



**Scientific Drilling**  
Rocky Mountain Operations

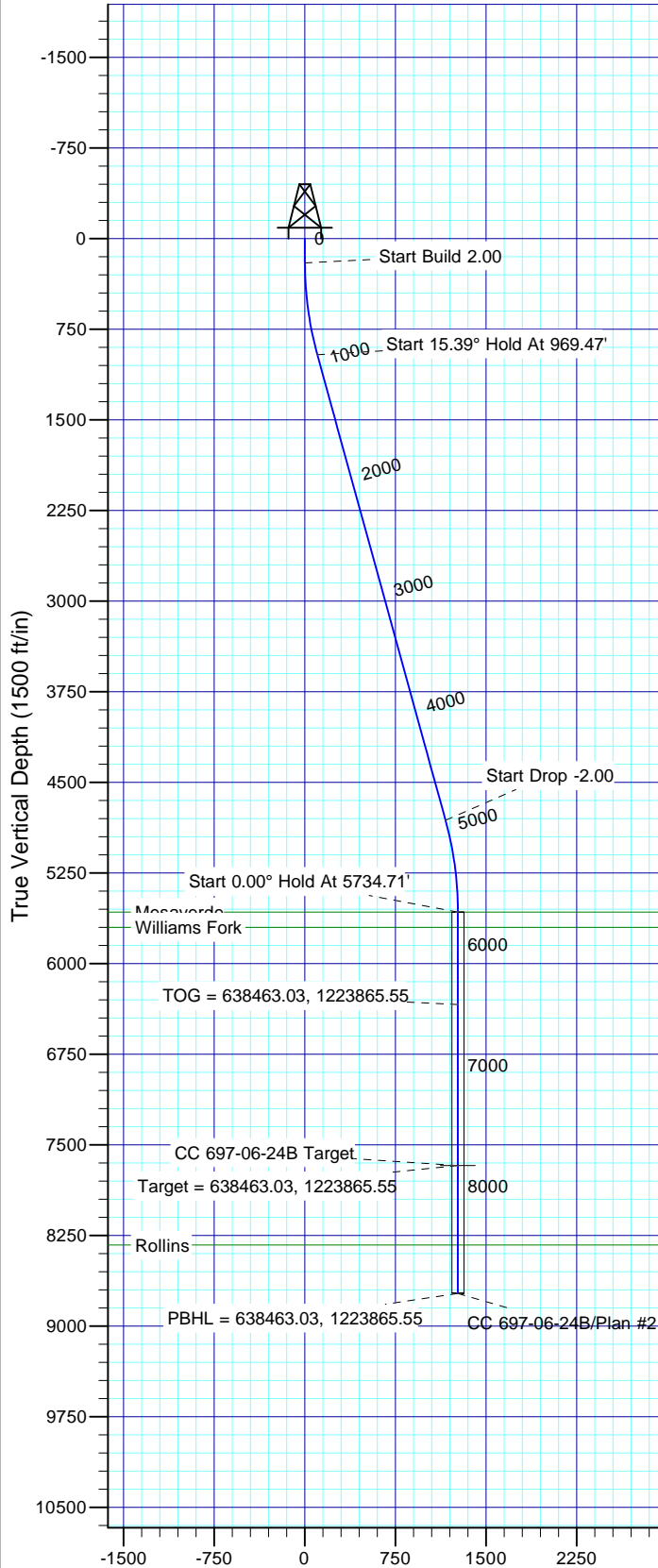
Company: OXY USA RMAT  
Project: Garfield County, CO NAD27  
Site: Cascade Creek 697-06A Pad



