



Scientific Drilling
Rocky Mountain Operations

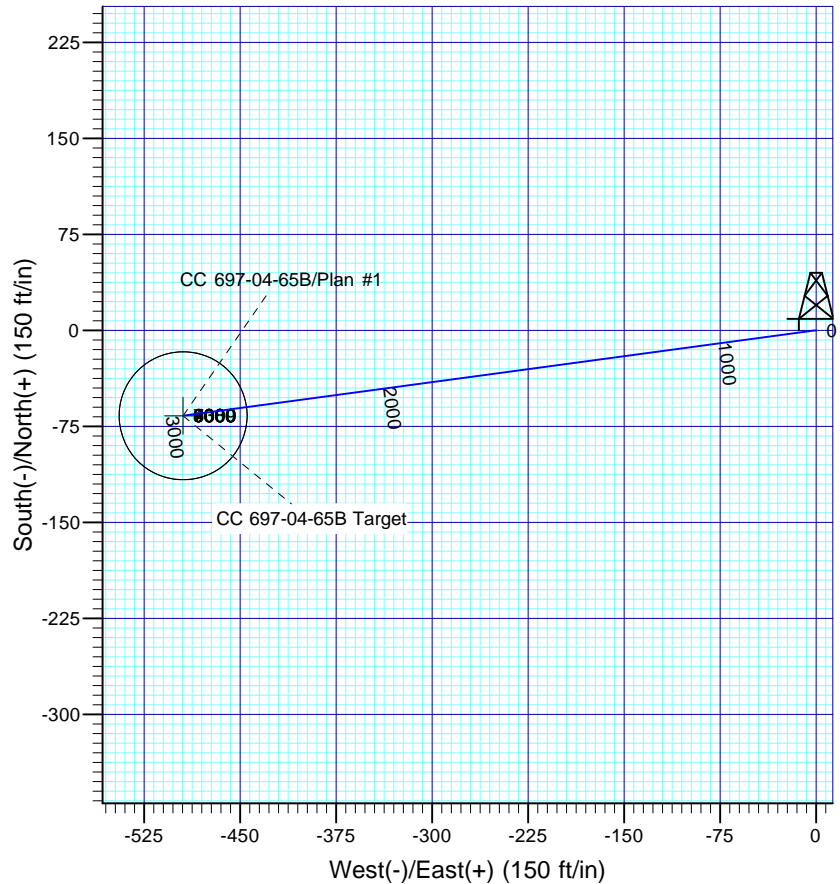
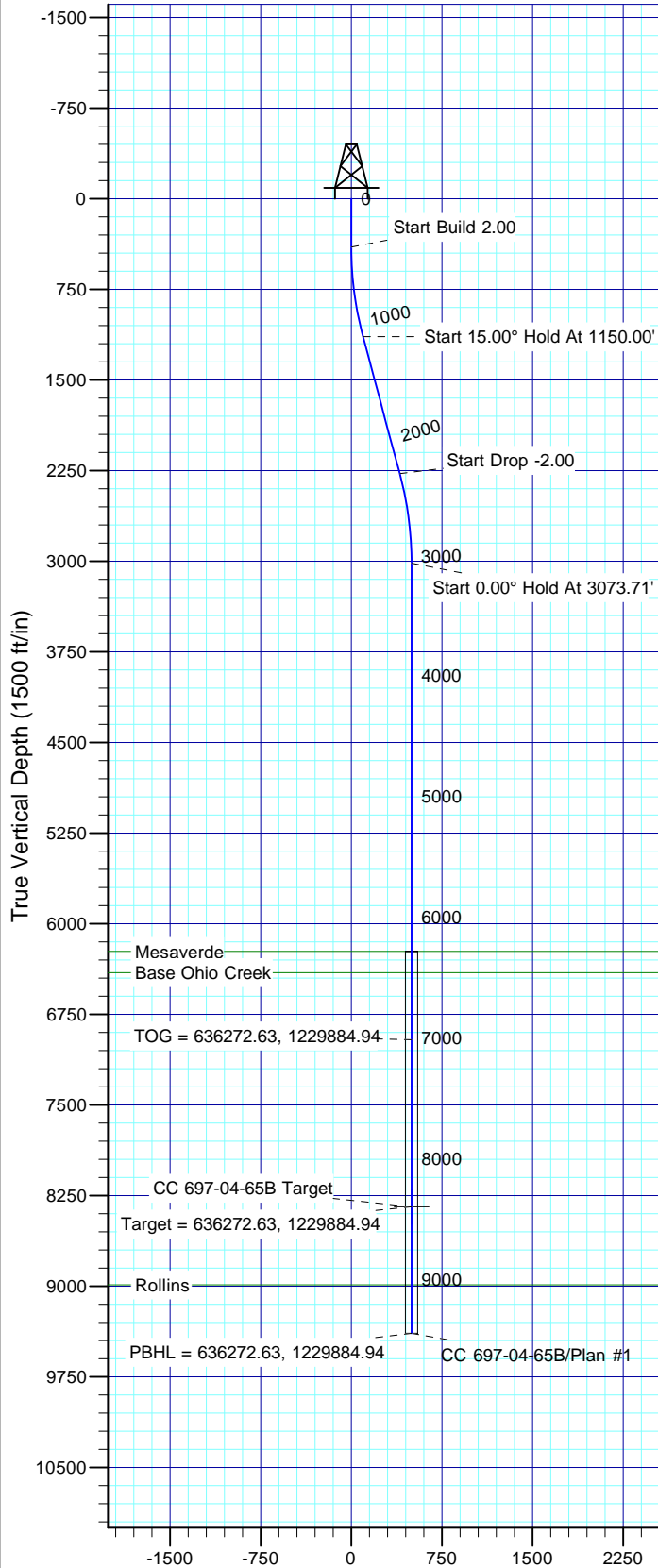
Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-04D Pad



