



Scientific Drilling
Rocky Mountain Operations

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



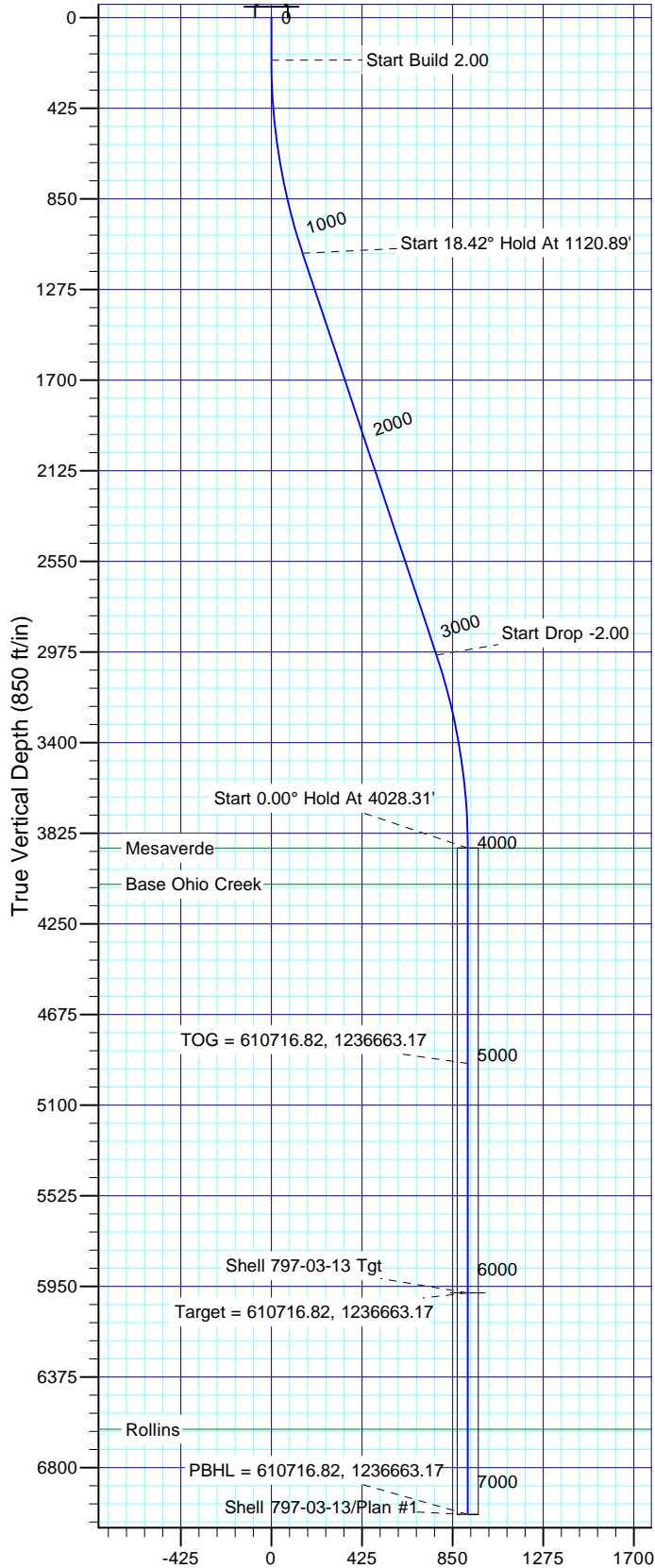
Well Details: Shell 797-03-13

TVD Reference: GL 6485' & RKB 30' @ 6515.00ft (H&P) Ground Level: 6485.00
+N/-S 0.00 +E/-W 0.00 Northing 610909.75 Easting 1237563.84 Latitude 39° 28' 46.675 N Longitude 108° 12' 5.233 W Slot G

