PDC Energy Inc. DJ Basin

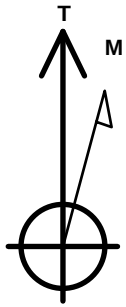
Well Name: **Challenger 8N (Nio C)**
Surface Location: Challenger 4N64W8 Pad Sec.8-T4N-R64W
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
Ground Elevation: 4776.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1364473.30	3257810.20	40.330190	-104.575260	

Original Well Elev WELL @ 4799.0ft (Original Well Elev)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 1433'FNL & 2431'FWL, Sec.8	1.0	0.0	0.0	Point
BHL 1853'FNL & 150'FWL, Sec.7	6899.0	-486.0	-7317.0	Point
LPL 1853'FNL & 1900'FWL, Sec.8	6899.0	-422.6	-532.5	Point



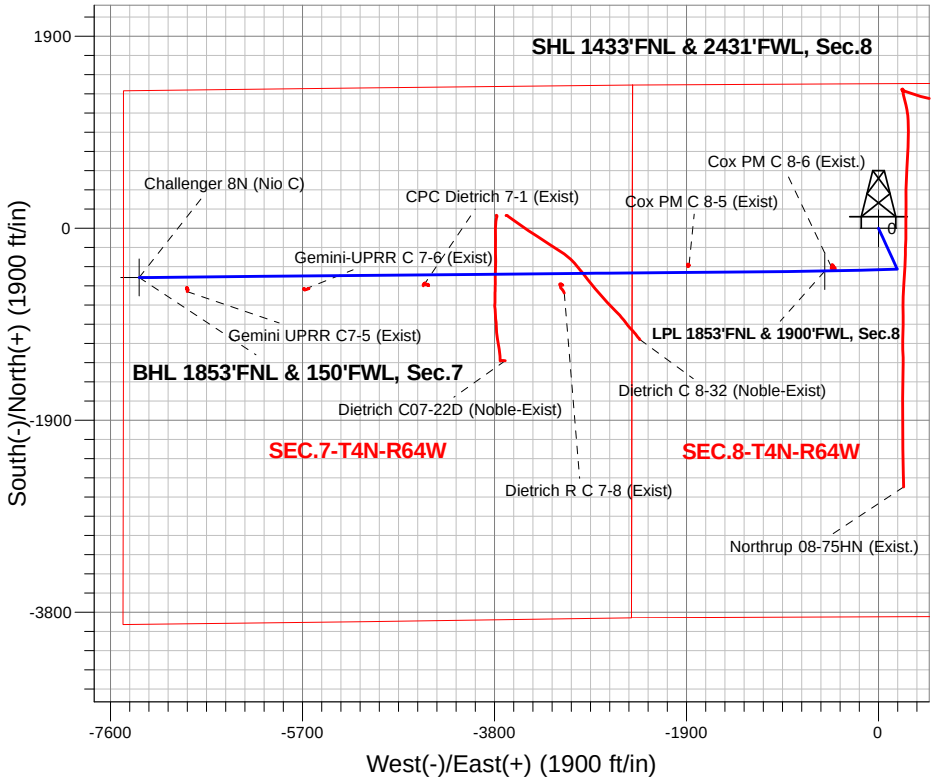
Azimuths to True North
Magnetic North: 7.81°

Magnetic Field
Strength: 52373.5snT
Dip Angle: 66.78°
Date: 6/28/2018
Model: IGRF2010

Challenger 4N64W8 Pad Sec.8-T4N-R64W
Challenger 8N (Nio C)
Plan #1 (6-28-18)
12:40, June 29 2018

