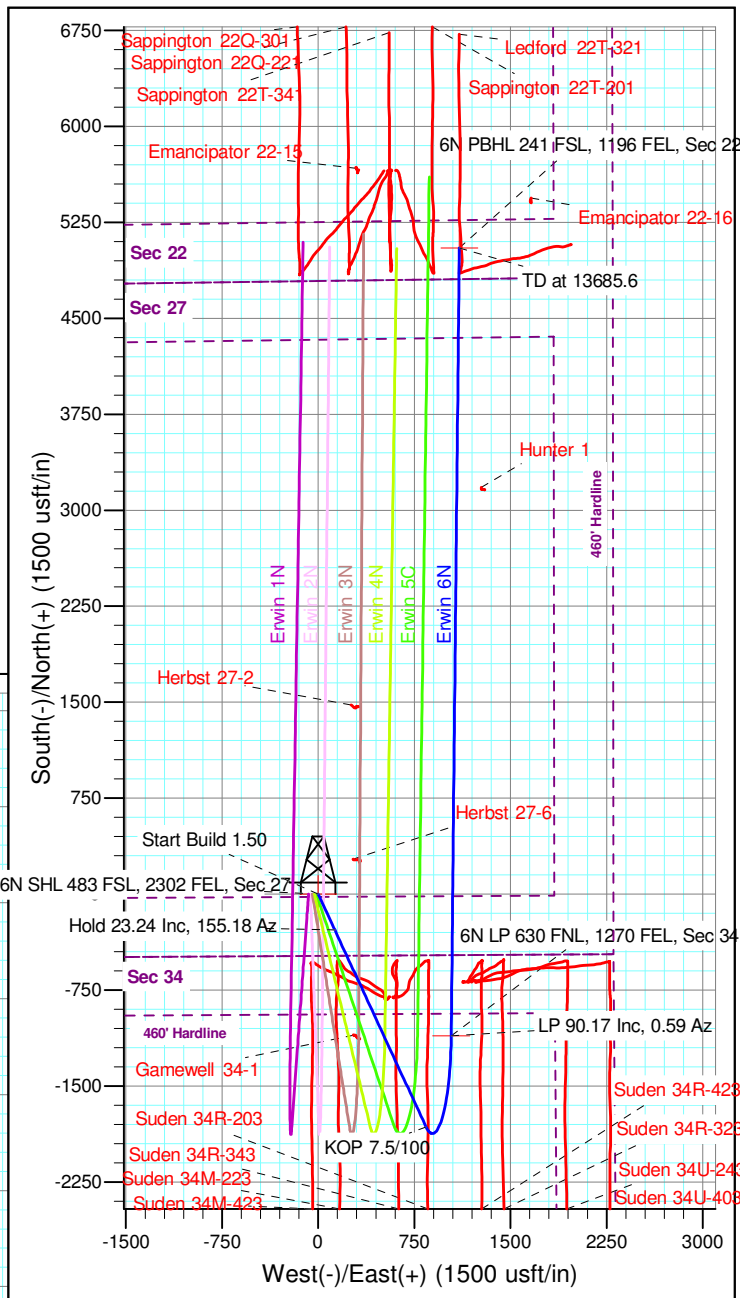
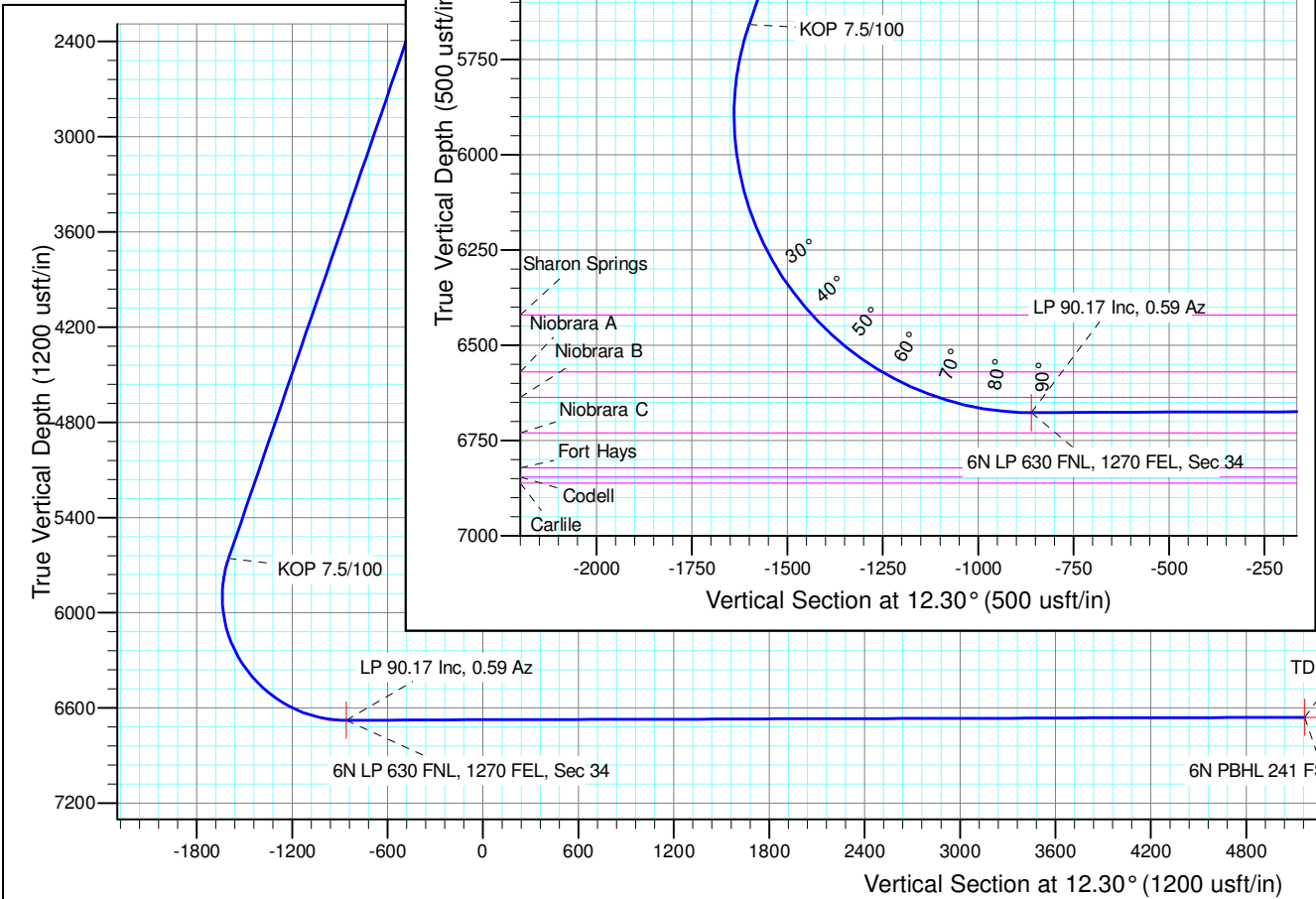
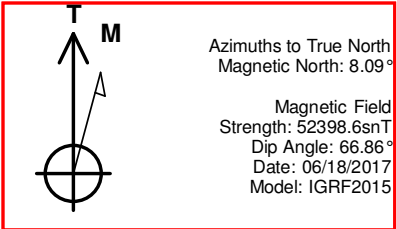




