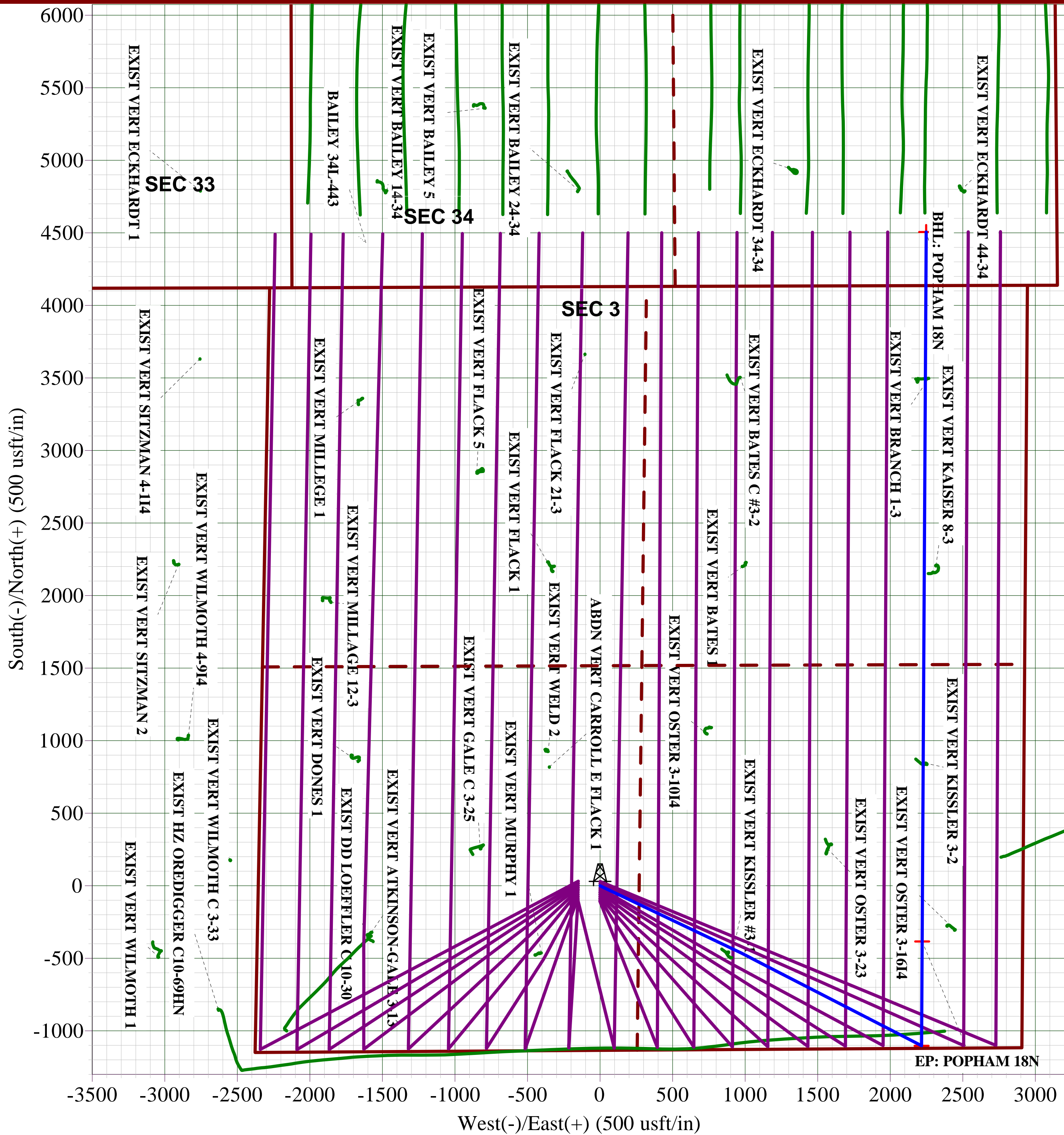
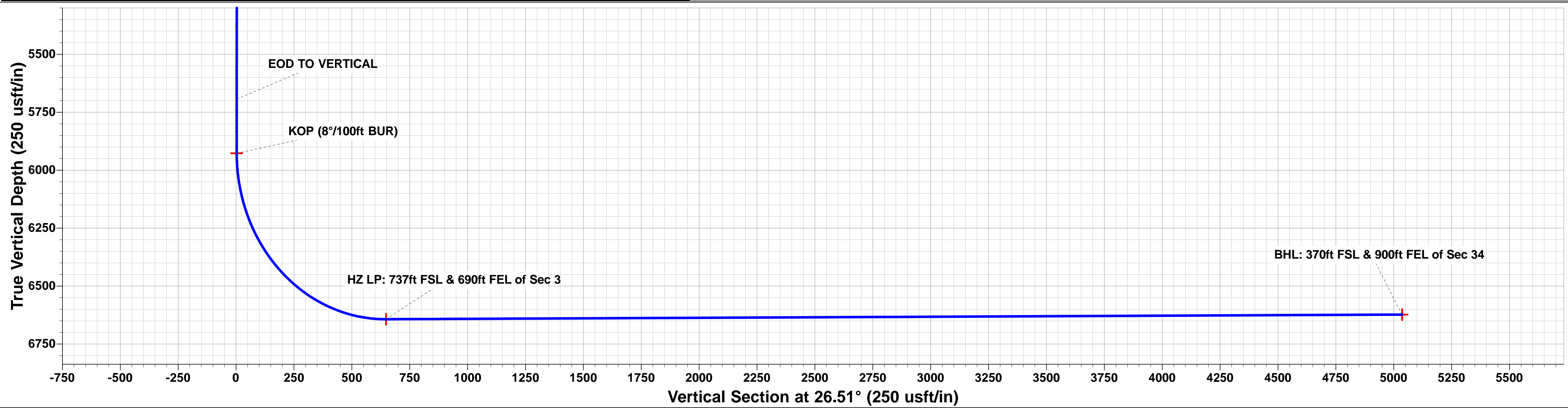
