



Scientific Drilling
Rocky Mountain Operations

Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-05C Pad



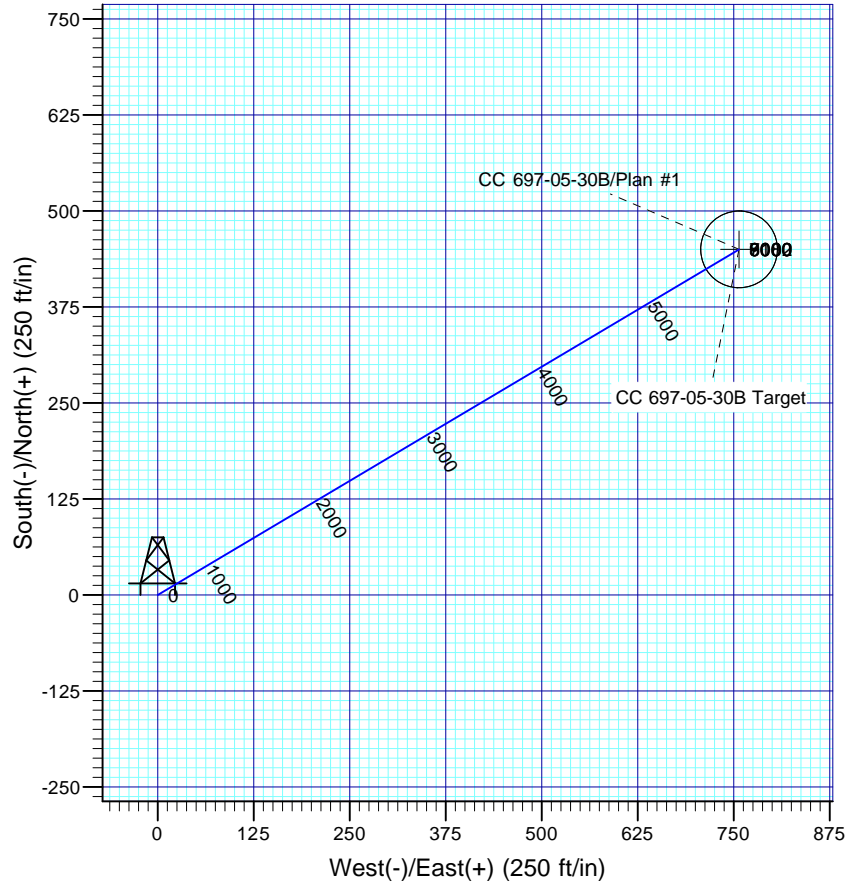
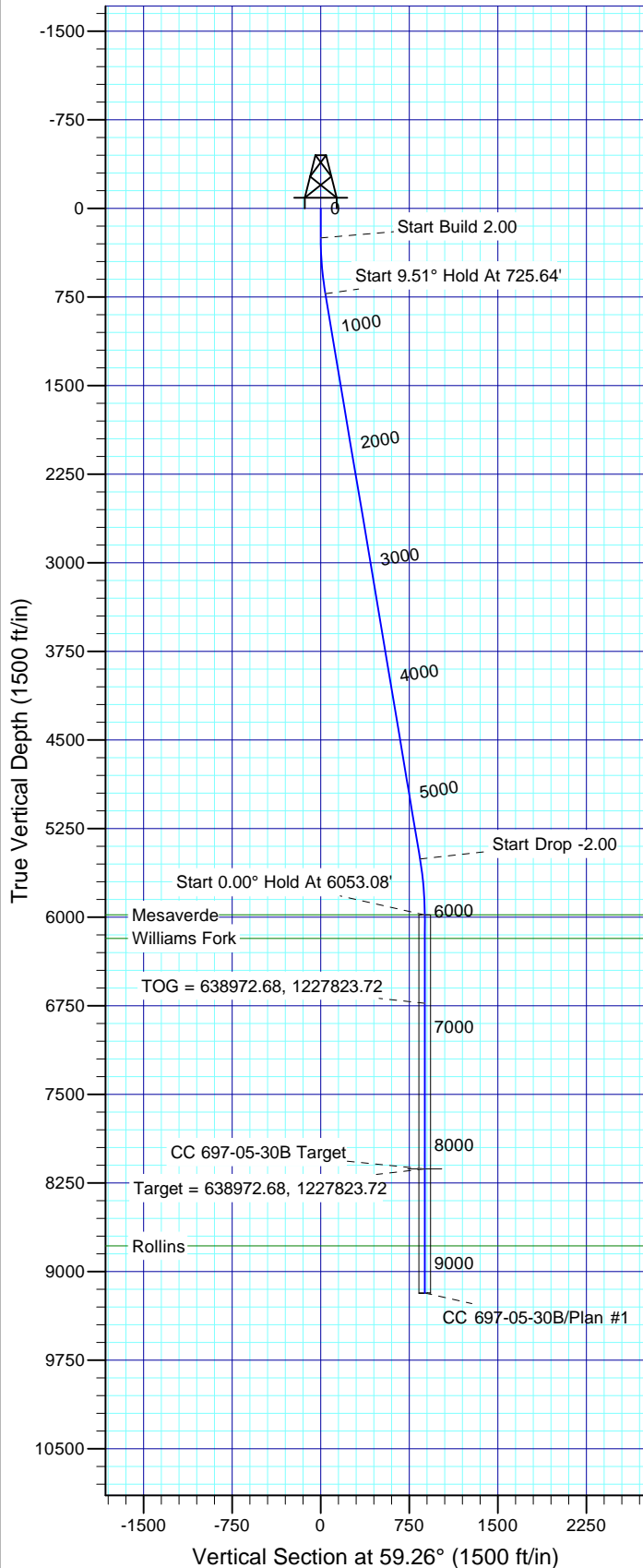
Well Details: CC 697-05-30B

