

PDC ENERGY

**WELD COUNTY, COLORADO
SW NW SEC. 10 T5N R64W 6th P.M.
WACKER 10F-204**

ORIGINAL WELLBORE

03 February, 2016

Plan: PROPOSAL #1





Project: WELD COUNTY, COLORADO
Site: SW NW SEC. 10 T5N R64W 6th P.M.
Well: WACKER 10F-204
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

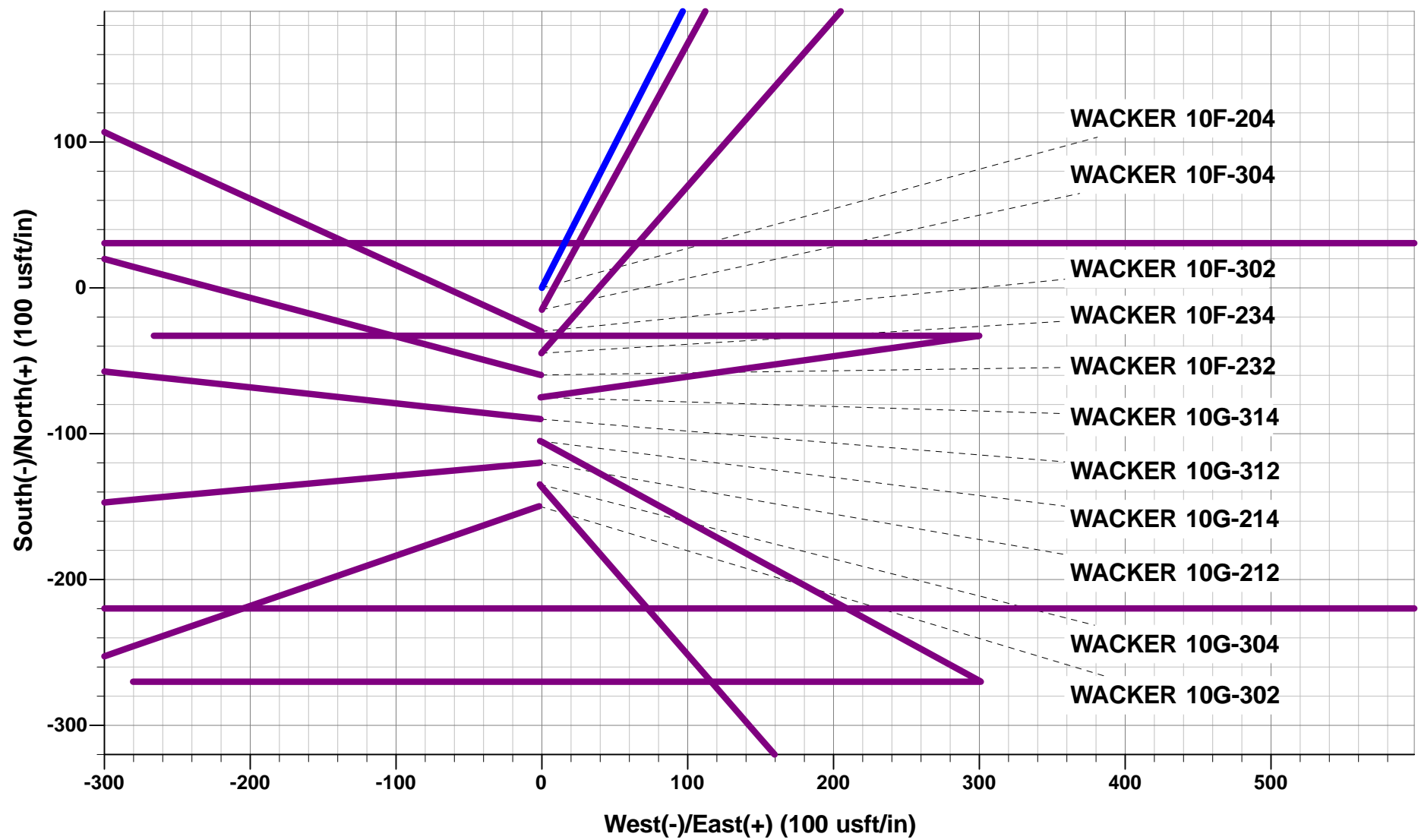


ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Dep	Annotation
0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	SHL: 2017ft FNL & 398ft FWL of Sec 10
1000.0	1000.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1595.6	1600.0	12.00	27.00	55.8	28.4	-23.3	62.6	EOB TO 12° INC
2524.9	2550.0	12.00	27.00	231.8	118.1	-96.7	260.1	END OF TANGENT
2612.3	2639.4	12.00	18.42	248.9	125.3	-102.2	278.7	EOT TO 18.42° AZ
4828.3	4904.9	12.00	18.42	695.8	274.1	-210.1	749.7	END OF TANGENT
5423.9	5504.9	0.00	0.00	755.2	293.9	-224.4	812.3	EOD TO VERTICAL
5928.8	6009.8	0.00	0.00	755.2	293.9	-224.4	812.3	KOP (8°/100ft BUR)
6645.0	7135.7	90.07	270.00	755.2	-423.2	489.7	1529.4	LANDING PNT *NEW*: 1260.2ft FNL & 20ft FEL of Sec 9
6635.0	15033.1	90.08	270.00	755.2	-8320.6	8354.8	9426.8	BHL: 1235ft FNL & 2645ft FWL of Sec 8

