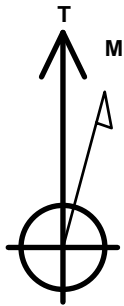


PDC Energy Inc. DJ Basin

Well Name: **J Clark 16N (Nio B)**
 Surface Location: Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
 Ground Elevation: 4615.0
 +N/-S +E/-W Northing Easting Longitude Slot
 0.0 0.0 1391636.23 3242815.94 40.405166 -104.628081
 Original Well Elev WELL @ 4638.0ft (Original Well Elev)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 550'FNL & 1949'FEL, Sec.14	1.0	0.0	0.0	Point
BHL 500'FNL & 1150'FEL, Sec.11	6768.0	5379.6	805.0	Point
LPL 50'FSL & 1150'FEL, Sec.11	6788.0	592.9	796.3	Point



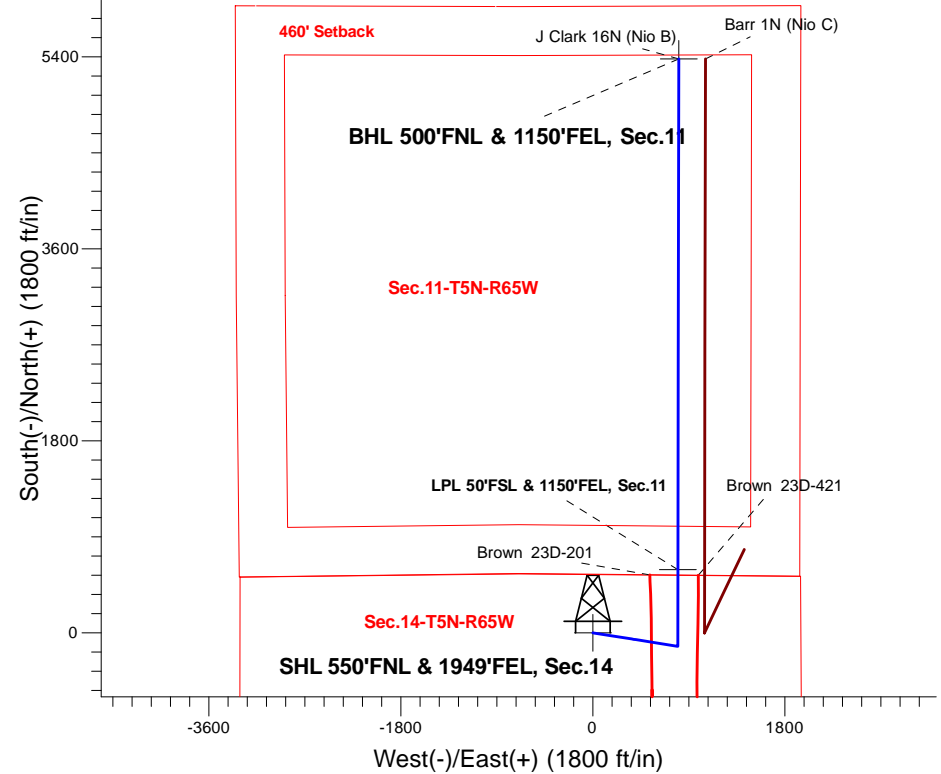
Azimuths to True North
 Magnetic North: 7.91°

Magnetic Field
 Strength: 52463.7snT
 Dip Angle: 66.85°
 Date: 12/19/2017
 Model: IGRF2010

Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W
 J Clark 16N (Nio B)
 Plan #1 (1-10-18)
 14:40, January 12 2018

ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP - Start Build 1.50
4455.7	4525.6	Start Drop -2.00
6072.1	6145.4	KOP #2 - Start Build 8.00
6788.0	7273.2	Start 4786.4 hold at 7273.2 MD
6768.0	12059.7	TD at 12059.7



