



Scientific Drilling
Rocky Mountain Operations

Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Shell 797-03A Pad



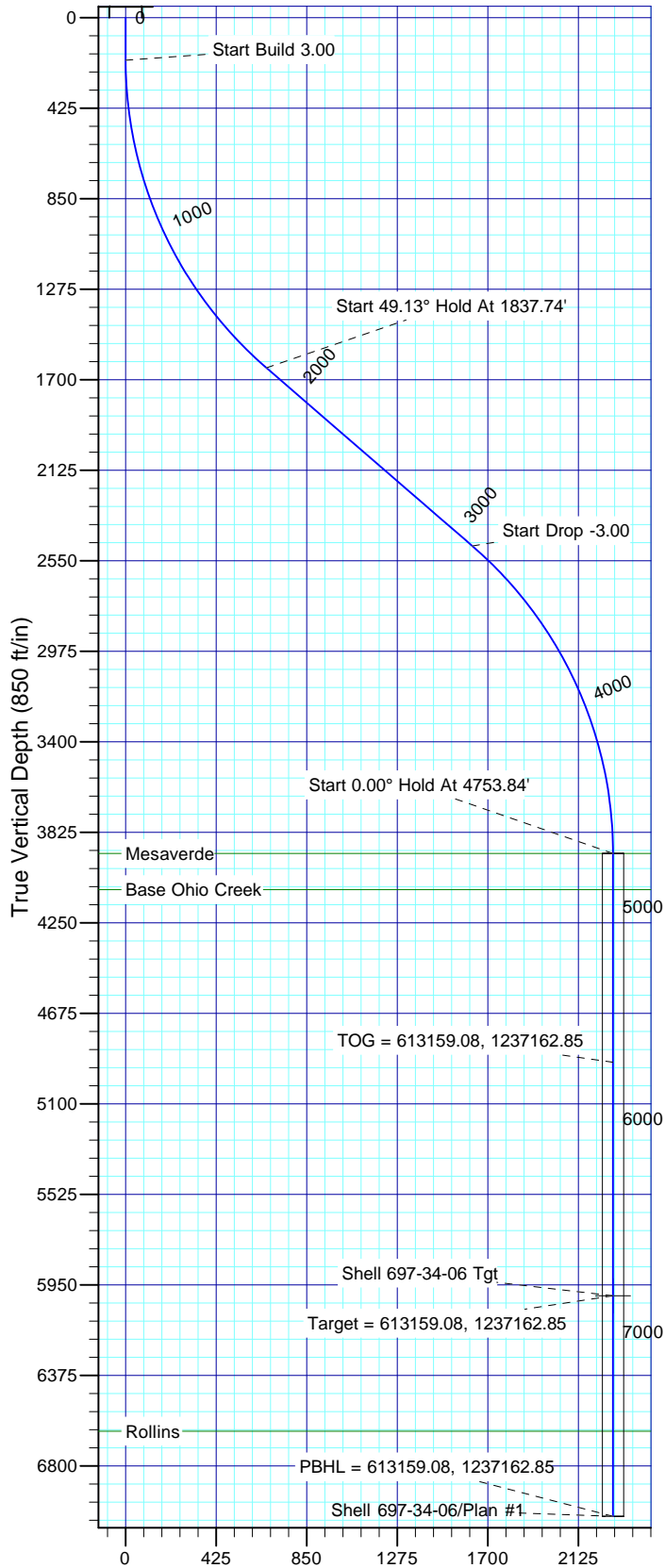
Well Details: Shell 697-34-06

TVD Reference: GL 6485' & RKB 30' @ 6515.00ft (H&P) Ground Level: 6485.00
+N/-S 0.00 +E/-W 0.00 Northing 610910.10 Easting 1237578.85 Latitude 39° 28' 46.683 N Longitude 108° 12' 5.042 W Slot I