Well Name: Erwin 6N
Surface Location: Erwin 5N64W27 PAD
North American Datum 1983
US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4684.0
WELL @ 4707.0usft (Original Well Elev)
Easting Latitude Longitude Slot
0.0 0.0 1377057.59 3269004.49 40° 21' 51.858 N 104° 32' 4.628 W

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	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	1749.2	23.24	155.18	1707.1	-281.3	130.1	1.50	155.18	-247.1	
4	6049.0	23.24	155.18	5658.0	-1821.1	842.2	0.00	0.00	-1599.8	
5	7529.6	90.17	0.59	6677.0	-1107.0	1037.8	7.50	-152.63	-860.5	6N LP 630 FNL, 1270 FEL, Sec 34
6	13685.6	90.17	0.59	6658.7	5048.6	1100.8	0.00	0.00	5167.3	





PDC Energy Inc. DJ Basin

SEC. 27-T5N-R64W

Erwin 5N64W27 PAD

Erwin 6N

Wellbore #1

Plan #2 19Jul17 kjs

Anticollision Report

19 July, 2017

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Erwin 6N
Project:	SEC. 27-T5N-R64W	TVD Reference:	WELL @ 4707.0usft (Original Well Elev)
Reference Site:	Erwin 5N64W27 PAD	MD Reference:	WELL @ 4707.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Erwin 6N	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 19Jul17 kjs	Offset TVD Reference:	Offset Datum

Reference	Plan #2 19Jul17 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	07/19/17		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	13,685.6	Plan #2 19Jul17 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						
Erwin 5N64W27 PAD						
Erwin 1N - Wellbore #1 - Plan #2 19Jul17 kjs	200.0	200.0	74.9	74.1	98.210	CC, ES
Erwin 1N - Wellbore #1 - Plan #2 19Jul17 kjs	13,685.6	13,705.1	1,221.8	948.0	4.462	SF
Erwin 2N - Wellbore #1 - Plan #2 19Jul17 kjs	200.0	200.0	60.0	59.2	78.627	CC, ES
Erwin 2N - Wellbore #1 - Plan #2 19Jul17 kjs	13,685.6	13,615.4	1,011.2	737.0	3.687	SF
Erwin 3N - Wellbore #1 - Plan #2 19Jul17 kjs	200.0	200.0	44.9	44.1	58.860	CC
Erwin 3N - Wellbore #1 - Plan #2 19Jul17 kjs	300.0	300.2	45.2	44.0	35.966	ES
Erwin 3N - Wellbore #1 - Plan #2 19Jul17 kjs	13,685.6	13,695.2	751.7	477.7	2.743	SF
Erwin 4N - Wellbore #1 - Plan #2 19Jul17 kjs	200.0	200.0	30.0	29.2	39.313	CC
Erwin 4N - Wellbore #1 - Plan #2 19Jul17 kjs	300.0	300.2	30.2	29.0	24.030	ES
Erwin 4N - Wellbore #1 - Plan #2 19Jul17 kjs	13,685.6	13,621.9	487.7	213.5	1.779	SF
Erwin 5C - Wellbore #1 - Plan #2 19Jul17 kjs	200.0	200.0	15.0	14.2	19.620	CC, ES
Erwin 5C - Wellbore #1 - Plan #2 19Jul17 kjs	13,685.6	13,886.4	306.4	69.5	1.294	Level 3, SF
Existing Wells Sec 34 T5N R64W						
Gamewell 34-1 - Wellbore #1 - Wellbore #1	3,821.6	3,588.3	197.7	159.5	5.177	CC, ES
Gamewell 34-1 - Wellbore #1 - Wellbore #1	3,900.0	3,661.4	200.0	161.1	5.137	SF
Suden 34M-223 - Wellbore #1 - Wellbore #1	3,018.8	2,855.7	76.7	47.7	2.639	CC, ES, SF
Suden 34M-423 - Wellbore #1 - Wellbore #1	2,729.4	2,589.8	79.2	52.1	2.926	CC, ES, SF
Suden 34R-203 - Wellbore #1 - Wellbore #1	7,300.0	7,146.0	188.3	125.1	2.978	SF
Suden 34R-203 - Wellbore #1 - Wellbore #1	7,500.0	6,951.3	181.1	121.3	3.030	ES
Suden 34R-203 - Wellbore #1 - Wellbore #1	7,545.7	6,908.1	180.8	122.1	3.079	CC
Suden 34R-323 - Wellbore #1 - Wellbore #1	7,700.0	6,811.7	397.6	340.2	6.928	SF
Suden 34R-323 - Wellbore #1 - Wellbore #1	7,787.0	6,731.0	395.4	338.6	6.965	CC, ES
Suden 34R-343 - Wellbore #1 - Wellbore #1	3,166.1	2,967.5	263.1	232.9	8.693	CC
Suden 34R-343 - Wellbore #1 - Wellbore #1	3,200.0	2,998.4	263.6	232.9	8.576	ES
Suden 34R-343 - Wellbore #1 - Wellbore #1	7,100.0	7,405.0	455.6	389.0	6.841	SF
Suden 34R-423 - Wellbore #1 - Wellbore #1	7,859.3	6,718.0	231.7	175.8	4.146	CC, ES, SF
Suden 34U-243 - Wellbore #1 - Wellbore #1	7,200.0	7,312.8	912.4	847.5	14.062	SF
Suden 34U-243 - Wellbore #1 - Wellbore #1	7,500.0	6,999.5	897.8	836.3	14.588	ES
Suden 34U-243 - Wellbore #1 - Wellbore #1	7,586.6	6,910.5	897.3	837.0	14.893	CC
Suden 34U-403 - Wellbore #1 - Wellbore #1	7,300.0	7,419.9	1,262.2	1,199.3	20.062	SF
Suden 34U-403 - Wellbore #1 - Wellbore #1	7,907.2	6,711.0	1,236.3	1,178.4	21.332	CC, ES

