



Scientific Drilling
Rocky Mountain Operations

Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-16-28 Pad



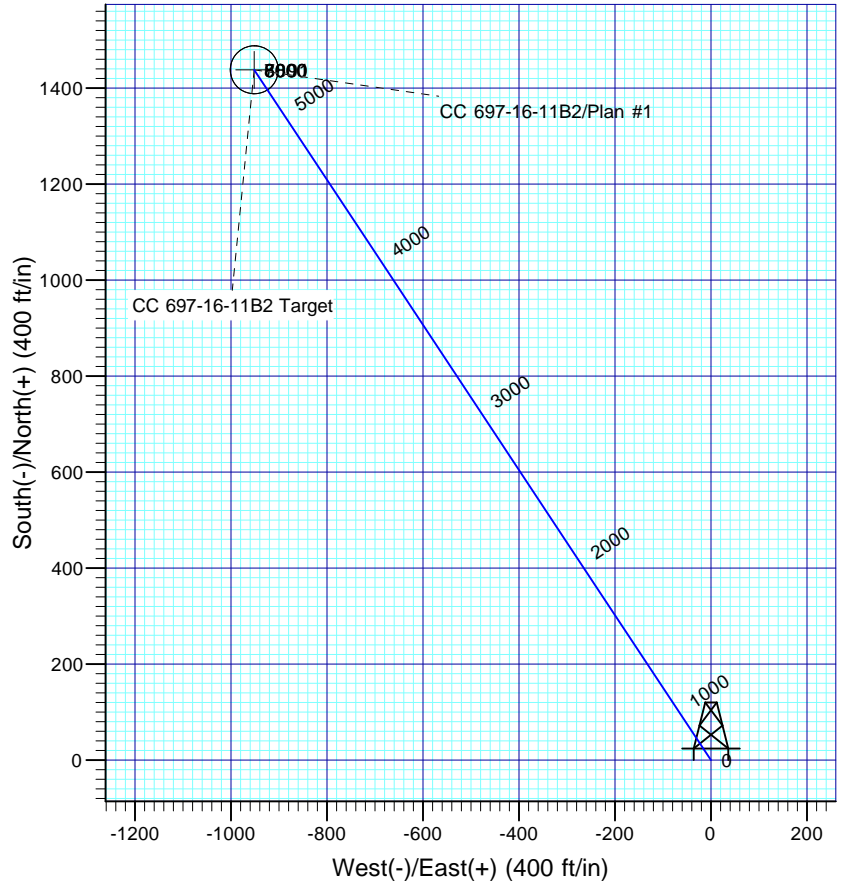
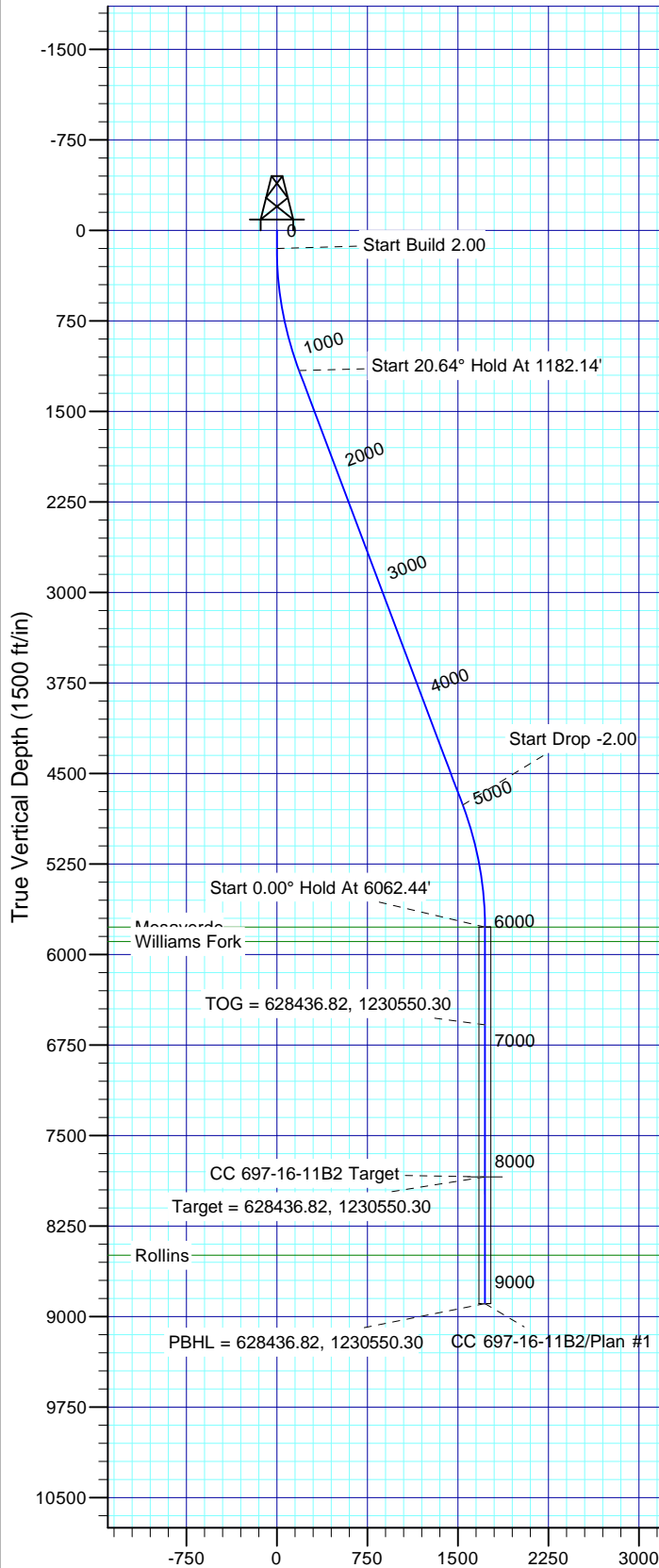
Well Details: CC 697-16-11B2

