



Scientific Drilling

Rocky Mountain Operations

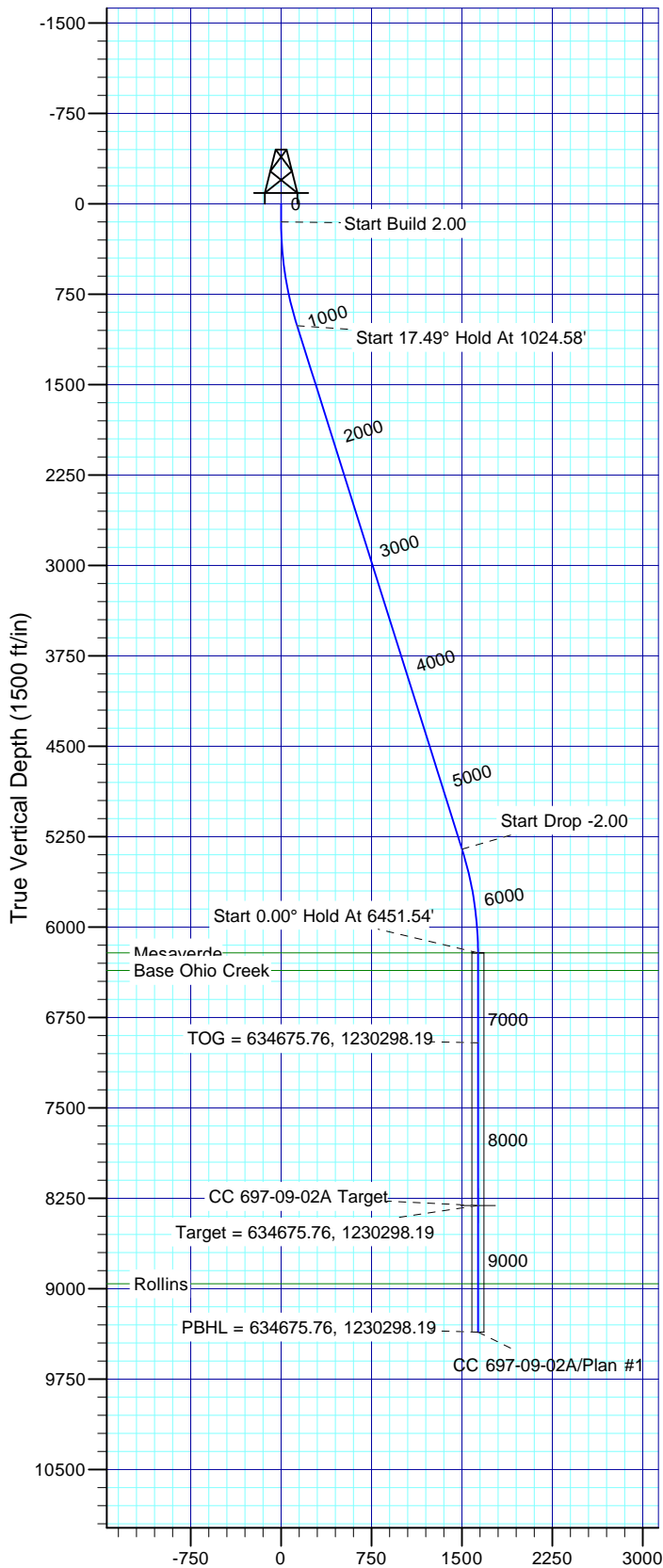
Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-04D Pad