Well Details: CC 697-04-65B

TVD Reference: GL 8629' & RKB 30' @ 8659.00ft (H&P) Ground Level: 8629.00
+N/-S 0.00 +E/-W 0.00 Northing 636324.58 Easting 1230381.24 Latitude 39° 32' 55.635 N Longitude 108° 13' 46.533 W Slot R

T M Azimuths to True North
Magnetic North: 10.47°
Magnetic Field
Strength: 52282.7snT
Dip Angle: 65.76°
Date: 2011/03/23
Model: IGRF2005-10



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
6229.00	6286.07	Mesaverde
6404.00	6461.07	Base Ohio Creek
8989.00	9046.07	Rollins

Plan: Plan #1

15:00, 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	400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
3	1150.00	15.00	262.30	1141.46	-13.07	-96.74	2.00	262.30	97.62	
4	2323.71	15.00	262.30	2275.18	-53.76	-397.78	0.00	0.00	401.39	
5	3073.71	0.00	0.00	3016.64	-66.83	-494.51	2.00	180.00	499.01	
6	8400.07	0.00	0.00	8343.00	-66.83	-494.51	0.00	0.00	499.01	CC 697-04-65B Target
7	9446.07	0.00	0.00	9389.00	-66.83	-494.51	0.00	0.00	499.01	

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-04D Pad
CC 697-04-65B - Slot R**

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 697-04-65B - Slot R
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 697-04-65B	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 697-04-65B - Slot R		
Well Position	+N/-S	796.76 ft	Northing: 636,324.58 usft
	+E/-W	81.24 ft	Easting: 1,230,381.24 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	Latitude: 39° 32' 55.635 N
			Longitude: 108° 13' 46.533 W
			Ground Level: 8,629.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	2011/03/23	10.47	65.76	52,283

