PDC Energy Inc. DJ Basin

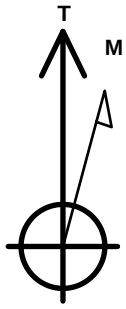
Well Name: **J Clark 5N (Nio C)**
Surface Location: Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
Ground Elevation: 4615.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1391636.25	3242650.93	40.405171	-104.628674	

Original Well Elev WELL @ 4638.0ft (Original Well Elev)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 550'FNL & 2114'FEL, Sec.14	1.0	0.0	0.0	Point
BHL 500'FNL & 1300'FWL, Sec.11	6848.0	5376.6	-1880.5	Point
LPL 50'FSL & 1334'FWL, Sec.11	6873.0	588.7	-1810.6	Point



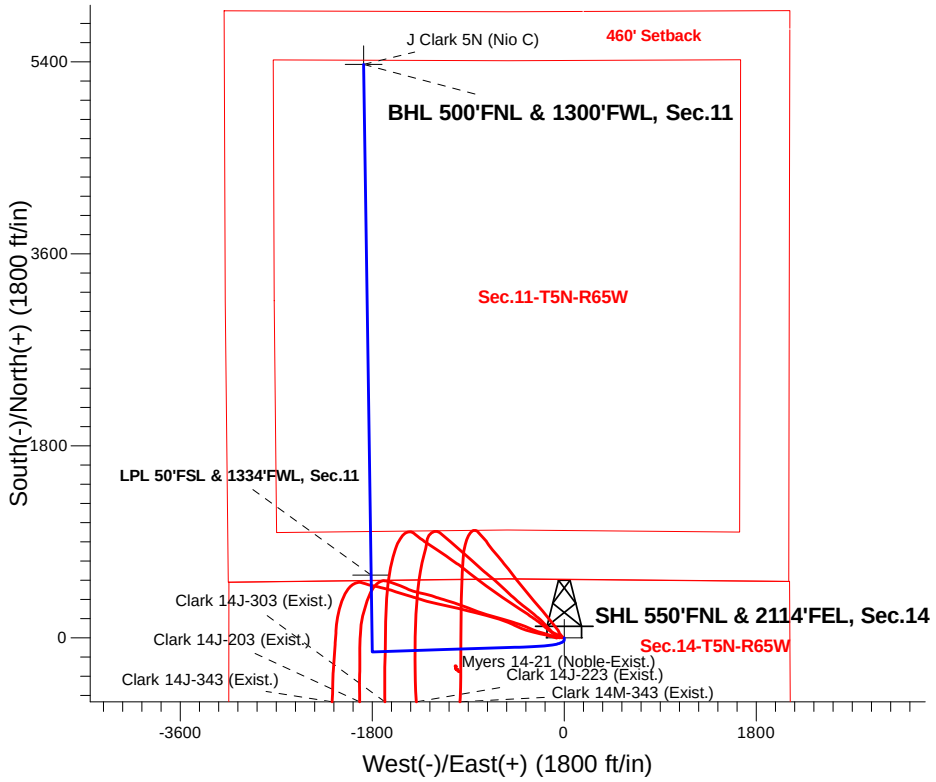
Azimuths to True North
Magnetic North: 7.91°

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 5N (Nio C)
Plan #1 (1-10-18)
10:22, January 12 2018

