

# **PDC ENERGY**

**WELD COUNTY, COLORADO  
SW NW SEC. 10 T5N R64W 6th P.M.  
WACKER 10G-214**

**ORIGINAL WELLBORE**

**04 February, 2016**

**Plan: PROPOSAL #1**





Project: WELD COUNTY, COLORADO  
Site: SW NW SEC. 10 T5N R64W 6th P.M.  
Well: WACKER 10G-214  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #1

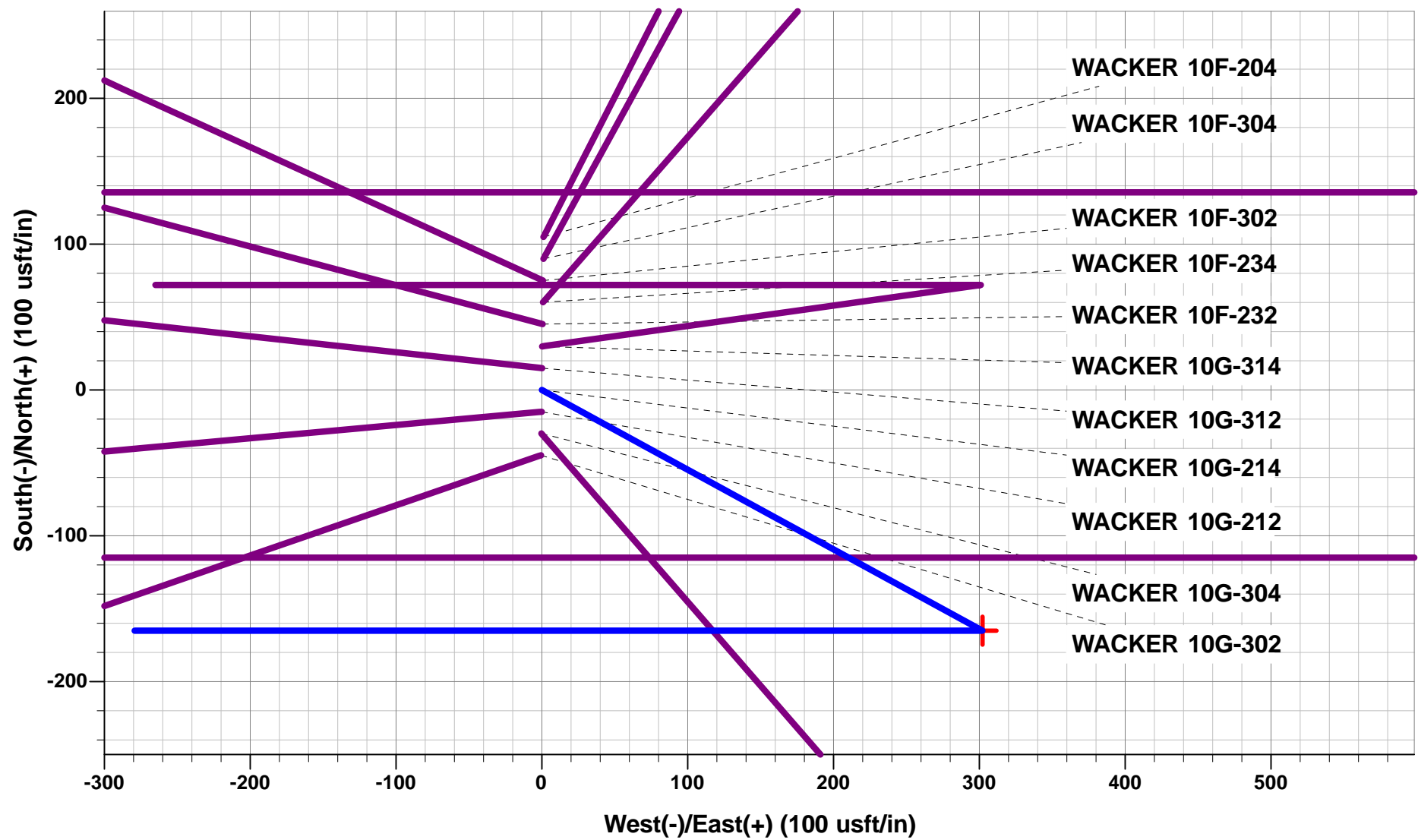


ANNOTATIONS

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: 2122ft FNL & 396ft FWL of Sec 10
1300.0	1300.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1895.8	1900.2	12.00	118.65	-30.0	55.0	-54.4	62.6	EOB TO 12° INC
2926.1	2953.5	12.00	118.65	-135.1	247.2	-244.5	281.7	END OF TANGENT
3521.9	3553.7	0.00	0.00	-165.1	302.2	-298.9	344.4	EOD TO VERTICAL
5928.9	5960.7	0.00	0.00	-165.1	302.2	-298.9	344.4	KOP (8°/100ft BUR)
6645.0	7086.5	90.08	270.00	-165.1	-414.9	418.1	1061.5	LANDING PNT *NEW*: 2285.6ft FNL & 20ft FEL of Sec 9
6635.0	14982.9	90.07	270.00	-165.1	-8311.2	8312.9	8957.8	BHL: 2260ft FNL & 2646ft FWL of Sec 8

