

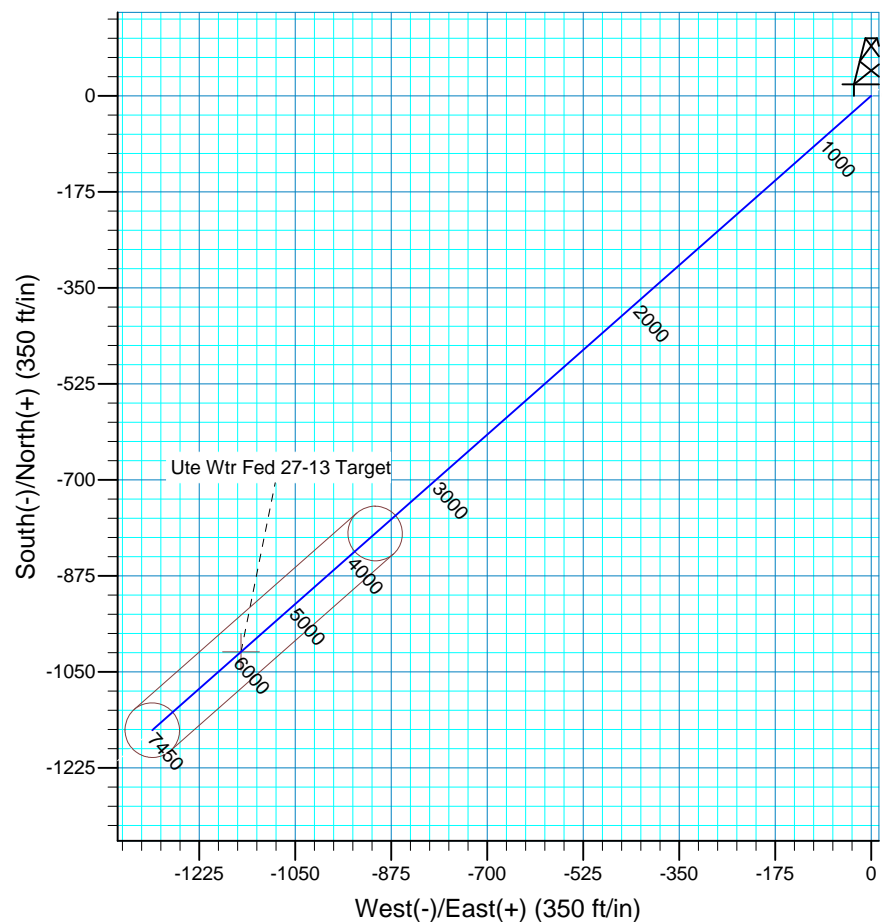
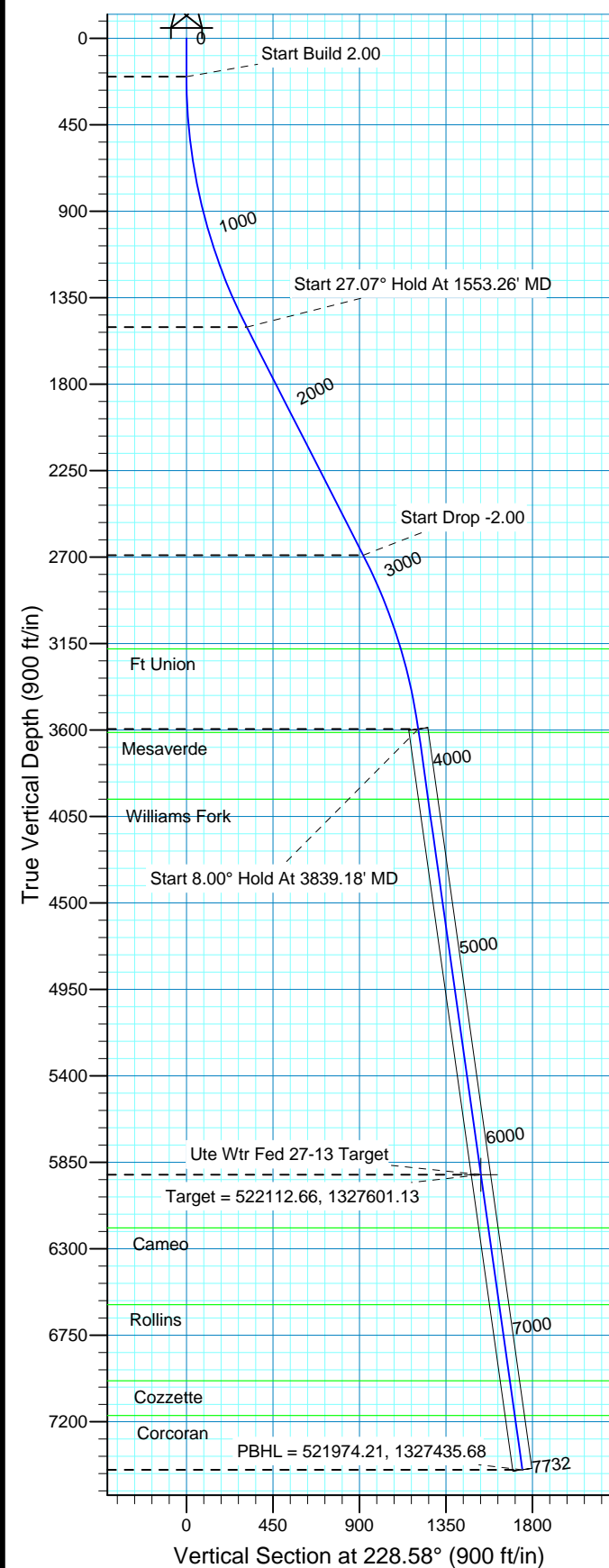
## WELL DETAILS: Ute Water Fed 27-13

