



WELL DETAILS: Broe 24C

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1407658.17	3176956.62	40° 27' 2.455 N	104° 51' 50.944 W

Project: WELD COUNTY
 Site: Broe Pad
 Well: Broe 24C
 Wellbore: OWB
 Design: Plan #1
 Lat: 40° 27' 2.455 N
 Long: 104° 51' 50.944 W
 GL: 4740.0
 KB: KB @ 4760.0usft

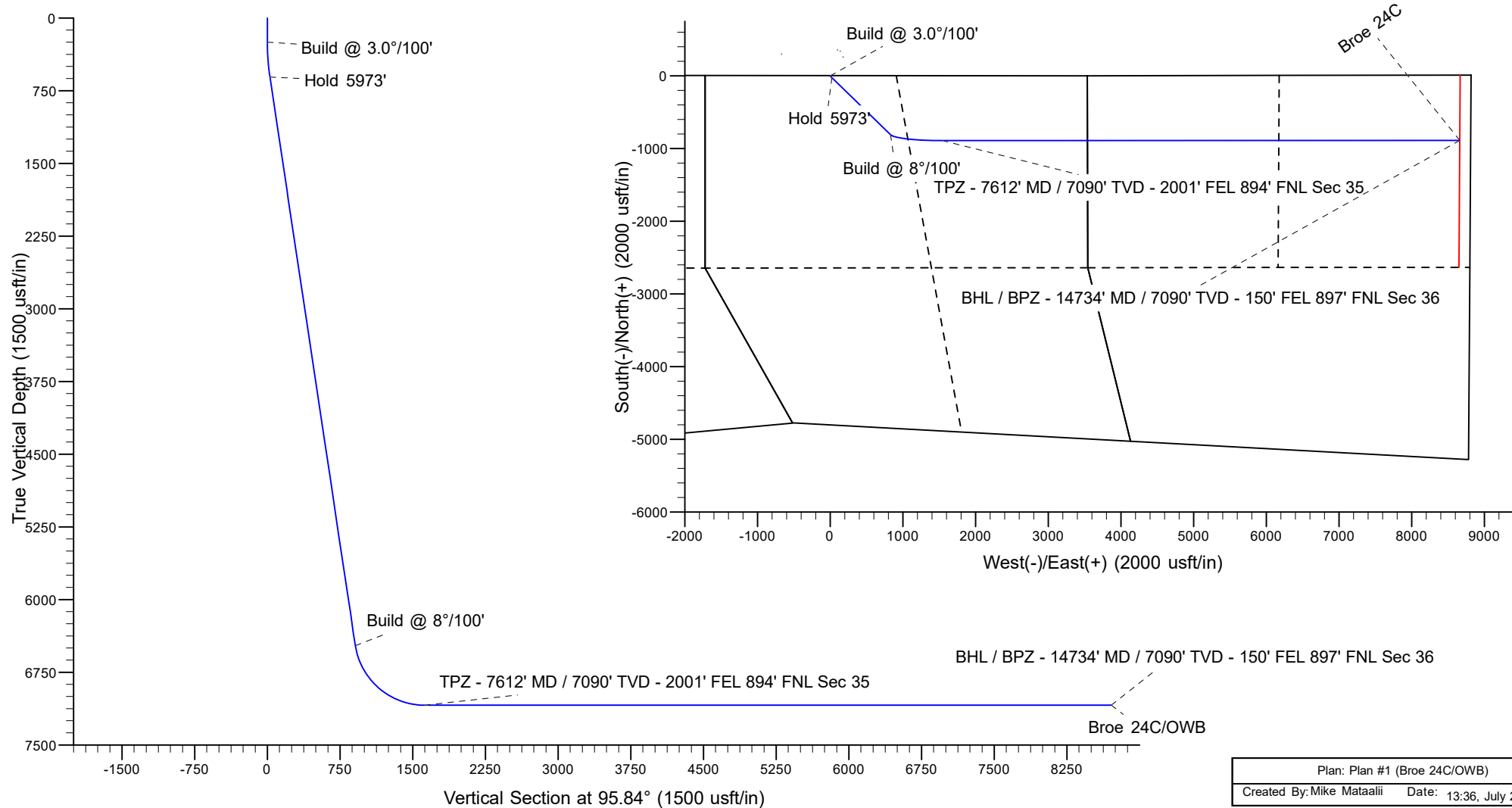


Azimuths to True North
 Magnetic North: 7.80°

Magnetic Field
 Strength: 51863.1nT
 Dip Angle: 66.64°
 Date: 6/24/2022
 Model: IGRF2000

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
250.0	0.00	0.00	250.0	0.0	0.0	0.00	0.00	0.0	Build @ 3.0°/100'
611.7	10.85	134.22	609.6	-23.8	24.5	3.00	134.22	26.8	Hold 5973'
6584.8	10.85	134.22	6475.9	-808.1	830.3	0.00	0.00	908.3	Build @ 8°/100'
7612.9	90.00	89.97	7090.0	-890.0	1540.0	8.00	-44.77	1622.6	TPZ - 7612' MD / 7090' TVD - 2001' FEL 894' FNL Sec 35
14734.9	90.00	89.97	7090.0	-886.6	8662.0	0.00	0.00	8707.3	BHL / BPZ - 14734' MD / 7090' TVD - 150' FEL 897' FNL Sec 36



