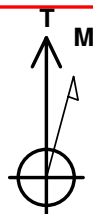
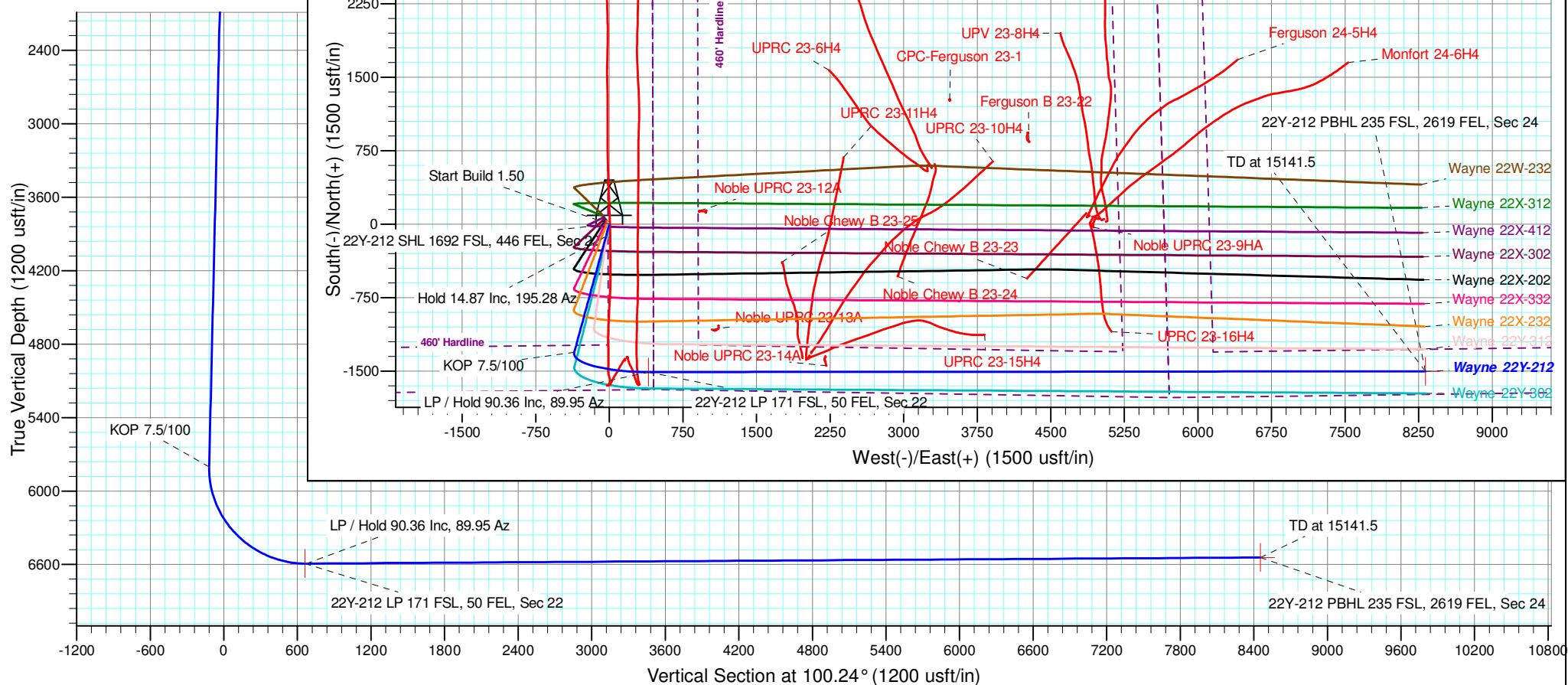
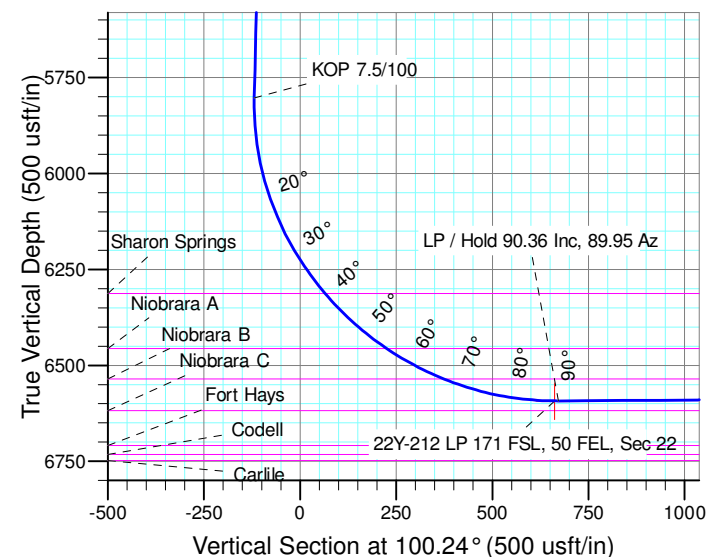


SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1191.1	14.87	195.28	1180.0	-123.3	-33.7	1.50	195.28	-11.2	
4	5974.2	14.87	195.28	5803.0	-1307.2	-357.1	0.00	0.00	-119.2	
5	7230.8	90.36	89.95	6593.0	-1510.0	409.9	7.50	-104.76	671.7	
6	15141.5	90.36	89.95	6543.0	-1502.6	8320.4	0.00	0.00	8455.0	22Y-212 PBHL 235 FSL 2619 FEL Sec 24



Magnetic Field
Strength: 52423.7snT
Dip Angle: 66.88°
Date: 05/03/2017
Model: IGRF2015

Project: SEC. 22-T5N-R64W
Site: Wayne 5N64W22X 1-10 PAD
Well: Wayne 22Y-212
Wellbore: Wellbore #1
Design: Design #1 03May17 jps



Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Wayne 22Y-212
Project:	SEC. 22 T5N-R64W	TVD Reference:	WELL @ 4623.0usft (Original Well Elev)
Reference Site:	Wayne 5N64W22X 1-10 PAD	MD Reference:	WELL @ 4623.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Wayne 22Y-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #2 07Jul17 kjs	Offset TVD Reference:	Offset Datum

Reference	Plan #2 07Jul17 kjs		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,682.5 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.45 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	07/07/17		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	15,152.1	Plan #2 07Jul17 kjs (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing Wells Sec. 22-T5N-R64W						
Emancipator 22-15 - Wellbore #1 - Wellbore #1	5,334.9	5,156.2	1,267.6	1,223.0	28.423	CC
Emancipator 22-15 - Wellbore #1 - Wellbore #1	5,400.0	5,214.4	1,267.9	1,222.7	28.061	ES
Emancipator 22-15 - Wellbore #1 - Wellbore #1	6,000.0	5,810.3	1,280.1	1,229.6	25.362	SF
Emancipator 22-16 - Wellbore #1 - Wellbore #1	4,960.4	4,795.3	112.5	71.3	2.731	CC, ES
Emancipator 22-16 - Wellbore #1 - Wellbore #1	5,000.0	4,833.3	113.0	71.6	2.726	SF
Ledford 22T-221 - Wellbore #1 - Wellbore #1	6,374.5	6,313.1	250.2	204.6	5.482	CC, ES, SF
Ledford 22T-321 - Wellbore #1 - Wellbore #1	6,294.9	6,284.6	459.4	411.8	9.662	CC, ES, SF
Ledford 22Y-341 - Wellbore #1 - Wellbore #1	6,768.1	6,485.2	54.8	18.7	1.517	CC, ES, SF
Ledford 22Y-401 - Wellbore #1 - Wellbore #1	7,092.6	6,560.2	137.6	105.3	4.262	CC, ES
