

# **PDC ENERGY**

**WELD COUNTY, COLORADO  
SW NW SEC. 10 T5N R64W 6th P.M.  
WACKER 10G-314**

## **ORIGINAL WELLBORE**

**03 February, 2016**

**Plan: PROPOSAL #1**





Project: WELD COUNTY, COLORADO  
Site: SW NW SEC. 10 T5N R64W 6th P.M.  
Well: WACKER 10G-314  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #1

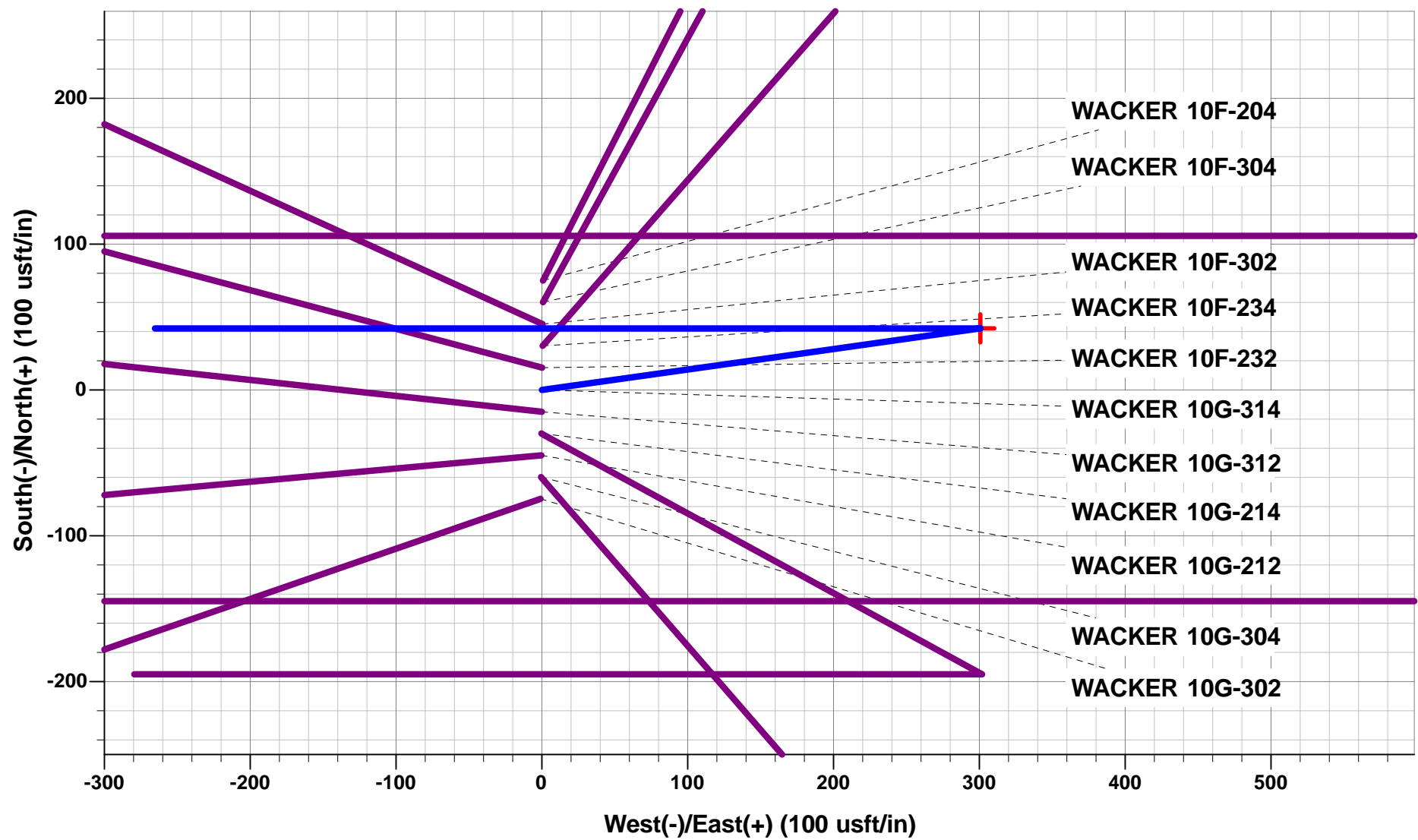


ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Dep	Annotation
0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	SHL: 2092ft FNL & 396ft FWL of Sec 10
1500.0	1500.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)
2095.6	2099.9	12.00	82.01	8.7	62.0	-61.9	62.6	EOB TO 12° INC
2935.7	2958.9	12.00	82.01	33.5	238.8	-238.6	241.2	END OF TANGENT
3531.3	3558.8	0.00	0.00	42.2	300.8	-300.6	303.7	EOD TO VERTICAL
5998.8	6026.3	0.00	0.00	42.2	300.8	-300.6	303.7	KOP (8°/100ft BUR)
6715.0	7152.7	90.11	270.00	42.2	-416.8	417.0	1021.3	LANDING PNT *NEW*: 2048.6ft FNL & 20ft FEL of Sec 9
6700.0	15049.3	90.11	270.00	42.2	-8313.4	8313.5	8917.9	BHL: 2023ft FNL & 2646ft FWL of Sec 8