Plan: Plan #1 (Broe 24C/OWB)

Created By: Mike Mataalii Date: 13:36, July 20 2022

PDC

WELD COUNTY

Broe Pad

Broe 24C

OWB

Plan #1

Anticollision Summary Report

20 July, 2022

PDC Energy Inc.
Anticollision Summary Report

Company:	PDC	Local Co-ordinate Reference:	Well Broe 24C
Project:	WELD COUNTY	TVD Reference:	KB @ 4760.0usft
Reference Site:	Broe Pad	MD Reference:	KB @ 4760.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Broe 24C	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
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 10,000.0 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	7/20/2022		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	14,734.9	Plan #1 (OWB)	MWD	OWSG 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						
Broe Offsets						
Christainsen 35-13 - OJH - OH	7,646.3	7,119.2	1,268.5	1,218.4	25.336	CC, ES
Christainsen 35-13 - OJH - OH	8,200.0	7,093.0	1,383.8	1,323.1	22.781	SF
Christiansen 1-35 - OH - OH	8,412.4	7,020.2	1,278.8	1,209.3	18.400	CC, ES
Christiansen 1-35 - OH - OH	8,800.0	7,037.0	1,336.1	1,256.8	16.837	SF
CHRISTIANSEN 35-15 - OJH - OH	7,742.6	7,065.0	1,256.4	1,092.2	7.652	CC, ES
CHRISTIANSEN 35-15 - OJH - OH	7,900.0	7,065.0	1,266.3	1,098.9	7.568	SF
Great Western 25-24-23 - OH - OH	11,800.0	6,000.0	2,092.6	1,986.3	19.692	SF
Great Western 25-24-23 - OH - OH	12,051.6	6,000.0	2,077.4	1,972.9	19.871	CC, ES
Great Western 25-24-24 - MWD Surveys - OH	10,945.5	7,710.3	874.9	718.3	5.585	CC, ES
Great Western 25-24-24 - MWD Surveys - OH	11,000.0	7,711.1	876.6	719.3	5.574	SF
Great Western 35-31 - OH - OH	7,731.2	7,332.7	239.6	176.7	3.811	CC, ES, SF
Great Western 35-41 - OH - OH	9,000.0	7,398.0	259.6	156.5	2.518	ES, SF
Great Western 35-41 - OH - OH	9,001.1	7,398.1	259.6	156.5	2.518	CC
GREAT WESTERN 35-52 - OH - OH	3,351.2	3,280.1	1,031.5	962.0	14.845	CC
Great Western 35-52 - OH - OH	3,351.2	3,280.1	1,031.5	962.0	14.845	CC
Great Western 35-52 - OH - OH	4,000.0	3,917.3	1,038.7	955.7	12.521	ES
GREAT WESTERN 35-52 - OH - OH	4,000.0	3,917.3	1,038.7	955.7	12.521	ES
Great Western 35-52 - OH - OH	6,650.0	6,519.4	1,206.9	1,066.9	8.625	SF
GREAT WESTERN 35-52 - OH - OH	6,650.0	6,519.4	1,206.9	1,066.9	8.625	SF
J E CHRISTIANSEN 35-1 - OH - OH	0.0	0.0	3,523.8			
J E CHRISTIANSEN 35-1 - OH - OH	100.0	22.0	3,524.2	3,523.4	4,143.886	ES
J E CHRISTIANSEN 35-1 - OH - OH	13,400.0	22.0	8,398.0	8,344.8	157.659	SF
KODAK 2 - OH - OH	3,603.5	3,544.8	4,933.5	4,858.5	65.800	CC
KODAK 2 - OH - OH	4,700.0	4,600.0	4,937.8	4,840.6	50.796	ES
KODAK 2 - OH - OH	5,100.0	4,600.0	4,958.9	4,860.6	50.468	SF
KODAK 34-11 - OH - OH	250.0	235.0	2,483.0	2,477.4	443.354	CC
KODAK 34-11 - OH - OH	400.0	384.8	2,485.6	2,476.5	275.262	ES
KODAK 34-11 - OH - OH	6,850.0	6,708.9	3,248.7	3,102.2	22.180	SF
KODAK 34-12 - OH - OH	250.0	234.0	3,493.4	3,487.8	625.711	CC
KODAK 34-12 - OH - OH	300.0	284.0	3,493.7	3,487.1	531.555	ES
KODAK 34-12 - OH - OH	6,950.0	6,791.0	4,357.3	4,208.8	29.331	SF
KODAK 34-13 - OH - OH	250.0	234.0	4,054.0	4,048.5	726.136	CC
KODAK 34-13 - OH - OH	400.0	383.8	4,055.4	4,046.6	462.148	ES
KODAK 34-13 - OH - OH	7,050.0	6,865.8	4,636.6	4,488.0	31.216	SF
KODAK 34-14 - OH - OH	250.0	234.0	3,310.9	3,305.3	593.029	CC
KODAK 34-14 - OH - OH	1,200.0	1,171.3	3,324.1	3,298.8	131.676	ES
KODAK 34-14 - OH - OH	7,000.0	6,829.5	3,720.5	3,573.5	25.304	SF