ANNOTATIONS

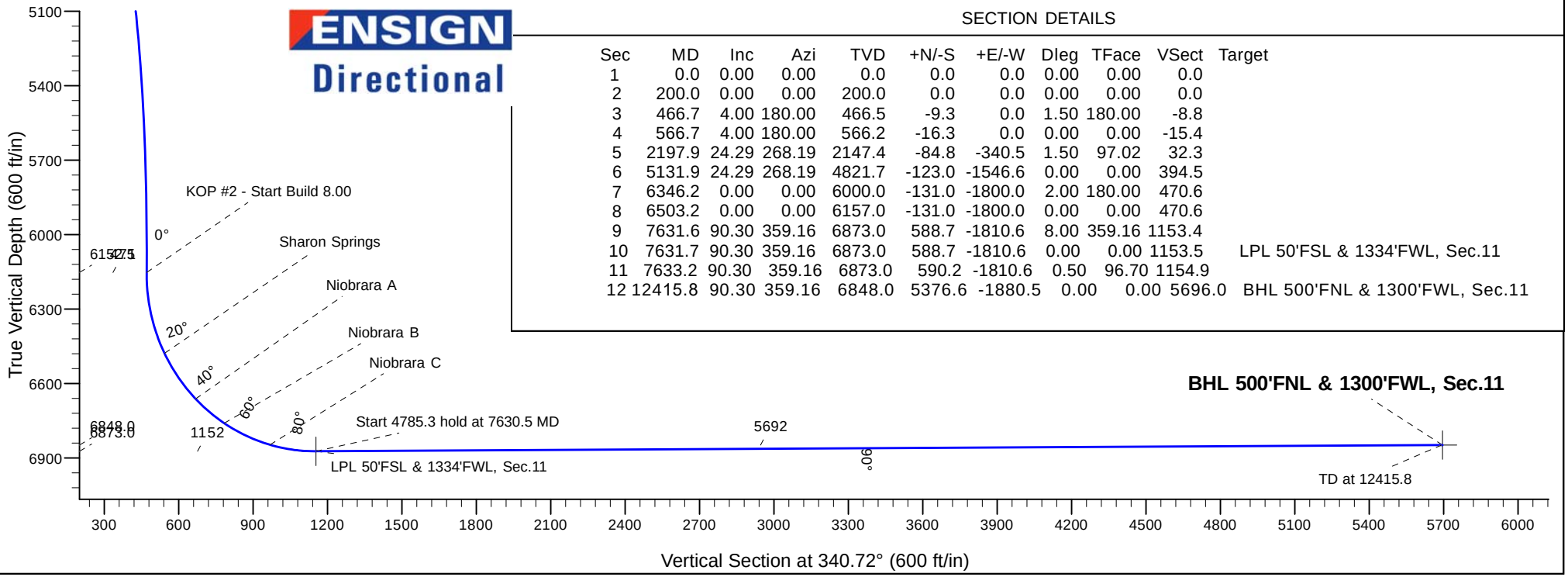
TVD	MD	Annotation
200.0	200.0	KOP - Start Build 1.50
466.5	466.7	Start 100.0 hold at 466.7 MD
566.2	566.7	Start DLS 1.50 TFO 97.07
4826.5	5137.1	Start Drop -2.00
6152.5	6498.7	KOP #2 - Start Build 8.00
6873.0	7630.5	Start 4785.3 hold at 7630.5 MD
6848.0	12415.8	TD at 12415.8



ENSIGN Directional

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	466.7	4.00	180.00	466.5	-9.3	0.0	1.50	180.00	-8.8	
4	566.7	4.00	180.00	566.2	-16.3	0.0	0.00	0.00	-15.4	
5	2197.9	24.29	268.19	2147.4	-84.8	-340.5	1.50	97.02	32.3	
6	5131.9	24.29	268.19	4821.7	-123.0	-1546.6	0.00	0.00	394.5	
7	6346.2	0.00	0.00	6000.0	-131.0	-1800.0	2.00	180.00	470.6	
8	6503.2	0.00	0.00	6157.0	-131.0	-1800.0	0.00	0.00	470.6	
9	7631.6	90.30	359.16	6873.0	588.7	-1810.6	8.00	359.16	1153.4	
10	7631.7	90.30	359.16	6873.0	588.7	-1810.6	0.00	0.00	1153.5	LPL 50'FSL & 1334'FWL, Sec.11
11	7633.2	90.30	359.16	6873.0	590.2	-1810.6	0.50	96.70	1154.9	
12	12415.8	90.30	359.16	6848.0	5376.6	-1880.5	0.00	0.00	5696.0	BHL 500'FNL & 1300'FWL, Sec.11



ENSIGN Directional

PDC Energy Inc. DJ Basin

SEC.14-T5N-R65W
Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W
J Clark 5N (Nio C)

Wellbore #1
Plan #1 (1-10-18)