		GL 7208' & RKB 18' @ 7226.00ft (Trinidad 217)		7208.00		
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	523095.84	1328776.01	39° 14' 44.210 N	107° 52' 13.126 W	



Azimuths to True North  
Magnetic North:  $10.43^\circ$

Magnetic Field  
Strength: 52351.7snT  
Dip Angle: 65.60°  
Date: 12/31/2009  
Model: IGRF2005-10



## FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3178.00	3412.04	Ft Union
3613.00	3857.36	Mesaverde
3960.00	4207.77	Williams Fork
6191.00	6460.69	Cameo
6591.00	6864.62	Rollins
6987.00	7264.52	Cozzette
7168.00	7447.30	Corcoran

Plan: Plan #1 (Ute Water Fed 27-13/OH)

Created By: Rex Hall    Date: 2010-03-11

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  
Local North: No north reference data is available

## 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	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	1553.26	27.07	228.58	1503.49	-207.55	-235.26	2.00	228.58	313.73	
4	2885.92	27.07	228.58	2690.21	-608.69	-689.97	0.00	0.00	920.09	
5	3839.18	8.00	228.58	3595.00	-797.79	-904.33	2.00	180.00	1205.94	
6	6181.98	8.00	228.58	5915.00	-1013.50	-1148.84	0.00	0.00	1531.99	Ute Wtr Fed 27-13 Target
7	7732.07	8.00	228.58	7450.00	-1156.22	-1310.61	0.00	0.00	1747.72	



# **OXY USA RMAT**

**Garfield County, CO NAD27**

**Ute Water 27-11 Pad**

**Ute Water Fed 27-13**

**OH**

**Plan: Plan #1**

## **Standard Planning Report**

**30 March, 2010**



<b>Database:</b>	EDM 2003.16 Multi-User Db	<b>Local Co-ordinate Reference:</b>	Well Ute Water Fed 27-13
<b>Company:</b>	OXY USA RMAT	<b>TVD Reference:</b>	GL 7208' & RKB 18' @ 7226.00ft (Trinidad 217)
<b>Project:</b>	Garfield County, CO NAD27	<b>MD Reference:</b>	GL 7208' & RKB 18' @ 7226.00ft (Trinidad 217)
<b>Site:</b>	Ute Water 27-11 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Ute Water Fed 27-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

