

PDC Energy Inc. DJ Basin

BYPASS STATE 02N

Bypass State 1-12

North American Datum 1983 , US State Plane 1983, Colorado Northern Zone

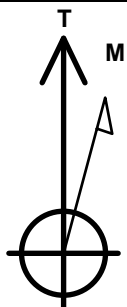
Ground Elevation: 4891.0

+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1389889.87 3186905.43 40.401708 -104.828887

RKB 28' Well @ 4919.0ft (RKB 28')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
02N SHL - 943' FWL & 1869' FNL	0.0	0.0	0.0	40.401708	-104.828887	Point
02N BHL - 787' FNL & 150' FWL	7009.0	1082.3	-11257.6	40.404672	-104.869309	Point
02N BPZ - 786' FNL & 200' FWL	7009.0	1082.4	-11207.8	40.404672	-104.869130	Point
02N LPL - 150' FEL & 798' FNL	7269.0	1075.5	-1099.5	40.404660	-104.832835	Point



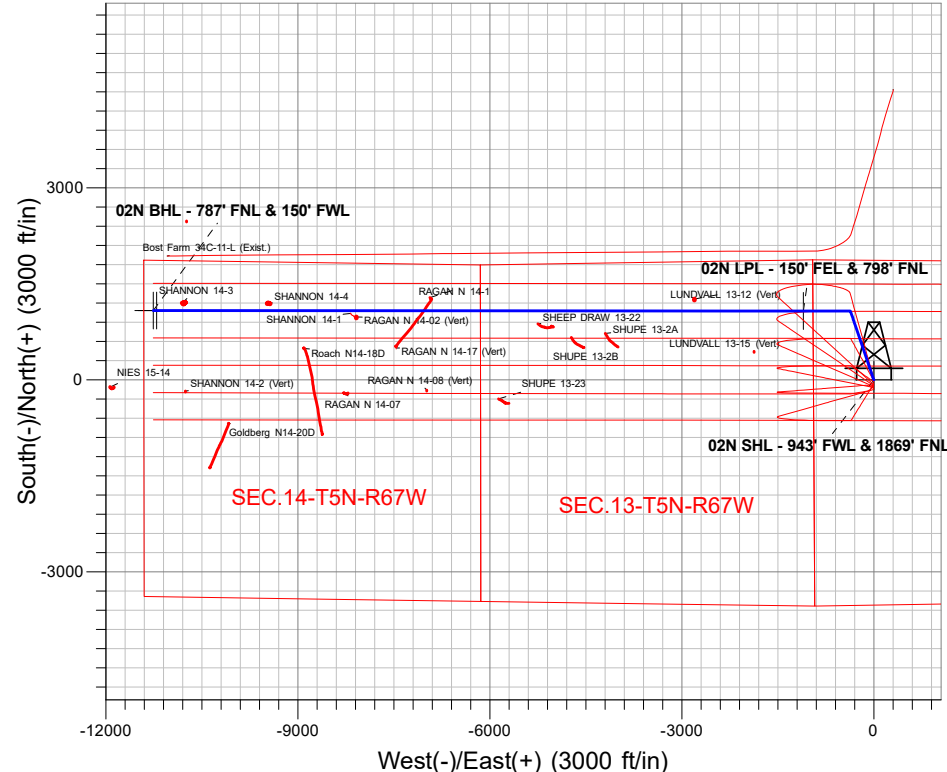
Azimuths to True North
Magnetic North: 7.83°

Magnetic Field
Strength: 51792.3nT
Dip Angle: 66.58°
Date: 04/12/2023
Model: HRGM

Bypass State 1-12
BYPASS STATE 02N
BYPASS STATE 02N Plan #1
14:37, December 28 2023

ANNOTATIONS

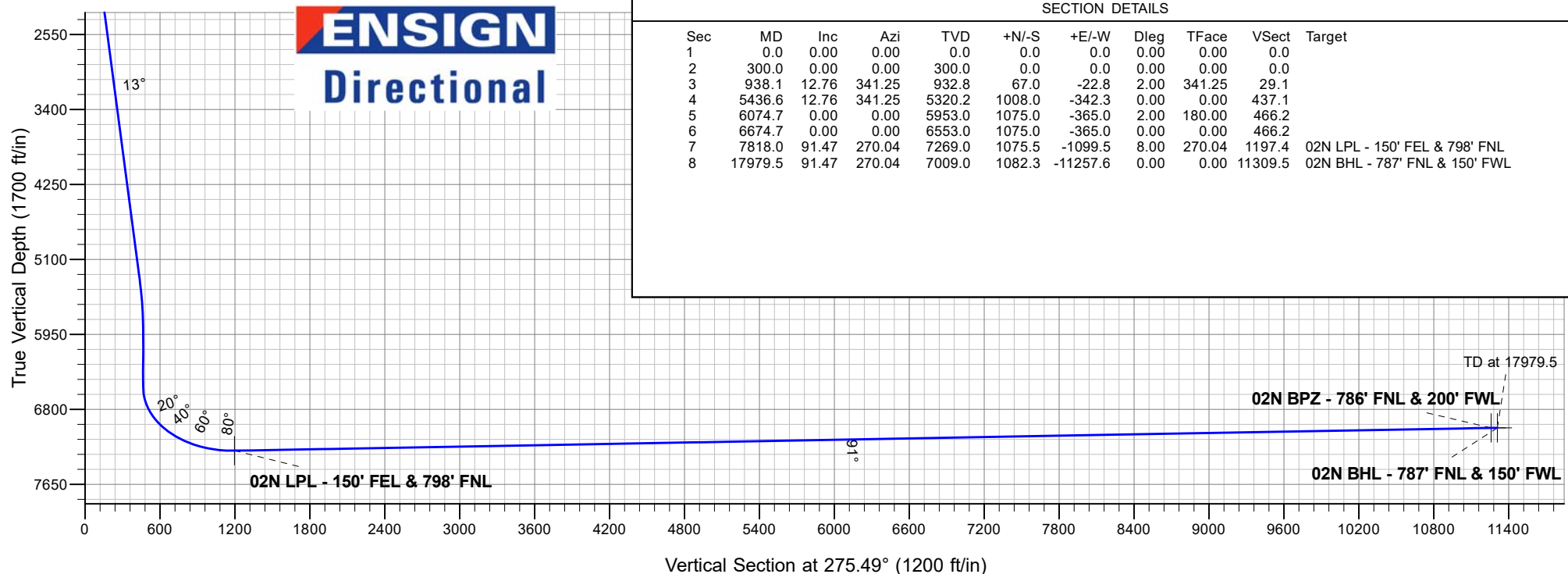
MD	TVD	Annotation
300.0	300.0	Start Build 2.00
938.1	932.8	Start 4498.5 hold at 938.1 MD
5436.6	5320.2	Start Drop -2.00
6074.7	5953.0	Start 600.0 hold at 6074.7 MD
6674.7	6553.0	Start Turn 0.00
7818.0	7269.0	Start 10161.4 hold at 7818.0 MD
17979.5	7009.0	TD at 17979.5



ENSIGN
Directional

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.0	
3	938.1	12.76	341.25	932.8	67.0	-22.8	2.00	341.25	29.1	
4	5436.6	12.76	341.25	5320.2	1008.0	-342.3	0.00	0.00	437.1	
5	6074.7	0.00	0.00	5953.0	1075.0	-365.0	2.00	180.00	466.2	
6	6674.7	0.00	0.00	6553.0	1075.0	-365.0	0.00	0.00	466.2	
7	7818.0	91.47	270.04	7269.0	1075.5	-1099.5	8.00	270.04	1197.4	02N LPL - 150' FEL & 798' FNL
8	17979.5	91.47	270.04	7009.0	1082.3	-11257.6	0.00	0.00	11309.5	02N BHL - 787' FNL & 150' FWL



