



Scientific Drilling
Rocky Mountain Operations

Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-17A Pad



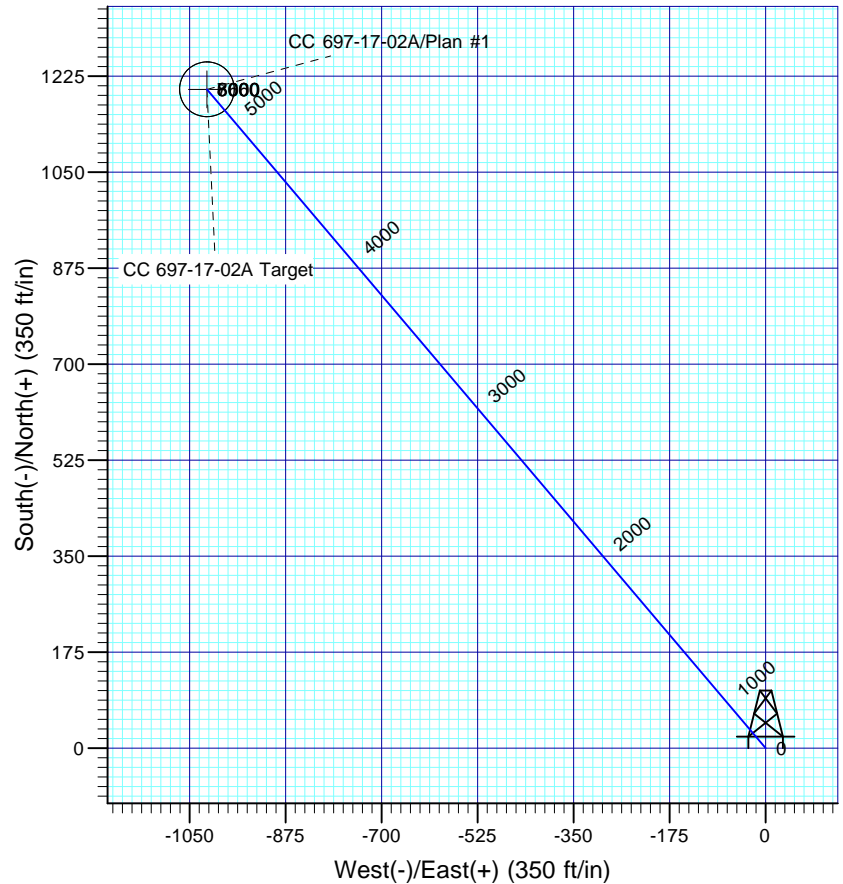
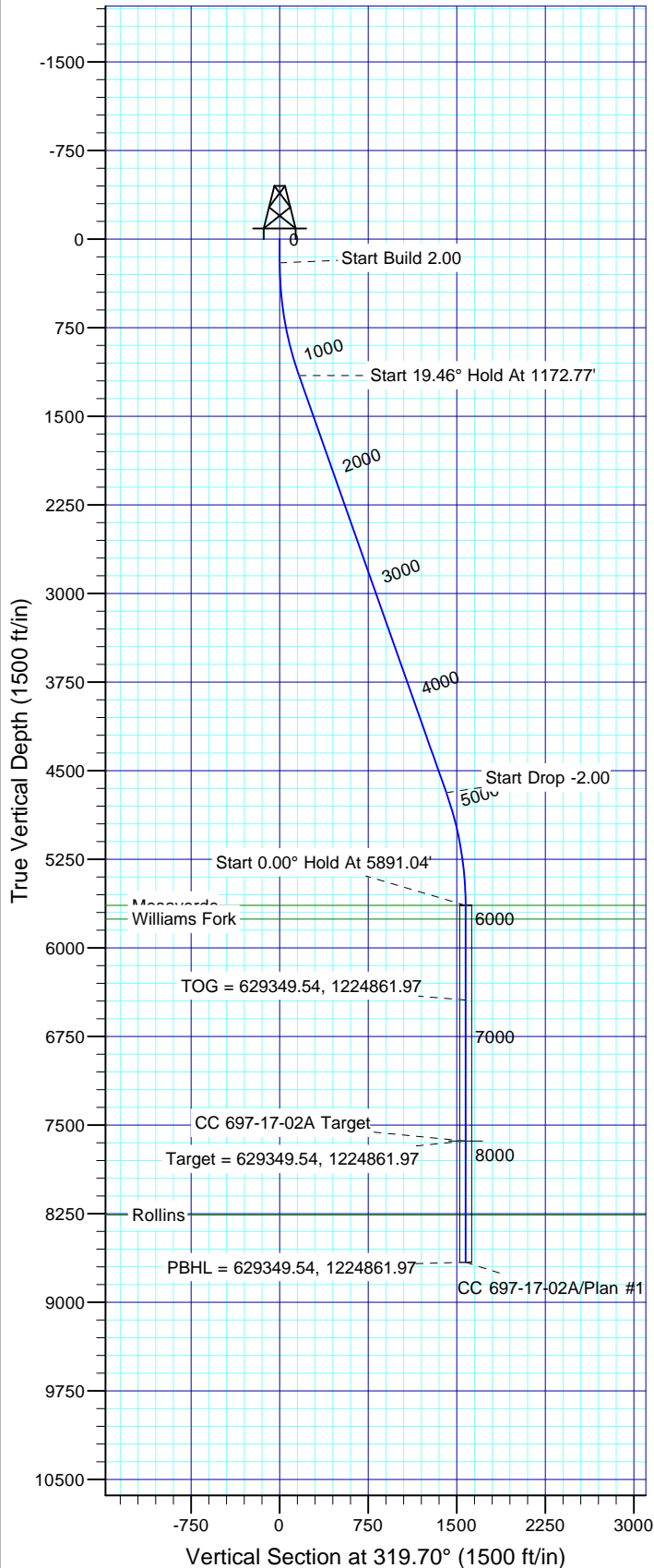
Well Details: CC 697-17-02A