Anticollision Report

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Erwin 6N
Project:	SEC. 27-T5N-R64W	TVD Reference:	WELL @ 4707.0usft (Original Well Elev)
Reference Site:	Erwin 5N64W27 PAD	MD Reference:	WELL @ 4707.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Erwin 6N	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 19Jul17 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. 22-T5N-R64W						
Emancipator 22-15 - Wellbore #1 - Wellbore #1	13,685.6	6,566.3	1,018.7	864.6	6.611	CC, ES, SF
Emancipator 22-16 - Wellbore #1 - Wellbore #1	13,685.6	6,538.3	683.1	529.1	4.435	CC, ES, SF
Ledford 22T-321 - Wellbore #1 - Wellbore #1	13,685.6	6,626.1	119.9	40.7	1.515	CC, ES, SF
Sappington 22Q-221 - Wellbore #1 - Wellbore #1	13,685.6	6,589.5	869.2	713.1	5.568	CC, ES, SF
Sappington 22Q-301 - Wellbore #1 - Wellbore #1	13,685.6	6,650.1	1,258.6	1,100.2	7.947	CC, ES, SF
Sappington 22T-201 - Wellbore #1 - Wellbore #1	13,685.6	6,609.8	260.1	120.1	1.858	CC, ES, SF
Sappington 22T-341 - Wellbore #1 - Wellbore #1	13,685.6	6,599.5	556.1	401.6	3.600	CC, ES, SF
Existing Wells Sec. 27 T5N R64W						
Hunter 1 - Wellbore #1 - Wellbore #1	11,823.1	5,000.0	1,565.4	1,505.4	26.082	CC, ES
Hunter 1 - Wellbore #1 - Wellbore #1	12,200.0	5,000.0	1,610.1	1,546.7	25.371	SF
Herbst 27-2 - Wellbore #1 - Wellbore #1	10,101.8	6,544.0	800.5	723.0	10.326	CC, ES
Herbst 27-2 - Wellbore #1 - Wellbore #1	10,300.0	6,550.4	824.7	743.4	10.143	SF
Herbst 27-6 - Wellbore #1 - Wellbore #1	100.0	25.0	405.8	405.6	3,015.023	CC, ES
Herbst 27-6 - Wellbore #1 - Wellbore #1	9,000.0	6,581.6	783.4	722.8	12.922	SF