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

PDC Energy Inc.
Anticollision Summary Report

Company:	PDC	Local Co-ordinate Reference:	Well Broe 24C
Project:	WELD COUNTY	TVD Reference:	KB @ 4760.0usft
Reference Site:	Broe Pad	MD Reference:	KB @ 4760.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Broe 24C	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	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						
Broe Offsets						
KODAK 34-15 - OH - OH	250.0	234.0	3,491.3	3,485.8	625.349	CC
KODAK 34-15 - OH - OH	400.0	383.8	3,493.4	3,484.5	392.716	ES
KODAK 34-15 - OH - OH	6,950.0	6,791.0	4,169.4	4,022.0	28.284	SF
KODAK 34-21 - OH - OH	250.0	234.0	5,183.4	5,177.8	928.421	CC
KODAK 34-21 - OH - OH	300.0	284.0	5,183.8	5,177.2	788.156	ES
KODAK 34-21 - OH - OH	7,050.0	6,865.8	6,152.7	6,002.2	40.885	SF
KODAK 34-22 - OH - OH	250.0	234.0	6,280.7	6,275.1	1,124.968	CC
KODAK 34-22 - OH - OH	300.0	284.0	6,281.2	6,274.6	954.331	ES
KODAK 34-22 - OH - OH	7,100.0	6,899.6	7,349.0	7,197.3	48.455	SF
KODAK 34-23 - OH - OH	250.0	234.0	6,602.8	6,597.2	1,182.649	CC
KODAK 34-23 - OH - OH	300.0	284.0	6,603.1	6,596.5	1,005.059	ES
KODAK 34-23 - OH - OH	7,150.0	6,930.8	7,495.7	7,344.4	49.563	SF
KODAK 34-24 - OH - OH	250.0	234.0	5,125.6	5,120.0	918.068	CC
KODAK 34-24 - OH - OH	400.0	383.8	5,127.9	5,119.0	572.680	ES
KODAK 34-24 - OH - OH	7,100.0	6,899.6	5,906.8	5,756.7	39.347	SF
KODAK 34-25 - OH - OH	250.0	234.0	6,126.4	6,120.8	1,097.326	CC
KODAK 34-25 - OH - OH	300.0	284.0	6,126.7	6,120.2	932.156	ES
KODAK 34-25 - OH - OH	7,150.0	6,930.8	7,080.5	6,928.9	46.711	SF
KODAK 34-31 - OH - OH	250.0	234.0	5,798.6	5,793.1	1,038.620	CC
KODAK 34-31 - OH - OH	500.0	483.3	5,801.4	5,790.5	531.973	ES
KODAK 34-31 - OH - OH	7,200.0	6,959.2	6,360.9	6,210.2	42.192	SF
KODAK 34-32 - OH - OH	250.0	234.0	6,878.5	6,872.9	1,232.034	CC
KODAK 34-32 - OH - OH	400.0	383.8	6,880.2	6,871.4	778.079	ES
KODAK 34-32 - OH - OH	7,250.0	6,984.8	7,628.0	7,476.0	50.197	SF
KODAK 34-33 - OH - OH	250.0	234.0	7,540.7	7,535.1	1,350.647	CC
KODAK 34-33 - OH - OH	500.0	483.3	7,543.0	7,532.1	693.941	ES
KODAK 34-33 - OH - OH	7,350.0	7,026.7	8,147.7	7,994.6	53.207	SF
KODAK 34-34 - OH - OH	586.3	568.5	5,957.2	5,944.6	473.613	CC
KODAK 34-34 - OH - OH	4,100.0	4,019.5	5,993.8	5,908.7	70.453	ES
KODAK 34-34 - OH - OH	7,300.0	7,007.3	6,361.0	6,208.8	41.791	SF
KODAK 34-35 - OH - OH	250.0	234.0	6,388.6	6,383.0	1,144.291	CC
KODAK 34-35 - OH - OH	600.0	582.0	6,392.7	6,379.8	493.069	ES
KODAK 34-35 - OH - OH	7,300.0	7,007.3	6,963.4	6,811.1	45.706	SF
KODAK 34-41 - OH - OH	2,026.3	1,841.8	3,434.1	3,414.7	177.297	CC, ES
KODAK 34-41 - OH - OH	7,600.0	7,020.8	4,240.0	4,186.3	78.980	SF
KODAK 34-42 - OH - OH	250.0	235.0	4,447.0	4,441.4	794.047	CC
KODAK 34-42 - OH - OH	2,500.0	2,449.1	4,472.5	4,420.4	85.863	ES
KODAK 34-42 - OH - OH	7,150.0	6,931.8	4,833.2	4,683.6	32.313	SF
KODAK 34-43 - OH - OH	6,588.9	6,464.8	5,140.1	5,003.8	37.723	CC
KODAK 34-43 - OH - OH	6,600.0	6,475.7	5,140.1	5,003.6	37.661	ES
KODAK 34-43 - OH - OH	7,400.0	7,043.9	5,440.5	5,286.3	35.278	SF
KODAK 34-44 - OH - OH	1,647.0	1,438.0	3,487.5	3,468.6	183.718	CC
KODAK 34-44 - OH - OH	1,700.0	1,477.2	3,487.6	3,468.5	181.786	ES
KODAK 34-44 - OH - OH	8,800.0	7,117.8	5,154.8	5,081.4	70.186	SF
KODAK 34-45 - OH - OH	1,635.2	1,434.8	3,469.2	3,451.3	193.474	CC
KODAK 34-45 - OH - OH	1,700.0	1,469.2	3,469.5	3,451.3	190.400	ES
KODAK 34-45 - OH - OH	8,000.0	7,222.0	5,203.0	5,138.0	79.964	SF
KODAK 35-21 - OH - OH	4,198.4	4,117.1	393.3	306.3	4.519	CC
KODAK 35-21 - OH - OH	4,400.0	4,315.1	395.1	303.9	4.330	ES
KODAK 35-21 - OH - OH	5,400.0	5,297.2	453.7	340.0	3.991	SF
KODAK 35-22 - OH - OH	250.0	234.0	1,580.7	1,575.1	283.129	CC
KODAK 35-22 - OH - OH	400.0	383.8	1,582.2	1,573.4	179.903	ES
KODAK 35-22 - OH - OH	6,750.0	6,618.1	2,218.0	2,073.7	15.376	SF

