



Scientific Drilling
Rocky Mountain Operations

Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-06D Pad



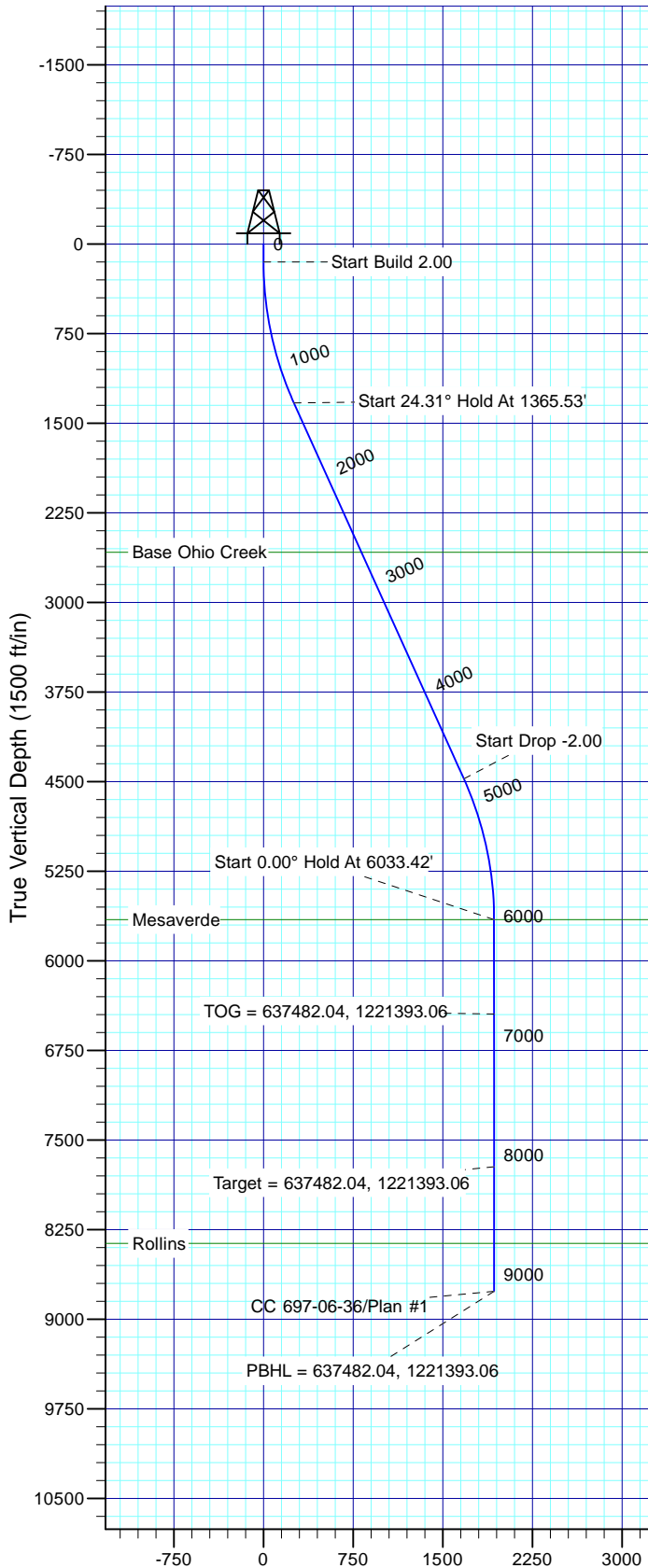
Well Details: CC 697-06-36

TVD Reference: GL 8345' & RKB 30' @ 8375.00ft (H&P) Ground Level: 8345.00
+N/-S 0.00 +E/-W 0.00 Northing 636288.97 Easting 1222909.28 Latitude 39° 32' 53.054 N Longitude 108° 15' 21.863 W Slot X