Ledford 22Y-401 - Wellbore #1 - Wellbore #1	7,100.0	6,560.7	137.7	105.4	4.262	SF
Existing Wells Sec. 23-T5N-R64W						
Noble Chewy B 23-23 - Wellbore #1 - Wellbore #1	11,091.3	6,633.3	952.8	780.8	5.540	CC
Noble Chewy B 23-23 - Wellbore #1 - Wellbore #1	11,100.0	6,633.2	952.8	780.6	5.530	ES
Noble Chewy B 23-23 - Wellbore #1 - Wellbore #1	11,300.0	6,632.0	975.4	796.3	5.446	SF
Noble Chewy B 23-24 - Wellbore #1 - Wellbore #1	9,772.6	6,714.8	974.5	845.1	7.530	CC
Noble Chewy B 23-24 - Wellbore #1 - Wellbore #1	9,800.0	6,714.4	974.9	844.5	7.480	ES
Noble Chewy B 23-24 - Wellbore #1 - Wellbore #1	10,000.0	6,711.2	1,000.6	863.6	7.302	SF
Noble Chewy B 23-25 - Wellbore #1 - Wellbore #1	8,595.2	6,665.0	1,113.5	1,024.2	12.475	CC
Noble Chewy B 23-25 - Wellbore #1 - Wellbore #1	8,600.0	6,665.0	1,113.5	1,024.1	12.454	ES
Noble Chewy B 23-25 - Wellbore #1 - Wellbore #1	9,100.0	6,665.0	1,222.5	1,116.7	11.545	SF
Noble UPRC 23-12A - Wellbore #1 - Wellbore #1	251.8	235.0	993.6	992.5	931.317	CC
Noble UPRC 23-12A - Wellbore #1 - Wellbore #1	300.0	283.3	993.7	992.4	747.520	ES
Noble UPRC 23-12A - Wellbore #1 - Wellbore #1	8,000.0	6,570.0	1,667.2	1,601.5	25.379	SF
Noble UPRC 23-13A - Wellbore #1 - Wellbore #1	7,880.6	6,556.5	431.4	368.6	6.870	CC
Noble UPRC 23-13A - Wellbore #1 - Wellbore #1	7,900.0	6,555.6	431.8	368.4	6.815	ES
Noble UPRC 23-13A - Wellbore #1 - Wellbore #1	8,000.0	6,551.1	447.6	381.2	6.746	SF
Noble UPRC 23-14A - Wellbore #1 - Wellbore #1	9,044.9	6,559.1	64.3	-35.6	0.643	Level 1, CC, ES, SF
Noble UPRC 23-9HA - Wellbore #1 - Wellbore #1	11,768.4	6,553.9	1,474.3	1,281.9	7.662	CC
Noble UPRC 23-9HA - Wellbore #1 - Wellbore #1	11,800.0	6,553.7	1,474.7	1,281.2	7.621	ES
Noble UPRC 23-9HA - Wellbore #1 - Wellbore #1	12,200.0	6,552.1	1,536.2	1,329.0	7.415	SF
UPRC 23-10H4 - Wellbore #1 - Wellbore #1						Out of range
UPRC 23-11H4 - Wellbore #1 - Wellbore #1 01May17 jps	9,036.6	6,015.1	1,561.7	1,477.7	18.598	CC
UPRC 23-11H4 - Wellbore #1 - Wellbore #1 01May17 jps	9,100.0	6,026.3	1,562.9	1,476.8	18.142	ES
UPRC 23-11H4 - Wellbore #1 - Wellbore #1 01May17 jps	9,600.0	6,104.1	1,657.8	1,554.4	16.030	SF
UPRC 23-15H4 - Wellbore #1 - Wellbore #1	10,538.8	7,097.7	376.8	218.9	2.386	CC, ES
UPRC 23-15H4 - Wellbore #1 - Wellbore #1	10,600.0	7,122.6	380.8	221.1	2.384	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Wayne 22Y-212
