

# **Ranchers Exploration**

**Larimer County, CO**

**Section 24-T6N-R68W**

**River West #2**

**Wellbore #1**

**Plan: Preliminary Directional Plan for APD 09-15-12**

## **Standard Planning Report**

**15 September, 2012**

Ranchers Exploration  
River West #2  
Larimer County, CO

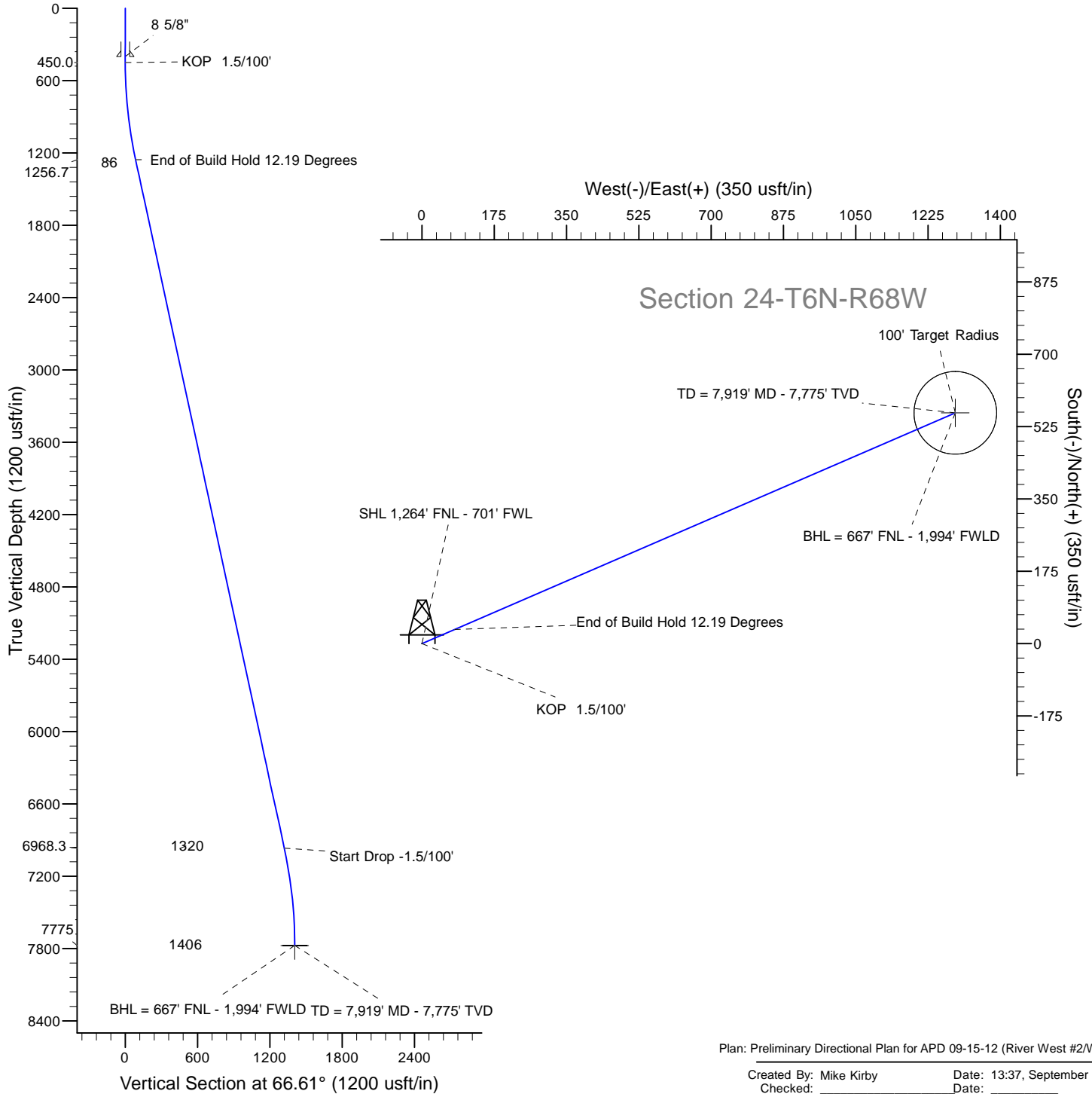
Geodetic System: US State Plane 1983  
Zone: Colorado Northern Zone  
WELL @ 4895.0usft (Assumed 15' KB)  
Ground Level: 4880.0  
Latitude: 40° 28' 33.132 N  
Longitude: 104° 57' 38.268 W  
Magnetic North is 8.76° East of True North (Magnetic Declination)



