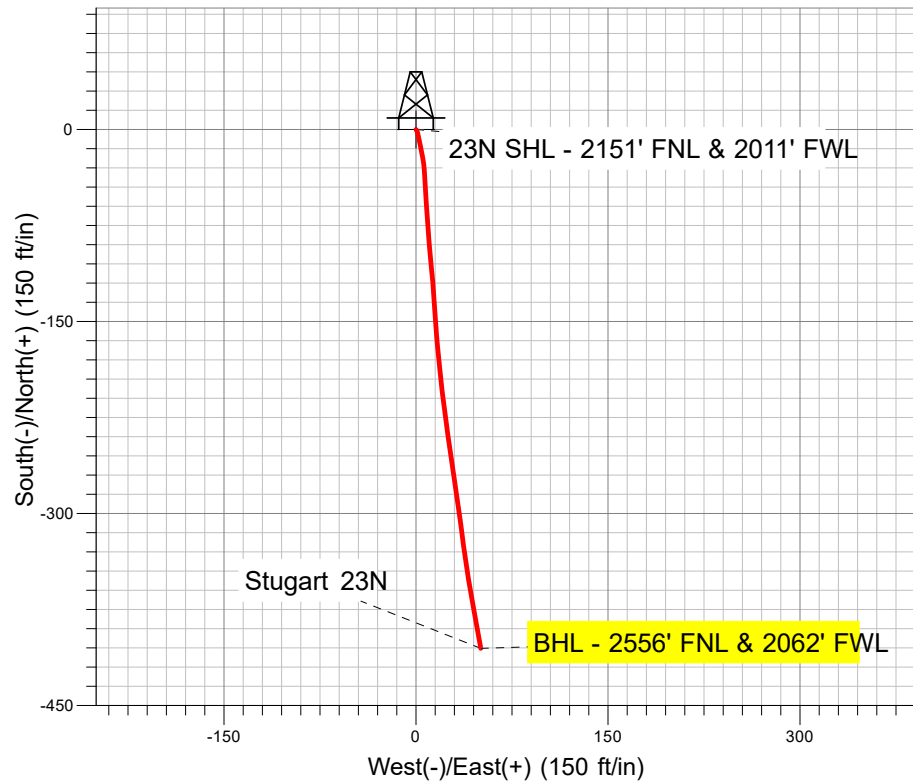
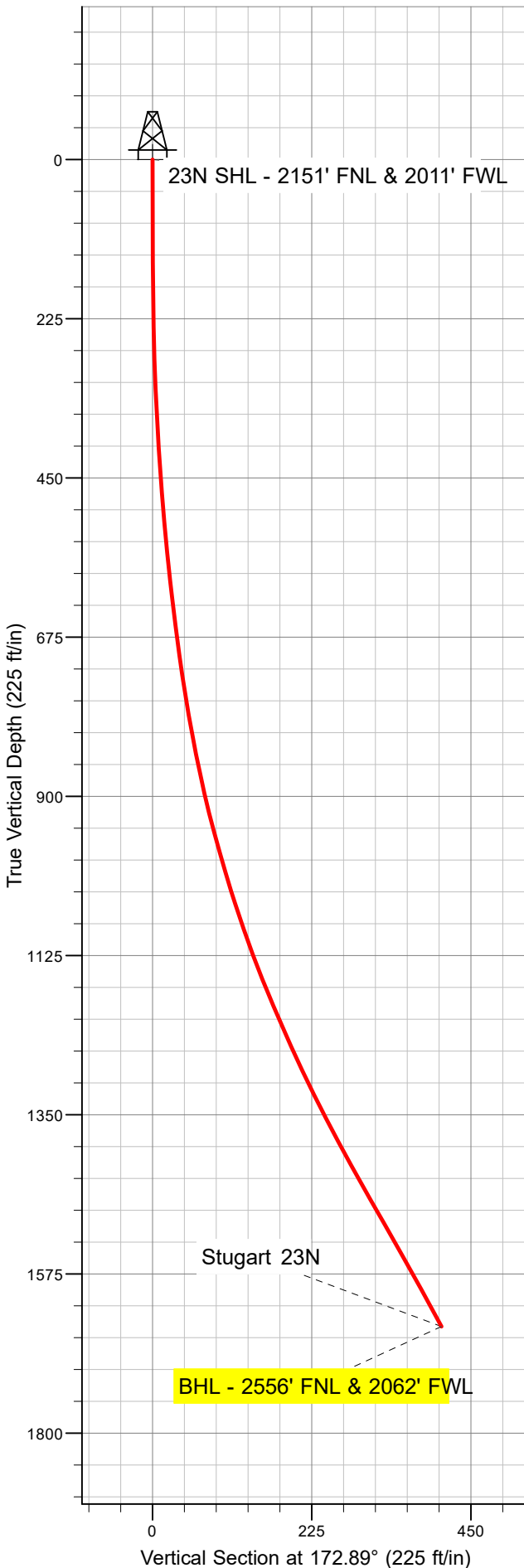




