297.1	-968.3	12.4	968.3	0.00	0.00	0.00
4,480.0	17.59	179.27	4,335.3	-980.4	12.6	980.4	0.00	0.00	0.00
4,520.0	17.59	179.27	4,373.4	-992.4	12.7	992.5	0.00	0.00	0.00
4,560.0	17.59	179.27	4,411.5	-1,004.5	12.9	1,004.6	0.00	0.00	0.00
4,600.0	17.59	179.27	4,449.6	-1,016.6	13.0	1,016.7	0.00	0.00	0.00
4,640.0	17.59	179.27	4,487.8	-1,028.7	13.2	1,028.8	0.00	0.00	0.00
4,680.0	17.59	179.27	4,525.9	-1,040.8	13.3	1,040.9	0.00	0.00	0.00
4,720.0	17.59	179.27	4,564.0	-1,052.9	13.5	1,053.0	0.00	0.00	0.00
4,760.0	17.59	179.27	4,602.2	-1,065.0	13.7	1,065.1	0.00	0.00	0.00
4,800.0	17.59	179.27	4,640.3	-1,077.1	13.8	1,077.2	0.00	0.00	0.00
4,840.0	17.59	179.27	4,678.4	-1,089.2	14.0	1,089.3	0.00	0.00	0.00
4,880.0	17.59	179.27	4,716.5	-1,101.3	14.1	1,101.3	0.00	0.00	0.00
4,920.0	17.59	179.27	4,754.7	-1,113.3	14.3	1,113.4	0.00	0.00	0.00
4,960.0	17.59	179.27	4,792.8	-1,125.4	14.4	1,125.5	0.00	0.00	0.00
5,000.0	17.59	179.27	4,830.9	-1,137.5	14.6	1,137.6	0.00	0.00	0.00
5,040.0	17.59	179.27	4,869.1	-1,149.6	14.7	1,149.7	0.00	0.00	0.00
5,080.0	17.59	179.27	4,907.2	-1,161.7	14.9	1,161.8	0.00	0.00	0.00
5,108.2	17.59	179.27	4,934.1	-1,170.2	15.0	1,170.3	0.00	0.00	0.00
5,120.0	17.36	179.27	4,945.3	-1,173.8	15.0	1,173.9	2.00	-2.00	0.00
5,160.0	16.56	179.27	4,983.6	-1,185.4	15.2	1,185.5	2.00	-2.00	0.00
5,200.0	15.76	179.27	5,022.0	-1,196.6	15.3	1,196.7	2.00	-2.00	0.00
5,240.0	14.96	179.27	5,060.6	-1,207.2	15.5	1,207.3	2.00	-2.00	0.00
5,280.0	14.16	179.27	5,099.3	-1,217.2	15.6	1,217.3	2.00	-2.00	0.00
5,320.0	13.36	179.27	5,138.1	-1,226.7	15.7	1,226.8	2.00	-2.00	0.00
5,360.0	12.56	179.27	5,177.1	-1,235.7	15.8	1,235.8	2.00	-2.00	0.00
5,400.0	11.76	179.27	5,216.2	-1,244.1	16.0	1,244.2	2.00	-2.00	0.00
5,440.0	10.96	179.27	5,255.4	-1,252.0	16.1	1,252.1	2.00	-2.00	0.00
5,480.0	10.16	179.27	5,294.8	-1,259.3	16.1	1,259.4	2.00	-2.00	0.00
5,520.0	9.36	179.27	5,334.2	-1,266.1	16.2	1,266.2	2.00	-2.00	0.00
5,560.0	8.56	179.27	5,373.7	-1,272.3	16.3	1,272.4	2.00	-2.00	0.00
5,600.0	7.76	179.27	5,413.3	-1,278.0	16.4	1,278.1	2.00	-2.00	0.00
5,640.0	6.96	179.27	5,453.0	-1,283.1	16.5	1,283.2	2.00	-2.00	0.00
5,680.0	6.16	179.27	5,492.7	-1,287.7	16.5	1,287.8	2.00	-2.00	0.00
5,720.0	5.36	179.27	5,532.5	-1,291.7	16.6	1,291.8	2.00	-2.00	0.00
5,760.0	4.56	179.27	5,572.3	-1,295.2	16.6	1,295.3	2.00	-2.00	0.00
5,800.0	3.76	179.27	5,612.2	-1,298.1	16.6	1,298.2	2.00	-2.00	0.00
5,840.0	2.96	179.27	5,652.2	-1,300.4	16.7	1,300.5	2.00	-2.00	0.00
5,880.0	2.16	179.27	5,692.1	-1,302.2	16.7	1,302.3	2.00	-2.00	0.00
5,920.0	1.36	179.27	5,732.1	-1,303.4	16.7	1,303.5	2.00	-2.00	0.00
5,960.0	0.56	179.27	5,772.1	-1,304.1	16.7	1,304.2	2.00	-2.00	0.00
5,987.9	0.00	0.00	5,800.0	-1,304.2	16.7	1,304.3	2.00	-2.00	0.00
TARGET BHL 1984'FNL & 1978'FWL									
6,000.0	0.00	0.00	5,812.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,040.0	0.00	0.00	5,852.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,080.0	0.00	0.00	5,892.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,120.0	0.00	0.00	5,932.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,160.0	0.00	0.00	5,972.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,200.0	0.00	0.00	6,012.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,240.0	0.00	0.00	6,052.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well R & R Farms 22-31D
Company:	Apollo Operating, LLC.	TVD Reference:	WELL @ 4595.0ft (RKB - 13')
Project:	SEC.31-T5N-R63W	MD Reference:	WELL @ 4595.0ft (RKB - 13')
Site:	R & R Farms 22-31D Pad Sec.31-T5N-R63W	North Reference:	True
Well:	R & R Farms 22-31D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (11-08-12)		

