

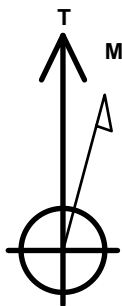
PDC Energy Inc. DJ Basin

Well Name: **Jagged 1N**

Surface Location: Jagged 4N64W08 Pad Sec.8-T4N-R64W
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
 Ground Elevation: 4772.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1362800.88 3257788.61 40.325600 -104.575400
 Original Well Elev WELL @ 4795.0ft (Original Well Elev)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 2166'FSL, 2395'FWL, SEC.8	1.0	0.0	0.0	Point
BHL 2365'FNL, 500'FWL, SEC.7	6905.0	673.1	-6928.0	Point
LPL 2365'FNL, 1909'FWL, SEC.8	6905.0	738.2	-485.8	Point



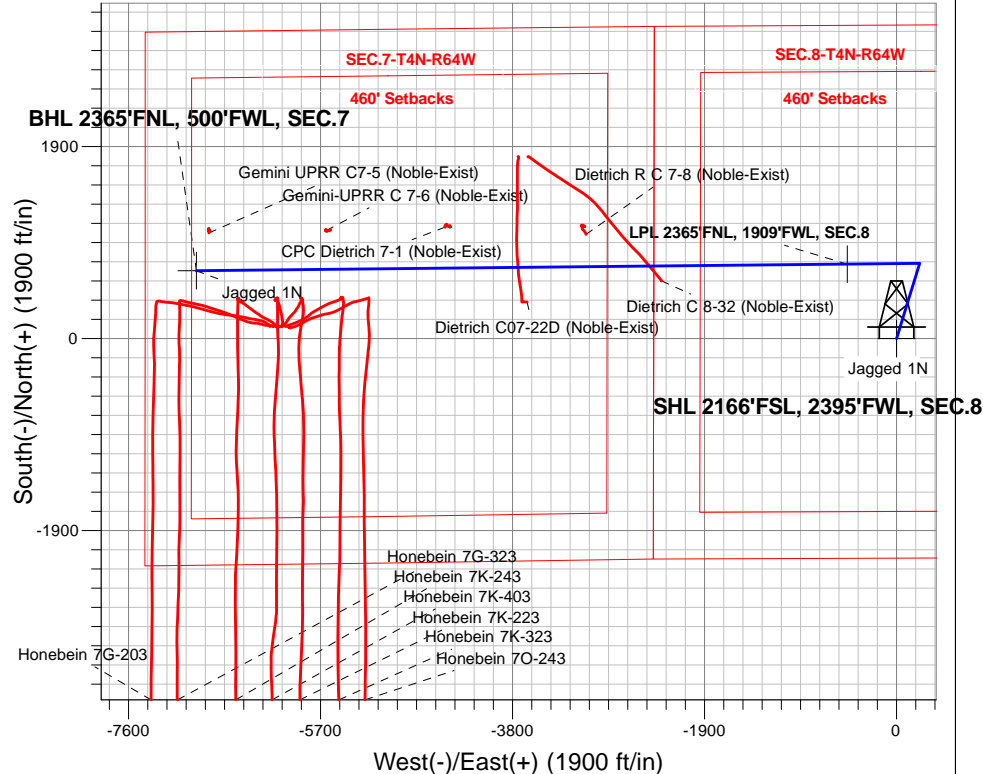
Azimuths to True North
 Magnetic North: 7.94°

Magnetic Field
 Strength: 52476.4snT
 Dip Angle: 66.81°
 Date: 6/28/2017
 Model: IGRF2010

Jagged 4N64W08 Pad Sec.8-T4N-R64W
 Jagged 1N
 Plan #3 (6-27-17)
 7:49, June 28 2017