TVD Reference: GL 8429' & RKB 30' @ 8459.00ft (H&P) Ground Level: 8429.00
+N/-S 0.00 +E/-W 0.00 Northing 638545.62 Easting 1227053.55 Latitude 39° 33' 16.586 N Longitude 108° 14' 29.851 W Slot T



Azimuths to True North
Magnetic North: 10.51°

Magnetic Field
Strength: 52311.6snT
Dip Angle: 65.77°
Date: 2010/12/16
Model: IGRF2005-10



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5981.00	6052.08	Mesaverde
6180.00	6251.08	Williams Fork
8782.00	8853.08	Rollins

Plan: Plan #1

14:23, December 28 2010
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	725.64	9.51	59.26	723.46	20.13	33.86	2.00	59.26	39.40	
4	5577.44	9.51	59.26	5508.54	429.96	723.07	0.00	0.00	841.25	
5	6053.08	0.00	0.00	5982.00	450.10	756.93	2.00	180.00	880.64	
6	8203.08	0.00	0.00	8132.00	450.10	756.93	0.00	0.00	880.64	CC 697-05-30B Target
7	9253.08	0.00	0.00	9182.00	450.10	756.93	0.00	0.00	880.64	

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-05C Pad
CC 697-05-30B - Slot T**

OH

Plan: Plan #1

Standard Planning Report

28 December, 2010

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-05-30B - Slot T
Company:	OXY USA RMAT	TVD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Site:	Cascade Creek 697-05C Pad	North Reference:	True
Well:	CC 697-05-30B	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 697-05C Pad, Sec. 5 T6S R97W			
Site Position:		Northing:	637,463.43 usft	Latitude:	39° 33' 5.626 N
From:	Map	Easting:	1,226,150.07 usft	Longitude:	108° 14' 40.963 W
Position Uncertainty:	0.00 ft	Slot Radius:	0.000 in	Grid Convergence:	-1.73 °

Well	CC 697-05-30B - Slot T					
Well Position	+N/-S	1,109.00 ft	Northing:	638,545.63 usft	Latitude:	39° 33' 16.586 N
	+E/-W	870.38 ft	Easting:	1,227,053.55 usft	Longitude:	108° 14' 29.851 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	8,429.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	2010/12/16	10.51	65.77	52,312