TVD Reference: GL 8185' & RKB 30' @ 8215.00ft (H&P) Ground Level: 8185.00
+N/-S 0.00 +E/-W 0.00 Northing 628118.39 Easting 1225843.74 Latitude 39° 31' 33.213 N Longitude 108° 14' 41.268 W Slot A



Azimuths to True North
Magnetic North: 10.50°

Magnetic Field
Strength: 52295.7nT
Dip Angle: 65.74°
Date: 2010/12/23
Model: IGRF2005-10



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5640.00	5891.04	Mesaverde
5755.00	6006.04	Williams Fork
8260.00	8511.04	Rollins

Plan: Plan #1

16:53, December 25 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	VSEct	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	1172.77	19.46	319.70	1154.19	124.75	-105.80	2.00	319.70	163.58	
4	4918.26	19.46	319.70	4685.81	1076.18	-912.72	0.00	0.00	1411.10	
5	5891.04	0.00	0.00	5640.00	1200.93	-1018.52	2.00	180.00	1574.68	
6	7885.04	0.00	0.00	7634.00	1200.93	-1018.52	0.00	0.00	1574.68	CC 697-17-02A Target
7	8911.04	0.00	0.00	8660.00	1200.93	-1018.52	0.00	0.00	1574.68	

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-17A Pad
CC 697-17-02A - Slot A**

OH

Plan: Plan #1

Standard Planning Report

25 December, 2010

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-17-02A - Slot A
Company:	OXY USA RMAT	TVD Reference:	GL 8185' & RKB 30' @ 8215.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8185' & RKB 30' @ 8215.00ft (H&P)
Site:	Cascade Creek 697-17A Pad	North Reference:	True
Well:	CC 697-17-02A	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 697-17A Pad			
Site Position:		Northing:	628,118.39 usft	Latitude:	39° 31' 33.213 N
From:	Map	Easting:	1,225,843.74 usft	Longitude:	108° 14' 41.268 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.73 °

