



Scientific Drilling
Rocky Mountain Operations

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



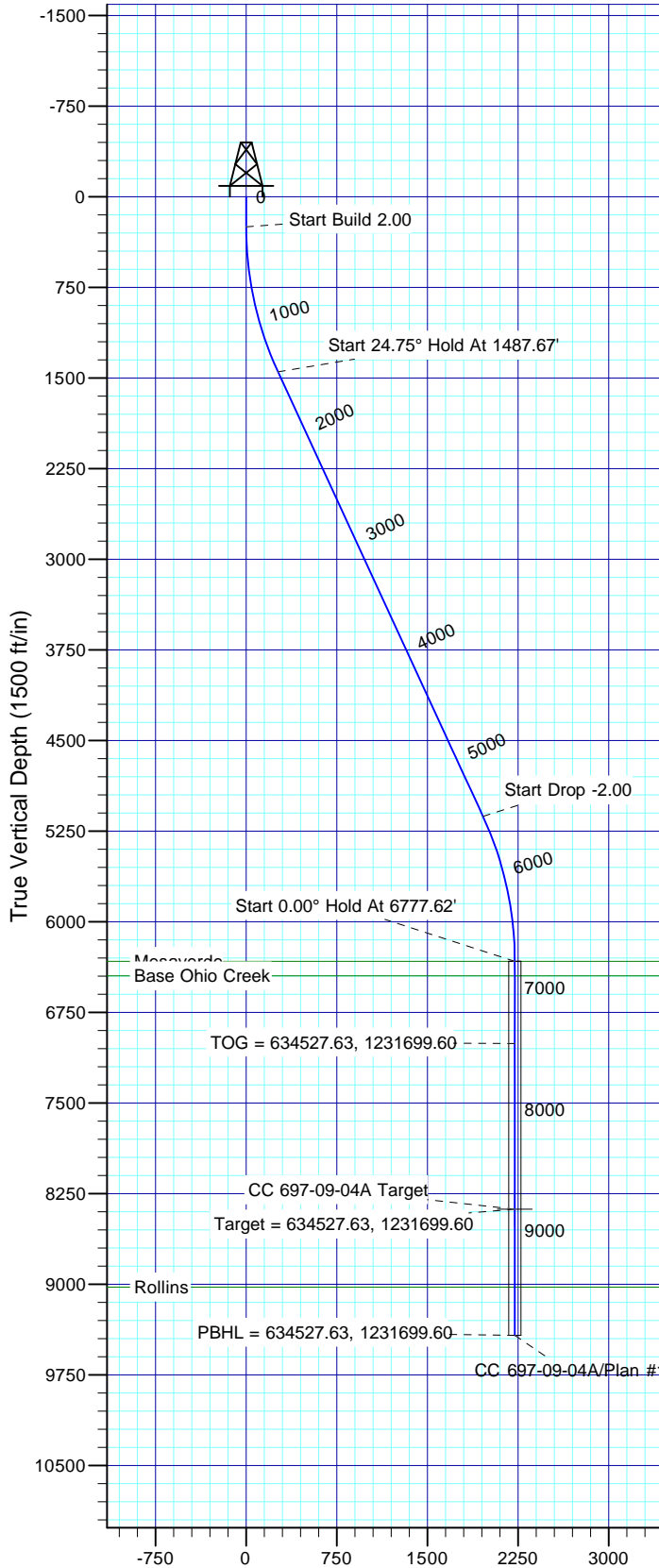
Well Details: CC 697-09-04A

TVD Reference: GL 8629' & RKB 30' @ 8659.00ft (H&P) Ground Level: 8629.00
+N/-S 0.00 +E/-W 0.00 Northing 636330.05 Easting 1230398.13 Latitude 39° 32' 55.694 N Longitude 108° 13' 46.320 W Slot M