Azimuths to True North  
Magnetic North: 8.76°

Magnetic Field  
Strength: 53043.3snT  
Dip Angle: 67.05°  
Date: 9/15/2012  
Model: IGRF200510

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
450.0	0.00	0.00	450.0	0.0	0.0	0.00	0.00	0.0
1262.8	12.19	66.61	1256.7	34.2	79.1	1.50	66.61	86.2
7106.2	12.19	66.61	6968.3	524.1	1211.7	0.00	0.00	1320.2
7919.0	0.00	0.00	7775.0	558.3	1290.8	1.50	180.00	1406.4



Plan: Preliminary Directional Plan for APD 09-15-12 (River West #2/Wellbore)

Created By: Mike Kirby Date: 13:37, September 15 2012  
Checked: \_\_\_\_\_ Date: \_\_\_\_\_  
Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_  
Approved: x Date: x

## Planning Report

<b>Database:</b>	Rocky Mountain R5000 Database	<b>Local Co-ordinate Reference:</b>	Well River West #2
<b>Company:</b>	Ranchers Exploration	<b>TVD Reference:</b>	WELL @ 4895.0usft (Assumed 15' KB)
<b>Project:</b>	Larimer County, CO	<b>MD Reference:</b>	WELL @ 4895.0usft (Assumed 15' KB)
<b>Site:</b>	Section 24-T6N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	River West #2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Preliminary Directional Plan for APD 09-15-12		

<b>Project</b>	Larimer County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		Section 24-T6N-R68W			
Site Position:		Northing:	1,416,656.18 usft	Latitude:	40° 28' 33.132 N
From:	Lat/Long	Easting:	3,150,051.09 usft	Longitude:	104° 57' 38.268 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.35 °

Well	River West #2					
Well Position	+N/-S	10.0 usft	Northing:	1,416,666.18 usft	Latitude:	40° 28' 33.231 N
	+E/-W	0.0 usft	Easting:	3,150,051.03 usft	Longitude:	104° 57' 38.268 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	4,985.0 usft	Ground Level:	4,880.0 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	9/15/2012	8.76	67.05	53,043

<b>Design</b>	Preliminary Directional Plan for APD 09-15-12			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	66.61

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
450.0	0.00	0.00	450.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,262.8	12.19	66.61	1,256.7	34.2	79.1	1.50	1.50	0.00	66.61	
7,106.2	12.19	66.61	6,968.3	524.1	1,211.7	0.00	0.00	0.00	0.00	
7,919.0	0.00	0.00	7,775.0	558.3	1,290.8	1.50	-1.50	0.00	180.00	River West #2 PBHL

