

Plan #1

WELL DETAILS: Rio 15NA

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1243157.34	3156857.28	39° 59' 58.175 N	104° 56' 24.371 W



Project: ADAMS COUNTY
Site: Rio Ivy
Well: Rio 15NA
Wellbore: OWB
Design: Plan #1
Lat: 39° 59' 58.175 N
Long: 104° 56' 24.371 W
GL: 5067.0
KB: KB 28' @ 5095.0usft



Azimuths to True North
Magnetic North: 8.00°

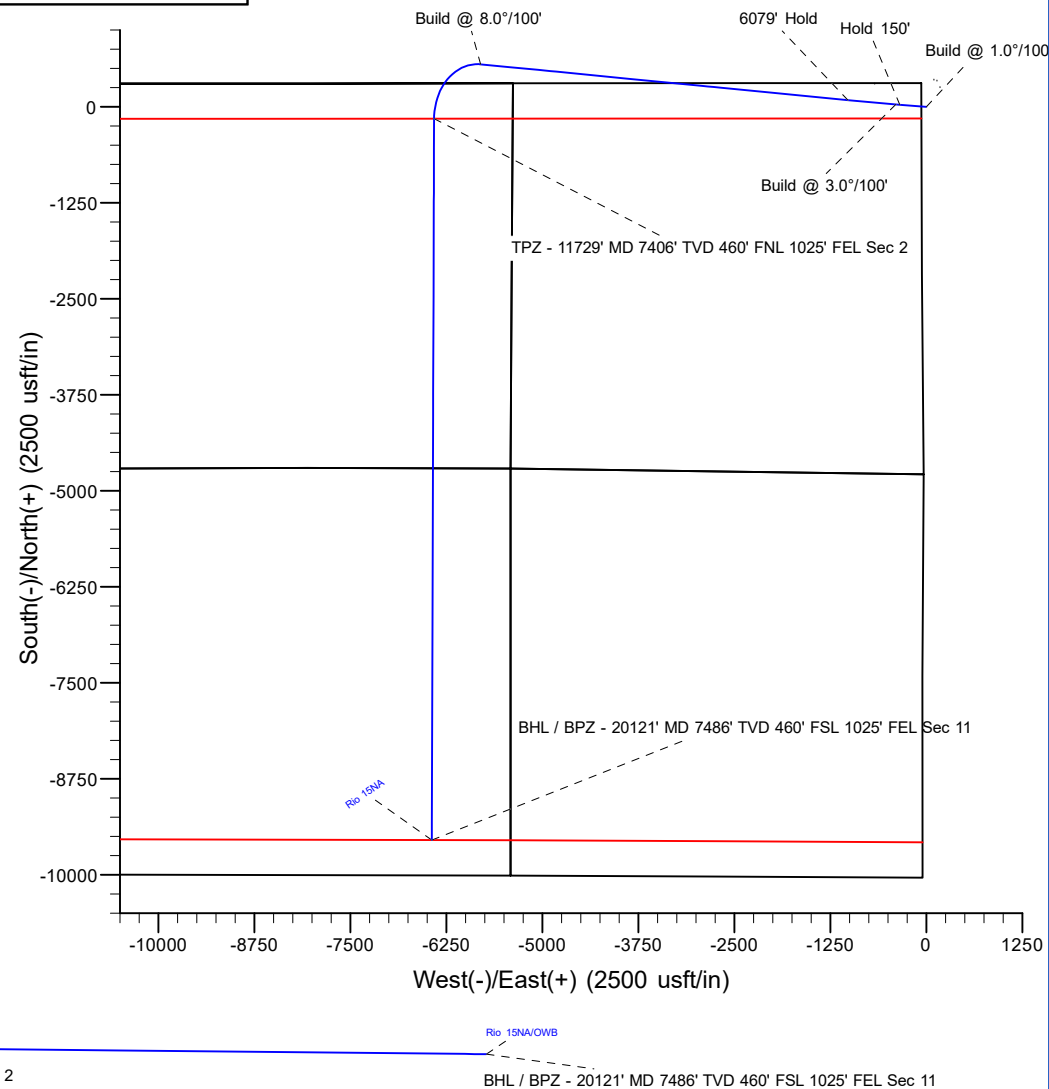
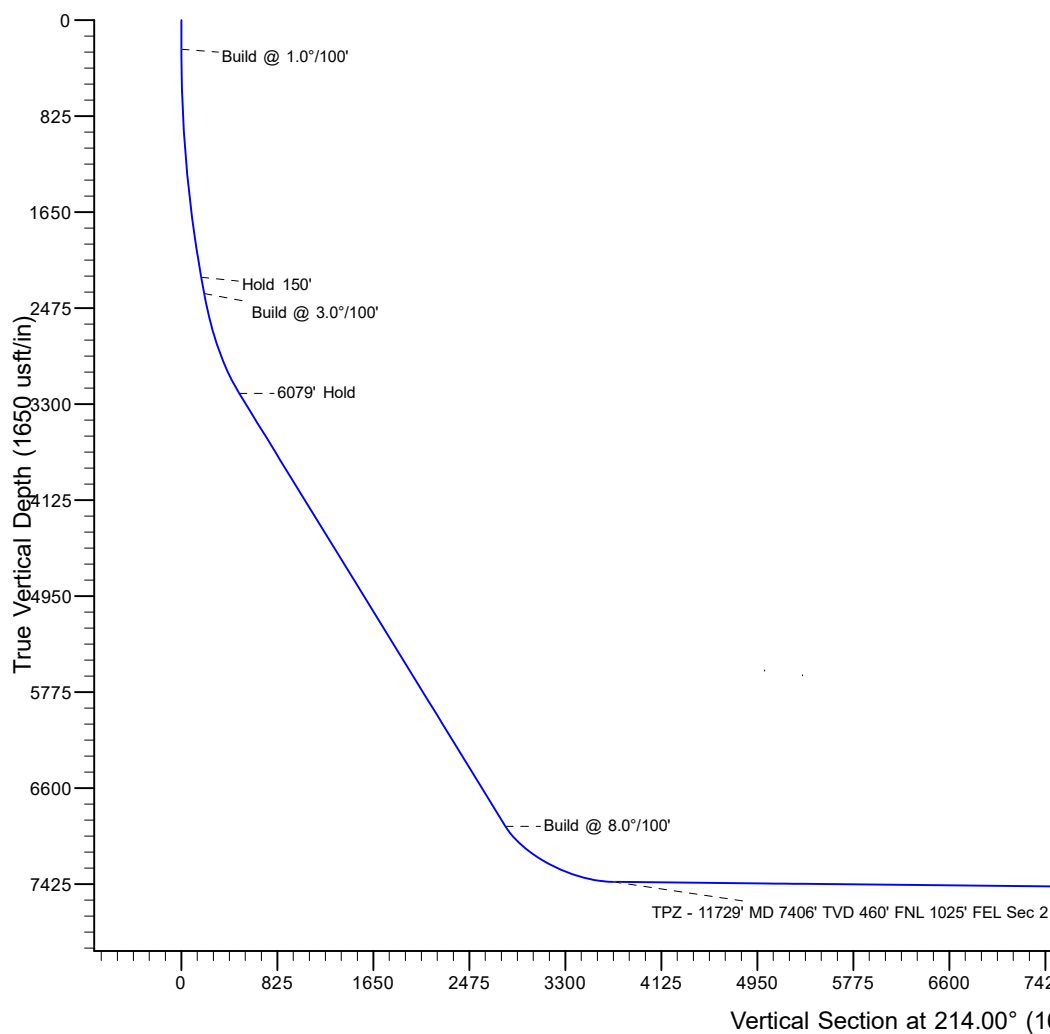
Magnetic Field
Strength: 51874.3nT
Dip Angle: 66.44°
Date: 12/31/2019
Model: IGRF2015

