



Scientific Drilling
Rocky Mountain Operations

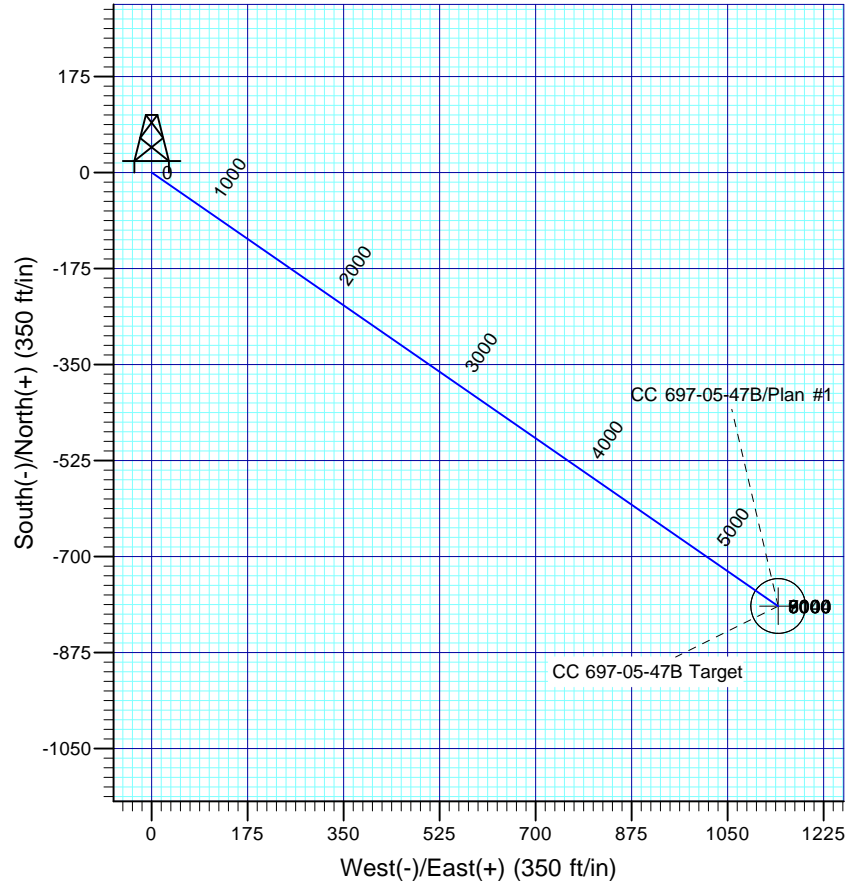
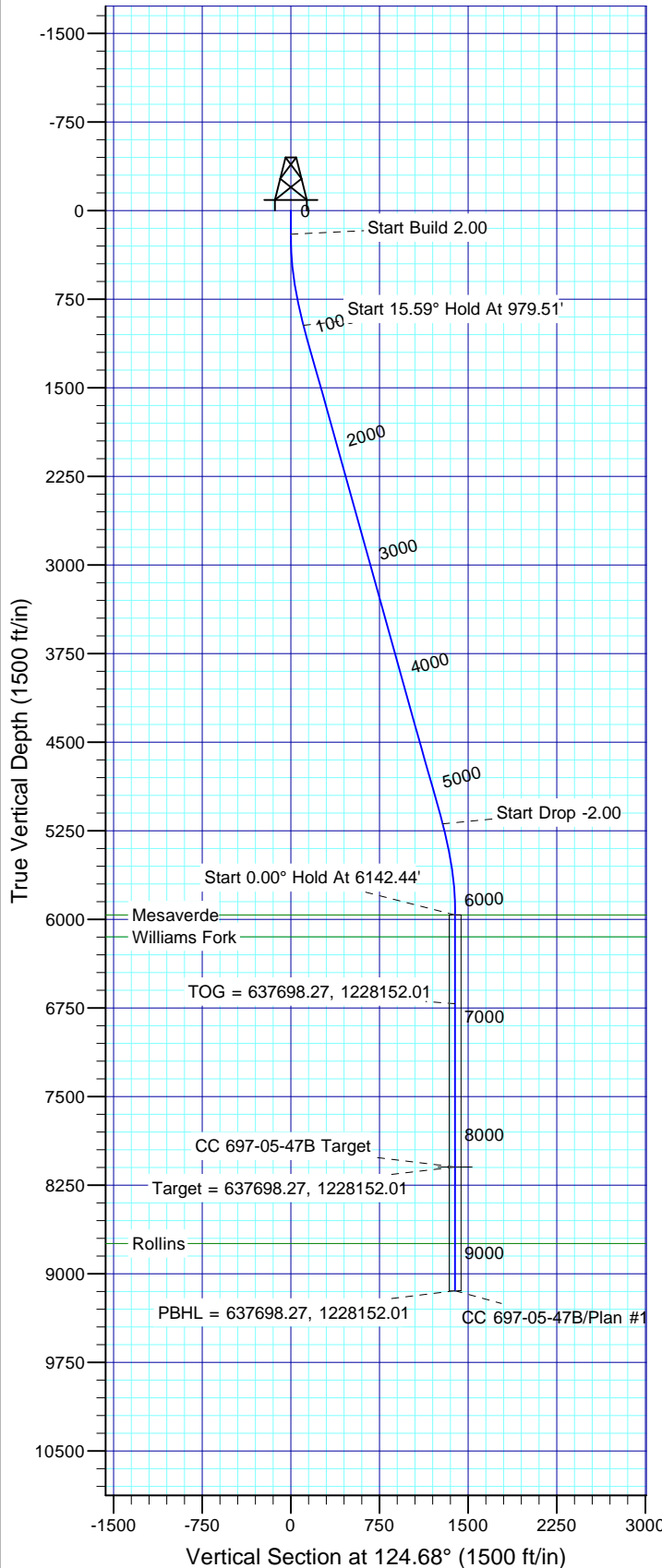
Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-05C Pad