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

PDC Energy Inc.
Anticollision Summary Report

Company:	PDC	Local Co-ordinate Reference:	Well Broe 24C
Project:	WELD COUNTY	TVD Reference:	KB @ 4760.0usft
Reference Site:	Broe Pad	MD Reference:	KB @ 4760.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Broe 24C	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	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						
Broe Offsets						
State 05-36 - OH - OH	14,180.1	7,037.5	1,596.5	1,378.4	7.321	CC
State 05-36 - OH - OH	14,200.0	7,037.3	1,596.6	1,377.8	7.299	ES
State 05-36 - OH - OH	14,400.0	7,035.7	1,611.5	1,387.9	7.206	SF
State 6-36 - OH - OH	12,658.2	7,048.6	215.3	4.5	1.021	Collision Avoidance Req., CC
STATE 7-36 - OH - OH	11,246.7	7,048.0	1,363.3	1,111.8	5.421	CC
STATE 7-36 - OH - OH	11,300.0	7,048.0	1,364.3	1,111.2	5.390	ES
STATE 7-36 - OH - OH	11,400.0	7,048.0	1,371.9	1,116.2	5.365	SF
STATE 8-36 - OH - OH	10,542.9	7,048.0	51.6	-181.3	0.221	No-Go Zone - Stop Drilling, CC
State M 36-1 - OH - OH	14,121.4	7,049.0	146.7	-76.1	0.658	No-Go Zone - Stop Drilling, CC
State M 36-13 - OH - OH	10,362.4	7,416.2	3,728.8	3,595.7	27.998	CC
State M 36-13 - OH - OH	10,500.0	7,415.5	3,731.4	3,594.3	27.226	ES
State M 36-13 - OH - OH	11,800.0	7,409.6	3,996.4	3,830.8	24.141	SF
State M 36-14 - OH - OH	13,871.0	7,066.6	807.3	593.1	3.768	CC
State M 36-14 - OH - OH	13,900.0	7,066.1	807.9	592.5	3.751	ES, SF
State M 36-3 - OH - OH	11,570.5	7,053.7	103.4	-64.1	0.617	No-Go Zone - Stop Drilling, CC
STATE M 36-5 - OH - OH	10,233.6	7,052.0	1,213.6	988.8	5.399	CC
STATE M 36-5 - OH - OH	10,300.0	7,052.0	1,215.4	988.7	5.360	ES
STATE M 36-5 - OH - OH	10,400.0	7,052.0	1,225.0	995.7	5.344	SF
State M 36-7 - OH - OH	12,797.2	7,048.9	1,250.3	1,064.2	6.720	CC
State M 36-7 - OH - OH	12,800.0	7,048.9	1,250.3	1,064.1	6.716	ES
State M 36-7 - OH - OH	13,000.0	7,047.4	1,266.6	1,074.6	6.598	SF
Windsor 35-2 - OH - OH	6,587.5	6,438.6	2,808.8	2,773.9	80.559	CC, ES
Windsor 35-2 - OH - OH	7,700.0	7,028.3	3,334.3	3,287.0	70.599	SF
Windsor 35-5 - OH - OH	3,574.6	3,495.7	2,185.1	2,164.5	105.768	CC
Windsor 35-5 - OH - OH	3,800.0	3,717.6	2,186.0	2,164.3	100.427	ES
Windsor 35-5 - OH - OH	7,100.0	6,930.7	2,431.3	2,391.8	61.583	SF
Windsor Invsetment Group 35-1 - OH - OH	6,679.0	6,505.5	1,279.8	1,241.1	33.067	CC, ES
Windsor Invsetment Group 35-1 - OH - OH	7,000.0	6,778.0	1,317.0	1,276.4	32.478	SF

