



Project: WELD COUNTY, COLORADO
Site: SE SW SEC. 3 T4N R64W 6th P.M.
Well: POPHAM 9N
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

ANNOTATIONS								
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	SHL: 1047ft FSL & 2206ft FWL of Sec 3
400.0	400.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)
995.8	1000.2	12.00	183.58	-62.5	-3.9	-62.5	62.6	EOB TO 12° INC
5256.0	5355.6	12.00	183.58	-966.6	-60.5	-967.0	968.5	END OF TANGENT
5851.8	5955.8	0.00	0.00	-1029.1	-64.4	-1029.5	1031.1	EOD TO VERTICAL
6007.8	6111.8	0.00	0.00	-1029.1	-64.4	-1029.5	1031.1	KOP (8°/100ft BUR)
6724.0	7239.7	90.23	0.98	-310.1	-52.1	-310.5	1750.2	HZ LP: 737ft FSL & 2160ft FWL of Sec 3
6704.0	12137.9	90.24	0.97	4587.3	31.2	4587.4	6648.3	BHL: 370ft FSL & 2005ft FWL of Sec 34

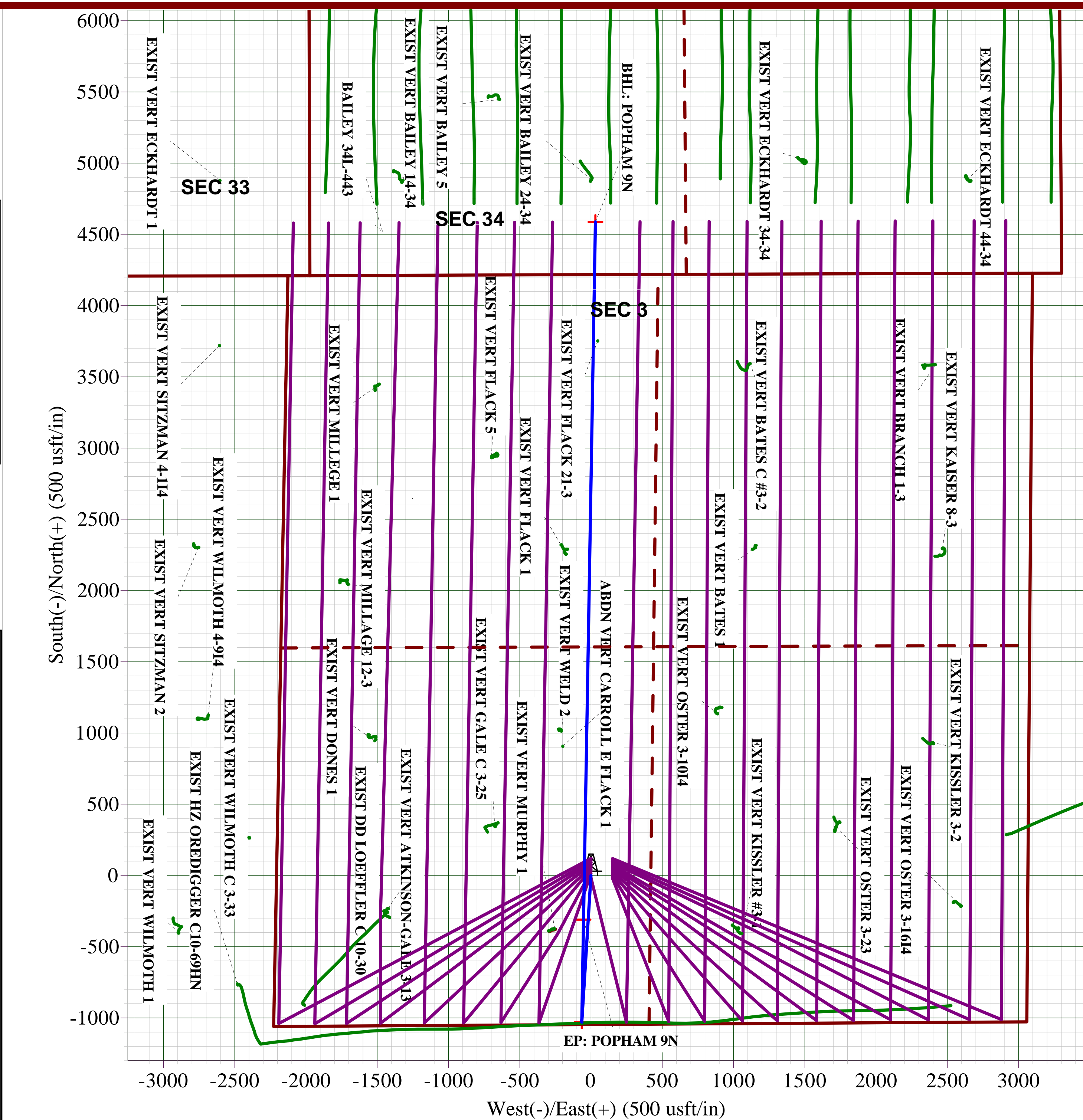
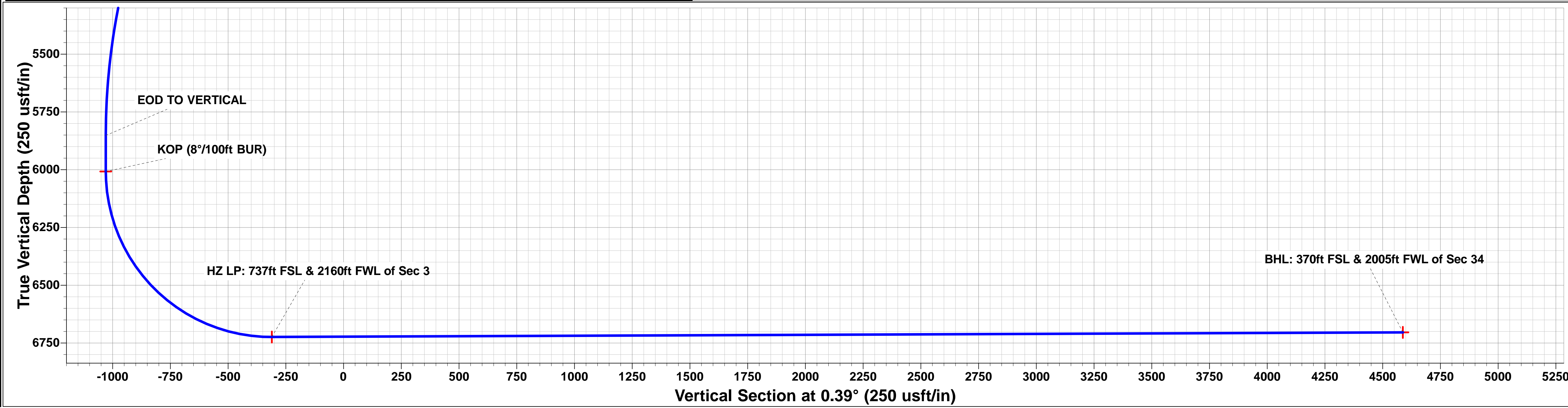
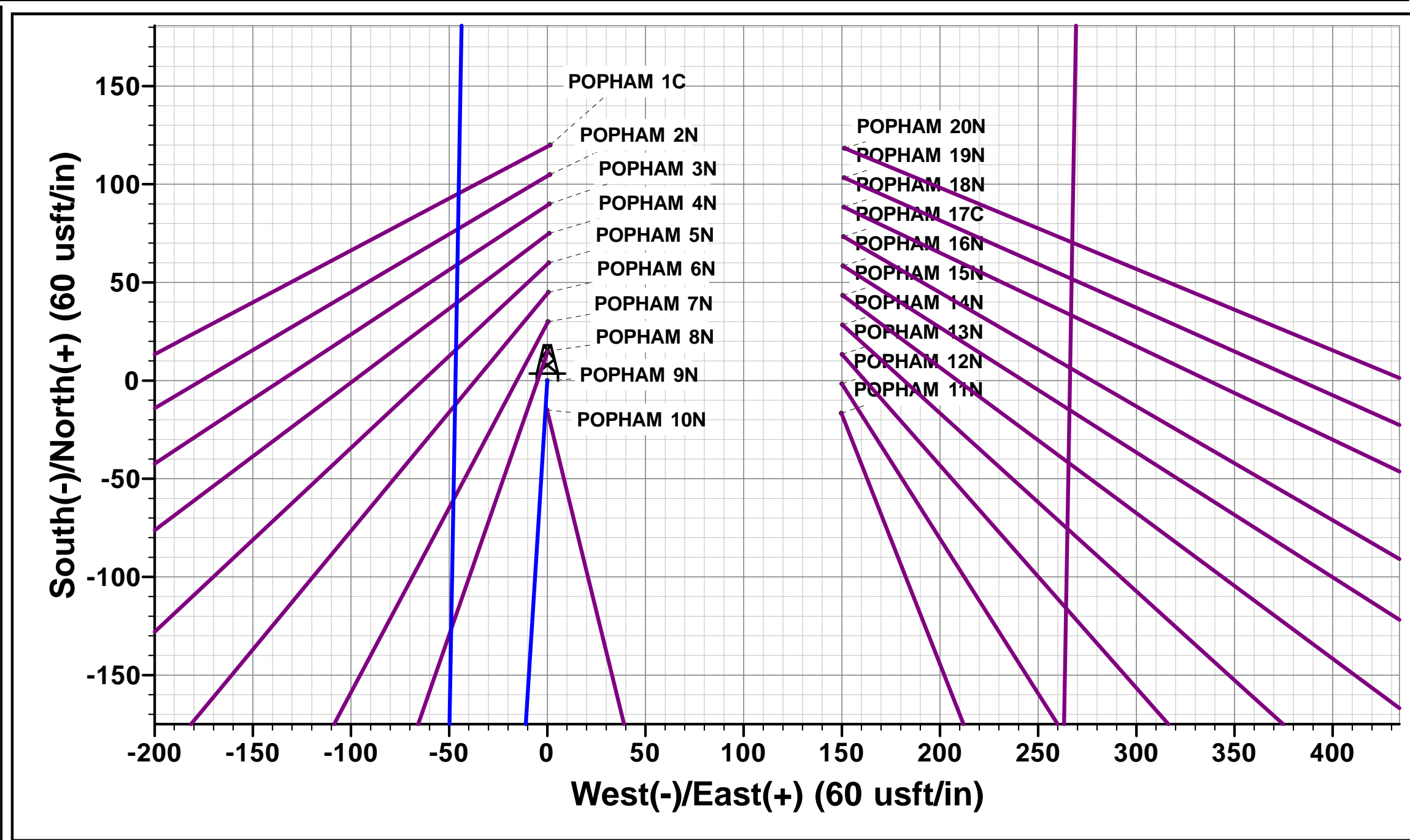
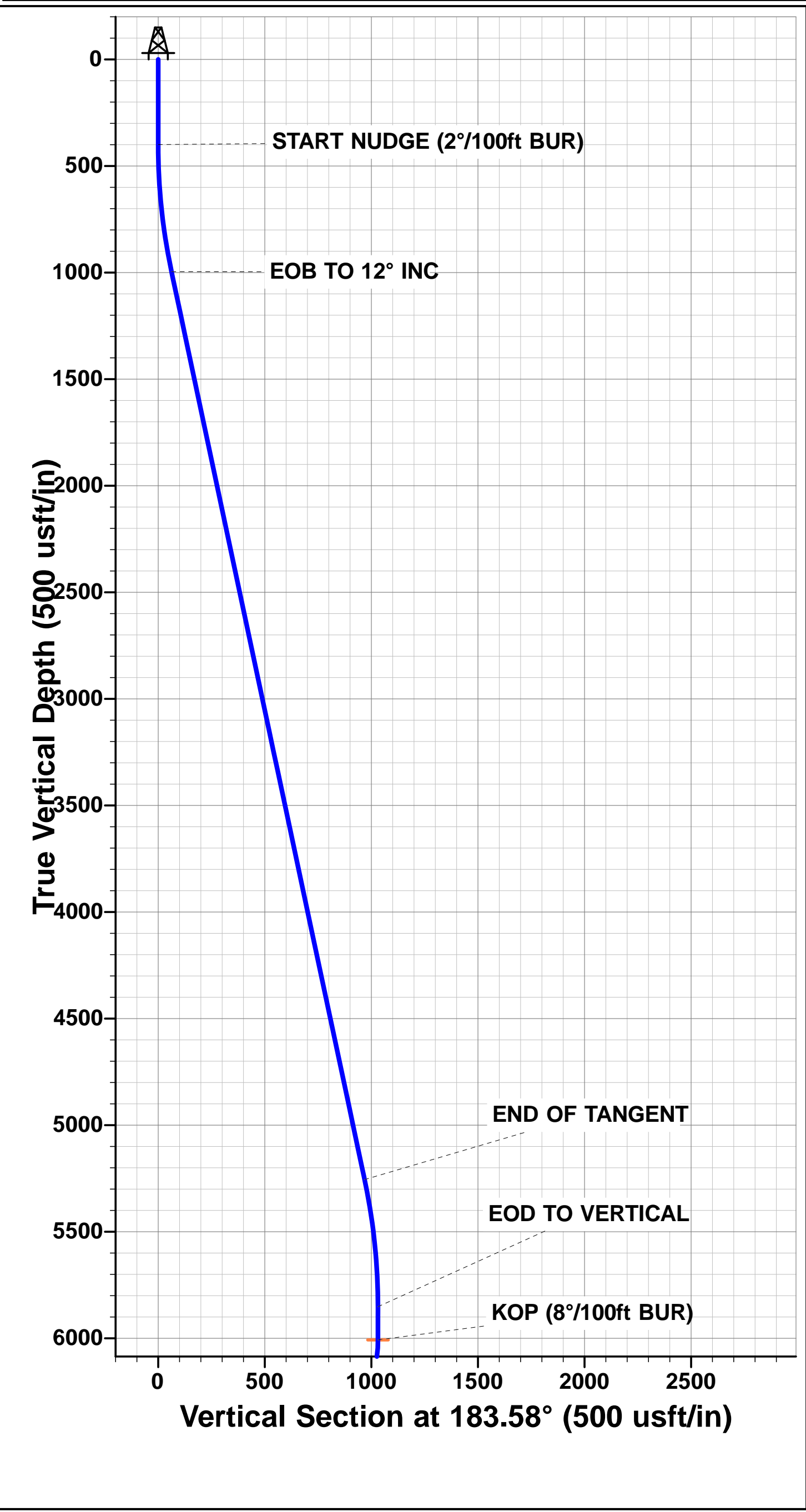
PROPOSED LOCAL COORDINATES:

SHL: 1047ft FSL & 2206ft FWL of Sec 3

HZ LP: 737ft FSL & 2160ft FWL of Sec 3

BHL: 370ft FSL & 2005ft FWL of Sec 34

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP: POPHAM 9N	6007.8	-1029.1	-64.4	40.334173	-104.538281
EP: POPHAM 9N	6724.0	-310.1	-52.1	40.336146	-104.538237
BHL: POPHAM 9N	6704.0	4587.3	31.2	40.349589	-104.537938



PDC ENERGY

**WELD COUNTY, COLORADO
SE SW SEC. 3 T4N R64W 6th P.M.
POPHAM 9N**

**ORIGINAL WELLBORE
PROPOSAL #1**

Anticollision Report

19 September, 2017



Anticollision Report



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well POPHAM 9N
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4684.0usft (Original Well Elev)
Reference Site:	SE SW SEC. 3 T4N R64W 6th P.M.	MD Reference:	KB-EST @ 4684.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	POPHAM 9N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #1	Offset TVD Reference:	Offset Datum

Reference	PROPOSAL #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.0usft	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:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	19/09/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	12,137.9	PROPOSAL #1 (ORIGINAL WELLBORE)	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						
SE SW SEC. 3 T4N R64W 6th P.M.						
POPHAM 10N - ORIGINAL WELLBORE - PROPOSAL #	266.3	267.3	15.0	14.1	16.223 CC	
POPHAM 10N - ORIGINAL WELLBORE - PROPOSAL #	300.0	301.0	15.0	13.9	13.941 ES	
POPHAM 10N - ORIGINAL WELLBORE - PROPOSAL #	12,138.8	12,086.7	320.6	134.4	1.722 SF	
POPHAM 11N - ORIGINAL WELLBORE - PROPOSAL #	300.0	298.0	150.7	149.6	141.163 CC, ES	
POPHAM 11N - ORIGINAL WELLBORE - PROPOSAL #	12,138.8	12,137.3	544.9	347.5	2.761 SF	
POPHAM 12N - ORIGINAL WELLBORE - PROPOSAL #	400.0	399.0	150.0	148.5	98.717 CC, ES	
POPHAM 12N - ORIGINAL WELLBORE - PROPOSAL #	12,138.8	12,098.5	801.1	607.6	4.142 SF	
POPHAM 13N - ORIGINAL WELLBORE - PROPOSAL #	400.0	398.0	150.7	149.2	99.341 CC	
POPHAM 13N - ORIGINAL WELLBORE - PROPOSAL #	500.0	498.0	151.0	149.1	77.840 ES	
POPHAM 13N - ORIGINAL WELLBORE - PROPOSAL #	12,138.8	12,211.8	1,063.9	870.4	5.499 SF	
POPHAM 14N - ORIGINAL WELLBORE - PROPOSAL #	400.0	398.0	153.0	151.5	100.847 CC, ES	