<b>Project</b>	Garfield County, CO NAD27		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Colorado Central 502		

Site		Ute Water 27-11 Pad, Sec 27 T9S R94W			
Site Position:		Northing:	523,095.84 ft	Latitude:	39° 14' 44.210 N
From:	Map	Easting:	1,328,776.01 ft	Longitude:	107° 52' 13.126 W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence:	-1.49 °

Well	Ute Water Fed 27-13					
Well Position	+N/-S	0.00 ft	Northing:	523,095.84 ft	Latitude:	39° 14' 44.210 N
	+E/-W	0.00 ft	Easting:	1,328,776.01 ft	Longitude:	107° 52' 13.126 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	7,208.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2005-10	12/31/2009	10.43	65.60	52,352

<b>Design</b>	Plan #1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00	
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	228.58	

<b>Plan Sections</b>										
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	
1,553.26	27.07	228.58	1,503.49	-207.55	-235.26	2.00	2.00	0.00	228.58	
2,885.92	27.07	228.58	2,690.21	-608.69	-689.97	0.00	0.00	0.00	0.00	
3,839.18	8.00	228.58	3,595.00	-797.79	-904.33	2.00	-2.00	0.00	180.00	
6,181.98	8.00	228.58	5,915.00	-1,013.50	-1,148.84	0.00	0.00	0.00	0.00	Ute Wtr Fed 27-13 Ta
7,732.07	8.00	228.58	7,450.00	-1,156.22	-1,310.61	0.00	0.00	0.00	0.00	

