



Scientific Drilling
Rocky Mountain Operations

Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-04D Pad



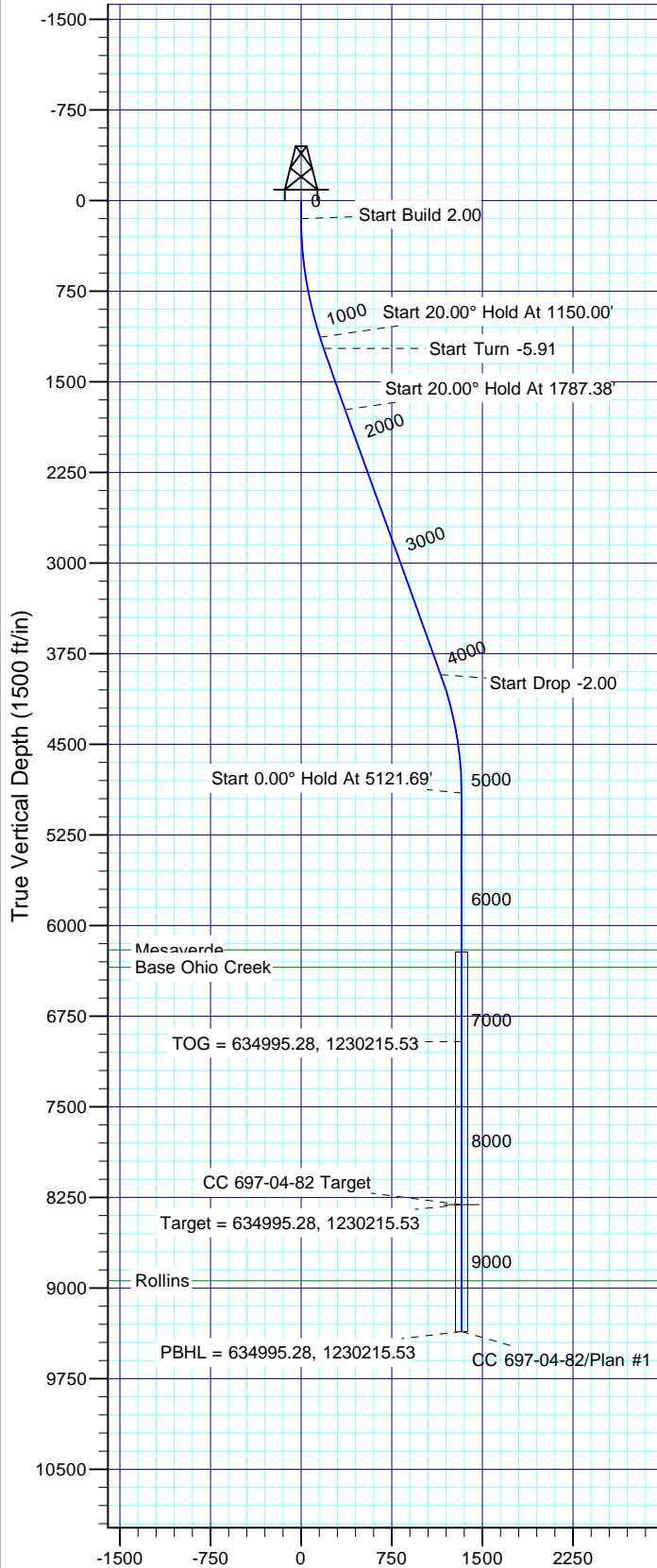
Well Details: CC 697-04-82

TVD Reference: GL 8610' & RKB 30' @ 8640.00ft (H&P) Ground Level: 8610.00
+N/-S 0.00 +E/-W 0.00 Northing 636313.04 Easting 1230371.66 Latitude 39° 32' 55.518 N Longitude 108° 13' 46.651 W Slot V