POPHAM 14N - ORIGINAL WELLBORE - PROPOSAL #	12,138.8	12,205.0	1,309.7	1,120.4	6.918 SF	
POPHAM 15N - ORIGINAL WELLBORE - PROPOSAL #	400.0	399.0	156.6	155.1	103.087 CC, ES	
POPHAM 15N - ORIGINAL WELLBORE - PROPOSAL #	12,138.8	12,349.2	1,583.8	1,390.8	8.206 SF	
POPHAM 16N - ORIGINAL WELLBORE - PROPOSAL #	400.0	399.0	161.6	160.1	106.349 CC, ES	
POPHAM 16N - ORIGINAL WELLBORE - PROPOSAL #	12,138.8	12,403.8	1,844.1	1,650.5	9.525 SF	
POPHAM 17C - ORIGINAL WELLBORE - PROPOSAL #	400.0	399.0	167.7	166.2	110.397 CC, ES	
POPHAM 17C - ORIGINAL WELLBORE - PROPOSAL #	12,138.8	12,631.0	2,105.6	1,912.0	10.879 SF	
POPHAM 18N - ORIGINAL WELLBORE - PROPOSAL #	400.0	399.0	175.0	173.5	115.180 CC, ES	
POPHAM 18N - ORIGINAL WELLBORE - PROPOSAL #	12,138.8	12,638.3	2,369.0	2,171.0	11.969 SF	
POPHAM 19N - ORIGINAL WELLBORE - PROPOSAL #	400.0	399.0	183.2	181.6	120.546 CC, ES	
POPHAM 19N - ORIGINAL WELLBORE - PROPOSAL #	12,138.8	12,812.5	2,657.7	2,463.2	13.669 SF	
POPHAM 1C - ORIGINAL WELLBORE - PROPOSAL #1	400.0	401.0	120.0	118.5	78.734 CC, ES	
POPHAM 1C - ORIGINAL WELLBORE - PROPOSAL #1	12,138.8	12,832.6	2,122.9	1,941.6	11.707 SF	
POPHAM 20N - ORIGINAL WELLBORE - PROPOSAL #	400.0	399.0	192.2	190.6	126.375 CC, ES	
POPHAM 20N - ORIGINAL WELLBORE - PROPOSAL #	12,138.8	12,916.3	2,880.6	2,685.9	14.795 SF	
POPHAM 2N - ORIGINAL WELLBORE - PROPOSAL #1	400.0	401.0	104.9	103.4	68.852 CC, ES	
POPHAM 2N - ORIGINAL WELLBORE - PROPOSAL #1	12,138.8	12,551.9	1,873.9	1,684.6	9.898 SF	
POPHAM 3N - ORIGINAL WELLBORE - PROPOSAL #1	400.0	401.0	90.0	88.5	59.052 CC, ES	
POPHAM 3N - ORIGINAL WELLBORE - PROPOSAL #1	12,138.8	12,502.5	1,650.6	1,460.9	8.699 SF	
POPHAM 4N - ORIGINAL WELLBORE - PROPOSAL #1	400.0	401.0	75.0	73.5	49.226 CC, ES	
POPHAM 4N - ORIGINAL WELLBORE - PROPOSAL #1	12,138.8	12,369.5	1,379.5	1,190.1	7.285 SF	
POPHAM 5N - ORIGINAL WELLBORE - PROPOSAL #1	400.0	401.0	60.0	58.5	39.373 CC, ES	
POPHAM 5N - ORIGINAL WELLBORE - PROPOSAL #1	12,138.8	12,319.8	1,104.8	914.3	5.800 SF	
POPHAM 6N - ORIGINAL WELLBORE - PROPOSAL #1	400.0	401.0	45.0	43.5	29.526 CC, ES	
POPHAM 6N - ORIGINAL WELLBORE - PROPOSAL #1	12,138.8	12,189.4	831.8	644.3	4.438 SF	
POPHAM 7N - ORIGINAL WELLBORE - PROPOSAL #1	400.0	401.0	30.0	28.5	19.700 CC, ES	