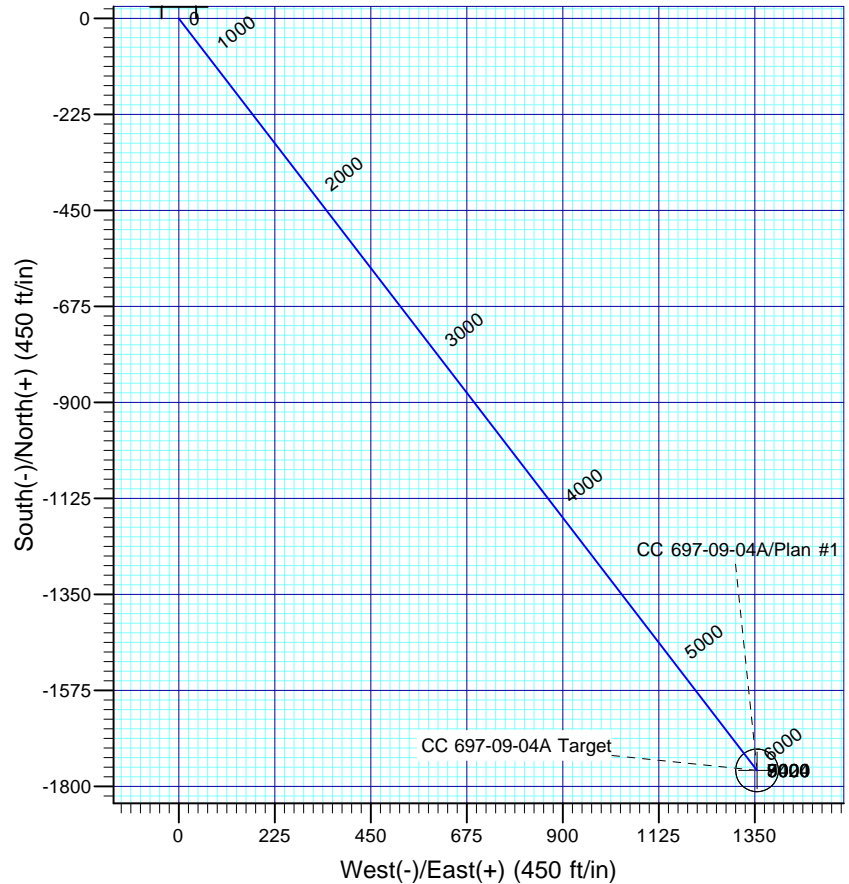


Azimuths to True North
Magnetic North: 10.47°

Magnetic Field
Strength: 52282.4snT
Dip Angle: 65.76°
Date: 2011/03/24
Model: IGRF2005-10



Vertical Section at 142.45° (1500 ft/in)



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
6329.00	6777.62	Mesaverde
6449.00	6897.62	Base Ohio Creek
9024.00	9472.62	Rollins

Plan: Plan #1

15:56, 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	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1487.67	24.75	142.45	1449.53	-208.68	160.43	2.00	142.45	263.22	
4	5539.95	24.75	142.45	5129.47	-1553.84	1194.60	0.00	0.00	1959.97	
5	6777.62	0.00	0.00	6329.00	-1762.52	1355.03	2.00	180.00	2223.19	
6	8828.62	0.00	0.00	8380.00	-1762.52	1355.03	0.00	0.00	2223.19	CC 697-09-04A Target
7	9872.62	0.00	0.00	9424.00	-1762.52	1355.03	0.00	0.00	2223.19	

OXY USA RMAT

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

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 697-09-04A - Slot M
Company:	OXY USA RMAT	TVD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	North Reference:	True
Well:	CC 697-09-04A	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 697-09-04A - Slot M					
Well Position	+N/-S	802.74 ft	Northing:	636,330.05 usft	Latitude:	39° 32' 55.694 N
	+E/-W	97.96 ft	Easting:	1,230,398.13 usft	Longitude:	108° 13' 46.320 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	8,629.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	2011/03/24	10.47	65.76	52,282