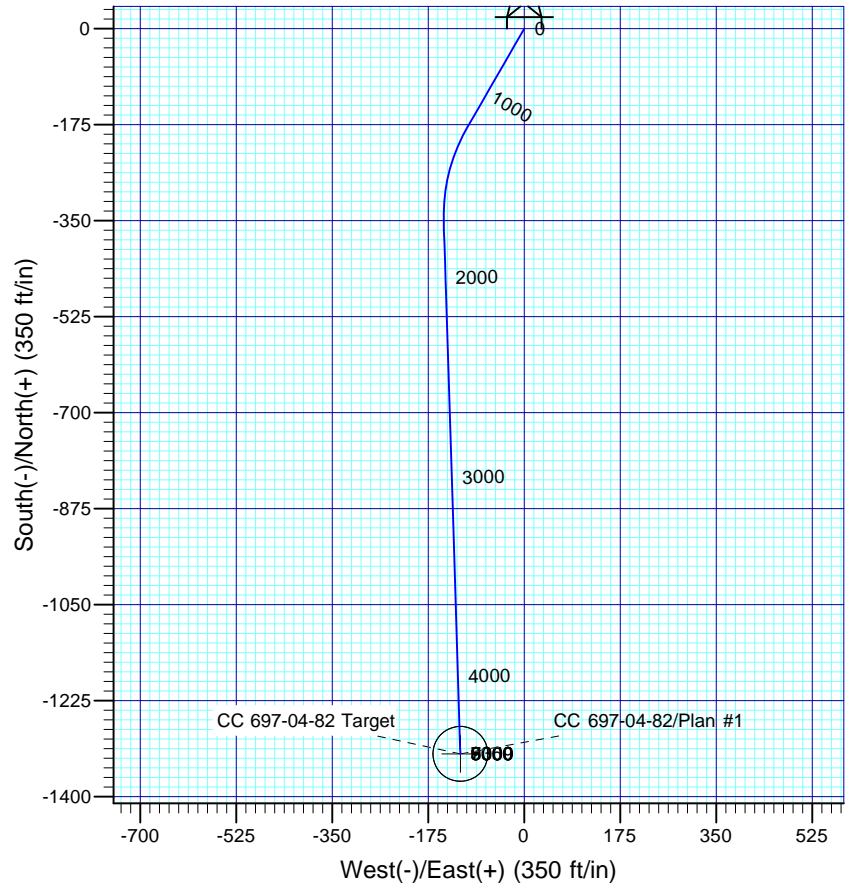


Azimuths to True North
Magnetic North: 10.47°

Magnetic Field
Strength: 52284.1snT
Dip Angle: 65.76°
Date: 2011/03/18
Model: IGRF2005-10



Vertical Section at 185.04° (1500 ft/in)



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
6200.00	6418.10	Mesaverde
6345.00	6563.10	Base Ohio Creek
8940.00	9158.10	Rollins

Plan: Plan #1

15:19, March 29 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	150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	
3	1150.00	20.00	210.00	1129.82	-149.62	-86.38	2.00	210.00	156.63	
4	1250.00	20.00	210.00	1223.78	-179.24	-103.48	0.00	0.00	187.63	
5	1787.38	20.00	178.22	1730.25	-351.19	-146.70	2.00	-104.98	362.71	CC 697-04-82 Target
6	1787.38	20.00	178.22	1730.25	-351.19	-146.70	2.00	180.00	362.71	
7	4121.69	20.00	178.22	3923.78	-1149.18	-121.85	0.00	0.00	1155.44	
8	5121.69	0.00	0.00	4903.59	-1321.86	-116.47	2.00	180.00	1326.98	
9	8528.10	0.00	0.00	8310.00	-1321.86	-116.47	0.00	0.00	1326.98	CC 697-04-82 Target
10	9577.10	0.00	0.00	9359.00	-1321.86	-116.47	0.00	0.00	1326.98	

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-04D Pad
CC 697-04-82 - Slot V**

OH

Plan: Plan #1

Standard Planning Report

29 March, 2011

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-04-82 - Slot V
Company:	OXY USA RMAT	TVD Reference:	GL 8610' & RKB 30' @ 8640.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8610' & RKB 30' @ 8640.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	North Reference:	True
Well:	CC 697-04-82	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 697-04D Pad			
Site Position:		Northing:	635,530.62 usft	Latitude:	39° 32' 47.760 N
From:	Map	Easting:	1,230,276.10 usft	Longitude:	108° 13' 47.570 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.72 °