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

Company:	PDC ENERGY	Local Co-ordinate Reference:	Well POPHAM 9N
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4684.0usft (Original Well Elev)
Reference Site:	SE SW SEC. 3 T4N R64W 6th P.M.	MD Reference:	KB-EST @ 4684.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	POPHAM 9N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #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						
SE SW SEC. 3 T4N R64W 6th P.M.						
POPHAM 7N - ORIGINAL WELLBORE - PROPOSAL #1	12,138.8	12,204.0	566.9	375.4	2.960	SF
POPHAM 8N - ORIGINAL WELLBORE - PROPOSAL #1	400.0	401.0	15.0	13.5	9.826	CC, ES
POPHAM 8N - ORIGINAL WELLBORE - PROPOSAL #1	12,138.8	12,123.9	308.0	117.6	1.618	SF

Company:	PDC ENERGY	Local Co-ordinate Reference:	Well POPHAM 9N
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Site Error:	0.0 usft	North Reference:	True
Reference Well:	POPHAM 9N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #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						
SE SW SEC. 3 T4N R64W 6th P.M. (OFFSETS FOR POPHAM)						
ABDN VERT HOFF 31-10 - Wellbore #1 - Wellbore #1	6,111.8	5,972.7	1,259.7	1,235.7	52.406	ES, SF
ABDN VERT HOFF 31-10 - Wellbore #1 - Wellbore #1	6,115.3	5,976.2	1,259.7	1,235.8	52.647	CC
EXIST DD HOFFMAN C 02-33D - Wellbore #1 - Wellbore	7,886.7	7,563.3	2,960.6	2,907.0	55.157	CC
EXIST DD HOFFMAN C 02-33D - Wellbore #1 - Wellbore	7,900.0	7,563.1	2,960.7	2,906.9	55.032	ES
EXIST DD HOFFMAN C 02-33D - Wellbore #1 - Wellbore	11,500.0	7,518.1	4,671.2	4,555.0	40.193	SF
EXIST HZ SUDEN 34M-223 - Wellbore #1 - Wellbore #1	12,138.8	11,092.0	1,097.4	918.7	6.143	CC, ES, SF
EXIST HZ SUDEN 34M-423 - Wellbore #1 - Wellbore #1	12,138.8	11,065.0	935.5	760.6	5.348	CC, ES, SF
EXIST HZ SUDEN 34R-203 - Wellbore #1 - Wellbore #1	12,138.8	11,081.0	1,799.9	1,621.4	10.081	CC, ES, SF
EXIST HZ SUDEN 34R-323 - Wellbore #1 - Wellbore #1	12,138.8	11,162.0	2,363.0	2,182.1	13.063	CC, ES, SF
EXIST HZ SUDEN 34R-343 - Wellbore #1 - Wellbore #1	12,138.8	11,135.0	1,547.6	1,368.8	8.655	CC, ES, SF
EXIST HZ SUDEN 34R-423 - Wellbore #1 - Wellbore #1	12,138.8	11,245.0	2,197.1	2,016.4	12.157	CC, ES, SF
EXIST HZ SUDEN 34U-243 - Wellbore #1 - Wellbore #1	12,138.8	11,118.0	2,861.0	2,680.1	15.816	CC, ES, SF
EXIST HZ SUDEN 34U-403 - Wellbore #1 - Wellbore #1	12,138.8	11,309.0	3,201.9	3,020.9	17.692	CC, ES, SF
EXIST VERT BATES 1 - Wellbore #1 - Wellbore #1	9,886.8	6,680.3	1,166.2	1,110.1	20.759	CC
EXIST VERT BATES 1 - Wellbore #1 - Wellbore #1	9,900.0	6,680.2	1,166.3	1,109.9	20.670	ES
EXIST VERT BATES 1 - Wellbore #1 - Wellbore #1	10,300.0	6,679.1	1,237.3	1,173.4	19.358	SF
EXIST VERT BATES C #3-2 - Wellbore #1 - Wellbore #1	11,171.2	6,711.2	1,013.9	933.0	12.530	CC
EXIST VERT BATES C #3-2 - Wellbore #1 - Wellbore #1	11,200.0	6,712.6	1,014.3	932.8	12.450	ES