Anticollision Summary Report

12 January, 2018

PDC ENERGY
Growing E&P Value

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well J Clark 5N (Nio C)
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 5N (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 (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	12,420.1	Plan #1 (1-10-18) (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
Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W						
J Clark 10N (Nio B) - Wellbore #1 - Plan #1 (12-18-17)	274.6	274.6	75.0	73.8	61.745	CC
J Clark 10N (Nio B) - Wellbore #1 - Plan #1 (12-18-17)	450.0	449.8	75.4	73.2	35.126	ES
J Clark 10N (Nio B) - Wellbore #1 - Plan #1 (12-18-17)	950.0	948.1	102.2	97.2	20.639	SF
J Clark 11N (Nio C) - Wellbore #1 - Plan #1 (12-18-17)	281.7	281.7	90.0	88.8	71.907	CC
J Clark 11N (Nio C) - Wellbore #1 - Plan #1 (12-18-17)	450.0	449.8	90.3	88.2	42.089	ES
J Clark 11N (Nio C) - Wellbore #1 - Plan #1 (12-18-17)	1,000.0	997.8	122.0	116.8	23.319	SF
J Clark 12N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	288.3	288.3	105.0	103.7	81.670	CC
J Clark 12N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	450.0	449.8	105.3	103.1	49.062	ES
J Clark 12N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	1,050.0	1,047.3	142.7	137.2	25.859	SF
J Clark 1C (Codell) - Wellbore #1 - Plan #1 (1-10-18)	182.6	184.6	135.1	134.4	183.590	CC
J Clark 1C (Codell) - Wellbore #1 - Plan #1 (1-10-18)	200.0	201.9	135.1	134.3	162.570	ES
J Clark 1C (Codell) - Wellbore #1 - Plan #1 (1-10-18)	2,600.0	2,460.9	338.6	320.6	18.787	SF
J Clark 2N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	200.0	202.0	120.1	119.3	144.428	CC
J Clark 2N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	400.0	401.9	120.3	118.4	64.133	ES
J Clark 2N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	12,420.1	12,605.5	758.7	500.8	2.941	SF
J Clark 3N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	400.0	402.1	105.1	103.3	57.772	CC
J Clark 3N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	500.0	502.0	105.1	102.7	44.269	ES
J Clark 3N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	12,420.1	12,629.8	501.1	241.4	1.930	SF
J Clark 4N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	2,312.4	2,286.2	44.1	30.8	3.329	CC
J Clark 4N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	12,420.1	12,411.3	269.6	20.4	1.082	Level 2, ES, SF
J Clark 6N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	233.4	233.4	15.0	14.0	15.014	CC
J Clark 6N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	350.0	350.0	15.3	13.7	9.489	ES
J Clark 6N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	12,420.1	12,264.7	262.5	17.8	1.073	Level 2, SF
J Clark 7N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	247.2	247.2	30.0	29.0	28.010	CC
J Clark 7N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	350.0	350.0	30.1	28.5	18.735	ES
J Clark 7N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	12,420.1	12,271.6	500.1	241.4	1.933	SF
J Clark 8N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	257.8	257.8	45.0	43.9	39.930	CC
J Clark 8N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	400.0	399.9	45.3	43.4	24.199	ES
J Clark 8N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	12,420.1	12,156.4	753.3	497.2	2.941	SF
J Clark 9C (Codell) - Wellbore #1 - Plan #1 (1-10-18)	267.4	267.4	60.0	58.8	50.979	CC
J Clark 9C (Codell) - Wellbore #1 - Plan #1 (1-10-18)	400.0	399.9	60.2	58.3	32.186	ES
J Clark 9C (Codell) - Wellbore #1 - Plan #1 (1-10-18)	850.0	848.7	78.3	73.9	17.825	SF

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well J Clark 5N (Nio C)
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 5N (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 (1-10-18)	**Offset TVD Reference:**	Offset Datum

