

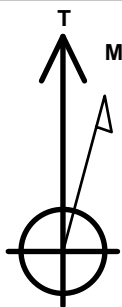
# PDC Energy Inc. DJ Basin

Well Name: **Stella 2N**

Surface Location: Stella 5N65W22Y Pad Sec.22-T5N-R65W  
 North American Datum 1983 , US State Plane 1983 Colorado Northern Zone  
 Ground Elevation: 4647.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1382384.91 3239173.97 40.379870 -104.641480  
 RKB - 23' WELL @ 4670.0ft (RKB - 23')

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 861'FSL & 438'FEL, Sec.22	1.0	0.0	0.0	Point
BHL 620'FSL & 500'FWL, Sec.21	6855.0	-293.0	-9616.1	Point
LPL 571'FSL & 732'FEL, Sec.22	6865.0	-293.0	-294.7	Point



Azimuths to True North  
 Magnetic North: 7.99°

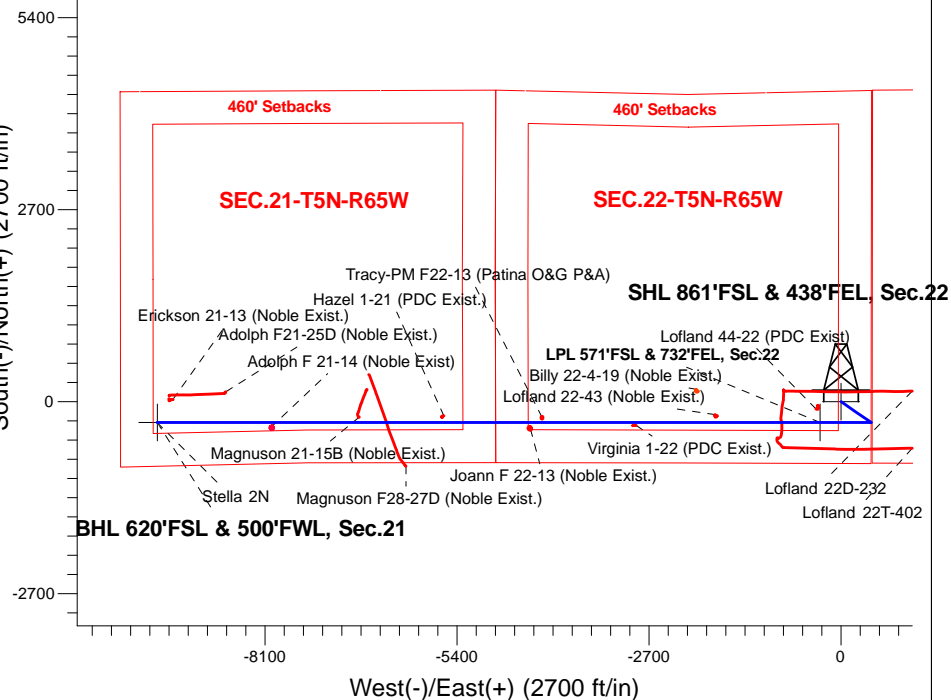
Magnetic Field  
 Strength: 52502.6snT  
 Dip Angle: 66.84°  
 Date: 6/16/2017  
 Model: IGRF2010

Stella 5N65W22Y Pad Sec.22-T5N-R65W  
 Stella 2N  
 Plan #2 (6-16-17)  
 13:23, June 16 2017

## ANNOTATIONS

TVD	MD	Annotation
1400.0	1400.0	KOP - Start Build 1.50
4870.9	4906.1	Start Drop -2.00
6148.8	6185.7	Start Build 8.00
6865.0	7311.4	Start 0.8 hold at 7311.4 MD
6865.0	7312.2	Start DLS 0.00 TFO -7.84
6855.0	16633.6	TD at 16633.6

South(-)/North(+) (2700 ft/in)