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - WACKER 10G-314	5998.8	42.2	300.8	40.415377	-104.543161
LANDING PNT *NEW*- WACKER 10G-314	6715.0	42.2	-416.8	40.415377	-104.545738
BHL - WACKER 10G-314	6700.0	42.2	-8313.4	40.415373	-104.574096

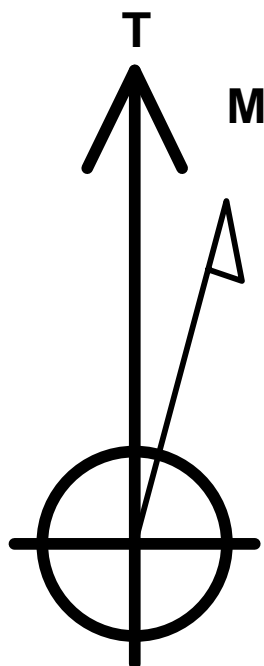


PROPOSED LOCAL COORDINATES:

SHL: 2092ft FNL & 396ft FWL of Sec 10

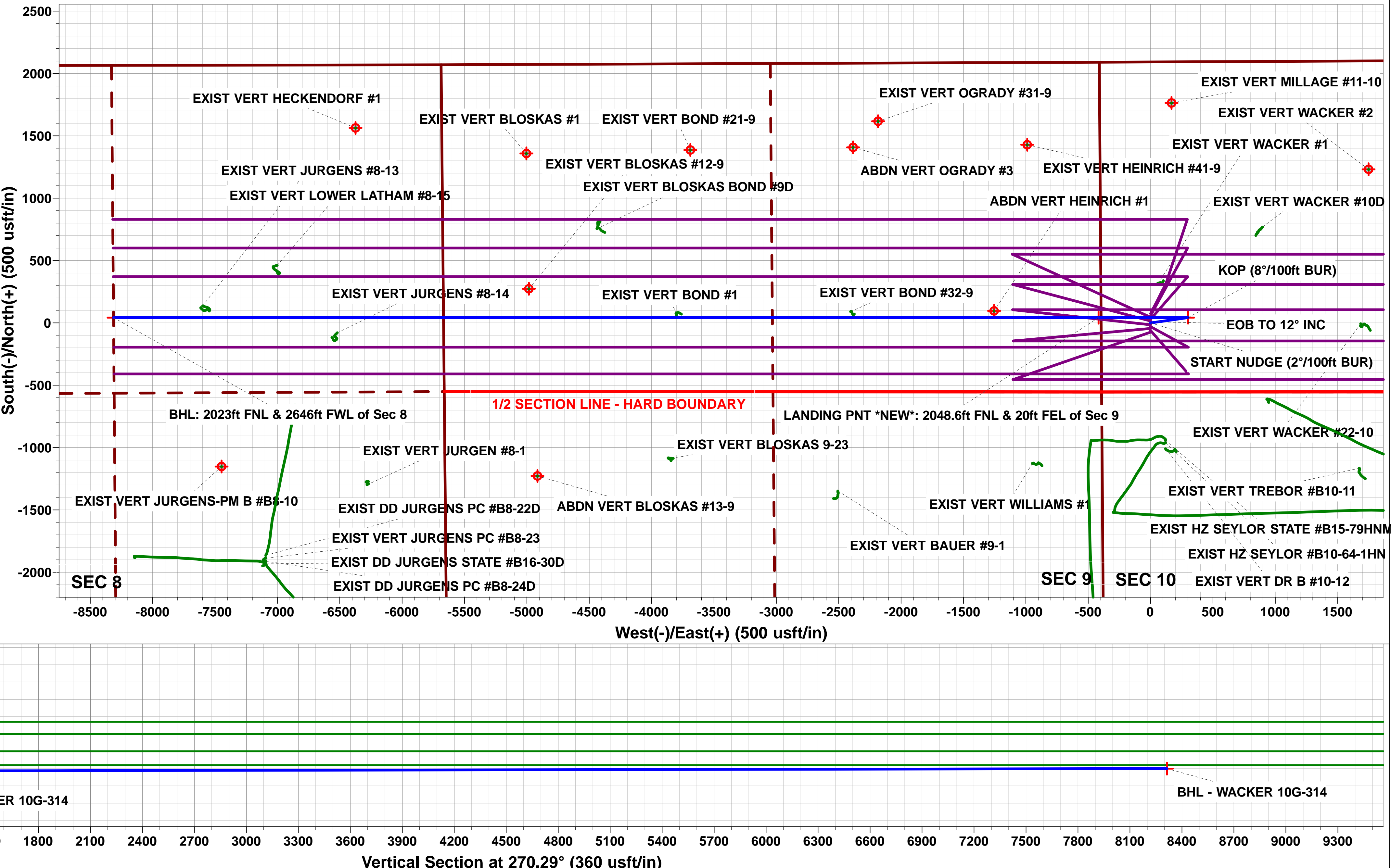
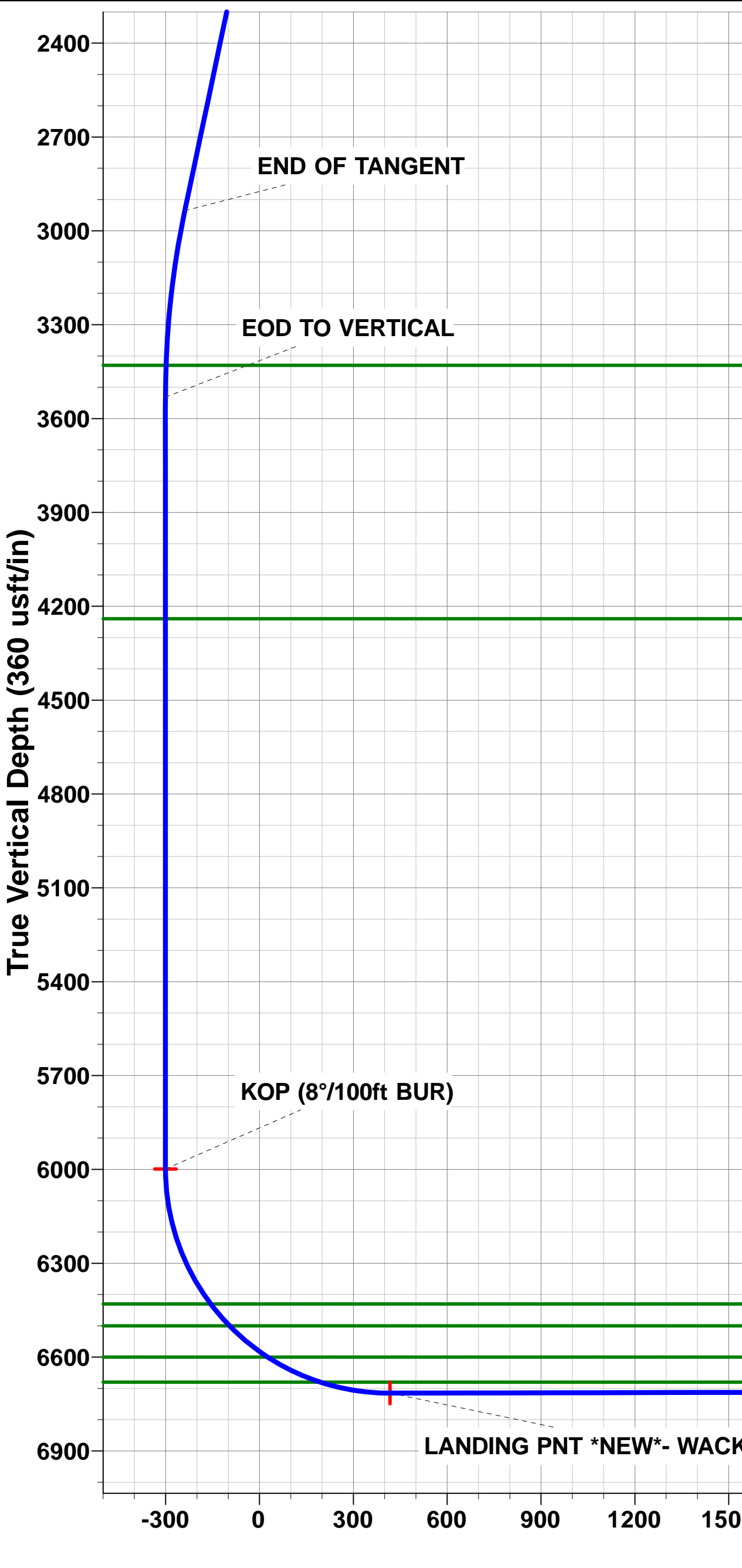
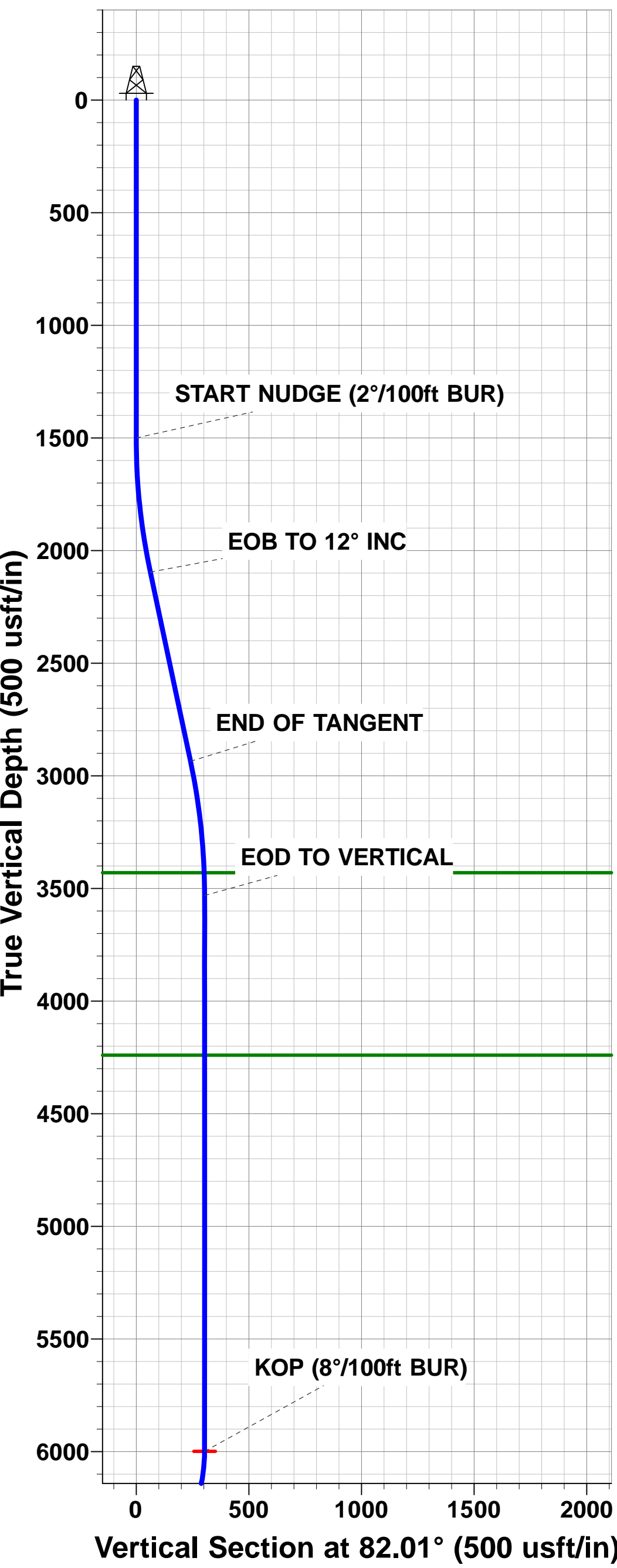
HZ LP \*NEW\*: 2048.6ft FNL & 20ft FEL of Sec 9