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	59.26

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	
725.64	9.51	59.26	723.46	20.13	33.86	2.00	2.00	0.00	59.26	
5,577.44	9.51	59.26	5,508.54	429.96	723.07	0.00	0.00	0.00	0.00	
6,053.08	0.00	0.00	5,982.00	450.10	756.93	2.00	-2.00	0.00	180.00	
8,203.08	0.00	0.00	8,132.00	450.10	756.93	0.00	0.00	0.00	0.00	CC 697-05-30B Target
9,253.08	0.00	0.00	9,182.00	450.10	756.93	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-05-30B - Slot T
Company:	OXY USA RMAT	TVD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Site:	Cascade Creek 697-05C Pad	North Reference:	True
Well:	CC 697-05-30B	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	59.26	300.00	0.22	0.38	0.44	2.00	2.00	0.00
400.00	3.00	59.26	399.93	2.01	3.37	3.93	2.00	2.00	0.00
500.00	5.00	59.26	499.68	5.57	9.37	10.90	2.00	2.00	0.00
600.00	7.00	59.26	599.13	10.91	18.35	21.35	2.00	2.00	0.00
700.00	9.00	59.26	698.15	18.03	30.32	35.27	2.00	2.00	0.00
725.64	9.51	59.26	723.46	20.13	33.86	39.40	2.00	2.00	0.00
Start 9.51° Hold At 725.64'									
800.00	9.51	59.26	796.80	26.42	44.42	51.68	0.00	0.00	0.00
900.00	9.51	59.26	895.42	34.86	58.63	68.21	0.00	0.00	0.00
1,000.00	9.51	59.26	994.04	43.31	72.83	84.74	0.00	0.00	0.00
1,100.00	9.51	59.26	1,092.67	51.76	87.04	101.26	0.00	0.00	0.00
1,200.00	9.51	59.26	1,191.29	60.20	101.24	117.79	0.00	0.00	0.00
1,300.00	9.51	59.26	1,289.92	68.65	115.45	134.32	0.00	0.00	0.00
1,400.00	9.51	59.26	1,388.54	77.10	129.66	150.85	0.00	0.00	0.00
1,500.00	9.51	59.26	1,487.17	85.54	143.86	167.37	0.00	0.00	0.00
1,600.00	9.51	59.26	1,585.79	93.99	158.07	183.90	0.00	0.00	0.00
1,700.00	9.51	59.26	1,684.42	102.44	172.27	200.43	0.00	0.00	0.00
1,800.00	9.51	59.26	1,783.04	110.88	186.48	216.95	0.00	0.00	0.00
1,900.00	9.51	59.26	1,881.67	119.33	200.68	233.48	0.00	0.00	0.00
2,000.00	9.51	59.26	1,980.29	127.78	214.89	250.01	0.00	0.00	0.00
2,100.00	9.51	59.26	2,078.92	136.23	229.09	266.53	0.00	0.00	0.00
2,200.00	9.51	59.26	2,177.54	144.67	243.30	283.06	0.00	0.00	0.00
2,300.00	9.51	59.26	2,276.17	153.12	257.50	299.59	0.00	0.00	0.00
2,400.00	9.51	59.26	2,374.79	161.57	271.71	316.12	0.00	0.00	0.00
2,500.00	9.51	59.26	2,473.42	170.01	285.91	332.64	0.00	0.00	0.00
2,600.00	9.51	59.26	2,572.04	178.46	300.12	349.17	0.00	0.00	0.00
2,700.00	9.51	59.26	2,670.67	186.91	314.32	365.70	0.00	0.00	0.00
2,800.00	9.51	59.26	2,769.29	195.35	328.53	382.22	0.00	0.00	0.00
2,900.00	9.51	59.26	2,867.92	203.80	342.73	398.75	0.00	0.00	0.00
3,000.00	9.51	59.26	2,966.54	212.25	356.94	415.28	0.00	0.00	0.00
3,100.00	9.51	59.26	3,065.17	220.69	371.15	431.80	0.00	0.00	0.00
3,200.00	9.51	59.26	3,163.79	229.14	385.35	448.33	0.00	0.00	0.00
3,300.00	9.51	59.26	3,262.42	237.59	399.56	464.86	0.00	0.00	0.00
3,400.00	9.51	59.26	3,361.04	246.04	413.76	481.38	0.00	0.00	0.00
3,500.00	9.51	59.26	3,459.67	254.48	427.97	497.91	0.00	0.00	0.00
3,600.00	9.51	59.26	3,558.29	262.93	442.17	514.44	0.00	0.00	0.00
3,700.00	9.51	59.26	3,656.92	271.38	456.38	530.97	0.00	0.00	0.00
3,800.00	9.51	59.26	3,755.54	279.82	470.58	547.49	0.00	0.00	0.00
3,900.00	9.51	59.26	3,854.17	288.27	484.79	564.02	0.00	0.00	0.00
4,000.00	9.51	59.26	3,952.79	296.72	498.99	580.55	0.00	0.00	0.00
4,100.00	9.51	59.26	4,051.42	305.16	513.20	597.07	0.00	0.00	0.00
4,200.00	9.51	59.26	4,150.04	313.61	527.40	613.60	0.00	0.00	0.00
4,300.00	9.51	59.26	4,248.66	322.06	541.61	630.13	0.00	0.00	0.00
4,400.00	9.51	59.26	4,347.29	330.50	555.81	646.65	0.00	0.00	0.00
4,500.00	9.51	59.26	4,445.91	338.95	570.02	663.18	0.00	0.00	0.00
4,600.00	9.51	59.26	4,544.54	347.40	584.22	679.71	0.00	0.00	0.00
4,700.00	9.51	59.26	4,643.16	355.85	598.43	696.24	0.00	0.00	0.00
4,800.00	9.51	59.26	4,741.79	364.29	612.64	712.76	0.00	0.00	0.00
4,900.00	9.51	59.26	4,840.41	372.74	626.84	729.29	0.00	0.00	0.00