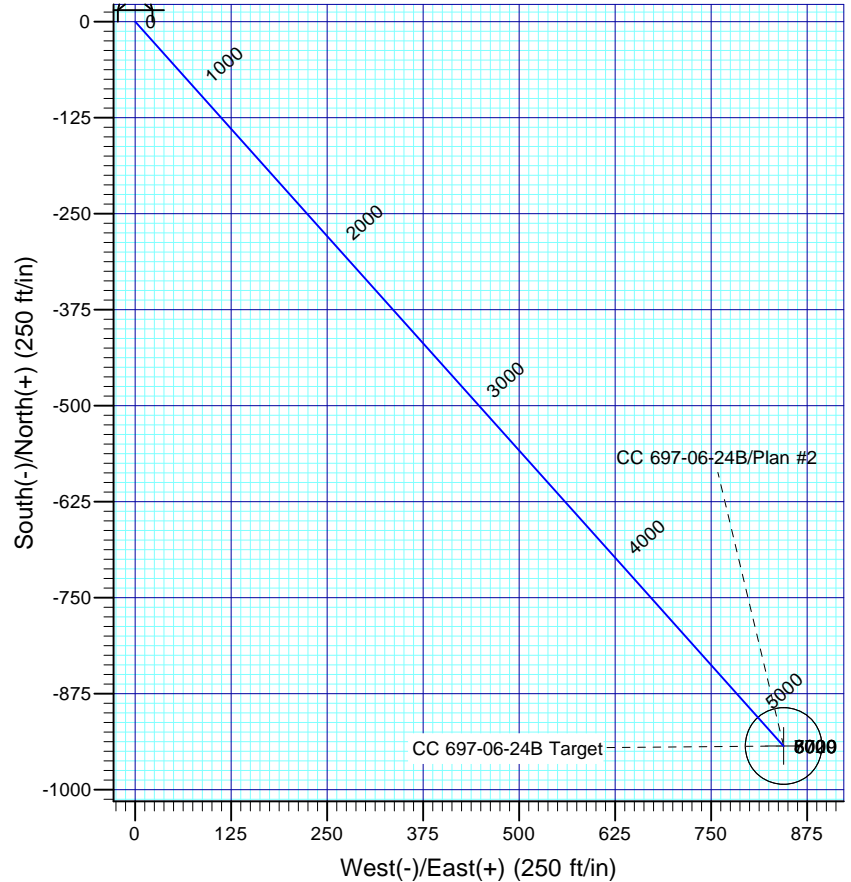
Well Details: CC 697-06-24B

TVD Reference: GL 8184' & RBK 30' @ 8214.00ft (H&P) Ground Level: 8184.00  
+N/-S 0.00 +E/-W 0.00 Northing 639431.28 Easting 1223050.20 Latitude 39° 33' 24.139 N Longitude 108° 15' 21.282 W Slot T

T M Azimuths to True North  
Magnetic North: 10.53°  
Magnetic Field  
Strength: 52275.1snT  
Dip Angle: 65.75°  
Date: 2011/01/06  
Model: IGRF2010



Vertical Section at 138.16° (1500 ft/in)



#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5574.00	5735.71	Mesaverde
5699.00	5860.71	Williams Fork
8329.00	8490.71	Rollins

Plan: Plan #2

**21:10, February 03 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	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	969.47	15.39	138.16	960.25	-76.53	68.52	2.00	138.16	102.72	
4	4965.24	15.39	138.16	4812.75	-866.55	775.83	0.00	0.00	163.11	
5	5734.71	0.00	0.00	5573.00	-943.08	844.35	2.00	180.00	1265.83	
6	7832.71	0.00	0.00	7671.00	-943.08	844.35	0.00	0.00	1265.83	CC 697-06-24B Target
7	8890.71	0.00	0.00	8729.00	-943.08	844.35	0.00	0.00	1265.83	

# **OXY USA RMAT**

**Garfield County, CO NAD27  
Cascade Creek 697-06A Pad  
CC 697-06-24B - Slot T**

**OH**

**Plan: Plan #2**

## **Standard Planning Report**

**03 February, 2011**

# Scientific Drilling International

## Planning Report

<b>Database:</b>	EDM-RexH-Local	<b>Local Co-ordinate Reference:</b>	Well CC 697-06-24B - Slot T
<b>Company:</b>	OXY USA RMAT	<b>TVD Reference:</b>	GL 8184' & RBK 30' @ 8214.00ft (H&P)
<b>Project:</b>	Garfield County, CO NAD27	<b>MD Reference:</b>	GL 8184' & RBK 30' @ 8214.00ft (H&P)
<b>Site:</b>	Cascade Creek 697-06A Pad	<b>North Reference:</b>	True
<b>Well:</b>	CC 697-06-24B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2		

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

Site		Cascade Creek 697-06A Pad, Sec 6 T6S R97W			
Site Position:		Northing:	639,442.25 usft	Latitude:	39° 33' 24.203 N
From:	Map	Easting:	1,222,903.93 usft	Longitude:	108° 15' 23.153 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.74 °