BHL 620'FSL & 500'FWL, Sec.21

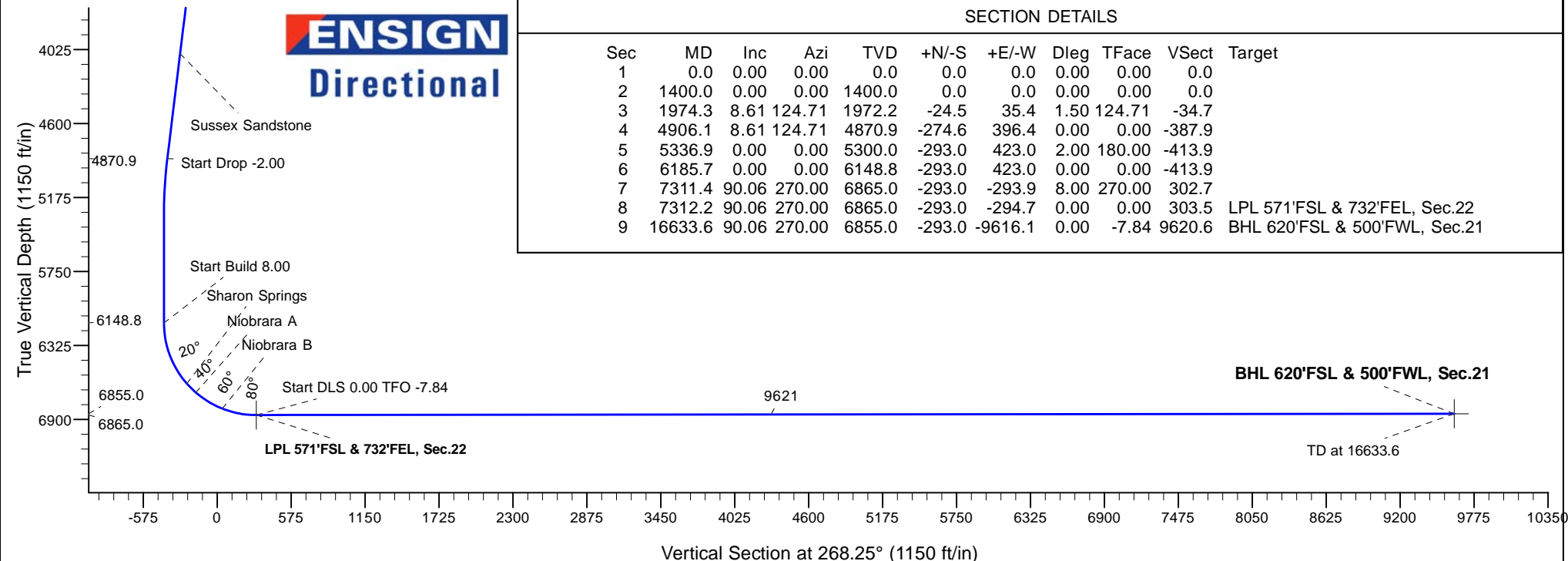
## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1400.0	0.00	0.00	1400.0	0.0	0.0	0.00	0.00	0.0	
3	1974.3	8.61	124.71	1972.2	-24.5	35.4	1.50	124.71	-34.7	
4	4906.1	8.61	124.71	4870.9	-274.6	396.4	0.00	0.00	-387.9	
5	5336.9	0.00	0.00	5300.0	-293.0	423.0	2.00	180.00	-413.9	
6	6185.7	0.00	0.00	6148.8	-293.0	423.0	0.00	0.00	-413.9	
7	7311.4	90.06	270.00	6865.0	-293.0	-293.9	8.00	270.00	302.7	
8	7312.2	90.06	270.00	6865.0	-293.0	-294.7	0.00	0.00	303.5	LPL 571'FSL & 732'FEL, Sec.22
9	16633.6	90.06	270.00	6855.0	-293.0	-9616.1	0.00	-7.84	9620.6	BHL 620'FSL & 500'FWL, Sec.21