Well	CC 697-04-82 - Slot V					
Well Position	+N/-S	784.94 ft	Northing:	636,313.04 usft	Latitude:	39° 32' 55.518 N
	+E/-W	72.01 ft	Easting:	1,230,371.66 usft	Longitude:	108° 13' 46.651 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	8,610.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	2011/03/18	10.47	65.76	52,284

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	185.04

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	
1,150.00	20.00	210.00	1,129.82	-149.62	-86.38	2.00	2.00	0.00	210.00	
1,250.00	20.00	210.00	1,223.78	-179.24	-103.48	0.00	0.00	0.00	0.00	
1,787.38	20.00	178.22	1,730.25	-351.19	-146.70	2.00	0.00	-5.91	-104.98	CC 697-04-82 Target
1,787.38	20.00	178.22	1,730.25	-351.19	-146.70	2.00	-2.00	0.00	180.00	
4,121.69	20.00	178.22	3,923.78	-1,149.18	-121.85	0.00	0.00	0.00	0.00	
5,121.69	0.00	0.00	4,903.59	-1,321.86	-116.47	2.00	-2.00	0.00	180.00	
8,528.10	0.00	0.00	8,310.00	-1,321.86	-116.47	0.00	0.00	0.00	0.00	CC 697-04-82 Target
9,577.10	0.00	0.00	9,359.00	-1,321.86	-116.47	0.00	0.00	0.00	0.00	

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Planning Report

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Company:	OXY USA RMAT	TVD Reference:	GL 8610' & RKB 30' @ 8640.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8610' & RKB 30' @ 8640.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	North Reference:	True
Well:	CC 697-04-82	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
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	210.00	200.00	-0.38	-0.22	0.40	2.00	2.00	0.00
300.00	3.00	210.00	299.93	-3.40	-1.96	3.56	2.00	2.00	0.00
400.00	5.00	210.00	399.68	-9.44	-5.45	9.88	2.00	2.00	0.00
500.00	7.00	210.00	499.13	-18.49	-10.68	19.36	2.00	2.00	0.00
600.00	9.00	210.00	598.15	-30.54	-17.64	31.97	2.00	2.00	0.00
700.00	11.00	210.00	696.63	-45.58	-26.32	47.72	2.00	2.00	0.00
800.00	13.00	210.00	794.44	-63.59	-36.71	66.56	2.00	2.00	0.00
900.00	15.00	210.00	891.46	-84.54	-48.81	88.49	2.00	2.00	0.00
1,000.00	17.00	210.00	987.58	-108.41	-62.59	113.48	2.00	2.00	0.00
1,100.00	19.00	210.00	1,082.68	-135.17	-78.04	141.50	2.00	2.00	0.00
1,150.00	20.00	210.00	1,129.82	-149.62	-86.38	156.63	2.00	2.00	0.00
Start 20.00° Hold At 1150.00'									
1,200.00	20.00	210.00	1,176.80	-164.43	-94.93	172.13	0.00	0.00	0.00
1,250.00	20.00	210.00	1,223.78	-179.24	-103.48	187.63	0.00	0.00	0.00
Start Turn -5.91									
1,300.00	19.76	207.14	1,270.81	-194.17	-111.62	203.22	2.00	-0.47	-5.72
1,400.00	19.43	201.26	1,365.02	-224.72	-125.36	234.86	2.00	-0.33	-5.88
1,500.00	19.30	195.24	1,459.37	-256.17	-135.74	267.09	2.00	-0.14	-6.02
1,600.00	19.36	189.20	1,553.75	-288.48	-142.73	299.89	2.00	0.06	-6.04
1,700.00	19.62	183.25	1,648.03	-321.60	-146.33	333.20	2.00	0.26	-5.95
1,787.38	20.00	178.22	1,730.25	-351.19	-146.70	362.71	2.00	0.44	-5.76
Start 20.00° Hold At 1787.38'									
1,800.00	20.00	178.22	1,742.10	-355.50	-146.57	366.99	0.00	0.00	0.00
1,900.00	20.00	178.22	1,836.07	-389.68	-145.50	400.95	0.00	0.00	0.00
2,000.00	20.00	178.22	1,930.04	-423.87	-144.44	434.91	0.00	0.00	0.00
2,100.00	20.00	178.22	2,024.01	-458.05	-143.37	468.87	0.00	0.00	0.00
2,200.00	20.00	178.22	2,117.98	-492.24	-142.31	502.83	0.00	0.00	0.00
2,300.00	20.00	178.22	2,211.95	-526.43	-141.24	536.79	0.00	0.00	0.00
2,400.00	20.00	178.22	2,305.92	-560.61	-140.18	570.75	0.00	0.00	0.00
2,500.00	20.00	178.22	2,399.89	-594.80	-139.11	604.71	0.00	0.00	0.00
2,600.00	20.00	178.22	2,493.86	-628.98	-138.05	638.67	0.00	0.00	0.00
2,700.00	20.00	178.22	2,587.83	-663.17	-136.98	672.63	0.00	0.00	0.00
2,800.00	20.00	178.22	2,681.79	-697.35	-135.92	706.59	0.00	0.00	0.00
2,900.00	20.00	178.22	2,775.76	-731.54	-134.85	740.55	0.00	0.00	0.00
3,000.00	20.00	178.22	2,869.73	-765.72	-133.79	774.51	0.00	0.00	0.00
3,100.00	20.00	178.22	2,963.70	-799.91	-132.72	808.47	0.00	0.00	0.00
3,200.00	20.00	178.22	3,057.67	-834.09	-131.66	842.43	0.00	0.00	0.00
3,300.00	20.00	178.22	3,151.64	-868.28	-130.59	876.39	0.00	0.00	0.00
3,400.00	20.00	178.22	3,245.61	-902.47	-129.53	910.35	0.00	0.00	0.00
3,500.00	20.00	178.22	3,339.58	-936.65	-128.46	944.31	0.00	0.00	0.00
3,600.00	20.00	178.22	3,433.55	-970.84	-127.40	978.27	0.00	0.00	0.00
3,700.00	20.00	178.22	3,527.52	-1,005.02	-126.34	1,012.23	0.00	0.00	0.00
3,800.00	20.00	178.22	3,621.49	-1,039.21	-125.27	1,046.19	0.00	0.00	0.00
3,900.00	20.00	178.22	3,715.46	-1,073.39	-124.21	1,080.15	0.00	0.00	0.00
4,000.00	20.00	178.22	3,809.43	-1,107.58	-123.14	1,114.11	0.00	0.00	0.00
4,100.00	20.00	178.22	3,903.39	-1,141.76	-122.08	1,148.07	0.00	0.00	0.00
4,121.69	20.00	178.22	3,923.78	-1,149.18	-121.85	1,155.44	0.00	0.00	0.00
Start Drop -2.00									
4,200.00	18.43	178.22	3,997.72	-1,174.94	-121.04	1,181.03	2.00	-2.00	0.00