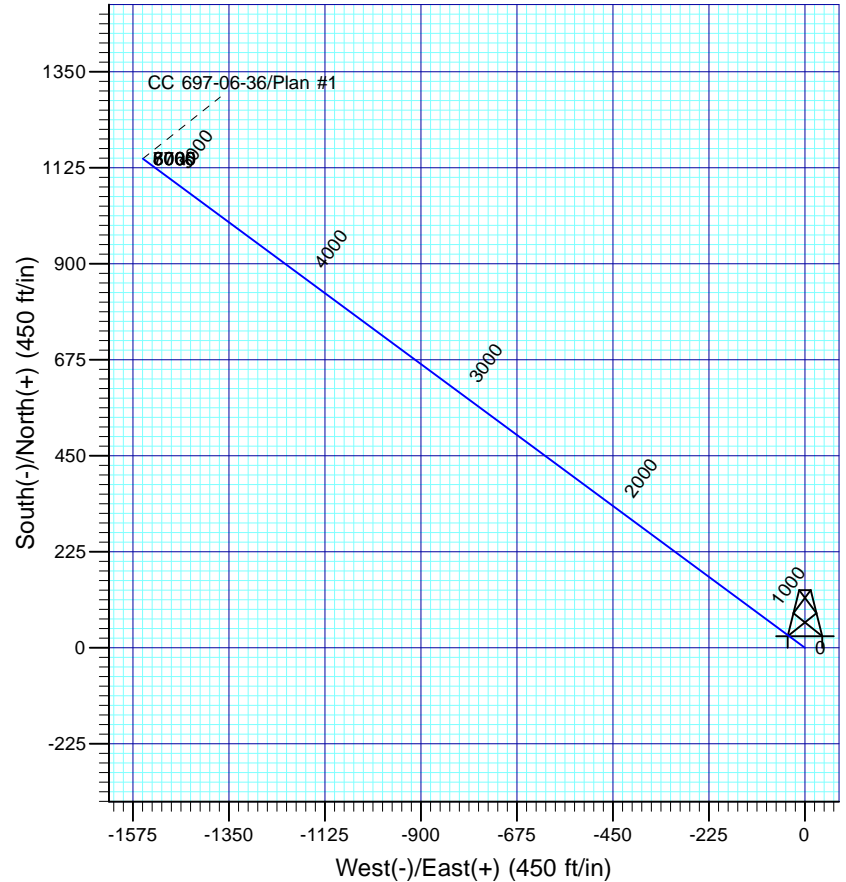


Azimuths to True North
Magnetic North: 10.38°

Magnetic Field
Strength: 52151.9snT
Dip Angle: 65.71°
Date: 03/06/2012
Model: IGRF2010



Vertical Section at 306.46° (1500 ft/in)



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2580.00	2737.83	Base Ohio Creek
5655.00	6033.42	Mesaverde
8365.00	8743.42	Rollins

Plan: Plan #1

13:25, March 07 2012
Created By: Janie Cooke

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	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	
3	1365.53	24.31	306.46	1329.39	150.96	-204.31	2.00	306.46	254.03	
4	4817.89	24.31	306.46	4475.61	995.57	-1347.41	0.00	0.00	675.31	
5	6033.42	0.00	0.00	5655.00	1146.53	-1551.72	2.00	180.00	1929.34	
6	8100.92	0.00	0.00	7722.50	1146.53	-1551.72	0.00	0.00	1929.34	
7	9143.42	0.00	0.00	8765.00	1146.53	-1551.72	0.00	0.00	1929.34	CC 697-06-36 Target

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-06D Pad
CC 697-06-36 - Slot X**

OH

Plan: Plan #1

Standard Planning Report

07 March, 2012





Database:	EDM-R5000-JanieCooke-Local	Local Co-ordinate Reference:	Well CC 697-06-36 - Slot X
Company:	OXY USA RMAT	TVD Reference:	GL 8345' & RKB 30' @ 8375.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8345' & RKB 30' @ 8375.00ft (H&P)
Site:	Cascade Creek 697-06D Pad	North Reference:	True
Well:	CC 697-06-36	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		Cascade Creek 697-06D Pad, Sec 6 T6S R97W				
Site Position:		Northing:	636,260.71 usft	Latitude:	39° 32' 52.746 N	
From:	Map	Easting:	1,222,814.04 usft	Longitude:	108° 15' 23.068 W	
Position Uncertainty:		0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.74 °