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 @ 1.0°/100'
2250.0	20.00	274.40	2209.6	26.5	-344.5	1.00	274.40	170.7	Hold 150'
2400.0	20.00	274.40	2350.6	30.4	-395.7	0.00	0.00	196.0	Build @ 3.0°/100'
3475.2	52.25	275.57	3207.7	87.3	-1018.6	3.00	1.73	497.2	6079' Hold
9554.8	52.25	275.57	6929.6	553.8	-5803.0	0.00	0.00	2785.6	Build @ 8.0°/100'
10729.3	89.51	180.18	7406.0	-154.8	-6409.4	8.00	-93.69	3712.2	TPZ - 11729' MD 7406' TVD 460' FNL 1025' FEL Sec 2
20121.8	89.51	180.18	7486.0	-9546.9	-6438.8	0.00	0.00	11515.3	BHL / BPZ - 20121' MD 7486' TVD 460' FSL 1025' FEL Sec 11

Plan: Plan #1 (Rio 15NA/OWB)

Created By: Mike Mataalii Date: 10:48, August 30 2022



PDC Energy Inc.
Anticollision Summary Report

Company:	GWP - PLANNING DB	Local Co-ordinate Reference:	Well Rio 15NA
Project:	ADAMS COUNTY	TVD Reference:	KB 28' @ 5095.0usft
Reference Site:	Rio Ivy	MD Reference:	KB 28' @ 5095.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Rio 15NA	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	8/30/2022		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	20,121.8	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
Offet Well - Wellbore - Design						
Rio Ivy						
Rio 13NA - OWB - Plan #1	3,589.8	3,587.4	18.2	-28.8	0.387	No-Go Zone - Stop Drilling, C
Rio 13NA - OWB - Plan #1	3,600.0	3,597.6	18.2	-28.9	0.386	No-Go Zone - Stop Drilling, E
Rio 14N - OWB - Plan #1	3,658.0	3,656.9	12.3	-36.3	0.253	No-Go Zone - Stop Drilling, C
Rio 14N - OWB - Plan #1	3,700.0	3,698.9	12.3	-36.9	0.250	No-Go Zone - Stop Drilling, S
Rio 14N - OWB - Plan #1	3,800.0	3,798.9	12.8	-37.1	0.257	No-Go Zone - Stop Drilling, E
Rio 16N - OWB - Plan #1	2,897.8	2,898.7	1.4	-28.3	0.046	No-Go Zone - Stop Drilling, C
Rio 16N - OWB - Plan #1	2,900.0	2,901.0	1.4	-28.3	0.046	No-Go Zone - Stop Drilling, S
Rio 16N - OWB - Plan #1	20,121.8	20,077.9	319.0	-37.0	0.896	No-Go Zone - Stop Drilling, E
Rio 17N - OWB - OWB	259.4	259.5	107.5	104.9	41.595	CC
Rio 17N - OWB - OWB	300.0	299.7	107.7	104.8	37.497	ES
Rio 17N - OWB - OWB	1,000.0	994.1	158.6	150.9	20.583	SF
Rio 17N - OWB - Plan #1	259.4	231.5	107.5	104.9	41.595	CC
Rio 17N - OWB - Plan #1	300.0	271.7	107.7	104.8	37.497	ES
Rio 17N - OWB - Plan #1	20,121.8	20,410.3	621.5	267.4	1.755	Collision Risk Procedures Re
Rio 18C - OWB - OWB	178.8	178.8	30.2	28.2	15.432	CC
Rio 18C - OWB - OWB	250.0	249.8	30.4	27.8	11.888	ES
Rio 18C - OWB - OWB	800.0	799.9	40.1	33.7	6.261	SF
Rio 18C - OWB - Plan #1	178.8	178.8	30.2	28.2	15.432	CC
Rio 18C - OWB - Plan #1	250.0	249.8	30.4	27.8	11.888	ES
Rio 18C - OWB - Plan #1	20,121.8	19,639.6	1,561.7	1,199.9	4.316	SF
Rio 19NA - OWB - OWB	0.0	0.0	15.3			
Rio 19NA - OWB - OWB	400.0	400.0	16.5	12.8	4.474	ES
Rio 19NA - OWB - OWB	600.0	599.9	21.1	16.0	4.109	SF
Rio 19NA - OWB - Plan #1	0.0	0.0	15.3			
Rio 19NA - OWB - Plan #1	400.0	400.0	16.5	12.8	4.474	ES
Rio 19NA - OWB - Plan #1	600.0	599.9	21.1	16.0	4.109	SF
Rio 20N - OWB - OWB	285.9	286.0	58.7	55.9	20.953	CC
Rio 20N - OWB - OWB	500.0	499.6	59.5	55.2	13.792	ES
Rio 20N - OWB - OWB	1,100.0	1,098.2	86.2	77.7	10.155	SF
Rio 20N - OWB - Plan #1	285.9	286.0	58.7	55.9	20.953	CC
Rio 20N - OWB - Plan #1	500.0	499.6	59.5	55.2	13.792	ES
Rio 20N - OWB - Plan #1	20,121.8	19,231.0	2,067.8	1,708.1	5.748	SF
Rio 21N - OWB - OWB	196.8	196.8	74.9	72.5	31.421	CC
Rio 21N - OWB - OWB	400.0	399.6	76.1	71.5	16.444	ES
Rio 21N - OWB - OWB	900.0	897.3	90.9	83.5	12.191	SF
Rio 21N - OWB - Plan #1	196.8	196.8	74.9	72.5	31.421	CC
Rio 21N - OWB - Plan #1	400.0	399.6	76.1	71.5	16.444	ES