Well	CC 697-06-24B - Slot T					
Well Position	+N/-S	-6.53 ft	Northing:	639,431.28 usft	Latitude:	39° 33' 24.139 N
	+E/-W	146.54 ft	Easting:	1,223,050.20 usft	Longitude:	108° 15' 21.282 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	8,184.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	2011/01/06	10.53	65.75	52,275

<b>Design</b>	Plan #2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	138.16

<b>Plan Sections</b>										
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	
969.47	15.39	138.16	960.25	-76.53	68.52	2.00	2.00	0.00	138.16	
4,965.24	15.39	138.16	4,812.75	-866.55	775.83	0.00	0.00	0.00	0.00	
5,734.71	0.00	0.00	5,573.00	-943.08	844.35	2.00	-2.00	0.00	180.00	
7,832.71	0.00	0.00	7,671.00	-943.08	844.35	0.00	0.00	0.00	0.00	CC 697-06-24B Target
8,890.71	0.00	0.00	8,729.00	-943.08	844.35	0.00	0.00	0.00	0.00	

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## Planning Report

<b>Database:</b>	EDM-RexH-Local	<b>Local Co-ordinate Reference:</b>	Well CC 697-06-24B - Slot T
<b>Company:</b>	OXY USA RMAT	<b>TVD Reference:</b>	GL 8184' & RBK 30' @ 8214.00ft (H&P)
<b>Project:</b>	Garfield County, CO NAD27	<b>MD Reference:</b>	GL 8184' & RBK 30' @ 8214.00ft (H&P)
<b>Site:</b>	Cascade Creek 697-06A Pad	<b>North Reference:</b>	True
<b>Well:</b>	CC 697-06-24B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2		

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	138.16	299.98	-1.30	1.16	1.75	2.00	2.00	0.00
400.00	4.00	138.16	399.84	-5.20	4.65	6.98	2.00	2.00	0.00
500.00	6.00	138.16	499.45	-11.69	10.47	15.69	2.00	2.00	0.00
600.00	8.00	138.16	598.70	-20.77	18.60	27.88	2.00	2.00	0.00
700.00	10.00	138.16	697.47	-32.43	29.03	43.52	2.00	2.00	0.00
800.00	12.00	138.16	795.62	-46.64	41.76	62.60	2.00	2.00	0.00
900.00	14.00	138.16	893.06	-63.40	56.76	85.10	2.00	2.00	0.00
969.47	15.39	138.16	960.25	-76.53	68.52	102.72	2.00	2.00	0.00
Start 15.39° Hold At 969.47'									
1,000.00	15.39	138.16	989.69	-82.56	73.92	110.82	0.00	0.00	0.00
1,100.00	15.39	138.16	1,086.10	-102.34	91.62	137.36	0.00	0.00	0.00
1,200.00	15.39	138.16	1,182.52	-122.11	109.32	163.90	0.00	0.00	0.00
1,300.00	15.39	138.16	1,278.93	-141.88	127.03	190.43	0.00	0.00	0.00
1,400.00	15.39	138.16	1,375.34	-161.65	144.73	216.97	0.00	0.00	0.00
1,500.00	15.39	138.16	1,471.76	-181.42	162.43	243.51	0.00	0.00	0.00
1,600.00	15.39	138.16	1,568.17	-201.19	180.13	270.05	0.00	0.00	0.00