PDC Energy Inc.
Anticollision Summary Report

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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						
Broe Pad						
Broe 01N - OWB - Plan #1	1,352.9	1,351.4	37.6	21.3	2.308	CC
Broe 01N - OWB - Plan #1	1,400.0	1,398.2	38.0	21.0	2.235	ES, SF
Broe 02NA - OWB - Plan #1	1,176.7	1,171.1	68.3	54.0	4.773	CC
Broe 02NA - OWB - Plan #1	1,300.0	1,293.7	69.5	53.5	4.336	ES
Broe 02NA - OWB - Plan #1	6,826.2	7,040.9	175.0	118.7	3.110	SF
Broe 03C - OWB - Plan #1	7,100.3	7,181.2	14.3	-46.5	0.235	No-Go Zone - Stop Drilling, (
Broe 04N - OWB - Plan #1	716.8	703.9	91.9	81.7	9.005	CC, ES
Broe 04N - OWB - Plan #1	6,997.6	7,168.4	206.2	144.2	3.327	SF
Broe 05N - OWB - Plan #1	667.0	651.9	96.6	85.9	9.016	CC
Broe 05N - OWB - Plan #1	700.0	683.7	96.8	85.7	8.704	ES
Broe 05N - OWB - Plan #1	7,114.5	7,217.1	390.3	325.0	5.984	SF
Broe 06NA - OWB - Plan #1	642.5	625.4	101.7	90.4	8.987	CC, ES
Broe 06NA - OWB - Plan #1	800.0	775.6	107.1	93.8	8.093	SF
Broe 07C - OWB - Plan #1	630.9	611.7	107.7	95.9	9.132	CC, ES
Broe 07C - OWB - Plan #1	800.0	772.1	114.4	100.6	8.318	SF
Broe 08N - OWB - Plan #1	628.2	607.0	114.9	102.7	9.449	CC, ES
Broe 08N - OWB - Plan #1	800.0	768.9	122.0	107.9	8.653	SF
Broe 09N - OWB - Plan #1	630.1	606.9	123.0	110.7	9.938	CC, ES
Broe 09N - OWB - Plan #1	800.0	766.2	130.1	115.8	9.105	SF
Broe 10NA - OWB - Plan #1	635.1	609.9	132.3	119.8	10.579	CC, ES
Broe 10NA - OWB - Plan #1	800.0	763.7	139.0	124.6	9.672	SF
Broe 11C - OWB - Plan #1	250.0	250.0	204.6	201.8	73.245	CC
Broe 11C - OWB - Plan #1	600.0	578.5	206.3	198.4	26.019	ES
Broe 11C - OWB - Plan #1	8,200.0	7,071.4	1,580.1	1,485.9	16.765	SF
Broe 12N - OWB - Plan #1	250.0	250.0	201.9	199.1	72.270	CC
Broe 12N - OWB - Plan #1	600.0	576.2	204.0	195.5	24.048	ES
Broe 12N - OWB - Plan #1	1,200.0	1,122.8	271.4	256.3	17.983	SF
Broe 13N - OWB - Plan #1	250.0	250.0	200.2	197.4	71.665	CC
Broe 13N - OWB - Plan #1	600.0	574.0	202.5	193.4	22.430	ES
Broe 13N - OWB - Plan #1	1,100.0	1,030.0	253.0	238.7	17.640	SF
Broe 14NA - OWB - Plan #1	250.0	250.0	199.9	197.2	71.577	CC
Broe 14NA - OWB - Plan #1	600.0	572.1	202.1	192.6	21.210	ES
Broe 14NA - OWB - Plan #1	1,100.0	1,025.4	255.3	240.5	17.328	SF
Broe 15C - OWB - Plan #1	250.0	250.0	200.5	197.7	71.776	CC
Broe 15C - OWB - Plan #1	600.0	570.3	202.5	192.5	20.260	ES
Broe 15C - OWB - Plan #1	1,000.0	933.1	238.5	224.5	16.980	SF
Broe 16N - OWB - Plan #1	250.0	250.0	202.2	199.4	72.377	CC
Broe 16N - OWB - Plan #1	611.7	579.5	203.9	193.4	19.378	ES
Broe 16N - OWB - Plan #1	1,000.0	929.9	240.3	225.8	16.658	SF
Broe 17N - OWB - Plan #1	250.0	250.0	205.0	202.2	73.368	CC
Broe 17N - OWB - Plan #1	611.7	578.0	206.1	195.3	18.950	ES
Broe 17N - OWB - Plan #1	1,000.0	926.8	242.6	227.9	16.439	SF
Broe 18NA - OWB - Plan #1	250.0	250.0	208.8	206.0	74.736	CC
Broe 18NA - OWB - Plan #1	611.7	576.7	209.3	198.1	18.736	ES
Broe 18NA - OWB - Plan #1	900.0	835.8	229.7	215.6	16.281	SF
Broe 19C - OWB - Plan #1	574.5	542.0	213.4	202.7	19.912	CC
Broe 19C - OWB - Plan #1	611.7	575.5	213.4	202.0	18.708	ES
Broe 19C - OWB - Plan #1	900.0	833.5	233.1	218.8	16.223	SF
Broe 20N - OWB - Plan #1	619.2	581.0	218.4	206.7	18.700	CC, ES
Broe 20N - OWB - Plan #1	900.0	831.5	237.2	222.6	16.263	SF
Broe 21C - OWB - Plan #1	552.9	560.2	55.3	45.0	5.414	CC
Broe 21C - OWB - Plan #1	600.0	607.1	55.9	44.7	5.006	ES
Broe 21C - OWB - Plan #1	14,734.9	14,797.6	621.5	176.0	1.395	Collision Avoidance Req., SF