Well Details: CC 697-05-47B

TVD Reference: GL 8429' & RKB 30' @ 8459.00ft (H&P) Ground Level: 8429.00
+N/-S 0.00 +E/-W 0.00 Northing 638522.64 Easting 1227034.26 Latitude 39° 33' 16.354 N Longitude 108° 14' 30.088 W Slot L

T M Azimuths to True North
Magnetic North: 10.51°
Magnetic Field
Strength: 52311.6snT
Dip Angle: 65.77°
Date: 2010/12/16
Model: IGRF2005-10



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5962.00	6142.44	Mesaverde
6147.00	6327.44	Williams Fork
8744.00	8924.44	Rollins

Plan: Plan #1

14:47, December 28 2010
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	VSec	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	979.51	15.59	124.68	969.93	-59.97	86.67	2.00	124.68	105.40	
4	5362.93	15.59	124.68	5192.07	-730.29	1055.45	0.00	0.00	1283.47	
5	6142.44	0.00	0.00	5962.00	-790.26	1142.12	2.00	180.00	1388.87	
6	8275.44	0.00	0.00	8095.00	-790.26	1142.12	0.00	0.00	1388.87	CC 697-05-47B Target
7	9324.44	0.00	0.00	9144.00	-790.26	1142.12	0.00	0.00	1388.87	

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-05C Pad
CC 697-05-47B - Slot L**

OH

Plan: Plan #1

Standard Planning Report

28 December, 2010

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-05-47B - Slot L
Company:	OXY USA RMAT	TVD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Site:	Cascade Creek 697-05C Pad	North Reference:	True
Well:	CC 697-05-47B	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 697-05C Pad, Sec. 5 T6S R97W		
Site Position:		Northing:	637,463.43 usft
From:	Map	Easting:	1,226,150.07 usft
Position Uncertainty:	0.00 ft	Slot Radius:	0.000 in
		Latitude:	39° 33' 5.626 N
		Longitude:	108° 14' 40.963 W
		Grid Convergence:	-1.73 °