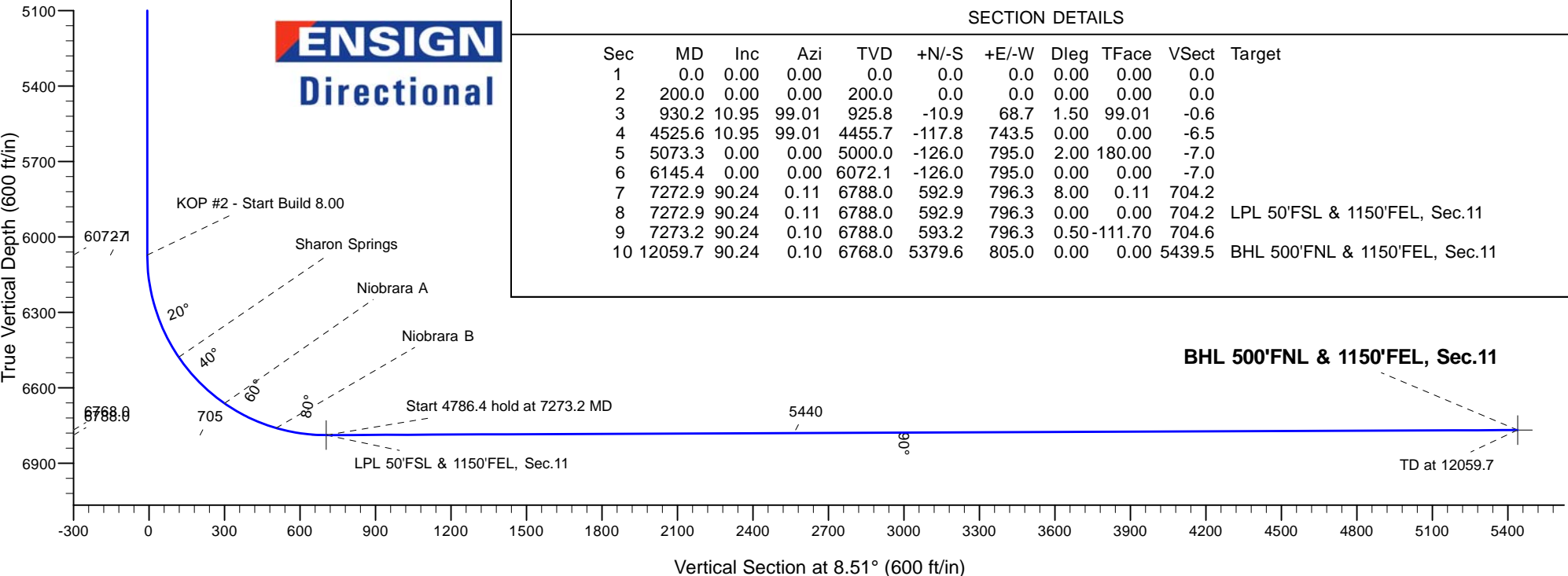
SECTION DETAILS

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	930.2	10.95	99.01	925.8	-10.9	68.7	1.50	99.01	-0.6	
4	4525.6	10.95	99.01	4455.7	-117.8	743.5	0.00	0.00	-6.5	
5	5073.3	0.00	0.00	5000.0	-126.0	795.0	2.00	180.00	-7.0	
6	6145.4	0.00	0.00	6072.1	-126.0	795.0	0.00	0.00	-7.0	
7	7272.9	90.24	0.11	6788.0	592.9	796.3	8.00	0.11	704.2	
8	7272.9	90.24	0.11	6788.0	592.9	796.3	0.00	0.00	704.2	LPL 50'FSL & 1150'FEL, Sec.11
9	7273.2	90.24	0.10	6788.0	593.2	796.3	0.50	-111.70	704.6	
10	12059.7	90.24	0.10	6768.0	5379.6	805.0	0.00	0.00	5439.5	BHL 500'FNL & 1150'FEL, Sec.11

BHL 500'FNL & 1150'FEL, Sec.11

TD at 12059.7

ENSIGN
 Directional





PDC Energy Inc. DJ Basin

SEC.14-T5N-R65W

Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W

J Clark 16N (Nio B)

Wellbore #1

Plan #1 (1-10-18)