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

PDC Energy Inc.
Anticollision Summary Report

Company:	GWP - PLANNING DB	Local Co-ordinate Reference:	Well Rio 15NA
Project:	ADAMS COUNTY	TVD Reference:	KB 28' @ 5095.0usft
Reference Site:	Rio Ivy	MD Reference:	KB 28' @ 5095.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Rio 15NA	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						
Rio Ivy						
Rio 21N - OWB - Plan #1	20,121.8	18,988.7	2,324.3	1,968.8	6.538	SF
Rio 22C - OWB - OWB	371.9	372.1	90.2	86.6	25.499	CC
Rio 22C - OWB - OWB	500.0	499.7	90.8	86.3	20.411	ES
Rio 22C - OWB - OWB	1,100.0	1,098.0	108.3	100.4	13.748	SF
Rio 22C - OWB - Plan #1	371.9	372.1	90.2	86.6	25.499	CC
Rio 22C - OWB - Plan #1	500.0	499.7	90.8	86.3	20.411	ES
Rio 22C - OWB - Plan #1	20,121.8	18,962.0	2,619.3	2,260.0	7.290	SF
Rio 23NA - OWB - OWB	0.0	0.0	105.6			
Rio 23NA - OWB - OWB	600.0	600.6	106.5	101.3	20.642	ES
Rio 23NA - OWB - OWB	1,100.0	1,095.9	134.8	126.8	17.003	SF
Rio 23NA - OWB - Plan #1	0.0	0.0	105.6			
Rio 23NA - OWB - Plan #1	600.0	600.6	106.5	101.3	20.642	ES
Rio 23NA - OWB - Plan #1	20,121.8	18,514.0	2,859.4	2,506.7	8.107	SF
Rio 24N - OWB - OWB	276.1	276.1	119.2	116.4	43.708	CC
Rio 24N - OWB - OWB	500.0	499.1	119.7	115.5	28.216	ES
Rio 24N - OWB - OWB	1,500.0	1,495.1	173.6	163.3	16.767	SF
Rio 24N - OWB - Plan #1	276.1	276.1	119.2	116.4	43.708	CC
Rio 24N - OWB - Plan #1	500.0	499.1	119.7	115.5	28.216	ES
Rio 24N - OWB - Plan #1	20,121.8	18,572.2	3,140.4	2,783.5	8.800	SF
Rio 25N - OWB - OWB	309.2	309.3	134.7	131.8	45.735	CC
Rio 25N - OWB - OWB	500.0	499.9	135.2	130.8	31.048	ES
Rio 25N - OWB - OWB	1,400.0	1,389.2	199.8	189.7	19.926	SF
Rio 25N - OWB - Plan #1	309.2	309.3	134.7	131.8	45.735	CC
Rio 25N - OWB - Plan #1	500.0	499.9	135.2	130.8	31.048	ES
Rio 25N - OWB - Plan #1	20,121.8	18,329.6	3,402.0	3,048.4	9.620	SF
Rio 26C - OWB - OWB	338.9	339.1	150.4	147.1	46.394	CC
Rio 26C - OWB - OWB	600.0	600.5	151.2	146.3	30.678	ES
Rio 26C - OWB - OWB	1,600.0	1,590.1	209.7	198.9	19.261	SF
Rio 26C - OWB - Plan #1	338.9	339.1	150.4	147.1	46.394	CC
Rio 26C - OWB - Plan #1	600.0	600.5	151.2	146.3	30.678	ES
Rio 26C - OWB - Plan #1	20,121.8	18,381.6	3,689.7	3,333.3	10.351	SF

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Anticollision Summary Report