Well	CC 697-05-47B - Slot L					
Well Position	+N/-S	1,085.44 ft	Northing:	638,522.64 usft	Latitude:	39° 33' 16.354 N
	+E/-W	851.79 ft	Easting:	1,227,034.25 usft	Longitude:	108° 14' 30.088 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	8,429.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	2010/12/16	10.51	65.77	52,312

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	124.68

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	
979.51	15.59	124.68	969.93	-59.97	86.67	2.00	2.00	0.00	124.68	
5,362.93	15.59	124.68	5,192.07	-730.29	1,055.45	0.00	0.00	0.00	0.00	
6,142.44	0.00	0.00	5,962.00	-790.26	1,142.12	2.00	-2.00	0.00	180.00	
8,275.44	0.00	0.00	8,095.00	-790.26	1,142.12	0.00	0.00	0.00	0.00	CC 697-05-47B Target
9,324.44	0.00	0.00	9,144.00	-790.26	1,142.12	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-05-47B - Slot L
Company:	OXY USA RMAT	TVD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Site:	Cascade Creek 697-05C Pad	North Reference:	True
Well:	CC 697-05-47B	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	124.68	299.98	-0.99	1.44	1.75	2.00	2.00	0.00
400.00	4.00	124.68	399.84	-3.97	5.74	6.98	2.00	2.00	0.00
500.00	6.00	124.68	499.45	-8.93	12.91	15.69	2.00	2.00	0.00
600.00	8.00	124.68	598.70	-15.86	22.93	27.88	2.00	2.00	0.00
700.00	10.00	124.68	697.47	-24.76	35.79	43.52	2.00	2.00	0.00
800.00	12.00	124.68	795.62	-35.62	51.48	62.60	2.00	2.00	0.00
900.00	14.00	124.68	893.06	-48.42	69.98	85.10	2.00	2.00	0.00
979.51	15.59	124.68	969.93	-59.97	86.67	105.40	2.00	2.00	0.00
Start 15.59° Hold At 979.51'									
1,000.00	15.59	124.68	989.66	-63.11	91.20	110.91	0.00	0.00	0.00
1,100.00	15.59	124.68	1,085.98	-78.40	113.30	137.78	0.00	0.00	0.00
1,200.00	15.59	124.68	1,182.30	-93.69	135.40	164.66	0.00	0.00	0.00
1,300.00	15.59	124.68	1,278.63	-108.98	157.51	191.53	0.00	0.00	0.00
1,400.00	15.59	124.68	1,374.95	-124.27	179.61	218.41	0.00	0.00	0.00
1,500.00	15.59	124.68	1,471.27	-139.57	201.71	245.28	0.00	0.00	0.00
1,600.00	15.59	124.68	1,567.59	-154.86	223.81	272.16	0.00	0.00	0.00
1,700.00	15.59	124.68	1,663.91	-170.15	245.91	299.04	0.00	0.00	0.00
1,800.00	15.59	124.68	1,760.23	-185.44	268.01	325.91	0.00	0.00	0.00
1,900.00	15.59	124.68	1,856.55	-200.73	290.11	352.79	0.00	0.00	0.00
2,000.00	15.59	124.68	1,952.87	-216.03	312.21	379.66	0.00	0.00	0.00
2,100.00	15.59	124.68	2,049.19	-231.32	334.31	406.54	0.00	0.00	0.00
2,200.00	15.59	124.68	2,145.51	-246.61	356.41	433.41	0.00	0.00	0.00
2,300.00	15.59	124.68	2,241.83	-261.90	378.51	460.29	0.00	0.00	0.00
2,400.00	15.59	124.68	2,338.15	-277.19	400.61	487.16	0.00	0.00	0.00
2,500.00	15.59	124.68	2,434.48	-292.49	422.71	514.04	0.00	0.00	0.00
2,600.00	15.59	124.68	2,530.80	-307.78	444.82	540.91	0.00	0.00	0.00
2,700.00	15.59	124.68	2,627.12	-323.07	466.92	567.79	0.00	0.00	0.00
2,800.00	15.59	124.68	2,723.44	-338.36	489.02	594.67	0.00	0.00	0.00
2,900.00	15.59	124.68	2,819.76	-353.66	511.12	621.54	0.00	0.00	0.00
3,000.00	15.59	124.68	2,916.08	-368.95	533.22	648.42	0.00	0.00	0.00
3,100.00	15.59	124.68	3,012.40	-384.24	555.32	675.29	0.00	0.00	0.00
3,200.00	15.59	124.68	3,108.72	-399.53	577.42	702.17	0.00	0.00	0.00
3,300.00	15.59	124.68	3,205.04	-414.82	599.52	729.04	0.00	0.00	0.00
3,400.00	15.59	124.68	3,301.36	-430.12	621.62	755.92	0.00	0.00	0.00
3,500.00	15.59	124.68	3,397.68	-445.41	643.72	782.79	0.00	0.00	0.00
3,600.00	15.59	124.68	3,494.00	-460.70	665.82	809.67	0.00	0.00	0.00
3,700.00	15.59	124.68	3,590.33	-475.99	687.92	836.55	0.00	0.00	0.00
3,800.00	15.59	124.68	3,686.65	-491.28	710.03	863.42	0.00	0.00	0.00
3,900.00	15.59	124.68	3,782.97	-506.58	732.13	890.30	0.00	0.00	0.00
4,000.00	15.59	124.68	3,879.29	-521.87	754.23	917.17	0.00	0.00	0.00
4,100.00	15.59	124.68	3,975.61	-537.16	776.33	944.05	0.00	0.00	0.00
4,200.00	15.59	124.68	4,071.93	-552.45	798.43	970.92	0.00	0.00	0.00
4,300.00	15.59	124.68	4,168.25	-567.74	820.53	997.80	0.00	0.00	0.00
4,400.00	15.59	124.68	4,264.57	-583.04	842.63	1,024.67	0.00	0.00	0.00
4,500.00	15.59	124.68	4,360.89	-598.33	864.73	1,051.55	0.00	0.00	0.00
4,600.00	15.59	124.68	4,457.21	-613.62	886.83	1,078.43	0.00	0.00	0.00
4,700.00	15.59	124.68	4,553.53	-628.91	908.93	1,105.30	0.00	0.00	0.00
4,800.00	15.59	124.68	4,649.86	-644.21	931.03	1,132.18	0.00	0.00	0.00
4,900.00	15.59	124.68	4,746.18	-659.50	953.13	1,159.05	0.00	0.00	0.00
5,000.00	15.59	124.68	4,842.50	-674.79	975.24	1,185.93	0.00	0.00	0.00