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - WACKER 10G-214	5928.9	-165.1	302.2	40.414726	-104.543157
LANDING PNT *NEW* - WACKER 10G-214	6645.0	-165.1	-414.9	40.414726	-104.545732
BHL - WACKER 10G-214	6635.0	-165.1	-8311.2	40.414722	-104.574089

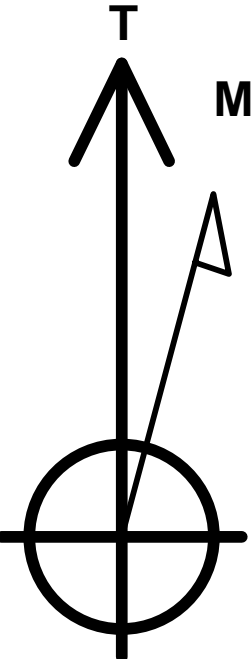


PROPOSED LOCAL COORDINATES:

SHL: 2122ft FNL & 396ft FWL of Sec 10

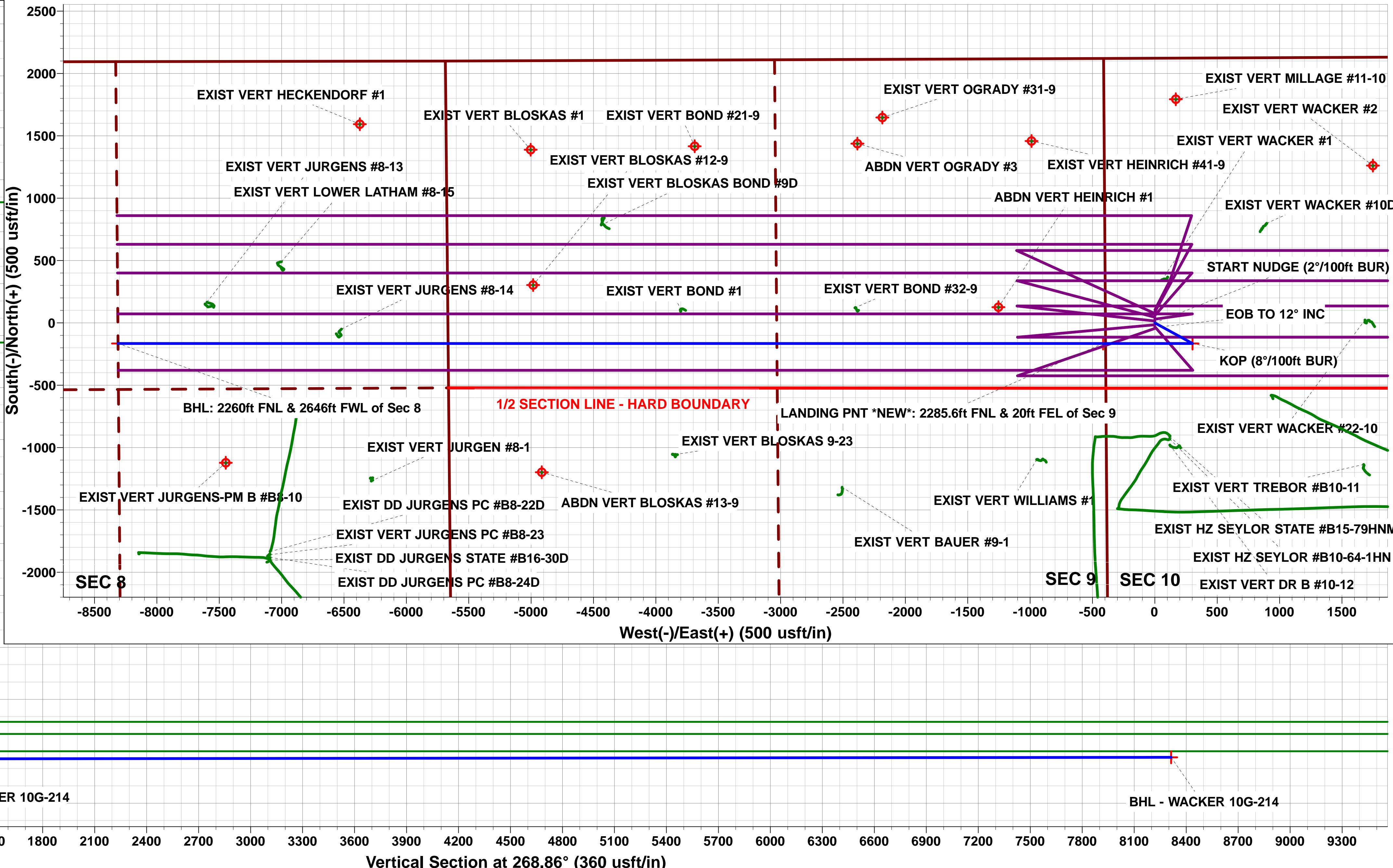
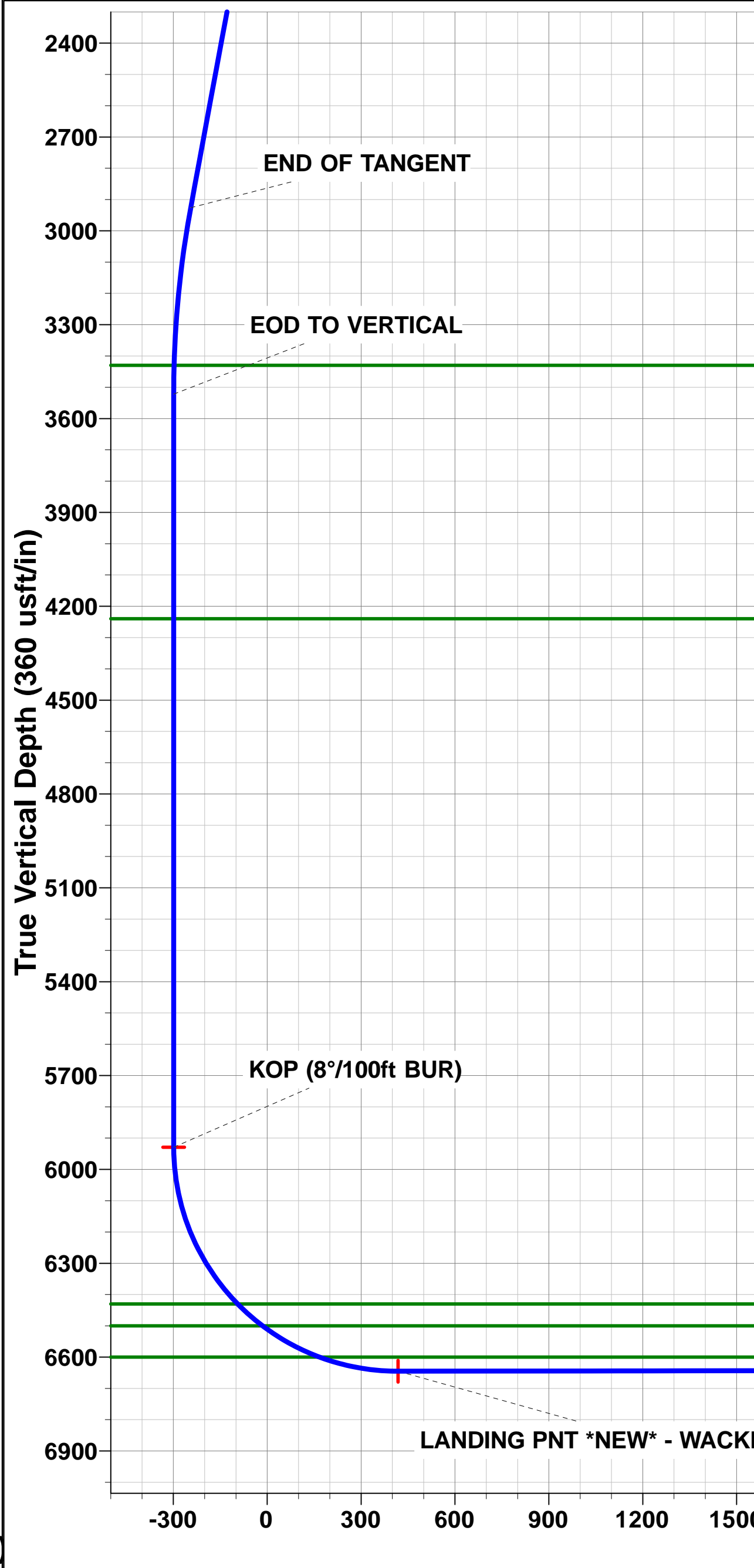
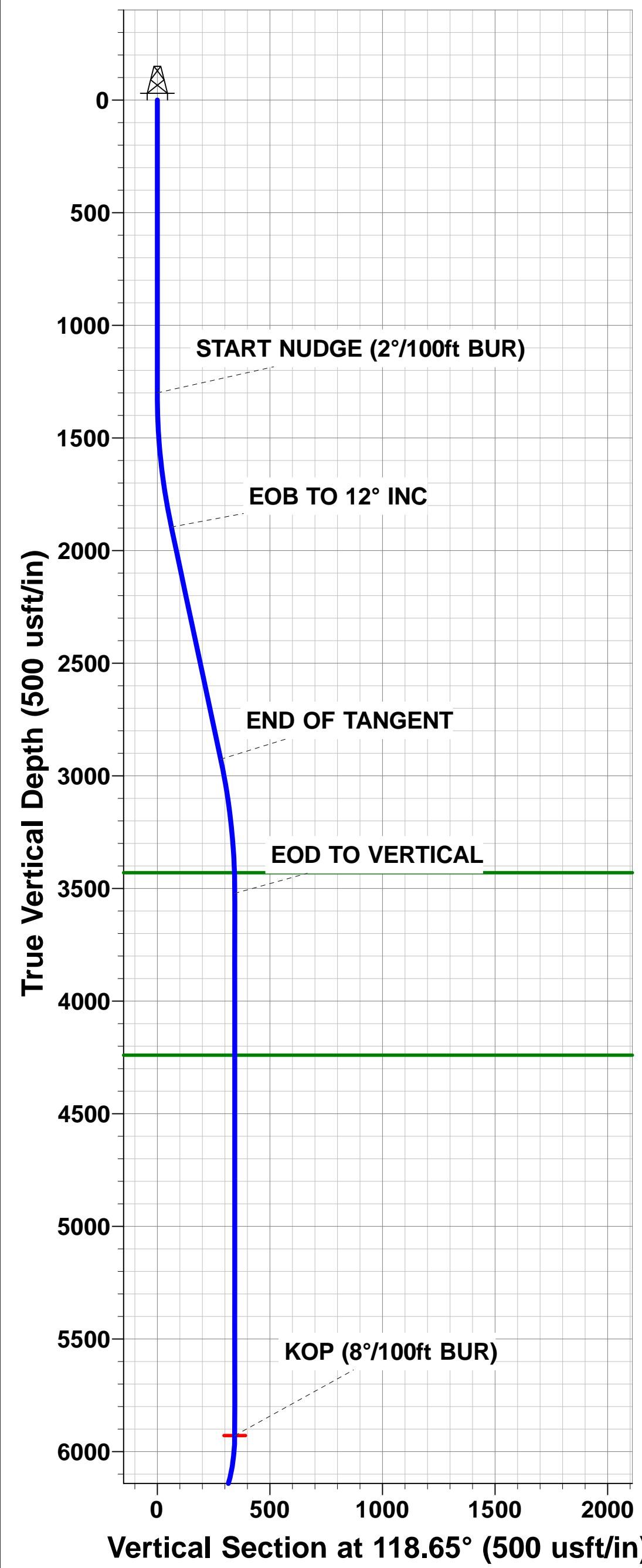
HZ LP \*NEW\*: 2285.6ft FNL & 20ft FEL of Sec 9