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

PDC Energy Inc.
Anticollision Summary Report

Company:	PDC	Local Co-ordinate Reference:	Well Broe 24C
Project:	WELD COUNTY	TVD Reference:	KB @ 4760.0usft
Reference Site:	Broe Pad	MD Reference:	KB @ 4760.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Broe 24C	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	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						
Broe Pad						
Broe 22N - OWB - Plan #1	573.4	577.1	26.2	16.0	2.575	CC
Broe 22N - OWB - Plan #1	600.0	603.7	26.3	15.7	2.466	ES
Broe 22N - OWB - Plan #1	14,734.9	14,584.5	451.7	43.6	1.107	Collision Avoidance Req., SF
Broe 23N - OWB - Plan #1	594.8	596.8	12.9	2.4	1.229	Collision Avoidance Req., CC
Broe 23N - OWB - Plan #1	14,734.9	14,637.2	234.5	-158.5	0.597	No-Go Zone - Stop Drilling, ES
Broe 25NA - OWB - Plan #1	1,042.4	1,041.6	1.4	-8.2	0.150	No-Go Zone - Stop Drilling, CC
Broe 25NA - OWB - Plan #1	1,100.0	1,099.2	2.9	-12.0	0.193	No-Go Zone - Stop Drilling, ES
Broe 26N - OWB - Plan #1	663.4	659.5	25.4	14.5	2.339	CC
Broe 26N - OWB - Plan #1	700.0	695.6	25.7	14.1	2.210	ES
Broe 26N - OWB - Plan #1	14,734.9	14,540.1	457.9	47.2	1.115	Collision Avoidance Req., SF
Broe 27N - OWB - Plan #1	688.0	682.2	38.2	27.3	3.500	CC
Broe 27N - OWB - Plan #1	700.0	694.0	38.2	27.1	3.428	ES
Broe 27N - OWB - Plan #1	14,734.9	14,606.0	635.9	199.2	1.456	Collision Avoidance Req., SF
Broe 28NA - OWB - Plan #1	733.0	723.4	64.0	53.1	5.828	CC
Broe 28NA - OWB - Plan #1	800.0	788.6	65.1	52.8	5.297	ES
Broe 28NA - OWB - Plan #1	14,734.9	14,502.7	1,072.9	640.7	2.483	SF
Broe 29C - OWB - Plan #1	711.5	703.8	51.0	40.0	4.655	CC, ES
Broe 29C - OWB - Plan #1	14,734.9	14,739.2	828.6	385.8	1.871	Collision Risk Procedures Req., SF
Broe 30N - OWB - Plan #1	753.9	742.5	77.1	66.0	6.985	CC
Broe 30N - OWB - Plan #1	800.0	787.1	77.6	65.7	6.522	ES
Broe 30N - OWB - Plan #1	14,734.9	14,609.5	1,258.1	818.8	2.864	SF
Broe FD 36-002HNN - OWB - Plan #1	503.8	508.7	41.5	32.6	4.673	CC, ES
Broe FD 36-002HNN - OWB - Plan #1	14,500.0	14,251.5	957.7	553.7	2.370	SF

PDC Energy Inc.
Anticollision Summary Report

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Project:	WELD COUNTY	TVD Reference:	KB @ 4760.0usft
Reference Site:	Broe Pad	MD Reference:	KB @ 4760.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Broe 24C	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 4760.0usft