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	262.30

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	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,150.00	15.00	262.30	1,141.46	-13.07	-96.74	2.00	2.00	0.00	262.30	
2,323.71	15.00	262.30	2,275.18	-53.76	-397.78	0.00	0.00	0.00	0.00	
3,073.71	0.00	0.00	3,016.64	-66.83	-494.51	2.00	-2.00	0.00	180.00	
8,400.07	0.00	0.00	8,343.00	-66.83	-494.51	0.00	0.00	0.00	0.00	CC 697-04-65B Target
9,446.07	0.00	0.00	9,389.00	-66.83	-494.51	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-04-65B - Slot R
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 697-04-65B	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
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
500.00	2.00	262.30	499.98	-0.23	-1.73	1.75	2.00	2.00	0.00
600.00	4.00	262.30	599.84	-0.93	-6.92	6.98	2.00	2.00	0.00
700.00	6.00	262.30	699.45	-2.10	-15.55	15.69	2.00	2.00	0.00
800.00	8.00	262.30	798.70	-3.73	-27.63	27.88	2.00	2.00	0.00
900.00	10.00	262.30	897.47	-5.83	-43.13	43.52	2.00	2.00	0.00
1,000.00	12.00	262.30	995.62	-8.38	-62.04	62.60	2.00	2.00	0.00
1,100.00	14.00	262.30	1,093.06	-11.40	-84.33	85.10	2.00	2.00	0.00
1,150.00	15.00	262.30	1,141.46	-13.07	-96.74	97.62	2.00	2.00	0.00
Start 15.00° Hold At 1150.00'									
1,200.00	15.00	262.30	1,189.76	-14.81	-109.56	110.56	0.00	0.00	0.00
1,300.00	15.00	262.30	1,286.35	-18.27	-135.21	136.44	0.00	0.00	0.00
1,400.00	15.00	262.30	1,382.94	-21.74	-160.86	162.32	0.00	0.00	0.00
1,500.00	15.00	262.30	1,479.54	-25.21	-186.51	188.20	0.00	0.00	0.00
1,600.00	15.00	262.30	1,576.13	-28.67	-212.16	214.08	0.00	0.00	0.00
1,700.00	15.00	262.30	1,672.72	-32.14	-237.80	239.97	0.00	0.00	0.00
1,800.00	15.00	262.30	1,769.31	-35.61	-263.45	265.85	0.00	0.00	0.00
1,900.00	15.00	262.30	1,865.91	-39.07	-289.10	291.73	0.00	0.00	0.00
2,000.00	15.00	262.30	1,962.50	-42.54	-314.75	317.61	0.00	0.00	0.00
2,100.00	15.00	262.30	2,059.09	-46.01	-340.40	343.49	0.00	0.00	0.00
2,200.00	15.00	262.30	2,155.68	-49.47	-366.05	369.38	0.00	0.00	0.00
2,300.00	15.00	262.30	2,252.28	-52.94	-391.70	395.26	0.00	0.00	0.00
2,323.71	15.00	262.30	2,275.18	-53.76	-397.78	401.39	0.00	0.00	0.00
Start Drop -2.00									
2,400.00	13.47	262.30	2,349.12	-56.27	-416.37	420.16	2.00	-2.00	0.00
2,500.00	11.47	262.30	2,446.76	-59.17	-437.77	441.75	2.00	-2.00	0.00
2,600.00	9.47	262.30	2,545.09	-61.60	-455.79	459.93	2.00	-2.00	0.00
2,700.00	7.47	262.30	2,643.99	-63.57	-470.39	474.67	2.00	-2.00	0.00
2,800.00	5.47	262.30	2,743.35	-65.08	-481.57	485.94	2.00	-2.00	0.00
2,900.00	3.47	262.30	2,843.04	-66.13	-489.30	493.74	2.00	-2.00	0.00
3,000.00	1.47	262.30	2,942.94	-66.71	-493.57	498.06	2.00	-2.00	0.00
3,073.71	0.00	0.00	3,016.64	-66.83	-494.51	499.01	2.00	-2.00	0.00
Start 0.00° Hold At 3073.71'									
3,100.00	0.00	0.00	3,042.93	-66.83	-494.51	499.01	0.00	0.00	0.00
3,200.00	0.00	0.00	3,142.93	-66.83	-494.51	499.01	0.00	0.00	0.00
3,300.00	0.00	0.00	3,242.93	-66.83	-494.51	499.01	0.00	0.00	0.00
3,400.00	0.00	0.00	3,342.93	-66.83	-494.51	499.01	0.00	0.00	0.00
3,500.00	0.00	0.00	3,442.93	-66.83	-494.51	499.01	0.00	0.00	0.00
3,600.00	0.00	0.00	3,542.93	-66.83	-494.51	499.01	0.00	0.00	0.00
3,700.00	0.00	0.00	3,642.93	-66.83	-494.51	499.01	0.00	0.00	0.00
3,800.00	0.00	0.00	3,742.93	-66.83	-494.51	499.01	0.00	0.00	0.00
3,900.00	0.00	0.00	3,842.93	-66.83	-494.51	499.01	0.00	0.00	0.00
4,000.00	0.00	0.00	3,942.93	-66.83	-494.51	499.01	0.00	0.00	0.00
4,100.00	0.00	0.00	4,042.93	-66.83	-494.51	499.01	0.00	0.00	0.00
4,200.00	0.00	0.00	4,142.93	-66.83	-494.51	499.01	0.00	0.00	0.00
4,300.00	0.00	0.00	4,242.93	-66.83	-494.51	499.01	0.00	0.00	0.00
4,400.00	0.00	0.00	4,342.93	-66.83	-494.51	499.01	0.00	0.00	0.00
4,500.00	0.00	0.00	4,442.93	-66.83	-494.51	499.01	0.00	0.00	0.00
4,600.00	0.00	0.00	4,542.93	-66.83	-494.51	499.01	0.00	0.00	0.00