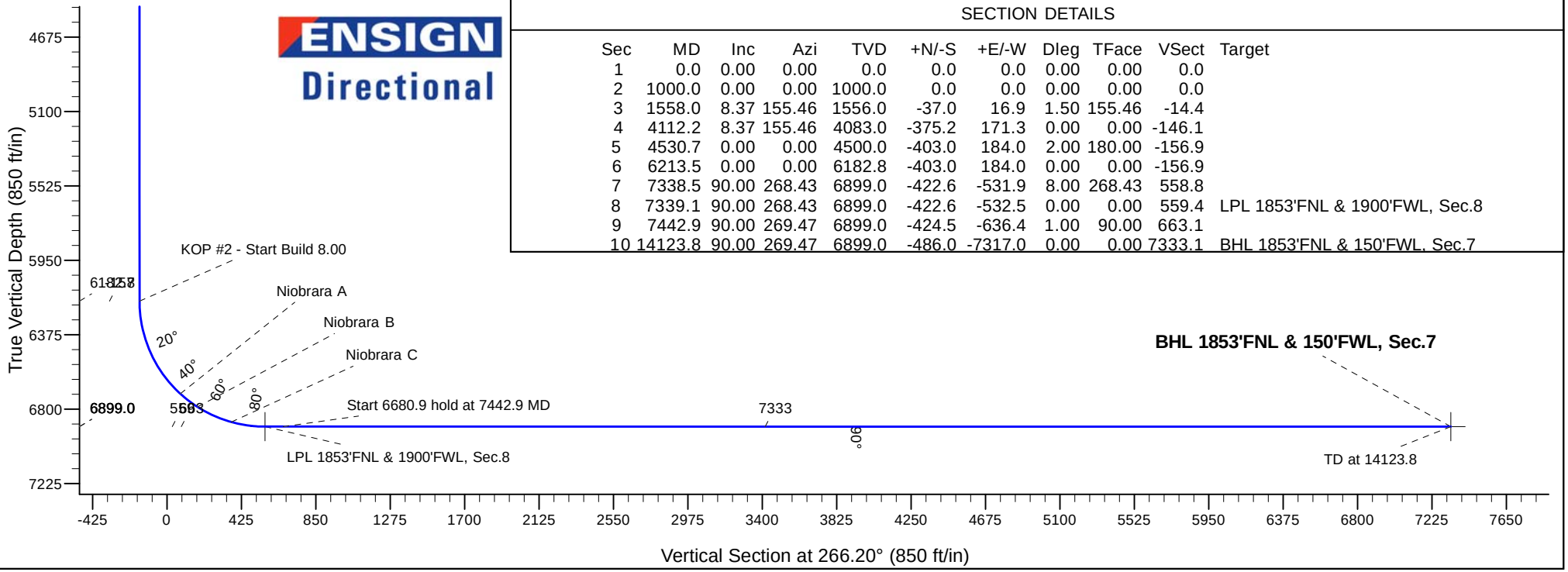
ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP - Start Build 1.50
4083.0	4112.2	Start Drop -2.00
6182.8	6213.5	KOP #2 - Start Build 8.00
6899.0	7339.1	Start DLS 1.00 TFO 90.00
6899.0	7442.9	Start 6680.9 hold at 7442.9 MD
6899.0	14123.8	TD at 14123.8



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	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1558.0	8.37	155.46	1556.0	-37.0	16.9	1.50	155.46	-14.4	
4	4112.2	8.37	155.46	4083.0	-375.2	171.3	0.00	0.00	-146.1	
5	4530.7	0.00	0.00	4500.0	-403.0	184.0	2.00	180.00	-156.9	
6	6213.5	0.00	0.00	6182.8	-403.0	184.0	0.00	0.00	-156.9	
7	7338.5	90.00	268.43	6899.0	-422.6	-531.9	8.00	268.43	558.8	
8	7339.1	90.00	268.43	6899.0	-422.6	-532.5	0.00	0.00	559.4	LPL 1853'FNL & 1900'FWL, Sec.8
9	7442.9	90.00	269.47	6899.0	-424.5	-636.4	1.00	90.00	663.1	
10	14123.8	90.00	269.47	6899.0	-486.0	-7317.0	0.00	0.00	7333.1	BHL 1853'FNL & 150'FWL, Sec.7



ENSIGN Directional

PDC Energy Inc. DJ Basin

SEC.8-T4N-R64W
Challenger 4N64W8 Pad Sec.8-T4N-R64W
Challenger 8N (Nio C)

Wellbore #1
Plan #1 (6-28-18)

Anticollision Report

29 June, 2018

PDC ENERGY
Growing E&P Value

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well Challenger 8N (Nio C)
Project:	SEC.8-T4N-R64W	**TVD Reference:**	WELL @ 4799.0ft (Original Well Elev)
Reference Site:	Challenger 4N64W8 Pad Sec.8-T4N-R64W	**MD Reference:**	WELL @ 4799.0ft (Original Well Elev)
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	Challenger 8N (Nio C)	**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 #1 (6-28-18)	**Offset TVD Reference:**	Offset Datum

Reference	Plan #1 (6-28-18)		
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 500.0 ft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.45 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 6/29/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	14,123.8	Plan #1 (6-28-18) (Wellbore #1)	MWD	MWD - Standard