1,700.00	15.39	138.16	1,664.59	-220.96	197.83	296.59	0.00	0.00	0.00
1,800.00	15.39	138.16	1,761.00	-240.74	215.53	323.12	0.00	0.00	0.00
1,900.00	15.39	138.16	1,857.42	-260.51	233.24	349.66	0.00	0.00	0.00
2,000.00	15.39	138.16	1,953.83	-280.28	250.94	376.20	0.00	0.00	0.00
2,100.00	15.39	138.16	2,050.25	-300.05	268.64	402.74	0.00	0.00	0.00
2,200.00	15.39	138.16	2,146.66	-319.82	286.34	429.27	0.00	0.00	0.00
2,300.00	15.39	138.16	2,243.07	-339.59	304.04	455.81	0.00	0.00	0.00
2,400.00	15.39	138.16	2,339.49	-359.37	321.74	482.35	0.00	0.00	0.00
2,500.00	15.39	138.16	2,435.90	-379.14	339.44	508.89	0.00	0.00	0.00
2,600.00	15.39	138.16	2,532.32	-398.91	357.15	535.43	0.00	0.00	0.00
2,700.00	15.39	138.16	2,628.73	-418.68	374.85	561.96	0.00	0.00	0.00
2,800.00	15.39	138.16	2,725.15	-438.45	392.55	588.50	0.00	0.00	0.00
2,900.00	15.39	138.16	2,821.56	-458.22	410.25	615.04	0.00	0.00	0.00
3,000.00	15.39	138.16	2,917.98	-477.99	427.95	641.58	0.00	0.00	0.00
3,100.00	15.39	138.16	3,014.39	-497.77	445.65	668.12	0.00	0.00	0.00
3,200.00	15.39	138.16	3,110.80	-517.54	463.36	694.65	0.00	0.00	0.00
3,300.00	15.39	138.16	3,207.22	-537.31	481.06	721.19	0.00	0.00	0.00
3,400.00	15.39	138.16	3,303.63	-557.08	498.76	747.73	0.00	0.00	0.00
3,500.00	15.39	138.16	3,400.05	-576.85	516.46	774.27	0.00	0.00	0.00
3,600.00	15.39	138.16	3,496.46	-596.62	534.16	800.80	0.00	0.00	0.00
3,700.00	15.39	138.16	3,592.88	-616.39	551.86	827.34	0.00	0.00	0.00
3,800.00	15.39	138.16	3,689.29	-636.17	569.57	853.88	0.00	0.00	0.00
3,900.00	15.39	138.16	3,785.71	-655.94	587.27	880.42	0.00	0.00	0.00
4,000.00	15.39	138.16	3,882.12	-675.71	604.97	906.96	0.00	0.00	0.00
4,100.00	15.39	138.16	3,978.53	-695.48	622.67	933.49	0.00	0.00	0.00
4,200.00	15.39	138.16	4,074.95	-715.25	640.37	960.03	0.00	0.00	0.00
4,300.00	15.39	138.16	4,171.36	-735.02	658.07	986.57	0.00	0.00	0.00
4,400.00	15.39	138.16	4,267.78	-754.80	675.77	1,013.11	0.00	0.00	0.00
4,500.00	15.39	138.16	4,364.19	-774.57	693.48	1,039.65	0.00	0.00	0.00
4,600.00	15.39	138.16	4,460.61	-794.34	711.18	1,066.18	0.00	0.00	0.00
4,700.00	15.39	138.16	4,557.02	-814.11	728.88	1,092.72	0.00	0.00	0.00
4,800.00	15.39	138.16	4,653.43	-833.88	746.58	1,119.26	0.00	0.00	0.00
4,900.00	15.39	138.16	4,749.85	-853.65	764.28	1,145.80	0.00	0.00	0.00
4,965.24	15.39	138.16	4,812.75	-866.55	775.83	1,163.11	0.00	0.00	0.00