<b>Database:</b>	EDM 2003.16 Multi-User Db	<b>Local Co-ordinate Reference:</b>	Well Ute Water Fed 27-13
<b>Company:</b>	OXY USA RMAT	<b>TVD Reference:</b>	GL 7208' & RKB 18' @ 7226.00ft (Trinidad 217)
<b>Project:</b>	Garfield County, CO NAD27	<b>MD Reference:</b>	GL 7208' & RKB 18' @ 7226.00ft (Trinidad 217)
<b>Site:</b>	Ute Water 27-11 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Ute Water Fed 27-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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
<b>Start Build 2.00</b>									
300.00	2.00	228.58	299.98	-1.15	-1.31	1.75	2.00	2.00	0.00
400.00	4.00	228.58	399.84	-4.62	-5.23	6.98	2.00	2.00	0.00
500.00	6.00	228.58	499.45	-10.38	-11.77	15.69	2.00	2.00	0.00
600.00	8.00	228.58	598.70	-18.44	-20.91	27.88	2.00	2.00	0.00
700.00	10.00	228.58	697.47	-28.79	-32.64	43.52	2.00	2.00	0.00
800.00	12.00	228.58	795.62	-41.42	-46.95	62.60	2.00	2.00	0.00
900.00	14.00	228.58	893.06	-56.30	-63.81	85.10	2.00	2.00	0.00
1,000.00	16.00	228.58	989.64	-73.42	-83.22	110.98	2.00	2.00	0.00
1,100.00	18.00	228.58	1,085.27	-92.76	-105.15	140.21	2.00	2.00	0.00
1,200.00	20.00	228.58	1,179.82	-114.30	-129.56	172.77	2.00	2.00	0.00
1,300.00	22.00	228.58	1,273.17	-138.00	-156.43	208.60	2.00	2.00	0.00
1,400.00	24.00	228.58	1,365.21	-163.85	-185.73	247.67	2.00	2.00	0.00
1,500.00	26.00	228.58	1,455.84	-191.81	-217.42	289.93	2.00	2.00	0.00
1,553.26	27.07	228.58	1,503.49	-207.55	-235.26	313.73	2.00	2.00	0.00
<b>Start 27.07° Hold At 1553.26' MD</b>									
1,600.00	27.07	228.58	1,545.11	-221.62	-251.21	334.99	0.00	0.00	0.00
1,700.00	27.07	228.58	1,634.16	-251.72	-285.33	380.49	0.00	0.00	0.00
1,800.00	27.07	228.58	1,723.21	-281.82	-319.45	425.99	0.00	0.00	0.00
1,900.00	27.07	228.58	1,812.26	-311.92	-353.57	471.49	0.00	0.00	0.00
2,000.00	27.07	228.58	1,901.31	-342.02	-387.69	516.99	0.00	0.00	0.00
2,100.00	27.07	228.58	1,990.36	-372.12	-421.81	562.49	0.00	0.00	0.00
2,200.00	27.07	228.58	2,079.41	-402.22	-455.93	607.99	0.00	0.00	0.00
2,300.00	27.07	228.58	2,168.45	-432.32	-490.05	653.50	0.00	0.00	0.00
2,400.00	27.07	228.58	2,257.50	-462.42	-524.17	699.00	0.00	0.00	0.00
2,500.00	27.07	228.58	2,346.55	-492.53	-558.30	744.50	0.00	0.00	0.00
2,600.00	27.07	228.58	2,435.60	-522.63	-592.42	790.00	0.00	0.00	0.00
2,700.00	27.07	228.58	2,524.65	-552.73	-626.54	835.50	0.00	0.00	0.00
2,800.00	27.07	228.58	2,613.70	-582.83	-660.66	881.00	0.00	0.00	0.00
2,885.92	27.07	228.58	2,690.21	-608.69	-689.97	920.09	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
2,900.00	26.78	228.58	2,702.76	-612.91	-694.75	926.47	2.00	-2.00	0.00
3,000.00	24.78	228.58	2,792.80	-641.68	-727.37	969.96	2.00	-2.00	0.00
3,100.00	22.78	228.58	2,884.31	-668.36	-757.61	1,010.29	2.00	-2.00	0.00
3,200.00	20.78	228.58	2,977.16	-692.91	-785.44	1,047.40	2.00	-2.00	0.00
3,300.00	18.78	228.58	3,071.25	-715.30	-810.82	1,081.24	2.00	-2.00	0.00
3,400.00	16.78	228.58	3,166.47	-735.51	-833.72	1,111.78	2.00	-2.00	0.00
3,412.04	16.54	228.58	3,178.00	-737.79	-836.31	1,115.23	2.00	-2.00	0.00
<b>Ft Union</b>									
3,500.00	14.78	228.58	3,262.70	-753.50	-854.12	1,138.98	2.00	-2.00	0.00
3,600.00	12.78	228.58	3,359.81	-769.26	-871.98	1,162.81	2.00	-2.00	0.00
3,700.00	10.78	228.58	3,457.70	-782.77	-887.30	1,183.23	2.00	-2.00	0.00
3,800.00	8.78	228.58	3,556.24	-794.01	-900.04	1,200.22	2.00	-2.00	0.00
3,839.18	8.00	228.58	3,595.00	-797.79	-904.33	1,205.94	2.00	-2.00	0.00
<b>Start 8.00° Hold At 3839.18' MD</b>									
3,857.36	8.00	228.58	3,613.00	-799.47	-906.23	1,208.47	0.00	0.00	0.00
<b>Mesaverde</b>									
3,900.00	8.00	228.58	3,655.23	-803.39	-910.68	1,214.40	0.00	0.00	0.00
4,000.00	8.00	228.58	3,754.25	-812.60	-921.11	1,228.32	0.00	0.00	0.00
4,100.00	8.00	228.58	3,853.28	-821.81	-931.55	1,242.24	0.00	0.00	0.00