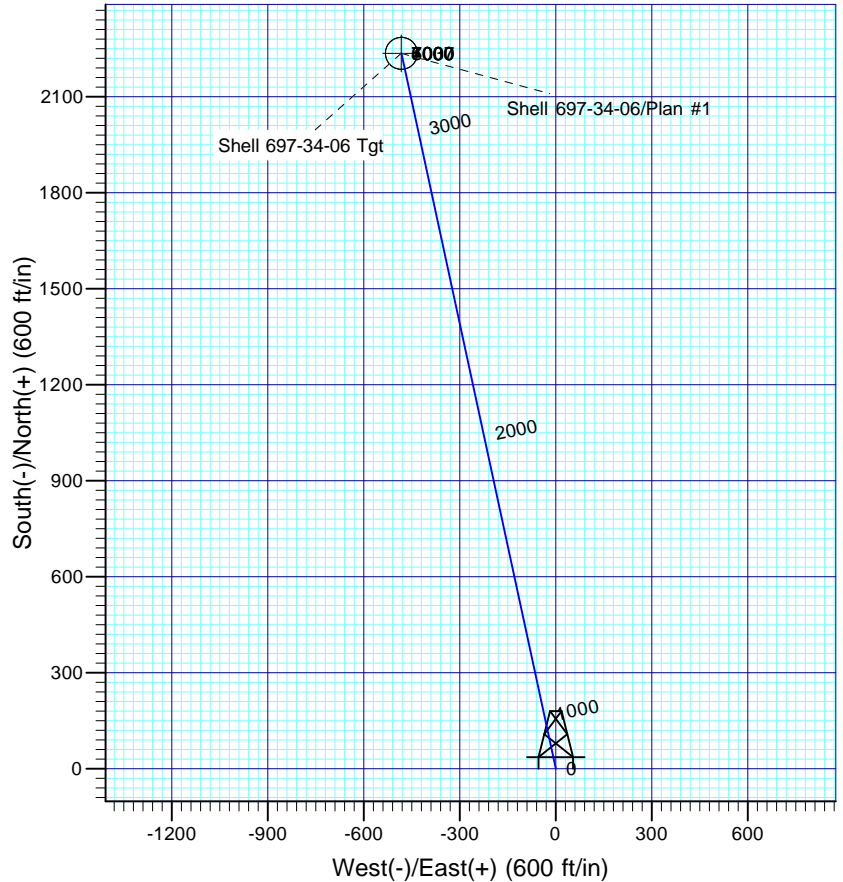


Azimuths to True North
Magnetic North: 10.42°

Magnetic Field
Strength: 52192.1nT
Dip Angle: 65.68°
Date: 08/18/2011
Model: IGRF2010



Vertical Section at 347.82° (850 ft/in)



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3925.00	4753.84	Mesaverde
4095.00	4923.84	Base Ohio Creek
6637.00	7465.84	Rollins

Plan: Plan #1

13:01, September 09 2011
Created By: Rex Hall

PROJECT DETAILS: Garfield County, CO NAD27

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Colorado Central 502

System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	1837.74	49.13	347.82	1644.28	645.34	-139.33	3.00	347.82	660.21	
4	3116.09	49.13	347.82	2480.72	1590.28	-343.35	0.00	0.00	0.00	
5	4753.84	0.00	0.00	3925.00	2235.62	-482.69	3.00	180.00	2287.14	
6	6830.34	0.00	0.00	6001.50	2235.62	-482.69	0.00	0.00	2287.14	Shell 697-34-06 Tgt
7	7865.84	0.00	0.00	7037.00	2235.62	-482.69	0.00	0.00	2287.14	

OXY USA RMAT

Garfield County, CO NAD27

Shell 797-03A Pad

Shell 697-34-06 - Slot I

OH

Plan: Plan #1

Standard Planning Report

09 September, 2011

Scientific Drilling International

Planning Report

Database:	Rockies Compass Server	Local Co-ordinate Reference:	Well Shell 697-34-06 - Slot I
Company:	OXY USA RMAT	TVD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Site:	Shell 797-03A Pad	North Reference:	True
Well:	Shell 697-34-06	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Garfield County, CO NAD27		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Colorado Central 502		

Site		Shell 797-03A Pad			
Site Position:		Northing:	610,902.00 usft	Latitude:	39° 28' 46.610 N
From:	Lat/Long	Easting:	1,237,601.62 usft	Longitude:	108° 12' 4.748 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.70 °

Well	Shell 697-34-06 - Slot I					
Well Position	+N/-S	7.42 ft	Northing:	610,910.10 usft	Latitude:	39° 28' 46.683 N
	+E/-W	-23.00 ft	Easting:	1,237,578.85 usft	Longitude:	108° 12' 5.042 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	6,485.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	08/18/11	10.42	65.68	52,192