# Planning Report

<b>Database:</b>	Rocky Mountain R5000 Database	<b>Local Co-ordinate Reference:</b>	Well River West #2
<b>Company:</b>	Ranchers Exploration	<b>TVD Reference:</b>	WELL @ 4895.0usft (Assumed 15' KB)
<b>Project:</b>	Larimer County, CO	<b>MD Reference:</b>	WELL @ 4895.0usft (Assumed 15' KB)
<b>Site:</b>	Section 24-T6N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	River West #2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Preliminary Directional Plan for APD 09-15-12		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>SHL 1,264' FNL - 701' FWL</b>									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>8 5/8"</b>									
450.0	0.00	0.00	450.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP 1.5/100'</b>									
500.0	0.75	66.61	500.0	0.1	0.3	0.3	1.50	1.50	0.00
600.0	2.25	66.61	600.0	1.2	2.7	2.9	1.50	1.50	0.00
700.0	3.75	66.61	699.8	3.2	7.5	8.2	1.50	1.50	0.00
800.0	5.25	66.61	799.5	6.4	14.7	16.0	1.50	1.50	0.00
900.0	6.75	66.61	899.0	10.5	24.3	26.5	1.50	1.50	0.00
1,000.0	8.25	66.61	998.1	15.7	36.3	39.5	1.50	1.50	0.00
1,100.0	9.75	66.61	1,096.9	21.9	50.6	55.2	1.50	1.50	0.00
1,200.0	11.25	66.61	1,195.2	29.1	67.4	73.4	1.50	1.50	0.00
1,262.8	12.19	66.61	1,256.7	34.2	79.1	86.2	1.50	1.50	0.00
<b>End of Build Hold 12.19 Degrees</b>									
1,300.0	12.19	66.61	1,293.0	37.3	86.3	94.0	0.00	0.00	0.00
1,400.0	12.19	66.61	1,390.8	45.7	105.7	115.1	0.00	0.00	0.00
1,500.0	12.19	66.61	1,488.5	54.1	125.0	136.2	0.00	0.00	0.00
1,600.0	12.19	66.61	1,586.3	62.5	144.4	157.4	0.00	0.00	0.00
1,700.0	12.19	66.61	1,684.0	70.9	163.8	178.5	0.00	0.00	0.00
1,800.0	12.19	66.61	1,781.8	79.2	183.2	199.6	0.00	0.00	0.00
1,900.0	12.19	66.61	1,879.5	87.6	202.6	220.7	0.00	0.00	0.00
2,000.0	12.19	66.61	1,977.2	96.0	222.0	241.8	0.00	0.00	0.00
2,100.0	12.19	66.61	2,075.0	104.4	241.4	263.0	0.00	0.00	0.00
2,200.0	12.19	66.61	2,172.7	112.8	260.7	284.1	0.00	0.00	0.00
2,300.0	12.19	66.61	2,270.5	121.2	280.1	305.2	0.00	0.00	0.00
2,400.0	12.19	66.61	2,368.2	129.6	299.5	326.3	0.00	0.00	0.00
2,500.0	12.19	66.61	2,466.0	137.9	318.9	347.4	0.00	0.00	0.00
2,600.0	12.19	66.61	2,563.7	146.3	338.3	368.6	0.00	0.00	0.00
2,700.0	12.19	66.61	2,661.5	154.7	357.7	389.7	0.00	0.00	0.00
2,800.0	12.19	66.61	2,759.2	163.1	377.0	410.8	0.00	0.00	0.00
2,900.0	12.19	66.61	2,856.9	171.5	396.4	431.9	0.00	0.00	0.00
3,000.0	12.19	66.61	2,954.7	179.9	415.8	453.0	0.00	0.00	0.00
3,100.0	12.19	66.61	3,052.4	188.2	435.2	474.2	0.00	0.00	0.00
3,200.0	12.19	66.61	3,150.2	196.6	454.6	495.3	0.00	0.00	0.00
3,300.0	12.19	66.61	3,247.9	205.0	474.0	516.4	0.00	0.00	0.00
3,400.0	12.19	66.61	3,345.7	213.4	493.3	537.5	0.00	0.00	0.00
3,500.0	12.19	66.61	3,443.4	221.8	512.7	558.6	0.00	0.00	0.00
3,600.0	12.19	66.61	3,541.2	230.2	532.1	579.7	0.00	0.00	0.00
3,700.0	12.19	66.61	3,638.9	238.5	551.5	600.9	0.00	0.00	0.00
3,800.0	12.19	66.61	3,736.6	246.9	570.9	622.0	0.00	0.00	0.00
3,900.0	12.19	66.61	3,834.4	255.3	590.3	643.1	0.00	0.00	0.00
4,000.0	12.19	66.61	3,932.1	263.7	609.6	664.2	0.00	0.00	0.00
4,100.0	12.19	66.61	4,029.9	272.1	629.0	685.3	0.00	0.00	0.00
4,200.0	12.19	66.61	4,127.6	280.5	648.4	706.5	0.00	0.00	0.00
4,300.0	12.19	66.61	4,225.4	288.9	667.8	727.6	0.00	0.00	0.00
4,400.0	12.19	66.61	4,323.1	297.2	687.2	748.7	0.00	0.00	0.00
4,500.0	12.19	66.61	4,420.9	305.6	706.6	769.8	0.00	0.00	0.00