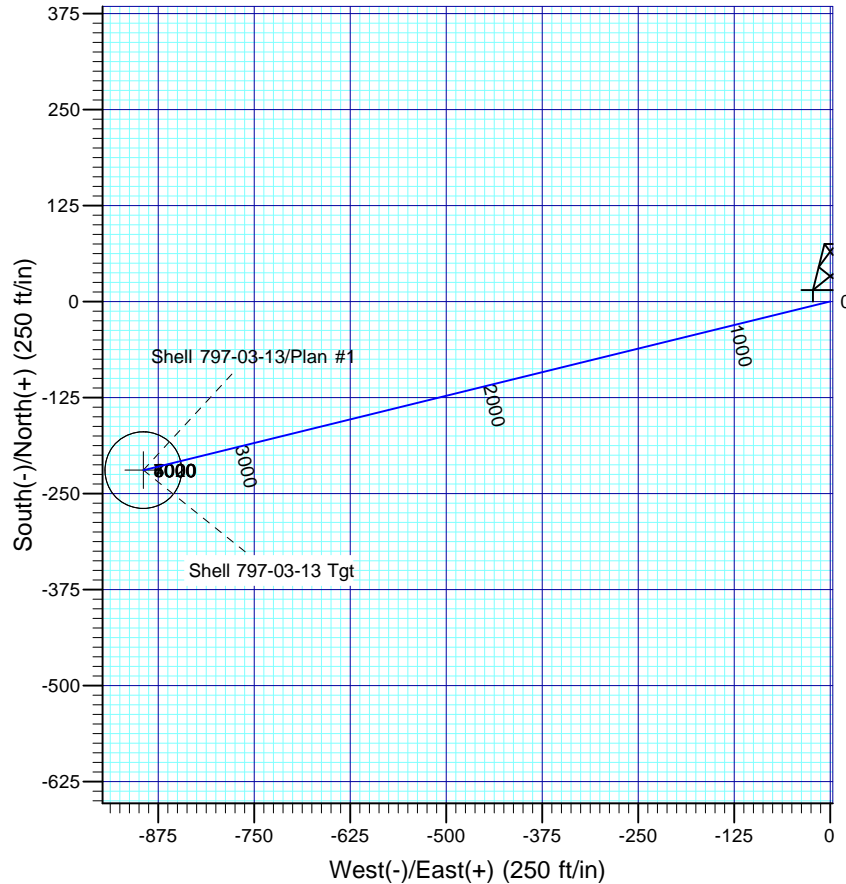


Azimuths to True North
Magnetic North: 10.42°

Magnetic Field
Strength: 52191.8snT
Dip Angle: 65.68°
Date: 08/19/2011
Model: IGRF2010



Vertical Section at 256.21° (850 ft/in)



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3895.00	4028.31	Mesaverde
4065.00	4198.31	Base Ohio Creek
6620.00	6753.31	Rollins

Plan: Plan #1

13:19, 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	1120.89	18.42	256.21	1105.11	-34.99	-142.51	2.00	256.21	146.74	
4	3107.42	18.42	256.21	2989.89	-184.64	-752.04	0.00	0.00	774.37	
5	4028.31	0.00	0.00	3895.00	-219.63	-894.54	2.00	180.00	921.11	
6	6114.56	0.00	0.00	5981.25	-219.63	-894.54	0.00	0.00	921.11	Shell 797-03-13 Tgt
7	7153.31	0.00	0.00	7020.00	-219.63	-894.54	0.00	0.00	921.11	

OXY USA RMAT

Garfield County, CO NAD27

Shell 797-03A Pad

Shell 797-03-13 - Slot G

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 797-03-13 - Slot G
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 797-03-13	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 797-03-13 - Slot G					
Well Position	+N/-S	6.63 ft	Northing:	610,909.75 usft	Latitude:	39° 28' 46.675 N
	+E/-W	-37.99 ft	Easting:	1,237,563.84 usft	Longitude:	108° 12' 5.233 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	08/19/11	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	256.21