<b>Database:</b>	EDM 2003.16 Multi-User Db	<b>Local Co-ordinate Reference:</b>	Well Ute Water Fed 27-13
<b>Company:</b>	OXY USA RMAT	<b>TVD Reference:</b>	GL 7208' & RKB 18' @ 7226.00ft (Trinidad 217)
<b>Project:</b>	Garfield County, CO NAD27	<b>MD Reference:</b>	GL 7208' & RKB 18' @ 7226.00ft (Trinidad 217)
<b>Site:</b>	Ute Water 27-11 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Ute Water Fed 27-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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)
4,200.00	8.00	228.58	3,952.31	-831.01	-941.99	1,256.15	0.00	0.00	0.00
4,207.77	8.00	228.58	3,960.00	-831.73	-942.80	1,257.23	0.00	0.00	0.00
<b>Williams Fork</b>									
4,300.00	8.00	228.58	4,051.33	-840.22	-952.42	1,270.07	0.00	0.00	0.00
4,400.00	8.00	228.58	4,150.36	-849.43	-962.86	1,283.99	0.00	0.00	0.00
4,500.00	8.00	228.58	4,249.39	-858.64	-973.30	1,297.91	0.00	0.00	0.00
4,600.00	8.00	228.58	4,348.41	-867.84	-983.73	1,311.82	0.00	0.00	0.00
4,700.00	8.00	228.58	4,447.44	-877.05	-994.17	1,325.74	0.00	0.00	0.00
4,800.00	8.00	228.58	4,546.47	-886.26	-1,004.60	1,339.66	0.00	0.00	0.00
4,900.00	8.00	228.58	4,645.50	-895.46	-1,015.04	1,353.58	0.00	0.00	0.00
5,000.00	8.00	228.58	4,744.52	-904.67	-1,025.48	1,367.49	0.00	0.00	0.00
5,100.00	8.00	228.58	4,843.55	-913.88	-1,035.91	1,381.41	0.00	0.00	0.00
5,200.00	8.00	228.58	4,942.58	-923.09	-1,046.35	1,395.33	0.00	0.00	0.00
5,300.00	8.00	228.58	5,041.60	-932.29	-1,056.79	1,409.24	0.00	0.00	0.00
5,400.00	8.00	228.58	5,140.63	-941.50	-1,067.22	1,423.16	0.00	0.00	0.00
5,500.00	8.00	228.58	5,239.66	-950.71	-1,077.66	1,437.08	0.00	0.00	0.00
5,600.00	8.00	228.58	5,338.68	-959.91	-1,088.10	1,451.00	0.00	0.00	0.00
5,700.00	8.00	228.58	5,437.71	-969.12	-1,098.53	1,464.91	0.00	0.00	0.00
5,800.00	8.00	228.58	5,536.74	-978.33	-1,108.97	1,478.83	0.00	0.00	0.00
5,900.00	8.00	228.58	5,635.76	-987.54	-1,119.41	1,492.75	0.00	0.00	0.00
6,000.00	8.00	228.58	5,734.79	-996.74	-1,129.84	1,506.67	0.00	0.00	0.00
6,100.00	8.00	228.58	5,833.82	-1,005.95	-1,140.28	1,520.58	0.00	0.00	0.00
6,181.98	8.00	228.58	5,915.00	-1,013.50	-1,148.84	1,531.99	0.00	0.00	0.00
<b>Target = 522112.66, 1327601.13 - Ute Wtr Fed 27-13 Target</b>									
6,200.00	8.00	228.58	5,932.84	-1,015.16	-1,150.72	1,534.50	0.00	0.00	0.00
6,300.00	8.00	228.58	6,031.87	-1,024.36	-1,161.15	1,548.42	0.00	0.00	0.00
6,400.00	8.00	228.58	6,130.90	-1,033.57	-1,171.59	1,562.33	0.00	0.00	0.00
6,460.69	8.00	228.58	6,191.00	-1,039.16	-1,177.92	1,570.78	0.00	0.00	0.00
<b>Cameo</b>									
6,500.00	8.00	228.58	6,229.92	-1,042.78	-1,182.03	1,576.25	0.00	0.00	0.00
6,600.00	8.00	228.58	6,328.95	-1,051.98	-1,192.46	1,590.17	0.00	0.00	0.00
6,700.00	8.00	228.58	6,427.98	-1,061.19	-1,202.90	1,604.09	0.00	0.00	0.00
6,800.00	8.00	228.58	6,527.00	-1,070.40	-1,213.34	1,618.00	0.00	0.00	0.00
6,864.62	8.00	228.58	6,591.00	-1,076.35	-1,220.08	1,627.00	0.00	0.00	0.00
<b>Rollins</b>									
6,900.00	8.00	228.58	6,626.03	-1,079.61	-1,223.77	1,631.92	0.00	0.00	0.00
7,000.00	8.00	228.58	6,725.06	-1,088.81	-1,234.21	1,645.84	0.00	0.00	0.00
7,100.00	8.00	228.58	6,824.08	-1,098.02	-1,244.65	1,659.76	0.00	0.00	0.00
7,200.00	8.00	228.58	6,923.11	-1,107.23	-1,255.08	1,673.67	0.00	0.00	0.00
7,264.52	8.00	228.58	6,987.00	-1,113.17	-1,261.81	1,682.65	0.00	0.00	0.00
<b>Cozzette</b>									
7,300.00	8.00	228.58	7,022.14	-1,116.43	-1,265.52	1,687.59	0.00	0.00	0.00
7,400.00	8.00	228.58	7,121.17	-1,125.64	-1,275.95	1,701.51	0.00	0.00	0.00
7,447.30	8.00	228.58	7,168.00	-1,130.00	-1,280.89	1,708.09	0.00	0.00	0.00
<b>Corcoran</b>									
7,500.00	8.00	228.58	7,220.19	-1,134.85	-1,286.39	1,715.43	0.00	0.00	0.00
7,600.00	8.00	228.58	7,319.22	-1,144.06	-1,296.83	1,729.34	0.00	0.00	0.00
7,700.00	8.00	228.58	7,418.25	-1,153.26	-1,307.26	1,743.26	0.00	0.00	0.00
7,732.07	8.00	228.58	7,450.00	-1,156.22	-1,310.61	1,747.72	0.00	0.00	0.00
<b>PBHL = 521974.21, 1327435.68</b>									