BHL: 2023ft FNL & 2646ft FWL of Sec 8



Azimuths to True North  
Magnetic North: 8.24°

Magnetic Field  
Strength: 52581.2snT  
Dip Angle: 66.94°  
Date: 03/02/2016  
Model: IGRF2015



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well WACKER 10G-314
<b>Company:</b>	PDC ENERGY	<b>TVD Reference:</b>	KB-EST @ 4624.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB-EST @ 4624.0usft (Original Well Elev)
<b>Site:</b>	SW NW SEC. 10 T5N R64W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	WACKER 10G-314	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

<b>Project</b>	WELD COUNTY, COLORADO		
<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		Using geodetic scale factor

<b>Site</b>	SW NW SEC. 10 T5N R64W 6th P.M.		
<b>Site Position:</b>		<b>Northing:</b>	1,395,629.17 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,266,123.73 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	1.10000ft
		<b>Latitude:</b>	40.415467
		<b>Longitude:</b>	-104.544238
		<b>Grid Convergence:</b>	0.62 °

<b>Well</b>	WACKER 10G-314		
<b>Well Position</b>	<b>+N/-S</b>	-75.1 usft	<b>Northing:</b>
	<b>+E/-W</b>	-0.8 usft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.0 usft		<b>Wellhead Elevation:</b>
			<b>Latitude:</b>
			<b>Longitude:</b>
			<b>Ground Level:</b>

<b>Wellbore</b>	ORIGINAL WELLBORE				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	03/02/2016	8.24	66.94	52,581

<b>Design</b>	PROPOSAL #1			
<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>
	6,700.0	0.0	0.0	270.29

<b>Plan Sections</b>											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (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	-4,624.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	-3,124.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,099.9	12.00	82.01	2,095.6	-2,528.4	8.7	62.0	2.00	2.00	0.00	82.01	
2,958.9	12.00	82.01	2,935.7	-1,688.3	33.5	238.8	0.00	0.00	0.00	0.00	
3,558.8	0.00	0.00	3,531.3	-1,092.7	42.2	300.8	2.00	-2.00	0.00	180.00	
6,026.3	0.00	0.00	5,998.8	1,374.8	42.2	300.8	0.00	0.00	0.00	0.00	KOP - WACKER 1C
7,152.7	90.11	270.00	6,715.0	2,091.0	42.2	-416.8	8.00	8.00	-7.99	270.00	LANDING PNT *NE
15,049.3	90.11	270.00	6,700.0	2,076.0	42.2	-8,313.4	0.00	0.00	0.00	178.56	BHL - WACKER 10

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well WACKER 10G-314
<b>Company:</b>	PDC ENERGY	<b>TVD Reference:</b>	KB-EST @ 4624.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB-EST @ 4624.0usft (Original Well Elev)
<b>Site:</b>	SW NW SEC. 10 T5N R64W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	WACKER 10G-314	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

## Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
<b>SHL: 2092ft FNL &amp; 396ft FWL of Sec 10</b>										
0.0	0.00	0.00	0.0	4,624.00	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,524.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,424.00	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	4,324.00	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	4,224.00	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	4,124.00	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	4,024.00	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	3,924.00	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	3,824.00	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	3,724.00	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	3,624.00	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	3,524.00	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	3,424.00	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	3,324.00	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	3,224.00	0.0	0.0	0.0	0.00	0.00	0.00
<b>START NUDGE (2°/100ft BUR)</b>										
1,500.0	0.00	0.00	1,500.0	3,124.00	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	2.00	82.01	1,600.0	3,024.02	0.2	1.7	-1.7	2.00	2.00	0.00
1,700.0	4.00	82.01	1,699.8	2,924.16	1.0	6.9	-6.9	2.00	2.00	0.00
1,800.0	6.00	82.01	1,799.5	2,824.55	2.2	15.5	-15.5	2.00	2.00	0.00
1,900.0	8.00	82.01	1,898.7	2,725.30	3.9	27.6	-27.6	2.00	2.00	0.00
2,000.0	10.00	82.01	1,997.5	2,626.53	6.0	43.1	-43.1	2.00	2.00	0.00
<b>EOB TO 12° INC</b>										
2,099.9	12.00	82.01	2,095.6	2,528.44	8.7	62.0	-61.9	2.00	2.00	0.00
2,100.0	12.00	82.01	2,095.6	2,528.38	8.7	62.0	-62.0	0.00	0.00	0.00
2,200.0	12.00	82.01	2,193.4	2,430.56	11.6	82.6	-82.5	0.00	0.00	0.00
2,300.0	12.00	82.01	2,291.3	2,332.75	14.5	103.2	-103.1	0.00	0.00	0.00
2,400.0	12.00	82.01	2,389.1	2,234.93	17.4	123.8	-123.7	0.00	0.00	0.00
2,500.0	12.00	82.01	2,486.9	2,137.12	20.3	144.3	-144.2	0.00	0.00	0.00
2,600.0	12.00	82.01	2,584.7	2,039.30	23.1	164.9	-164.8	0.00	0.00	0.00
2,700.0	12.00	82.01	2,682.5	1,941.49	26.0	185.5	-185.4	0.00	0.00	0.00
2,800.0	12.00	82.01	2,780.3	1,843.67	28.9	206.1	-206.0	0.00	0.00	0.00
2,900.0	12.00	82.01	2,878.1	1,745.86	31.8	226.7	-226.5	0.00	0.00	0.00
<b>END OF TANGENT</b>										
2,958.9	12.00	82.01	2,935.7	1,688.26	33.5	238.8	-238.6	0.00	0.00	0.00
3,000.0	11.18	82.01	2,976.0	1,647.98	34.7	247.0	-246.8	2.00	-2.00	0.00
3,100.0	9.18	82.01	3,074.4	1,549.56	37.1	264.5	-264.3	2.00	-2.00	0.00
3,200.0	7.18	82.01	3,173.4	1,450.58	39.1	278.6	-278.4	2.00	-2.00	0.00
3,300.0	5.18	82.01	3,272.8	1,351.17	40.6	289.2	-289.0	2.00	-2.00	0.00
3,400.0	3.18	82.01	3,372.6	1,251.44	41.6	296.4	-296.2	2.00	-2.00	0.00
<b>PARKMAN SANDSTONE</b>										
3,457.5	2.03	82.01	3,430.0	1,194.00	42.0	299.0	-298.8	2.00	-2.00	0.00
3,500.0	1.18	82.01	3,472.5	1,151.51	42.1	300.2	-300.0	2.00	-2.00	0.00
<b>EOD TO VERTICAL</b>										
3,558.8	0.00	0.00	3,531.3	1,092.70	42.2	300.8	-300.6	2.00	-2.00	0.00
3,600.0	0.00	0.00	3,572.5	1,051.52	42.2	300.8	-300.6	0.00	0.00	0.00
3,700.0	0.00	0.00	3,672.5	951.52	42.2	300.8	-300.6	0.00	0.00	0.00
3,800.0	0.00	0.00	3,772.5	851.52	42.2	300.8	-300.6	0.00	0.00	0.00
3,900.0	0.00	0.00	3,872.5	751.52	42.2	300.8	-300.6	0.00	0.00	0.00
4,000.0	0.00	0.00	3,972.5	651.52	42.2	300.8	-300.6	0.00	0.00	0.00
4,100.0	0.00	0.00	4,072.5	551.52	42.2	300.8	-300.6	0.00	0.00	0.00
4,200.0	0.00	0.00	4,172.5	451.52	42.2	300.8	-300.6	0.00	0.00	0.00



# Planning Report



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<b>Well:</b>	WACKER 10G-314	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

## Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
<b>SUSSEX SANDSTONE</b>										
4,267.5	0.00	0.00	4,240.0	384.00	42.2	300.8	-300.6	0.00	0.00	0.00
4,300.0	0.00	0.00	4,272.5	351.52	42.2	300.8	-300.6	0.00	0.00	0.00
4,400.0	0.00	0.00	4,372.5	251.52	42.2	300.8	-300.6	0.00	0.00	0.00
4,500.0	0.00	0.00	4,472.5	151.52	42.2	300.8	-300.6	0.00	0.00	0.00
4,600.0	0.00	0.00	4,572.5	51.52	42.2	300.8	-300.6	0.00	0.00	0.00
4,700.0	0.00	0.00	4,672.5	-48.48	42.2	300.8	-300.6	0.00	0.00	0.00
4,800.0	0.00	0.00	4,772.5	-148.48	42.2	300.8	-300.6	0.00	0.00	0.00
4,900.0	0.00	0.00	4,872.5	-248.48	42.2	300.8	-300.6	0.00	0.00	0.00
5,000.0	0.00	0.00	4,972.5	-348.48	42.2	300.8	-300.6	0.00	0.00	0.00
5,100.0	0.00	0.00	5,072.5	-448.48	42.2	300.8	-300.6	0.00	0.00	0.00
5,200.0	0.00	0.00	5,172.5	-548.48	42.2	300.8	-300.6	0.00	0.00	0.00
5,300.0	0.00	0.00	5,272.5	-648.48	42.2	300.8	-300.6	0.00	0.00	0.00
5,400.0	0.00	0.00	5,372.5	-748.48	42.2	300.8	-300.6	0.00	0.00	0.00
5,500.0	0.00	0.00	5,472.5	-848.48	42.2	300.8	-300.6	0.00	0.00	0.00
5,600.0	0.00	0.00	5,572.5	-948.48	42.2	300.8	-300.6	0.00	0.00	0.00
5,700.0	0.00	0.00	5,672.5	-1,048.48	42.2	300.8	-300.6	0.00	0.00	0.00
5,800.0	0.00	0.00	5,772.5	-1,148.48	42.2	300.8	-300.6	0.00	0.00	0.00
5,900.0	0.00	0.00	5,872.5	-1,248.48	42.2	300.8	-300.6	0.00	0.00	0.00
6,000.0	0.00	0.00	5,972.5	-1,348.48	42.2	300.8	-300.6	0.00	0.00	0.00
<b>KOP (8°/100ft BUR)</b>										
6,026.3	0.00	0.00	5,998.8	-1,374.80	42.2	300.8	-300.6	0.00	0.00	0.00
6,100.0	5.89	270.00	6,072.4	-1,448.35	42.2	297.0	-296.8	8.00	8.00	0.00
6,200.0	13.89	270.00	6,170.8	-1,546.79	42.2	279.8	-279.6	8.00	8.00	0.00
6,300.0	21.89	270.00	6,265.9	-1,641.87	42.2	249.1	-248.9	8.00	8.00	0.00
6,400.0	29.89	270.00	6,355.8	-1,731.76	42.2	205.5	-205.3	8.00	8.00	0.00
<b>SHARON SPRINGS</b>										
6,489.0	37.02	270.00	6,430.0	-1,806.00	42.2	156.4	-156.2	8.00	8.00	0.00
6,500.0	37.89	270.00	6,438.7	-1,814.70	42.2	149.8	-149.6	8.00	8.00	0.00
<b>NIOBRARA A</b>										
6,581.5	44.41	270.00	6,500.0	-1,876.00	42.2	96.2	-96.0	8.00	8.00	0.00
6,600.0	45.89	270.00	6,513.1	-1,889.07	42.2	83.1	-82.8	8.00	8.00	0.00
6,700.0	53.89	270.00	6,577.4	-1,953.44	42.2	6.6	-6.4	8.00	8.00	0.00
<b>NIOBRARA B</b>										
6,739.8	57.08	270.00	6,600.0	-1,976.00	42.2	-26.2	26.4	8.00	8.00	0.00
6,800.0	61.89	270.00	6,630.5	-2,006.55	42.2	-78.0	78.2	8.00	8.00	0.00
6,900.0	69.89	270.00	6,671.4	-2,047.36	42.2	-169.2	169.4	8.00	8.00	0.00
<b>NIOBRARA C</b>										
6,926.5	72.01	270.00	6,680.0	-2,056.00	42.2	-194.2	194.5	8.00	8.00	0.00
7,000.0	77.89	270.00	6,699.1	-2,075.07	42.2	-265.2	265.4	8.00	8.00	0.00
7,100.0	85.89	270.00	6,713.2	-2,089.16	42.2	-364.1	364.3	8.00	8.00	0.00
<b>LANDING PNT *NEW*: 2048.6ft FNL &amp; 20ft FEL of Sec 9</b>										
7,152.7	90.11	270.00	6,715.0	-2,091.00	42.2	-416.8	417.0	8.00	8.00	0.00
7,200.0	90.11	270.00	6,714.9	-2,090.91	42.2	-464.1	464.3	0.00	0.00	0.00
7,300.0	90.11	270.00	6,714.7	-2,090.71	42.2	-564.1	564.3	0.00	0.00	0.00
7,400.0	90.11	270.00	6,714.5	-2,090.52	42.2	-664.1	664.3	0.00	0.00	0.00
7,500.0	90.11	270.00	6,714.3	-2,090.32	42.2	-764.1	764.3	0.00	0.00	0.00
7,600.0	90.11	270.00	6,714.1	-2,090.13	42.2	-864.1	864.3	0.00	0.00	0.00
7,700.0	90.11	270.00	6,713.9	-2,089.93	42.2	-964.1	964.3	0.00	0.00	0.00
7,800.0	90.11	270.00	6,713.7	-2,089.74	42.2	-1,064.1	1,064.3	0.00	0.00	0.00
7,900.0	90.11	270.00	6,713.5	-2,089.54	42.2	-1,164.1	1,164.3	0.00	0.00	0.00
8,000.0	90.11	270.00	6,713.4	-2,089.35	42.2	-1,264.1	1,264.3	0.00	0.00	0.00
8,100.0	90.11	270.00	6,713.2	-2,089.16	42.2	-1,364.1	1,364.3	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well WACKER 10G-314
<b>Company:</b>	PDC ENERGY	<b>TVD Reference:</b>	KB-EST @ 4624.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB-EST @ 4624.0usft (Original Well Elev)
<b>Site:</b>	SW NW SEC. 10 T5N R64W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	WACKER 10G-314	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,200.0	90.11	270.00	6,713.0	-2,088.96	42.2	-1,464.1	1,464.3	0.00	0.00	0.00
8,300.0	90.11	270.00	6,712.8	-2,088.77	42.2	-1,564.1	1,564.3	0.00	0.00	0.00
8,400.0	90.11	270.00	6,712.6	-2,088.57	42.2	-1,664.1	1,664.3	0.00	0.00	0.00
8,500.0	90.11	270.00	6,712.4	-2,088.38	42.2	-1,764.1	1,764.3	0.00	0.00	0.00