Project:	SEC. 22 T5N-R64W	TVD Reference:	WELL @ 4623.0usft (Original Well Elev)
Reference Site:	Wayne 5N64W22X 1-10 PAD	MD Reference:	WELL @ 4623.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Wayne 22Y-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #2 07Jul17 kjs	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing Wells Sec. 23-T5N-R64W						
UPRC 23-16H4 - Wellbore #1 - Wellbore #1	11,914.2	6,982.2	493.9	304.4	2.606	CC, ES, SF
UPRC 23-3H4 - Wellbore #1 - Wellbore #1 01May17 jps						Out of range
UPRC 23-4A - Wellbore #1 - Wellbore #1 28Apr17 jps						Out of range
UPRC 23-5A - Wellbore #1 - Wellbore #1 28Apr17 jps						Out of range
UPRC 23-6H4 - Wellbore #1 - Wellbore #1 01May17 jps						Out of range
UPV 23-1H4 - Wellbore #1 - Wellbore #1 01May17 jps						Out of range
UPV 23-8H4 - Wellbore #1 - Wellbore #1 01May17 jps						Out of range
Wayne 5N64W22X 1-10 PAD						
Wayne 22W-232 - Wellbore #1 - Design #1 03May17 jps	200.0	200.0	120.0	119.3	157.381	CC, ES
Wayne 22W-232 - Wellbore #1 - Design #1 03May17 jps	1,200.0	1,173.0	276.6	269.8	41.115	SF
Wayne 22X-202 - Wellbore #1 - Design #1 03May17 jps	200.0	200.0	60.0	59.3	78.690	CC
Wayne 22X-202 - Wellbore #1 - Design #1 03May17 jps	300.0	300.6	60.4	59.1	47.843	ES
Wayne 22X-202 - Wellbore #1 - Design #1 03May17 jps	15,152.1	14,945.5	935.2	351.4	1.602	SF
Wayne 22X-232 - Wellbore #1 - Design #1 03May17 jps	200.0	200.0	30.0	29.2	39.345	CC
Wayne 22X-232 - Wellbore #1 - Design #1 03May17 jps	15,152.1	15,035.4	458.0	-126.2	0.784	Level 1, ES, SF
Wayne 22X-302 - Wellbore #1 - Design #1 03May17 jps	200.0	200.0	75.0	74.3	98.373	CC, ES
Wayne 22X-302 - Wellbore #1 - Design #1 03May17 jps	15,152.1	14,999.9	1,171.6	588.2	2.008	SF
Wayne 22X-312 - Wellbore #1 - Design #1 03May17 jps	200.0	200.0	105.0	104.2	137.680	CC, ES
Wayne 22X-312 - Wellbore #1 - Design #1 03May17 jps	15,152.1	14,971.9	1,670.8	1,087.2	2.863	SF
Wayne 22X-332 - Wellbore #1 - Design #1 03May17 jps	200.0	200.0	45.0	44.3	59.028	CC
Wayne 22X-332 - Wellbore #1 - Design #1 03May17 jps	300.0	300.6	45.2	43.9	35.870	ES
Wayne 22X-332 - Wellbore #1 - Design #1 03May17 jps	15,152.1	15,061.2	693.6	111.7	1.192	Level 2, SF
Wayne 22X-412 - Wellbore #1 - Design #1 03May17 jps	200.0	200.0	90.0	89.3	118.057	CC, ES