<b>Database:</b>	EDM 2003.16 Multi-User Db	<b>Local Co-ordinate Reference:</b>	Well Ute Water Fed 27-13
<b>Company:</b>	OXY USA RMAT	<b>TVD Reference:</b>	GL 7208' & RKB 18' @ 7226.00ft (Trinidad 217)
<b>Project:</b>	Garfield County, CO NAD27	<b>MD Reference:</b>	GL 7208' & RKB 18' @ 7226.00ft (Trinidad 217)
<b>Site:</b>	Ute Water 27-11 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Ute Water Fed 27-13	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Ute Wtr Fed 27-13 Target - plan hits target center - Circle (radius 50.00)	-8.00	228.58	5,915.00	-1,013.50	-1,148.84	522,112.66	1,327,601.13	39° 14' 34.192 N	107° 52' 27.728 W

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
3,412.04	3,178.00	Ft Union		0.00		
3,857.36	3,613.00	Mesaverde		0.00		
4,207.77	3,960.00	Williams Fork		0.00		
6,460.69	6,191.00	Cameo		0.00		
6,864.62	6,591.00	Rollins		0.00		
7,264.52	6,987.00	Cozzette		0.00		
7,447.30	7,168.00	Corcoran		0.00		

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
200.00	200.00	0.00	0.00	Start Build 2.00
1,553.26	1,503.49	-207.55	-235.26	Start 27.07° Hold At 1553.26' MD
2,885.92	2,690.21	-608.69	-689.97	Start Drop -2.00
3,839.18	3,595.00	-797.79	-904.33	Start 8.00° Hold At 3839.18' MD
6,181.98	5,915.00	-1,013.50	-1,148.84	Target = 522112.66, 1327601.13
7,732.07	7,450.00	-1,156.22	-1,310.61	PBHL = 521974.21, 1327435.68