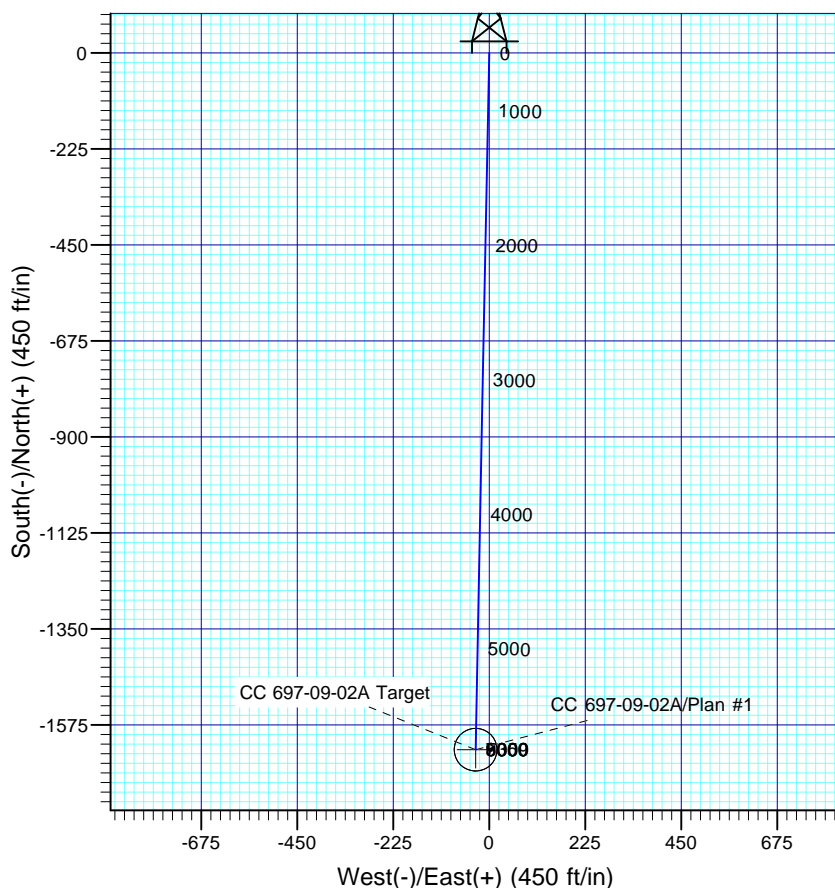
Well Details: CC 697-09-02A

TVD Reference: GL 8629' & 30' @ 8659.00ft (H&P) Ground Level: 8629.00
+N/-S 0.00 +E/-W 0.00 Northing 636306.97 Easting 1230378.97 Latitude 39° 32' 55.460 N Longitude 108° 13' 46.555 W Slot U

T M Azimuths to True North
Magnetic North: 10.47°
Magnetic Field
Strength: 52282.9snT
Dip Angle: 65.76°
Date: 2011/03/22
Model: IGRF2005-10



Vertical Section at 181.11° (1500 ft/in)



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
6214.00	6451.54	Mesaverde
6359.00	6596.54	Base Ohio Creek
8959.00	9196.54	Rollins

Plan: Plan #1

15:53, 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	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	1024.58	17.49	181.11	1011.05	-132.44	-2.57	2.00	181.11	132.46	
4	5576.96	17.49	181.11	5352.95	-1500.47	-29.16	0.00	0.00	1500.75	
5	6451.54	0.00	0.00	6214.00	-1632.91	-31.74	2.00	180.00	1633.21	
6	8546.54	0.00	0.00	8309.00	-1632.91	-31.74	0.00	0.00	1633.21	CC 697-09-02A Target
7	9596.54	0.00	0.00	9359.00	-1632.91	-31.74	0.00	0.00	1633.21	

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-04D Pad
CC 697-09-02A - Slot U**

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 697-09-02A - Slot U
Company:	OXY USA RMAT	TVD Reference:	GL 8629' & 30' @ 8659.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8629' & 30' @ 8659.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	North Reference:	True
Well:	CC 697-09-02A	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
From:	Map	Easting:	1,230,276.10 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in
		Latitude:	39° 32' 47.760 N
		Longitude:	108° 13' 47.570 W
		Grid Convergence:	-1.72 °

Well	CC 697-09-02A - Slot U		
Well Position	+N/-S	779.09 ft	Northing:
	+E/-W	79.50 ft	Easting:
Position Uncertainty	0.00 ft		Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	2011/03/22	10.47	65.76	52,283