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - WACKER 10F-204	5928.8	755.2	293.9	40.417540	-104.543183
LANDING PNT *NEW* - WACKER 10F-204	6645.0	755.2	-423.2	40.417540	-104.545758
BHL - WACKER 10F-204	6635.0	755.2	-8320.6	40.417536	-104.574120

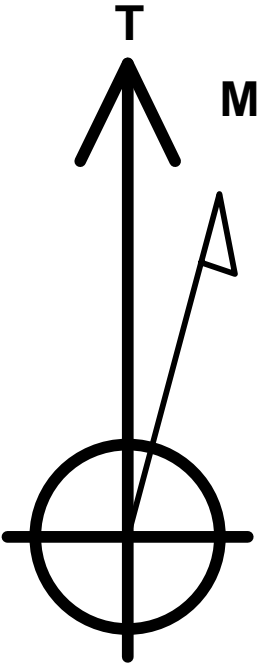


PROPOSED LOCAL COORDINATES:

SHL: 2017ft FNL & 398ft FWL of Sec 10

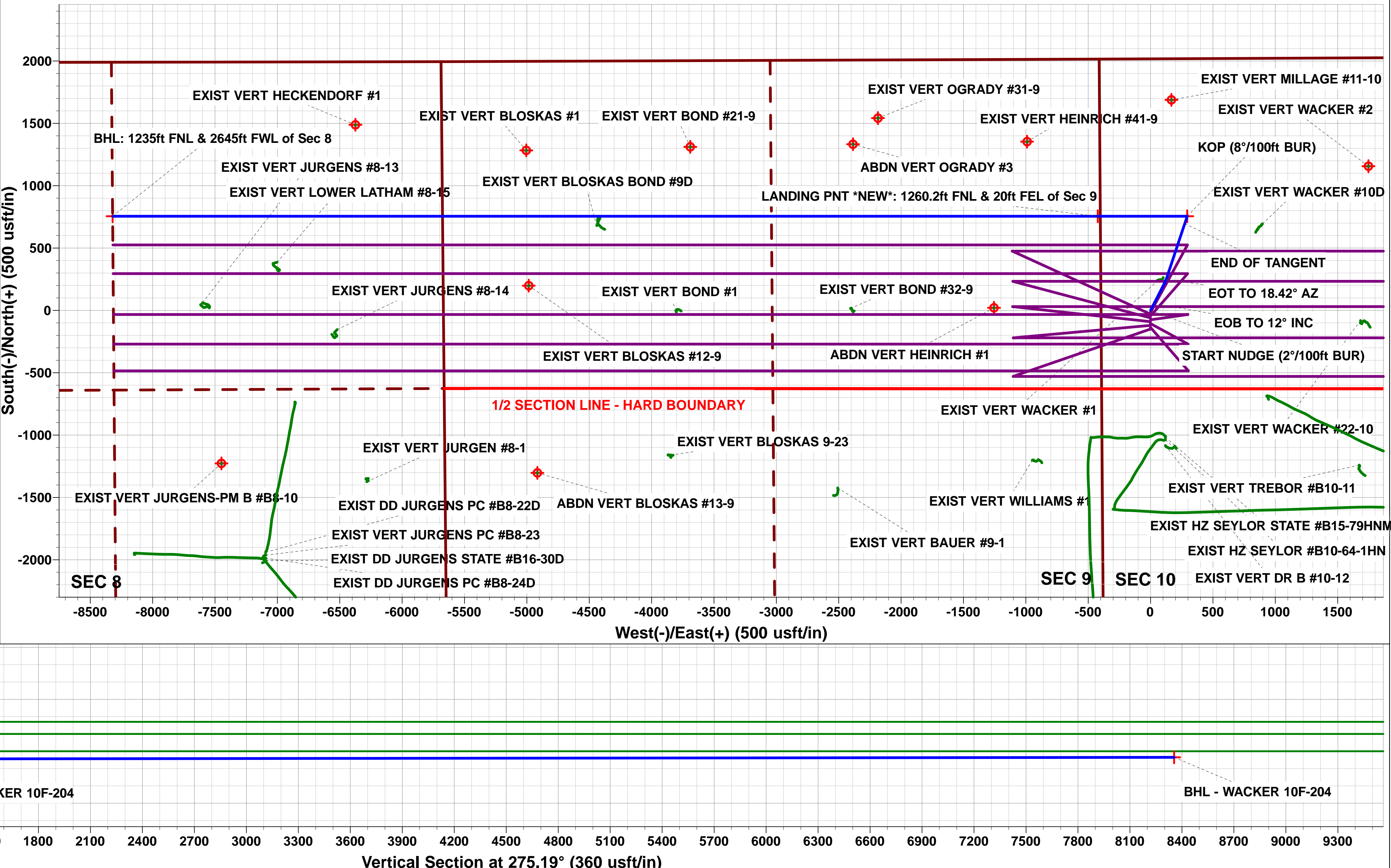
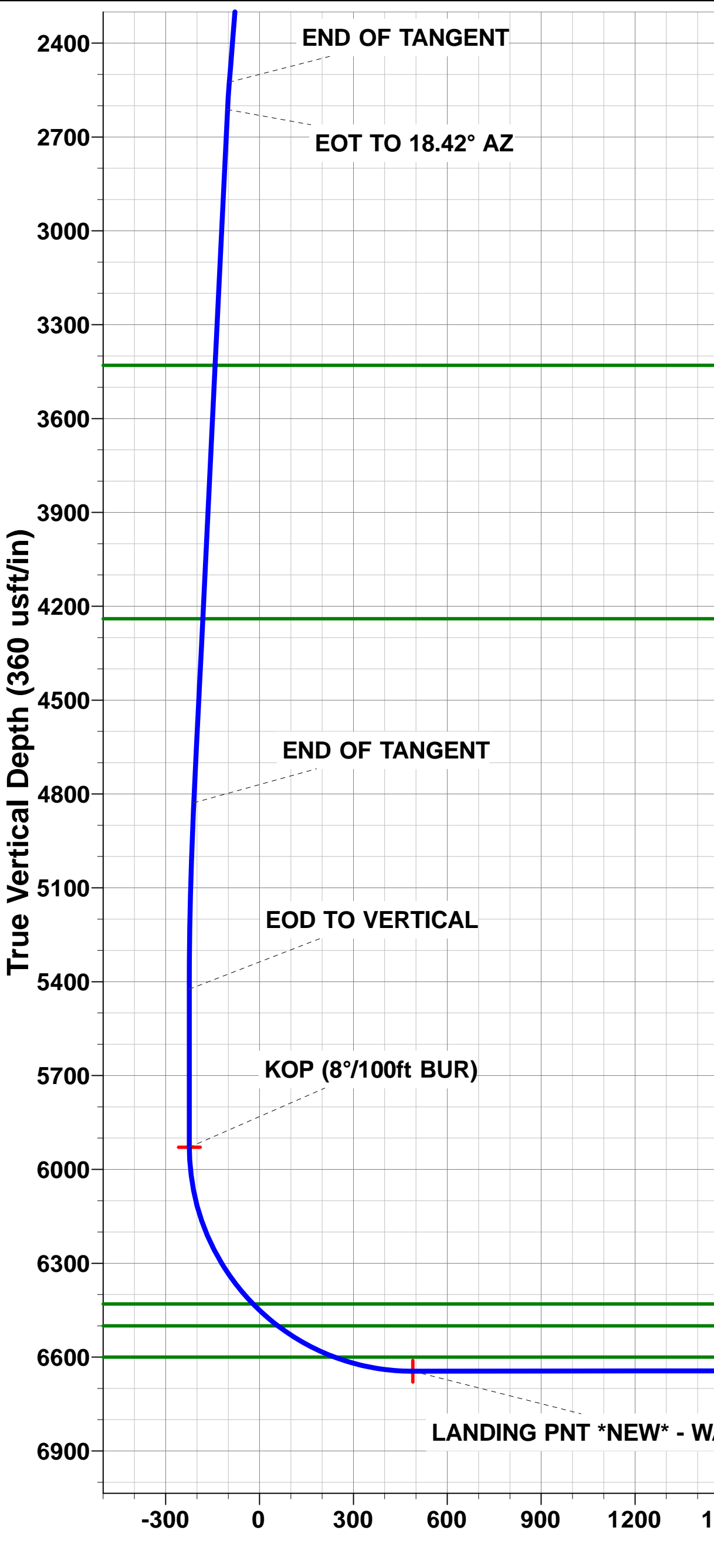
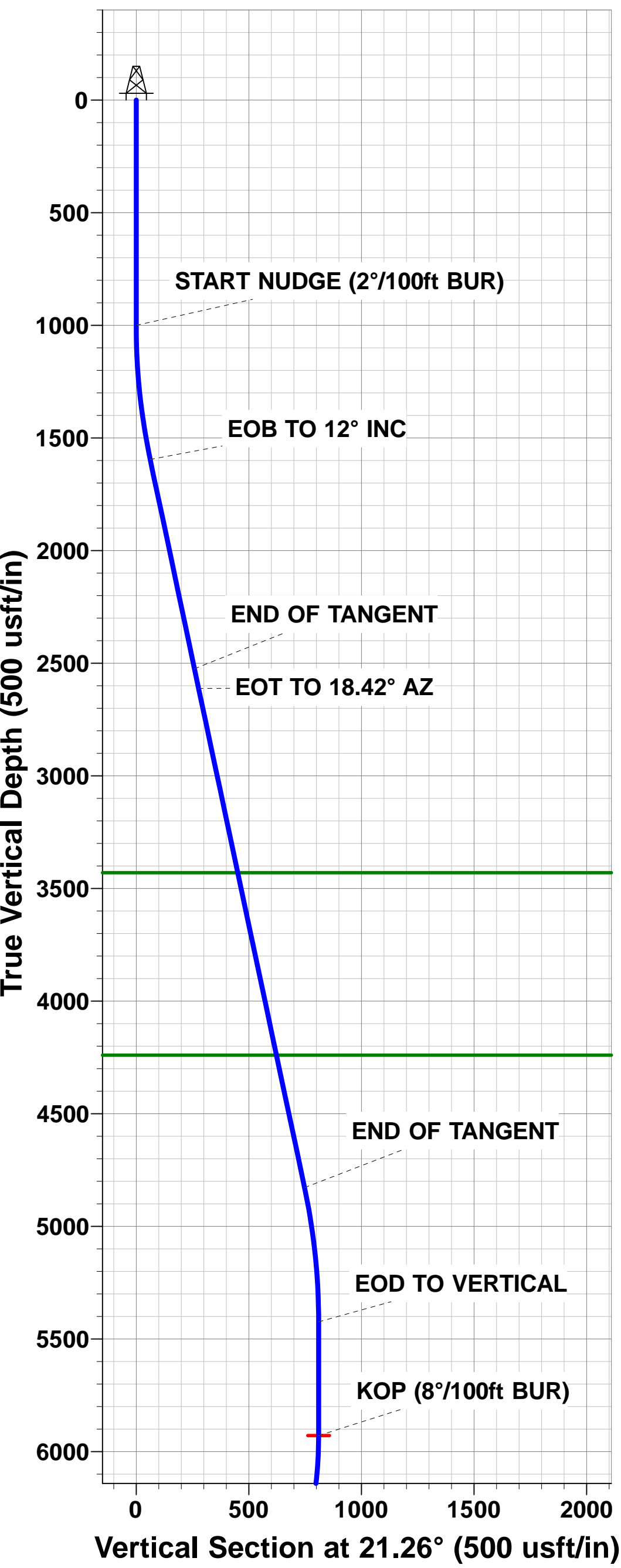
HZ LP *NEW*: 1260.2ft FNL & 20ft FEL of Sec 9