TVD Reference: GL 8301' & RKB 30' @ 8331.00ft (H&P) Ground Level: 8301.00
+N/-S 0.00 +E/-W 0.00 Northing 626970.64 Easting 1231458.15 Latitude 39° 31' 23.545 N Longitude 108° 13' 29.210 W Slot A



Azimuths to True North
Magnetic North: 10.48°

Magnetic Field
Strength: 52284.5nT
Dip Angle: 65.74°
Date: 2011/02/04
Model: IGRF2005-10



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5771.00	6062.44	Mesaverde
5891.00	6182.44	Williams Fork
8491.00	8782.44	Rollins

Plan: Plan #1

6:30, February 07 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	1182.14	20.64	326.52	1159.96	153.41	-101.48	2.00	326.52	183.93	
4	5030.29	20.64	326.52	4761.04	1284.89	-849.94	0.00	0.00	1540.56	
5	6062.44	0.00	0.00	5771.00	1438.29	-951.42	2.00	180.00	1724.50	
6	8132.44	0.00	0.00	7841.00	1438.29	-951.42	0.00	0.00	1724.50	CC 697-16-11B2 Target
7	9182.44	0.00	0.00	8891.00	1438.29	-951.42	0.00	0.00	1724.50	

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-16-28 Pad
CC 697-16-11B2 - Slot A**

OH

Plan: Plan #1

Standard Planning Report

07 February, 2011

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-16-11B2 - Slot A
Company:	OXY USA RMAT	TVD Reference:	GL 8301' & RKB 30' @ 8331.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8301' & RKB 30' @ 8331.00ft (H&P)
Site:	Cascade Creek 697-16-28 Pad	North Reference:	True
Well:	CC 697-16-11B2	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 697-16-28 Pad, Sec. 16 T6N R97W			
Site Position:		Northing:	627,311.42 usft	Latitude:	39° 31' 26.935 N
From:	Map	Easting:	1,231,538.04 usft	Longitude:	108° 13' 28.321 W
Position Uncertainty:	0.00 ft	Slot Radius:	0.000 in	Grid Convergence:	-1.72 °