EXIST VERT BATES C #3-2 - Wellbore #1 - Wellbore #1	11,400.0	6,723.0	1,039.3	954.0	12.182	SF
EXIST VERT BRANCH 1-3 - Wellbore #1 - Wellbore #1	11,159.1	6,656.8	2,328.2	2,247.9	28.979	CC
EXIST VERT BRANCH 1-3 - Wellbore #1 - Wellbore #1	11,200.0	6,655.7	2,328.6	2,247.5	28.702	ES
EXIST VERT BRANCH 1-3 - Wellbore #1 - Wellbore #1	12,137.9	6,628.7	2,525.5	2,426.2	25.433	SF
EXIST VERT ECKHARDT 34-34 - Wellbore #1 - Wellbor	12,138.8	6,475.0	1,500.2	1,401.5	15.187	CC, ES, SF
EXIST VERT ECKHARDT 44-34 - Wellbore #1 - Wellbor	12,138.8	6,300.0	2,639.5	2,540.8	26.737	CC, ES, SF
EXIST VERT FLACK 1 - Wellbore #1 - Wellbore #1	9,867.2	6,650.0	213.5	158.7	3.896	CC, ES, SF
EXIST VERT FLACK 5 - Wellbore #1 - Wellbore #1	10,470.6	6,691.1	700.6	633.5	10.447	CC, ES
EXIST VERT FLACK 5 - Wellbore #1 - Wellbore #1	10,600.0	6,691.4	712.4	642.9	10.248	SF
EXIST VERT GALE C 3-25 - Wellbore #1 - Wellbore #1	7,842.4	6,700.0	683.5	659.9	28.904	CC, ES
EXIST VERT GALE C 3-25 - Wellbore #1 - Wellbore #1	8,100.0	6,700.0	730.5	704.1	27.658	SF
EXIST VERT KAISER 8-3 - Wellbore #1 - Wellbore #1	9,831.9	6,750.0	2,422.2	2,367.0	43.908	CC
EXIST VERT KAISER 8-3 - Wellbore #1 - Wellbore #1	9,900.0	6,750.0	2,423.1	2,366.7	42.943	ES
EXIST VERT KAISER 8-3 - Wellbore #1 - Wellbore #1	11,900.0	6,750.0	3,185.1	3,090.4	33.653	SF
EXIST VERT KISSLER #3-1 - Wellbore #1 - Wellbore #1	7,050.0	6,675.0	1,056.7	1,034.8	48.181	SF
EXIST VERT KISSLER #3-1 - Wellbore #1 - Wellbore #1	7,220.2	6,700.0	1,043.2	1,021.6	48.304	CC, ES
EXIST VERT KISSLER 3-2 - Wellbore #1 - Wellbore #1	8,551.5	6,800.0	2,360.1	2,327.0	71.348	CC
EXIST VERT KISSLER 3-2 - Wellbore #1 - Wellbore #1	8,600.0	6,800.0	2,360.6	2,326.7	69.782	ES
EXIST VERT KISSLER 3-2 - Wellbore #1 - Wellbore #1	12,137.9	6,800.0	4,293.4	4,194.0	43.202	SF
EXIST VERT MURPHY 1 - Wellbore #1 - Wellbore #1	2,665.6	2,607.3	245.0	234.2	22.746	CC
EXIST VERT MURPHY 1 - Wellbore #1 - Wellbore #1	2,700.0	2,641.0	245.1	234.2	22.452	ES
EXIST VERT MURPHY 1 - Wellbore #1 - Wellbore #1	7,125.7	6,500.0	313.3	292.6	15.141	SF
EXIST VERT OSTER 3-1014 - Wellbore #1 - Wellbore #1	8,745.0	6,671.0	945.4	909.6	26.391	CC, ES
EXIST VERT OSTER 3-1014 - Wellbore #1 - Wellbore #1	9,200.0	6,675.5	1,049.1	1,005.6	24.083	SF
EXIST VERT OSTER 3-1614 - Wellbore #1 - Wellbore #1	7,404.1	6,650.0	2,593.7	2,572.3	121.183	CC, ES
EXIST VERT OSTER 3-1614 - Wellbore #1 - Wellbore #1	12,137.9	6,601.3	5,397.8	5,298.5	54.352	SF
EXIST VERT OSTER 3-23 - Wellbore #1 - Wellbore #1	608.7	605.7	1,753.5	1,751.8	1,080.598	CC
EXIST VERT OSTER 3-23 - Wellbore #1 - Wellbore #1	8,000.0	6,500.0	1,753.8	1,728.4	69.168	ES
EXIST VERT OSTER 3-23 - Wellbore #1 - Wellbore #1	11,000.0	6,500.0	3,483.7	3,406.7	45.255	SF
EXIST VERT WELD 2 - Wellbore #1 - Wellbore #1	8,575.1	6,700.0	193.5	160.2	5.821	CC, ES
EXIST VERT WELD 2 - Wellbore #1 - Wellbore #1	8,600.0	6,700.0	195.1	161.5	5.803	SF