BHL 620'FSL & 500'FWL, Sec.21

TD at 16633.6

**ENSIGN**  
 Directional



## **PDC Energy Inc. DJ Basin**

**SEC.22-T5N-R65W**

**Stella 5N65W22Y Pad Sec.22-T5N-R65W**

**Stella 2N**

**Wellbore #1**

**Plan #2 (6-16-17)**

## **Anticollision Report**

**16 June, 2017**

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Stella 2N
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4670.0ft (RKB - 23')
<b>Reference Site:</b>	Stella 5N65W22Y Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4670.0ft (RKB - 23')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Stella 2N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.45 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #2 (6-16-17)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #2 (6-16-17)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 800.0 ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.45 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b> 6/16/2017			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	16,633.6	Plan #2 (6-16-17) (Wellbore #1)	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						
Adolph F21-25D Pad Sec.21-T5N-R65W						
Adolph F21-25D (Noble Exist.) - Wellbore #1 - Wellbore #	15,671.3	6,922.4	431.7	101.4	1.307	Level 3, CC
Adolph F21-25D (Noble Exist.) - Wellbore #1 - Wellbore #	15,700.0	6,922.3	432.6	101.4	1.306	Level 3, ES, SF
Erickson 21-13 (Noble Exist.) - Wellbore #1 - Wellbore #1	16,414.2	6,825.9	322.6	-23.8	0.931	Level 1, CC, ES, SF
Elbert 1-12 Pad Sec.21-T5N-R65W						
Elbert 12N - Wellbore #1 - Plan #6 (1-13-17)	7,070.0	16,654.6	472.0	116.1	1.326	Level 3, CC, ES, SF
Existing Wells Sec.21-T5N-R65W						
Hazel 1-21 (PDC Exist.) - Wellbore #1 - Wellbore #1	12,601.6	6,827.7	92.5	-122.7	0.430	Level 1, CC, ES, SF
Magnuson 21-15B (Noble Exist.) - Wellbore #1 - Wellbor	13,794.1	6,876.2	73.3	-184.2	0.285	Level 1, CC, ES, SF
Existing Wells Sec.21-T5N-R65W (Grid to North)						
Adolph F 21-14 (Noble Exist) - Wellbore #1 - Wellbore #1	15,036.0	6,824.3	71.8	-226.7	0.240	Level 1, CC, ES, SF
Existing Wells Sec.22-T5N-R65W						
Lofland 44-22 (PDC Exist) - Wellbore #1 - Wellbore #1	7,369.0	6,842.2	193.8	151.1	4.537	CC, ES
Lofland 44-22 (PDC Exist) - Wellbore #1 - Wellbore #1	7,400.0	6,842.3	196.2	152.8	4.519	SF
Tracy-PM F22-13 (Patina O&G P&A) - Wellbore #1 - We	11,221.7	6,827.9	74.8	-245.3	0.234	Level 1, CC, ES, SF
Virginia 1-22 (PDC Exist.) - Wellbore #1 - Wellbore #1	9,904.2	6,829.7	40.8	-82.1	0.332	Level 1, CC, ES, SF
Lofland 22T-HZ Pad Sec.22-T5N-R65W						
Lofland 22D-232 - Wellbore #1 - Wellbore #1	6,950.0	7,429.8	434.3	381.8	8.278	SF
Lofland 22D-232 - Wellbore #1 - Wellbore #1	7,050.0	7,334.1	432.3	380.6	8.363	ES
Lofland 22D-232 - Wellbore #1 - Wellbore #1	7,077.8	7,306.8	432.2	380.8	8.395	CC
Lofland 22T-402 - Wellbore #1 - Wellbore #1	7,496.0	6,963.1	362.5	311.5	7.107	CC
Lofland 22T-402 - Wellbore #1 - Wellbore #1	7,500.0	6,959.8	362.5	311.5	7.100	ES
Lofland 22T-402 - Wellbore #1 - Wellbore #1	7,600.0	6,883.2	368.2	315.9	7.038	SF
Lorenz F22-67-1HN Pad Sec.22-T5N-R65W						
Billy 22-4-19 (Noble Exist.) - Wellbore #1 - Wellbore #1	9,051.9	6,828.1	463.3	369.2	4.924	CC, ES
Billy 22-4-19 (Noble Exist.) - Wellbore #1 - Wellbore #1	9,100.0	6,827.5	465.8	370.1	4.868	SF
Joann F 22-13 (Noble Exist.) - Wellbore #1 - Wellbore #1	11,388.2	6,831.0	88.3	-84.7	0.510	Level 1, CC, ES, SF
Lofland 22-43 (Noble Exist.) - Wellbore #1 - Wellbore #1	8,789.1	6,830.0	106.4	20.5	1.239	Level 2, CC, ES, SF
Magnuson Pad Sec.21-T5N-R65W						
Magnuson F28-27D (Noble Exist.) - Magnuson F28-27D	13,138.2	7,028.0	614.8	373.5	2.548	CC, ES
Magnuson F28-27D (Noble Exist.) - Magnuson F28-27D	13,200.0	7,027.4	617.9	374.5	2.539	SF