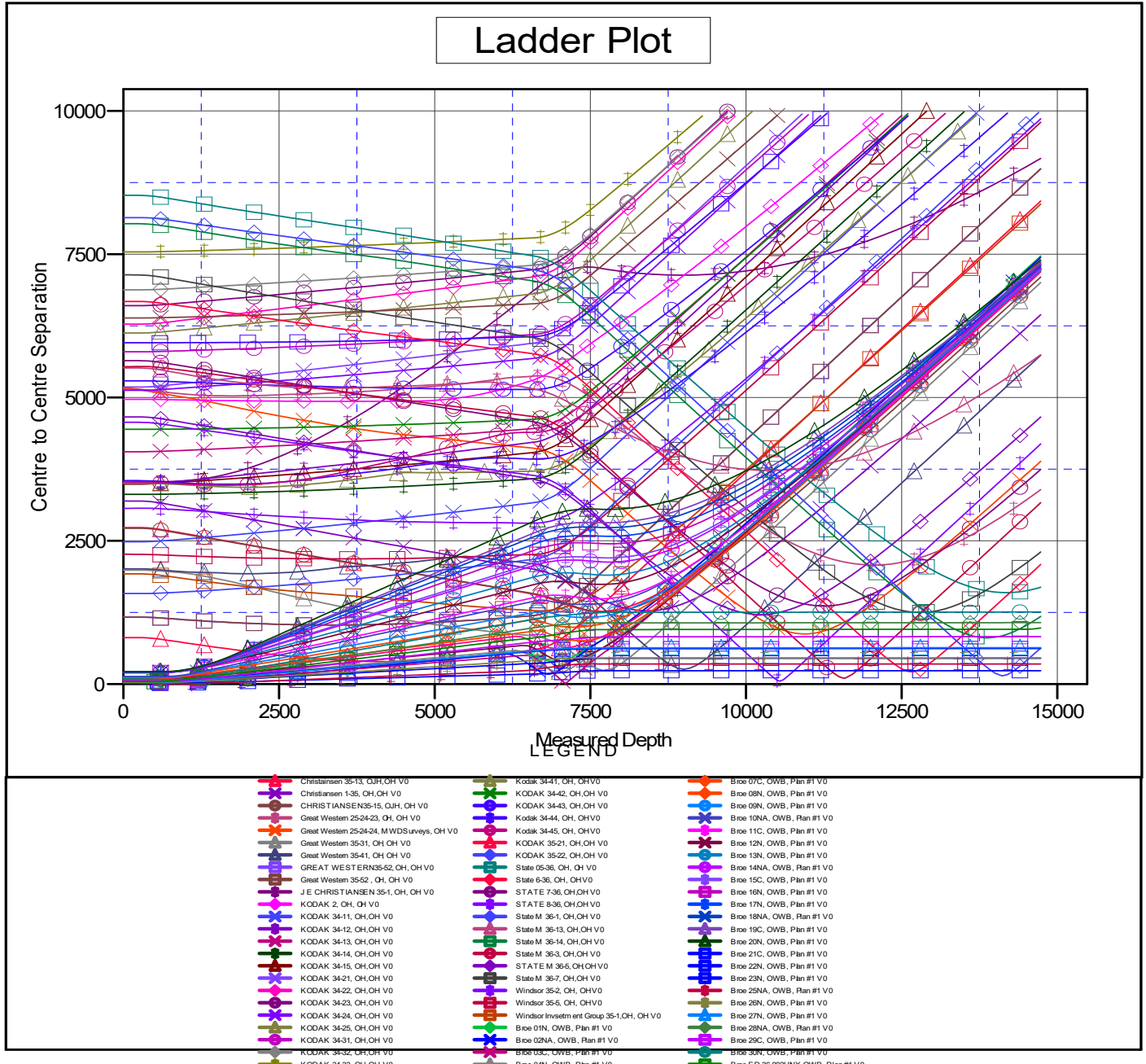
Offset Depths are relative to Offset Datum

Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: Broe 24C

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.41°



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

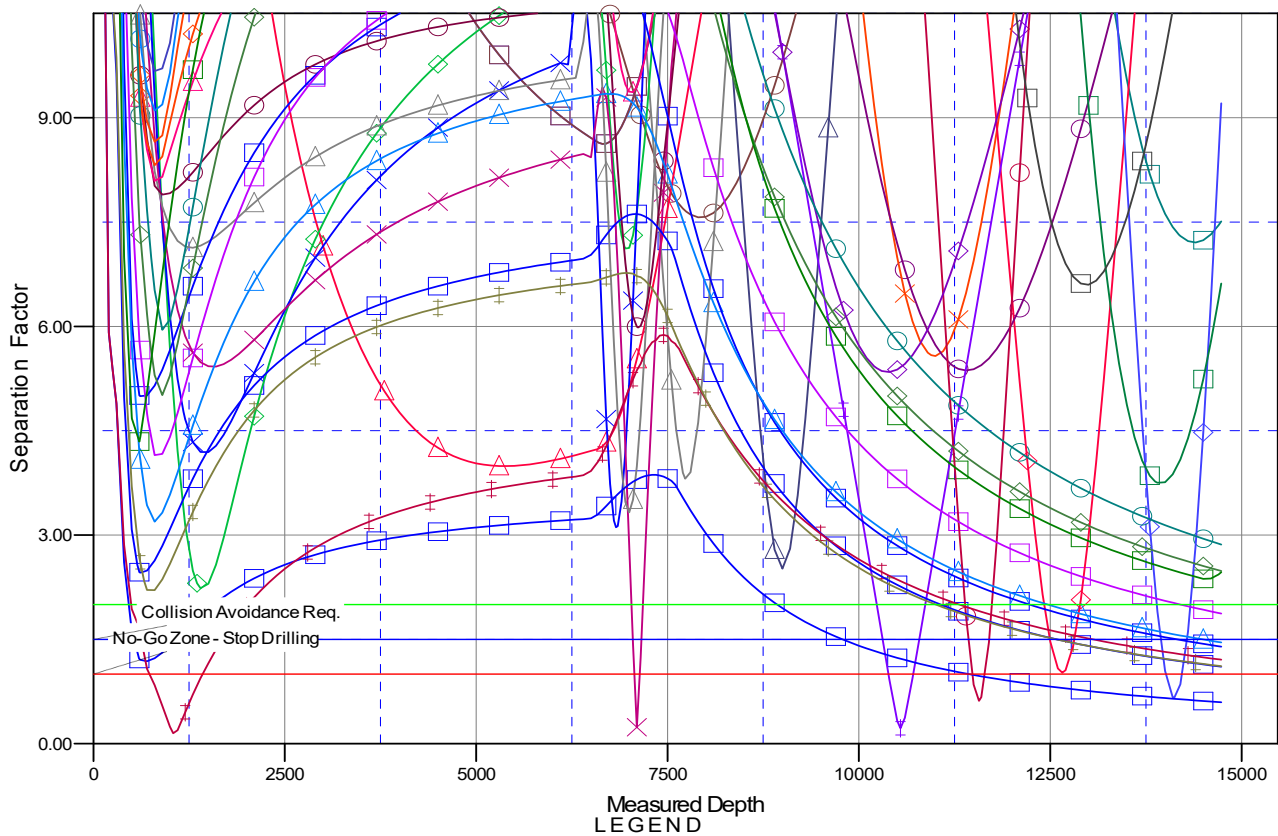
PDC Energy Inc.
Anticollision Summary Report