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
Challenger 4N64W8 Pad Sec.8-T4N-R64W						
Challenger 1N (Nio B) - Wellbore #1 - Plan #1 (6-27-18)	200.0	198.0	105.6	104.8	128.756	CC, ES
Challenger 1N (Nio B) - Wellbore #1 - Plan #1 (6-27-18)	1,000.0	966.3	185.4	180.1	34.926	SF
Challenger 2N (Nio C) - Wellbore #1 - Plan #1 (6-27-18)	400.0	399.0	91.1	89.2	47.322	CC, ES
Challenger 2N (Nio C) - Wellbore #1 - Plan #1 (6-27-18)	1,000.0	980.8	136.2	130.9	25.992	SF
Challenger 3N (Nio B) - Wellbore #1 - Plan #1 (6-27-18)	600.0	599.0	76.5	73.5	25.283	CC, ES
Challenger 3N (Nio B) - Wellbore #1 - Plan #1 (6-27-18)	1,000.0	990.0	96.4	91.2	18.470	SF
Challenger 4N (Nio C) - Wellbore #1 - Plan #1 (6-27-18)	1,000.0	999.0	61.9	56.7	11.845	CC, ES
Challenger 4N (Nio C) - Wellbore #1 - Plan #1 (6-27-18)	1,100.0	1,097.5	64.3	58.6	11.197	SF
Challenger 5N (Nio B) - Wellbore #1 - Plan #1 (6-27-18)	1,000.0	1,000.0	47.4	42.1	9.053	CC, ES
Challenger 5N (Nio B) - Wellbore #1 - Plan #1 (6-27-18)	1,200.0	1,199.9	52.2	45.9	8.356	SF
Challenger 6N (Nio C) - Wellbore #1 - Plan #1 (6-28-18)	1,000.0	1,000.0	32.8	27.6	6.267	CC
Challenger 6N (Nio C) - Wellbore #1 - Plan #1 (6-28-18)	14,123.8	14,103.0	492.9	-14.0	0.972	Level 1, ES, SF
Challenger 7N (Nio B) - Wellbore #1 - Plan #1 (6-28-18)	1,000.0	1,000.0	14.6	9.3	2.786	CC
Challenger 7N (Nio B) - Wellbore #1 - Plan #1 (6-28-18)	14,123.8	14,039.5	239.4	-246.6	0.493	Level 1, ES, SF
Challenger 9N (Nio B) - Wellbore #1 - Plan #1 (6-28-18)	766.3	767.3	14.6	10.6	3.692	CC
Challenger 9N (Nio B) - Wellbore #1 - Plan #1 (6-28-18)	14,123.8	14,085.3	282.7	-208.7	0.575	Level 1, ES, SF
Dietrich C Pad Sec.7-T4N-R64W						
Dietrich C 8-32 (Noble-Exist) - Dietrich C 8-32 - Dietrich C						Out of range
Dietrich C07-18 Pad Sec.7-T4N-R64W						
Dietrich C07-22D (Noble-Exist) - Wellbore #1 - Wellbore						Out of range
Existing Wells Sec.7-T4N-R64W (GRID)						
CPC Dietrich 7-1 (Exist) - Wellbore #1 - Wellbore #1	11,314.6	6,932.5	100.7	-72.5	0.581	Level 1, CC, ES, SF
Dietrich R C 7-8 (Exist) - Dietrich RC 7-8 - Dietrich RC 7-	9,925.2	6,916.9	179.1	53.0	1.420	Level 3, CC, ES, SF
Gemini UPRR C7-5 (Exist) - Wellbore #1 - Wellbore #1	13,644.1	6,926.0	134.2	-118.1	0.532	Level 1, CC, ES, SF
Gemini-UPRR C 7-6 (Exist) - Wellbore #1 - Wellbore #1	12,491.1	6,964.6	130.6	-82.0	0.614	Level 1, CC, SF
Gemini-UPRR C 7-6 (Exist) - Wellbore #1 - Wellbore #1	12,500.0	6,964.6	130.9	-82.0	0.615	Level 1, ES
Existing Wells Sec.8-T4N-R64W (GRID)						
Cox PM C 8-5 (Exist) - Wellbore #1 - Wellbore #1	8,684.3	6,904.1	78.0	-6.0	0.929	Level 1, CC, ES, SF
Cox PM C 8-6 (Exist.) - Wellbore #1 - Wellbore #1	7,272.6	6,880.7	34.2	-5.7	0.858	Level 1, CC, ES, SF
Northrup 08-75HN (Exist.) - Wellbore #1 - Wellbore #1	6,700.0	8,535.0	352.7	302.5	7.028	SF
Northrup 08-75HN (Exist.) - Wellbore #1 - Wellbore #1	6,740.3	8,537.4	349.3	300.6	7.175	CC, ES