Well	CC 697-17-02A - Slot A					
Well Position	+N/-S	0.00 ft	Northing:	628,118.39 usft	Latitude:	39° 31' 33.213 N
	+E/-W	0.00 ft	Easting:	1,225,843.74 usft	Longitude:	108° 14' 41.268 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	8,185.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	2010/12/23	10.50	65.74	52,296

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	319.70

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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,172.77	19.46	319.70	1,154.19	124.75	-105.80	2.00	2.00	0.00	319.70	
4,918.26	19.46	319.70	4,685.81	1,076.18	-912.72	0.00	0.00	0.00	0.00	
5,891.04	0.00	0.00	5,640.00	1,200.93	-1,018.52	2.00	-2.00	0.00	180.00	
7,885.04	0.00	0.00	7,634.00	1,200.93	-1,018.52	0.00	0.00	0.00	0.00	CC 697-17-02A Target
8,911.04	0.00	0.00	8,660.00	1,200.93	-1,018.52	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-17-02A - Slot A
Company:	OXY USA RMAT	TVD Reference:	GL 8185' & RKB 30' @ 8215.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8185' & RKB 30' @ 8215.00ft (H&P)
Site:	Cascade Creek 697-17A Pad	North Reference:	True
Well:	CC 697-17-02A	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
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
300.00	2.00	319.70	299.98	1.33	-1.13	1.75	2.00	2.00	0.00
400.00	4.00	319.70	399.84	5.32	-4.51	6.98	2.00	2.00	0.00
500.00	6.00	319.70	499.45	11.97	-10.15	15.69	2.00	2.00	0.00
600.00	8.00	319.70	598.70	21.26	-18.03	27.88	2.00	2.00	0.00
700.00	10.00	319.70	697.47	33.19	-28.15	43.52	2.00	2.00	0.00
800.00	12.00	319.70	795.62	47.74	-40.49	62.60	2.00	2.00	0.00
900.00	14.00	319.70	893.06	64.90	-55.04	85.10	2.00	2.00	0.00
1,000.00	16.00	319.70	989.64	84.64	-71.78	110.98	2.00	2.00	0.00
1,100.00	18.00	319.70	1,085.27	106.93	-90.69	140.21	2.00	2.00	0.00
1,172.77	19.46	319.70	1,154.19	124.75	-105.80	163.58	2.00	2.00	0.00
Start 19.46° Hold At 1172.77'									
1,200.00	19.46	319.70	1,179.86	131.67	-111.67	172.65	0.00	0.00	0.00
1,300.00	19.46	319.70	1,274.15	157.07	-133.21	205.95	0.00	0.00	0.00
1,400.00	19.46	319.70	1,368.44	182.47	-154.76	239.26	0.00	0.00	0.00
1,500.00	19.46	319.70	1,462.73	207.87	-176.30	272.57	0.00	0.00	0.00
1,600.00	19.46	319.70	1,557.02	233.28	-197.84	305.88	0.00	0.00	0.00
1,700.00	19.46	319.70	1,651.31	258.68	-219.39	339.18	0.00	0.00	0.00