BHL: 1235ft FNL & 2645ft FWL of Sec 8



Azimuths to True North
Magnetic North: 8.24°

Magnetic Field
Strength: 52581.3snT
Dip Angle: 66.94°
Date: 03/02/2016
Model: IGRF2015



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well WACKER 10F-204
Company:	PDC ENERGY	TVD Reference:	KB-EST @ 4624.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4624.0usft (Original Well Elev)
Site:	SW NW SEC. 10 T5N R64W 6th P.M.	North Reference:	True
Well:	WACKER 10F-204	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Project	WELD COUNTY, COLORADO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

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

Well	WACKER 10F-204		
Well Position	+N-S	0.0 usft	Northing:
	+E-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	40.415467
		Longitude:	-104.544238
		Ground Level:	4,611.0 usft

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

Design	PROPOSAL #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
	0.0	0.0	0.0	275.19

Plan Sections											
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	
1,000.0	0.00	0.00	1,000.0	-3,624.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,600.0	12.00	27.00	1,595.6	-3,028.4	55.8	28.4	2.00	2.00	0.00	27.00	
2,550.0	12.00	27.00	2,524.9	-2,099.1	231.8	118.1	0.00	0.00	0.00	0.00	
2,639.4	12.00	18.42	2,612.3	-2,011.7	248.9	125.3	2.00	0.00	-9.60	-90.00	
4,904.9	12.00	18.42	4,828.3	204.3	695.8	274.1	0.00	0.00	0.00	0.00	
5,504.9	0.00	0.00	5,423.9	799.9	755.2	293.9	2.00	-2.00	0.00	180.00	
6,009.8	0.00	0.00	5,928.8	1,304.8	755.2	293.9	0.00	0.00	0.00	0.00	KOP - WACKER 10
7,135.7	90.07	270.00	6,645.0	2,021.0	755.2	-423.2	8.00	8.00	-7.99	270.00	LANDING PNT *NE
15,033.1	90.08	270.00	6,635.0	2,011.0	755.2	-8,320.6	0.00	0.00	0.00	-34.29	BHL - WACKER 10