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	181.11

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)	(°)	
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	
1,024.58	17.49	181.11	1,011.05	-132.44	-2.57	2.00	2.00	0.00	181.11	
5,576.96	17.49	181.11	5,352.95	-1,500.47	-29.16	0.00	0.00	0.00	0.00	
6,451.54	0.00	0.00	6,214.00	-1,632.91	-31.74	2.00	-2.00	0.00	180.00	
8,546.54	0.00	0.00	8,309.00	-1,632.91	-31.74	0.00	0.00	0.00	0.00	CC 697-09-02A Target
9,596.54	0.00	0.00	9,359.00	-1,632.91	-31.74	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-09-02A - Slot U
Company:	OXY USA RMAT	TVD Reference:	GL 8629' & 30' @ 8659.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8629' & 30' @ 8659.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	North Reference:	True
Well:	CC 697-09-02A	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	181.11	200.00	-0.44	-0.01	0.44	2.00	2.00	0.00
300.00	3.00	181.11	299.93	-3.93	-0.08	3.93	2.00	2.00	0.00
400.00	5.00	181.11	399.68	-10.90	-0.21	10.90	2.00	2.00	0.00
500.00	7.00	181.11	499.13	-21.35	-0.41	21.35	2.00	2.00	0.00
600.00	9.00	181.11	598.15	-35.26	-0.69	35.27	2.00	2.00	0.00
700.00	11.00	181.11	696.63	-52.62	-1.02	52.63	2.00	2.00	0.00
800.00	13.00	181.11	794.44	-73.41	-1.43	73.42	2.00	2.00	0.00
900.00	15.00	181.11	891.46	-97.60	-1.90	97.62	2.00	2.00	0.00
1,000.00	17.00	181.11	987.58	-125.15	-2.43	125.18	2.00	2.00	0.00
1,024.58	17.49	181.11	1,011.05	-132.44	-2.57	132.46	2.00	2.00	0.00
Start 17.49° Hold At 1024.58'									
1,100.00	17.49	181.11	1,082.99	-155.10	-3.01	155.13	0.00	0.00	0.00
1,200.00	17.49	181.11	1,178.37	-185.15	-3.60	185.19	0.00	0.00	0.00
1,300.00	17.49	181.11	1,273.74	-215.21	-4.18	215.25	0.00	0.00	0.00
1,400.00	17.49	181.11	1,369.12	-245.26	-4.77	245.30	0.00	0.00	0.00
1,500.00	17.49	181.11	1,464.50	-275.31	-5.35	275.36	0.00	0.00	0.00
1,600.00	17.49	181.11	1,559.87	-305.36	-5.94	305.42	0.00	0.00	0.00
1,700.00	17.49	181.11	1,655.25	-335.41	-6.52	335.47	0.00	0.00	0.00
1,800.00	17.49	181.11	1,750.62	-365.46	-7.10	365.53	0.00	0.00	0.00
1,900.00	17.49	181.11	1,846.00	-395.51	-7.69	395.59	0.00	0.00	0.00