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Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-04-65B - Slot R
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 697-04-65B	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)
4,700.00	0.00	0.00	4,642.93	-66.83	-494.51	499.01	0.00	0.00	0.00
4,800.00	0.00	0.00	4,742.93	-66.83	-494.51	499.01	0.00	0.00	0.00
4,900.00	0.00	0.00	4,842.93	-66.83	-494.51	499.01	0.00	0.00	0.00
5,000.00	0.00	0.00	4,942.93	-66.83	-494.51	499.01	0.00	0.00	0.00
5,100.00	0.00	0.00	5,042.93	-66.83	-494.51	499.01	0.00	0.00	0.00
5,200.00	0.00	0.00	5,142.93	-66.83	-494.51	499.01	0.00	0.00	0.00
5,300.00	0.00	0.00	5,242.93	-66.83	-494.51	499.01	0.00	0.00	0.00
5,400.00	0.00	0.00	5,342.93	-66.83	-494.51	499.01	0.00	0.00	0.00
5,500.00	0.00	0.00	5,442.93	-66.83	-494.51	499.01	0.00	0.00	0.00
5,600.00	0.00	0.00	5,542.93	-66.83	-494.51	499.01	0.00	0.00	0.00
5,700.00	0.00	0.00	5,642.93	-66.83	-494.51	499.01	0.00	0.00	0.00
5,800.00	0.00	0.00	5,742.93	-66.83	-494.51	499.01	0.00	0.00	0.00
5,900.00	0.00	0.00	5,842.93	-66.83	-494.51	499.01	0.00	0.00	0.00
6,000.00	0.00	0.00	5,942.93	-66.83	-494.51	499.01	0.00	0.00	0.00
6,100.00	0.00	0.00	6,042.93	-66.83	-494.51	499.01	0.00	0.00	0.00
6,200.00	0.00	0.00	6,142.93	-66.83	-494.51	499.01	0.00	0.00	0.00
6,286.07	0.00	0.00	6,229.00	-66.83	-494.51	499.01	0.00	0.00	0.00
Mesaverde									
6,300.00	0.00	0.00	6,242.93	-66.83	-494.51	499.01	0.00	0.00	0.00
6,400.00	0.00	0.00	6,342.93	-66.83	-494.51	499.01	0.00	0.00	0.00
6,461.07	0.00	0.00	6,404.00	-66.83	-494.51	499.01	0.00	0.00	0.00
Base Ohio Creek									
6,500.00	0.00	0.00	6,442.93	-66.83	-494.51	499.01	0.00	0.00	0.00
6,600.00	0.00	0.00	6,542.93	-66.83	-494.51	499.01	0.00	0.00	0.00
6,700.00	0.00	0.00	6,642.93	-66.83	-494.51	499.01	0.00	0.00	0.00
6,800.00	0.00	0.00	6,742.93	-66.83	-494.51	499.01	0.00	0.00	0.00
6,900.00	0.00	0.00	6,842.93	-66.83	-494.51	499.01	0.00	0.00	0.00
7,000.00	0.00	0.00	6,942.93	-66.83	-494.51	499.01	0.00	0.00	0.00
7,016.07	0.00	0.00	6,959.00	-66.83	-494.51	499.01	0.00	0.00	0.00
TOG = 636272.63, 1229884.94									
7,100.00	0.00	0.00	7,042.93	-66.83	-494.51	499.01	0.00	0.00	0.00
7,200.00	0.00	0.00	7,142.93	-66.83	-494.51	499.01	0.00	0.00	0.00
7,300.00	0.00	0.00	7,242.93	-66.83	-494.51	499.01	0.00	0.00	0.00
7,400.00	0.00	0.00	7,342.93	-66.83	-494.51	499.01	0.00	0.00	0.00
7,500.00	0.00	0.00	7,442.93	-66.83	-494.51	499.01	0.00	0.00	0.00
7,600.00	0.00	0.00	7,542.93	-66.83	-494.51	499.01	0.00	0.00	0.00
7,700.00	0.00	0.00	7,642.93	-66.83	-494.51	499.01	0.00	0.00	0.00
7,800.00	0.00	0.00	7,742.93	-66.83	-494.51	499.01	0.00	0.00	0.00
7,900.00	0.00	0.00	7,842.93	-66.83	-494.51	499.01	0.00	0.00	0.00
8,000.00	0.00	0.00	7,942.93	-66.83	-494.51	499.01	0.00	0.00	0.00
8,100.00	0.00	0.00	8,042.93	-66.83	-494.51	499.01	0.00	0.00	0.00
8,200.00	0.00	0.00	8,142.93	-66.83	-494.51	499.01	0.00	0.00	0.00
8,300.00	0.00	0.00	8,242.93	-66.83	-494.51	499.01	0.00	0.00	0.00
8,400.00	0.00	0.00	8,342.93	-66.83	-494.51	499.01	0.00	0.00	0.00
8,400.07	0.00	0.00	8,343.00	-66.83	-494.51	499.01	0.00	0.00	0.00
Target = 636272.63, 1229884.94									
8,500.00	0.00	0.00	8,442.93	-66.83	-494.51	499.01	0.00	0.00	0.00
8,600.00	0.00	0.00	8,542.93	-66.83	-494.51	499.01	0.00	0.00	0.00
8,700.00	0.00	0.00	8,642.93	-66.83	-494.51	499.01	0.00	0.00	0.00
8,800.00	0.00	0.00	8,742.93	-66.83	-494.51	499.01	0.00	0.00	0.00
8,900.00	0.00	0.00	8,842.93	-66.83	-494.51	499.01	0.00	0.00	0.00
9,000.00	0.00	0.00	8,942.93	-66.83	-494.51	499.01	0.00	0.00	0.00
9,046.07	0.00	0.00	8,989.00	-66.83	-494.51	499.01	0.00	0.00	0.00