Well	CC 697-06-36 - Slot X					
Well Position	+N/-S	31.14 ft	Northing:	636,288.98 usft	Latitude:	39° 32' 53.054 N
	+E/-W	94.34 ft	Easting:	1,222,909.28 usft	Longitude:	108° 15' 21.863 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	8,345.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	03/06/2012	10.38	65.71	52,152

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	306.46

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	
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,365.53	24.31	306.46	1,329.39	150.96	-204.31	2.00	2.00	0.00	306.46	
4,817.89	24.31	306.46	4,475.61	995.57	-1,347.41	0.00	0.00	0.00	0.00	
6,033.42	0.00	0.00	5,655.00	1,146.53	-1,551.72	2.00	-2.00	0.00	180.00	
8,100.92	0.00	0.00	7,722.50	1,146.53	-1,551.72	0.00	0.00	0.00	0.00	CC 697-06-36 Target
9,143.42	0.00	0.00	8,765.00	1,146.53	-1,551.72	0.00	0.00	0.00	0.00	



Database: EDM-R5000-JanieCooke-Local
Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-06D Pad
Well: CC 697-06-36
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Well CC 697-06-36 - Slot X
 GL 8345' & RKB 30' @ 8375.00ft (H&P)
 GL 8345' & RKB 30' @ 8375.00ft (H&P)
 True
 Minimum Curvature

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
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
200.00	1.00	306.46	200.00	0.26	-0.35	0.44	2.00	2.00	0.00
300.00	3.00	306.46	299.93	2.33	-3.16	3.93	2.00	2.00	0.00
400.00	5.00	306.46	399.68	6.48	-8.77	10.90	2.00	2.00	0.00
500.00	7.00	306.46	499.13	12.69	-17.17	21.35	2.00	2.00	0.00
600.00	9.00	306.46	598.15	20.96	-28.37	35.27	2.00	2.00	0.00
700.00	11.00	306.46	696.63	31.28	-42.33	52.63	2.00	2.00	0.00
800.00	13.00	306.46	794.44	43.63	-59.05	73.42	2.00	2.00	0.00
900.00	15.00	306.46	891.46	58.01	-78.51	97.62	2.00	2.00	0.00
1,000.00	17.00	306.46	987.58	74.39	-100.68	125.18	2.00	2.00	0.00
1,100.00	19.00	306.46	1,082.68	92.75	-125.53	156.08	2.00	2.00	0.00
1,200.00	21.00	306.46	1,176.65	113.07	-153.04	190.28	2.00	2.00	0.00
1,300.00	23.00	306.46	1,269.36	135.33	-183.16	227.74	2.00	2.00	0.00
1,365.53	24.31	306.46	1,329.39	150.96	-204.31	254.03	2.00	2.00	0.00
Start 24.31° Hold At 1365.53'									
1,400.00	24.31	306.46	1,360.80	159.39	-215.72	268.22	0.00	0.00	0.00
1,500.00	24.31	306.46	1,451.93	183.86	-248.83	309.39	0.00	0.00	0.00