Anticollision 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						
SW SW SEC. 34 T5N R64W 6th P.M.						
ABDN VERT CARROLL E FLACK 1 - Wellbore #1 - Desi	8,455.2	6,714.1	166.7	3.0	1.019	Level 2, CC, ES, SF
EXIST DD LOEFFLER C 10-30 - Wellbore #1 - Wellbore	1,302.0	1,248.8	1,446.6	1,441.2	266.324	CC, ES
EXIST DD LOEFFLER C 10-30 - Wellbore #1 - Wellbore	6,250.0	6,276.0	1,955.6	1,914.7	47.868	SF
EXIST HZ CHESNUT 27G-203 - Wellbore #1 - Wellbore	12,138.8	13,769.0	1,907.5	1,670.3	8.041	CC, ES, SF
EXIST HZ CHESNUT 27G-423 - Wellbore #1 - Wellbore	12,138.8	13,972.0	1,544.3	1,306.6	6.498	CC, ES, SF
EXIST HZ CHESNUT 27K-203 - Wellbore #1 - Wellbore	12,138.8	13,900.0	864.3	628.5	3.665	CC, ES, SF
EXIST HZ CHESNUT 27K-323 - Wellbore #1 - Wellbore	12,138.8	14,120.0	272.7	47.3	1.210	Level 2, CC, ES, SF
EXIST HZ CHESNUT 27K-343 - Wellbore #1 - Wellbore	12,138.8	13,920.0	1,216.9	979.2	5.119	CC, ES, SF
EXIST HZ CHESNUT 27K-403 - Wellbore #1 - Wellbore	12,138.8	14,160.0	575.7	353.9	2.596	CC, ES, SF
EXIST HZ CHESNUT 27O-243 - Wellbore #1 - Wellbore	12,138.8	14,066.0	188.4	-1.2	0.994	Level 1, CC, ES, SF
EXIST HZ CHESNUT 27O-303 - Wellbore #1 - Wellbore	12,138.8	14,196.0	449.2	222.4	1.981	CC, ES, SF
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	6,600.0	8,662.0	237.1	175.7	3.862	ES, SF
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	6,618.6	8,662.8	236.1	175.9	3.921	CC
EXIST VERT ATKINSON-GALE 3-13 - Wellbore #1 - We	7,234.7	6,746.1	1,364.3	1,343.0	64.120	CC, ES
EXIST VERT ATKINSON-GALE 3-13 - Wellbore #1 - We	12,137.9	6,666.3	5,088.6	4,989.4	51.305	SF
EXIST VERT BAILEY 14-34 - Wellbore #1 - Wellbore #1	12,138.8	6,525.0	1,468.8	1,369.8	14.838	CC, ES, SF
EXIST VERT BAILEY 24-34 - Wellbore #1 - Wellbore #1	12,138.8	6,500.0	472.9	403.6	6.829	CC, ES, SF
EXIST VERT BAILEY 5 - Wellbore #1 - Wellbore #1	12,138.8	6,685.4	1,153.8	1,054.1	11.572	CC, ES, SF
EXIST VERT DONES 1 - Wellbore #1 - Wellbore #1	8,512.6	6,744.4	1,529.5	1,497.2	47.464	CC, ES
EXIST VERT DONES 1 - Wellbore #1 - Wellbore #1	9,900.0	6,728.7	2,064.9	2,008.6	36.650	SF
EXIST VERT ECKHARDT 1 - Wellbore #1 - Design #1	12,138.8	6,703.0	2,650.6	2,419.4	11.463	CC, ES, SF
EXIST VERT FLACK 21-3 - Wellbore #1 - Design #1	11,304.3	6,698.4	30.2	-184.8	0.141	Level 1, CC, ES, SF
EXIST VERT MILLAGE 12-3 - Wellbore #1 - Wellbore #1	9,574.3	6,730.9	1,750.1	1,699.7	34.713	CC
EXIST VERT MILLAGE 12-3 - Wellbore #1 - Wellbore #1	9,600.0	6,730.7	1,750.3	1,699.4	34.397	ES
EXIST VERT MILLAGE 12-3 - Wellbore #1 - Wellbore #1	10,700.0	6,724.0	2,080.9	2,009.4	29.106	SF
EXIST VERT MILLEGE 1 - Wellbore #1 - Wellbore #1	10,929.5	6,700.0	1,524.7	1,449.0	20.121	CC, ES
EXIST VERT MILLEGE 1 - Wellbore #1 - Wellbore #1	11,500.0	6,700.0	1,628.0	1,541.2	18.762	SF
EXIST VERT MURPHY 1 - Wellbore #1 - Wellbore #1	2,681.5	2,622.8	239.0	228.1	22.051	CC
EXIST VERT MURPHY 1 - Wellbore #1 - Wellbore #1	2,700.0	2,640.9	239.0	228.1	21.895	ES
EXIST VERT MURPHY 1 - Wellbore #1 - Wellbore #1	7,120.3	6,500.0	308.4	287.7	14.946	SF
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	9,815.9	6,525.0	2,785.1	2,730.4	50.903	CC
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	9,900.0	6,525.0	2,786.4	2,730.1	49.519	ES
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	12,137.9	6,525.0	3,626.0	3,527.0	36.616	SF
EXIST VERT SITZMAN 4-114 - Wellbore #1 - Design #1	11,226.6	6,721.8	2,622.4	2,408.7	12.267	CC
EXIST VERT SITZMAN 4-114 - Wellbore #1 - Design #1	11,300.0	6,721.5	2,623.5	2,408.3	12.192	ES
EXIST VERT SITZMAN 4-114 - Wellbore #1 - Design #1	11,800.0	6,719.4	2,684.4	2,459.5	11.940	SF
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1	3,131.4	3,081.5	2,844.0	2,831.1	220.608	CC
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1	3,200.0	3,136.9	2,844.2	2,831.0	215.253	ES
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1	12,138.8	6,760.0	5,714.6	5,615.3	57.520	SF
EXIST VERT WILMOTH 4-914 - Wellbore #1 - Wellbore #	8,603.6	6,780.8	2,712.4	2,678.6	80.296	CC, ES
EXIST VERT WILMOTH 4-914 - Wellbore #1 - Wellbore #	12,137.9	6,700.0	4,454.3	4,354.9	44.838	SF
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	7,774.3	6,722.7	2,353.0	2,330.3	103.447	CC
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	7,800.0	6,722.7	2,353.2	2,330.2	102.551	ES
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	12,137.9	6,714.6	4,957.4	4,858.6	50.164	SF

Offset Design SE SW SEC. 3 T4N R64W 6th P.M. - POPHAM 10N - ORIGINAL WELLBORE - PROPOSAL #1										Offset Site Error:	0.0 usft
Survey Program: 0-MWD										Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation Factor

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