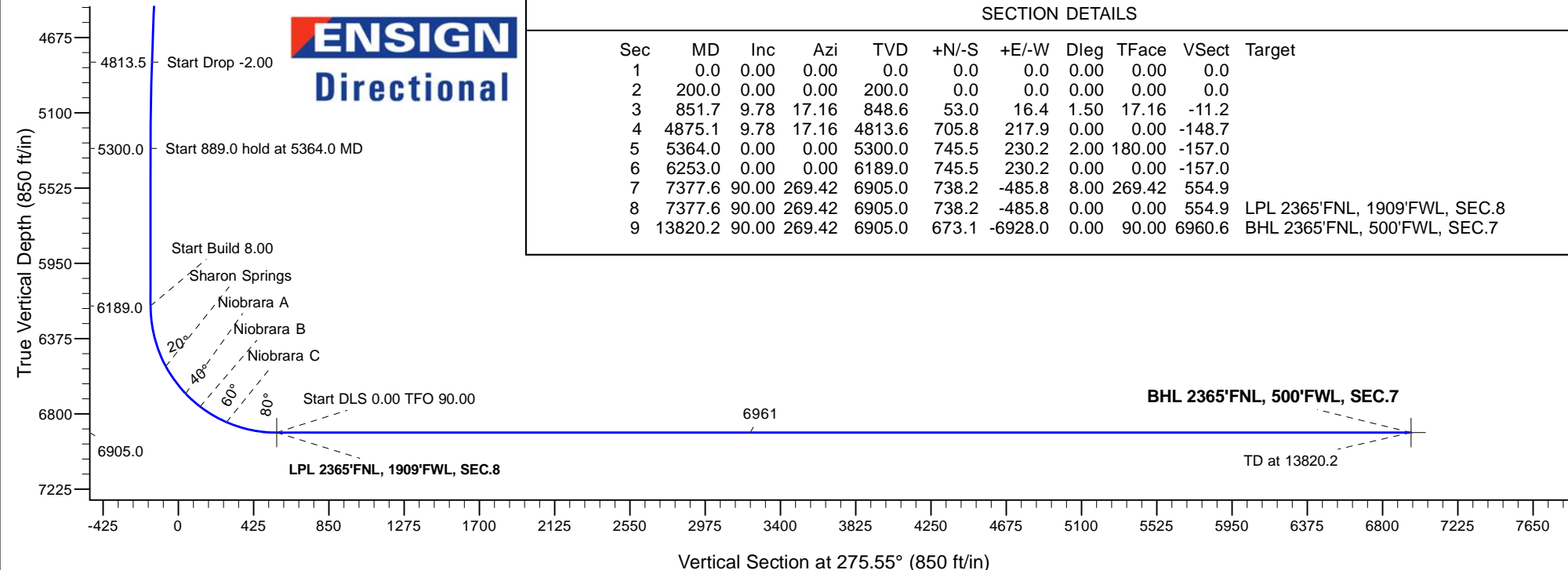
ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP - Start Build 1.50
4813.5	4875.1	Start Drop -2.00
5300.0	5364.0	Start 889.0 hold at 5364.0 MD
6189.0	6253.0	Start Build 8.00
6905.0	7377.6	Start DLS 0.00 TFO 90.00
6905.0	13820.2	TD at 13820.2



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	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	851.7	9.78	17.16	848.6	53.0	16.4	1.50	17.16	-11.2	
4	4875.1	9.78	17.16	4813.6	705.8	217.9	0.00	0.00	-148.7	
5	5364.0	0.00	0.00	5300.0	745.5	230.2	2.00	180.00	-157.0	
6	6253.0	0.00	0.00	6189.0	745.5	230.2	0.00	0.00	-157.0	
7	7377.6	90.00	269.42	6905.0	738.2	-485.8	8.00	269.42	554.9	
8	7377.6	90.00	269.42	6905.0	738.2	-485.8	0.00	0.00	554.9	LPL 2365'FNL, 1909'FWL, SEC.8
9	13820.2	90.00	269.42	6905.0	673.1	-6928.0	0.00	90.00	6960.6	BHL 2365'FNL, 500'FWL, SEC.7





PDC Energy Inc. DJ Basin

SEC.8-T4N-R64W

Jagged 4N64W08 Pad Sec.8-T4N-R64W

Jagged 1N

Wellbore #1

Plan #3 (6-27-17)