Wayne 22X-412 - Wellbore #1 - Design #1 03May17 jps	15,152.1	14,927.0	1,424.0	846.0	2.464	SF
Wayne 22Y-302 - Wellbore #1 - Design #1 03May17 jps	200.0	200.0	15.0	14.2	19.623	CC
Wayne 22Y-302 - Wellbore #1 - Design #1 03May17 jps	15,152.1	15,237.0	232.8	-331.6	0.412	Level 1, ES, SF
Wayne 22Y-312 - Wellbore #1 - Plan #3 07Jul17 kjs	990.3	992.3	10.0	4.8	1.940	CC
Wayne 22Y-312 - Wellbore #1 - Plan #3 07Jul17 kjs	15,152.1	14,950.8	244.5	-320.9	0.432	Level 1, ES, SF

Offset Design Existing Wells Sec. 22-T5N-R64W - Emancipator 22-15 - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 usft
Survey Program: 100-MWD													Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
1,200.0	1,188.6	1,155.2	1,155.1	4.3	2.8	49.02	-864.3	-1,538.2	1,674.9	1,668.2	6.70	249.850		
1,300.0	1,285.3	1,256.8	1,256.7	4.9	3.1	49.67	-865.6	-1,538.3	1,658.5	1,651.0	7.50	221.209		
1,400.0	1,381.9	1,349.1	1,348.9	5.6	3.3	50.27	-866.8	-1,538.2	1,642.1	1,633.8	8.28	198.348		
1,500.0	1,478.5	1,438.0	1,437.9	6.2	3.6	50.87	-867.9	-1,538.7	1,626.5	1,617.4	9.06	179.614		
1,600.0	1,575.2	1,534.5	1,534.3	6.9	3.8	51.54	-868.9	-1,539.6	1,611.3	1,601.4	9.86	163.364		
1,700.0	1,671.8	1,638.9	1,638.7	7.5	4.1	52.29	-869.9	-1,540.4	1,596.2	1,585.5	10.71	149.024		
1,800.0	1,768.4	1,748.0	1,747.8	8.2	4.4	53.10	-870.0	-1,540.7	1,580.5	1,569.0	11.59	136.408		
1,900.0	1,865.1	1,849.0	1,848.9	8.8	4.6	53.89	-869.4	-1,540.7	1,564.7	1,552.3	12.45	125.704		
2,000.0	1,961.7	1,944.8	1,944.6	9.5	4.9	54.68	-868.2	-1,540.8	1,549.0	1,535.7	13.30	116.472		
2,100.0	2,058.4	2,041.0	2,040.8	10.1	5.1	55.49	-866.8	-1,541.2	1,533.9	1,519.7	14.16	108.323		
2,200.0	2,155.0	2,145.6	2,145.4	10.8	5.4	56.40	-865.1	-1,541.2	1,518.6	1,503.6	15.06	100.847		
2,300.0	2,251.6	2,241.9	2,241.7	11.4	5.6	57.27	-863.0	-1,541.1	1,503.3	1,487.4	15.94	94.303		
2,400.0	2,348.3	2,334.3	2,334.0	12.1	5.9	58.10	-861.4	-1,541.1	1,488.8	1,471.9	16.81	88.537		
2,500.0	2,444.9	2,429.2	2,429.0	12.8	6.1	58.98	-859.6	-1,541.1	1,474.5	1,456.8	17.71	83.280		
2,600.0	2,541.6	2,518.2	2,518.0	13.4	6.3	59.81	-858.4	-1,541.5	1,461.1	1,442.5	18.58	78.623		
2,700.0	2,638.2	2,621.1	2,620.8	14.1	6.6	60.80	-856.4	-1,541.9	1,447.9	1,428.4	19.52	74.192		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation