



Scientific Drilling
Rocky Mountain Operations

Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-06A Pad



Well Details: CC 697-05-26

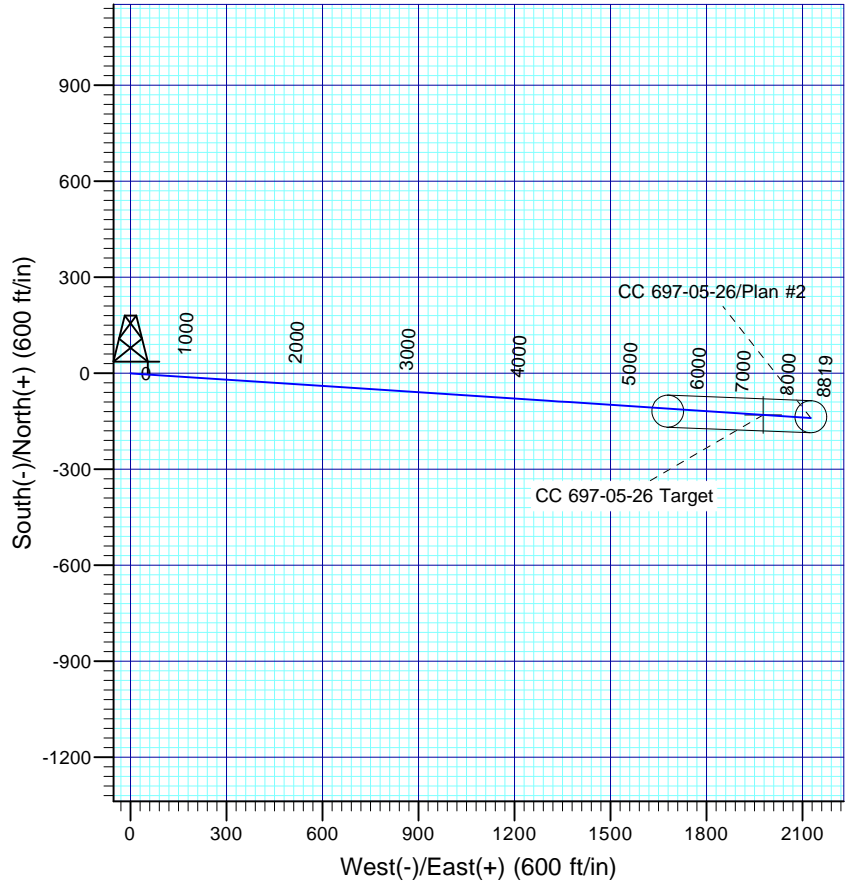
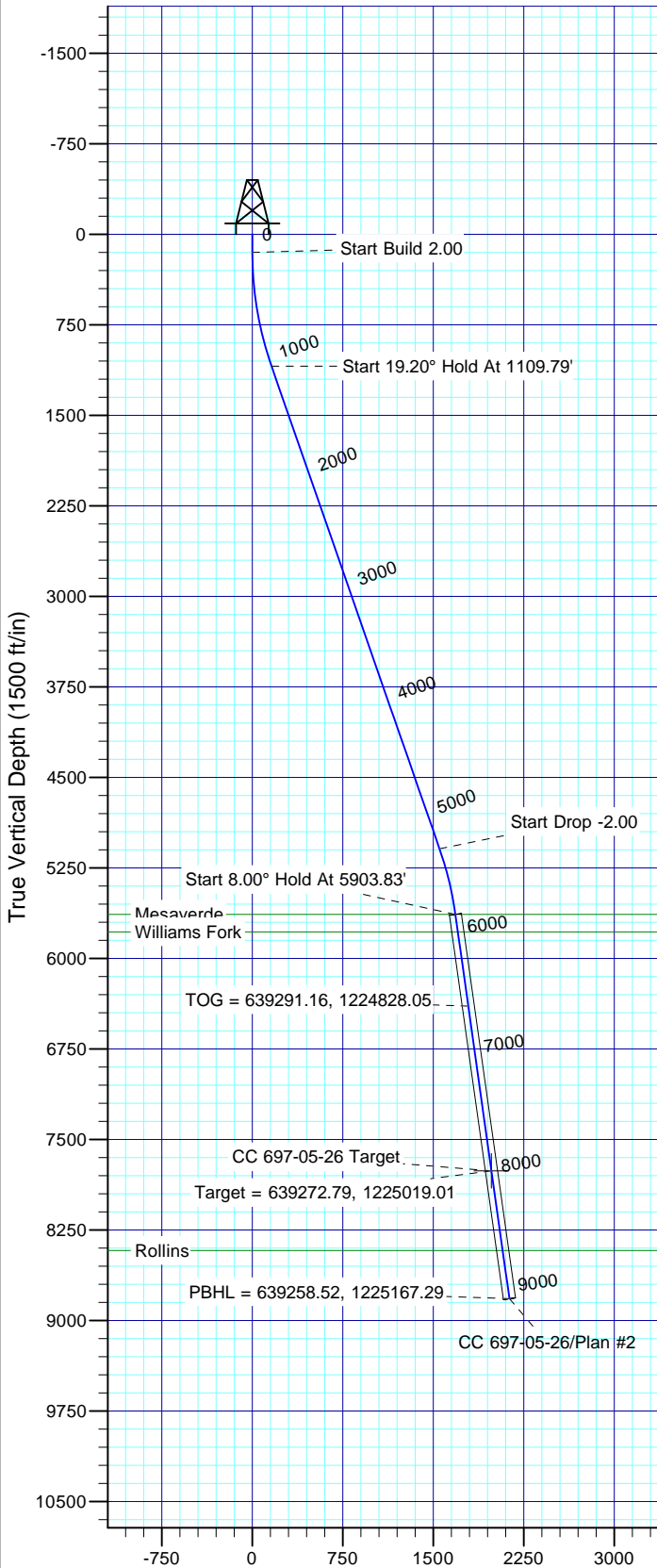
TVD Reference: GL 8184' & RKB 30' @ 8214.00ft (H&P) Ground Level: 8184.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	639462.54	1223046.58	39° 33' 24.447 N	108° 15' 21.340 W	K



Azimuths to True North
Magnetic North: 10.51°

Magnetic Field
Strength: 52311.8snT
Dip Angle: 65.77°
Date: 2010/12/20
Model: IGRF2005-10



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5634.00	5903.83	Mesaverde
5779.00	6050.26	Williams Fork
8419.00	8716.20	Rollins

Plan: Plan #2

11:58, February 03 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	VSECT	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	1109.79	19.20	93.76	1091.93	-10.44	158.94	2.00	93.76	159.28	
4	5344.05	19.20	93.76	5090.77	-101.66	1548.15	0.00	0.00	1551.49	
5	5903.83	8.00	93.76	5634.00	-110.27	1679.27	2.00	180.00	1682.89	
6	8049.71	8.00	93.76	7759.00	-129.84	1977.28	0.00	0.00	1981.54	CC 697-05-26 Target
7	9120.13	8.00	93.76	8819.00	-139.60	2125.93	0.00	0.00	2130.51	

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-06A Pad
CC 697-05-26 - Slot K**

OH

Plan: Plan #2

Standard Planning Report

03 February, 2011

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-05-26 - Slot K
Company:	OXY USA RMAT	TVD Reference:	GL 8184' & RKB 30' @ 8214.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8184' & RKB 30' @ 8214.00ft (H&P)
Site:	Cascade Creek 697-06A Pad	North Reference:	True
Well:	CC 697-05-26	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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 697-06A Pad, Sec 6 T6S R97W				
Site Position:		Northing:	639,442.25 usft	Latitude:	39° 33' 24.203 N	
From:	Map	Easting:	1,222,903.93 usft	Longitude:	108° 15' 23.153 W	
Position Uncertainty:		0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.74 °

Well	CC 697-05-26 - Slot K					
Well Position	+N/-S	24.61 ft	Northing:	639,462.54 usft	Latitude:	39° 33' 24.447 N
	+E/-W	141.97 ft	Easting:	1,223,046.58 usft	Longitude:	108° 15' 21.340 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	8,184.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	2010/12/20	10.51	65.77	52,312