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	
1,120.89	18.42	256.21	1,105.11	-34.99	-142.51	2.00	2.00	0.00	256.21	
3,107.42	18.42	256.21	2,989.89	-184.64	-752.04	0.00	0.00	0.00	0.00	
4,028.31	0.00	0.00	3,895.00	-219.63	-894.54	2.00	-2.00	0.00	180.00	
6,114.56	0.00	0.00	5,981.25	-219.63	-894.54	0.00	0.00	0.00	0.00	Shell 797-03-13 Tgt
7,153.31	0.00	0.00	7,020.00	-219.63	-894.54	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	Rockies Compass Server	Local Co-ordinate Reference:	Well Shell 797-03-13 - Slot G
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 797-03-13	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 2.00									
300.00	2.00	256.21	299.98	-0.42	-1.69	1.75	2.00	2.00	0.00
400.00	4.00	256.21	399.84	-1.66	-6.78	6.98	2.00	2.00	0.00
500.00	6.00	256.21	499.45	-3.74	-15.24	15.69	2.00	2.00	0.00
600.00	8.00	256.21	598.70	-6.65	-27.08	27.88	2.00	2.00	0.00
700.00	10.00	256.21	697.47	-10.38	-42.27	43.52	2.00	2.00	0.00
800.00	12.00	256.21	795.62	-14.93	-60.80	62.60	2.00	2.00	0.00
900.00	14.00	256.21	893.06	-20.29	-82.64	85.10	2.00	2.00	0.00
1,000.00	16.00	256.21	989.64	-26.46	-107.78	110.98	2.00	2.00	0.00
1,100.00	18.00	256.21	1,085.27	-33.43	-136.17	140.21	2.00	2.00	0.00
1,120.89	18.42	256.21	1,105.11	-34.99	-142.51	146.74	2.00	2.00	0.00
Start 18.42° Hold At 1120.89'									
1,200.00	18.42	256.21	1,180.17	-40.95	-166.78	171.73	0.00	0.00	0.00
1,300.00	18.42	256.21	1,275.05	-48.48	-197.46	203.33	0.00	0.00	0.00
1,400.00	18.42	256.21	1,369.93	-56.01	-228.15	234.92	0.00	0.00	0.00
1,500.00	18.42	256.21	1,464.80	-63.55	-258.83	266.52	0.00	0.00	0.00
1,600.00	18.42	256.21	1,559.68	-71.08	-289.51	298.11	0.00	0.00	0.00
1,700.00	18.42	256.21	1,654.56	-78.61	-320.20	329.71	0.00	0.00	0.00
1,800.00	18.42	256.21	1,749.44	-86.15	-350.88	361.30	0.00	0.00	0.00
1,900.00	18.42	256.21	1,844.32	-93.68	-381.56	392.89	0.00	0.00	0.00
2,000.00	18.42	256.21	1,939.19	-101.21	-412.25	424.49	0.00	0.00	0.00
2,100.00	18.42	256.21	2,034.07	-108.75	-442.93	456.08	0.00	0.00	0.00
2,200.00	18.42	256.21	2,128.95	-116.28	-473.61	487.68	0.00	0.00	0.00
2,300.00	18.42	256.21	2,223.83	-123.81	-504.29	519.27	0.00	0.00	0.00
2,400.00	18.42	256.21	2,318.70	-131.35	-534.98	550.87	0.00	0.00	0.00
2,500.00	18.42	256.21	2,413.58	-138.88	-565.66	582.46	0.00	0.00	0.00
2,600.00	18.42	256.21	2,508.46	-146.41	-596.34	614.05	0.00	0.00	0.00
2,700.00	18.42	256.21	2,603.34	-153.95	-627.03	645.65	0.00	0.00	0.00
2,800.00	18.42	256.21	2,698.22	-161.48	-657.71	677.24	0.00	0.00	0.00
2,900.00	18.42	256.21	2,793.09	-169.01	-688.39	708.84	0.00	0.00	0.00
3,000.00	18.42	256.21	2,887.97	-176.55	-719.08	740.43	0.00	0.00	0.00
3,100.00	18.42	256.21	2,982.85	-184.08	-749.76	772.03	0.00	0.00	0.00
3,107.42	18.42	256.21	2,989.89	-184.64	-752.04	774.37	0.00	0.00	0.00
Start Drop -2.00									
3,200.00	16.57	256.21	3,078.18	-191.27	-779.06	802.20	2.00	-2.00	0.00
3,300.00	14.57	256.21	3,174.51	-197.67	-805.12	829.03	2.00	-2.00	0.00
3,400.00	12.57	256.21	3,271.72	-203.26	-827.90	852.49	2.00	-2.00	0.00
3,500.00	10.57	256.21	3,369.68	-208.04	-847.37	872.53	2.00	-2.00	0.00
3,600.00	8.57	256.21	3,468.29	-212.01	-863.51	889.15	2.00	-2.00	0.00
3,700.00	6.57	256.21	3,567.41	-215.14	-876.29	902.32	2.00	-2.00	0.00
3,800.00	4.57	256.21	3,666.93	-217.46	-885.71	912.02	2.00	-2.00	0.00
3,900.00	2.57	256.21	3,766.73	-218.94	-891.75	918.24	2.00	-2.00	0.00
4,000.00	0.57	256.21	3,866.69	-219.59	-894.41	920.97	2.00	-2.00	0.00
4,028.31	0.00	0.00	3,895.00	-219.63	-894.54	921.11	2.00	-2.00	0.00
Start 0.00° Hold At 4028.31' - Mesaverde									
4,100.00	0.00	0.00	3,966.69	-219.63	-894.54	921.11	0.00	0.00	0.00
4,198.31	0.00	0.00	4,065.00	-219.63	-894.54	921.11	0.00	0.00	0.00
Base Ohio Creek									
4,200.00	0.00	0.00	4,066.69	-219.63	-894.54	921.11	0.00	0.00	0.00
4,300.00	0.00	0.00	4,166.69	-219.63	-894.54	921.11	0.00	0.00	0.00