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Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-04-65B - Slot R
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 697-04-65B	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									
9,100.00	0.00	0.00	9,042.93	-66.83	-494.51	499.01	0.00	0.00	0.00
9,200.00	0.00	0.00	9,142.93	-66.83	-494.51	499.01	0.00	0.00	0.00
9,300.00	0.00	0.00	9,242.93	-66.83	-494.51	499.01	0.00	0.00	0.00
9,400.00	0.00	0.00	9,342.93	-66.83	-494.51	499.01	0.00	0.00	0.00
9,446.07	0.00	0.00	9,389.00	-66.83	-494.51	499.01	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
- hit/miss target									
- Shape									
CC 697-04-65B Target	0.00	260.56	8,343.00	-66.83	-494.51	636,272.64	1,229,884.94	39° 32' 54.974 N	108° 13' 52.846 W
- plan hits target center									
- Circle (radius 50.00)									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
6,286.07	6,229.00	Mesaverde		0.00		
6,461.07	6,404.00	Base Ohio Creek		0.00		
9,046.07	8,989.00	Rollins		0.00		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
400.00	400.00	0.00	0.00	Start Build 2.00
1,150.00	1,141.46	-13.07	-96.74	Start 15.00° Hold At 1150.00'
2,323.71	2,275.18	-53.76	-397.78	Start Drop -2.00
3,073.71	3,016.64	-66.83	-494.51	Start 0.00° Hold At 3073.71'
7,016.07	6,959.00	-66.83	-494.51	TOG = 636272.63, 1229884.94
8,400.07	8,343.00	-66.83	-494.51	Target = 636272.63, 1229884.94
9,446.07	9,389.00	-66.83	-494.51	PBHL = 636272.63, 1229884.94