1,600.00	24.31	306.46	1,543.06	208.32	-281.94	350.56	0.00	0.00	0.00
1,700.00	24.31	306.46	1,634.20	232.79	-315.05	391.72	0.00	0.00	0.00
1,800.00	24.31	306.46	1,725.33	257.25	-348.16	432.89	0.00	0.00	0.00
1,900.00	24.31	306.46	1,816.46	281.72	-381.28	474.06	0.00	0.00	0.00
2,000.00	24.31	306.46	1,907.59	306.18	-414.39	515.23	0.00	0.00	0.00
2,100.00	24.31	306.46	1,998.73	330.64	-447.50	556.40	0.00	0.00	0.00
2,200.00	24.31	306.46	2,089.86	355.11	-480.61	597.57	0.00	0.00	0.00
2,300.00	24.31	306.46	2,180.99	379.57	-513.72	638.74	0.00	0.00	0.00
2,400.00	24.31	306.46	2,272.13	404.04	-546.83	679.90	0.00	0.00	0.00
2,500.00	24.31	306.46	2,363.26	428.50	-579.94	721.07	0.00	0.00	0.00
2,600.00	24.31	306.46	2,454.39	452.97	-613.05	762.24	0.00	0.00	0.00
2,700.00	24.31	306.46	2,545.52	477.43	-646.16	803.41	0.00	0.00	0.00
2,737.83	24.31	306.46	2,580.00	486.69	-658.69	818.98	0.00	0.00	0.00
Base Ohio Creek									
2,800.00	24.31	306.46	2,636.66	501.90	-679.27	844.58	0.00	0.00	0.00
2,900.00	24.31	306.46	2,727.79	526.36	-712.38	885.75	0.00	0.00	0.00
3,000.00	24.31	306.46	2,818.92	550.83	-745.49	926.91	0.00	0.00	0.00
3,100.00	24.31	306.46	2,910.05	575.29	-778.60	968.08	0.00	0.00	0.00
3,200.00	24.31	306.46	3,001.19	599.76	-811.71	1,009.25	0.00	0.00	0.00
3,300.00	24.31	306.46	3,092.32	624.22	-844.82	1,050.42	0.00	0.00	0.00
3,400.00	24.31	306.46	3,183.45	648.69	-877.94	1,091.59	0.00	0.00	0.00
3,500.00	24.31	306.46	3,274.58	673.15	-911.05	1,132.76	0.00	0.00	0.00
3,600.00	24.31	306.46	3,365.72	697.62	-944.16	1,173.92	0.00	0.00	0.00
3,700.00	24.31	306.46	3,456.85	722.08	-977.27	1,215.09	0.00	0.00	0.00
3,800.00	24.31	306.46	3,547.98	746.54	-1,010.38	1,256.26	0.00	0.00	0.00
3,900.00	24.31	306.46	3,639.12	771.01	-1,043.49	1,297.43	0.00	0.00	0.00
4,000.00	24.31	306.46	3,730.25	795.47	-1,076.60	1,338.60	0.00	0.00	0.00
4,100.00	24.31	306.46	3,821.38	819.94	-1,109.71	1,379.77	0.00	0.00	0.00
4,200.00	24.31	306.46	3,912.51	844.40	-1,142.82	1,420.93	0.00	0.00	0.00
4,300.00	24.31	306.46	4,003.65	868.87	-1,175.93	1,462.10	0.00	0.00	0.00
4,400.00	24.31	306.46	4,094.78	893.33	-1,209.04	1,503.27	0.00	0.00	0.00
4,500.00	24.31	306.46	4,185.91	917.80	-1,242.15	1,544.44	0.00	0.00	0.00
4,600.00	24.31	306.46	4,277.04	942.26	-1,275.26	1,585.61	0.00	0.00	0.00