Company:	PDC	Local Co-ordinate Reference:	Well Broe 24C
Project:	WELD COUNTY	TVD Reference:	KB @ 4760.0usft
Reference Site:	Broe Pad	MD Reference:	KB @ 4760.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Broe 24C	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 4760.0usft
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: Broe 24C
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.41°

Separation Factor Plot



Christiansen 35-13, OH, OH V0	KODAK 34-41, OH, OH V0	Broe 07C, OWB, Plan #1 V0
Christiansen 1-35, OH, OH V0	KODAK 34-42, OH, OH V0	Broe 08N, OWB, Plan #1 V0
CHRISTIANSEN35-15, OH, OH V0	KODAK 34-43, OH, OH V0	Broe 09N, OWB, Plan #1 V0
Great Western 25-24-23, OH, OH V0	KODAK 34-44, OH, OH V0	Broe 10NA, OWB, Plan #1 V0
Great Western 35-31, OH, OH V0	KODAK 34-45, OH, OH V0	Broe 11C, OWB, Plan #1 V0
Great Western 35-41, OH, OH V0	KODAK 35-21, OH, OH V0	Broe 12N, OWB, Plan #1 V0
GREAT WESTERN35-52, OH, OH V0	KODAK 35-22, OH, OH V0	Broe 13N, OWB, Plan #1 V0
Great Western 35-52, OH, OH V0	State 05-36, OH, OH V0	Broe 14NA, OWB, Plan #1 V0
J E CHRISTIANSEN 35-1, OH, OH V0	State 5-36, OH, OH V0	Broe 15C, OWB, Plan #1 V0
KODAK 2, OH, OH V0	STATE 7-36, OH, OH V0	Broe 16N, OWB, Plan #1 V0
KODAK 34-11, OH, OH V0	STATE 8-36, OH, OH V0	Broe 17N, OWB, Plan #1 V0
KODAK 34-12, OH, OH V0	State M 36-1, OH, OH V0	Broe 18NA, OWB, Plan #1 V0
KODAK 34-13, OH, OH V0	State M 36-13, OH, OH V0	Broe 19C, OWB, Plan #1 V0
KODAK 34-14, OH, OH V0	State M 36-14, OH, OH V0	Broe 20N, OWB, Plan #1 V0
KODAK 34-15, OH, OH V0	State M 36-3, OH, OH V0	Broe 21C, OWB, Plan #1 V0
KODAK 34-21, OH, OH V0	STATE M 36-5, OH, OH V0	Broe 22N, OWB, Plan #1 V0
KODAK 34-22, OH, OH V0	State M 36-7, OH, OH V0	Broe 23N, OWB, Plan #1 V0
KODAK 34-23, OH, OH V0	Windsor 35-2, OH, OH V0	Broe 25NA, OWB, Plan #1 V0
KODAK 34-24, OH, OH V0	Windsor 35-5, OH, OH V0	Broe 26N, OWB, Plan #1 V0
KODAK 34-25, OH, OH V0	Windsor Investment Group 35-1, OH, OH V0	Broe 27N, OWB, Plan #1 V0
KODAK 34-31, OH, OH V0	Broe 01N, OWB, Plan #1 V0	Broe 28NA, OWB, Plan #1 V0
KODAK 34-32, OH, OH V0	Broe 02NA, OWB, Plan #1 V0	Broe 29C, OWB, Plan #1 V0
KODAK 34-33, OH, OH V0	Broe 03C, OWB, Plan #1 V0	Broe 30N, OWB, Plan #1 V0
KODAK 34-34, OH, OH V0	Broe 04N, OWB, Plan #1 V0	Broe 31N, OWB, Plan #1 V0

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