2,000.00	17.49	181.11	1,941.38	-425.56	-8.27	425.64	0.00	0.00	0.00
2,100.00	17.49	181.11	2,036.75	-455.61	-8.86	455.70	0.00	0.00	0.00
2,200.00	17.49	181.11	2,132.13	-485.66	-9.44	485.75	0.00	0.00	0.00
2,300.00	17.49	181.11	2,227.50	-515.71	-10.02	515.81	0.00	0.00	0.00
2,400.00	17.49	181.11	2,322.88	-545.76	-10.61	545.87	0.00	0.00	0.00
2,500.00	17.49	181.11	2,418.26	-575.82	-11.19	575.92	0.00	0.00	0.00
2,600.00	17.49	181.11	2,513.63	-605.87	-11.78	605.98	0.00	0.00	0.00
2,700.00	17.49	181.11	2,609.01	-635.92	-12.36	636.04	0.00	0.00	0.00
2,800.00	17.49	181.11	2,704.39	-665.97	-12.94	666.09	0.00	0.00	0.00
2,900.00	17.49	181.11	2,799.76	-696.02	-13.53	696.15	0.00	0.00	0.00
3,000.00	17.49	181.11	2,895.14	-726.07	-14.11	726.21	0.00	0.00	0.00
3,100.00	17.49	181.11	2,990.51	-756.12	-14.70	756.26	0.00	0.00	0.00
3,200.00	17.49	181.11	3,085.89	-786.17	-15.28	786.32	0.00	0.00	0.00
3,300.00	17.49	181.11	3,181.27	-816.22	-15.86	816.38	0.00	0.00	0.00
3,400.00	17.49	181.11	3,276.64	-846.27	-16.45	846.43	0.00	0.00	0.00
3,500.00	17.49	181.11	3,372.02	-876.32	-17.03	876.49	0.00	0.00	0.00
3,600.00	17.49	181.11	3,467.39	-906.37	-17.62	906.55	0.00	0.00	0.00
3,700.00	17.49	181.11	3,562.77	-936.42	-18.20	936.60	0.00	0.00	0.00
3,800.00	17.49	181.11	3,658.15	-966.48	-18.79	966.66	0.00	0.00	0.00
3,900.00	17.49	181.11	3,753.52	-996.53	-19.37	996.71	0.00	0.00	0.00
4,000.00	17.49	181.11	3,848.90	-1,026.58	-19.95	1,026.77	0.00	0.00	0.00
4,100.00	17.49	181.11	3,944.28	-1,056.63	-20.54	1,056.83	0.00	0.00	0.00
4,200.00	17.49	181.11	4,039.65	-1,086.68	-21.12	1,086.88	0.00	0.00	0.00
4,300.00	17.49	181.11	4,135.03	-1,116.73	-21.71	1,116.94	0.00	0.00	0.00
4,400.00	17.49	181.11	4,230.40	-1,146.78	-22.29	1,147.00	0.00	0.00	0.00
4,500.00	17.49	181.11	4,325.78	-1,176.83	-22.87	1,177.05	0.00	0.00	0.00
4,600.00	17.49	181.11	4,421.16	-1,206.88	-23.46	1,207.11	0.00	0.00	0.00
4,700.00	17.49	181.11	4,516.53	-1,236.93	-24.04	1,237.17	0.00	0.00	0.00
4,800.00	17.49	181.11	4,611.91	-1,266.98	-24.63	1,267.22	0.00	0.00	0.00
4,900.00	17.49	181.11	4,707.28	-1,297.03	-25.21	1,297.28	0.00	0.00	0.00