Database: EDM-R5000-JanieCooke-Local
Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-06D Pad
Well: CC 697-06-36
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Well CC 697-06-36 - Slot X
 GL 8345' & RKB 30' @ 8375.00ft (H&P)
 GL 8345' & RKB 30' @ 8375.00ft (H&P)
 True
 Minimum Curvature

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)
4,700.00	24.31	306.46	4,368.18	966.73	-1,308.37	1,626.78	0.00	0.00	0.00
4,800.00	24.31	306.46	4,459.31	991.19	-1,341.48	1,667.94	0.00	0.00	0.00
4,817.89	24.31	306.46	4,475.61	995.57	-1,347.41	1,675.31	0.00	0.00	0.00
Start Drop -2.00									
4,900.00	22.67	306.46	4,550.92	1,015.02	-1,373.73	1,708.04	2.00	-2.00	0.00
5,000.00	20.67	306.46	4,643.84	1,036.96	-1,403.42	1,744.96	2.00	-2.00	0.00
5,100.00	18.67	306.46	4,738.01	1,056.96	-1,430.49	1,778.61	2.00	-2.00	0.00
5,200.00	16.67	306.46	4,833.28	1,074.99	-1,454.90	1,808.96	2.00	-2.00	0.00
5,300.00	14.67	306.46	4,929.56	1,091.04	-1,476.62	1,835.97	2.00	-2.00	0.00
5,400.00	12.67	306.46	5,026.73	1,105.08	-1,495.63	1,859.60	2.00	-2.00	0.00
5,500.00	10.67	306.46	5,124.65	1,117.10	-1,511.89	1,879.82	2.00	-2.00	0.00
5,600.00	8.67	306.46	5,223.23	1,127.08	-1,525.40	1,896.62	2.00	-2.00	0.00
5,700.00	6.67	306.46	5,322.33	1,135.01	-1,536.13	1,909.96	2.00	-2.00	0.00
5,800.00	4.67	306.46	5,421.84	1,140.88	-1,544.07	1,919.84	2.00	-2.00	0.00
5,900.00	2.67	306.46	5,521.63	1,144.68	-1,549.22	1,926.23	2.00	-2.00	0.00
6,000.00	0.67	306.46	5,621.58	1,146.41	-1,551.56	1,929.15	2.00	-2.00	0.00
6,033.42	0.00	0.00	5,655.00	1,146.53	-1,551.72	1,929.34	2.00	-2.00	160.19
Start 0.00° Hold At 6033.42' - Mesaverde									
6,100.00	0.00	0.00	5,721.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
6,200.00	0.00	0.00	5,821.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
6,300.00	0.00	0.00	5,921.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
6,400.00	0.00	0.00	6,021.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
6,500.00	0.00	0.00	6,121.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
6,600.00	0.00	0.00	6,221.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
6,700.00	0.00	0.00	6,321.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
6,800.00	0.00	0.00	6,421.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
6,823.42	0.00	0.00	6,445.00	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
TOG = 637482.04, 1221393.06									
6,900.00	0.00	0.00	6,521.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
7,000.00	0.00	0.00	6,621.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
7,100.00	0.00	0.00	6,721.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
7,200.00	0.00	0.00	6,821.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
7,300.00	0.00	0.00	6,921.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
7,400.00	0.00	0.00	7,021.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
7,500.00	0.00	0.00	7,121.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
7,600.00	0.00	0.00	7,221.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
7,700.00	0.00	0.00	7,321.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
7,800.00	0.00	0.00	7,421.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
7,900.00	0.00	0.00	7,521.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
8,000.00	0.00	0.00	7,621.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
8,100.00	0.00	0.00	7,721.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
8,100.92	0.00	0.00	7,722.50	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
Target = 637482.04, 1221393.06									
8,200.00	0.00	0.00	7,821.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
8,300.00	0.00	0.00	7,921.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
8,400.00	0.00	0.00	8,021.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
8,500.00	0.00	0.00	8,121.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
8,600.00	0.00	0.00	8,221.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
8,700.00	0.00	0.00	8,321.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
8,743.42	0.00	0.00	8,365.00	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
Rollins									
8,800.00	0.00	0.00	8,421.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
8,900.00	0.00	0.00	8,521.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
9,000.00	0.00	0.00	8,621.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00



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Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-06D Pad
Well: CC 697-06-36
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well CC 697-06-36 - Slot X
TVD Reference: GL 8345' & RKB 30' @ 8375.00ft (H&P)
MD Reference: GL 8345' & RKB 30' @ 8375.00ft (H&P)
North Reference: True
Survey Calculation Method: Minimum Curvature

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)
9,100.00	0.00	0.00	8,721.58	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
9,143.42	0.00	0.00	8,765.00	1,146.53	-1,551.72	1,929.34	0.00	0.00	0.00
PBHL = 637482.04, 1221393.06									

Design Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
CC 697-06-36 Target - plan hits target center - Circle (radius 50.00)	0.00	0.00	7,722.50	1,146.53	-1,551.72	637,482.04	1,221,393.06	39° 33' 4.385 N	108° 15' 41.673 W

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,737.83	2,580.00	Base Ohio Creek		0.00	
6,033.42	5,655.00	Mesaverde		0.00	
8,743.42	8,365.00	Rollins		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
150.00	150.00	0.00	0.00	Start Build 2.00
1,365.53	1,329.39	150.96	-204.31	Start 24.31° Hold At 1365.53'
4,817.89	4,475.61	995.57	-1,347.41	Start Drop -2.00
6,033.42	5,655.00	1,146.53	-1,551.72	Start 0.00° Hold At 6033.42'
6,823.42	6,445.00	1,146.53	-1,551.72	TOG = 637482.04, 1221393.06
8,100.92	7,722.50	1,146.53	-1,551.72	Target = 637482.04, 1221393.06
9,143.42	8,765.00	1,146.53	-1,551.72	PBHL = 637482.04, 1221393.06