BHL: 2260ft FNL & 2646ft FWL of Sec 8



Azimuths to True North  
Magnetic North: 8.24°

Magnetic Field  
Strength: 52580.9snT  
Dip Angle: 66.94°  
Date: 04/02/2016  
Model: IGRF2015



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well WACKER 10G-214
<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-214	<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-214		
<b>Well Position</b>	<b>+N/-S</b>	-104.9 usft	<b>Northing:</b>
	<b>+E/-W</b>	-1.1 usft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>	usft
		<b>Latitude:</b>	40.415179
		<b>Longitude:</b>	-104.544242
		<b>Ground Level:</b>	4,611.0 usft

<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	04/02/2016	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>
	6,635.0	0.0	0.0	268.86

<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	
1,300.0	0.00	0.00	1,300.0	-3,324.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,900.2	12.00	118.65	1,895.8	-2,728.2	-30.0	55.0	2.00	2.00	0.00	118.65	
2,953.5	12.00	118.65	2,926.1	-1,697.9	-135.1	247.2	0.00	0.00	0.00	0.00	
3,553.7	0.00	0.00	3,521.9	-1,102.1	-165.1	302.2	2.00	-2.00	0.00	180.00	
5,960.7	0.00	0.00	5,928.9	1,304.9	-165.1	302.2	0.00	0.00	0.00	0.00	KOP - WACKER 1C
7,086.5	90.08	270.00	6,645.0	2,021.0	-165.1	-414.9	8.00	8.00	-7.99	270.00	LANDING PNT *NE
14,982.9	90.07	270.00	6,635.0	2,011.0	-165.1	-8,311.2	0.00	0.00	0.00	179.09	BHL - WACKER 10