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	142.45

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	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,487.67	24.75	142.45	1,449.53	-208.68	160.43	2.00	2.00	0.00	142.45	
5,539.95	24.75	142.45	5,129.47	-1,553.84	1,194.60	0.00	0.00	0.00	0.00	
6,777.62	0.00	0.00	6,329.00	-1,762.52	1,355.03	2.00	-2.00	0.00	180.00	
8,828.62	0.00	0.00	8,380.00	-1,762.52	1,355.03	0.00	0.00	0.00	0.00	CC 697-09-04A Target
9,872.62	0.00	0.00	9,424.00	-1,762.52	1,355.03	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

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Company:	OXY USA RMAT	TVD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	North Reference:	True
Well:	CC 697-09-04A	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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
300.00	1.00	142.45	300.00	-0.35	0.27	0.44	2.00	2.00	0.00
400.00	3.00	142.45	399.93	-3.11	2.39	3.93	2.00	2.00	0.00
500.00	5.00	142.45	499.68	-8.64	6.64	10.90	2.00	2.00	0.00
600.00	7.00	142.45	599.13	-16.93	13.02	21.35	2.00	2.00	0.00
700.00	9.00	142.45	698.15	-27.96	21.50	35.27	2.00	2.00	0.00
800.00	11.00	142.45	796.63	-41.73	32.08	52.63	2.00	2.00	0.00
900.00	13.00	142.45	894.44	-58.21	44.75	73.42	2.00	2.00	0.00
1,000.00	15.00	142.45	991.46	-77.39	59.50	97.62	2.00	2.00	0.00
1,100.00	17.00	142.45	1,087.58	-99.24	76.30	125.18	2.00	2.00	0.00
1,200.00	19.00	142.45	1,182.68	-123.74	95.13	156.08	2.00	2.00	0.00
1,300.00	21.00	142.45	1,276.65	-150.85	115.97	190.28	2.00	2.00	0.00
1,400.00	23.00	142.45	1,369.36	-180.55	138.81	227.74	2.00	2.00	0.00
1,487.67	24.75	142.45	1,449.53	-208.68	160.43	263.22	2.00	2.00	0.00
Start 24.75° Hold At 1487.67'									
1,500.00	24.75	142.45	1,460.72	-212.77	163.58	268.38	0.00	0.00	0.00
1,600.00	24.75	142.45	1,551.54	-245.97	189.10	310.26	0.00	0.00	0.00
1,700.00	24.75	142.45	1,642.35	-279.16	214.62	352.13	0.00	0.00	0.00
1,800.00	24.75	142.45	1,733.16	-312.36	240.14	394.00	0.00	0.00	0.00
1,900.00	24.75	142.45	1,823.97	-345.55	265.66	435.87	0.00	0.00	0.00