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Stella 2N
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<b>Reference Site:</b>	Stella 5N65W22Y Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4670.0ft (RKB - 23')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Stella 2N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.45 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #2 (6-16-17)	<b>Offset TVD Reference:</b>	Offset Datum

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						
Stella 5N65W22Y Pad Sec.22-T5N-R65W						
Stella 1N - Wellbore #1 - Plan #2 (6-16-17)	1,400.0	1,400.0	13.8	6.3	1.851	CC
Stella 1N - Wellbore #1 - Plan #2 (6-16-17)	16,634.1	16,697.4	290.4	-372.7	0.438	Level 1, ES, SF
Stella 3N - Wellbore #1 - Plan #2 (6-16-17)	1,200.0	1,200.0	15.6	9.3	2.465	CC
Stella 3N - Wellbore #1 - Plan #2 (6-16-17)	16,634.1	16,723.4	247.8	-410.1	0.377	Level 1, ES, SF
Stella 4N - Wellbore #1 - Plan #2 (6-16-17)	1,000.0	1,000.0	31.2	26.0	5.967	CC
Stella 4N - Wellbore #1 - Plan #2 (6-16-17)	16,634.1	16,683.4	466.3	-210.4	0.689	Level 1, ES, SF

Offset Design		Adolph F21-25D Pad Sec.21-T5N-R65W - Adolph F21-25D (Noble Exist.) - Wellbore #1 - Wellbore #1											Offset Site Error:		0.0 ft	
Survey Program:		78-												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning			
15,000.0	6,856.8	6,926.9	6,838.7	282.3	25.0	90.35	138.7	-8,653.8	798.1	490.9	307.21	2.598				
15,100.0	6,856.7	6,926.2	6,838.0	285.7	25.0	90.26	138.7	-8,653.8	716.0	405.4	310.65	2.305				
15,200.0	6,856.6	6,925.6	6,837.4	289.1	25.0	90.17	138.7	-8,653.8	639.1	325.0	314.08	2.035				
15,300.0	6,856.5	6,924.9	6,836.7	292.6	25.0	90.09	138.7	-8,653.8	569.4	251.9	317.52	1.793				
15,400.0	6,856.4	6,924.2	6,836.0	296.0	25.0	90.00	138.6	-8,653.8	509.8	188.9	320.95	1.589				
15,500.0	6,856.2	6,923.6	6,835.4	299.4	25.0	89.91	138.6	-8,653.8	464.4	140.0	324.39	1.432	Level 3			
15,600.0	6,856.1	6,922.9	6,834.7	302.9	25.0	89.82	138.6	-8,653.8	437.5	109.7	327.82	1.335	Level 3			
15,671.3	6,856.1	6,922.4	6,834.2	305.3	25.0	89.76	138.6	-8,653.8	431.7	101.4	330.27	1.307	Level 3, CC			
15,700.0	6,856.0	6,922.3	6,834.1	306.3	25.0	89.73	138.6	-8,653.8	432.6	101.4	331.25	1.306	Level 3, ES, SF			
15,800.0	6,855.9	6,921.6	6,833.4	309.7	25.0	89.65	138.6	-8,653.8	450.4	115.8	334.68	1.346	Level 3			
15,900.0	6,855.8	6,920.9	6,832.7	313.2	25.0	89.56	138.6	-8,653.8	488.5	150.4	338.12	1.445	Level 3			
16,000.0	6,855.7	6,920.3	6,832.1	316.6	25.0	89.47	138.6	-8,653.8	542.6	201.0	341.55	1.589				
16,100.0	6,855.6	6,919.6	6,831.4	320.0	25.0	89.39	138.6	-8,653.9	608.4	263.4	344.98	1.763				
16,200.0	6,855.5	6,919.0	6,830.8	323.5	25.0	89.30	138.6	-8,653.9	682.5	334.1	348.41	1.959				
16,300.0	6,855.4	6,918.3	6,830.1	326.9	25.0	89.21	138.6	-8,653.9	762.6	410.8	351.84	2.168				