1,800.00	19.46	319.70	1,745.60	284.08	-240.93	372.49	0.00	0.00	0.00
1,900.00	19.46	319.70	1,839.89	309.48	-262.47	405.80	0.00	0.00	0.00
2,000.00	19.46	319.70	1,934.18	334.88	-284.02	439.11	0.00	0.00	0.00
2,100.00	19.46	319.70	2,028.47	360.29	-305.56	472.41	0.00	0.00	0.00
2,200.00	19.46	319.70	2,122.76	385.69	-327.10	505.72	0.00	0.00	0.00
2,300.00	19.46	319.70	2,217.05	411.09	-348.65	539.03	0.00	0.00	0.00
2,400.00	19.46	319.70	2,311.34	436.49	-370.19	572.33	0.00	0.00	0.00
2,500.00	19.46	319.70	2,405.63	461.89	-391.74	605.64	0.00	0.00	0.00
2,600.00	19.46	319.70	2,499.92	487.30	-413.28	638.95	0.00	0.00	0.00
2,700.00	19.46	319.70	2,594.21	512.70	-434.82	672.26	0.00	0.00	0.00
2,800.00	19.46	319.70	2,688.50	538.10	-456.37	705.56	0.00	0.00	0.00
2,900.00	19.46	319.70	2,782.79	563.50	-477.91	738.87	0.00	0.00	0.00
3,000.00	19.46	319.70	2,877.08	588.90	-499.45	772.18	0.00	0.00	0.00
3,100.00	19.46	319.70	2,971.37	614.31	-521.00	805.49	0.00	0.00	0.00
3,200.00	19.46	319.70	3,065.66	639.71	-542.54	838.79	0.00	0.00	0.00
3,300.00	19.46	319.70	3,159.95	665.11	-564.08	872.10	0.00	0.00	0.00
3,400.00	19.46	319.70	3,254.24	690.51	-585.63	905.41	0.00	0.00	0.00
3,500.00	19.46	319.70	3,348.53	715.91	-607.17	938.72	0.00	0.00	0.00
3,600.00	19.46	319.70	3,442.82	741.32	-628.71	972.02	0.00	0.00	0.00
3,700.00	19.46	319.70	3,537.11	766.72	-650.26	1,005.33	0.00	0.00	0.00
3,800.00	19.46	319.70	3,631.40	792.12	-671.80	1,038.64	0.00	0.00	0.00
3,900.00	19.46	319.70	3,725.69	817.52	-693.35	1,071.95	0.00	0.00	0.00
4,000.00	19.46	319.70	3,819.98	842.92	-714.89	1,105.25	0.00	0.00	0.00
4,100.00	19.46	319.70	3,914.27	868.33	-736.43	1,138.56	0.00	0.00	0.00
4,200.00	19.46	319.70	4,008.56	893.73	-757.98	1,171.87	0.00	0.00	0.00
4,300.00	19.46	319.70	4,102.85	919.13	-779.52	1,205.18	0.00	0.00	0.00
4,400.00	19.46	319.70	4,197.14	944.53	-801.06	1,238.48	0.00	0.00	0.00
4,500.00	19.46	319.70	4,291.43	969.93	-822.61	1,271.79	0.00	0.00	0.00
4,600.00	19.46	319.70	4,385.72	995.33	-844.15	1,305.10	0.00	0.00	0.00
4,700.00	19.46	319.70	4,480.01	1,020.74	-865.69	1,338.41	0.00	0.00	0.00
4,800.00	19.46	319.70	4,574.30	1,046.14	-887.24	1,371.71	0.00	0.00	0.00
4,900.00	19.46	319.70	4,668.59	1,071.54	-908.78	1,405.02	0.00	0.00	0.00
4,918.26	19.46	319.70	4,685.81	1,076.18	-912.72	1,411.10	0.00	0.00	0.00