Anticollision Summary Report

28 June, 2017



Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Jagged 1N
Project:	SEC.8-T4N-R64W	TVD Reference:	WELL @ 4795.0ft (Original Well Elev)
Reference Site:	Jagged 4N64W08 Pad Sec.8-T4N-R64W	MD Reference:	WELL @ 4795.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Jagged 1N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (6-27-17)	Offset TVD Reference:	Offset Datum

Reference	Plan #3 (6-27-17)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 800.0 ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.45 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	6/28/2017		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	13,820.2	Plan #3 (6-27-17) (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						
Dietrich C Pad Sec.7-T4N-R64W						
Dietrich C 8-32 (Noble-Exist) - Dietrich C 8-32 - Dietrich C	9,219.0	7,232.5	146.4	26.2	1.218	Level 2, CC, ES, SF
Dietrich C07-18 Pad Sec.7-T4N-R64W						
Dietrich C07-22D (Noble-Exist) - Wellbore #1 - Wellbore	10,565.8	7,177.4	342.9	192.2	2.275	CC, ES
Dietrich C07-22D (Noble-Exist) - Wellbore #1 - Wellbore	10,600.0	7,175.7	344.6	192.7	2.269	SF
Existing Wells Sec.7-T4N-R64W (GRID)						
CPC Dietrich 7-1 (Noble-Exist) - Wellbore #1 - Wellbore #	11,355.8	6,961.7	412.7	240.1	2.391	CC, ES
CPC Dietrich 7-1 (Noble-Exist) - Wellbore #1 - Wellbore #	11,400.0	6,961.6	415.0	240.9	2.384	SF
Dietrich R C 7-8 (Noble-Exist) - Dietrich RC 7-8 - Design	9,973.6	6,937.5	399.1	270.5	3.104	CC
Dietrich R C 7-8 (Noble-Exist) - Dietrich RC 7-8 - Design	10,000.0	6,937.5	400.0	270.5	3.089	ES, SF
Dietrich R C 7-8 (Noble-Exist) - Dietrich RC 7-8 - Dietrich	9,965.6	6,952.0	332.6	206.9	2.647	CC, ES
Dietrich R C 7-8 (Noble-Exist) - Dietrich RC 7-8 - Dietrich	10,000.0	6,951.2	334.4	207.5	2.636	SF
Gemini UPRR C7-5 (Noble-Exist) - Wellbore #1 - Wellbo	13,685.9	6,954.3	381.3	129.6	1.515	CC
Gemini UPRR C7-5 (Noble-Exist) - Wellbore #1 - Wellbo	13,700.0	6,954.7	381.5	129.3	1.513	ES, SF
Gemini-UPRR C 7-6 (Noble-Exist) - Wellbore #1 - Wellbo	12,532.2	6,976.2	384.6	172.6	1.814	CC, ES, SF
Honebein 4N64W7K Pad Sec.7-T4N-R64W						
Honebein 7G-203 - Wellbore #1 - Wellbore #1	13,820.9	6,848.2	657.5	429.3	2.881	CC, ES, SF
Honebein 7G-323 - Wellbore #1 - Wellbore #1	13,820.9	6,798.0	560.4	337.4	2.513	CC, ES, SF
Honebein 7K-223 - Wellbore #1 - Wellbore #1	12,767.8	6,704.0	550.3	369.1	3.037	CC, ES
Honebein 7K-223 - Wellbore #1 - Wellbore #1	12,900.0	6,728.7	564.9	374.5	2.968	SF
Honebein 7K-243 - Wellbore #1 - Wellbore #1	13,417.7	6,758.9	510.2	305.9	2.497	CC, ES, SF
Honebein 7K-323 - Wellbore #1 - Wellbore #1	12,376.3	6,787.0	499.6	320.2	2.784	CC
Honebein 7K-323 - Wellbore #1 - Wellbore #1	12,400.0	6,787.0	500.2	320.0	2.777	ES, SF
Honebein 7K-403 - Wellbore #1 - Wellbore #1	13,020.1	6,794.0	454.8	254.6	2.271	CC, ES, SF
Honebein 7O-243 - Wellbore #1 - Wellbore #1	12,127.1	6,817.5	542.0	365.9	3.078	CC, ES
Honebein 7O-243 - Wellbore #1 - Wellbore #1	12,200.0	6,817.9	546.8	368.5	3.067	SF