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-04-82 - Slot V
Company:	OXY USA RMAT	TVD Reference:	GL 8610' & RKB 30' @ 8640.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8610' & RKB 30' @ 8640.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	North Reference:	True
Well:	CC 697-04-82	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)
4,300.00	16.43	178.22	4,093.12	-1,204.88	-120.11	1,210.78	2.00	-2.00	0.00
4,400.00	14.43	178.22	4,189.51	-1,231.48	-119.28	1,237.20	2.00	-2.00	0.00
4,500.00	12.43	178.22	4,286.77	-1,254.70	-118.56	1,260.27	2.00	-2.00	0.00
4,600.00	10.43	178.22	4,384.78	-1,274.52	-117.94	1,279.95	2.00	-2.00	0.00
4,700.00	8.43	178.22	4,483.42	-1,290.90	-117.43	1,296.22	2.00	-2.00	0.00
4,800.00	6.43	178.22	4,582.58	-1,303.83	-117.03	1,309.07	2.00	-2.00	0.00
4,900.00	4.43	178.22	4,682.12	-1,313.29	-116.73	1,318.47	2.00	-2.00	0.00
5,000.00	2.43	178.22	4,781.94	-1,319.28	-116.55	1,324.42	2.00	-2.00	0.00
5,100.00	0.43	178.22	4,881.90	-1,321.78	-116.47	1,326.90	2.00	-2.00	0.00
5,121.69	0.00	0.00	4,903.59	-1,321.86	-116.47	1,326.98	2.00	-2.00	0.00
Start 0.00° Hold At 5121.69'									
5,200.00	0.00	0.00	4,981.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
5,300.00	0.00	0.00	5,081.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
5,400.00	0.00	0.00	5,181.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
5,500.00	0.00	0.00	5,281.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
5,600.00	0.00	0.00	5,381.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
5,700.00	0.00	0.00	5,481.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
5,800.00	0.00	0.00	5,581.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
5,900.00	0.00	0.00	5,681.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
6,000.00	0.00	0.00	5,781.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
6,100.00	0.00	0.00	5,881.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
6,200.00	0.00	0.00	5,981.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
6,300.00	0.00	0.00	6,081.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
6,400.00	0.00	0.00	6,181.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
6,418.10	0.00	0.00	6,200.00	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
Mesaverde									
6,500.00	0.00	0.00	6,281.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
6,563.10	0.00	0.00	6,345.00	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
Base Ohio Creek									
6,600.00	0.00	0.00	6,381.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
6,700.00	0.00	0.00	6,481.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
6,800.00	0.00	0.00	6,581.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
6,900.00	0.00	0.00	6,681.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
7,000.00	0.00	0.00	6,781.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
7,100.00	0.00	0.00	6,881.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
7,177.10	0.00	0.00	6,959.00	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
TOG = 634995.28, 1230215.53									
7,200.00	0.00	0.00	6,981.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
7,300.00	0.00	0.00	7,081.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
7,400.00	0.00	0.00	7,181.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
7,500.00	0.00	0.00	7,281.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
7,600.00	0.00	0.00	7,381.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
7,700.00	0.00	0.00	7,481.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
7,800.00	0.00	0.00	7,581.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
7,900.00	0.00	0.00	7,681.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
8,000.00	0.00	0.00	7,781.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
8,100.00	0.00	0.00	7,881.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
8,200.00	0.00	0.00	7,981.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
8,300.00	0.00	0.00	8,081.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
8,400.00	0.00	0.00	8,181.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
8,500.00	0.00	0.00	8,281.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
8,528.10	0.00	0.00	8,310.00	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
Target = 634995.28, 1230215.53									

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-04-82 - Slot V
Company:	OXY USA RMAT	TVD Reference:	GL 8610' & RKB 30' @ 8640.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8610' & RKB 30' @ 8640.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	North Reference:	True
Well:	CC 697-04-82	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)
8,600.00	0.00	0.00	8,381.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
8,700.00	0.00	0.00	8,481.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
8,800.00	0.00	0.00	8,581.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
8,900.00	0.00	0.00	8,681.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
9,000.00	0.00	0.00	8,781.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
9,100.00	0.00	0.00	8,881.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
9,158.10	0.00	0.00	8,940.00	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
Rollins									
9,200.00	0.00	0.00	8,981.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
9,300.00	0.00	0.00	9,081.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
9,400.00	0.00	0.00	9,181.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
9,500.00	0.00	0.00	9,281.90	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
9,577.10	0.00	0.00	9,359.00	-1,321.86	-116.47	1,326.98	0.00	0.00	0.00
PBHL = 634995.28, 1230215.53									

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 697-04-82 Target	0.00	0.00	8,310.00	-1,321.86	-116.47	634,995.28	1,230,215.53	39° 32' 42.453 N	108° 13' 48.138 W
- plan hits target center									
- Circle (radius 50.00)									

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,418.10	6,200.00	Mesaverde		0.00	
6,563.10	6,345.00	Base Ohio Creek		0.00	
9,158.10	8,940.00	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
1,150.00	1,129.82	-149.62	-86.38	Start 20.00° Hold At 1150.00'
1,250.00	1,223.78	-179.24	-103.48	Start Turn -5.91
1,787.38	1,730.25	-351.19	-146.70	Start 20.00° Hold At 1787.38'
4,121.69	3,923.78	-1,149.18	-121.85	Start Drop -2.00
5,121.69	4,903.59	-1,321.86	-116.47	Start 0.00° Hold At 5121.69'
7,177.10	6,959.00	-1,321.86	-116.47	TOG = 634995.28, 1230215.53
8,528.10	8,310.00	-1,321.86	-116.47	Target = 634995.28, 1230215.53
9,577.10	9,359.00	-1,321.86	-116.47	PBHL = 634995.28, 1230215.53