2,000.00	24.75	142.45	1,914.78	-378.75	291.18	477.74	0.00	0.00	0.00
2,100.00	24.75	142.45	2,005.59	-411.94	316.70	519.61	0.00	0.00	0.00
2,200.00	24.75	142.45	2,096.41	-445.14	342.22	561.48	0.00	0.00	0.00
2,300.00	24.75	142.45	2,187.22	-478.33	367.74	603.36	0.00	0.00	0.00
2,400.00	24.75	142.45	2,278.03	-511.53	393.27	645.23	0.00	0.00	0.00
2,500.00	24.75	142.45	2,368.84	-544.72	418.79	687.10	0.00	0.00	0.00
2,600.00	24.75	142.45	2,459.65	-577.92	444.31	728.97	0.00	0.00	0.00
2,700.00	24.75	142.45	2,550.47	-611.11	469.83	770.84	0.00	0.00	0.00
2,800.00	24.75	142.45	2,641.28	-644.31	495.35	812.71	0.00	0.00	0.00
2,900.00	24.75	142.45	2,732.09	-677.50	520.87	854.58	0.00	0.00	0.00
3,000.00	24.75	142.45	2,822.90	-710.70	546.39	896.46	0.00	0.00	0.00
3,100.00	24.75	142.45	2,913.71	-743.89	571.91	938.33	0.00	0.00	0.00
3,200.00	24.75	142.45	3,004.52	-777.09	597.43	980.20	0.00	0.00	0.00
3,300.00	24.75	142.45	3,095.34	-810.28	622.95	1,022.07	0.00	0.00	0.00
3,400.00	24.75	142.45	3,186.15	-843.48	648.47	1,063.94	0.00	0.00	0.00
3,500.00	24.75	142.45	3,276.96	-876.67	673.99	1,105.81	0.00	0.00	0.00
3,600.00	24.75	142.45	3,367.77	-909.87	699.51	1,147.68	0.00	0.00	0.00
3,700.00	24.75	142.45	3,458.58	-943.06	725.03	1,189.56	0.00	0.00	0.00
3,800.00	24.75	142.45	3,549.39	-976.26	750.55	1,231.43	0.00	0.00	0.00
3,900.00	24.75	142.45	3,640.21	-1,009.45	776.07	1,273.30	0.00	0.00	0.00
4,000.00	24.75	142.45	3,731.02	-1,042.65	801.59	1,315.17	0.00	0.00	0.00
4,100.00	24.75	142.45	3,821.83	-1,075.84	827.12	1,357.04	0.00	0.00	0.00
4,200.00	24.75	142.45	3,912.64	-1,109.04	852.64	1,398.91	0.00	0.00	0.00
4,300.00	24.75	142.45	4,003.45	-1,142.23	878.16	1,440.78	0.00	0.00	0.00
4,400.00	24.75	142.45	4,094.27	-1,175.43	903.68	1,482.66	0.00	0.00	0.00
4,500.00	24.75	142.45	4,185.08	-1,208.63	929.20	1,524.53	0.00	0.00	0.00
4,600.00	24.75	142.45	4,275.89	-1,241.82	954.72	1,566.40	0.00	0.00	0.00
4,700.00	24.75	142.45	4,366.70	-1,275.02	980.24	1,608.27	0.00	0.00	0.00
4,800.00	24.75	142.45	4,457.51	-1,308.21	1,005.76	1,650.14	0.00	0.00	0.00
4,900.00	24.75	142.45	4,548.32	-1,341.41	1,031.28	1,692.01	0.00	0.00	0.00