Scientific Drilling International

Planning Report

Database:	Rockies Compass Server	Local Co-ordinate Reference:	Well Shell 797-03-13 - Slot G
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 797-03-13	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)
4,400.00	0.00	0.00	4,266.69	-219.63	-894.54	921.11	0.00	0.00	0.00
4,500.00	0.00	0.00	4,366.69	-219.63	-894.54	921.11	0.00	0.00	0.00
4,600.00	0.00	0.00	4,466.69	-219.63	-894.54	921.11	0.00	0.00	0.00
4,700.00	0.00	0.00	4,566.69	-219.63	-894.54	921.11	0.00	0.00	0.00
4,800.00	0.00	0.00	4,666.69	-219.63	-894.54	921.11	0.00	0.00	0.00
4,900.00	0.00	0.00	4,766.69	-219.63	-894.54	921.11	0.00	0.00	0.00
5,000.00	0.00	0.00	4,866.69	-219.63	-894.54	921.11	0.00	0.00	0.00
5,038.31	0.00	0.00	4,905.00	-219.63	-894.54	921.11	0.00	0.00	0.00
TOG = 610716.82, 1236663.17									
5,100.00	0.00	0.00	4,966.69	-219.63	-894.54	921.11	0.00	0.00	0.00
5,200.00	0.00	0.00	5,066.69	-219.63	-894.54	921.11	0.00	0.00	0.00
5,300.00	0.00	0.00	5,166.69	-219.63	-894.54	921.11	0.00	0.00	0.00
5,400.00	0.00	0.00	5,266.69	-219.63	-894.54	921.11	0.00	0.00	0.00
5,500.00	0.00	0.00	5,366.69	-219.63	-894.54	921.11	0.00	0.00	0.00
5,600.00	0.00	0.00	5,466.69	-219.63	-894.54	921.11	0.00	0.00	0.00
5,700.00	0.00	0.00	5,566.69	-219.63	-894.54	921.11	0.00	0.00	0.00
5,800.00	0.00	0.00	5,666.69	-219.63	-894.54	921.11	0.00	0.00	0.00
5,900.00	0.00	0.00	5,766.69	-219.63	-894.54	921.11	0.00	0.00	0.00
6,000.00	0.00	0.00	5,866.69	-219.63	-894.54	921.11	0.00	0.00	0.00
6,100.00	0.00	0.00	5,966.69	-219.63	-894.54	921.11	0.00	0.00	0.00
6,114.56	0.00	0.00	5,981.25	-219.63	-894.54	921.11	0.00	0.00	0.00
Target = 610716.82, 1236663.17									
6,200.00	0.00	0.00	6,066.69	-219.63	-894.54	921.11	0.00	0.00	0.00
6,300.00	0.00	0.00	6,166.69	-219.63	-894.54	921.11	0.00	0.00	0.00
6,400.00	0.00	0.00	6,266.69	-219.63	-894.54	921.11	0.00	0.00	0.00
6,500.00	0.00	0.00	6,366.69	-219.63	-894.54	921.11	0.00	0.00	0.00
6,600.00	0.00	0.00	6,466.69	-219.63	-894.54	921.11	0.00	0.00	0.00
6,700.00	0.00	0.00	6,566.69	-219.63	-894.54	921.11	0.00	0.00	0.00
6,753.31	0.00	0.00	6,620.00	-219.63	-894.54	921.11	0.00	0.00	0.00
Rollins									
6,800.00	0.00	0.00	6,666.69	-219.63	-894.54	921.11	0.00	0.00	0.00
6,900.00	0.00	0.00	6,766.69	-219.63	-894.54	921.11	0.00	0.00	0.00
7,000.00	0.00	0.00	6,866.69	-219.63	-894.54	921.11	0.00	0.00	0.00
7,100.00	0.00	0.00	6,966.69	-219.63	-894.54	921.11	0.00	0.00	0.00
7,153.31	0.00	0.00	7,020.00	-219.63	-894.54	921.11	0.00	0.00	0.00
PBHL = 610716.82, 1236663.17									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Shell 797-03-13 Tgt	0.00	0.00	5,981.25	-219.63	-894.54	610,716.82	1,236,663.17	39° 28' 44.504 N	108° 12' 16.641 W
- hit/miss target									
- Shape									
- plan hits target center									
- Circle (radius 50.00)									

Scientific Drilling International

Planning Report

Database:	Rockies Compass Server	Local Co-ordinate Reference:	Well Shell 797-03-13 - Slot G
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 797-03-13	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,028.31	3,895.00	Mesaverde		0.00	
4,198.31	4,065.00	Base Ohio Creek		0.00	
6,753.31	6,620.00	Rollins		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
200.00	200.00	0.00	0.00	Start Build 2.00	
1,120.89	1,105.11	-34.99	-142.51	Start 18.42° Hold At 1120.89'	
3,107.42	2,989.89	-184.64	-752.04	Start Drop -2.00	
4,028.31	3,895.00	-219.63	-894.54	Start 0.00° Hold At 4028.31'	
5,038.31	4,905.00	-219.63	-894.54	TOG = 610716.82, 1236663.17	
6,114.56	5,981.25	-219.63	-894.54	Target = 610716.82, 1236663.17	
7,153.31	7,020.00	-219.63	-894.54	PBHL = 610716.82, 1236663.17	