PDC Energy Inc. DJ Basin

SEC.18-T5N-R66W

Bypass State 1-12

BYPASS STATE 02N

BYPASS STATE 02N

Plan: BYPASS STATE 02N Plan #1

Standard Planning Report

28 December, 2023

Ensign

Planning Report

Database:	US_EDM	Local Co-ordinate Reference:	Well BYPASS STATE 02N
Company:	PDC Energy Inc. DJ Basin	TVD Reference:	Well @ 4919.0ft (RKB 28')
Project:	SEC.18-T5N-R66W	MD Reference:	Well @ 4919.0ft (RKB 28')
Site:	Bypass State 1-12	North Reference:	True
Well:	BYPASS STATE 02N	Survey Calculation Method:	Minimum Curvature
Wellbore:	BYPASS STATE 02N		
Design:	BYPASS STATE 02N Plan #1		

Project	SEC.18-T5N-R66W		
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		Bypass State 1-12			
Site Position:		Northing:	1,389,904.46 usft	Latitude:	40.401748
From:	Lat/Long	Easting:	3,186,905.04 usft	Longitude:	-104.828888
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.43

Well	BYPASS STATE 02N					
Well Position	+N/-S	-14.6 ft	Northing:	1,389,889.87 usft	Latitude:	40.401708
	+E/-W	0.3 ft	Easting:	3,186,905.43 usft	Longitude:	-104.828887
Position Uncertainty		0.0 ft	Wellhead Elevation:		Ground Level:	4,891.0 ft

Wellbore	BYPASS STATE 02N				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HRGM	04/12/2023	7.83	66.58	51,792.26373526

Design	BYPASS STATE 02N Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	275.49

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
938.1	12.76	341.25	932.8	67.0	-22.8	2.00	2.00	0.00	341.25	
5,436.6	12.76	341.25	5,320.2	1,008.0	-342.3	0.00	0.00	0.00	0.00	
6,074.7	0.00	0.00	5,953.0	1,075.0	-365.0	2.00	-2.00	0.00	180.00	
6,674.7	0.00	0.00	6,553.0	1,075.0	-365.0	0.00	0.00	0.00	0.00	
7,818.0	91.47	270.04	7,269.0	1,075.5	-1,099.5	8.00	0.00	0.00	270.04	02N LPL - 150' FEL
17,979.5	91.47	270.04	7,009.0	1,082.3	-11,257.6	0.00	0.00	0.00	0.00	02N BHL - 787' FNI

Ensign

Planning Report

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Company:	PDC Energy Inc. DJ Basin	TVD Reference:	Well @ 4919.0ft (RKB 28')
Project:	SEC.18-T5N-R66W	MD Reference:	Well @ 4919.0ft (RKB 28')
Site:	Bypass State 1-12	North Reference:	True
Well:	BYPASS STATE 02N	Survey Calculation Method:	Minimum Curvature
Wellbore:	BYPASS STATE 02N		
Design:	BYPASS STATE 02N Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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
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
Start Build 2.00									
400.0	2.00	341.25	400.0	1.7	-0.6	0.7	2.00	2.00	0.00
500.0	4.00	341.25	499.8	6.6	-2.2	2.9	2.00	2.00	0.00
600.0	6.00	341.25	599.5	14.9	-5.0	6.4	2.00	2.00	0.00
700.0	8.00	341.25	698.7	26.4	-9.0	11.4	2.00	2.00	0.00
800.0	10.00	341.25	797.5	41.2	-14.0	17.9	2.00	2.00	0.00
900.0	12.00	341.25	895.6	59.3	-20.1	25.7	2.00	2.00	0.00
938.1	12.76	341.25	932.8	67.0	-22.8	29.1	2.00	2.00	0.00
Start 4498.5 hold at 938.1 MD									
1,000.0	12.76	341.25	993.2	80.0	-27.2	34.7	0.00	0.00	0.00
1,100.0	12.76	341.25	1,090.7	100.9	-34.3	43.7	0.00	0.00	0.00
1,200.0	12.76	341.25	1,188.3	121.8	-41.4	52.8	0.00	0.00	0.00
1,300.0	12.76	341.25	1,285.8	142.7	-48.5	61.9	0.00	0.00	0.00
1,400.0	12.76	341.25	1,383.3	163.6	-55.6	71.0	0.00	0.00	0.00
1,500.0	12.76	341.25	1,480.9	184.5	-62.7	80.0	0.00	0.00	0.00
1,600.0	12.76	341.25	1,578.4	205.5	-69.8	89.1	0.00	0.00	0.00
1,700.0	12.76	341.25	1,675.9	226.4	-76.9	98.2	0.00	0.00	0.00
1,800.0	12.76	341.25	1,773.4	247.3	-84.0	107.2	0.00	0.00	0.00
1,900.0	12.76	341.25	1,871.0	268.2	-91.1	116.3	0.00	0.00	0.00
2,000.0	12.76	341.25	1,968.5	289.1	-98.2	125.4	0.00	0.00	0.00
2,100.0	12.76	341.25	2,066.0	310.1	-105.3	134.5	0.00	0.00	0.00
2,200.0	12.76	341.25	2,163.6	331.0	-112.4	143.5	0.00	0.00	0.00
2,300.0	12.76	341.25	2,261.1	351.9	-119.5	152.6	0.00	0.00	0.00
2,400.0	12.76	341.25	2,358.6	372.8	-126.6	161.7	0.00	0.00	0.00
2,500.0	12.76	341.25	2,456.2	393.7	-133.7	170.7	0.00	0.00	0.00
2,600.0	12.76	341.25	2,553.7	414.6	-140.8	179.8	0.00	0.00	0.00
2,700.0	12.76	341.25	2,651.2	435.6	-147.9	188.9	0.00	0.00	0.00
2,800.0	12.76	341.25	2,748.7	456.5	-155.0	198.0	0.00	0.00	0.00
2,900.0	12.76	341.25	2,846.3	477.4	-162.1	207.0	0.00	0.00	0.00
3,000.0	12.76	341.25	2,943.8	498.3	-169.2	216.1	0.00	0.00	0.00
3,100.0	12.76	341.25	3,041.3	519.2	-176.3	225.2	0.00	0.00	0.00
3,200.0	12.76	341.25	3,138.9	540.1	-183.4	234.3	0.00	0.00	0.00
3,300.0	12.76	341.25	3,236.4	561.1	-190.5	243.3	0.00	0.00	0.00
3,400.0	12.76	341.25	3,333.9	582.0	-197.6	252.4	0.00	0.00	0.00
3,500.0	12.76	341.25	3,431.4	602.9	-204.7	261.5	0.00	0.00	0.00
3,600.0	12.76	341.25	3,529.0	623.8	-211.8	270.5	0.00	0.00	0.00
3,700.0	12.76	341.25	3,626.5	644.7	-218.9	279.6	0.00	0.00	0.00
3,800.0	12.76	341.25	3,724.0	665.7	-226.0	288.7	0.00	0.00	0.00
3,900.0	12.76	341.25	3,821.6	686.6	-233.1	297.8	0.00	0.00	0.00
4,000.0	12.76	341.25	3,919.1	707.5	-240.2	306.8	0.00	0.00	0.00
4,100.0	12.76	341.25	4,016.6	728.4	-247.3	315.9	0.00	0.00	0.00
4,200.0	12.76	341.25	4,114.2	749.3	-254.4	325.0	0.00	0.00	0.00
4,300.0	12.76	341.25	4,211.7	770.2	-261.5	334.0	0.00	0.00	0.00
4,400.0	12.76	341.25	4,309.2	791.2	-268.6	343.1	0.00	0.00	0.00
4,500.0	12.76	341.25	4,406.7	812.1	-275.7	352.2	0.00	0.00	0.00
4,600.0	12.76	341.25	4,504.3	833.0	-282.8	361.3	0.00	0.00	0.00
4,700.0	12.76	341.25	4,601.8	853.9	-289.9	370.3	0.00	0.00	0.00
4,800.0	12.76	341.25	4,699.3	874.8	-297.0	379.4	0.00	0.00	0.00
4,900.0	12.76	341.25	4,796.9	895.7	-304.1	388.5	0.00	0.00	0.00
5,000.0	12.76	341.25	4,894.4	916.7	-311.2	397.5	0.00	0.00	0.00