Company:	GWP - PLANNING DB	Local Co-ordinate Reference:	Well Rio 15NA
Project:	ADAMS COUNTY	TVD Reference:	KB 28' @ 5095.0usft
Reference Site:	Rio Ivy	MD Reference:	KB 28' @ 5095.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Rio 15NA	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						
Rio Ivy Offsets						
ALBERT SACK #14-31 - OWB\ - OWB	186.4	140.5	1,579.9	1,578.1	874.754	CC
ALBERT SACK #14-31 - OWB\ - OWB	250.0	204.1	1,580.0	1,577.9	726.533	ES
ALBERT SACK #14-31 - OWB\ - OWB	15,500.0	4,937.9	9,944.3	9,850.4	105.880	SF
ALICIA #12-15H-5N - OWB - OWB	16,681.5	11,538.8	4,182.3	3,993.2	22.126	CC, ES
ALICIA #12-15H-5N - OWB - OWB	20,121.8	7,958.5	4,206.3	4,008.1	21.224	SF
ALICIA 12-15H-5N - OWB - OWB	20,121.8	4,798.0	5,106.9	4,944.2	31.388	CC, ES, SF
BEISEL (OWP) #42-1 - OWB - OWB	3,413.8	3,137.0	1,234.2	1,206.6	44.760	CC
BEISEL (OWP) #42-1 - OWB - OWB	3,475.2	3,176.3	1,235.1	1,206.4	43.073	ES
BEISEL (OWP) #42-1 - OWB - OWB	4,300.0	3,680.8	1,417.6	1,375.8	33.926	SF
Beisel Unit #1 - OWB - OWB	4,342.9	3,708.5	1,113.4	1,068.0	24.521	CC
Beisel Unit #1 - OWB - OWB	4,400.0	3,743.1	1,114.3	1,067.8	23.951	ES
Beisel Unit #1 - OWB - OWB	4,900.0	4,051.4	1,197.1	1,142.8	22.039	SF
BELLINGER #12-7 - OWB - OWB	18,581.7	5,162.0	5,101.3	4,961.4	36.448	CC
BELLINGER #12-7 - OWB - OWB	18,600.0	5,162.0	5,101.4	4,961.4	36.434	ES
BELLINGER #12-7 - OWB - OWB	19,200.0	5,162.0	5,138.7	4,996.8	36.221	SF
Bullwash #11-11 - OWB - OWB	18,415.0	5,100.0	3,333.7	3,178.8	21.527	CC
Bullwash #11-11 - OWB - OWB	18,500.0	5,100.0	3,334.8	3,177.7	21.229	ES
Bullwash #11-11 - OWB - OWB	19,700.0	5,100.0	3,572.8	3,387.6	19.293	SF
BYDALAK #1-11 - OWB - OWB	16,027.4	7,492.1	2,293.5	2,171.4	18.784	CC
BYDALAK #1-11 - OWB - OWB	16,100.0	7,492.7	2,294.7	2,169.5	18.331	ES
BYDALAK #1-11 - OWB - OWB	17,200.0	7,502.1	2,575.9	2,407.7	15.319	SF
CROFF (OWP) #12-5 - OWB - OWB	17,299.3	5,139.0	5,075.2	4,955.3	42.344	CC
CROFF (OWP) #12-5 - OWB - OWB	17,300.0	5,139.0	5,075.2	4,955.3	42.343	ES
CROFF (OWP) #12-5 - OWB - OWB	18,300.0	5,139.0	5,172.9	5,049.2	41.817	SF
Cundall #1 - OWB - OWB	15,600.0	7,432.5	3,011.8	2,888.1	24.360	SF
Cundall #1 - OWB - OWB	16,000.0	7,435.9	2,984.9	2,863.2	24.539	ES
Cundall #1 - OWB - OWB	16,001.6	7,435.9	2,984.9	2,863.2	24.540	CC
CUNDALL #5-12 - OWB - OWB	16,900.0	7,454.6	1,905.3	1,756.6	12.811	SF
CUNDALL #5-12 - OWB - OWB	17,280.6	7,457.8	1,866.9	1,724.5	13.107	CC, ES
CUNDALL #6-12 - OWB - OWB	17,000.0	7,444.4	3,151.6	3,008.5	22.024	SF
CUNDALL #6-12 - OWB - OWB	17,267.0	7,446.7	3,140.3	2,998.1	22.083	CC, ES
CUNDALL 11-12 #2 - OWB - OWB	15,500.0	7,441.6	1,774.9	1,642.9	13.450	SF
CUNDALL 11-12 #2 - OWB - OWB	15,990.1	7,445.8	1,705.9	1,584.5	14.045	CC, ES
EHLER #34-11-1 - OWB - OWB	19,970.8	7,487.7	756.5	568.8	4.031	CC
EHLER #34-11-1 - OWB - OWB	20,000.0	7,488.0	757.1	566.4	3.971	ES
EHLER #34-11-1 - OWB - OWB	20,121.8	7,489.0	771.4	570.0	3.829	SF
GASPAR #11-1 - OWB - OWB	8,479.3	6,265.9	601.3	473.7	4.710	CC
GASPAR #11-1 - OWB - OWB	8,500.0	6,278.9	601.5	473.5	4.699	ES, SF
IVEY #16-11 - OWB - OWB	19,800.0	7,585.3	364.7	147.8	1.681	Collision Risk Procedures Recommended
IVEY #16-11 - OWB - OWB	19,898.9	7,585.1	351.0	146.2	1.714	Collision Risk Procedures Recommended
Ivey LC 02-033HC - OWB - OWB	10,650.0	18,217.2	1,075.3	892.4	5.879	SF
Ivey LC 02-033HC - OWB - OWB	13,263.8	15,555.9	1,053.8	890.9	6.470	CC
Ivey LC 02-033HC - OWB - OWB	20,121.8	8,677.0	1,057.7	877.8	5.882	ES
Ivey LC 02-036HC - OWB - OWB	15,886.0	13,025.4	499.9	362.6	3.639	CC
Ivey LC 02-036HC - OWB - OWB	20,121.8	8,754.0	505.6	360.7	3.490	ES, SF
IVEY LC 26-362HC - OWB - OWB	20,121.8	7,659.0	320.9	128.9	1.671	Collision Risk Procedures Recommended
IVEY LC 26-362HC - ST01 - ST01	20,121.8	7,659.0	320.9	128.9	1.671	Collision Risk Procedures Recommended
Ivey LC 26-362HN - OWB - OWB	20,121.8	7,611.8	437.8	242.2	2.238	CC, ES, SF
Ivey LC 26-363HN - OWB - OWB	20,121.8	7,689.5	285.2	129.6	1.832	Collision Risk Procedures Recommended
Ivey LC 26-363HNN - OWB - OWB	20,121.8	7,594.5	371.9	197.7	2.136	CC, ES, SF
Ivey LC 26-365HC - OWB - OWB	20,121.8	7,691.8	452.8	287.4	2.737	CC, ES, SF
Ivey LC 26-366HN - OWB - OWB	20,121.8	7,591.9	766.3	585.6	4.241	CC, ES, SF