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Site Error:	0.0 ft	North Reference:	True
Reference Well:	Jagged 1N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (6-27-17)	Offset TVD Reference:	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						
Jagged 4N64W08 Pad Sec.8-T4N-R64W						
Jagged 10N - Wellbore #1 - Plan #2 (6-27-17)	200.0	200.0	136.6	135.8	165.404	CC
Jagged 10N - Wellbore #1 - Plan #2 (6-27-17)	300.0	300.6	136.8	135.4	101.404	ES
Jagged 10N - Wellbore #1 - Plan #2 (6-27-17)	900.0	883.4	188.3	183.2	36.828	SF
Jagged 2N - Wellbore #1 - Plan #3 (6-27-17)	200.0	200.0	16.7	15.9	20.254	CC
Jagged 2N - Wellbore #1 - Plan #3 (6-27-17)	13,820.9	13,712.3	259.6	-199.0	0.566	Level 1, ES, SF
Jagged 3N - Wellbore #1 - Plan #3 (6-27-17)	200.0	200.0	30.7	29.9	37.165	CC
Jagged 3N - Wellbore #1 - Plan #3 (6-27-17)	13,820.9	13,760.3	510.3	29.0	1.060	Level 2, ES, SF
Jagged 4N - Wellbore #1 - Plan #2 (6-27-17)	200.0	200.0	44.6	43.8	54.009	CC
Jagged 4N - Wellbore #1 - Plan #2 (6-27-17)	300.0	300.0	45.0	43.6	32.695	ES
Jagged 4N - Wellbore #1 - Plan #2 (6-27-17)	12,100.0	11,892.0	772.4	413.4	2.152	SF
Jagged 5N - Wellbore #1 - Plan #2 (6-27-17)	200.0	200.0	61.3	60.5	74.263	CC
Jagged 5N - Wellbore #1 - Plan #2 (6-27-17)	300.0	300.0	61.7	60.4	44.844	ES
Jagged 5N - Wellbore #1 - Plan #2 (6-27-17)	800.0	797.5	87.6	83.3	20.414	SF
Jagged 6N - Wellbore #1 - Plan #2 (6-27-17)	200.0	200.0	75.3	74.5	91.141	CC
Jagged 6N - Wellbore #1 - Plan #2 (6-27-17)	300.0	300.0	75.7	74.3	54.970	ES
Jagged 6N - Wellbore #1 - Plan #2 (6-27-17)	900.0	896.1	112.0	107.1	22.837	SF
Jagged 7N - Wellbore #1 - Plan #3 (6-27-17)	200.0	200.0	92.0	91.2	111.394	CC
Jagged 7N - Wellbore #1 - Plan #3 (6-27-17)	300.0	300.0	92.4	91.0	67.121	ES
Jagged 7N - Wellbore #1 - Plan #3 (6-27-17)	1,000.0	993.1	140.2	134.8	25.836	SF
Jagged 8N - Wellbore #1 - Plan #2 (6-27-17)	200.0	200.0	106.0	105.1	128.272	CC
Jagged 8N - Wellbore #1 - Plan #2 (6-27-17)	300.0	300.0	106.3	105.0	77.248	ES
Jagged 8N - Wellbore #1 - Plan #2 (6-27-17)	1,000.0	989.8	156.7	151.3	29.137	SF
Jagged 9C - Wellbore #1 - Plan #3 (6-27-17)	200.0	200.0	119.9	119.1	145.150	CC
Jagged 9C - Wellbore #1 - Plan #3 (6-27-17)	300.0	300.0	120.3	118.9	87.374	ES
Jagged 9C - Wellbore #1 - Plan #3 (6-27-17)	1,000.0	984.2	179.3	173.8	32.730	SF