Ensign

Planning Report

Database:	US_EDM	Local Co-ordinate Reference:	Well BYPASS STATE 02N
Company:	PDC Energy Inc. DJ Basin	TVD Reference:	Well @ 4919.0ft (RKB 28')
Project:	SEC.18-T5N-R66W	MD Reference:	Well @ 4919.0ft (RKB 28')
Site:	Bypass State 1-12	North Reference:	True
Well:	BYPASS STATE 02N	Survey Calculation Method:	Minimum Curvature
Wellbore:	BYPASS STATE 02N		
Design:	BYPASS STATE 02N Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,100.0	12.76	341.25	4,991.9	937.6	-318.3	406.6	0.00	0.00	0.00
5,200.0	12.76	341.25	5,089.4	958.5	-325.4	415.7	0.00	0.00	0.00
5,300.0	12.76	341.25	5,187.0	979.4	-332.6	424.8	0.00	0.00	0.00
5,400.0	12.76	341.25	5,284.5	1,000.3	-339.7	433.8	0.00	0.00	0.00
5,436.6	12.76	341.25	5,320.2	1,008.0	-342.3	437.1	0.00	0.00	0.00
Start Drop -2.00									
5,500.0	11.49	341.25	5,382.2	1,020.6	-346.5	442.6	2.00	-2.00	0.00
5,600.0	9.49	341.25	5,480.5	1,037.8	-352.4	450.1	2.00	-2.00	0.00
5,700.0	7.49	341.25	5,579.4	1,051.8	-357.1	456.2	2.00	-2.00	0.00
5,800.0	5.49	341.25	5,678.8	1,062.5	-360.8	460.8	2.00	-2.00	0.00
5,900.0	3.49	341.25	5,778.4	1,070.0	-363.3	464.0	2.00	-2.00	0.00
6,000.0	1.49	341.25	5,878.3	1,074.1	-364.7	465.8	2.00	-2.00	0.00
6,074.7	0.00	0.00	5,953.0	1,075.0	-365.0	466.2	2.00	-2.00	0.00
Start 600.0 hold at 6074.7 MD									
6,100.0	0.00	0.00	5,978.3	1,075.0	-365.0	466.2	0.00	0.00	0.00
6,200.0	0.00	0.00	6,078.3	1,075.0	-365.0	466.2	0.00	0.00	0.00
6,300.0	0.00	0.00	6,178.3	1,075.0	-365.0	466.2	0.00	0.00	0.00
6,400.0	0.00	0.00	6,278.3	1,075.0	-365.0	466.2	0.00	0.00	0.00
6,500.0	0.00	0.00	6,378.3	1,075.0	-365.0	466.2	0.00	0.00	0.00
6,600.0	0.00	0.00	6,478.3	1,075.0	-365.0	466.2	0.00	0.00	0.00
6,674.7	0.00	0.00	6,553.0	1,075.0	-365.0	466.2	0.00	0.00	0.00
Start Turn 0.00									
6,700.0	2.02	270.04	6,578.3	1,075.0	-365.5	466.6	8.00	8.00	0.00
6,800.0	10.02	270.04	6,677.7	1,075.0	-375.9	477.1	8.00	8.00	0.00
6,900.0	18.02	270.04	6,774.6	1,075.0	-400.2	501.2	8.00	8.00	0.00
7,000.0	26.02	270.04	6,867.3	1,075.0	-437.6	538.5	8.00	8.00	0.00
7,100.0	34.02	270.04	6,953.8	1,075.1	-487.6	588.3	8.00	8.00	0.00
7,200.0	42.02	270.04	7,032.5	1,075.1	-549.2	649.5	8.00	8.00	0.00
7,300.0	50.02	270.04	7,101.9	1,075.2	-621.1	721.1	8.00	8.00	0.00
7,400.0	58.02	270.04	7,160.6	1,075.2	-701.9	801.6	8.00	8.00	0.00
7,500.0	66.02	270.04	7,207.4	1,075.3	-790.2	889.5	8.00	8.00	0.00
7,600.0	74.02	270.04	7,241.6	1,075.3	-884.1	982.9	8.00	8.00	0.00
7,700.0	82.02	270.04	7,262.3	1,075.4	-981.8	1,080.2	8.00	8.00	0.00
7,800.0	90.02	270.04	7,269.2	1,075.5	-1,081.5	1,179.5	8.00	8.00	0.00
7,818.0	91.47	270.04	7,269.0	1,075.5	-1,099.5	1,197.4	8.00	8.00	0.00
Start 10161.4 hold at 7818.0 MD									
7,900.0	91.47	270.04	7,266.9	1,075.5	-1,181.5	1,279.0	0.00	0.00	0.00
8,000.0	91.47	270.04	7,264.3	1,075.6	-1,281.4	1,378.5	0.00	0.00	0.00
8,100.0	91.47	270.04	7,261.8	1,075.7	-1,381.4	1,478.0	0.00	0.00	0.00
8,200.0	91.47	270.04	7,259.2	1,075.7	-1,481.4	1,577.5	0.00	0.00	0.00
8,300.0	91.47	270.04	7,256.7	1,075.8	-1,581.3	1,677.0	0.00	0.00	0.00
8,400.0	91.47	270.04	7,254.1	1,075.9	-1,681.3	1,776.6	0.00	0.00	0.00
8,500.0	91.47	270.04	7,251.6	1,075.9	-1,781.3	1,876.1	0.00	0.00	0.00
8,600.0	91.47	270.04	7,249.0	1,076.0	-1,881.2	1,975.6	0.00	0.00	0.00
8,700.0	91.47	270.04	7,246.4	1,076.1	-1,981.2	2,075.1	0.00	0.00	0.00
8,800.0	91.47	270.04	7,243.9	1,076.1	-2,081.2	2,174.6	0.00	0.00	0.00
8,900.0	91.47	270.04	7,241.3	1,076.2	-2,181.2	2,274.1	0.00	0.00	0.00
9,000.0	91.47	270.04	7,238.8	1,076.3	-2,281.1	2,373.6	0.00	0.00	0.00
9,100.0	91.47	270.04	7,236.2	1,076.3	-2,381.1	2,473.2	0.00	0.00	0.00
9,200.0	91.47	270.04	7,233.6	1,076.4	-2,481.1	2,572.7	0.00	0.00	0.00
9,300.0	91.47	270.04	7,231.1	1,076.5	-2,581.0	2,672.2	0.00	0.00	0.00
9,400.0	91.47	270.04	7,228.5	1,076.5	-2,681.0	2,771.7	0.00	0.00	0.00
9,500.0	91.47	270.04	7,226.0	1,076.6	-2,781.0	2,871.2	0.00	0.00	0.00