4,600.0	12.19	66.61	4,518.6	314.0	725.9	790.9	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	Rocky Mountain R5000 Database	<b>Local Co-ordinate Reference:</b>	Well River West #2
<b>Company:</b>	Ranchers Exploration	<b>TVD Reference:</b>	WELL @ 4895.0usft (Assumed 15' KB)
<b>Project:</b>	Larimer County, CO	<b>MD Reference:</b>	WELL @ 4895.0usft (Assumed 15' KB)
<b>Site:</b>	Section 24-T6N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	River West #2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Preliminary Directional Plan for APD 09-15-12		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,700.0	12.19	66.61	4,616.3	322.4	745.3	812.1	0.00	0.00	0.00
4,800.0	12.19	66.61	4,714.1	330.8	764.7	833.2	0.00	0.00	0.00
4,900.0	12.19	66.61	4,811.8	339.2	784.1	854.3	0.00	0.00	0.00
5,000.0	12.19	66.61	4,909.6	347.5	803.5	875.4	0.00	0.00	0.00
5,100.0	12.19	66.61	5,007.3	355.9	822.9	896.5	0.00	0.00	0.00
5,200.0	12.19	66.61	5,105.1	364.3	842.2	917.7	0.00	0.00	0.00
5,300.0	12.19	66.61	5,202.8	372.7	861.6	938.8	0.00	0.00	0.00
5,400.0	12.19	66.61	5,300.6	381.1	881.0	959.9	0.00	0.00	0.00
5,500.0	12.19	66.61	5,398.3	389.5	900.4	981.0	0.00	0.00	0.00
5,600.0	12.19	66.61	5,496.0	397.9	919.8	1,002.1	0.00	0.00	0.00
5,700.0	12.19	66.61	5,593.8	406.2	939.2	1,023.3	0.00	0.00	0.00
5,800.0	12.19	66.61	5,691.5	414.6	958.5	1,044.4	0.00	0.00	0.00
5,900.0	12.19	66.61	5,789.3	423.0	977.9	1,065.5	0.00	0.00	0.00
6,000.0	12.19	66.61	5,887.0	431.4	997.3	1,086.6	0.00	0.00	0.00
6,100.0	12.19	66.61	5,984.8	439.8	1,016.7	1,107.7	0.00	0.00	0.00
6,200.0	12.19	66.61	6,082.5	448.2	1,036.1	1,128.8	0.00	0.00	0.00
6,300.0	12.19	66.61	6,180.3	456.5	1,055.5	1,150.0	0.00	0.00	0.00
6,400.0	12.19	66.61	6,278.0	464.9	1,074.8	1,171.1	0.00	0.00	0.00
6,500.0	12.19	66.61	6,375.7	473.3	1,094.2	1,192.2	0.00	0.00	0.00
6,600.0	12.19	66.61	6,473.5	481.7	1,113.6	1,213.3	0.00	0.00	0.00
6,700.0	12.19	66.61	6,571.2	490.1	1,133.0	1,234.4	0.00	0.00	0.00
6,800.0	12.19	66.61	6,669.0	498.5	1,152.4	1,255.6	0.00	0.00	0.00
6,900.0	12.19	66.61	6,766.7	506.9	1,171.8	1,276.7	0.00	0.00	0.00
7,000.0	12.19	66.61	6,864.5	515.2	1,191.1	1,297.8	0.00	0.00	0.00
7,100.0	12.19	66.61	6,962.2	523.6	1,210.5	1,318.9	0.00	0.00	0.00
7,106.2	12.19	66.61	6,968.3	524.1	1,211.7	1,320.2	0.00	0.00	0.00
<b>Start Drop -1.5/100'</b>									
7,200.0	10.79	66.61	7,060.2	531.6	1,228.9	1,338.9	1.50	-1.50	0.00
7,300.0	9.29	66.61	7,158.7	538.5	1,244.9	1,356.3	1.50	-1.50	0.00
7,400.0	7.79	66.61	7,257.5	544.4	1,258.5	1,371.2	1.50	-1.50	0.00
7,500.0	6.29	66.61	7,356.8	549.2	1,269.7	1,383.4	1.50	-1.50	0.00
7,600.0	4.79	66.61	7,456.3	553.1	1,278.6	1,393.1	1.50	-1.50	0.00
7,700.0	3.29	66.61	7,556.1	555.9	1,285.0	1,400.1	1.50	-1.50	0.00
7,800.0	1.79	66.61	7,656.0	557.6	1,289.1	1,404.5	1.50	-1.50	0.00
7,900.0	0.29	66.61	7,755.9	558.3	1,290.8	1,406.3	1.50	-1.50	0.00
7,918.5	0.01	66.61	7,774.5	558.3	1,290.8	1,406.4	1.50	-1.50	0.00
<b>BHL = 667' FNL - 1,994' FWLD - TD = 7,919' MD - 7,775' TVD</b>									
7,919.0	0.00	0.00	7,775.0	558.3	1,290.8	1,406.4	1.50	-1.50	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
River West #2 PBHL	0.00	0.00	7,775.0	558.3	1,290.8	1,417,232.37	3,151,338.42	40° 28' 38.748 N	104° 57' 21.564 W
- hit/miss target									
- Shape									
- plan hits target center									
- Circle (radius 100.0)									

## Planning Report

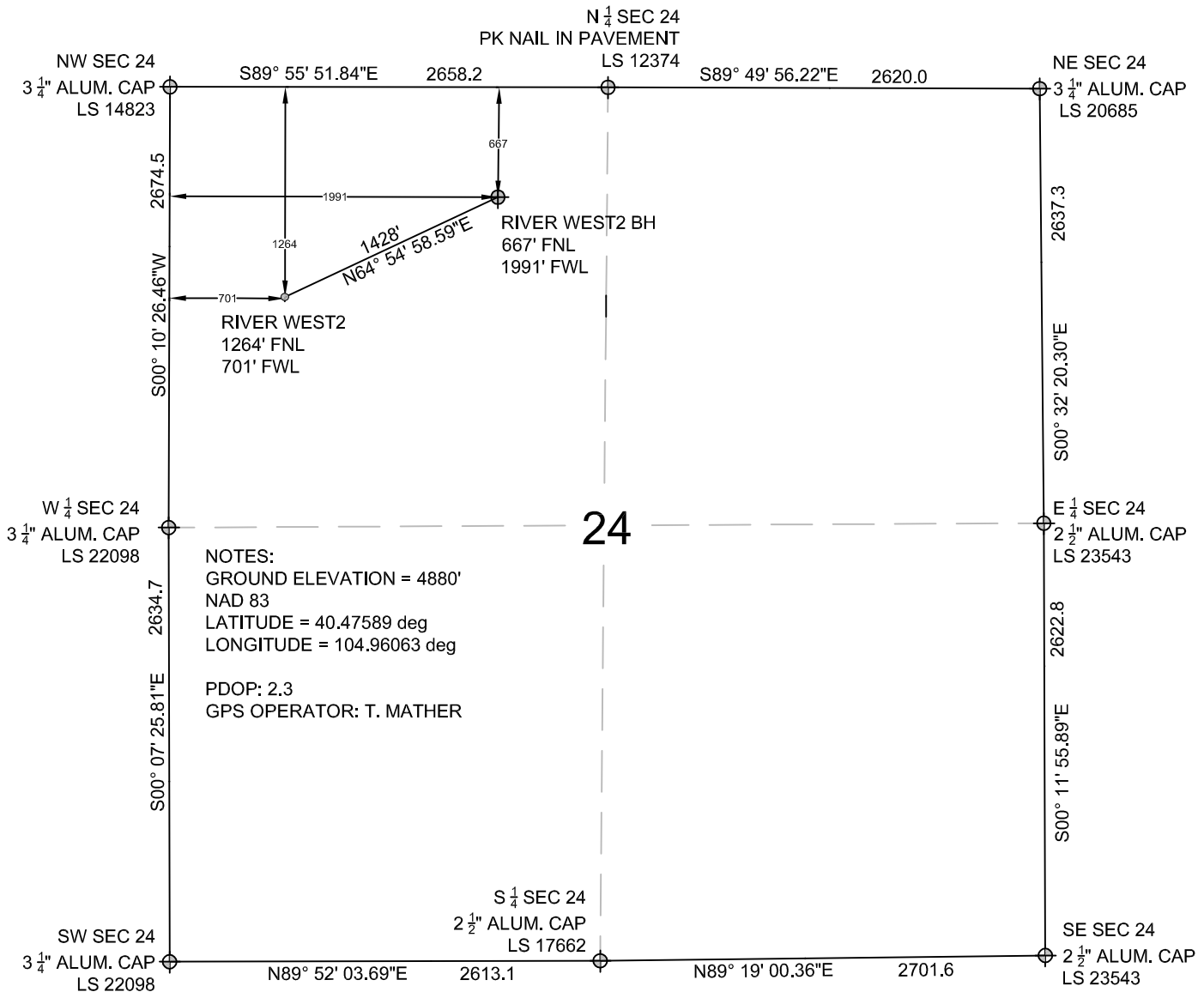
<b>Database:</b>	Rocky Mountain R5000 Database	<b>Local Co-ordinate Reference:</b>	Well River West #2
<b>Company:</b>	Ranchers Exploration	<b>TVD Reference:</b>	WELL @ 4895.0usft (Assumed 15' KB)
<b>Project:</b>	Larimer County, CO	<b>MD Reference:</b>	WELL @ 4895.0usft (Assumed 15' KB)
<b>Site:</b>	Section 24-T6N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	River West #2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Preliminary Directional Plan for APD 09-15-12		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
400.0	400.0	8 5/8"	8-5/8	12-1/4	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1.0	1.0	0.0	0.0	SHL 1,264' FNL - 701' FWL	
450.0	450.0	0.0	0.0	KOP 1.5/100'	
1,262.8	1,256.7	34.2	79.1	End of Build Hold 12.19 Degrees	
7,106.2	6,968.3	524.1	1,211.7	Start Drop -1.5/100'	
7,918.5	7,774.5	558.3	1,290.8	BHL = 667' FNL - 1,994' FWLD	
7,918.5	7,774.5	558.3	1,290.8	TD = 7,919' MD - 7,775' TVD	