Planned 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)
6,280.0	0.00	0.00	6,092.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,320.0	0.00	0.00	6,132.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,360.0	0.00	0.00	6,172.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,400.0	0.00	0.00	6,212.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,440.0	0.00	0.00	6,252.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,480.0	0.00	0.00	6,292.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,520.0	0.00	0.00	6,332.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,560.0	0.00	0.00	6,372.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,600.0	0.00	0.00	6,412.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,640.0	0.00	0.00	6,452.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,680.0	0.00	0.00	6,492.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,720.0	0.00	0.00	6,532.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,760.0	0.00	0.00	6,572.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,800.0	0.00	0.00	6,612.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,840.0	0.00	0.00	6,652.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,880.0	0.00	0.00	6,692.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,887.9	0.00	0.00	6,700.0	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
LEGAL BOX 400' X 400', 1984'FNL & 1979'FWL - TARGET CIRCLE 1984'FNL & 1978'FWL									
6,920.0	0.00	0.00	6,732.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
6,960.0	0.00	0.00	6,772.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
7,000.0	0.00	0.00	6,812.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
7,040.0	0.00	0.00	6,852.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
7,080.0	0.00	0.00	6,892.1	-1,304.2	16.7	1,304.3	0.00	0.00	0.00
7,087.9	0.00	0.00	6,900.0	-1,304.2	16.7	1,304.3	0.00	0.00	0.00

Targets									
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	
	- Shape								Latitude Longitude
LEGAL BOX 400' X 400'		0.00	0.00	6,700.0	-1,304.2	17.7	1,374,796.10	3,283,901.24	40.357740 -104.481256
	- plan misses target center by 1.0ft at 6887.9ft MD (6700.0 TVD, -1304.2 N, 16.7 E)								
	- Rectangle (sides W400.0 H400.0 D200.0)								
TARGET CIRCLE 1984'FNL & 1978'FWL		0.00	0.00	6,700.0	-1,304.2	16.7	1,374,796.09	3,283,900.26	40.357740 -104.481260
	- plan hits target center								
	- Circle (radius 75.0)								
TARGET BHL 1984'FWL		0.00	0.00	5,800.0	-1,304.2	16.7	1,374,796.09	3,283,900.26	40.357740 -104.481260
	- plan hits target center								
	- Point								

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
600.0	600.0	8 5/8"	8-5/8	12-1/4	