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well WACKER 10G-214
<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-214	<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: 2122ft 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
<b>START NUDGE (2°/100ft BUR)</b>										
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	2.00	118.65	1,400.0	3,224.02	-0.8	1.5	-1.5	2.00	2.00	0.00
1,500.0	4.00	118.65	1,499.8	3,124.16	-3.3	6.1	-6.1	2.00	2.00	0.00
1,600.0	6.00	118.65	1,599.5	3,024.55	-7.5	13.8	-13.6	2.00	2.00	0.00
1,700.0	8.00	118.65	1,698.7	2,925.30	-13.4	24.5	-24.2	2.00	2.00	0.00
1,800.0	10.00	118.65	1,797.5	2,826.53	-20.9	38.2	-37.8	2.00	2.00	0.00
1,900.0	12.00	118.65	1,895.6	2,728.38	-30.0	54.9	-54.3	2.00	2.00	0.00
<b>EOB TO 12° INC</b>										
1,900.2	12.00	118.65	1,895.8	2,728.17	-30.0	55.0	-54.4	2.00	2.00	0.00
2,000.0	12.00	118.65	1,993.4	2,630.56	-40.0	73.2	-72.4	0.00	0.00	0.00
2,100.0	12.00	118.65	2,091.2	2,532.75	-50.0	91.4	-90.4	0.00	0.00	0.00
2,200.0	12.00	118.65	2,189.1	2,434.94	-59.9	109.7	-108.5	0.00	0.00	0.00
2,300.0	12.00	118.65	2,286.9	2,337.12	-69.9	127.9	-126.5	0.00	0.00	0.00
2,400.0	12.00	118.65	2,384.7	2,239.31	-79.9	146.2	-144.6	0.00	0.00	0.00
2,500.0	12.00	118.65	2,482.5	2,141.50	-89.8	164.5	-162.6	0.00	0.00	0.00
2,600.0	12.00	118.65	2,580.3	2,043.68	-99.8	182.7	-180.7	0.00	0.00	0.00
2,700.0	12.00	118.65	2,678.1	1,945.87	-109.8	201.0	-198.7	0.00	0.00	0.00
2,800.0	12.00	118.65	2,775.9	1,848.06	-119.8	219.2	-216.8	0.00	0.00	0.00
2,900.0	12.00	118.65	2,873.8	1,750.24	-129.7	237.5	-234.8	0.00	0.00	0.00
<b>END OF TANGENT</b>										
2,953.5	12.00	118.65	2,926.1	1,697.93	-135.1	247.2	-244.5	0.00	0.00	0.00
3,000.0	11.07	118.65	2,971.6	1,652.36	-139.5	255.4	-252.6	2.00	-2.00	0.00
3,100.0	9.07	118.65	3,070.1	1,553.90	-147.9	270.7	-267.7	2.00	-2.00	0.00
3,200.0	7.07	118.65	3,169.1	1,454.90	-154.6	283.1	-279.9	2.00	-2.00	0.00
3,300.0	5.07	118.65	3,268.5	1,355.46	-159.7	292.3	-289.1	2.00	-2.00	0.00
3,400.0	3.07	118.65	3,368.3	1,255.72	-163.1	298.6	-295.3	2.00	-2.00	0.00
<b>PARKMAN SANDSTONE</b>										
3,461.8	1.84	118.65	3,430.0	1,194.00	-164.4	300.9	-297.6	2.00	-2.00	0.00
3,500.0	1.07	118.65	3,468.2	1,155.79	-164.9	301.8	-298.4	2.00	-2.00	0.00
<b>EOD TO VERTICAL</b>										
3,553.7	0.00	0.00	3,521.9	1,102.10	-165.1	302.2	-298.9	2.00	-2.00	0.00
3,600.0	0.00	0.00	3,568.2	1,055.80	-165.1	302.2	-298.9	0.00	0.00	0.00
3,700.0	0.00	0.00	3,668.2	955.80	-165.1	302.2	-298.9	0.00	0.00	0.00
3,800.0	0.00	0.00	3,768.2	855.80	-165.1	302.2	-298.9	0.00	0.00	0.00
3,900.0	0.00	0.00	3,868.2	755.80	-165.1	302.2	-298.9	0.00	0.00	0.00
4,000.0	0.00	0.00	3,968.2	655.80	-165.1	302.2	-298.9	0.00	0.00	0.00
4,100.0	0.00	0.00	4,068.2	555.80	-165.1	302.2	-298.9	0.00	0.00	0.00
4,200.0	0.00	0.00	4,168.2	455.80	-165.1	302.2	-298.9	0.00	0.00	0.00