Planning Report



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Company:	PDC ENERGY	TVD Reference:	KB-EST @ 4624.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4624.0usft (Original Well Elev)
Site:	SW NW SEC. 10 T5N R64W 6th P.M.	North Reference:	True
Well:	WACKER 10F-204	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
SHL: 2017ft FNL & 398ft FWL of Sec 10										
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
START NUDGE (2°/100ft BUR)										
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	2.00	27.00	1,100.0	3,524.02	1.6	0.8	-0.6	2.00	2.00	0.00
1,200.0	4.00	27.00	1,199.8	3,424.16	6.2	3.2	-2.6	2.00	2.00	0.00
1,300.0	6.00	27.00	1,299.5	3,324.55	14.0	7.1	-5.8	2.00	2.00	0.00
1,400.0	8.00	27.00	1,398.7	3,225.30	24.8	12.7	-10.4	2.00	2.00	0.00
1,500.0	10.00	27.00	1,497.5	3,126.53	38.8	19.8	-16.2	2.00	2.00	0.00
EOB TO 12° INC										
1,600.0	12.00	27.00	1,595.6	3,028.38	55.8	28.4	-23.3	2.00	2.00	0.00
1,700.0	12.00	27.00	1,693.4	2,930.56	74.3	37.9	-31.0	0.00	0.00	0.00
1,800.0	12.00	27.00	1,791.3	2,832.75	92.8	47.3	-38.7	0.00	0.00	0.00
1,900.0	12.00	27.00	1,889.1	2,734.93	111.4	56.7	-46.4	0.00	0.00	0.00
2,000.0	12.00	27.00	1,986.9	2,637.12	129.9	66.2	-54.2	0.00	0.00	0.00
2,100.0	12.00	27.00	2,084.7	2,539.30	148.4	75.6	-61.9	0.00	0.00	0.00
2,200.0	12.00	27.00	2,182.5	2,441.49	166.9	85.1	-69.6	0.00	0.00	0.00
2,300.0	12.00	27.00	2,280.3	2,343.67	185.5	94.5	-77.3	0.00	0.00	0.00
2,400.0	12.00	27.00	2,378.1	2,245.86	204.0	103.9	-85.1	0.00	0.00	0.00
2,500.0	12.00	27.00	2,476.0	2,148.04	222.5	113.4	-92.8	0.00	0.00	0.00
END OF TANGENT										
2,550.0	12.00	27.00	2,524.9	2,099.14	231.8	118.1	-96.7	0.00	0.00	0.00
2,600.0	12.00	22.20	2,573.8	2,050.23	241.2	122.4	-100.1	2.00	0.00	-9.60
EOT TO 18.42° AZ										
2,639.4	12.00	18.42	2,612.3	2,011.71	248.9	125.3	-102.2	2.00	0.00	-9.60
2,700.0	12.00	18.42	2,671.6	1,952.41	260.9	129.2	-105.1	0.00	0.00	0.00
2,800.0	12.00	18.42	2,769.4	1,854.60	280.6	135.8	-109.9	0.00	0.00	0.00
2,900.0	12.00	18.42	2,867.2	1,756.78	300.3	142.4	-114.7	0.00	0.00	0.00
3,000.0	12.00	18.42	2,965.0	1,658.97	320.0	149.0	-119.4	0.00	0.00	0.00
3,100.0	12.00	18.42	3,062.8	1,561.16	339.8	155.5	-124.2	0.00	0.00	0.00
3,200.0	12.00	18.42	3,160.7	1,463.34	359.5	162.1	-128.9	0.00	0.00	0.00
3,300.0	12.00	18.42	3,258.5	1,365.53	379.2	168.7	-133.7	0.00	0.00	0.00
3,400.0	12.00	18.42	3,356.3	1,267.71	398.9	175.2	-138.5	0.00	0.00	0.00
PARKMAN SANDSTONE										
3,475.4	12.00	18.42	3,430.0	1,194.00	413.8	180.2	-142.0	0.00	0.00	0.00
3,500.0	12.00	18.42	3,454.1	1,169.90	418.7	181.8	-143.2	0.00	0.00	0.00
3,600.0	12.00	18.42	3,551.9	1,072.08	438.4	188.4	-148.0	0.00	0.00	0.00
3,700.0	12.00	18.42	3,649.7	974.27	458.1	194.9	-152.7	0.00	0.00	0.00
3,800.0	12.00	18.42	3,747.5	876.45	477.8	201.5	-157.5	0.00	0.00	0.00
3,900.0	12.00	18.42	3,845.4	778.64	497.6	208.1	-162.3	0.00	0.00	0.00
4,000.0	12.00	18.42	3,943.2	680.82	517.3	214.6	-167.0	0.00	0.00	0.00
4,100.0	12.00	18.42	4,041.0	583.01	537.0	221.2	-171.8	0.00	0.00	0.00
4,200.0	12.00	18.42	4,138.8	485.19	556.7	227.8	-176.5	0.00	0.00	0.00
4,300.0	12.00	18.42	4,236.6	387.38	576.5	234.4	-181.3	0.00	0.00	0.00