Scientific Drilling International

Planning Report

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Company:	OXY USA RMAT	TVD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Site:	Cascade Creek 697-05C Pad	North Reference:	True
Well:	CC 697-05-30B	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	9.51	59.26	4,939.04	381.19	641.05	745.82	0.00	0.00	0.00
5,100.00	9.51	59.26	5,037.66	389.63	655.25	762.34	0.00	0.00	0.00
5,200.00	9.51	59.26	5,136.29	398.08	669.46	778.87	0.00	0.00	0.00
5,300.00	9.51	59.26	5,234.91	406.53	683.66	795.40	0.00	0.00	0.00
5,400.00	9.51	59.26	5,333.54	414.97	697.87	811.92	0.00	0.00	0.00
5,500.00	9.51	59.26	5,432.16	423.42	712.07	828.45	0.00	0.00	0.00
5,577.44	9.51	59.26	5,508.54	429.96	723.07	841.25	0.00	0.00	0.00
Start Drop -2.00									
5,600.00	9.06	59.26	5,530.80	431.82	726.20	844.89	2.00	-2.00	0.00
5,700.00	7.06	59.26	5,629.81	438.99	738.26	858.91	2.00	-2.00	0.00
5,800.00	5.06	59.26	5,729.24	444.39	747.33	869.47	2.00	-2.00	0.00
5,900.00	3.06	59.26	5,828.99	448.01	753.42	876.56	2.00	-2.00	0.00
6,000.00	1.06	59.26	5,928.92	449.85	756.51	880.15	2.00	-2.00	0.00
6,052.08	0.02	59.26	5,981.00	450.10	756.93	880.64	2.00	-2.00	0.00
Mesaverde									
6,053.08	0.00	0.00	5,982.00	450.10	756.93	880.64	2.00	-2.00	0.00
Start 0.00° Hold At 6053.08'									
6,100.00	0.00	0.00	6,028.92	450.10	756.93	880.64	0.00	0.00	0.00
6,200.00	0.00	0.00	6,128.92	450.10	756.93	880.64	0.00	0.00	0.00
6,251.08	0.00	0.00	6,180.00	450.10	756.93	880.64	0.00	0.00	0.00
Williams Fork									
6,300.00	0.00	0.00	6,228.92	450.10	756.93	880.64	0.00	0.00	0.00
6,400.00	0.00	0.00	6,328.92	450.10	756.93	880.64	0.00	0.00	0.00
6,500.00	0.00	0.00	6,428.92	450.10	756.93	880.64	0.00	0.00	0.00
6,600.00	0.00	0.00	6,528.92	450.10	756.93	880.64	0.00	0.00	0.00
6,700.00	0.00	0.00	6,628.92	450.10	756.93	880.64	0.00	0.00	0.00
6,800.00	0.00	0.00	6,728.92	450.10	756.93	880.64	0.00	0.00	0.00
6,800.08	0.00	0.00	6,729.00	450.10	756.93	880.64	0.00	0.00	0.00
TOG = 638972.68, 1227823.72									
6,900.00	0.00	0.00	6,828.92	450.10	756.93	880.64	0.00	0.00	0.00
7,000.00	0.00	0.00	6,928.92	450.10	756.93	880.64	0.00	0.00	0.00
7,100.00	0.00	0.00	7,028.92	450.10	756.93	880.64	0.00	0.00	0.00
7,200.00	0.00	0.00	7,128.92	450.10	756.93	880.64	0.00	0.00	0.00
7,300.00	0.00	0.00	7,228.92	450.10	756.93	880.64	0.00	0.00	0.00
7,400.00	0.00	0.00	7,328.92	450.10	756.93	880.64	0.00	0.00	0.00
7,500.00	0.00	0.00	7,428.92	450.10	756.93	880.64	0.00	0.00	0.00
7,600.00	0.00	0.00	7,528.92	450.10	756.93	880.64	0.00	0.00	0.00
7,700.00	0.00	0.00	7,628.92	450.10	756.93	880.64	0.00	0.00	0.00
7,800.00	0.00	0.00	7,728.92	450.10	756.93	880.64	0.00	0.00	0.00
7,900.00	0.00	0.00	7,828.92	450.10	756.93	880.64	0.00	0.00	0.00
8,000.00	0.00	0.00	7,928.92	450.10	756.93	880.64	0.00	0.00	0.00
8,100.00	0.00	0.00	8,028.92	450.10	756.93	880.64	0.00	0.00	0.00
8,200.00	0.00	0.00	8,128.92	450.10	756.93	880.64	0.00	0.00	0.00
8,203.08	0.00	0.00	8,132.00	450.10	756.93	880.64	0.00	0.00	0.00
Target = 638972.68, 1227823.72									
8,300.00	0.00	0.00	8,228.92	450.10	756.93	880.64	0.00	0.00	0.00
8,400.00	0.00	0.00	8,328.92	450.10	756.93	880.64	0.00	0.00	0.00
8,500.00	0.00	0.00	8,428.92	450.10	756.93	880.64	0.00	0.00	0.00
8,600.00	0.00	0.00	8,528.92	450.10	756.93	880.64	0.00	0.00	0.00
8,700.00	0.00	0.00	8,628.92	450.10	756.93	880.64	0.00	0.00	0.00
8,800.00	0.00	0.00	8,728.92	450.10	756.93	880.64	0.00	0.00	0.00
8,853.08	0.00	0.00	8,782.00	450.10	756.93	880.64	0.00	0.00	0.00
Rollins									