Anticollision Summary Report

12 January, 2018



Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well J Clark 16N (Nio B)
Project:	SEC.14-T5N-R65W	TVD Reference:	WELL @ 4638.0ft (Original Well Elev)
Reference Site:	Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W	MD Reference:	WELL @ 4638.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	J Clark 16N (Nio B)	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 (1-10-18)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (1-10-18)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 50.0ft	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	1/12/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	12,059.7	Plan #1 (1-10-18) (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
Barr 5N65W11TY Pad Sec.11-T5N-R65W						
Barr 1N (Nio C) - Wellbore #1 - Plan #3 (10-11-17)	6,940.7	6,868.4	249.9	207.0	5.825	CC
Barr 1N (Nio C) - Wellbore #1 - Plan #3 (10-11-17)	12,059.7	12,011.3	259.7	24.3	1.103	Level 2, ES, SF
Brown 5N65W23 Pad Sec.23-T5N-R65W						
Brown 23D-201 - Wellbore #1 - Wellbore #1	6,997.2	15,015.5	254.8	28.7	1.127	Level 2, CC
Brown 23D-201 - Wellbore #1 - Wellbore #1	7,050.0	15,064.0	255.7	27.4	1.120	Level 2, ES, SF
Brown 23D-421 - Wellbore #1 - Wellbore #1	7,229.3	15,203.0	240.5	50.0	1.262	Level 3, CC, ES, SF
Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W						
J Clark 10N (Nio B) - Wellbore #1 - Plan #1 (12-18-17)	200.0	200.0	90.0	89.2	108.976	CC, ES
J Clark 10N (Nio B) - Wellbore #1 - Plan #1 (12-18-17)	900.0	896.1	153.6	148.8	32.258	SF
J Clark 11N (Nio C) - Wellbore #1 - Plan #1 (12-18-17)	200.0	200.0	75.0	74.2	90.802	CC, ES
J Clark 11N (Nio C) - Wellbore #1 - Plan #1 (12-18-17)	850.0	846.9	129.8	125.4	29.007	SF
J Clark 12N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	200.0	200.0	60.0	59.2	72.629	CC, ES
J Clark 12N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	750.0	748.1	99.3	95.4	25.422	SF
J Clark 13N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	200.0	200.0	45.0	44.2	54.488	CC, ES
J Clark 13N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	12,059.7	12,058.2	753.8	498.4	2.952	SF
J Clark 14N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	200.0	200.0	30.0	29.2	36.314	CC, ES
J Clark 14N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	12,059.7	12,002.2	500.1	244.1	1.954	SF
J Clark 15N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	200.0	200.0	15.0	14.2	18.174	CC
J Clark 15N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	12,059.7	12,087.4	261.0	12.8	1.051	Level 2, ES, SF
J Clark 5N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	200.0	200.0	165.0	164.2	199.778	CC, ES
J Clark 5N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	1,000.0	966.8	270.6	265.2	50.367	SF
J Clark 6N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	200.0	200.0	150.0	149.2	181.604	CC, ES
J Clark 6N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	1,150.0	1,123.8	270.1	263.9	43.884	SF
J Clark 7N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	200.0	200.0	135.0	134.2	163.430	CC, ES
J Clark 7N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	1,350.0	1,326.4	286.5	279.3	39.515	SF
J Clark 8N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	200.0	200.0	120.0	119.2	145.290	CC, ES
J Clark 8N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	1,600.0	1,575.1	316.3	307.7	36.502	SF
J Clark 9C (Codell) - Wellbore #1 - Plan #1 (1-10-18)	200.0	200.0	105.0	104.2	127.116	CC, ES
J Clark 9C (Codell) - Wellbore #1 - Plan #1 (1-10-18)	1,850.0	1,824.6	346.9	336.8	34.374	SF

Reference Depths are relative to WELL @ 4638.0ft (Original Well Elev)	Coordinates are relative to: J Clark 16N (Nio B)
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000	Grid Convergence at Surface is: 0.56°



Reference Depths are relative to WELL @ 4638.0ft (Original Well Elev)	Coordinates are relative to: J Clark 16N (Nio B)
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Central Meridian is -105.500000	Grid Convergence at Surface is: 0.56°