Summary

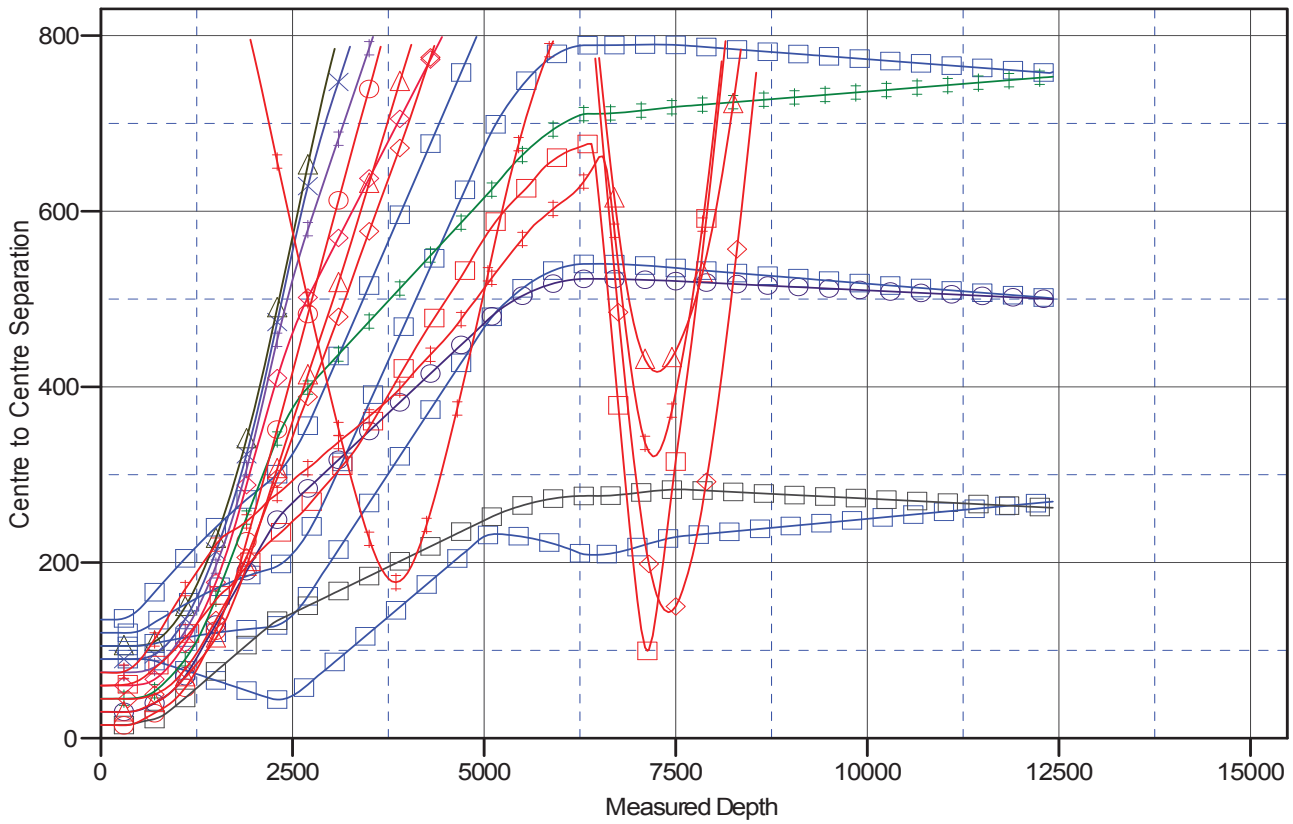
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Clark 5N65W14EJ Pad Sec.14-T5N-R65W						
Clark 14J-203 (Exist.) - Wellbore #1 - Wellbore #1	0.0	1.0	59.9	59.9	10,000.000	CC
Clark 14J-203 (Exist.) - Wellbore #1 - Wellbore #1	7,130.7	7,163.6	99.5	52.1	2.101	ES
Clark 14J-203 (Exist.) - Wellbore #1 - Wellbore #1	7,150.0	7,155.0	101.0	52.7	2.091	SF
Clark 14J-223 (Exist.) - Wellbore #1 - Wellbore #1	285.4	286.4	29.7	28.5	24.994	CC
Clark 14J-223 (Exist.) - Wellbore #1 - Wellbore #1	350.0	351.0	29.9	28.4	19.813	ES
Clark 14J-223 (Exist.) - Wellbore #1 - Wellbore #1	7,050.0	7,675.6	441.7	391.6	8.831	SF
Clark 14J-303 (Exist.) - Wellbore #1 - Wellbore #1	387.5	388.7	44.7	43.1	26.680	CC
Clark 14J-303 (Exist.) - Wellbore #1 - Wellbore #1	450.0	451.2	44.9	42.9	22.335	ES
Clark 14J-303 (Exist.) - Wellbore #1 - Wellbore #1	7,409.3	7,495.6	143.6	92.7	2.821	SF
Clark 14J-343 (Exist.) - Wellbore #1 - Wellbore #1	180.4	181.4	74.5	73.8	116.613	CC
Clark 14J-343 (Exist.) - Wellbore #1 - Wellbore #1	200.0	200.7	74.5	73.8	100.635	ES
Clark 14J-343 (Exist.) - Wellbore #1 - Wellbore #1	7,250.0	7,147.7	322.4	272.5	6.468	SF
Clark 14M-343 (Exist.) - Wellbore #1 - Wellbore #1	282.7	282.8	14.6	13.5	12.641	CC
Clark 14M-343 (Exist.) - Wellbore #1 - Wellbore #1	300.0	300.0	14.7	13.4	11.788	ES
Clark 14M-343 (Exist.) - Wellbore #1 - Wellbore #1	500.0	499.8	19.1	16.8	8.333	SF
Existing Wells Sec.14-T5N-R65W						
Myers 14-21 (Noble-Exist.) - Wellbore #1 - Wellbore #1	3,846.2	3,627.6	177.6	141.9	4.973	CC
Myers 14-21 (Noble-Exist.) - Wellbore #1 - Wellbore #1	3,850.0	3,631.2	177.7	141.9	4.964	ES
Myers 14-21 (Noble-Exist.) - Wellbore #1 - Wellbore #1	3,900.0	3,677.2	178.9	142.4	4.901	SF