# WELL LOCATION CERTIFICATE: RIVER WEST-2

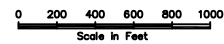
SECTION 24, TOWNSHIP 6 NORTH, RANGE 68 WEST, 6TH P.M.



WELL **RIVER WEST-2** TO BE LOCATED 1264' FNL AND 701' FWL, SECTION 24, T6N, R68W OF 6TH P.M.

## LEGEND

- EXISTING MONUMENT
- PROPOSED WELL
- BOTTOM HOLE
- EXISTING WELL
- BH = BOTTOM HOLE



## NOTES:

- THIS FIELD SURVEY CONFORMS TO THE MINIMUM STANDARDS SET BY THE COGCC, RULE NO. 215
- ELEVATIONS ARE NAVD 88, USING CONUS GEOID 03 AS OBSERVED FROM GPS OBSERVATIONS
- THE BASIS OF BEARINGS ARE PER STATE PLANE COORDINATE COLORADO NORTH ZONE NAD 83
- DISTANCES ARE MEASURED PERPENDICULAR TO THE NEAREST SECTION LINE



**InfoMaption Inc.**

1514 Banyan Dr.  
Fort Collins, CO 80521  
Ph. 970.581.3131  
www.infomaption.com

**OPERATOR:**  
**RANCHERS EXPLORATION**

**SURFACE LOCATION:**  
NW 1/4 NW 1/4 SEC. 24, T6N R68W

Field Data	TRM	Date	4-23-2012	File Name.	120424 RIVER WEST-2 WELL PLAT.dwg
Drawn	TRM	Date	4-26-2012	Project No.	120104
				Well Name:	RIVER WEST WELLS-2