# Planning Report



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<b>Site:</b>	SW NW SEC. 10 T5N R64W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	WACKER 10G-214	<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>										
4,271.8	0.00	0.00	4,240.0	384.00	-165.1	302.2	-298.9	0.00	0.00	0.00
4,300.0	0.00	0.00	4,268.2	355.80	-165.1	302.2	-298.9	0.00	0.00	0.00
4,400.0	0.00	0.00	4,368.2	255.80	-165.1	302.2	-298.9	0.00	0.00	0.00
4,500.0	0.00	0.00	4,468.2	155.80	-165.1	302.2	-298.9	0.00	0.00	0.00
4,600.0	0.00	0.00	4,568.2	55.80	-165.1	302.2	-298.9	0.00	0.00	0.00
4,700.0	0.00	0.00	4,668.2	-44.20	-165.1	302.2	-298.9	0.00	0.00	0.00
4,800.0	0.00	0.00	4,768.2	-144.20	-165.1	302.2	-298.9	0.00	0.00	0.00
4,900.0	0.00	0.00	4,868.2	-244.20	-165.1	302.2	-298.9	0.00	0.00	0.00
5,000.0	0.00	0.00	4,968.2	-344.20	-165.1	302.2	-298.9	0.00	0.00	0.00
5,100.0	0.00	0.00	5,068.2	-444.20	-165.1	302.2	-298.9	0.00	0.00	0.00
5,200.0	0.00	0.00	5,168.2	-544.20	-165.1	302.2	-298.9	0.00	0.00	0.00
5,300.0	0.00	0.00	5,268.2	-644.20	-165.1	302.2	-298.9	0.00	0.00	0.00
5,400.0	0.00	0.00	5,368.2	-744.20	-165.1	302.2	-298.9	0.00	0.00	0.00
5,500.0	0.00	0.00	5,468.2	-844.20	-165.1	302.2	-298.9	0.00	0.00	0.00
5,600.0	0.00	0.00	5,568.2	-944.20	-165.1	302.2	-298.9	0.00	0.00	0.00
5,700.0	0.00	0.00	5,668.2	-1,044.20	-165.1	302.2	-298.9	0.00	0.00	0.00
5,800.0	0.00	0.00	5,768.2	-1,144.20	-165.1	302.2	-298.9	0.00	0.00	0.00
5,900.0	0.00	0.00	5,868.2	-1,244.20	-165.1	302.2	-298.9	0.00	0.00	0.00
<b>KOP (8°/100ft BUR)</b>										
5,960.7	0.00	0.00	5,928.9	-1,304.90	-165.1	302.2	-298.9	0.00	0.00	0.00
6,000.0	3.14	270.00	5,968.2	-1,344.18	-165.1	301.1	-297.8	8.00	8.00	0.00
6,100.0	11.15	270.00	6,067.3	-1,443.33	-165.1	288.7	-285.4	8.00	8.00	0.00
6,200.0	19.15	270.00	6,163.8	-1,539.77	-165.1	262.6	-259.3	8.00	8.00	0.00
6,300.0	27.15	270.00	6,255.6	-1,631.65	-165.1	223.3	-220.0	8.00	8.00	0.00
6,400.0	35.15	270.00	6,341.2	-1,717.16	-165.1	171.6	-168.3	8.00	8.00	0.00
6,500.0	43.15	270.00	6,418.7	-1,794.65	-165.1	108.5	-105.2	8.00	8.00	0.00
<b>SHARON SPRINGS</b>										
6,515.7	44.41	270.00	6,430.0	-1,806.00	-165.1	97.7	-94.4	8.00	8.00	0.00
6,600.0	51.15	270.00	6,486.6	-1,862.60	-165.1	35.3	-32.0	8.00	8.00	0.00
<b>NIORARA A</b>										
6,621.8	52.89	270.00	6,500.0	-1,876.00	-165.1	18.1	-14.8	8.00	8.00	0.00
6,700.0	59.15	270.00	6,543.7	-1,919.70	-165.1	-46.7	50.0	8.00	8.00	0.00
6,800.0	67.15	270.00	6,588.8	-1,964.82	-165.1	-135.9	139.1	8.00	8.00	0.00
<b>NIORARA B</b>										
6,830.3	69.58	270.00	6,600.0	-1,976.00	-165.1	-164.1	167.3	8.00	8.00	0.00
6,900.0	75.15	270.00	6,621.1	-1,997.10	-165.1	-230.4	233.7	8.00	8.00	0.00
7,000.0	83.16	270.00	6,639.9	-2,015.90	-165.1	-328.6	331.8	8.00	8.00	0.00
<b>LANDING PNT *NEW*: 2285.6ft FNL &amp; 20ft FEL of Sec 9</b>										
7,086.5	90.08	270.00	6,645.0	-2,021.00	-165.1	-414.9	418.1	8.00	8.00	0.00
7,100.0	90.08	270.00	6,645.0	-2,020.98	-165.1	-428.4	431.6	0.00	0.00	0.00
7,200.0	90.08	270.00	6,644.8	-2,020.84	-165.1	-528.4	531.5	0.00	0.00	0.00
7,300.0	90.08	270.00	6,644.7	-2,020.70	-165.1	-628.4	631.5	0.00	0.00	0.00
7,400.0	90.08	270.00	6,644.6	-2,020.56	-165.1	-728.4	731.5	0.00	0.00	0.00
7,500.0	90.08	270.00	6,644.4	-2,020.43	-165.1	-828.4	831.5	0.00	0.00	0.00
7,600.0	90.08	270.00	6,644.3	-2,020.29	-165.1	-928.4	931.5	0.00	0.00	0.00
7,700.0	90.08	270.00	6,644.2	-2,020.15	-165.1	-1,028.4	1,031.4	0.00	0.00	0.00
7,800.0	90.08	270.00	6,644.0	-2,020.01	-165.1	-1,128.4	1,131.4	0.00	0.00	0.00