Ensign

Planning Report

Database:	US_EDM	Local Co-ordinate Reference:	Well BYPASS STATE 02N
Company:	PDC Energy Inc. DJ Basin	TVD Reference:	Well @ 4919.0ft (RKB 28')
Project:	SEC.18-T5N-R66W	MD Reference:	Well @ 4919.0ft (RKB 28')
Site:	Bypass State 1-12	North Reference:	True
Well:	BYPASS STATE 02N	Survey Calculation Method:	Minimum Curvature
Wellbore:	BYPASS STATE 02N		
Design:	BYPASS STATE 02N Plan #1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
9,600.0	91.47	270.04	7,223.4	1,076.7	-2,880.9	2,970.7	0.00	0.00	0.00	
9,700.0	91.47	270.04	7,220.8	1,076.8	-2,980.9	3,070.2	0.00	0.00	0.00	
9,800.0	91.47	270.04	7,218.3	1,076.8	-3,080.9	3,169.8	0.00	0.00	0.00	
9,900.0	91.47	270.04	7,215.7	1,076.9	-3,180.8	3,269.3	0.00	0.00	0.00	
10,000.0	91.47	270.04	7,213.2	1,077.0	-3,280.8	3,368.8	0.00	0.00	0.00	
10,100.0	91.47	270.04	7,210.6	1,077.0	-3,380.8	3,468.3	0.00	0.00	0.00	
10,200.0	91.47	270.04	7,208.1	1,077.1	-3,480.7	3,567.8	0.00	0.00	0.00	
10,300.0	91.47	270.04	7,205.5	1,077.2	-3,580.7	3,667.3	0.00	0.00	0.00	
10,400.0	91.47	270.04	7,202.9	1,077.2	-3,680.7	3,766.9	0.00	0.00	0.00	
10,500.0	91.47	270.04	7,200.4	1,077.3	-3,780.6	3,866.4	0.00	0.00	0.00	
10,600.0	91.47	270.04	7,197.8	1,077.4	-3,880.6	3,965.9	0.00	0.00	0.00	
10,700.0	91.47	270.04	7,195.3	1,077.4	-3,980.6	4,065.4	0.00	0.00	0.00	
10,800.0	91.47	270.04	7,192.7	1,077.5	-4,080.5	4,164.9	0.00	0.00	0.00	
10,900.0	91.47	270.04	7,190.1	1,077.6	-4,180.5	4,264.4	0.00	0.00	0.00	
11,000.0	91.47	270.04	7,187.6	1,077.6	-4,280.5	4,363.9	0.00	0.00	0.00	
11,100.0	91.47	270.04	7,185.0	1,077.7	-4,380.4	4,463.5	0.00	0.00	0.00	
11,200.0	91.47	270.04	7,182.5	1,077.8	-4,480.4	4,563.0	0.00	0.00	0.00	
11,300.0	91.47	270.04	7,179.9	1,077.8	-4,580.4	4,662.5	0.00	0.00	0.00	
11,400.0	91.47	270.04	7,177.3	1,077.9	-4,680.3	4,762.0	0.00	0.00	0.00	
11,500.0	91.47	270.04	7,174.8	1,078.0	-4,780.3	4,861.5	0.00	0.00	0.00	
11,600.0	91.47	270.04	7,172.2	1,078.0	-4,880.3	4,961.0	0.00	0.00	0.00	
11,700.0	91.47	270.04	7,169.7	1,078.1	-4,980.2	5,060.5	0.00	0.00	0.00	
11,800.0	91.47	270.04	7,167.1	1,078.2	-5,080.2	5,160.1	0.00	0.00	0.00	
11,900.0	91.47	270.04	7,164.6	1,078.2	-5,180.2	5,259.6	0.00	0.00	0.00	
12,000.0	91.47	270.04	7,162.0	1,078.3	-5,280.1	5,359.1	0.00	0.00	0.00	
12,100.0	91.47	270.04	7,159.4	1,078.4	-5,380.1	5,458.6	0.00	0.00	0.00	
12,200.0	91.47	270.04	7,156.9	1,078.4	-5,480.1	5,558.1	0.00	0.00	0.00	
12,300.0	91.47	270.04	7,154.3	1,078.5	-5,580.0	5,657.6	0.00	0.00	0.00	
12,400.0	91.47	270.04	7,151.8	1,078.6	-5,680.0	5,757.2	0.00	0.00	0.00	
12,500.0	91.47	270.04	7,149.2	1,078.6	-5,780.0	5,856.7	0.00	0.00	0.00	
12,600.0	91.47	270.04	7,146.6	1,078.7	-5,879.9	5,956.2	0.00	0.00	0.00	
12,700.0	91.47	270.04	7,144.1	1,078.8	-5,979.9	6,055.7	0.00	0.00	0.00	
12,800.0	91.47	270.04	7,141.5	1,078.8	-6,079.9	6,155.2	0.00	0.00	0.00	
12,900.0	91.47	270.04	7,139.0	1,078.9	-6,179.8	6,254.7	0.00	0.00	0.00	
13,000.0	91.47	270.04	7,136.4	1,079.0	-6,279.8	6,354.2	0.00	0.00	0.00	
13,100.0	91.47	270.04	7,133.9	1,079.0	-6,379.8	6,453.8	0.00	0.00	0.00	
13,200.0	91.47	270.04	7,131.3	1,079.1	-6,479.7	6,553.3	0.00	0.00	0.00	
13,300.0	91.47	270.04	7,128.7	1,079.2	-6,579.7	6,652.8	0.00	0.00	0.00	
13,400.0	91.47	270.04	7,126.2	1,079.2	-6,679.7	6,752.3	0.00	0.00	0.00	
13,500.0	91.47	270.04	7,123.6	1,079.3	-6,779.6	6,851.8	0.00	0.00	0.00	
13,600.0	91.47	270.04	7,121.1	1,079.4	-6,879.6	6,951.3	0.00	0.00	0.00	
13,700.0	91.47	270.04	7,118.5	1,079.4	-6,979.6	7,050.8	0.00	0.00	0.00	
13,800.0	91.47	270.04	7,115.9	1,079.5	-7,079.5	7,150.4	0.00	0.00	0.00	
13,900.0	91.47	270.04	7,113.4	1,079.6	-7,179.5	7,249.9	0.00	0.00	0.00	
14,000.0	91.47	270.04	7,110.8	1,079.6	-7,279.5	7,349.4	0.00	0.00	0.00	
14,100.0	91.47	270.04	7,108.3	1,079.7	-7,379.4	7,448.9	0.00	0.00	0.00	
14,200.0	91.47	270.04	7,105.7	1,079.8	-7,479.4	7,548.4	0.00	0.00	0.00	
14,300.0	91.47	270.04	7,103.1	1,079.8	-7,579.4	7,647.9	0.00	0.00	0.00	
14,400.0	91.47	270.04	7,100.6	1,079.9	-7,679.3	7,747.4	0.00	0.00	0.00	
14,500.0	91.47	270.04	7,098.0	1,080.0	-7,779.3	7,847.0	0.00	0.00	0.00	
14,600.0	91.47	270.04	7,095.5	1,080.0	-7,879.3	7,946.5	0.00	0.00	0.00	
14,700.0	91.47	270.04	7,092.9	1,080.1	-7,979.3	8,046.0	0.00	0.00	0.00	
14,800.0	91.47	270.04	7,090.4	1,080.2	-8,079.2	8,145.5	0.00	0.00	0.00	
14,900.0	91.47	270.04	7,087.8	1,080.2	-8,179.2	8,245.0	0.00	0.00	0.00	

Ensign

Planning Report

Database:	US_EDM	Local Co-ordinate Reference:	Well BYPASS STATE 02N
Company:	PDC Energy Inc. DJ Basin	TVD Reference:	Well @ 4919.0ft (RKB 28')
Project:	SEC.18-T5N-R66W	MD Reference:	Well @ 4919.0ft (RKB 28')
Site:	Bypass State 1-12	North Reference:	True
Well:	BYPASS STATE 02N	Survey Calculation Method:	Minimum Curvature
Wellbore:	BYPASS STATE 02N		
Design:	BYPASS STATE 02N Plan #1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
15,000.0	91.47	270.04	7,085.2	1,080.3	-8,279.2	8,344.5	0.00	0.00	0.00	
15,100.0	91.47	270.04	7,082.7	1,080.4	-8,379.1	8,444.1	0.00	0.00	0.00	
15,200.0	91.47	270.04	7,080.1	1,080.4	-8,479.1	8,543.6	0.00	0.00	0.00	
15,300.0	91.47	270.04	7,077.6	1,080.5	-8,579.1	8,643.1	0.00	0.00	0.00	
15,400.0	91.47	270.04	7,075.0	1,080.6	-8,679.0	8,742.6	0.00	0.00	0.00	
15,500.0	91.47	270.04	7,072.4	1,080.6	-8,779.0	8,842.1	0.00	0.00	0.00	
15,600.0	91.47	270.04	7,069.9	1,080.7	-8,879.0	8,941.6	0.00	0.00	0.00	
15,700.0	91.47	270.04	7,067.3	1,080.8	-8,978.9	9,041.1	0.00	0.00	0.00	
15,800.0	91.47	270.04	7,064.8	1,080.8	-9,078.9	9,140.7	0.00	0.00	0.00	
15,900.0	91.47	270.04	7,062.2	1,080.9	-9,178.9	9,240.2	0.00	0.00	0.00	
16,000.0	91.47	270.04	7,059.6	1,081.0	-9,278.8	9,339.7	0.00	0.00	0.00	
16,100.0	91.47	270.04	7,057.1	1,081.0	-9,378.8	9,439.2	0.00	0.00	0.00	
16,200.0	91.47	270.04	7,054.5	1,081.1	-9,478.8	9,538.7	0.00	0.00	0.00	
16,300.0	91.47	270.04	7,052.0	1,081.2	-9,578.7	9,638.2	0.00	0.00	0.00	
16,400.0	91.47	270.04	7,049.4	1,081.2	-9,678.7	9,737.7	0.00	0.00	0.00	
16,500.0	91.47	270.04	7,046.9	1,081.3	-9,778.7	9,837.3	0.00	0.00	0.00	
16,600.0	91.47	270.04	7,044.3	1,081.4	-9,878.6	9,936.8	0.00	0.00	0.00	
16,700.0	91.47	270.04	7,041.7	1,081.4	-9,978.6	10,036.3	0.00	0.00	0.00	
16,800.0	91.47	270.04	7,039.2	1,081.5	-10,078.6	10,135.8	0.00	0.00	0.00	
16,900.0	91.47	270.04	7,036.6	1,081.6	-10,178.5	10,235.3	0.00	0.00	0.00	
17,000.0	91.47	270.04	7,034.1	1,081.6	-10,278.5	10,334.8	0.00	0.00	0.00	
17,100.0	91.47	270.04	7,031.5	1,081.7	-10,378.5	10,434.3	0.00	0.00	0.00	
17,200.0	91.47	270.04	7,028.9	1,081.8	-10,478.4	10,533.9	0.00	0.00	0.00	
17,300.0	91.47	270.04	7,026.4	1,081.8	-10,578.4	10,633.4	0.00	0.00	0.00	
17,400.0	91.47	270.04	7,023.8	1,081.9	-10,678.4	10,732.9	0.00	0.00	0.00	
17,500.0	91.47	270.04	7,021.3	1,082.0	-10,778.3	10,832.4	0.00	0.00	0.00	
17,600.0	91.47	270.04	7,018.7	1,082.0	-10,878.3	10,931.9	0.00	0.00	0.00	
17,700.0	91.47	270.04	7,016.2	1,082.1	-10,978.3	11,031.4	0.00	0.00	0.00	
17,800.0	91.47	270.04	7,013.6	1,082.2	-11,078.2	11,131.0	0.00	0.00	0.00	
17,900.0	91.47	270.04	7,011.0	1,082.2	-11,178.2	11,230.5	0.00	0.00	0.00	
17,979.5	91.47	270.04	7,009.0	1,082.3	-11,257.6	11,309.5	0.00	0.00	0.00	
TD at 17979.5										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
02N SHL - 943' FWL & - plan hits target center - Point	0.00	0.00	0.0	0.0	0.0	1,389,889.87	3,186,905.43	40.401708	-104.828887	
02N BHL - 787' FNL & - plan hits target center - Point	0.00	0.00	7,009.0	1,082.3	-11,257.6	1,390,886.89	3,175,640.39	40.404672	-104.869309	
02N BPZ - 786' FNL & - plan misses target center by 29.7ft at 17900.0ft MD (7011.0 TVD, 1082.2 N, -11178.2 E) - Point	0.00	0.00	7,009.0	1,082.4	-11,207.8	1,390,887.36	3,175,690.24	40.404672	-104.869130	
02N LPL - 150' FEL & - plan hits target center - Point	0.00	0.00	7,269.0	1,075.5	-1,099.5	1,390,956.97	3,185,797.84	40.404660	-104.832835	

Ensign

Planning Report

Database:	US_EDM	Local Co-ordinate Reference:	Well BYPASS STATE 02N
Company:	PDC Energy Inc. DJ Basin	TVD Reference:	Well @ 4919.0ft (RKB 28')
Project:	SEC.18-T5N-R66W	MD Reference:	Well @ 4919.0ft (RKB 28')
Site:	Bypass State 1-12	North Reference:	True
Well:	BYPASS STATE 02N	Survey Calculation Method:	Minimum Curvature
Wellbore:	BYPASS STATE 02N		
Design:	BYPASS STATE 02N Plan #1		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
300.0	300.0	0.0	0.0	Start Build 2.00
938.1	932.8	67.0	-22.8	Start 4498.5 hold at 938.1 MD
5,436.6	5,320.2	1,008.0	-342.3	Start Drop -2.00
6,074.7	5,953.0	1,075.0	-365.0	Start 600.0 hold at 6074.7 MD
6,674.7	6,553.0	1,075.0	-365.0	Start Turn 0.00
7,818.0	7,269.0	1,075.5	-1,099.5	Start 10161.4 hold at 7818.0 MD
17,979.5	7,009.0	1,082.3	-11,257.6	TD at 17979.5

PDC Energy Inc. DJ Basin

SEC.18-T5N-R66W

Bypass State 1-12

BYPASS STATE 02N

BYPASS STATE 02N

BYPASS STATE 02N Plan #1

Anticollision Summary Report

28 December, 2023

Ensign

Anticollision Summary Report

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well BYPASS STATE 02N
Project:	SEC.18-T5N-R66W	TVD Reference:	Well @ 4919.0ft (RKB 28')
Reference Site:	Bypass State 1-12	MD Reference:	Well @ 4919.0ft (RKB 28')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	BYPASS STATE 02N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	BYPASS STATE 02N	Database:	US_EDM
Reference Design:	BYPASS STATE 02N Plan #1	Offset TVD Reference:	Offset Datum