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	347.82

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,837.74	49.13	347.82	1,644.28	645.34	-139.33	3.00	3.00	0.00	347.82	
3,116.09	49.13	347.82	2,480.72	1,590.28	-343.35	0.00	0.00	0.00	0.00	
4,753.84	0.00	0.00	3,925.00	2,235.62	-482.69	3.00	-3.00	0.00	180.00	
6,830.34	0.00	0.00	6,001.50	2,235.62	-482.69	0.00	0.00	0.00	0.00	Shell 697-34-06 Tgt
7,865.84	0.00	0.00	7,037.00	2,235.62	-482.69	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	Rockies Compass Server	Local Co-ordinate Reference:	Well Shell 697-34-06 - Slot I
Company:	OXY USA RMAT	TVD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Site:	Shell 797-03A Pad	North Reference:	True
Well:	Shell 697-34-06	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 3.00									
300.00	3.00	347.82	299.95	2.56	-0.55	2.62	3.00	3.00	0.00
400.00	6.00	347.82	399.63	10.23	-2.21	10.46	3.00	3.00	0.00
500.00	9.00	347.82	498.77	22.98	-4.96	23.51	3.00	3.00	0.00
600.00	12.00	347.82	597.08	40.79	-8.81	41.74	3.00	3.00	0.00
700.00	15.00	347.82	694.31	63.61	-13.73	65.08	3.00	3.00	0.00
800.00	18.00	347.82	790.18	91.37	-19.73	93.48	3.00	3.00	0.00
900.00	21.00	347.82	884.43	123.99	-26.77	126.85	3.00	3.00	0.00
1,000.00	24.00	347.82	976.81	161.40	-34.85	165.12	3.00	3.00	0.00
1,100.00	27.00	347.82	1,067.06	203.47	-43.93	208.16	3.00	3.00	0.00
1,200.00	30.00	347.82	1,154.93	250.11	-54.00	255.87	3.00	3.00	0.00
1,300.00	33.00	347.82	1,240.18	301.18	-65.03	308.12	3.00	3.00	0.00
1,400.00	36.00	347.82	1,322.59	356.54	-76.98	364.75	3.00	3.00	0.00
1,500.00	39.00	347.82	1,401.91	416.03	-89.82	425.62	3.00	3.00	0.00
1,600.00	42.00	347.82	1,477.95	479.51	-103.53	490.56	3.00	3.00	0.00
1,700.00	45.00	347.82	1,550.47	546.79	-118.06	559.38	3.00	3.00	0.00
1,800.00	48.00	347.82	1,619.30	617.68	-133.36	631.91	3.00	3.00	0.00
1,837.74	49.13	347.82	1,644.28	645.34	-139.33	660.21	3.00	3.00	0.00
Start 49.13° Hold At 1837.74'									
1,900.00	49.13	347.82	1,685.01	691.36	-149.27	707.29	0.00	0.00	0.00
2,000.00	49.13	347.82	1,750.45	765.28	-165.23	782.91	0.00	0.00	0.00
2,100.00	49.13	347.82	1,815.88	839.20	-181.19	858.53	0.00	0.00	0.00
2,200.00	49.13	347.82	1,881.31	913.12	-197.15	934.16	0.00	0.00	0.00
2,300.00	49.13	347.82	1,946.74	987.04	-213.11	1,009.78	0.00	0.00	0.00
2,400.00	49.13	347.82	2,012.17	1,060.95	-229.07	1,085.40	0.00	0.00	0.00
2,500.00	49.13	347.82	2,077.60	1,134.87	-245.03	1,161.02	0.00	0.00	0.00
2,600.00	49.13	347.82	2,143.03	1,208.79	-260.99	1,236.65	0.00	0.00	0.00
2,700.00	49.13	347.82	2,208.47	1,282.71	-276.95	1,312.27	0.00	0.00	0.00
2,800.00	49.13	347.82	2,273.90	1,356.63	-292.91	1,387.89	0.00	0.00	0.00
2,900.00	49.13	347.82	2,339.33	1,430.55	-308.87	1,463.51	0.00	0.00	0.00
3,000.00	49.13	347.82	2,404.76	1,504.47	-324.83	1,539.13	0.00	0.00	0.00
3,100.00	49.13	347.82	2,470.19	1,578.39	-340.79	1,614.76	0.00	0.00	0.00
3,116.09	49.13	347.82	2,480.72	1,590.28	-343.35	1,626.93	0.00	0.00	0.00
Start Drop -3.00									
3,200.00	46.62	347.82	2,537.00	1,651.11	-356.49	1,689.15	3.00	-3.00	0.00
3,300.00	43.62	347.82	2,607.56	1,720.36	-371.44	1,760.00	3.00	-3.00	0.00
3,400.00	40.62	347.82	2,681.73	1,785.90	-385.59	1,827.05	3.00	-3.00	0.00
3,500.00	37.62	347.82	2,759.31	1,847.56	-398.90	1,890.13	3.00	-3.00	0.00
3,600.00	34.62	347.82	2,840.08	1,905.17	-411.34	1,949.07	3.00	-3.00	0.00
3,700.00	31.62	347.82	2,923.83	1,958.56	-422.87	2,003.69	3.00	-3.00	0.00
3,800.00	28.62	347.82	3,010.32	2,007.60	-433.46	2,053.86	3.00	-3.00	0.00
3,900.00	25.62	347.82	3,099.32	2,052.15	-443.07	2,099.43	3.00	-3.00	0.00
4,000.00	22.62	347.82	3,190.59	2,092.08	-451.70	2,140.29	3.00	-3.00	0.00
4,100.00	19.62	347.82	3,283.86	2,127.29	-459.30	2,176.31	3.00	-3.00	0.00
4,200.00	16.62	347.82	3,378.89	2,157.68	-465.86	2,207.40	3.00	-3.00	0.00
4,300.00	13.62	347.82	3,475.42	2,183.16	-471.36	2,233.47	3.00	-3.00	0.00
4,400.00	10.62	347.82	3,573.18	2,203.68	-475.79	2,254.45	3.00	-3.00	0.00
4,500.00	7.62	347.82	3,671.91	2,219.16	-479.13	2,270.29	3.00	-3.00	0.00
4,600.00	4.62	347.82	3,771.33	2,229.57	-481.38	2,280.95	3.00	-3.00	0.00
4,700.00	1.62	347.82	3,871.17	2,234.88	-482.53	2,286.38	3.00	-3.00	0.00