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Well:	WACKER 10F-204	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
SUSSEX SANDSTONE										
4,303.5	12.00	18.42	4,240.0	384.00	577.1	234.6	-181.5	0.00	0.00	0.00
4,400.0	12.00	18.42	4,334.4	289.56	596.2	240.9	-186.0	0.00	0.00	0.00
4,500.0	12.00	18.42	4,432.3	191.75	615.9	247.5	-190.8	0.00	0.00	0.00
4,600.0	12.00	18.42	4,530.1	93.93	635.6	254.1	-195.6	0.00	0.00	0.00
4,700.0	12.00	18.42	4,627.9	-3.88	655.4	260.6	-200.3	0.00	0.00	0.00
4,800.0	12.00	18.42	4,725.7	-101.70	675.1	267.2	-205.1	0.00	0.00	0.00
4,900.0	12.00	18.42	4,823.5	-199.51	694.8	273.8	-209.8	0.00	0.00	0.00
END OF TANGENT										
4,904.9	12.00	18.42	4,828.3	-204.28	695.8	274.1	-210.1	0.00	0.00	0.00
5,000.0	10.10	18.42	4,921.6	-297.64	713.1	279.9	-214.3	2.00	-2.00	0.00
5,100.0	8.10	18.42	5,020.4	-396.37	728.1	284.8	-217.9	2.00	-2.00	0.00
5,200.0	6.10	18.42	5,119.6	-495.60	739.8	288.8	-220.7	2.00	-2.00	0.00
5,300.0	4.10	18.42	5,219.2	-595.20	748.2	291.6	-222.7	2.00	-2.00	0.00
5,400.0	2.10	18.42	5,319.1	-695.05	753.4	293.3	-224.0	2.00	-2.00	0.00
5,500.0	0.10	18.42	5,419.0	-795.03	755.2	293.9	-224.4	2.00	-2.00	0.00
EOD TO VERTICAL										
5,504.9	0.00	0.00	5,423.9	-799.90	755.2	293.9	-224.4	2.00	-2.00	0.00
5,600.0	0.00	0.00	5,519.0	-895.03	755.2	293.9	-224.4	0.00	0.00	0.00
5,700.0	0.00	0.00	5,619.0	-995.03	755.2	293.9	-224.4	0.00	0.00	0.00
5,800.0	0.00	0.00	5,719.0	-1,095.03	755.2	293.9	-224.4	0.00	0.00	0.00
5,900.0	0.00	0.00	5,819.0	-1,195.03	755.2	293.9	-224.4	0.00	0.00	0.00
6,000.0	0.00	0.00	5,919.0	-1,295.03	755.2	293.9	-224.4	0.00	0.00	0.00
KOP (8°/100ft BUR)										
6,009.8	0.00	0.00	5,928.8	-1,304.80	755.2	293.9	-224.4	0.00	0.00	0.00
6,100.0	7.22	270.00	6,018.8	-1,394.79	755.2	288.2	-218.8	8.00	8.00	0.00
6,200.0	15.22	270.00	6,116.8	-1,492.80	755.2	268.8	-199.4	8.00	8.00	0.00
6,300.0	23.22	270.00	6,211.1	-1,587.15	755.2	235.9	-166.6	8.00	8.00	0.00
6,400.0	31.22	270.00	6,300.0	-1,676.00	755.2	190.2	-121.1	8.00	8.00	0.00
6,500.0	39.22	270.00	6,381.6	-1,757.63	755.2	132.5	-63.7	8.00	8.00	0.00
SHARON SPRINGS										
6,564.9	44.41	270.00	6,430.0	-1,806.00	755.2	89.3	-20.7	8.00	8.00	0.00
6,600.0	47.22	270.00	6,454.4	-1,830.45	755.2	64.1	4.4	8.00	8.00	0.00
NIOBRARA A										
6,671.0	52.90	270.00	6,500.0	-1,876.00	755.2	9.7	58.6	8.00	8.00	0.00
6,700.0	55.22	270.00	6,517.0	-1,893.04	755.2	-13.8	82.0	8.00	8.00	0.00
6,800.0	63.22	270.00	6,568.2	-1,944.17	755.2	-99.6	167.5	8.00	8.00	0.00
NIOBRARA B										
6,879.5	69.58	270.00	6,600.0	-1,976.00	755.2	-172.5	240.0	8.00	8.00	0.00
6,900.0	71.22	270.00	6,606.9	-1,982.86	755.2	-191.7	259.2	8.00	8.00	0.00
7,000.0	79.22	270.00	6,632.4	-2,008.36	755.2	-288.3	355.4	8.00	8.00	0.00
7,100.0	87.22	270.00	6,644.2	-2,020.16	755.2	-387.6	454.2	8.00	8.00	0.00
LANDING PNT *NEW*: 1260.2ft FNL & 20ft FEL of Sec 9										
7,135.7	90.07	270.00	6,645.0	-2,021.00	755.2	-423.2	489.7	8.00	8.00	0.00
7,200.0	90.07	270.00	6,644.9	-2,020.92	755.2	-487.5	553.8	0.00	0.00	0.00
7,300.0	90.07	270.00	6,644.8	-2,020.80	755.2	-587.5	653.4	0.00	0.00	0.00
7,400.0	90.07	270.00	6,644.7	-2,020.68	755.2	-687.5	753.0	0.00	0.00	0.00
7,500.0	90.07	270.00	6,644.6	-2,020.55	755.2	-787.5	852.6	0.00	0.00	0.00
7,600.0	90.07	270.00	6,644.4	-2,020.43	755.2	-887.5	952.2	0.00	0.00	0.00
7,700.0	90.07	270.00	6,644.3	-2,020.31	755.2	-987.5	1,051.8	0.00	0.00	0.00
7,800.0	90.07	270.00	6,644.2	-2,020.19	755.2	-1,087.5	1,151.4	0.00	0.00	0.00
7,900.0	90.07	270.00	6,644.1	-2,020.06	755.2	-1,187.5	1,250.9	0.00	0.00	0.00