Design	Plan #2			
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	93.76

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	
1,109.79	19.20	93.76	1,091.93	-10.44	158.94	2.00	2.00	0.00	93.76	
5,344.05	19.20	93.76	5,090.77	-101.66	1,548.15	0.00	0.00	0.00	0.00	
5,903.84	8.00	93.76	5,634.00	-110.27	1,679.27	2.00	-2.00	0.00	180.00	
8,049.72	8.00	93.76	7,759.00	-129.84	1,977.28	0.00	0.00	0.00	0.00	CC 697-05-26 Target
9,120.13	8.00	93.76	8,819.00	-139.60	2,125.93	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-05-26 - Slot K
Company:	OXY USA RMAT	TVD Reference:	GL 8184' & RKB 30' @ 8214.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8184' & RKB 30' @ 8214.00ft (H&P)
Site:	Cascade Creek 697-06A Pad	North Reference:	True
Well:	CC 697-05-26	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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	93.76	200.00	-0.03	0.44	0.44	2.00	2.00	0.00
300.00	3.00	93.76	299.93	-0.26	3.92	3.93	2.00	2.00	0.00
400.00	5.00	93.76	399.68	-0.71	10.88	10.90	2.00	2.00	0.00
500.00	7.00	93.76	499.13	-1.40	21.31	21.35	2.00	2.00	0.00
600.00	9.00	93.76	598.15	-2.31	35.19	35.27	2.00	2.00	0.00
700.00	11.00	93.76	696.63	-3.45	52.52	52.63	2.00	2.00	0.00
800.00	13.00	93.76	794.44	-4.81	73.27	73.42	2.00	2.00	0.00
900.00	15.00	93.76	891.46	-6.40	97.41	97.62	2.00	2.00	0.00
1,000.00	17.00	93.76	987.58	-8.20	124.91	125.18	2.00	2.00	0.00
1,100.00	19.00	93.76	1,082.68	-10.23	155.74	156.08	2.00	2.00	0.00
1,109.79	19.20	93.76	1,091.93	-10.44	158.94	159.28	2.00	2.00	0.00
Start 19.20° Hold At 1109.79'									
1,200.00	19.20	93.76	1,177.13	-12.38	188.54	188.94	0.00	0.00	0.00
1,300.00	19.20	93.76	1,271.57	-14.53	221.34	221.82	0.00	0.00	0.00
1,400.00	19.20	93.76	1,366.01	-16.69	254.15	254.70	0.00	0.00	0.00
1,500.00	19.20	93.76	1,460.45	-18.84	286.96	287.58	0.00	0.00	0.00
1,600.00	19.20	93.76	1,554.89	-21.00	319.77	320.46	0.00	0.00	0.00
1,700.00	19.20	93.76	1,649.33	-23.15	352.58	353.34	0.00	0.00	0.00
1,800.00	19.20	93.76	1,743.77	-25.31	385.39	386.22	0.00	0.00	0.00
1,900.00	19.20	93.76	1,838.21	-27.46	418.20	419.10	0.00	0.00	0.00
2,000.00	19.20	93.76	1,932.65	-29.62	451.01	451.98	0.00	0.00	0.00
2,100.00	19.20	93.76	2,027.09	-31.77	483.82	484.86	0.00	0.00	0.00
2,200.00	19.20	93.76	2,121.53	-33.92	516.62	517.74	0.00	0.00	0.00
2,300.00	19.20	93.76	2,215.97	-36.08	549.43	550.62	0.00	0.00	0.00
2,400.00	19.20	93.76	2,310.41	-38.23	582.24	583.50	0.00	0.00	0.00
2,500.00	19.20	93.76	2,404.85	-40.39	615.05	616.38	0.00	0.00	0.00
2,600.00	19.20	93.76	2,499.29	-42.54	647.86	649.26	0.00	0.00	0.00
2,700.00	19.20	93.76	2,593.73	-44.70	680.67	682.14	0.00	0.00	0.00
2,800.00	19.20	93.76	2,688.17	-46.85	713.48	715.01	0.00	0.00	0.00
2,900.00	19.20	93.76	2,782.61	-49.00	746.29	747.89	0.00	0.00	0.00
3,000.00	19.20	93.76	2,877.05	-51.16	779.10	780.77	0.00	0.00	0.00
3,100.00	19.20	93.76	2,971.49	-53.31	811.91	813.65	0.00	0.00	0.00
3,200.00	19.20	93.76	3,065.93	-55.47	844.71	846.53	0.00	0.00	0.00
3,300.00	19.20	93.76	3,160.37	-57.62	877.52	879.41	0.00	0.00	0.00
3,400.00	19.20	93.76	3,254.81	-59.78	910.33	912.29	0.00	0.00	0.00
3,500.00	19.20	93.76	3,349.25	-61.93	943.14	945.17	0.00	0.00	0.00
3,600.00	19.20	93.76	3,443.69	-64.09	975.95	978.05	0.00	0.00	0.00
3,700.00	19.20	93.76	3,538.13	-66.24	1,008.76	1,010.93	0.00	0.00	0.00
3,800.00	19.20	93.76	3,632.57	-68.39	1,041.57	1,043.81	0.00	0.00	0.00
3,900.00	19.20	93.76	3,727.01	-70.55	1,074.38	1,076.69	0.00	0.00	0.00
4,000.00	19.20	93.76	3,821.45	-72.70	1,107.19	1,109.57	0.00	0.00	0.00
4,100.00	19.20	93.76	3,915.89	-74.86	1,139.99	1,142.45	0.00	0.00	0.00
4,200.00	19.20	93.76	4,010.33	-77.01	1,172.80	1,175.33	0.00	0.00	0.00
4,300.00	19.20	93.76	4,104.77	-79.17	1,205.61	1,208.21	0.00	0.00	0.00
4,400.00	19.20	93.76	4,199.21	-81.32	1,238.42	1,241.09	0.00	0.00	0.00
4,500.00	19.20	93.76	4,293.65	-83.47	1,271.23	1,273.97	0.00	0.00	0.00
4,600.00	19.20	93.76	4,388.09	-85.63	1,304.04	1,306.85	0.00	0.00	0.00
4,700.00	19.20	93.76	4,482.53	-87.78	1,336.85	1,339.73	0.00	0.00	0.00
4,800.00	19.20	93.76	4,576.97	-89.94	1,369.66	1,372.61	0.00	0.00	0.00
4,900.00	19.20	93.76	4,671.41	-92.09	1,402.47	1,405.49	0.00	0.00	0.00