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-05-47B - Slot L
Company:	OXY USA RMAT	TVD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Site:	Cascade Creek 697-05C Pad	North Reference:	True
Well:	CC 697-05-47B	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)
5,100.00	15.59	124.68	4,938.82	-690.08	997.34	1,212.80	0.00	0.00	0.00
5,200.00	15.59	124.68	5,035.14	-705.37	1,019.44	1,239.68	0.00	0.00	0.00
5,300.00	15.59	124.68	5,131.46	-720.67	1,041.54	1,266.55	0.00	0.00	0.00
5,362.93	15.59	124.68	5,192.07	-730.29	1,055.45	1,283.47	0.00	0.00	0.00
Start Drop -2.00									
5,400.00	14.85	124.68	5,227.84	-735.83	1,063.45	1,293.20	2.00	-2.00	0.00
5,500.00	12.85	124.68	5,324.93	-749.44	1,083.13	1,317.13	2.00	-2.00	0.00
5,600.00	10.85	124.68	5,422.80	-761.13	1,100.01	1,337.67	2.00	-2.00	0.00
5,700.00	8.85	124.68	5,521.32	-770.86	1,114.08	1,354.77	2.00	-2.00	0.00
5,800.00	6.85	124.68	5,620.38	-778.63	1,125.31	1,368.42	2.00	-2.00	0.00
5,900.00	4.85	124.68	5,719.85	-784.43	1,133.69	1,378.61	2.00	-2.00	0.00
6,000.00	2.85	124.68	5,819.62	-788.25	1,139.21	1,385.33	2.00	-2.00	0.00
6,100.00	0.85	124.68	5,919.56	-790.08	1,141.86	1,388.55	2.00	-2.00	0.00
6,142.44	0.00	0.00	5,962.00	-790.26	1,142.12	1,388.87	2.00	-2.00	0.00
Start 0.00° Hold At 6142.44' - Mesaverde									
6,200.00	0.00	0.00	6,019.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
6,300.00	0.00	0.00	6,119.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
6,327.44	0.00	0.00	6,147.00	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
Williams Fork									
6,400.00	0.00	0.00	6,219.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
6,500.00	0.00	0.00	6,319.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
6,600.00	0.00	0.00	6,419.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
6,700.00	0.00	0.00	6,519.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
6,800.00	0.00	0.00	6,619.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
6,894.44	0.00	0.00	6,714.00	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
TOG = 637698.27, 1228152.01									
6,900.00	0.00	0.00	6,719.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
7,000.00	0.00	0.00	6,819.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
7,100.00	0.00	0.00	6,919.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
7,200.00	0.00	0.00	7,019.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
7,300.00	0.00	0.00	7,119.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
7,400.00	0.00	0.00	7,219.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
7,500.00	0.00	0.00	7,319.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
7,600.00	0.00	0.00	7,419.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
7,700.00	0.00	0.00	7,519.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
7,800.00	0.00	0.00	7,619.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
7,900.00	0.00	0.00	7,719.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
8,000.00	0.00	0.00	7,819.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
8,100.00	0.00	0.00	7,919.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
8,200.00	0.00	0.00	8,019.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
8,275.44	0.00	0.00	8,095.00	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
Target = 637698.27, 1228152.01									
8,300.00	0.00	0.00	8,119.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
8,400.00	0.00	0.00	8,219.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
8,500.00	0.00	0.00	8,319.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
8,600.00	0.00	0.00	8,419.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
8,700.00	0.00	0.00	8,519.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
8,800.00	0.00	0.00	8,619.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
8,900.00	0.00	0.00	8,719.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
8,924.44	0.00	0.00	8,744.00	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
Rollins									
9,000.00	0.00	0.00	8,819.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
9,100.00	0.00	0.00	8,919.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00