7,900.0	90.08	270.00	6,643.9	-2,019.88	-165.1	-1,228.4	1,231.4	0.00	0.00	0.00
8,000.0	90.08	270.00	6,643.7	-2,019.74	-165.1	-1,328.4	1,331.4	0.00	0.00	0.00
8,100.0	90.08	270.00	6,643.6	-2,019.60	-165.1	-1,428.4	1,431.4	0.00	0.00	0.00
8,200.0	90.08	270.00	6,643.5	-2,019.47	-165.1	-1,528.4	1,531.3	0.00	0.00	0.00
8,300.0	90.08	270.00	6,643.3	-2,019.33	-165.1	-1,628.4	1,631.3	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-214
<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-214	<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)
8,400.0	90.08	270.00	6,643.2	-2,019.20	-165.1	-1,728.4	1,731.3	0.00	0.00	0.00
8,500.0	90.08	270.00	6,643.1	-2,019.06	-165.1	-1,828.4	1,831.3	0.00	0.00	0.00
8,600.0	90.08	270.00	6,642.9	-2,018.93	-165.1	-1,928.4	1,931.3	0.00	0.00	0.00
8,700.0	90.08	270.00	6,642.8	-2,018.79	-165.1	-2,028.4	2,031.2	0.00	0.00	0.00
8,800.0	90.08	270.00	6,642.7	-2,018.66	-165.1	-2,128.4	2,131.2	0.00	0.00	0.00
8,900.0	90.08	270.00	6,642.5	-2,018.52	-165.1	-2,228.4	2,231.2	0.00	0.00	0.00
9,000.0	90.08	270.00	6,642.4	-2,018.39	-165.1	-2,328.4	2,331.2	0.00	0.00	0.00
9,100.0	90.08	270.00	6,642.3	-2,018.26	-165.1	-2,428.4	2,431.2	0.00	0.00	0.00
9,200.0	90.08	270.00	6,642.1	-2,018.12	-165.1	-2,528.4	2,531.1	0.00	0.00	0.00
9,300.0	90.08	270.00	6,642.0	-2,017.99	-165.1	-2,628.4	2,631.1	0.00	0.00	0.00
9,400.0	90.08	270.00	6,641.9	-2,017.86	-165.1	-2,728.4	2,731.1	0.00	0.00	0.00
9,500.0	90.08	270.00	6,641.7	-2,017.73	-165.1	-2,828.4	2,831.1	0.00	0.00	0.00
9,600.0	90.08	270.00	6,641.6	-2,017.60	-165.1	-2,928.4	2,931.1	0.00	0.00	0.00
9,700.0	90.08	270.00	6,641.5	-2,017.46	-165.1	-3,028.4	3,031.0	0.00	0.00	0.00
9,800.0	90.07	270.00	6,641.3	-2,017.33	-165.1	-3,128.4	3,131.0	0.00	0.00	0.00
9,900.0	90.07	270.00	6,641.2	-2,017.20	-165.1	-3,228.4	3,231.0	0.00	0.00	0.00
10,000.0	90.07	270.00	6,641.1	-2,017.07	-165.1	-3,328.4	3,331.0	0.00	0.00	0.00
10,100.0	90.07	270.00	6,640.9	-2,016.94	-165.1	-3,428.4	3,431.0	0.00	0.00	0.00
10,200.0	90.07	270.00	6,640.8	-2,016.81	-165.1	-3,528.4	3,530.9	0.00	0.00	0.00
10,300.0	90.07	270.00	6,640.7	-2,016.68	-165.1	-3,628.4	3,630.9	0.00	0.00	0.00
10,400.0	90.07	270.00	6,640.6	-2,016.56	-165.1	-3,728.4	3,730.9	0.00	0.00	0.00
10,500.0	90.07	270.00	6,640.4	-2,016.43	-165.1	-3,828.4	3,830.9	0.00	0.00	0.00
10,600.0	90.07	270.00	6,640.3	-2,016.30	-165.1	-3,928.4	3,930.9	0.00	0.00	0.00
10,700.0	90.07	270.00	6,640.2	-2,016.17	-165.1	-4,028.4	4,030.8	0.00	0.00	0.00
10,800.0	90.07	270.00	6,640.0	-2,016.04	-165.1	-4,128.4	4,130.8	0.00	0.00	0.00
10,900.0	90.07	270.00	6,639.9	-2,015.92	-165.1	-4,228.4	4,230.8	0.00	0.00	0.00
11,000.0	90.07	270.00	6,639.8	-2,015.79	-165.1	-4,328.4	4,330.8	0.00	0.00	0.00
11,100.0	90.07	270.00	6,639.7	-2,015.66	-165.1	-4,428.4	4,430.8	0.00	0.00	0.00
11,200.0	90.07	270.00	6,639.5	-2,015.54	-165.1	-4,528.4	4,530.7	0.00	0.00	0.00
11,300.0	90.07	270.00	6,639.4	-2,015.41	-165.1	-4,628.4	4,630.7	0.00	0.00	0.00
11,400.0	90.07	270.00	6,639.3	-2,015.28	-165.1	-4,728.4	4,730.7	0.00	0.00	0.00
11,500.0	90.07	270.00	6,639.2	-2,015.16	-165.1	-4,828.4	4,830.7	0.00	0.00	0.00
11,600.0	90.07	270.00	6,639.0	-2,015.03	-165.1	-4,928.4	4,930.7	0.00	0.00	0.00
11,700.0	90.07	270.00	6,638.9	-2,014.91	-165.1	-5,028.4	5,030.6	0.00	0.00	0.00
11,800.0	90.07	270.00	6,638.8	-2,014.79	-165.1	-5,128.4	5,130.6	0.00	0.00	0.00
11,900.0	90.07	270.00	6,638.7	-2,014.66	-165.1	-5,228.4	5,230.6	0.00	0.00	0.00
12,000.0	90.07	270.00	6,638.5	-2,014.54	-165.1	-5,328.4	5,330.6	0.00	0.00	0.00