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## Planning Report

<b>Database:</b>	EDM-RexH-Local	<b>Local Co-ordinate Reference:</b>	Well CC 697-06-24B - Slot T
<b>Company:</b>	OXY USA RMAT	<b>TVD Reference:</b>	GL 8184' & RBK 30' @ 8214.00ft (H&P)
<b>Project:</b>	Garfield County, CO NAD27	<b>MD Reference:</b>	GL 8184' & RBK 30' @ 8214.00ft (H&P)
<b>Site:</b>	Cascade Creek 697-06A Pad	<b>North Reference:</b>	True
<b>Well:</b>	CC 697-06-24B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2		

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)
<b>Start Drop -2.00</b>									
5,000.00	14.69	138.16	4,846.32	-873.27	781.85	1,172.13	2.00	-2.00	0.00
5,100.00	12.69	138.16	4,943.47	-890.91	797.64	1,195.80	2.00	-2.00	0.00
5,200.00	10.69	138.16	5,041.39	-906.01	811.16	1,216.07	2.00	-2.00	0.00
5,300.00	8.69	138.16	5,139.96	-918.55	822.39	1,232.91	2.00	-2.00	0.00
5,400.00	6.69	138.16	5,239.05	-928.53	831.32	1,246.30	2.00	-2.00	0.00
5,500.00	4.69	138.16	5,338.55	-935.92	837.94	1,256.22	2.00	-2.00	0.00
5,600.00	2.69	138.16	5,438.34	-940.72	842.24	1,262.66	2.00	-2.00	0.00
5,700.00	0.69	138.16	5,538.29	-942.92	844.21	1,265.62	2.00	-2.00	0.00
5,734.71	0.00	0.00	5,573.00	-943.08	844.35	1,265.83	2.00	-2.00	0.00
<b>Start 0.00° Hold At 5734.71'</b>									
5,735.71	0.00	0.00	5,574.00	-943.08	844.35	1,265.83	0.00	0.00	0.00
<b>Mesaverde</b>									
5,800.00	0.00	0.00	5,638.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
5,860.71	0.00	0.00	5,699.00	-943.08	844.35	1,265.83	0.00	0.00	0.00
<b>Williams Fork</b>									
5,900.00	0.00	0.00	5,738.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
6,000.00	0.00	0.00	5,838.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
6,100.00	0.00	0.00	5,938.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
6,200.00	0.00	0.00	6,038.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
6,300.00	0.00	0.00	6,138.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
6,400.00	0.00	0.00	6,238.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
6,500.00	0.00	0.00	6,338.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
6,500.71	0.00	0.00	6,339.00	-943.08	844.35	1,265.83	0.00	0.00	0.00
<b>TOG = 638463.03, 1223865.55</b>									
6,600.00	0.00	0.00	6,438.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
6,700.00	0.00	0.00	6,538.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
6,800.00	0.00	0.00	6,638.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
6,900.00	0.00	0.00	6,738.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
7,000.00	0.00	0.00	6,838.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
7,100.00	0.00	0.00	6,938.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
7,200.00	0.00	0.00	7,038.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
7,300.00	0.00	0.00	7,138.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
7,400.00	0.00	0.00	7,238.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
7,500.00	0.00	0.00	7,338.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
7,600.00	0.00	0.00	7,438.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
7,700.00	0.00	0.00	7,538.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
7,800.00	0.00	0.00	7,638.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
7,832.71	0.00	0.00	7,671.00	-943.08	844.35	1,265.83	0.00	0.00	0.00
<b>Target = 638463.03, 1223865.55</b>									
7,900.00	0.00	0.00	7,738.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
8,000.00	0.00	0.00	7,838.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
8,100.00	0.00	0.00	7,938.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
8,200.00	0.00	0.00	8,038.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
8,300.00	0.00	0.00	8,138.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
8,400.00	0.00	0.00	8,238.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
8,490.71	0.00	0.00	8,329.00	-943.08	844.35	1,265.83	0.00	0.00	0.00
<b>Rollins</b>									
8,500.00	0.00	0.00	8,338.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
8,600.00	0.00	0.00	8,438.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
8,700.00	0.00	0.00	8,538.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
8,800.00	0.00	0.00	8,638.29	-943.08	844.35	1,265.83	0.00	0.00	0.00
8,890.71	0.00	0.00	8,729.00	-943.08	844.35	1,265.83	0.00	0.00	0.00

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## Planning Report

<b>Database:</b>	EDM-RexH-Local	<b>Local Co-ordinate Reference:</b>	Well CC 697-06-24B - Slot T
<b>Company:</b>	OXY USA RMAT	<b>TVD Reference:</b>	GL 8184' & RBK 30' @ 8214.00ft (H&P)
<b>Project:</b>	Garfield County, CO NAD27	<b>MD Reference:</b>	GL 8184' & RBK 30' @ 8214.00ft (H&P)
<b>Site:</b>	Cascade Creek 697-06A Pad	<b>North Reference:</b>	True
<b>Well:</b>	CC 697-06-24B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2		

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)
PBHL = 638463.03, 1223865.55									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
CC 697-06-24B Target	0.00	0.00	7,671.00	-943.08	844.35	638,463.03	1,223,865.55	39° 33' 14.818 N	108° 15' 10.502 W
- plan hits target center									
- Circle (radius 50.00)									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
5,735.71	5,574.00	Mesaverde		0.00		
5,860.71	5,699.00	Williams Fork		0.00		
8,490.71	8,329.00	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	
969.47	960.25	-76.53	68.52	Start 15.39° Hold At 969.47'	
4,965.24	4,812.75	-866.55	775.83	Start Drop -2.00	
5,734.71	5,573.00	-943.08	844.35	Start 0.00° Hold At 5734.71'	
6,500.71	6,339.00	-943.08	844.35	TOG = 638463.03, 1223865.55	
7,832.71	7,671.00	-943.08	844.35	Target = 638463.03, 1223865.55	
8,890.71	8,729.00	-943.08	844.35	PBHL = 638463.03, 1223865.55	