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Planning Report

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Company:	OXY USA RMAT	TVD Reference:	GL 8185' & RKB 30' @ 8215.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8185' & RKB 30' @ 8215.00ft (H&P)
Site:	Cascade Creek 697-17A Pad	North Reference:	True
Well:	CC 697-17-02A	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)
Start Drop -2.00									
5,000.00	17.82	319.70	4,763.26	1,096.10	-929.61	1,437.22	2.00	-2.00	0.00
5,100.00	15.82	319.70	4,858.98	1,118.17	-948.33	1,466.16	2.00	-2.00	0.00
5,200.00	13.82	319.70	4,955.64	1,137.68	-964.87	1,491.74	2.00	-2.00	0.00
5,300.00	11.82	319.70	5,053.15	1,154.60	-979.22	1,513.93	2.00	-2.00	0.00
5,400.00	9.82	319.70	5,151.36	1,168.92	-991.37	1,532.70	2.00	-2.00	0.00
5,500.00	7.82	319.70	5,250.18	1,180.61	-1,001.28	1,548.03	2.00	-2.00	0.00
5,600.00	5.82	319.70	5,349.46	1,189.67	-1,008.97	1,559.91	2.00	-2.00	0.00
5,700.00	3.82	319.70	5,449.10	1,196.08	-1,014.40	1,568.31	2.00	-2.00	0.00
5,800.00	1.82	319.70	5,548.98	1,199.83	-1,017.58	1,573.23	2.00	-2.00	0.00
5,891.04	0.00	0.00	5,640.00	1,200.93	-1,018.52	1,574.68	2.00	-2.00	0.00
Start 0.00° Hold At 5891.04' - Mesaverde									
5,900.00	0.00	0.00	5,648.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
6,000.00	0.00	0.00	5,748.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
6,006.04	0.00	0.00	5,755.00	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
Williams Fork									
6,100.00	0.00	0.00	5,848.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
6,200.00	0.00	0.00	5,948.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
6,300.00	0.00	0.00	6,048.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
6,400.00	0.00	0.00	6,148.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
6,500.00	0.00	0.00	6,248.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
6,600.00	0.00	0.00	6,348.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
6,691.04	0.00	0.00	6,440.00	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
TOG = 629349.54, 1224861.97									
6,700.00	0.00	0.00	6,448.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
6,800.00	0.00	0.00	6,548.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
6,900.00	0.00	0.00	6,648.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
7,000.00	0.00	0.00	6,748.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
7,100.00	0.00	0.00	6,848.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
7,200.00	0.00	0.00	6,948.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
7,300.00	0.00	0.00	7,048.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
7,400.00	0.00	0.00	7,148.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
7,500.00	0.00	0.00	7,248.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
7,600.00	0.00	0.00	7,348.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
7,700.00	0.00	0.00	7,448.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
7,800.00	0.00	0.00	7,548.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
7,885.04	0.00	0.00	7,634.00	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
Target = 629349.54, 1224861.97									
7,900.00	0.00	0.00	7,648.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
8,000.00	0.00	0.00	7,748.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
8,100.00	0.00	0.00	7,848.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
8,200.00	0.00	0.00	7,948.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
8,300.00	0.00	0.00	8,048.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
8,400.00	0.00	0.00	8,148.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
8,500.00	0.00	0.00	8,248.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
8,511.04	0.00	0.00	8,260.00	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
Rollins									
8,600.00	0.00	0.00	8,348.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
8,700.00	0.00	0.00	8,448.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
8,800.00	0.00	0.00	8,548.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
8,900.00	0.00	0.00	8,648.96	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
8,911.04	0.00	0.00	8,660.00	1,200.93	-1,018.52	1,574.68	0.00	0.00	0.00
PBHL = 629349.54, 1224861.97									

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Planning Report

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Project:	Garfield County, CO NAD27	MD Reference:	GL 8185' & RKB 30' @ 8215.00ft (H&P)
Site:	Cascade Creek 697-17A Pad	North Reference:	True
Well:	CC 697-17-02A	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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 697-17-02A Target - plan hits target center - Circle (radius 50.00)	0.00	0.00	7,634.00	1,200.93	-1,018.52	629,349.54	1,224,861.96	39° 31' 45.083 N	108° 14' 54.267 W

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,891.04	5,640.00	Mesaverde		0.00	
6,006.04	5,755.00	Williams Fork		0.00	
8,511.04	8,260.00	Rollins		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.00	200.00	0.00	0.00	Start Build 2.00
1,172.77	1,154.19	124.75	-105.80	Start 19.46° Hold At 1172.77'
4,918.26	4,685.81	1,076.18	-912.72	Start Drop -2.00
5,891.04	5,640.00	1,200.93	-1,018.52	Start 0.00° Hold At 5891.04'
6,691.04	6,440.00	1,200.93	-1,018.52	TOG = 629349.54, 1224861.97
7,885.04	7,634.00	1,200.93	-1,018.52	Target = 629349.54, 1224861.97
8,911.04	8,660.00	1,200.93	-1,018.52	PBHL = 629349.54, 1224861.97