Scientific Drilling International

Planning Report

Database:	Rockies Compass Server	Local Co-ordinate Reference:	Well Shell 697-34-06 - Slot I
Company:	OXY USA RMAT	TVD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Site:	Shell 797-03A Pad	North Reference:	True
Well:	Shell 697-34-06	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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)
4,753.84	0.00	0.00	3,925.00	2,235.62	-482.69	2,287.14	3.00	-3.00	0.00
Start 0.00° Hold At 4753.84' - Mesaverde									
4,800.00	0.00	0.00	3,971.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
4,900.00	0.00	0.00	4,071.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
4,923.84	0.00	0.00	4,095.00	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
Base Ohio Creek									
5,000.00	0.00	0.00	4,171.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
5,100.00	0.00	0.00	4,271.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
5,200.00	0.00	0.00	4,371.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
5,300.00	0.00	0.00	4,471.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
5,400.00	0.00	0.00	4,571.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
5,500.00	0.00	0.00	4,671.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
5,600.00	0.00	0.00	4,771.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
5,700.00	0.00	0.00	4,871.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
5,733.84	0.00	0.00	4,905.00	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
TOG = 613159.08, 1237162.85									
5,800.00	0.00	0.00	4,971.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
5,900.00	0.00	0.00	5,071.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
6,000.00	0.00	0.00	5,171.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
6,100.00	0.00	0.00	5,271.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
6,200.00	0.00	0.00	5,371.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
6,300.00	0.00	0.00	5,471.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
6,400.00	0.00	0.00	5,571.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
6,500.00	0.00	0.00	5,671.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
6,600.00	0.00	0.00	5,771.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
6,700.00	0.00	0.00	5,871.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
6,800.00	0.00	0.00	5,971.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
6,830.34	0.00	0.00	6,001.50	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
Target = 613159.08, 1237162.85									
6,900.00	0.00	0.00	6,071.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
7,000.00	0.00	0.00	6,171.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
7,100.00	0.00	0.00	6,271.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
7,200.00	0.00	0.00	6,371.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
7,300.00	0.00	0.00	6,471.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
7,400.00	0.00	0.00	6,571.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
7,465.84	0.00	0.00	6,637.00	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
Rollins									
7,500.00	0.00	0.00	6,671.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
7,600.00	0.00	0.00	6,771.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
7,700.00	0.00	0.00	6,871.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
7,800.00	0.00	0.00	6,971.16	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
7,865.84	0.00	0.00	7,037.00	2,235.62	-482.69	2,287.14	0.00	0.00	0.00
PBHL = 613159.08, 1237162.85									

Scientific Drilling International

Planning Report

Database:	Rockies Compass Server	Local Co-ordinate Reference:	Well Shell 697-34-06 - Slot I
Company:	OXY USA RMAT	TVD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 6485' & RKB 30' @ 6515.00ft (H&P)
Site:	Shell 797-03A Pad	North Reference:	True
Well:	Shell 697-34-06	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
Shell 697-34-06 Tgt	0.00	0.00	6,001.50	2,235.62	-482.69	613,159.08	1,237,162.85	39° 29' 8.780 N	108° 12' 11.198 W
- plan hits target center									
- Circle (radius 50.00)									

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
4,753.84	3,925.00	Mesaverde		0.00	
4,923.84	4,095.00	Base Ohio Creek		0.00	
7,465.84	6,637.00	Rollins		0.00	

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
200.00	200.00	0.00	0.00	Start Build 3.00
1,837.74	1,644.28	645.34	-139.33	Start 49.13° Hold At 1837.74'
3,116.09	2,480.72	1,590.28	-343.35	Start Drop -3.00
4,753.84	3,925.00	2,235.62	-482.69	Start 0.00° Hold At 4753.84'
5,733.84	4,905.00	2,235.62	-482.69	TOG = 613159.08, 1237162.85
6,830.34	6,001.50	2,235.62	-482.69	Target = 613159.08, 1237162.85
7,865.84	7,037.00	2,235.62	-482.69	PBHL = 613159.08, 1237162.85