Reference	BYPASS STATE 02N Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum ellipse separation of 1,000.0 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.45 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	12/28/2023		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	17,979.5	BYPASS STATE 02N Plan #1 (BYPASS S	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Bypass State 1-12						
BYPASS STATE 11C - BYPASS STATE 11C - BYPASS	300.0	290.0	134.9	133.4	89.883	CC, ES
BYPASS STATE 11C - BYPASS STATE 11C - BYPASS	8,400.0	7,261.0	1,318.9	1,247.8	18.545	SF
BYPASS STATE 01N - BYPASS STATE 01N - BYPASS	100.0	99.0	14.9	14.5	37.862	CC
BYPASS STATE 01N - BYPASS STATE 01N - BYPASS	17,979.5	17,941.1	431.8	-318.7	0.575	Level 1, ES, SF
BYPASS STATE 03N - BYPASS STATE 03N - BYPASS	300.0	300.0	14.9	13.4	9.953	CC
BYPASS STATE 03N - BYPASS STATE 03N - BYPASS	17,979.5	17,880.7	431.1	-318.2	0.575	Level 1, ES, SF
BYPASS STATE 04NA - BYPASS STATE 04NA - BYPAS	300.0	302.0	29.9	28.4	19.896	CC, ES
BYPASS STATE 04NA - BYPASS STATE 04NA - BYPAS	17,979.5	17,732.5	868.2	123.4	1.166	Level 2, SF
BYPASS STATE 05C - BYPASS STATE 05C - BYPASS	300.0	302.0	44.9	43.4	29.865	CC, ES
BYPASS STATE 05C - BYPASS STATE 05C - BYPASS	17,979.5	18,042.5	1,286.3	531.3	1.704	SF
BYPASS STATE 06N - BYPASS STATE 06N - BYPASS	300.0	290.0	59.9	58.4	39.840	CC, ES
BYPASS STATE 06N - BYPASS STATE 06N - BYPASS	600.0	587.6	76.0	72.8	24.042	SF
BYPASS STATE 07N - BYPASS STATE 07N - BYPASS	517.0	512.2	65.8	63.0	23.067	CC, ES
BYPASS STATE 07N - BYPASS STATE 07N - BYPASS	8,000.0	7,533.9	434.8	350.8	5.175	SF
BYPASS STATE 08N - BYPASS STATE 08N - BYPASS	7,700.0	7,786.6	11.5	-27.1	0.298	Level 1, CC, ES, SF
BYPASS STATE 09N - BYPASS STATE 09N - BYPASS	365.5	370.8	103.7	101.8	55.461	CC
BYPASS STATE 09N - BYPASS STATE 09N - BYPASS	400.0	405.7	103.8	101.8	50.350	ES
BYPASS STATE 09N - BYPASS STATE 09N - BYPASS	7,300.0	7,926.9	430.7	362.1	6.286	SF
BYPASS STATE 10N - BYPASS STATE 10N - BYPASS	329.3	332.6	118.6	116.9	71.632	CC, ES
BYPASS STATE 10N - BYPASS STATE 10N - BYPASS	8,000.0	7,432.5	882.5	821.4	14.437	SF
BYPASS STATE 12N - BYPASS STATE 12N - BYPASS	100.0	90.0	149.9	149.5	373.342	CC
BYPASS STATE 12N - BYPASS STATE 12N - BYPASS	200.0	188.7	150.3	149.3	161.470	ES
BYPASS STATE 12N - BYPASS STATE 12N - BYPASS	4,700.0	4,452.9	1,477.8	1,444.1	43.878	SF
Bost Farms 5-7 Pad SEC.7-T5N-R66W						
Bost Farm 38N-8C-L - Bost Farm 38N-8C-L Wellbore #1	7,500.0	8,416.0	881.7	810.7	12.423	CC
Bost Farm 38N-8C-L - Bost Farm 38N-8C-L Wellbore #1	7,502.7	8,416.0	881.7	810.7	12.419	ES
Bost Farm 38N-8C-L - Bost Farm 38N-8C-L Wellbore #1	7,900.0	8,150.8	919.4	842.8	12.003	SF
Existing Wells Sec.10-T5N-R67W						
B&B 10-44 (Exist.) - Wellbore #1 - Wellbore #1						Out of range
UPRR 49 PAN AM B1 (Exist.) - Wellbore #1 - Wellbore #	17,461.9	7,113.2	1,402.1	867.2	2.621	CC
UPRR 49 PAN AM B1 (Exist.) - Wellbore #1 - Wellbore #	17,500.0	7,112.3	1,402.6	866.1	2.614	ES
UPRR 49 PAN AM B1 (Exist.) - Wellbore #1 - Wellbore #	17,600.0	7,109.7	1,408.9	869.4	2.612	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Ensign

Anticollision Summary Report

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well BYPASS STATE 02N
Project:	SEC.18-T5N-R66W	TVD Reference:	Well @ 4919.0ft (RKB 28')
Reference Site:	Bypass State 1-12	MD Reference:	Well @ 4919.0ft (RKB 28')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	BYPASS STATE 02N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	BYPASS STATE 02N	Database:	US_EDM
Reference Design:	BYPASS STATE 02N Plan #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Existing Wells SEC.13-T5N-67W(GRID)						
LUNDVALL 13-12 (Vert) - LUNDVALL 13-12 (Vert) - LUN	9,522.3	7,158.4	187.0	-253.4	0.425	Level 1, CC, ES, SF
LUNDVALL 13-15 (Vert) - LUNDVALL 13-15 (Vert) - LUN	8,589.6	7,206.3	630.7	218.3	1.529	CC, ES, SF
SHEEP DRAW 13-22 - SHEEP DRAW 13-22 - SHEEP D	11,940.4	7,157.3	224.0	33.8	1.178	Level 2, CC, ES, SF
SHUPE 13-23 - SHUPE 13-23 - SHUPE 13-23	12,600.0	7,163.7	1,381.6	1,169.5	6.512	CC
SHUPE 13-23 - SHUPE 13-23 - SHUPE 13-23	12,600.0	7,163.7	1,381.6	1,169.5	6.512	ES
SHUPE 13-23 - SHUPE 13-23 - SHUPE 13-23	12,700.0	7,165.4	1,387.0	1,173.4	6.493	SF
SHUPE 13-2A - SHUPE 13-2A - SHUPE 13-2A	10,900.0	7,170.5	363.3	204.8	2.292	SF
SHUPE 13-2A - SHUPE 13-2A - SHUPE 13-2A	10,907.7	7,170.5	363.3	204.8	2.293	CC, ES
SHUPE 13-2B - SHUPE 13-2B - SHUPE 13-2B	11,439.3	7,176.7	425.5	251.0	2.439	CC, ES, SF
Existing Wells Sec.14-T5N-R67W(GRID)						
RAGAN N 14-02 (Vert) - RAGAN N 14-02 (Vert) - RAGA	14,800.0	7,118.4	97.2	-521.3	0.157	Level 1, ES
RAGAN N 14-02 (Vert) - RAGAN N 14-02 (Vert) - RAGA	14,806.5	7,118.2	97.0	-521.2	0.157	Level 1, CC, SF
RAGAN N 14-07 - RAGAN N 14-07 - RAGAN N 14-07	15,003.0	7,109.0	1,284.0	988.9	4.351	CC, ES
RAGAN N 14-07 - RAGAN N 14-07 - RAGAN N 14-07	15,100.0	7,107.0	1,287.6	991.3	4.345	SF
RAGAN N 14-08 (Vert) - RAGAN N 14-08 (Vert) - RAGA	13,705.4	7,134.4	1,239.1	657.8	2.132	CC, ES, SF
RAGAN N 14-1 - RAGAN N 14-1 - RAGAN N 14-1	13,650.2	7,245.2	200.4	-49.1	0.803	Level 1, CC, ES, SF
RAGAN N 14-17 (Vert) - RAGAN N 14-17 (Vert) - RAGA	14,182.3	7,123.2	582.4	-14.7	0.975	Level 1, CC, ES, SF
SHANNON 14-1 - SHANNON 14-1 - SHANNON 14-1	14,897.6	7,157.6	41.8	-249.1	0.144	Level 1, CC, ES, SF
SHANNON 14-2 (Vert) - SHANNON 14-2 (Vert) - SHANN	17,476.6	7,114.9	1,255.9	546.2	1.769	CC
SHANNON 14-2 (Vert) - SHANNON 14-2 (Vert) - SHANN	17,500.0	7,114.3	1,256.2	546.0	1.769	ES, SF
SHANNON 14-3 - Shannon 14-3 - Shannon 14-3	17,520.3	7,113.9	117.1	-262.7	0.308	Level 1, CC, ES, SF
SHANNON 14-4 - SHANNON 14-4 - SHANNON 14-4	16,199.1	7,148.3	109.2	-224.7	0.327	Level 1, CC
SHANNON 14-4 - SHANNON 14-4 - SHANNON 14-4	16,200.0	7,148.3	109.2	-224.8	0.327	Level 1, ES, SF
Existing Wells Sec.7-T5N-R66W						
Bost Farm 13N-11A-L (Exist.) - Bost Farm 13N-11A-L We	17,979.5	17,982.1	1,292.9	782.6	2.533	CC, ES, SF
Bost Farm 13N-11B-L (Exist.) - Bost Farm 13N-11B-L We	17,979.5	17,952.7	1,497.7	984.7	2.919	CC, ES, SF
Bost Farm 33C-11-L (Exist.) - Bost Farm 33C-11-L Wellb						Out of range
Bost Farm 33N-11A-L (Exist.) - Bost Farm 33N-11A-L We						Out of range
Bost Farm 34C-11-L (Exist.) - Bost Farm 34C-11-L Wellb	17,760.8	18,093.0	857.5	357.4	1.715	CC
Bost Farm 34C-11-L (Exist.) - Bost Farm 34C-11-L Wellb	17,800.0	18,093.0	858.4	357.3	1.713	ES, SF
Bost Farm 34N-11C-L (Exist.) - Bost Farm 34N-11C-L We	17,744.3	17,880.0	1,061.0	558.6	2.112	CC, ES
Bost Farm 34N-11C-L (Exist.) - Bost Farm 34N-11C-L We	17,800.0	17,880.0	1,062.5	558.6	2.109	SF
Goldberg Pad Sec.14-T5N-R67W						
Goldberg N14-20D - Wellbore #1 - Wellbore #1						Out of range
Roach Pad Sec.14-T5N-R67W						
Roach N14-18D - Roach N14-18D - Roach N14-18D	15,629.5	7,351.8	589.2	270.0	1.846	CC, ES, SF
SEC.15-T5N-R67W(EXIST)						
EDWARDS 15-11 - EDWARDS 15-11 - EDWARDS 15-11	17,979.5	7,107.7	1,033.3	972.5	17.013	CC, ES, SF
NIES 15-14 - NIES 15-14 - NIES 15-14	17,979.5	7,111.3	1,369.1	1,014.3	3.859	CC, ES, SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Ensign