Well	CC 697-16-11B2 - Slot A					
Well Position	+N/-S	-343.02 ft	Northing:	626,970.64 usft	Latitude:	39° 31' 23.545 N
	+E/-W	-69.64 ft	Easting:	1,231,458.15 usft	Longitude:	108° 13' 29.210 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	8,301.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	2011/02/04	10.48	65.74	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	326.52

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	
1,182.14	20.64	326.52	1,159.96	153.41	-101.48	2.00	2.00	0.00	326.52	
5,030.29	20.64	326.52	4,761.04	1,284.89	-849.94	0.00	0.00	0.00	0.00	
6,062.44	0.00	0.00	5,771.00	1,438.29	-951.42	2.00	-2.00	0.00	180.00	
8,132.44	0.00	0.00	7,841.00	1,438.29	-951.42	0.00	0.00	0.00	0.00	CC 697-16-11B2 Tarç
9,182.44	0.00	0.00	8,891.00	1,438.29	-951.42	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-16-11B2 - Slot A
Company:	OXY USA RMAT	TVD Reference:	GL 8301' & RKB 30' @ 8331.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8301' & RKB 30' @ 8331.00ft (H&P)
Site:	Cascade Creek 697-16-28 Pad	North Reference:	True
Well:	CC 697-16-11B2	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	326.52	200.00	0.36	-0.24	0.44	2.00	2.00	0.00
300.00	3.00	326.52	299.93	3.27	-2.17	3.93	2.00	2.00	0.00
400.00	5.00	326.52	399.68	9.09	-6.01	10.90	2.00	2.00	0.00
500.00	7.00	326.52	499.13	17.81	-11.78	21.35	2.00	2.00	0.00
600.00	9.00	326.52	598.15	29.42	-19.46	35.27	2.00	2.00	0.00
700.00	11.00	326.52	696.63	43.90	-29.04	52.63	2.00	2.00	0.00
800.00	13.00	326.52	794.44	61.24	-40.51	73.42	2.00	2.00	0.00
900.00	15.00	326.52	891.46	81.41	-53.86	97.62	2.00	2.00	0.00
1,000.00	17.00	326.52	987.58	104.40	-69.06	125.18	2.00	2.00	0.00
1,100.00	19.00	326.52	1,082.68	130.17	-86.11	156.08	2.00	2.00	0.00
1,182.14	20.64	326.52	1,159.96	153.41	-101.48	183.93	2.00	2.00	0.00
Start 20.64° Hold At 1182.14'									
1,200.00	20.64	326.52	1,176.67	158.66	-104.95	190.23	0.00	0.00	0.00
1,300.00	20.64	326.52	1,270.25	188.06	-124.40	225.48	0.00	0.00	0.00
1,400.00	20.64	326.52	1,363.83	217.46	-143.85	260.73	0.00	0.00	0.00
1,500.00	20.64	326.52	1,457.41	246.87	-163.30	295.99	0.00	0.00	0.00
1,600.00	20.64	326.52	1,550.99	276.27	-182.75	331.24	0.00	0.00	0.00
1,700.00	20.64	326.52	1,644.57	305.67	-202.20	366.50	0.00	0.00	0.00
