PDC ENERGY

WELD COUNTY, COLORADO
NW NE SEC 30 T4N R67W 6th P.M.
OLSON 30M-223

ORIGINAL WELLBORE

26 February, 2016

Plan: PROPOSAL #2

Project: WELD COUNTY, COLORADO
Site: NW NE SEC 30 T4N R67W 6th P.M.
Well: OLSON 30M-223
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #2

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: 983ft FNL & 2374ft FEL of Sec 30
2150.0	2150.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)
2880.6	2888.8	14.78	0.24	94.7	0.4	-94.7	94.7	EOB TO 14.78° INC
5643.2	5745.8	14.78	0.24	823.4	3.5	-823.4	823.4	END OF TANGENT
6373.8	6484.6	0.00	0.00	918.1	3.9	-918.1	918.1	EOD TO VERTICAL
6403.8	6514.6	0.00	0.00	918.1	3.9	-918.1	918.1	KOP (8°/100ft BUR)
7120.0	7641.3	90.14	180.00	200.2	3.9	-200.2	1636.0	7" ICP *NEW*: 782.9ft FNL & 2370.9ft FEL of Sec 30
7110.0	11655.0	90.15	180.00	-3813.5	3.9	3813.5	5649.7	BHL: 500ft FSL & 2365ft FEL of Sec 30

PROPOSED LOCAL COORDINATES:

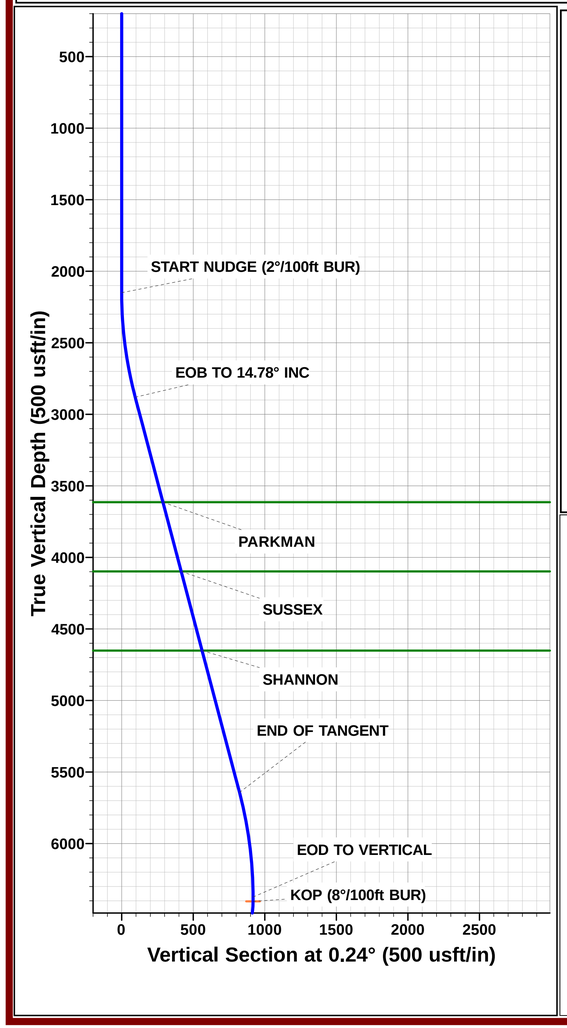
SHL: 983ft FNL & 2374t FEL Sec 30

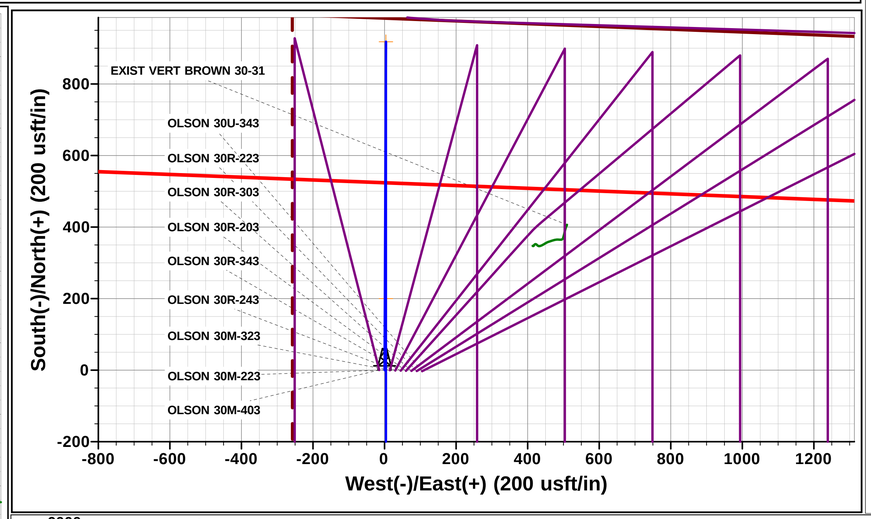
7" ICP *NEW*: 782.9ft FNL & 2370.9ft FEL Sec 30

BHL: 500ft FSL & 2365ft FEL Sec 30

WELLBORE TARGET DETAILS (LAT/LONG)

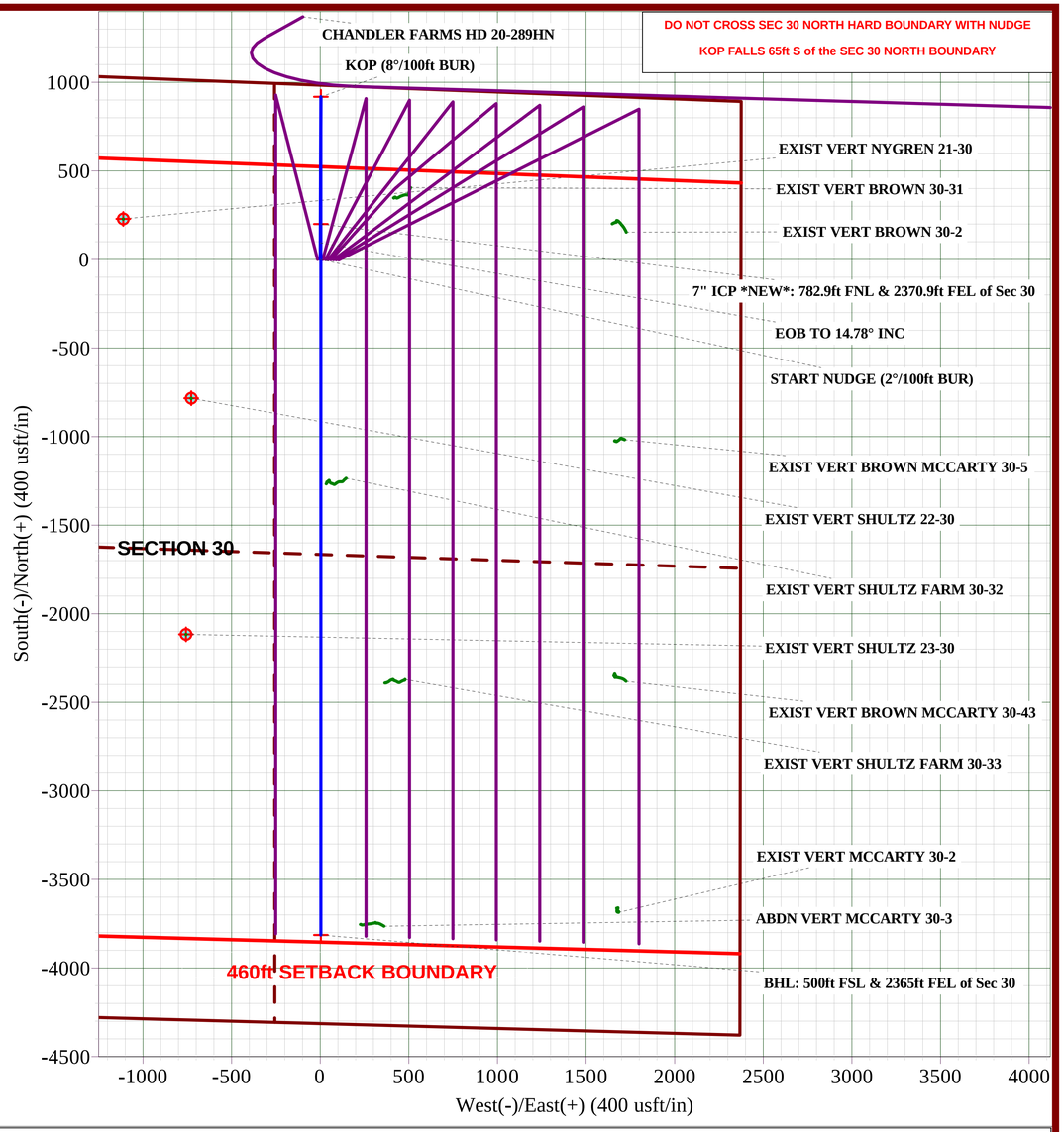
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - OLSON 30M-223 (P2)	6403.8	918.1	3.9	40.291541	-104.931556
BHL - OLSON 30M-223	7110.0	-3813.5	3.9	40.278553	-104.931556
7" ICP *NEW* - OLSON 30M-223 (P2)	7120.0	200.2	3.9	40.289571	-104.931556

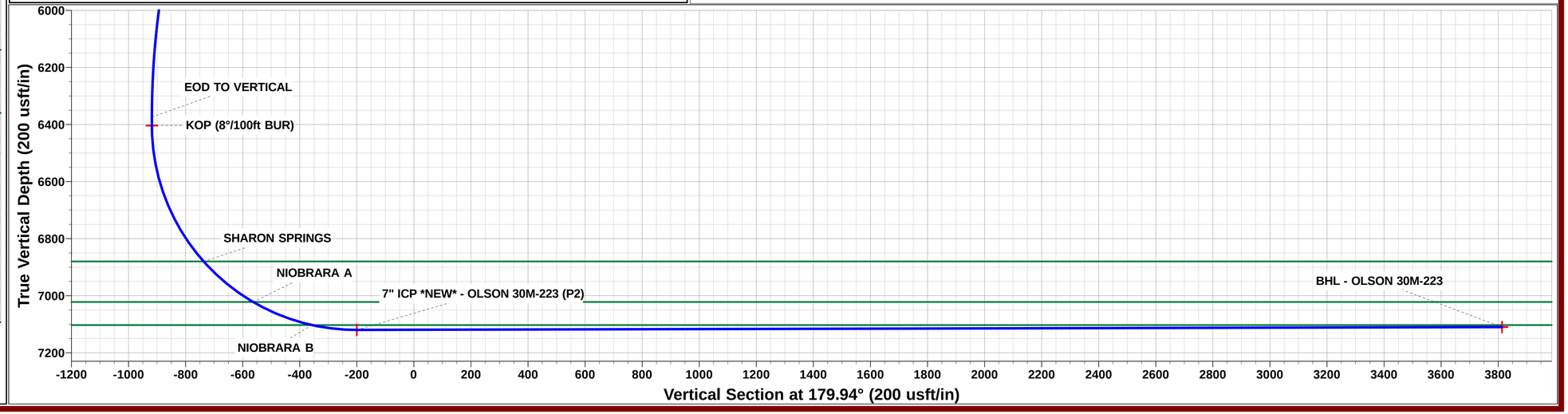




DO NOT CROSS SEC 30 NORTH HARD BOUNDARY WITH NUDGE

KOP FALLS 65ft S of the SEC 30 NORTH BOUNDARY





Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well OLSON 30M-223
Company:	PDC ENERGY	**TVD Reference:**	KB-EST @ 4990.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	**MD Reference:**	KB-EST @ 4990.0usft (Original Well Elev)
Site:	NW NE SEC 30 T4N R67W 6th P.M.	**North Reference:**	True
Well:	OLSON 30M-223	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

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 NW NE SEC 30 T4N R67W 6th P.M.

Site Position:		**Northing:**	1,348,637.56 usft	**Latitude:**	40.289013
From:	Lat/Long	**Easting:**	3,158,676.90 usft	**Longitude:**	-104.931193
Position Uncertainty:	0.0 usft	**Slot Radius:**	1.10000 ft	**Grid Convergence:**	0.37 °

Well OLSON 30M-223

Well Position	**+N/-S**	2.9 usft	**Northing:**	1,348,639.79 usft	**Latitude:**	40.289021
	+E/-W	-105.2 usft	**Easting:**	3,158,571.72 usft	**Longitude:**	-104.931570
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	4,967.0 usft

Wellbore ORIGINAL WELLBORE

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	25/02/2016	8.43	66.77	52,465

Design PROPOSAL #2

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	179.94

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	-4,990.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,150.0	0.00	0.00	2,150.0	-2,840.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,888.8	14.78	0.24	2,880.6	-2,109.4	94.7	0.4	2.00	2.00	0.00	0.24	
5,745.8	14.78	0.24	5,643.2	653.2	823.4	3.5	0.00	0.00	0.00	0.00	
6,484.6	0.00	0.00	6,373.8	1,383.8	918.1	3.9	2.00	-2.00	0.00	180.00	
6,514.6	0.00	0.00	6,403.8	1,413.8	918.1	3.9	0.00	0.00	0.00	0.00	KOP - OLSON 30M
7,641.3	90.14	180.00	7,120.0	2,130.0	200.2	3.9	8.00	8.00	0.00	180.00	
11,655.0	90.15	180.00	7,110.0	2,120.0	-3,813.5	3.9	0.00	0.00	0.00	-1.92	BHL - OLSON 30M

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well OLSON 30M-223
Company:	PDC ENERGY	**TVD Reference:**	KB-EST @ 4990.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	**MD Reference:**	KB-EST @ 4990.0usft (Original Well Elev)
Site:	NW NE SEC 30 T4N R67W 6th P.M.	**North Reference:**	True
Well:	OLSON 30M-223	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

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: 983ft FNL & 2374ft FEL of Sec 30										
0.0	***0.00***	***0.00***	***0.0***	***4,990.00***	***0.0***	***0.0***	***0.0***	***0.00***	***0.00***	***0.00***
100.0	0.00	0.00	100.0	4,890.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,790.00	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	4,690.00	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	4,590.00	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	4,490.00	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	4,390.00	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	4,290.00	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	4,190.00	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	4,090.00	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	3,990.00	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	3,890.00	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	3,790.00	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	3,690.00	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	3,590.00	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	3,490.00	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	3,390.00	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	3,290.00	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	3,190.00	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	3,090.00	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	2,990.00	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	2,890.00	0.0	0.0	0.0	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
2,150.0	***0.00***	***0.00***	***2,150.0***	***2,840.00***	***0.0***	***0.0***	***0.0***	***0.00***	***0.00***	***0.00***
2,200.0	1.00	0.24	2,200.0	2,790.00	0.4	0.0	-0.4	2.00	2.00	0.00
2,300.0	3.00	0.24	2,299.9	2,690.07	3.9	0.0	-3.9	2.00	2.00	0.00
2,400.0	5.00	0.24	2,399.7	2,590.32	10.9	0.0	-10.9	2.00	2.00	0.00
2,500.0	7.00	0.24	2,499.1	2,490.87	21.4	0.1	-21.4	2.00	2.00	0.00
2,600.0	9.00	0.24	2,598.2	2,391.85	35.3	0.1	-35.3	2.00	2.00	0.00
2,700.0	11.00	0.24	2,696.6	2,293.37	52.6	0.2	-52.6	2.00	2.00	0.00
2,800.0	13.00	0.24	2,794.4	2,195.56	73.4	0.3	-73.4	2.00	2.00	0.00
EOB TO 14.78° INC										
2,888.8	***14.78***	***0.24***	***2,880.6***	***2,109.36***	***94.7***	***0.4***	***-94.7***	***2.00***	***2.00***	***0.00***
2,900.0	14.78	0.24	2,891.5	2,098.53	97.6	0.4	-97.6	0.00	0.00	0.00
3,000.0	14.78	0.24	2,988.2	2,001.84	123.1	0.5	-123.1	0.00	0.00	0.00
3,100.0	14.78	0.24	3,084.9	1,905.15	148.6	0.6	-148.6	0.00	0.00	0.00
3,200.0	14.78	0.24	3,181.5	1,808.45	174.1	0.7	-174.1	0.00	0.00	0.00
3,300.0	14.78	0.24	3,278.2	1,711.76	199.6	0.8	-199.6	0.00	0.00	0.00
3,400.0	14.78	0.24	3,374.9	1,615.07	225.1	1.0	-225.1	0.00	0.00	0.00
3,500.0	14.78	0.24	3,471.6	1,518.37	250.6	1.1	-250.6	0.00	0.00	0.00
3,600.0	14.78	0.24	3,568.3	1,421.68	276.1	1.2	-276.1	0.00	0.00	0.00
PARKMAN										
3,647.2	***14.78***	***0.24***	***3,614.0***	***1,376.00***	***288.2***	***1.2***	***-288.2***	***0.00***	***0.00***	***0.00***
3,700.0	14.78	0.24	3,665.0	1,324.99	301.6	1.3	-301.6	0.00	0.00	0.00
3,800.0	14.78	0.24	3,761.7	1,228.29	327.1	1.4	-327.1	0.00	0.00	0.00
3,900.0	14.78	0.24	3,858.4	1,131.60	352.6	1.5	-352.6	0.00	0.00	0.00
4,000.0	14.78	0.24	3,955.1	1,034.91	378.1	1.6	-378.1	0.00	0.00	0.00
4,100.0	14.78	0.24	4,051.8	938.21	403.6	1.7	-403.6	0.00	0.00	0.00
SUSSEX										
4,147.8	***14.78***	***0.24***	***4,098.0***	***892.00***	***415.8***	***1.8***	***-415.8***	***0.00***	***0.00***	***0.00***
4,200.0	14.78	0.24	4,148.5	841.52	429.1	1.8	-429.1	0.00	0.00	0.00
4,300.0	14.78	0.24	4,245.2	744.83	454.6	1.9	-454.6	0.00	0.00	0.00
4,400.0	14.78	0.24	4,341.9	648.13	480.1	2.0	-480.1	0.00	0.00	0.00

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Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

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)
4,500.0	14.78	0.24	4,438.6	551.44	505.6	2.1	-505.6	0.00	0.00	0.00
4,600.0	14.78	0.24	4,535.3	454.75	531.1	2.3	-531.1	0.00	0.00	0.00
4,700.0	14.78	0.24	4,631.9	358.05	556.7	2.4	-556.6	0.00	0.00	0.00
SHANNON										
4,719.7	***14.78***	***0.24***	***4,651.0***	***339.00***	***561.7***	***2.4***	***-561.7***	***0.00***	***0.00***	***0.00***
4,800.0	14.78	0.24	4,728.6	261.36	582.2	2.5	-582.2	0.00	0.00	0.00
4,900.0	14.78	0.24	4,825.3	164.67	607.7	2.6	-607.7	0.00	0.00	0.00
5,000.0	14.78	0.24	4,922.0	67.98	633.2	2.7	-633.2	0.00	0.00	0.00
5,100.0	14.78	0.24	5,018.7	-28.72	658.7	2.8	-658.7	0.00	0.00	0.00
5,200.0	14.78	0.24	5,115.4	-125.41	684.2	2.9	-684.2	0.00	0.00	0.00
5,300.0	14.78	0.24	5,212.1	-222.10	709.7	3.0	-709.7	0.00	0.00	0.00
5,400.0	14.78	0.24	5,308.8	-318.80	735.2	3.1	-735.2	0.00	0.00	0.00
5,500.0	14.78	0.24	5,405.5	-415.49	760.7	3.2	-760.7	0.00	0.00	0.00
5,600.0	14.78	0.24	5,502.2	-512.18	786.2	3.3	-786.2	0.00	0.00	0.00
5,700.0	14.78	0.24	5,598.9	-608.88	811.7	3.4	-811.7	0.00	0.00	0.00
END OF TANGENT										
5,745.8	***14.78***	***0.24***	***5,643.2***	***-653.16***	***823.4***	***3.5***	***-823.4***	***0.00***	***0.00***	***0.00***
5,800.0	13.69	0.24	5,695.7	-705.70	836.7	3.6	-836.7	2.00	-2.00	0.00
5,900.0	11.69	0.24	5,793.2	-803.25	858.7	3.6	-858.7	2.00	-2.00	0.00
6,000.0	9.69	0.24	5,891.5	-901.51	877.2	3.7	-877.2	2.00	-2.00	0.00
6,100.0	7.69	0.24	5,990.4	-1,000.35	892.3	3.8	-892.3	2.00	-2.00	0.00
6,200.0	5.69	0.24	6,089.7	-1,099.67	904.0	3.8	-904.0	2.00	-2.00	0.00
6,300.0	3.69	0.24	6,189.3	-1,199.33	912.2	3.9	-912.2	2.00	-2.00	0.00
6,400.0	1.69	0.24	6,289.2	-1,299.21	916.9	3.9	-916.8	2.00	-2.00	0.00
EOD TO VERTICAL										
6,484.6	***0.00***	***0.00***	***6,373.8***	***-1,383.80***	***918.1***	***3.9***	***-918.1***	***2.00***	***-2.00***	***0.00***
6,500.0	0.00	0.00	6,389.2	-1,399.20	918.1	3.9	-918.1	0.00	0.00	0.00
KOP (8°/100ft BUR)										
6,514.6	***0.00***	***0.00***	***6,403.8***	***-1,413.80***	***918.1***	***3.9***	***-918.1***	***0.00***	***0.00***	***0.00***
6,600.0	6.83	180.00	6,489.0	-1,499.00	913.0	3.9	-913.0	8.00	8.00	0.00
6,700.0	14.83	180.00	6,587.1	-1,597.14	894.2	3.9	-894.2	8.00	8.00	0.00
6,800.0	22.83	180.00	6,681.7	-1,691.71	862.0	3.9	-862.0	8.00	8.00	0.00
6,900.0	30.83	180.00	6,770.9	-1,780.87	816.9	3.9	-816.9	8.00	8.00	0.00
7,000.0	38.83	180.00	6,852.9	-1,862.88	759.8	3.9	-759.8	8.00	8.00	0.00
SHARON SPRINGS										
7,035.5	***41.67***	***180.00***	***6,880.0***	***-1,890.00***	***736.9***	***3.9***	***-736.8***	***8.00***	***8.00***	***0.00***
7,100.0	46.83	180.00	6,926.2	-1,936.16	691.9	3.9	-691.9	8.00	8.00	0.00
7,200.0	54.83	180.00	6,989.3	-1,999.27	614.4	3.9	-614.4	8.00	8.00	0.00
NIOBRARA A										
7,260.5	***59.67***	***180.00***	***7,022.0***	***-2,032.00***	***563.5***	***3.9***	***-563.5***	***8.00***	***8.00***	***0.00***
7,300.0	62.83	180.00	7,041.0	-2,050.98	528.9	3.9	-528.9	8.00	8.00	0.00
7,400.0	70.83	180.00	7,080.3	-2,090.29	437.1	3.9	-437.1	8.00	8.00	0.00
NIOBRARA B										
7,483.3	***77.49***	***180.00***	***7,103.0***	***-2,113.00***	***357.0***	***3.9***	***-357.0***	***8.00***	***8.00***	***0.00***
7,500.0	78.83	180.00	7,106.4	-2,116.44	340.6	3.9	-340.6	8.00	8.00	0.00
7,600.0	86.83	180.00	7,118.9	-2,128.90	241.5	3.9	-241.5	8.00	8.00	0.00
7" ICP *NEW*: 782.9ft FNL & 2370.9ft FEL of Sec 30										
7,641.3	***90.14***	***180.00***	***7,120.0***	***-2,130.00***	***200.2***	***3.9***	***-200.2***	***8.00***	***8.00***	***0.00***
7,700.0	90.14	180.00	7,119.9	-2,129.85	141.5	3.9	-141.5	0.01	0.01	0.00
7,800.0	90.14	180.00	7,119.6	-2,129.61	41.5	3.9	-41.5	0.00	0.00	0.00
7,900.0	90.14	180.00	7,119.4	-2,129.36	-58.5	3.9	58.5	0.00	0.00	0.00
8,000.0	90.14	180.00	7,119.1	-2,129.12	-158.5	3.9	158.5	0.00	0.00	0.00
8,100.0	90.14	180.00	7,118.9	-2,128.87	-258.5	3.9	258.5	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well OLSON 30M-223
Company:	PDC ENERGY	**TVD Reference:**	KB-EST @ 4990.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	**MD Reference:**	KB-EST @ 4990.0usft (Original Well Elev)
Site:	NW NE SEC 30 T4N R67W 6th P.M.	**North Reference:**	True
Well:	OLSON 30M-223	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