Offset Design Erwin 5N64W27 PAD - Erwin 1N - Wellbore #1 - Plan #2 19Jul17 kjs												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.28	-0.4	-74.9	74.9				
100.0	100.0	100.0	100.0	0.1	0.1	-90.28	-0.4	-74.9	74.9	74.7	0.21	353.302	
200.0	200.0	200.0	200.0	0.4	0.4	-90.28	-0.4	-74.9	74.9	74.1	0.76	98.210	CC, ES
300.0	300.0	299.8	299.8	0.6	0.6	114.45	-1.7	-75.0	75.5	74.3	1.26	60.096	
400.0	399.9	399.7	399.6	0.9	0.9	114.18	-5.6	-75.3	77.5	75.7	1.76	44.055	
500.0	499.7	499.4	499.1	1.2	1.2	113.75	-12.1	-75.7	80.7	78.4	2.32	34.731	
600.0	599.3	599.1	598.4	1.5	1.5	113.20	-21.1	-76.4	85.2	82.3	2.95	28.869	
700.0	698.6	698.7	697.3	1.8	1.8	112.58	-32.8	-77.2	91.0	87.4	3.65	24.929	
800.0	797.5	798.2	795.7	2.2	2.2	111.91	-47.0	-78.3	98.1	93.7	4.43	22.146	
900.0	896.1	897.5	893.6	2.7	2.7	111.22	-63.7	-79.5	106.5	101.2	5.30	20.105	
1,000.0	994.2	996.7	990.9	3.2	3.1	110.54	-82.9	-80.8	116.1	109.9	6.26	18.565	
1,100.0	1,091.7	1,095.6	1,087.4	3.7	3.7	109.89	-104.6	-82.4	127.1	119.8	7.31	17.375	
1,200.0	1,188.6	1,194.3	1,183.2	4.3	4.3	109.26	-128.7	-84.1	139.3	130.8	8.47	16.439	
1,300.0	1,284.9	1,292.8	1,278.0	5.0	4.9	108.67	-155.2	-86.0	152.7	143.0	9.73	15.691	
1,400.0	1,380.4	1,391.1	1,371.9	5.7	5.6	108.12	-184.1	-88.1	167.4	156.3	11.10	15.086	
1,500.0	1,475.0	1,489.0	1,464.7	6.5	6.3	107.59	-215.3	-90.4	183.3	170.8	12.57	14.589	
1,600.0	1,568.9	1,586.7	1,556.5	7.3	7.1	107.10	-248.7	-92.8	200.5	186.3	14.14	14.182	
1,700.0	1,661.7	1,685.0	1,648.4	8.2	8.0	106.96	-283.6	-95.3	218.6	202.8	15.80	13.840	
1,800.0	1,753.8	1,783.2	1,740.1	9.2	8.8	107.46	-318.4	-97.8	237.4	219.9	17.50	13.563	
1,900.0	1,845.6	1,881.4	1,831.9	10.1	9.6	108.07	-353.2	-100.3	256.3	237.1	19.23	13.328	
2,000.0	1,937.5	1,979.6	1,923.6	11.1	10.5	108.60	-388.0	-102.8	275.3	254.3	20.97	13.129	
2,100.0	2,029.4	2,077.7	2,015.4	12.1	11.3	109.06	-422.8	-105.3	294.2	271.5	22.71	12.958	
2,200.0	2,121.3	2,175.9	2,107.1	13.1	12.1	109.46	-457.6	-107.8	313.2	288.7	24.45	12.809	
2,300.0	2,213.2	2,274.0	2,198.8	14.0	13.0	109.82	-492.5	-110.3	332.2	306.0	26.20	12.679	
2,400.0	2,305.1	2,372.2	2,290.6	15.0	13.8	110.14	-527.3	-112.8	351.2	323.2	27.95	12.565	
2,500.0	2,397.0	2,470.4	2,382.3	16.0	14.7	110.43	-562.1	-115.3	370.2	340.5	29.70	12.464	
2,600.0	2,488.9	2,568.5	2,474.1	17.0	15.5	110.69	-596.9	-117.8	389.2	357.7	31.45	12.373	
2,700.0	2,580.7	2,666.7	2,565.8	18.0	16.4	110.92	-631.7	-120.3	408.2	375.0	33.21	12.292	
2,800.0	2,672.6	2,764.8	2,657.6	19.0	17.2	111.13	-666.5	-122.8	427.2	392.3	34.97	12.219	

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