8,000.0	90.07	270.00	6,643.9	-2,019.94	755.2	-1,287.5	1,350.5	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well WACKER 10F-204
Company:	PDC ENERGY	TVD Reference:	KB-EST @ 4624.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4624.0usft (Original Well Elev)
Site:	SW NW SEC. 10 T5N R64W 6th P.M.	North Reference:	True
Well:	WACKER 10F-204	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
8,100.0	90.07	270.00	6,643.8	-2,019.82	755.2	-1,387.5	1,450.1	0.00	0.00	0.00
8,200.0	90.07	270.00	6,643.7	-2,019.70	755.2	-1,487.5	1,549.7	0.00	0.00	0.00
8,300.0	90.07	270.00	6,643.6	-2,019.57	755.2	-1,587.5	1,649.3	0.00	0.00	0.00
8,400.0	90.07	270.00	6,643.4	-2,019.45	755.2	-1,687.5	1,748.9	0.00	0.00	0.00
8,500.0	90.07	270.00	6,643.3	-2,019.33	755.2	-1,787.5	1,848.5	0.00	0.00	0.00
8,600.0	90.07	270.00	6,643.2	-2,019.20	755.2	-1,887.5	1,948.1	0.00	0.00	0.00
8,700.0	90.07	270.00	6,643.1	-2,019.08	755.2	-1,987.5	2,047.7	0.00	0.00	0.00
8,800.0	90.07	270.00	6,643.0	-2,018.95	755.2	-2,087.5	2,147.3	0.00	0.00	0.00
8,900.0	90.07	270.00	6,642.8	-2,018.83	755.2	-2,187.5	2,246.9	0.00	0.00	0.00
9,000.0	90.07	270.00	6,642.7	-2,018.71	755.2	-2,287.5	2,346.4	0.00	0.00	0.00
9,100.0	90.07	270.00	6,642.6	-2,018.58	755.2	-2,387.5	2,446.0	0.00	0.00	0.00
9,200.0	90.07	270.00	6,642.5	-2,018.46	755.2	-2,487.5	2,545.6	0.00	0.00	0.00
9,300.0	90.07	270.00	6,642.3	-2,018.33	755.2	-2,587.5	2,645.2	0.00	0.00	0.00
9,400.0	90.07	270.00	6,642.2	-2,018.21	755.2	-2,687.5	2,744.8	0.00	0.00	0.00
9,500.0	90.07	270.00	6,642.1	-2,018.08	755.2	-2,787.5	2,844.4	0.00	0.00	0.00
9,600.0	90.07	270.00	6,642.0	-2,017.96	755.2	-2,887.5	2,944.0	0.00	0.00	0.00
9,700.0	90.07	270.00	6,641.8	-2,017.83	755.2	-2,987.5	3,043.6	0.00	0.00	0.00
9,800.0	90.07	270.00	6,641.7	-2,017.71	755.2	-3,087.5	3,143.2	0.00	0.00	0.00
9,900.0	90.07	270.00	6,641.6	-2,017.58	755.2	-3,187.5	3,242.8	0.00	0.00	0.00
10,000.0	90.07	270.00	6,641.5	-2,017.46	755.2	-3,287.5	3,342.4	0.00	0.00	0.00
10,100.0	90.07	270.00	6,641.3	-2,017.33	755.3	-3,387.5	3,441.9	0.00	0.00	0.00
10,200.0	90.07	270.00	6,641.2	-2,017.21	755.3	-3,487.5	3,541.5	0.00	0.00	0.00
10,300.0	90.07	270.00	6,641.1	-2,017.08	755.3	-3,587.5	3,641.1	0.00	0.00	0.00
10,400.0	90.07	270.00	6,641.0	-2,016.96	755.3	-3,687.5	3,740.7	0.00	0.00	0.00
10,500.0	90.07	270.00	6,640.8	-2,016.83	755.3	-3,787.5	3,840.3	0.00	0.00	0.00
10,600.0	90.07	270.00	6,640.7	-2,016.70	755.3	-3,887.5	3,939.9	0.00	0.00	0.00
10,700.0	90.07	270.00	6,640.6	-2,016.58	755.3	-3,987.5	4,039.5	0.00	0.00	0.00
10,800.0	90.07	270.00	6,640.5	-2,016.45	755.3	-4,087.5	4,139.1	0.00	0.00	0.00
10,900.0	90.07	270.00	6,640.3	-2,016.33	755.3	-4,187.5	4,238.7	0.00	0.00	0.00
11,000.0	90.07	270.00	6,640.2	-2,016.20	755.3	-4,287.5	4,338.3	0.00	0.00	0.00
11,100.0	90.07	270.00	6,640.1	-2,016.07	755.3	-4,387.5	4,437.9	0.00	0.00	0.00
11,200.0	90.07	270.00	6,639.9	-2,015.95	755.3	-4,487.5	4,537.4	0.00	0.00	0.00
11,300.0	90.07	270.00	6,639.8	-2,015.82	755.3	-4,587.5	4,637.0	0.00	0.00	0.00
11,400.0	90.07	270.00	6,639.7	-2,015.69	755.2	-4,687.5	4,736.6	0.00	0.00	0.00
11,500.0	90.07	270.00	6,639.6	-2,015.56	755.2	-4,787.5	4,836.2	0.00	0.00	0.00
11,600.0	90.07	270.00	6,639.4	-2,015.44	755.2	-4,887.5	4,935.8	0.00	0.00	0.00
11,700.0	90.07	270.00	6,639.3	-2,015.31	755.2	-4,987.5	5,035.4	0.00	0.00	0.00
11,800.0	90.07	270.00	6,639.2	-2,015.18	755.2	-5,087.5	5,135.0	0.00	0.00	0.00
11,900.0	90.07	270.00	6,639.1	-2,015.06	755.2	-5,187.5	5,234.6	0.00	0.00	0.00
12,000.0	90.07	270.00	6,638.9	-2,014.93	755.2	-5,287.5	5,334.2	0.00	0.00	0.00