Anticollision Summary Report

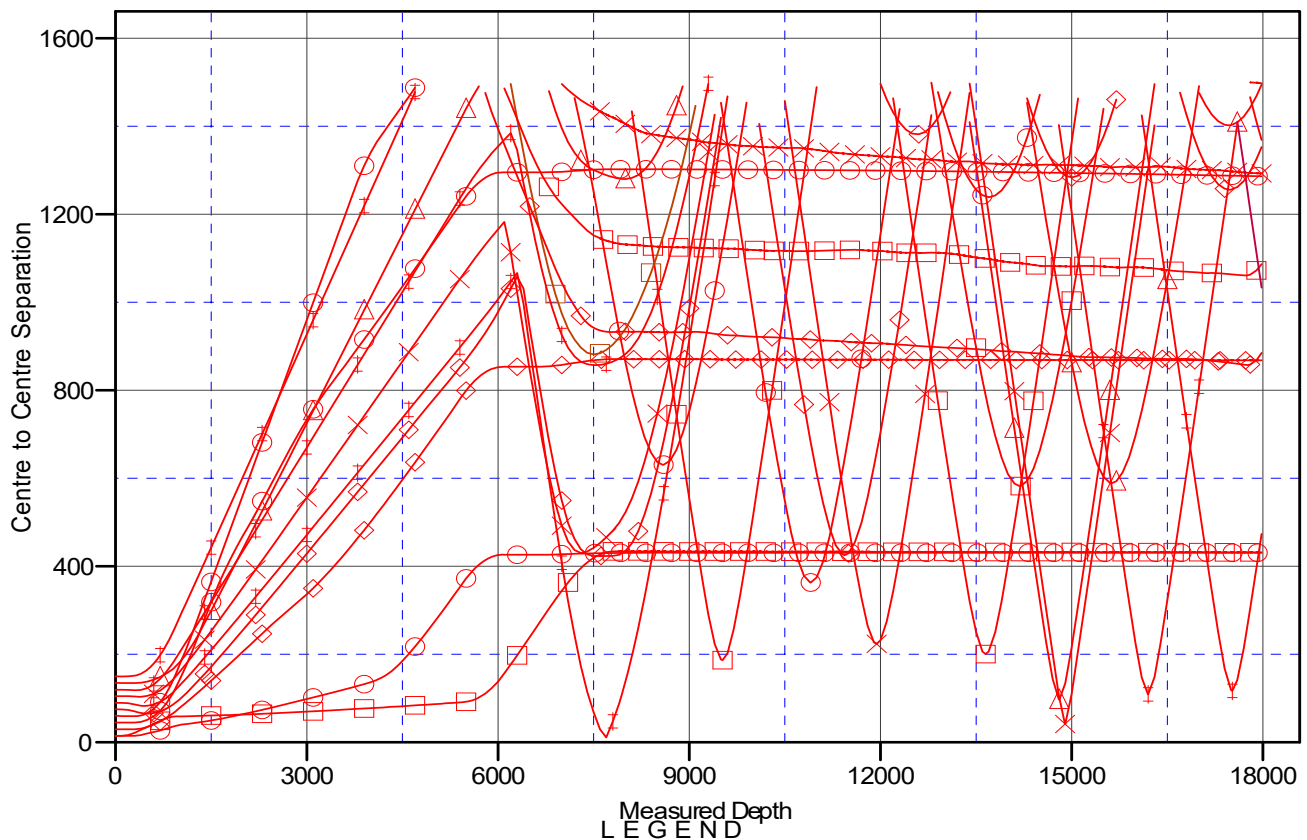
Company: PDC Energy Inc. DJ Basin
Project: SEC.18-T5N-R66W
Reference Site: Bypass State 1-12
Site Error: 0.0 ft
Reference Well: BYPASS STATE 02N
Well Error: 0.0 ft
Reference Wellbore: BYPASS STATE 02N
Reference Design: BYPASS STATE 02N Plan #1

Local Co-ordinate Reference: Well BYPASS STATE 02N
TVD Reference: Well @ 4919.0ft (RKB 28')
MD Reference: Well @ 4919.0ft (RKB 28')
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: US_EDM
Offset TVD Reference: Offset Datum

Reference Depths are relative to Well @ 4919.0ft (RKB 28')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: BYPASS STATE 02N
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.43°