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well J Clark 5N (Nio C)
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 5N (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 (1-10-18)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4638.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: J Clark 5N (Nio C)
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.56°

Ladder Plot



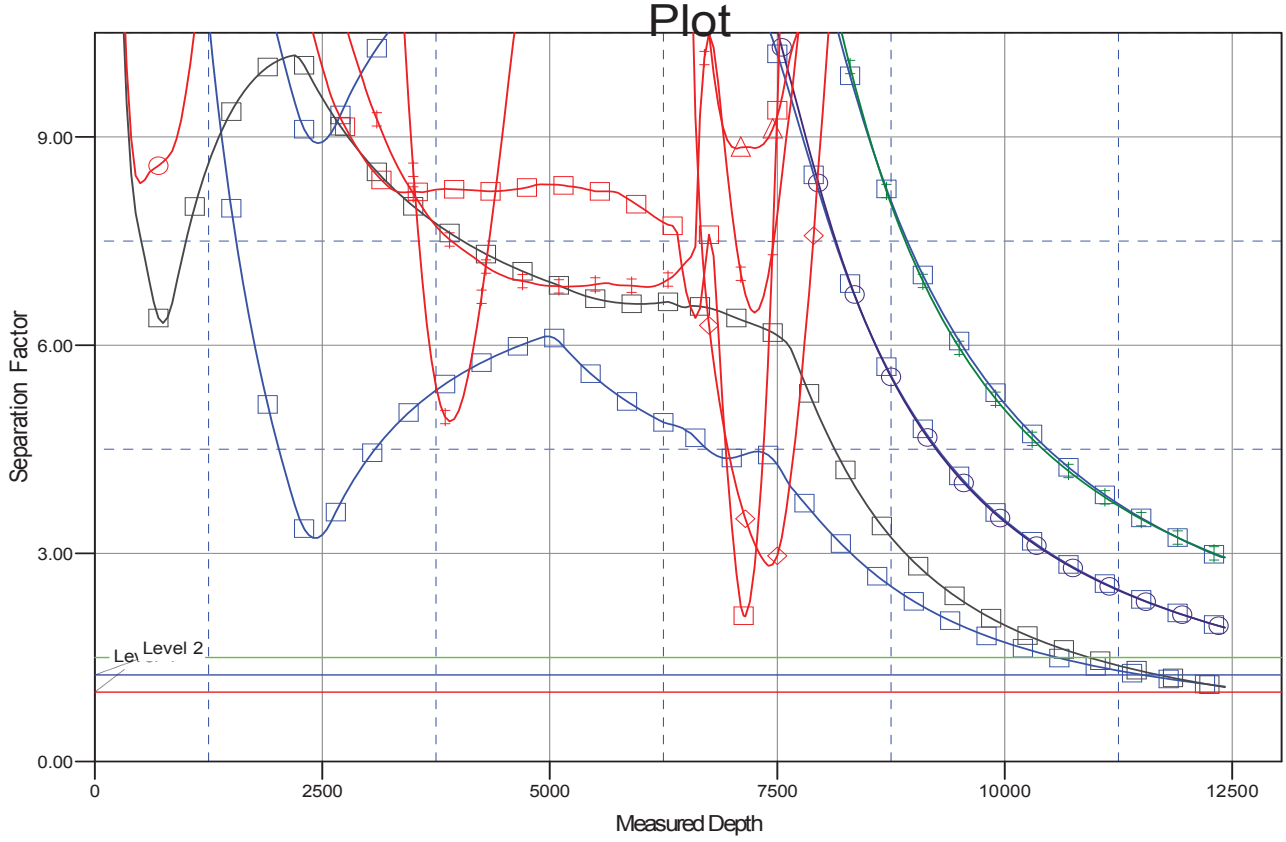
LEGEND

- rk 10N (Nio B), Wellbore #1, Plan #1 (12-18-17) V0
- rk 11N (Nio C), Wellbore #1, Plan #1 (12-18-17) V0
- rk 12N (Nio B), Wellbore #1, Plan #1 (1-10-18) V0
- rk 1C (Codell), Wellbore #1, Plan #1 (1-10-18) V0
- rk 2N (Nio B), Wellbore #1, Plan #1 (1-10-18) V0
- rk 3N (Nio C), Wellbore #1, Plan #1 (1-10-18) V0
- J Clark 4N (Nio B), Wellbore #1, Plan #1 (1-10-18) V0
- J Clark 6N (Nio B), Wellbore #1, Plan #1 (1-10-18) V0
- J Clark 7N (Nio C), Wellbore #1, Plan #1 (1-10-18) V0
- J Clark 8N (Nio B), Wellbore #1, Plan #1 (1-10-18) V0
- J Clark 9C (Codell), Wellbore #1, Plan #1 (1-10-18) V0
- Clark 14J-203 (Exist.), Wellbore #1, Wellbore #1 V0
- Clark 14J-223 (Exist.), Wellbore #1, Wellbore
- Clark 14J-303 (Exist.), Wellbore #1, Wellbore
- Clark 14J-343 (Exist.), Wellbore #1, Wellbore
- Clark 14M-343 (Exist.), Wellbore #1, Wellbore