12,100.0	90.07	270.00	6,638.8	-2,014.80	755.2	-5,387.5	5,433.8	0.00	0.00	0.00
12,200.0	90.07	270.00	6,638.7	-2,014.67	755.2	-5,487.5	5,533.3	0.00	0.00	0.00
12,300.0	90.07	270.00	6,638.5	-2,014.54	755.2	-5,587.5	5,632.9	0.00	0.00	0.00
12,400.0	90.07	270.00	6,638.4	-2,014.42	755.2	-5,687.5	5,732.5	0.00	0.00	0.00
12,500.0	90.07	270.00	6,638.3	-2,014.29	755.2	-5,787.5	5,832.1	0.00	0.00	0.00
12,600.0	90.07	270.00	6,638.2	-2,014.16	755.2	-5,887.5	5,931.7	0.00	0.00	0.00
12,700.0	90.07	270.00	6,638.0	-2,014.03	755.2	-5,987.5	6,031.3	0.00	0.00	0.00
12,800.0	90.07	270.00	6,637.9	-2,013.90	755.2	-6,087.5	6,130.9	0.00	0.00	0.00
12,900.0	90.07	270.00	6,637.8	-2,013.77	755.2	-6,187.5	6,230.5	0.00	0.00	0.00
13,000.0	90.07	270.00	6,637.6	-2,013.64	755.2	-6,287.5	6,330.1	0.00	0.00	0.00
13,100.0	90.07	270.00	6,637.5	-2,013.52	755.2	-6,387.5	6,429.7	0.00	0.00	0.00
13,200.0	90.07	270.00	6,637.4	-2,013.39	755.2	-6,487.5	6,529.3	0.00	0.00	0.00
13,300.0	90.07	270.00	6,637.3	-2,013.26	755.2	-6,587.5	6,628.8	0.00	0.00	0.00
13,400.0	90.07	270.00	6,637.1	-2,013.13	755.2	-6,687.5	6,728.4	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well WACKER 10F-204
Company:	PDC ENERGY	TVD Reference:	KB-EST @ 4624.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4624.0usft (Original Well Elev)
Site:	SW NW SEC. 10 T5N R64W 6th P.M.	North Reference:	True
Well:	WACKER 10F-204	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
13,500.0	90.07	270.00	6,637.0	-2,013.00	755.2	-6,787.5	6,828.0	0.00	0.00	0.00
13,600.0	90.07	270.00	6,636.9	-2,012.87	755.2	-6,887.5	6,927.6	0.00	0.00	0.00
13,700.0	90.07	270.00	6,636.7	-2,012.74	755.2	-6,987.5	7,027.2	0.00	0.00	0.00
13,800.0	90.07	270.00	6,636.6	-2,012.61	755.2	-7,087.5	7,126.8	0.00	0.00	0.00
13,900.0	90.07	270.00	6,636.5	-2,012.48	755.2	-7,187.5	7,226.4	0.00	0.00	0.00
14,000.0	90.07	270.00	6,636.3	-2,012.35	755.2	-7,287.5	7,326.0	0.00	0.00	0.00
14,100.0	90.07	270.00	6,636.2	-2,012.22	755.2	-7,387.5	7,425.6	0.00	0.00	0.00
14,200.0	90.07	270.00	6,636.1	-2,012.09	755.2	-7,487.5	7,525.2	0.00	0.00	0.00
14,300.0	90.07	270.00	6,636.0	-2,011.96	755.2	-7,587.5	7,624.7	0.00	0.00	0.00
14,400.0	90.07	270.00	6,635.8	-2,011.83	755.2	-7,687.5	7,724.3	0.00	0.00	0.00
14,500.0	90.07	270.00	6,635.7	-2,011.70	755.2	-7,787.5	7,823.9	0.00	0.00	0.00
14,600.0	90.07	270.00	6,635.6	-2,011.57	755.2	-7,887.5	7,923.5	0.00	0.00	0.00
14,700.0	90.07	270.00	6,635.4	-2,011.44	755.2	-7,987.5	8,023.1	0.00	0.00	0.00
14,800.0	90.08	270.00	6,635.3	-2,011.31	755.2	-8,087.5	8,122.7	0.00	0.00	0.00
14,900.0	90.08	270.00	6,635.2	-2,011.17	755.2	-8,187.5	8,222.3	0.00	0.00	0.00
15,000.0	90.08	270.00	6,635.0	-2,011.04	755.2	-8,287.5	8,321.9	0.00	0.00	0.00
BHL: 1235ft FNL & 2645ft FWL of Sec 8										
15,033.1	90.08	270.00	6,635.0	-2,011.00	755.2	-8,320.6	8,354.8	0.00	0.00	0.00

Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,475.4	3,430.0	PARKMAN SANDSTONE			
4,303.5	4,240.0	SUSSEX SANDSTONE			
6,564.9	6,430.0	SHARON SPRINGS			
6,671.0	6,500.0	NIOBRARA A			
6,879.5	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: 2017ft FNL & 398ft FWL of Sec 10
1,000.0	1,000.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,600.0	1,595.6	55.8	28.4	EOB TO 12° INC
2,550.0	2,524.9	231.8	118.1	END OF TANGENT
2,639.4	2,612.3	248.9	125.3	EOT TO 18.42° AZ
4,904.9	4,828.3	695.8	274.1	END OF TANGENT
5,504.9	5,423.9	755.2	293.9	EOD TO VERTICAL
6,009.8	5,928.8	755.2	293.9	KOP (8°/100ft BUR)
7,135.7	6,645.0	755.2	-423.2	LANDING PNT *NEW*: 1260.2ft FNL & 20ft FEL of Sec 9
15,033.1	6,635.0	755.2	-8,320.6	BHL: 1235ft FNL & 2645ft FWL of Sec 8