8,600.0	90.11	270.00	6,712.2	-2,088.19	42.2	-1,864.1	1,864.3	0.00	0.00	0.00
8,700.0	90.11	270.00	6,712.0	-2,087.99	42.2	-1,964.1	1,964.3	0.00	0.00	0.00
8,800.0	90.11	270.00	6,711.8	-2,087.80	42.2	-2,064.1	2,064.3	0.00	0.00	0.00
8,900.0	90.11	270.00	6,711.6	-2,087.61	42.2	-2,164.1	2,164.3	0.00	0.00	0.00
9,000.0	90.11	270.00	6,711.4	-2,087.42	42.2	-2,264.1	2,264.3	0.00	0.00	0.00
9,100.0	90.11	270.00	6,711.2	-2,087.22	42.2	-2,364.1	2,364.3	0.00	0.00	0.00
9,200.0	90.11	270.00	6,711.0	-2,087.03	42.2	-2,464.1	2,464.3	0.00	0.00	0.00
9,300.0	90.11	270.00	6,710.8	-2,086.84	42.2	-2,564.1	2,564.3	0.00	0.00	0.00
9,400.0	90.11	270.00	6,710.6	-2,086.65	42.2	-2,664.1	2,664.3	0.00	0.00	0.00
9,500.0	90.11	270.00	6,710.5	-2,086.45	42.2	-2,764.1	2,764.3	0.00	0.00	0.00
9,600.0	90.11	270.00	6,710.3	-2,086.26	42.2	-2,864.1	2,864.3	0.00	0.00	0.00
9,700.0	90.11	270.00	6,710.1	-2,086.07	42.2	-2,964.1	2,964.2	0.00	0.00	0.00
9,800.0	90.11	270.00	6,709.9	-2,085.88	42.2	-3,064.1	3,064.2	0.00	0.00	0.00
9,900.0	90.11	270.00	6,709.7	-2,085.69	42.2	-3,164.1	3,164.2	0.00	0.00	0.00
10,000.0	90.11	270.00	6,709.5	-2,085.49	42.2	-3,264.1	3,264.2	0.00	0.00	0.00
10,100.0	90.11	270.00	6,709.3	-2,085.30	42.2	-3,364.1	3,364.2	0.00	0.00	0.00
10,200.0	90.11	270.00	6,709.1	-2,085.11	42.2	-3,464.1	3,464.2	0.00	0.00	0.00
10,300.0	90.11	270.00	6,708.9	-2,084.92	42.2	-3,564.1	3,564.2	0.00	0.00	0.00
10,400.0	90.11	270.00	6,708.7	-2,084.73	42.2	-3,664.1	3,664.2	0.00	0.00	0.00
10,500.0	90.11	270.00	6,708.5	-2,084.54	42.2	-3,764.1	3,764.2	0.00	0.00	0.00
10,600.0	90.11	270.00	6,708.3	-2,084.35	42.2	-3,864.1	3,864.2	0.00	0.00	0.00
10,700.0	90.11	270.00	6,708.2	-2,084.16	42.2	-3,964.1	3,964.2	0.00	0.00	0.00
10,800.0	90.11	270.00	6,708.0	-2,083.97	42.2	-4,064.1	4,064.2	0.00	0.00	0.00
10,900.0	90.11	270.00	6,707.8	-2,083.78	42.2	-4,164.1	4,164.2	0.00	0.00	0.00
11,000.0	90.11	270.00	6,707.6	-2,083.59	42.2	-4,264.1	4,264.2	0.00	0.00	0.00
11,100.0	90.11	270.00	6,707.4	-2,083.40	42.2	-4,364.1	4,364.2	0.00	0.00	0.00
11,200.0	90.11	270.00	6,707.2	-2,083.21	42.2	-4,464.1	4,464.2	0.00	0.00	0.00
11,300.0	90.11	270.00	6,707.0	-2,083.02	42.2	-4,564.1	4,564.2	0.00	0.00	0.00
11,400.0	90.11	270.00	6,706.8	-2,082.83	42.2	-4,664.1	4,664.2	0.00	0.00	0.00
11,500.0	90.11	270.00	6,706.6	-2,082.64	42.2	-4,764.1	4,764.2	0.00	0.00	0.00
11,600.0	90.11	270.00	6,706.4	-2,082.45	42.2	-4,864.1	4,864.2	0.00	0.00	0.00
11,700.0	90.11	270.00	6,706.3	-2,082.26	42.2	-4,964.1	4,964.2	0.00	0.00	0.00
11,800.0	90.11	270.00	6,706.1	-2,082.07	42.2	-5,064.1	5,064.2	0.00	0.00	0.00
11,900.0	90.11	270.00	6,705.9	-2,081.88	42.2	-5,164.1	5,164.2	0.00	0.00	0.00
12,000.0	90.11	270.00	6,705.7	-2,081.69	42.2	-5,264.1	5,264.2	0.00	0.00	0.00
12,100.0	90.11	270.00	6,705.5	-2,081.50	42.2	-5,364.1	5,364.2	0.00	0.00	0.00
12,200.0	90.11	270.00	6,705.3	-2,081.32	42.2	-5,464.1	5,464.2	0.00	0.00	0.00
12,300.0	90.11	270.00	6,705.1	-2,081.13	42.2	-5,564.1	5,564.2	0.00	0.00	0.00
12,400.0	90.11	270.00	6,704.9	-2,080.94	42.2	-5,664.1	5,664.2	0.00	0.00	0.00
12,500.0	90.11	270.00	6,704.8	-2,080.75	42.2	-5,764.1	5,764.2	0.00	0.00	0.00
12,600.0	90.11	270.00	6,704.6	-2,080.56	42.2	-5,864.1	5,864.2	0.00	0.00	0.00
12,700.0	90.11	270.00	6,704.4	-2,080.37	42.2	-5,964.1	5,964.2	0.00	0.00	0.00
12,800.0	90.11	270.00	6,704.2	-2,080.19	42.2	-6,064.1	6,064.2	0.00	0.00	0.00
12,900.0	90.11	270.00	6,704.0	-2,080.00	42.2	-6,164.1	6,164.2	0.00	0.00	0.00
13,000.0	90.11	270.00	6,703.8	-2,079.81	42.2	-6,264.1	6,264.2	0.00	0.00	0.00
13,100.0	90.11	270.00	6,703.6	-2,079.62	42.2	-6,364.1	6,364.2	0.00	0.00	0.00
13,200.0	90.11	270.00	6,703.4	-2,079.44	42.2	-6,464.1	6,464.2	0.00	0.00	0.00
13,300.0	90.11	270.00	6,703.3	-2,079.25	42.2	-6,564.1	6,564.2	0.00	0.00	0.00
13,400.0	90.11	270.00	6,703.1	-2,079.06	42.2	-6,664.1	6,664.2	0.00	0.00	0.00
13,500.0	90.11	270.00	6,702.9	-2,078.88	42.2	-6,764.1	6,764.2	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well WACKER 10G-314
<b>Company:</b>	PDC ENERGY	<b>TVD Reference:</b>	KB-EST @ 4624.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB-EST @ 4624.0usft (Original Well Elev)
<b>Site:</b>	SW NW SEC. 10 T5N R64W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	WACKER 10G-314	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

## Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,600.0	90.11	270.00	6,702.7	-2,078.69	42.2	-6,864.1	6,864.2	0.00	0.00	0.00
13,700.0	90.11	270.00	6,702.5	-2,078.50	42.2	-6,964.1	6,964.2	0.00	0.00	0.00
13,800.0	90.11	270.00	6,702.3	-2,078.32	42.2	-7,064.1	7,064.2	0.00	0.00	0.00
13,900.0	90.11	270.00	6,702.1	-2,078.13	42.2	-7,164.1	7,164.2	0.00	0.00	0.00
14,000.0	90.11	270.00	6,701.9	-2,077.94	42.2	-7,264.1	7,264.2	0.00	0.00	0.00
14,100.0	90.11	270.00	6,701.8	-2,077.76	42.2	-7,364.1	7,364.2	0.00	0.00	0.00
14,200.0	90.11	270.00	6,701.6	-2,077.57	42.2	-7,464.1	7,464.2	0.00	0.00	0.00
14,300.0	90.11	270.00	6,701.4	-2,077.39	42.2	-7,564.1	7,564.2	0.00	0.00	0.00
14,400.0	90.11	270.00	6,701.2	-2,077.20	42.2	-7,664.1	7,664.2	0.00	0.00	0.00
14,500.0	90.11	270.00	6,701.0	-2,077.02	42.2	-7,764.1	7,764.2	0.00	0.00	0.00
14,600.0	90.11	270.00	6,700.8	-2,076.83	42.2	-7,864.1	7,864.2	0.00	0.00	0.00
14,700.0	90.11	270.00	6,700.6	-2,076.65	42.2	-7,964.1	7,964.2	0.00	0.00	0.00
14,800.0	90.11	270.00	6,700.5	-2,076.46	42.2	-8,064.1	8,064.2	0.00	0.00	0.00
14,900.0	90.11	270.00	6,700.3	-2,076.28	42.2	-8,164.1	8,164.2	0.00	0.00	0.00
15,000.0	90.11	270.00	6,700.1	-2,076.09	42.2	-8,264.1	8,264.2	0.00	0.00	0.00
<b>BHL: 2023ft FNL &amp; 2646ft FWL of Sec 8</b>										
<b>15,049.3</b>	<b>90.11</b>	<b>270.00</b>	<b>6,700.0</b>	<b>-2,076.00</b>	<b>42.2</b>	<b>-8,313.4</b>	<b>8,313.5</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

## Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,457.5	3,430.0	PARKMAN SANDSTONE			
4,267.5	4,240.0	SUSSEX SANDSTONE			
6,489.0	6,430.0	SHARON SPRINGS			
6,581.5	6,500.0	NIOBRARA A			
6,739.8	6,600.0	NIOBRARA B			
6,926.5	6,680.0	NIOBRARA C			

## Plan Annotations

MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.0	0.0	0.0	0.0	SHL: 2092ft FNL & 396ft FWL of Sec 10
1,500.0	1,500.0	0.0	0.0	START NUDGE (2°/100ft BUR)
2,099.9	2,095.6	8.7	62.0	EOB TO 12° INC
2,958.9	2,935.7	33.5	238.8	END OF TANGENT
3,558.8	3,531.3	42.2	300.8	EOD TO VERTICAL
6,026.3	5,998.8	42.2	300.8	KOP (8°/100ft BUR)
7,152.7	6,715.0	42.2	-416.8	LANDING PNT *NEW*: 2048.6ft FNL & 20ft FEL of Sec 9
15,049.3	6,700.0	42.2	-8,313.4	BHL: 2023ft FNL & 2646ft FWL of Sec 8