- Myers 14-21 (Noble-Exist.), Wellbore #1, Well

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well J Clark 5N (Nio C)
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 5N (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 (1-10-18)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4638.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: J Clark 5N (Nio C)
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.56°



LEGEND

- rk 10N (Nio B), Wellbore #1, Plan #1 (12-18-17) V0
- rk 11N (Nio C), Wellbore #1, Plan #1 (12-18-17) V0
- rk 12N (Nio B), Wellbore #1, Plan #1 (1-10-18) V0
- rk 1C (Codell), Wellbore #1, Plan #1 (1-10-18) V0
- rk 2N (Nio B), Wellbore #1, Plan #1 (1-10-18) V0
- rk 3N (Nio C), Wellbore #1, Plan #1 (1-10-18) V0
- J Clark 4N (Nio B), Wellbore #1, Plan #1 (1-10-18) V0
- J Clark 6N (Nio B), Wellbore #1, Plan #1 (1-10-18) V0
- J Clark 7N (Nio C), Wellbore #1, Plan #1 (1-10-18) V0
- J Clark 8N (Nio B), Wellbore #1, Plan #1 (1-10-18) V0
- J Clark 9C (Codell), Wellbore #1, Plan #1 (1-10-18) V0
- Clark 14J-203 (Exist.), Wellbore #1, Wellbore #1 V0
- Clark 14J-223 (Exist.), Wellbore #1, Wellbore
- Clark 14J-303 (Exist.), Wellbore #1, Wellbore
- Clark 14J-343 (Exist.), Wellbore #1, Wellbore
- Clark 14M-343 (Exist.), Wellbore #1, Wellbore
- Myers 14-21 (Noble-Exist.), Wellbore #1, Well