Ivey LC 26-366HN - ST01 - ST01	20,121.8	7,571.9	678.4	500.8	3.821	CC, ES, 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:	GWP - PLANNING DB	Local Co-ordinate Reference:	Well Rio 15NA
Project:	ADAMS COUNTY	TVD Reference:	KB 28' @ 5095.0usft
Reference Site:	Rio Ivy	MD Reference:	KB 28' @ 5095.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Rio 15NA	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						
Rio Ivy Offsets						
Ivey LC 26-366HNX - OWB - OWB	20,121.8	7,550.0	746.6	576.8	4.396	CC, ES, SF
Ivey LC 26-368HC - OWB - OWB	20,121.8	7,492.1	1,017.9	823.4	5.234	CC, ES, SF
Ivey LC 26-368HN - OWB - OWB	20,121.8	7,499.4	995.5	806.6	5.271	CC, ES, SF
Ivey Unit #1 - OWB - OWB	18,500.0	7,469.2	366.8	190.5	2.080	ES, SF
Ivey Unit #1 - OWB - OWB	18,583.7	7,469.9	357.2	193.0	2.176	CC
JOHNSON 1 - OWB - OWB	13,286.4	5,200.0	2,260.7	2,190.1	32.023	CC
JOHNSON 1 - OWB - OWB	13,300.0	5,200.0	2,260.8	2,190.1	31.989	ES
JOHNSON 1 - OWB - OWB	15,000.0	5,200.0	2,836.8	2,722.3	24.783	SF
LENART (OWP) #S-1 - OWB - OWB	16,596.9	5,137.0	5,615.2	5,502.2	49.703	CC
LENART (OWP) #S-1 - OWB - OWB	16,600.0	5,137.0	5,615.2	5,502.2	49.697	ES
LENART (OWP) #S-1 - OWB - OWB	18,400.0	5,137.0	5,897.6	5,773.8	47.670	SF
MALLO #1 - OWB - OWB	19,902.1	5,175.0	5,119.5	4,958.5	31.802	CC, ES
MALLO #1 - OWB - OWB	20,121.8	5,175.0	5,124.2	4,962.6	31.705	SF
Morrison #1 - OWB - OWB	8,300.0	5,100.0	3,406.1	3,289.5	29.216	SF
Morrison #1 - OWB - OWB	13,326.6	5,100.0	2,878.9	2,824.3	52.770	CC, ES
MORRISON 11-1 - OWB - OWB	12,000.0	7,604.7	3,311.2	3,192.1	27.820	SF
MORRISON 11-1 - OWB - OWB	13,400.0	7,618.8	2,996.7	2,894.0	29.186	ES
MORRISON 11-1 - OWB - OWB	13,408.6	7,618.9	2,996.7	2,894.0	29.194	CC
MORRISON 15-1 - OWB - OWB	4,302.6	3,690.2	4,096.6	4,051.7	91.251	CC
MORRISON 15-1 - OWB - OWB	4,400.0	3,749.8	4,097.3	4,050.5	87.543	ES
MORRISON 15-1 - OWB - OWB	16,200.0	7,428.6	4,678.6	4,569.5	42.905	SF
MORRISON 24-1 #3 - OWB - OWB	13,600.0	7,419.5	3,248.2	3,139.2	29.820	SF
MORRISON 24-1 #3 - OWB - OWB	14,660.4	7,428.5	3,070.2	2,969.4	30.454	CC, ES
MORRISON 33-1 #4 - OWB - OWB	4,423.9	3,760.4	3,095.4	3,048.1	65.491	CC
MORRISON 33-1 #4 - OWB - OWB	4,500.0	3,807.0	3,096.0	3,047.2	63.492	ES
MORRISON 33-1 #4 - OWB - OWB	6,900.0	5,276.3	3,662.6	3,577.4	42.974	SF
Morrison Investment #1 - OWB - OWB	13,900.0	7,434.0	1,822.2	1,702.8	15.261	SF
Morrison Investment #1 - OWB - OWB	14,600.0	7,440.0	1,669.4	1,568.5	16.537	ES
Morrison Investment #1 - OWB - OWB	14,631.0	7,440.2	1,669.1	1,568.7	16.627	CC
NORTH COLORADO #12-13 - OWB - OWB	20,121.8	7,507.9	2,927.1	2,707.7	13.341	CC, ES, SF
NORTH COLORADO #6 - OWB - OWB	20,121.8	7,520.0	3,122.5	2,913.0	14.903	CC, ES, SF
NORTH COLORADO BOULEVARD #3 - OWB - OWB	20,121.8	5,113.0	3,145.0	2,992.5	20.620	CC, ES, SF
NORTH COLORADO BOULEVARD UNIT #5 - OWB - OWB	20,121.8	5,300.0	4,843.5	4,663.6	26.915	CC, ES, SF
North York #1 - OWB - OWB	18,200.0	5,200.0	3,734.2	3,604.3	28.748	SF
North York #1 - OWB - OWB	18,541.4	5,200.0	3,718.5	3,589.5	28.818	CC, ES
NORTH YORK #11-12 - OWB - OWB	18,400.0	7,472.3	3,081.6	2,916.6	18.685	SF
NORTH YORK #11-12 - OWB - OWB	18,587.7	7,473.9	3,075.8	2,911.6	18.728	CC, ES
NORTH YORK #13-12-3 - OWB - OWB	19,700.0	7,474.4	1,663.0	1,470.5	8.638	SF
NORTH YORK #13-12-3 - OWB - OWB	19,900.0	7,476.1	1,643.2	1,454.2	8.696	ES
NORTH YORK #13-12-3 - OWB - OWB	19,963.9	7,476.7	1,641.9	1,454.4	8.754	CC
NORTH YORK #2 - OWB - OWB	19,600.0	5,200.0	2,843.6	2,709.5	21.211	SF
NORTH YORK #2 - OWB - OWB	20,048.3	5,200.0	2,808.0	2,677.0	21.424	CC, ES
NORTH YORK 13-12 - OWB - OWB	19,500.0	7,625.5	1,691.5	1,483.0	8.110	SF
NORTH YORK 13-12 - OWB - OWB	19,700.0	7,629.5	1,673.7	1,468.4	8.153	ES
NORTH YORK 13-12 - OWB - OWB	19,750.3	7,630.5	1,672.9	1,468.7	8.190	CC
NORTH YORK 14-12 - OWB - OWB	19,700.0	7,489.2	3,015.6	2,805.6	14.358	SF
NORTH YORK 14-12 - OWB - OWB	19,800.0	7,490.3	3,013.1	2,803.5	14.374	ES
NORTH YORK 14-12 - OWB - OWB	19,825.4	7,490.6	3,013.0	2,803.5	14.381	CC
REHFELD K UNIT #1 - OWB - OWB	14,000.0	7,469.9	195.0	64.0	1.489	Collision Avoidance Req., ES
REHFELD K UNIT #1 - OWB - OWB	14,101.0	7,470.7	166.8	74.2	1.801	Collision Risk Procedures Req., ES
REINHOLT (OWP) #12-6 - OWB - OWB	16,209.2	5,110.0	4,988.0	4,885.8	48.807	CC, ES
REINHOLT (OWP) #12-6 - OWB - OWB	17,900.0	5,110.0	5,266.8	5,155.6	47.348	SF
Rio LC 12-242HC - OWB - OWB	125.3	118.7	138.5	137.3	112.129	CC

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

PDC Energy Inc.
Anticollision Summary Report

Company:	GWP - PLANNING DB	Local Co-ordinate Reference:	Well Rio 15NA
Project:	ADAMS COUNTY	TVD Reference:	KB 28' @ 5095.0usft
Reference Site:	Rio Ivy	MD Reference:	KB 28' @ 5095.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Rio 15NA	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						
Rio Ivy Offsets						
Rio LC 12-242HC - OWB - OWB	250.0	243.1	138.7	135.9	49.968	ES
Rio LC 12-242HC - OWB - OWB	1,200.0	1,189.1	211.3	202.0	22.812	SF
Rio LC 12-332HN - OWB - OWB	100.0	93.1	95.0	94.1	114.581	CC
Rio LC 12-332HN - OWB - OWB	250.0	242.8	95.2	92.5	35.417	ES
Rio LC 12-332HN - OWB - OWB	900.0	891.1	135.2	128.0	18.658	SF
Rio LC 12-362HN - OWB - OWB	335.6	330.5	148.6	145.1	43.178	CC
Rio LC 12-362HN - OWB - OWB	400.0	394.5	148.9	144.9	37.768	ES
Rio LC 12-362HN - OWB - OWB	20,121.8	17,660.0	5,800.2	5,442.4	16.213	SF
Rio LC 12-363HN - OWB - OWB	251.9	245.4	127.4	124.7	46.953	CC
Rio LC 12-363HN - OWB - OWB	300.0	293.2	127.6	124.6	42.311	ES
Rio LC 12-363HN - OWB - OWB	20,121.8	17,368.3	5,690.2	5,344.6	16.468	SF
Rio LC 12-363HNX - OWB - OWB	0.0	0.0	117.3			
Rio LC 12-363HNX - OWB - OWB	300.0	293.2	117.7	114.8	39.385	ES
Rio LC 12-363HNX - OWB - OWB	20,121.8	17,377.4	5,528.7	5,175.7	15.661	SF
Rio LC 12-365HC - OWB - OWB	223.9	217.4	107.6	105.0	41.692	CC
Rio LC 12-365HC - OWB - OWB	250.0	243.1	107.7	104.9	39.092	ES
Rio LC 12-365HC - OWB - OWB	20,121.8	17,859.3	5,268.0	4,913.9	14.877	SF
Rio LC 12-365HN - OWB - OWB	100.0	93.0	101.0	100.2	121.858	CC
Rio LC 12-365HN - OWB - OWB	200.0	192.4	101.7	99.3	42.003	ES
Rio LC 12-365HN - OWB - OWB	20,121.8	17,507.0	5,163.0	4,813.9	14.792	SF
Rio LC 12-366HN - OWB - OWB	161.9	154.9	94.3	92.5	52.423	CC
Rio LC 12-366HN - OWB - OWB	250.0	242.8	94.5	91.7	34.153	ES
Rio LC 12-366HN - OWB - OWB	20,121.8	17,674.6	4,876.8	4,527.5	13.963	SF
Rio LC 12-366HN - ST01 - ST01	161.9	154.9	94.3	92.5	52.423	CC
Rio LC 12-366HN - ST01 - ST01	250.0	242.8	94.5	91.7	34.153	ES
Rio LC 12-366HN - ST01 - ST01	20,121.8	17,751.6	4,803.2	4,451.3	13.651	SF
Rio LC 12-366HNX - OWB - OWB	305.2	299.4	89.9	86.8	28.527	CC
Rio LC 12-366HNX - OWB - OWB	400.0	394.4	90.6	86.6	23.085	ES
Rio LC 12-366HNX - OWB - OWB	20,121.8	17,498.6	4,768.4	4,417.7	13.596	SF
Rio LC 12-368HC - OWB - OWB	100.0	93.1	90.1	89.2	108.836	CC
Rio LC 12-368HC - OWB - OWB	200.0	192.8	90.6	88.1	37.388	ES
Rio LC 12-368HC - OWB - OWB	20,100.0	17,951.0	4,523.0	4,171.8	12.879	SF
Rio LC 12-368HN - OWB - OWB	304.5	298.8	89.4	86.2	27.788	CC, ES
Rio LC 12-368HN - OWB - OWB	20,121.8	17,728.0	4,391.0	4,039.6	12.496	SF
Rio LC 12-369HNX - OWB - OWB	338.6	333.3	99.9	96.2	26.724	CC
Rio LC 12-369HNX - OWB - OWB	400.0	394.9	100.2	96.0	23.994	ES
Rio LC 12-369HNX - OWB - OWB	20,121.8	17,890.5	4,004.9	3,649.9	11.282	SF
Rio LC 12-376HN - OWB - OWB	175.7	156.9	30.2	28.3	15.639	CC
Rio LC 12-376HN - OWB - OWB	250.0	231.0	30.4	27.8	11.831	ES
Rio LC 12-376HN - OWB - OWB	800.0	781.1	40.1	33.7	6.247	SF
RUBY 2 - OWB - OWB	18,608.8	7,703.8	4,360.2	4,180.5	24.272	CC, ES
RUBY 2 - OWB - OWB	18,700.0	7,703.5	4,361.1	4,181.4	24.262	SF
Sack #1 - OWB - OWB	15,900.0	7,464.0	426.6	284.3	2.998	SF
Sack #1 - OWB - OWB	16,000.0	7,464.9	403.8	275.3	3.143	ES
Sack #1 - OWB - OWB	16,044.5	7,465.3	401.4	279.0	3.281	CC
SACK #4N-30HZ - OWB - OWB	371.4	344.6	1,160.0	1,156.2	305.971	CC
SACK #4N-30HZ - OWB - OWB	400.0	370.5	1,160.1	1,156.1	291.084	ES
SACK #4N-30HZ - OWB - OWB	3,900.0	3,471.9	1,959.8	1,924.3	55.198	SF
SACK (OWP) #11-6 - OWB - OWB	263.2	241.2	526.3	523.3	178.233	CC
SACK (OWP) #11-6 - OWB - OWB	300.0	277.4	526.4	523.2	164.610	ES
SACK (OWP) #11-6 - OWB - OWB	2,800.0	2,715.3	1,021.3	999.1	46.038	SF
SACK 7-11 - OWB - OWB	17,382.2	7,491.7	1,009.9	865.8	7.006	CC
SACK 7-11 - OWB - OWB	17,500.0	7,492.7	1,016.8	863.4	6.631	ES

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

PDC Energy Inc.
Anticollision Summary Report

Company:	GWP - PLANNING DB	Local Co-ordinate Reference:	Well Rio 15NA
Project:	ADAMS COUNTY	TVD Reference:	KB 28' @ 5095.0usft
Reference Site:	Rio Ivy	MD Reference:	KB 28' @ 5095.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Rio 15NA	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