Ladder Plot



- LEGEND**
- | | |
|---|--------------------|
| ✕ BYPASS STATE 09N, BYPASS STATE 09N, BYPASS STATE 09N Plan #1 V0 | ▣ EDWARDS 15-11, I |
| ○ BYPASS STATE 05C, BYPASS STATE 05C, BYPASS STATE 05C Plan #1 V0 | ▲ Roach N14-18D, R |
| ▲ BYPASS STATE 11C, BYPASS STATE 11C, BYPASS STATE 11C Plan #1 V0 | ▣ RAGANN 14-17(V |
| ◆ BYPASS STATE 07N, BYPASS STATE 07N, BYPASS STATE 07N Plan #1 V0 | ✕ SHANNON 14-3, Sh |
| ✕ BYPASS STATE 08N, BYPASS STATE 08N, BYPASS STATE 08N Plan #1 V0 | ▣ RAGANN 14-1, RA |
| ▣ BostFarm 38N-8C-L, BostFarm 38N-8C-L Wellbore #1, 38N-8C-L_Final Surveys V0 | ◆ SHANNON 14-2(V |
| ▲ UPRR 49 PANAMB1 (Exist), Wellbore #1, Wellbore #1 V0 | ✕ SHANNON 14-4, S |
| ✕ BostFarm 13N-11B-L (Exist), BostFarm 13N-11B-L Wellbore #1, BostFarm 13N-11B-L Wellbore #1 V0 | ✕ SHANNON 14-1, S |
| ▣ BostFarm 34N-11C-L (Exist), BostFarm 34N-11C-L Wellbore #1, BostFarm 34N-11C-L Wellbore #1 V0 | ○ RAGANN 14-08(V |
| ◆ BostFarm 34C-11-L (Exist), BostFarm 34C-11-L Wellbore #1, BostFarm 34C-11-L Wellbore #1 V0 | ◆ RAGANN 14-07, R |

Ensign

Anticollision Summary Report

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well BYPASS STATE 02N
Project:	SEC.18-T5N-R66W	TVD Reference:	Well @ 4919.0ft (RKB 28')
Reference Site:	Bypass State 1-12	MD Reference:	Well @ 4919.0ft (RKB 28')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	BYPASS STATE 02N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	BYPASS STATE 02N	Database:	US_EDM
Reference Design:	BYPASS STATE 02N Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to Well @ 4919.0ft (RKB 28')

Offset Depths are relative to Offset Datum

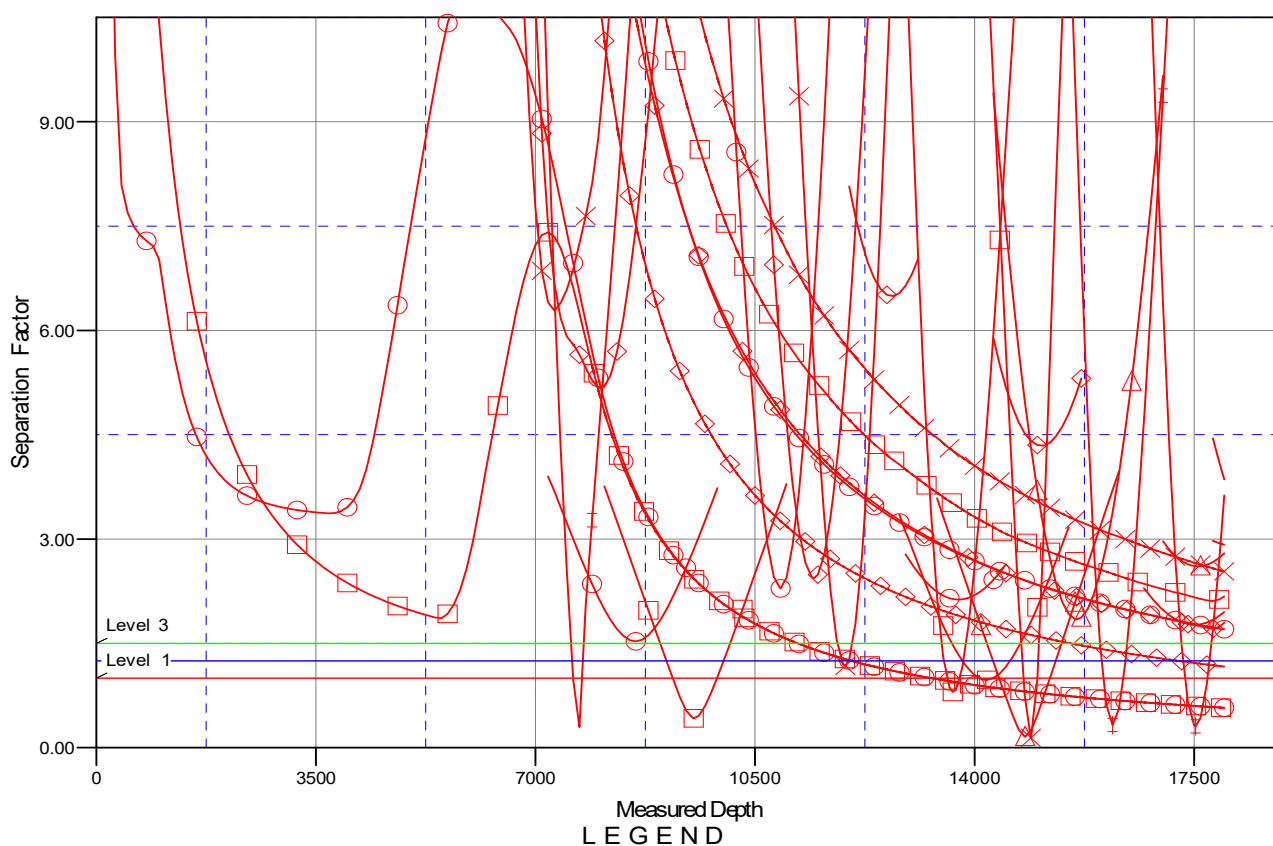
Central Meridian is -105.500000

Coordinates are relative to: BYPASS STATE 02N

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.43°

Separation Factor Plot



- | | |
|--|--------------------|
| ✕ BYPASS STATE 09N, BYPASS STATE 09N, BYPASS STATE 09N Plan #1 V0 | ✕ EDWARDS 15-11, I |
| ⊙ BYPASS STATE 05C, BYPASS STATE 05C, BYPASS STATE 05C Plan #1 V0 | ⚠ Roach N14-18D, R |
| ⚠ BYPASS STATE 11C, BYPASS STATE 11C, BYPASS STATE 11C Plan #1 V0 | ⚠ RAGANN 14-17 (V |
| ⬠ BYPASS STATE 07N, BYPASS STATE 07N, BYPASS STATE 07N Plan #1 V0 | ✕ SHANNON 14-3, Sh |
| ✕ BYPASS STATE 08N, BYPASS STATE 08N, BYPASS STATE 08N Plan #1 V0 | ⚠ RAGANN 14-1, RA |
| ⚠ Bost Farm 38N-8C-L, Bost Farm 38N-8C-L Wellbore #1, 38N-8C-L_Final Surveys V0 | ⬠ SHANNON 14-2 (V |
| ⚠ UPRR 49 PANAMB1 (Exist), Wellbore #1, Wellbore #1 V0 | ✕ SHANNON 14-1, SI |
| ✕ Bost Farm 13N-11B-L (Exist), Bost Farm 13N-11B-L Wellbore #1, Bost Farm 13N-11B-L Wellbore #1 V0 | ⊙ RAGANN 14-08 (V |
| ⚠ Bost Farm 34N-11C-L (Exist), Bost Farm 34N-11C-L Wellbore #1, Bost Farm 34N-11C-L Wellbore #1 V0 | ⬠ RAGANN 14-07 R |
| ⬠ Bost Farm 34C-11-L (Exist), Bost Farm 34C-11-L Wellbore #1, Bost Farm 34C-11-L Wellbore #1 V0 | |