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-05-30B - Slot T
Company:	OXY USA RMAT	TVD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Site:	Cascade Creek 697-05C Pad	North Reference:	True
Well:	CC 697-05-30B	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)
8,900.00	0.00	0.00	8,828.92	450.10	756.93	880.64	0.00	0.00	0.00
9,000.00	0.00	0.00	8,928.92	450.10	756.93	880.64	0.00	0.00	0.00
9,100.00	0.00	0.00	9,028.92	450.10	756.93	880.64	0.00	0.00	0.00
9,200.00	0.00	0.00	9,128.92	450.10	756.93	880.64	0.00	0.00	0.00
9,253.08	0.00	0.00	9,182.00	450.10	756.93	880.64	0.00	0.00	0.00
PBHL = 638972.68, 1227823.72									

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 697-05-30B Target	0.00	0.00	8,132.00	450.10	756.93	638,972.68	1,227,823.72	39° 33' 21.035 N	108° 14' 20.187 W
- plan hits target center									
- Circle (radius 50.00)									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
6,052.08	5,981.00	Mesaverde		0.00		
6,251.08	6,180.00	Williams Fork		0.00		
8,853.08	8,782.00	Rollins		0.00		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
250.00	250.00	0.00	0.00	Start Build 2.00
725.64	723.46	20.13	33.86	Start 9.51° Hold At 725.64'
5,577.44	5,508.54	429.96	723.07	Start Drop -2.00
6,053.08	5,982.00	450.10	756.93	Start 0.00° Hold At 6053.08'
6,800.08	6,729.00	450.10	756.93	TOG = 638972.68, 1227823.72
8,203.08	8,132.00	450.10	756.93	Target = 638972.68, 1227823.72
9,253.08	9,182.00	450.10	756.93	PBHL = 638972.68, 1227823.72