12,100.0	90.07	270.00	6,638.4	-2,014.41	-165.1	-5,428.4	5,430.6	0.00	0.00	0.00
12,200.0	90.07	270.00	6,638.3	-2,014.29	-165.1	-5,528.4	5,530.5	0.00	0.00	0.00
12,300.0	90.07	270.00	6,638.2	-2,014.17	-165.1	-5,628.4	5,630.5	0.00	0.00	0.00
12,400.0	90.07	270.00	6,638.0	-2,014.05	-165.1	-5,728.4	5,730.5	0.00	0.00	0.00
12,500.0	90.07	270.00	6,637.9	-2,013.92	-165.1	-5,828.4	5,830.5	0.00	0.00	0.00
12,600.0	90.07	270.00	6,637.8	-2,013.80	-165.1	-5,928.4	5,930.5	0.00	0.00	0.00
12,700.0	90.07	270.00	6,637.7	-2,013.68	-165.1	-6,028.4	6,030.4	0.00	0.00	0.00
12,800.0	90.07	270.00	6,637.6	-2,013.56	-165.1	-6,128.4	6,130.4	0.00	0.00	0.00
12,900.0	90.07	270.00	6,637.4	-2,013.44	-165.1	-6,228.4	6,230.4	0.00	0.00	0.00
13,000.0	90.07	270.00	6,637.3	-2,013.32	-165.1	-6,328.4	6,330.4	0.00	0.00	0.00
13,100.0	90.07	270.00	6,637.2	-2,013.20	-165.1	-6,428.4	6,430.4	0.00	0.00	0.00
13,200.0	90.07	270.00	6,637.1	-2,013.08	-165.1	-6,528.4	6,530.3	0.00	0.00	0.00
13,300.0	90.07	270.00	6,637.0	-2,012.96	-165.1	-6,628.4	6,630.3	0.00	0.00	0.00
13,400.0	90.07	270.00	6,636.8	-2,012.84	-165.1	-6,728.4	6,730.3	0.00	0.00	0.00
13,500.0	90.07	270.00	6,636.7	-2,012.72	-165.1	-6,828.4	6,830.3	0.00	0.00	0.00
13,600.0	90.07	270.00	6,636.6	-2,012.60	-165.1	-6,928.4	6,930.3	0.00	0.00	0.00
13,700.0	90.07	270.00	6,636.5	-2,012.49	-165.1	-7,028.4	7,030.2	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-214
<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-214	<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)
13,800.0	90.07	270.00	6,636.4	-2,012.37	-165.1	-7,128.4	7,130.2	0.00	0.00	0.00
13,900.0	90.07	270.00	6,636.3	-2,012.25	-165.1	-7,228.4	7,230.2	0.00	0.00	0.00
14,000.0	90.07	270.00	6,636.1	-2,012.13	-165.1	-7,328.4	7,330.2	0.00	0.00	0.00
14,100.0	90.07	270.00	6,636.0	-2,012.02	-165.1	-7,428.4	7,430.2	0.00	0.00	0.00
14,200.0	90.07	270.00	6,635.9	-2,011.90	-165.1	-7,528.4	7,530.1	0.00	0.00	0.00
14,300.0	90.07	270.00	6,635.8	-2,011.78	-165.1	-7,628.4	7,630.1	0.00	0.00	0.00
14,400.0	90.07	270.00	6,635.7	-2,011.67	-165.1	-7,728.4	7,730.1	0.00	0.00	0.00
14,500.0	90.07	270.00	6,635.6	-2,011.55	-165.1	-7,828.4	7,830.1	0.00	0.00	0.00
14,600.0	90.07	270.00	6,635.4	-2,011.44	-165.1	-7,928.4	7,930.1	0.00	0.00	0.00
14,700.0	90.07	270.00	6,635.3	-2,011.32	-165.1	-8,028.4	8,030.0	0.00	0.00	0.00
14,800.0	90.07	270.00	6,635.2	-2,011.21	-165.1	-8,128.4	8,130.0	0.00	0.00	0.00
14,900.0	90.07	270.00	6,635.1	-2,011.09	-165.1	-8,228.3	8,230.0	0.00	0.00	0.00
<b>BHL: 2260ft FNL &amp; 2646ft FWL of Sec 8</b>										
<b>14,982.9</b>	<b>90.07</b>	<b>270.00</b>	<b>6,635.0</b>	<b>-2,011.00</b>	<b>-165.1</b>	<b>-8,311.2</b>	<b>8,312.9</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

## Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,461.8	3,430.0	PARKMAN SANDSTONE			
4,271.8	4,240.0	SUSSEX SANDSTONE			
6,515.7	6,430.0	SHARON SPRINGS			
6,621.8	6,500.0	NIOBRARA A			
6,830.3	6,600.0	NIOBRARA B			

## Plan Annotations

MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.0	0.0	0.0	0.0	SHL: 2122ft FNL & 396ft FWL of Sec 10
1,300.0	1,300.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,900.2	1,895.8	-30.0	55.0	EOB TO 12° INC
2,953.5	2,926.1	-135.1	247.2	END OF TANGENT
3,553.7	3,521.9	-165.1	302.2	EOD TO VERTICAL
5,960.7	5,928.9	-165.1	302.2	KOP (8°/100ft BUR)
7,086.5	6,645.0	-165.1	-414.9	LANDING PNT *NEW*: 2285.6ft FNL & 20ft FEL of Sec 9
14,982.9	6,635.0	-165.1	-8,311.2	BHL: 2260ft FNL & 2646ft FWL of Sec 8