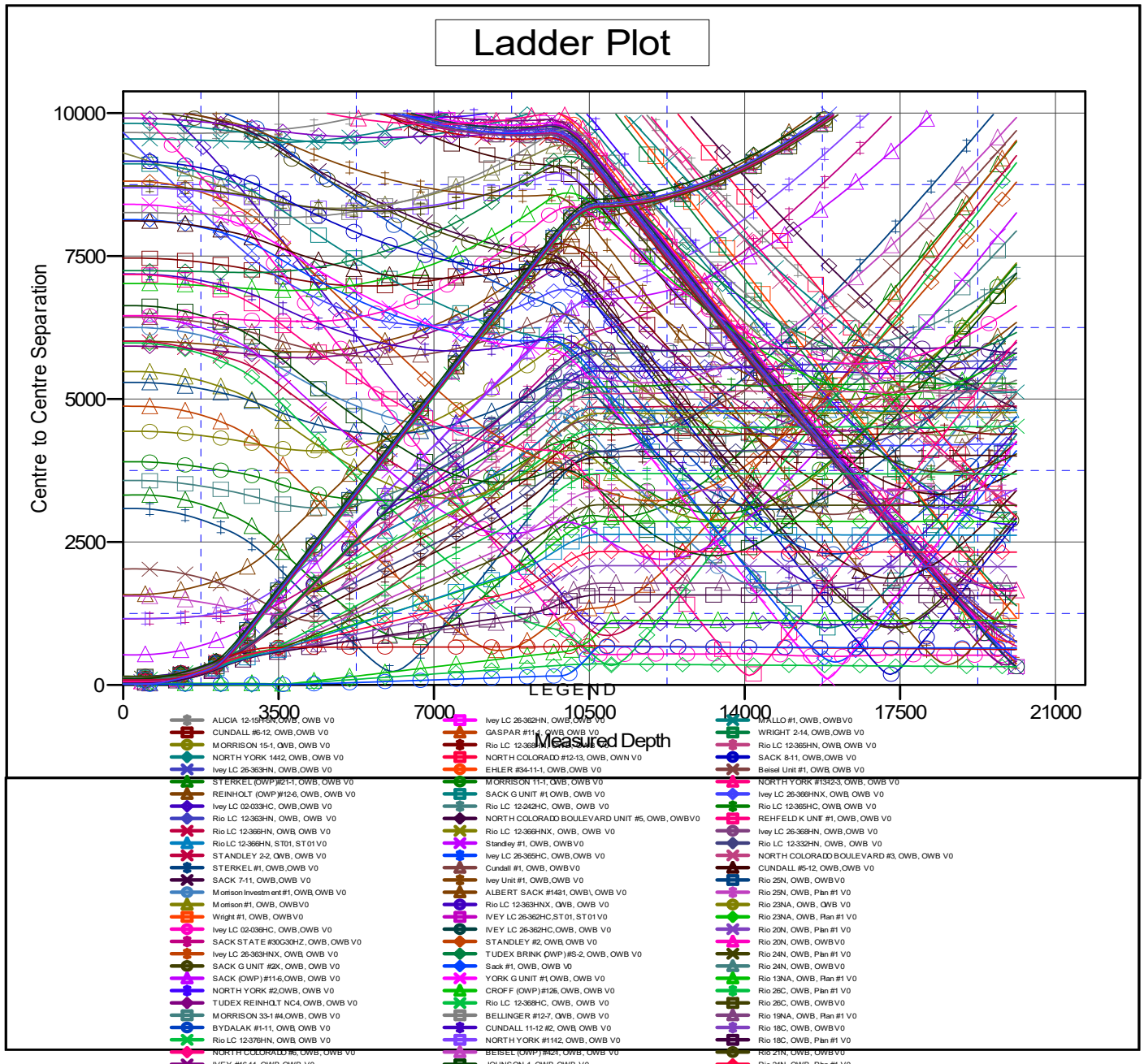
Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Rio Ivy Offsets						
SACK 7-11 - OWB - OWB	17,800.0	7,495.2	1,092.9	919.7	6.309	SF
SACK 8-11 - OWB - OWB	17,200.0	7,472.1	202.3	37.7	1.229	Collision Avoidance Req., ES
SACK 8-11 - OWB - OWB	17,278.6	7,472.8	186.4	44.0	1.309	Collision Avoidance Req., CC
SACK G UNIT #1 - OWB - OWB	15,863.4	7,495.7	999.4	879.9	8.363	CC
SACK G UNIT #1 - OWB - OWB	15,900.0	7,496.0	1,000.1	877.8	8.178	ES
SACK G UNIT #1 - OWB - OWB	16,300.0	7,499.4	1,090.6	938.3	7.164	SF
SACK G UNIT #2-X - OWB - OWB	17,298.0	7,487.9	1,001.2	858.4	7.013	CC
SACK G UNIT #2-X - OWB - OWB	17,400.0	7,488.8	1,006.4	855.6	6.675	ES
SACK G UNIT #2-X - OWB - OWB	17,700.0	7,491.4	1,078.9	907.6	6.300	SF
SACK STATE #30C-30HZ - OWB - OWB	100.0	69.1	1,156.2	1,155.2	1,087.378	CC
SACK STATE #30C-30HZ - OWB - OWB	250.0	212.5	1,156.7	1,153.7	389.935	ES
SACK STATE #30C-30HZ - OWB - OWB	4,400.0	4,062.1	1,828.8	1,784.3	41.101	SF
Standley #1 - OWB - OWB	9,200.0	5,251.0	2,694.3	2,575.0	22.582	SF
Standley #1 - OWB - OWB	12,163.6	5,251.0	2,196.9	2,131.2	33.459	CC
Standley #1 - OWB - OWB	12,200.0	5,251.0	2,197.2	2,131.2	33.309	ES
STANDLEY #2 - OWB - OWB	11,939.7	5,192.0	3,220.6	3,136.0	38.085	CC
STANDLEY #2 - OWB - OWB	12,000.0	5,192.0	3,221.2	3,135.8	37.727	ES
STANDLEY #2 - OWB - OWB	14,200.0	5,192.0	3,934.6	3,796.1	28.408	SF
STANDLEY 1-2 - OWB - OWB	10,996.1	7,476.5	341.9	271.8	4.883	CC
STANDLEY 1-2 - OWB - OWB	11,000.0	7,476.5	341.9	271.8	4.881	ES
STANDLEY 1-2 - OWB - OWB	11,300.0	7,480.6	457.4	330.1	3.592	SF
STANDLEY 2-2 - OWB - OWB	10,906.9	7,674.3	867.2	792.6	11.617	CC, ES
STANDLEY 2-2 - OWB - OWB	11,600.0	7,678.0	1,110.1	975.9	8.270	SF
STERKEL #1 - OWB - OWB	6,072.6	4,789.8	236.5	156.6	2.960	CC, ES
STERKEL #1 - OWB - OWB	6,100.0	4,806.6	237.5	157.3	2.960	SF
STERKEL (OWP) #21-1 - OWB - OWB	6,421.8	5,000.0	801.4	714.4	9.206	CC, ES
STERKEL (OWP) #21-1 - OWB - OWB	6,600.0	5,107.5	813.7	723.9	9.064	SF
TUDEX BRINK (OWP) #S-2 - OWB - OWB	17,672.4	5,178.0	5,655.4	5,527.1	44.082	CC
TUDEX BRINK (OWP) #S-2 - OWB - OWB	17,700.0	5,178.0	5,655.5	5,527.1	44.040	ES
TUDEX BRINK (OWP) #S-2 - OWB - OWB	18,900.0	5,178.0	5,787.1	5,652.9	43.108	SF
TUDEX REINHOLT NC4 - OWB - OWB	16,100.5	7,461.3	4,438.5	4,314.7	35.852	CC, ES
TUDEX REINHOLT NC4 - OWB - OWB	16,500.0	7,463.6	4,456.5	4,331.8	35.763	SF
Wright #1 - OWB - OWB	20,121.8	7,502.0	1,175.5	988.4	6.280	CC, ES, SF
WRIGHT 2-14 - OWB - OWB	20,121.8	7,497.0	1,385.8	1,246.0	9.909	CC, ES, SF
YORK G UNIT #1 - OWB - OWB	15,860.9	7,474.7	109.4	-10.0	0.916	No-Go Zone - Stop Drilling, CC
YORK G UNIT #1 - OWB - OWB	15,900.0	7,475.0	116.2	-26.0	0.817	No-Go Zone - Stop Drilling, ES