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Planning Report

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Company:	OXY USA RMAT	TVD Reference:	GL 8184' & RKB 30' @ 8214.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8184' & RKB 30' @ 8214.00ft (H&P)
Site:	Cascade Creek 697-06A Pad	North Reference:	True
Well:	CC 697-05-26	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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	19.20	93.76	4,765.85	-94.25	1,435.27	1,438.37	0.00	0.00	0.00
5,100.00	19.20	93.76	4,860.29	-96.40	1,468.08	1,471.25	0.00	0.00	0.00
5,200.00	19.20	93.76	4,954.73	-98.56	1,500.89	1,504.12	0.00	0.00	0.00
5,300.00	19.20	93.76	5,049.17	-100.71	1,533.70	1,537.00	0.00	0.00	0.00
5,344.05	19.20	93.76	5,090.77	-101.66	1,548.15	1,551.49	0.00	0.00	0.00
Start Drop -2.00									
5,400.00	18.08	93.76	5,143.79	-102.83	1,565.99	1,569.37	2.00	-2.00	0.00
5,500.00	16.08	93.76	5,239.38	-104.75	1,595.30	1,598.73	2.00	-2.00	0.00
5,600.00	14.08	93.76	5,335.93	-106.46	1,621.25	1,624.74	2.00	-2.00	0.00
5,700.00	12.08	93.76	5,433.33	-107.94	1,643.82	1,647.36	2.00	-2.00	0.00
5,800.00	10.08	93.76	5,531.46	-109.20	1,662.99	1,666.58	2.00	-2.00	0.00
5,900.00	8.08	93.76	5,630.21	-110.23	1,678.74	1,682.35	2.00	-2.00	0.00
5,903.83	8.00	93.76	5,634.00	-110.27	1,679.27	1,682.89	2.00	-2.00	0.00
Start 8.00° Hold At 5903.83' - Mesaverde									
6,000.00	8.00	93.76	5,729.23	-111.15	1,692.63	1,696.27	0.00	0.00	0.00
6,050.26	8.00	93.76	5,779.00	-111.60	1,699.60	1,703.27	0.00	0.00	0.00
Williams Fork									
6,100.00	8.00	93.76	5,828.26	-112.06	1,706.51	1,710.19	0.00	0.00	0.00
6,200.00	8.00	93.76	5,927.29	-112.97	1,720.40	1,724.11	0.00	0.00	0.00
6,300.00	8.00	93.76	6,026.31	-113.88	1,734.29	1,738.02	0.00	0.00	0.00
6,400.00	8.00	93.76	6,125.34	-114.79	1,748.18	1,751.94	0.00	0.00	0.00
6,500.00	8.00	93.76	6,224.37	-115.70	1,762.06	1,765.86	0.00	0.00	0.00
6,600.00	8.00	93.76	6,323.39	-116.62	1,775.95	1,779.77	0.00	0.00	0.00
6,671.30	8.00	93.76	6,394.00	-117.27	1,785.85	1,789.70	0.00	0.00	0.00
TOG = 639291.16, 1224828.05									
6,700.00	8.00	93.76	6,422.42	-117.53	1,789.84	1,793.69	0.00	0.00	0.00
6,800.00	8.00	93.76	6,521.45	-118.44	1,803.72	1,807.61	0.00	0.00	0.00
6,900.00	8.00	93.76	6,620.47	-119.35	1,817.61	1,821.53	0.00	0.00	0.00
7,000.00	8.00	93.76	6,719.50	-120.26	1,831.50	1,835.44	0.00	0.00	0.00
7,100.00	8.00	93.76	6,818.53	-121.18	1,845.39	1,849.36	0.00	0.00	0.00
7,200.00	8.00	93.76	6,917.55	-122.09	1,859.27	1,863.28	0.00	0.00	0.00
7,300.00	8.00	93.76	7,016.58	-123.00	1,873.16	1,877.20	0.00	0.00	0.00
7,400.00	8.00	93.76	7,115.61	-123.91	1,887.05	1,891.11	0.00	0.00	0.00
7,500.00	8.00	93.76	7,214.64	-124.82	1,900.94	1,905.03	0.00	0.00	0.00
7,600.00	8.00	93.76	7,313.66	-125.74	1,914.82	1,918.95	0.00	0.00	0.00
7,700.00	8.00	93.76	7,412.69	-126.65	1,928.71	1,932.87	0.00	0.00	0.00
7,800.00	8.00	93.76	7,511.72	-127.56	1,942.60	1,946.78	0.00	0.00	0.00
7,900.00	8.00	93.76	7,610.74	-128.47	1,956.49	1,960.70	0.00	0.00	0.00
8,000.00	8.00	93.76	7,709.77	-129.38	1,970.37	1,974.62	0.00	0.00	0.00
8,049.72	8.00	93.76	7,759.00	-129.84	1,977.28	1,981.54	0.00	0.00	0.00
Target = 639272.79, 1225019.01									
8,100.00	8.00	93.76	7,808.80	-130.30	1,984.26	1,988.53	0.00	0.00	0.00
8,200.00	8.00	93.76	7,907.82	-131.21	1,998.15	2,002.45	0.00	0.00	0.00
8,300.00	8.00	93.76	8,006.85	-132.12	2,012.04	2,016.37	0.00	0.00	0.00
8,400.00	8.00	93.76	8,105.88	-133.03	2,025.92	2,030.29	0.00	0.00	0.00
8,500.00	8.00	93.76	8,204.90	-133.94	2,039.81	2,044.20	0.00	0.00	0.00
8,600.00	8.00	93.76	8,303.93	-134.85	2,053.70	2,058.12	0.00	0.00	0.00
8,700.00	8.00	93.76	8,402.96	-135.77	2,067.59	2,072.04	0.00	0.00	0.00
8,716.20	8.00	93.76	8,419.00	-135.91	2,069.84	2,074.29	0.00	0.00	0.00
Rollins									
8,800.00	8.00	93.76	8,501.98	-136.68	2,081.47	2,085.96	0.00	0.00	0.00
8,900.00	8.00	93.76	8,601.01	-137.59	2,095.36	2,099.87	0.00	0.00	0.00
9,000.00	8.00	93.76	8,700.04	-138.50	2,109.25	2,113.79	0.00	0.00	0.00

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Planning Report

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Company:	OXY USA RMAT	TVD Reference:	GL 8184' & RKB 30' @ 8214.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8184' & RKB 30' @ 8214.00ft (H&P)
Site:	Cascade Creek 697-06A Pad	North Reference:	True
Well:	CC 697-05-26	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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	8.00	93.76	8,799.06	-139.41	2,123.14	2,127.71	0.00	0.00	0.00
9,120.13	8.00	93.76	8,819.00	-139.60	2,125.93	2,130.51	0.00	0.00	0.00
PBHL = 639258.52, 1225167.29									

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 697-05-26 Target - plan hits target center - Circle (radius 50.00)	-8.00	92.22	7,759.00	-129.84	1,977.28	639,272.79	1,225,019.00	39° 33' 23.163 N	108° 14' 56.095 W

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,903.83	5,634.00	Mesaverde		0.00	
6,050.26	5,779.00	Williams Fork		0.00	
8,716.20	8,419.00	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
1,109.79	1,091.93	-10.44	158.94	Start 19.20° Hold At 1109.79'
5,344.05	5,090.77	-101.66	1,548.15	Start Drop -2.00
5,903.84	5,634.00	-110.27	1,679.27	Start 8.00° Hold At 5903.83'
6,671.30	6,394.00	-117.27	1,785.85	TOG = 639291.16, 1224828.05
8,049.72	7,759.00	-129.84	1,977.28	Target = 639272.79, 1225019.01
9,120.13	8,819.00	-139.60	2,125.93	PBHL = 639258.52, 1225167.29