1,800.00	20.64	326.52	1,738.15	335.08	-221.65	401.75	0.00	0.00	0.00
1,900.00	20.64	326.52	1,831.73	364.48	-241.10	437.01	0.00	0.00	0.00
2,000.00	20.64	326.52	1,925.31	393.88	-260.55	472.26	0.00	0.00	0.00
2,100.00	20.64	326.52	2,018.88	423.29	-280.00	507.51	0.00	0.00	0.00
2,200.00	20.64	326.52	2,112.46	452.69	-299.45	542.77	0.00	0.00	0.00
2,300.00	20.64	326.52	2,206.04	482.09	-318.90	578.02	0.00	0.00	0.00
2,400.00	20.64	326.52	2,299.62	511.50	-338.35	613.28	0.00	0.00	0.00
2,500.00	20.64	326.52	2,393.20	540.90	-357.80	648.53	0.00	0.00	0.00
2,600.00	20.64	326.52	2,486.78	570.30	-377.25	683.78	0.00	0.00	0.00
2,700.00	20.64	326.52	2,580.36	599.71	-396.70	719.04	0.00	0.00	0.00
2,800.00	20.64	326.52	2,673.94	629.11	-416.15	754.29	0.00	0.00	0.00
2,900.00	20.64	326.52	2,767.52	658.51	-435.60	789.55	0.00	0.00	0.00
3,000.00	20.64	326.52	2,861.10	687.92	-455.05	824.80	0.00	0.00	0.00
3,100.00	20.64	326.52	2,954.68	717.32	-474.50	860.06	0.00	0.00	0.00
3,200.00	20.64	326.52	3,048.26	746.72	-493.95	895.31	0.00	0.00	0.00
3,300.00	20.64	326.52	3,141.84	776.13	-513.40	930.56	0.00	0.00	0.00
3,400.00	20.64	326.52	3,235.42	805.53	-532.85	965.82	0.00	0.00	0.00
3,500.00	20.64	326.52	3,329.00	834.93	-552.30	1,001.07	0.00	0.00	0.00
3,600.00	20.64	326.52	3,422.58	864.34	-571.75	1,036.33	0.00	0.00	0.00
3,700.00	20.64	326.52	3,516.16	893.74	-591.20	1,071.58	0.00	0.00	0.00
3,800.00	20.64	326.52	3,609.74	923.14	-610.65	1,106.83	0.00	0.00	0.00
3,900.00	20.64	326.52	3,703.32	952.55	-630.10	1,142.09	0.00	0.00	0.00
4,000.00	20.64	326.52	3,796.90	981.95	-649.55	1,177.34	0.00	0.00	0.00
4,100.00	20.64	326.52	3,890.48	1,011.35	-669.00	1,212.60	0.00	0.00	0.00
4,200.00	20.64	326.52	3,984.06	1,040.76	-688.45	1,247.85	0.00	0.00	0.00
4,300.00	20.64	326.52	4,077.64	1,070.16	-707.90	1,283.11	0.00	0.00	0.00
4,400.00	20.64	326.52	4,171.22	1,099.56	-727.35	1,318.36	0.00	0.00	0.00
4,500.00	20.64	326.52	4,264.80	1,128.97	-746.80	1,353.61	0.00	0.00	0.00
4,600.00	20.64	326.52	4,358.38	1,158.37	-766.25	1,388.87	0.00	0.00	0.00
4,700.00	20.64	326.52	4,451.95	1,187.77	-785.70	1,424.12	0.00	0.00	0.00
4,800.00	20.64	326.52	4,545.53	1,217.18	-805.15	1,459.38	0.00	0.00	0.00
4,900.00	20.64	326.52	4,639.11	1,246.58	-824.60	1,494.63	0.00	0.00	0.00