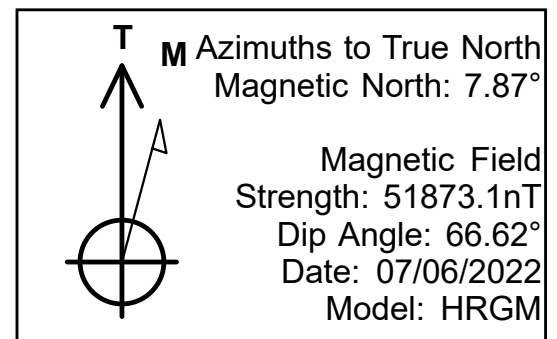
Well Name: Stugart 23N  
Surface Location: Stugart State 6-20  
North American Datum 1983 US State Plane 1983 Colorado Northern Zone  
Ground Elevation: 4885.0  
+N/-S +E/-W Northing Easting Latitude Longitude  
0.0 0.0 1384356.10 3193349.45 40.38639 -104.80591  
Ensign 122 - RKB 13' WELL @ 4898.0ft (Ensign 122 - RKB 13')

## PDC Energy Inc. DJ Basin

# Final Survey Plot



Project: SEC.20-T5N-R66W  
Site: Stugart State 6-20  
Well: Stugart 23N  
Plan: Stugart 23N





# **PDC Energy Inc. DJ Basin**

**SEC.20-T5N-R66W**

**Stugart State 6-20**

**Stugart 23N**

**Stugart 23N**

**Design: Stugart 23N**

## **Standard Survey Report**

**26 July, 2022**

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Stugart 23N
<b>Project:</b>	SEC.20-T5N-R66W	<b>TVD Reference:</b>	WELL @ 4898.0ft (Ensign 122 - RKB 13')
<b>Site:</b>	Stugart State 6-20	<b>MD Reference:</b>	WELL @ 4898.0ft (Ensign 122 - RKB 13')
<b>Well:</b>	Stugart 23N	<b>North Reference:</b>	True
<b>Wellbore:</b>	Stugart 23N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Stugart 23N	<b>Database:</b>	US_EDM

<b>Project</b>	SEC.20-T5N-R66W		
<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

Site		Stugart State 6-20			
Site Position: From:	Lat/Long	Northing:	1,384,531.67 usft	Latitude:	40.386863
		Easting:	3,193,390.47 usft	Longitude:	-104.805753
	Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:

Well	Stugart 23N					
Well Position	+N/-S	0.0 ft	Northing:	1,384,356.11 usf	Latitude:	40.38639
	+E/-W	0.0 ft	Easting:	3,193,349.45 usf	Longitude:	-104.80591
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,885.0 ft

<b>Wellbore</b>	Stugart 23N				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HRGM	07/06/2022	7.87	66.62	51,873.10249844

<b>Design</b>	Stugart 23N				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	172.89	

<b>Survey Program</b>	<b>Date</b>	07/26/2022			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
145.0	1,729.0	Survey #1 (Stugart 23N)	MWD	MWD - Standard	

<b>Survey</b>									
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
145.0	0.26	150.25	145.0	-0.3	0.2	0.3	0.18	0.18	0.00
237.0	1.14	149.02	237.0	-1.3	0.7	1.3	0.96	0.96	-1.34
328.0	2.73	170.29	327.9	-4.2	1.6	4.3	1.89	1.75	23.37
444.0	4.13	166.78	443.7	-11.0	3.0	11.2	1.22	1.21	-3.03
531.0	5.10	168.71	530.4	-17.8	4.5	18.2	1.13	1.11	2.22
618.0	6.77	172.23	617.0	-26.7	5.9	27.2	1.96	1.92	4.05
702.0	7.91	177.85	700.3	-37.4	6.8	37.9	1.60	1.36	6.69
787.0	9.76	175.92	784.3	-50.4	7.5	50.9	2.20	2.18	-2.27
872.0	12.13	176.27	867.7	-66.5	8.6	67.0	2.79	2.79	0.41

<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Stugart 23N
<b>Project:</b>	SEC.20-T5N-R66W	<b>TVD Reference:</b>	WELL @ 4898.0ft (Ensign 122 - RKB 13')
<b>Site:</b>	Stugart State 6-20	<b>MD Reference:</b>	WELL @ 4898.0ft (Ensign 122 - RKB 13')
<b>Well:</b>	Stugart 23N	<b>North Reference:</b>	True
<b>Wellbore:</b>	Stugart 23N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Stugart 23N	<b>Database:</b>	US_EDM

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)	
958.0	14.95	175.92	951.3	-86.6	10.0	87.1	3.28	3.28	-0.41	
1,044.0	17.32	173.98	1,033.9	-110.4	12.1	111.0	2.83	2.76	-2.26	
1,129.0	20.14	176.62	1,114.4	-137.6	14.3	138.3	3.46	3.32	3.11	
1,217.0	23.13	174.69	1,196.2	-169.9	16.8	170.7	3.49	3.40	-2.19	
1,304.0	24.89	173.46	1,275.7	-205.1	20.5	206.1	2.10	2.02	-1.41	
1,389.0	27.44	171.52	1,352.0	-242.3	25.4	243.5	3.16	3.00	-2.28	
1,476.0	29.11	172.05	1,428.6	-283.0	31.3	284.7	1.94	1.92	0.61	
1,562.0	29.90	172.23	1,503.4	-325.0	37.1	327.1	0.92	0.92	0.21	
1,669.0	28.84	169.59	1,596.7	-376.8	45.4	379.5	1.56	-0.99	-2.47	
1,729.0	28.84	169.59	1,649.2	-405.3	50.6	408.4	0.00	0.00	0.00	
BHL - 2556' FNL & 2062' FWL										

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,729.0	1,649.2	-405.3	50.6	BHL - 2556' FNL & 2062' FWL	

Checked By: _____	Approved By: _____	Date: _____
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