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	90.14	180.00	7,118.6	-2,128.63	-358.5	3.9	358.5	0.00	0.00	0.00
8,300.0	90.14	180.00	7,118.4	-2,128.38	-458.5	3.9	458.5	0.00	0.00	0.00
8,400.0	90.14	180.00	7,118.1	-2,128.13	-558.5	3.9	558.5	0.00	0.00	0.00
8,500.0	90.14	180.00	7,117.9	-2,127.89	-658.5	3.9	658.5	0.00	0.00	0.00
8,600.0	90.14	180.00	7,117.6	-2,127.64	-758.5	3.9	758.5	0.00	0.00	0.00
8,700.0	90.14	180.00	7,117.4	-2,127.40	-858.5	3.9	858.5	0.00	0.00	0.00
8,800.0	90.14	180.00	7,117.1	-2,127.15	-958.5	3.9	958.5	0.00	0.00	0.00
8,900.0	90.14	180.00	7,116.9	-2,126.90	-1,058.5	3.9	1,058.5	0.00	0.00	0.00
9,000.0	90.14	180.00	7,116.7	-2,126.65	-1,158.5	3.9	1,158.5	0.00	0.00	0.00
9,100.0	90.14	180.00	7,116.4	-2,126.41	-1,258.5	3.9	1,258.5	0.00	0.00	0.00
9,200.0	90.14	180.00	7,116.2	-2,126.16	-1,358.5	3.9	1,358.5	0.00	0.00	0.00
9,300.0	90.14	180.00	7,115.9	-2,125.91	-1,458.5	3.9	1,458.5	0.00	0.00	0.00
9,400.0	90.14	180.00	7,115.7	-2,125.66	-1,558.5	3.9	1,558.5	0.00	0.00	0.00
9,500.0	90.14	180.00	7,115.4	-2,125.41	-1,658.5	3.9	1,658.5	0.00	0.00	0.00
9,600.0	90.14	180.00	7,115.2	-2,125.16	-1,758.5	3.9	1,758.5	0.00	0.00	0.00
9,700.0	90.14	180.00	7,114.9	-2,124.92	-1,858.5	3.9	1,858.5	0.00	0.00	0.00
9,800.0	90.14	180.00	7,114.7	-2,124.67	-1,958.5	3.9	1,958.5	0.00	0.00	0.00
9,900.0	90.14	180.00	7,114.4	-2,124.42	-2,058.5	3.9	2,058.5	0.00	0.00	0.00
10,000.0	90.14	180.00	7,114.2	-2,124.17	-2,158.5	3.9	2,158.5	0.00	0.00	0.00
10,100.0	90.14	180.00	7,113.9	-2,123.92	-2,258.5	3.9	2,258.5	0.00	0.00	0.00
10,200.0	90.14	180.00	7,113.7	-2,123.67	-2,358.5	3.9	2,358.5	0.00	0.00	0.00
10,300.0	90.14	180.00	7,113.4	-2,123.42	-2,458.5	3.9	2,458.5	0.00	0.00	0.00
10,400.0	90.14	180.00	7,113.2	-2,123.17	-2,558.5	3.9	2,558.5	0.00	0.00	0.00
10,500.0	90.14	180.00	7,112.9	-2,122.91	-2,658.5	3.9	2,658.5	0.00	0.00	0.00
10,600.0	90.14	180.00	7,112.7	-2,122.66	-2,758.5	3.9	2,758.5	0.00	0.00	0.00
10,700.0	90.14	180.00	7,112.4	-2,122.41	-2,858.5	3.9	2,858.5	0.00	0.00	0.00
10,800.0	90.14	180.00	7,112.2	-2,122.16	-2,958.5	3.9	2,958.5	0.00	0.00	0.00
10,900.0	90.14	180.00	7,111.9	-2,121.91	-3,058.5	3.9	3,058.5	0.00	0.00	0.00
11,000.0	90.14	180.00	7,111.7	-2,121.66	-3,158.5	3.9	3,158.5	0.00	0.00	0.00
11,100.0	90.14	180.00	7,111.4	-2,121.40	-3,258.5	3.9	3,258.5	0.00	0.00	0.00
11,200.0	90.14	180.00	7,111.2	-2,121.15	-3,358.5	3.9	3,358.5	0.00	0.00	0.00
11,300.0	90.14	180.00	7,110.9	-2,120.90	-3,458.5	3.9	3,458.5	0.00	0.00	0.00
11,400.0	90.15	180.00	7,110.6	-2,120.65	-3,558.5	3.9	3,558.5	0.00	0.00	0.00
11,500.0	90.15	180.00	7,110.4	-2,120.39	-3,658.5	3.9	3,658.5	0.00	0.00	0.00
11,600.0	90.15	180.00	7,110.1	-2,120.14	-3,758.5	3.9	3,758.5	0.00	0.00	0.00
BHL: 500ft FSL & 2365ft FEL of Sec 30										
11,655.0	***90.15***	***180.00***	***7,110.0***	***-2,120.00***	***-3,813.5***	***3.9***	***3,813.5***	***0.00***	***0.00***	***0.00***

Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,647.2	3,614.0	PARKMAN			
4,147.8	4,098.0	SUSSEX			
4,719.7	4,651.0	SHANNON			
7,035.5	6,880.0	SHARON SPRINGS			
7,260.5	7,022.0	NIOBRARA A			
7,483.3	7,103.0	NIOBRARA B			

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well OLSON 30M-223
Company:	PDC ENERGY	**TVD Reference:**	KB-EST @ 4990.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	**MD Reference:**	KB-EST @ 4990.0usft (Original Well Elev)
Site:	NW NE SEC 30 T4N R67W 6th P.M.	**North Reference:**	True
Well:	OLSON 30M-223	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

Plan Annotations

MD (usft)	TVD (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
0.0	0.0	0.0	0.0	SHL: 983ft FNL & 2374ft FEL of Sec 30
2,150.0	2,150.0	0.0	0.0	START NUDGE (2°/100ft BUR)
2,888.8	2,880.6	94.7	0.4	EOB TO 14.78° INC
5,745.8	5,643.2	823.4	3.5	END OF TANGENT
6,484.6	6,373.8	918.1	3.9	EOD TO VERTICAL
6,514.6	6,403.8	918.1	3.9	KOP (8°/100ft BUR)
7,641.3	7,120.0	200.2	3.9	7" ICP *NEW*: 782.9ft FNL & 2370.9ft FEL of Sec 30
11,655.0	7,110.0	-3,813.5	3.9	BHL: 500ft FSL & 2365ft FEL of Sec 30