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-16-11B2 - Slot A
Company:	OXY USA RMAT	TVD Reference:	GL 8301' & RKB 30' @ 8331.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8301' & RKB 30' @ 8331.00ft (H&P)
Site:	Cascade Creek 697-16-28 Pad	North Reference:	True
Well:	CC 697-16-11B2	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	20.64	326.52	4,732.69	1,275.98	-844.05	1,529.88	0.00	0.00	0.00	
5,030.29	20.64	326.52	4,761.04	1,284.89	-849.94	1,540.56	0.00	0.00	0.00	
Start Drop -2.00										
5,100.00	19.25	326.52	4,826.57	1,304.72	-863.06	1,564.34	2.00	-2.00	0.00	
5,200.00	17.25	326.52	4,921.53	1,330.84	-880.33	1,595.66	2.00	-2.00	0.00	
5,300.00	15.25	326.52	5,017.53	1,354.17	-895.77	1,623.64	2.00	-2.00	0.00	
5,400.00	13.25	326.52	5,114.45	1,374.70	-909.35	1,648.25	2.00	-2.00	0.00	
5,500.00	11.25	326.52	5,212.17	1,392.39	-921.05	1,669.46	2.00	-2.00	0.00	
5,600.00	9.25	326.52	5,310.57	1,407.23	-930.87	1,687.25	2.00	-2.00	0.00	
5,700.00	7.25	326.52	5,409.53	1,419.20	-938.78	1,701.60	2.00	-2.00	0.00	
5,800.00	5.25	326.52	5,508.93	1,428.28	-944.79	1,712.48	2.00	-2.00	0.00	
5,900.00	3.25	326.52	5,608.65	1,434.45	-948.88	1,719.89	2.00	-2.00	0.00	
6,000.00	1.25	326.52	5,708.57	1,437.73	-951.04	1,723.82	2.00	-2.00	0.00	
6,062.44	0.00	0.00	5,771.00	1,438.29	-951.42	1,724.50	2.00	-2.00	0.00	
Start 0.00° Hold At 6062.44' - Mesaverde										
6,100.00	0.00	0.00	5,808.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
6,182.44	0.00	0.00	5,891.00	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
Williams Fork										
6,200.00	0.00	0.00	5,908.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,008.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,108.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,208.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,308.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,408.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,508.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
6,872.44	0.00	0.00	6,581.00	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
TOG = 628436.82, 1230550.30										
6,900.00	0.00	0.00	6,608.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,708.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
7,100.00	0.00	0.00	6,808.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
7,200.00	0.00	0.00	6,908.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,008.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,108.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,208.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,308.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,408.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,508.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,608.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,708.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
8,100.00	0.00	0.00	7,808.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
8,132.44	0.00	0.00	7,841.00	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
Target = 628436.82, 1230550.30										
8,200.00	0.00	0.00	7,908.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,008.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,108.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,208.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,308.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
8,700.00	0.00	0.00	8,408.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
8,782.44	0.00	0.00	8,491.00	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
Rollins										
8,800.00	0.00	0.00	8,508.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
8,900.00	0.00	0.00	8,608.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,708.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-16-11B2 - Slot A
Company:	OXY USA RMAT	TVD Reference:	GL 8301' & RKB 30' @ 8331.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8301' & RKB 30' @ 8331.00ft (H&P)
Site:	Cascade Creek 697-16-28 Pad	North Reference:	True
Well:	CC 697-16-11B2	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)
9,100.00	0.00	0.00	8,808.56	1,438.29	-951.42	1,724.50	0.00	0.00	0.00
9,182.44	0.00	0.00	8,891.00	1,438.29	-951.42	1,724.50	0.00	0.00	0.00
PBHL = 628436.82, 1230550.30									

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 697-16-11B2 Target - plan hits target center - Circle (radius 50.00)	0.00	0.00	7,841.00	1,438.29	-951.42	628,436.82	1,230,550.29	39° 31' 37.760 N	108° 13' 41.352 W

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,062.44	5,771.00	Mesaverde		0.00	
6,182.44	5,891.00	Williams Fork		0.00	
8,782.44	8,491.00	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
1,182.14	1,159.96	153.41	-101.48	Start 20.64° Hold At 1182.14'
5,030.29	4,761.04	1,284.89	-849.94	Start Drop -2.00
6,062.44	5,771.00	1,438.29	-951.42	Start 0.00° Hold At 6062.44'
6,872.44	6,581.00	1,438.29	-951.42	TOG = 628436.82, 1230550.30
8,132.44	7,841.00	1,438.29	-951.42	Target = 628436.82, 1230550.30
9,182.44	8,891.00	1,438.29	-951.42	PBHL = 628436.82, 1230550.30