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Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-05-47B - Slot L
Company:	OXY USA RMAT	TVD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Site:	Cascade Creek 697-05C Pad	North Reference:	True
Well:	CC 697-05-47B	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)
9,200.00	0.00	0.00	9,019.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
9,300.00	0.00	0.00	9,119.56	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
9,324.44	0.00	0.00	9,144.00	-790.26	1,142.12	1,388.87	0.00	0.00	0.00
PBHL = 637698.27, 1228152.01									

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 697-05-47B Target - plan hits target center - Circle (radius 50.00)	0.00	0.00	8,095.00	-790.26	1,142.12	637,698.28	1,228,152.01	39° 33' 8.543 N	108° 14' 15.507 W

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,142.44	5,962.00	Mesaverde		0.00	
6,327.44	6,147.00	Williams Fork		0.00	
8,924.44	8,744.00	Rollins		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.00	200.00	0.00	0.00	Start Build 2.00
979.51	969.93	-59.97	86.67	Start 15.59° Hold At 979.51'
5,362.93	5,192.07	-730.29	1,055.45	Start Drop -2.00
6,142.44	5,962.00	-790.26	1,142.12	Start 0.00° Hold At 6142.44'
6,894.44	6,714.00	-790.26	1,142.12	TOG = 637698.27, 1228152.01
8,275.44	8,095.00	-790.26	1,142.12	Target = 637698.27, 1228152.01
9,324.44	9,144.00	-790.26	1,142.12	PBHL = 637698.27, 1228152.01