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

Anticollision Summary Report

Company:	GWP - PLANNING DB	Local Co-ordinate Reference:	Well Rio 15NA
Project:	ADAMS COUNTY	TVD Reference:	KB 28' @ 5095.0usft
Reference Site:	Rio Ivy	MD Reference:	KB 28' @ 5095.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Rio 15NA	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

Grid Convergence at Surface is: 0.36°



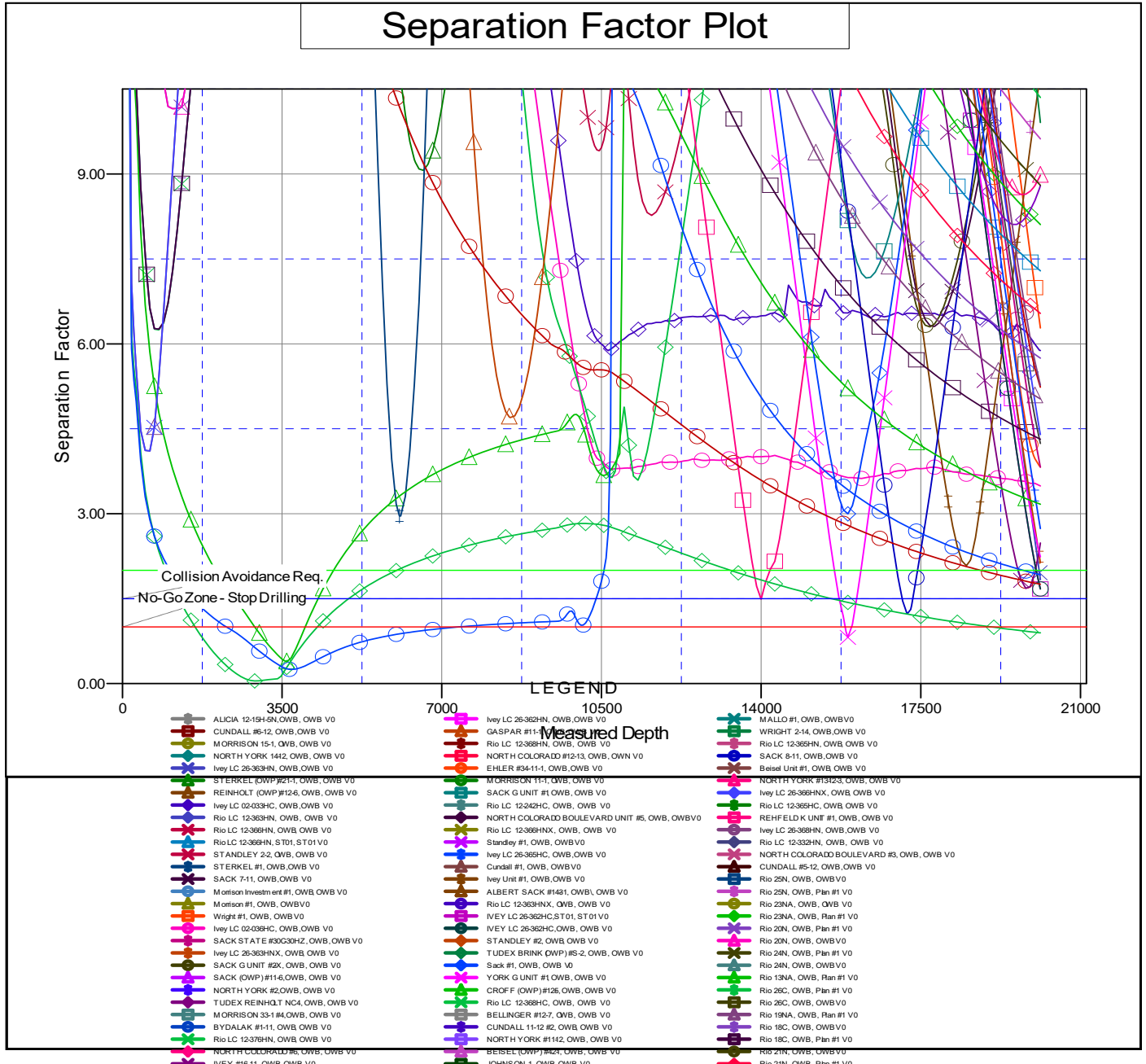
CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

PDC Energy Inc.
Anticollision Summary Report

Company:	GWP - PLANNING DB	Local Co-ordinate Reference:	Well Rio 15NA
Project:	ADAMS COUNTY	TVD Reference:	KB 28' @ 5095.0usft
Reference Site:	Rio Ivy	MD Reference:	KB 28' @ 5095.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Rio 15NA	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 28' @ 5095.0usft
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: Rio 15NA
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.36°



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