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Planning Report

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Project:	Garfield County, CO NAD27	MD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	North Reference:	True
Well:	CC 697-09-04A	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	24.75	142.45	4,639.14	-1,374.60	1,056.80	1,733.88	0.00	0.00	0.00
5,100.00	24.75	142.45	4,729.95	-1,407.80	1,082.32	1,775.76	0.00	0.00	0.00
5,200.00	24.75	142.45	4,820.76	-1,440.99	1,107.84	1,817.63	0.00	0.00	0.00
5,300.00	24.75	142.45	4,911.57	-1,474.19	1,133.36	1,859.50	0.00	0.00	0.00
5,400.00	24.75	142.45	5,002.38	-1,507.38	1,158.88	1,901.37	0.00	0.00	0.00
5,500.00	24.75	142.45	5,093.20	-1,540.58	1,184.40	1,943.24	0.00	0.00	0.00
5,539.95	24.75	142.45	5,129.47	-1,553.84	1,194.60	1,959.97	0.00	0.00	0.00
Start Drop -2.00									
5,600.00	23.55	142.45	5,184.27	-1,573.32	1,209.57	1,984.54	2.00	-2.00	0.00
5,700.00	21.55	142.45	5,276.62	-1,603.72	1,232.95	2,022.89	2.00	-2.00	0.00
5,800.00	19.55	142.45	5,370.25	-1,631.55	1,254.35	2,057.99	2.00	-2.00	0.00
5,900.00	17.55	142.45	5,465.04	-1,656.77	1,273.74	2,089.81	2.00	-2.00	0.00
6,000.00	15.55	142.45	5,560.90	-1,679.36	1,291.10	2,118.30	2.00	-2.00	0.00
6,100.00	13.55	142.45	5,657.68	-1,699.28	1,306.41	2,143.42	2.00	-2.00	0.00
6,200.00	11.55	142.45	5,755.29	-1,716.51	1,319.66	2,165.16	2.00	-2.00	0.00
6,300.00	9.55	142.45	5,853.59	-1,731.02	1,330.82	2,183.47	2.00	-2.00	0.00
6,400.00	7.55	142.45	5,952.47	-1,742.81	1,339.88	2,198.34	2.00	-2.00	0.00
6,500.00	5.55	142.45	6,051.82	-1,751.86	1,346.84	2,209.75	2.00	-2.00	0.00
6,600.00	3.55	142.45	6,151.50	-1,758.15	1,351.68	2,217.69	2.00	-2.00	0.00
6,700.00	1.55	142.45	6,251.39	-1,761.68	1,354.39	2,222.14	2.00	-2.00	0.00
6,777.62	0.00	0.00	6,329.00	-1,762.52	1,355.03	2,223.19	2.00	-2.00	0.00
Start 0.00° Hold At 6777.62' - Mesaverde									
6,800.00	0.00	0.00	6,351.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
6,897.62	0.00	0.00	6,449.00	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
Base Ohio Creek									
6,900.00	0.00	0.00	6,451.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
7,000.00	0.00	0.00	6,551.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
7,100.00	0.00	0.00	6,651.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
7,200.00	0.00	0.00	6,751.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
7,300.00	0.00	0.00	6,851.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
7,400.00	0.00	0.00	6,951.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
7,457.62	0.00	0.00	7,009.00	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
TOG = 634527.63, 1231699.60									
7,500.00	0.00	0.00	7,051.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
7,600.00	0.00	0.00	7,151.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
7,700.00	0.00	0.00	7,251.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
7,800.00	0.00	0.00	7,351.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
7,900.00	0.00	0.00	7,451.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
8,000.00	0.00	0.00	7,551.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
8,100.00	0.00	0.00	7,651.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
8,200.00	0.00	0.00	7,751.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
8,300.00	0.00	0.00	7,851.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
8,400.00	0.00	0.00	7,951.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
8,500.00	0.00	0.00	8,051.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
8,600.00	0.00	0.00	8,151.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
8,700.00	0.00	0.00	8,251.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
8,800.00	0.00	0.00	8,351.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
8,828.62	0.00	0.00	8,380.00	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
Target = 634527.63, 1231699.60									
8,900.00	0.00	0.00	8,451.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
9,000.00	0.00	0.00	8,551.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
9,100.00	0.00	0.00	8,651.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
9,200.00	0.00	0.00	8,751.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00

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Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-09-04A - Slot M
Company:	OXY USA RMAT	TVD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	North Reference:	True
Well:	CC 697-09-04A	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)
9,300.00	0.00	0.00	8,851.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
9,400.00	0.00	0.00	8,951.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
9,472.62	0.00	0.00	9,024.00	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
Rollins									
9,500.00	0.00	0.00	9,051.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
9,600.00	0.00	0.00	9,151.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
9,700.00	0.00	0.00	9,251.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
9,800.00	0.00	0.00	9,351.38	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
9,872.62	0.00	0.00	9,424.00	-1,762.52	1,355.03	2,223.19	0.00	0.00	0.00
PBHL = 634527.63, 1231699.60									

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 697-09-04A Target - plan hits target center - Circle (radius 50.00)	0.00	0.00	8,380.00	-1,762.52	1,355.03	634,527.63	1,231,699.60	39° 32' 38.273 N	108° 13' 29.022 W

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,777.62	6,329.00	Mesaverde		0.00	
6,897.62	6,449.00	Base Ohio Creek		0.00	
9,472.62	9,024.00	Rollins		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
250.00	250.00	0.00	0.00	Start Build 2.00
1,487.67	1,449.53	-208.68	160.43	Start 24.75° Hold At 1487.67'
5,539.95	5,129.47	-1,553.84	1,194.60	Start Drop -2.00
6,777.62	6,329.00	-1,762.52	1,355.03	Start 0.00° Hold At 6777.62'
7,457.62	7,009.00	-1,762.52	1,355.03	TOG = 634527.63, 1231699.60
8,828.62	8,380.00	-1,762.52	1,355.03	Target = 634527.63, 1231699.60
9,872.62	9,424.00	-1,762.52	1,355.03	PBHL = 634527.63, 1231699.60