Scientific Drilling International

Planning Report

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Company:	OXY USA RMAT	TVD Reference:	GL 8629' & 30' @ 8659.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8629' & 30' @ 8659.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	North Reference:	True
Well:	CC 697-09-02A	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)
5,000.00	17.49	181.11	4,802.66	-1,327.09	-25.79	1,327.34	0.00	0.00	0.00
5,100.00	17.49	181.11	4,898.04	-1,357.14	-26.38	1,357.39	0.00	0.00	0.00
5,200.00	17.49	181.11	4,993.41	-1,387.19	-26.96	1,387.45	0.00	0.00	0.00
5,300.00	17.49	181.11	5,088.79	-1,417.24	-27.55	1,417.51	0.00	0.00	0.00
5,400.00	17.49	181.11	5,184.17	-1,447.29	-28.13	1,447.56	0.00	0.00	0.00
5,500.00	17.49	181.11	5,279.54	-1,477.34	-28.71	1,477.62	0.00	0.00	0.00
5,576.96	17.49	181.11	5,352.95	-1,500.47	-29.16	1,500.75	0.00	0.00	0.00
Start Drop -2.00									
5,600.00	17.03	181.11	5,374.94	-1,507.30	-29.30	1,507.59	2.00	-2.00	0.00
5,700.00	15.03	181.11	5,471.05	-1,534.91	-29.83	1,535.20	2.00	-2.00	0.00
5,800.00	13.03	181.11	5,568.06	-1,559.15	-30.31	1,559.44	2.00	-2.00	0.00
5,900.00	11.03	181.11	5,665.86	-1,579.99	-30.71	1,580.29	2.00	-2.00	0.00
6,000.00	9.03	181.11	5,764.33	-1,597.40	-31.05	1,597.70	2.00	-2.00	0.00
6,100.00	7.03	181.11	5,863.34	-1,611.37	-31.32	1,611.67	2.00	-2.00	0.00
6,200.00	5.03	181.11	5,962.78	-1,621.87	-31.52	1,622.18	2.00	-2.00	0.00
6,300.00	3.03	181.11	6,062.53	-1,628.90	-31.66	1,629.21	2.00	-2.00	0.00
6,400.00	1.03	181.11	6,162.46	-1,632.44	-31.73	1,632.75	2.00	-2.00	0.00
6,451.54	0.00	0.00	6,214.00	-1,632.91	-31.74	1,633.21	2.00	-2.00	0.00
Start 0.00° Hold At 6451.54' - Mesaverde									
6,500.00	0.00	0.00	6,262.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
6,596.54	0.00	0.00	6,359.00	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
Base Ohio Creek									
6,600.00	0.00	0.00	6,362.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
6,700.00	0.00	0.00	6,462.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
6,800.00	0.00	0.00	6,562.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
6,900.00	0.00	0.00	6,662.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
7,000.00	0.00	0.00	6,762.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
7,100.00	0.00	0.00	6,862.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
7,196.54	0.00	0.00	6,959.00	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
TOG = 634675.76, 1230298.19									
7,200.00	0.00	0.00	6,962.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
7,300.00	0.00	0.00	7,062.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
7,400.00	0.00	0.00	7,162.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
7,500.00	0.00	0.00	7,262.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
7,600.00	0.00	0.00	7,362.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
7,700.00	0.00	0.00	7,462.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
7,800.00	0.00	0.00	7,562.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
7,900.00	0.00	0.00	7,662.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
8,000.00	0.00	0.00	7,762.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
8,100.00	0.00	0.00	7,862.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
8,200.00	0.00	0.00	7,962.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
8,300.00	0.00	0.00	8,062.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
8,400.00	0.00	0.00	8,162.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
8,500.00	0.00	0.00	8,262.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
8,546.54	0.00	0.00	8,309.00	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
Target = 634675.76, 1230298.19									
8,600.00	0.00	0.00	8,362.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
8,700.00	0.00	0.00	8,462.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
8,800.00	0.00	0.00	8,562.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
8,900.00	0.00	0.00	8,662.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
9,000.00	0.00	0.00	8,762.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
9,100.00	0.00	0.00	8,862.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
9,196.54	0.00	0.00	8,959.00	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00

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Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-09-02A - Slot U
Company:	OXY USA RMAT	TVD Reference:	GL 8629' & 30' @ 8659.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8629' & 30' @ 8659.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	North Reference:	True
Well:	CC 697-09-02A	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)
Rollins									
9,200.00	0.00	0.00	8,962.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
9,300.00	0.00	0.00	9,062.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
9,400.00	0.00	0.00	9,162.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
9,500.00	0.00	0.00	9,262.46	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00
9,596.54	0.00	0.00	9,359.00	-1,632.91	-31.74	1,633.21	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
CC 697-09-02A Target	0.00	0.00	8,309.00	-1,632.91	-31.74	634,675.76	1,230,298.19	39° 32' 39.321 N	108° 13' 46.960 W
- hit/miss target									
- Shape									
- plan hits target center									
- Circle (radius 50.00)									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
6,451.54	6,214.00	Mesaverde		0.00		
6,596.54	6,359.00	Base Ohio Creek		0.00		
9,196.54	8,959.00	Rollins		0.00		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
150.00	150.00	0.00	0.00	Start Build 2.00
1,024.58	1,011.05	-132.44	-2.57	Start 17.49° Hold At 1024.58'
5,576.96	5,352.95	-1,500.47	-29.16	Start Drop -2.00
6,451.54	6,214.00	-1,632.91	-31.74	Start 0.00° Hold At 6451.54'
7,196.54	6,959.00	-1,632.91	-31.74	TOG = 634675.76, 1230298.19
8,546.54	8,309.00	-1,632.91	-31.74	Target = 634675.76, 1230298.19
9,596.54	9,359.00	-1,632.91	-31.74	PBHL = 634675.76, 1230298.19