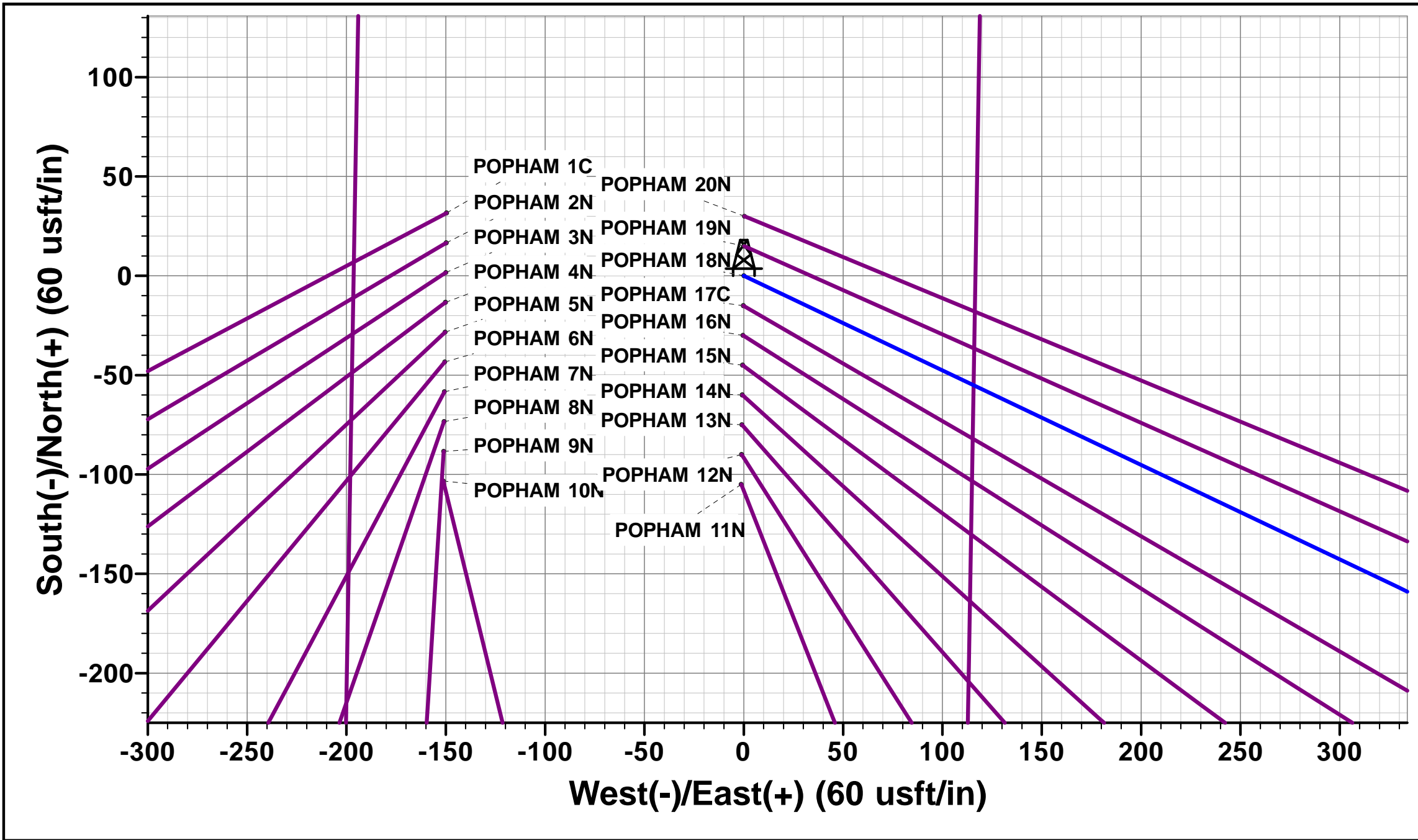
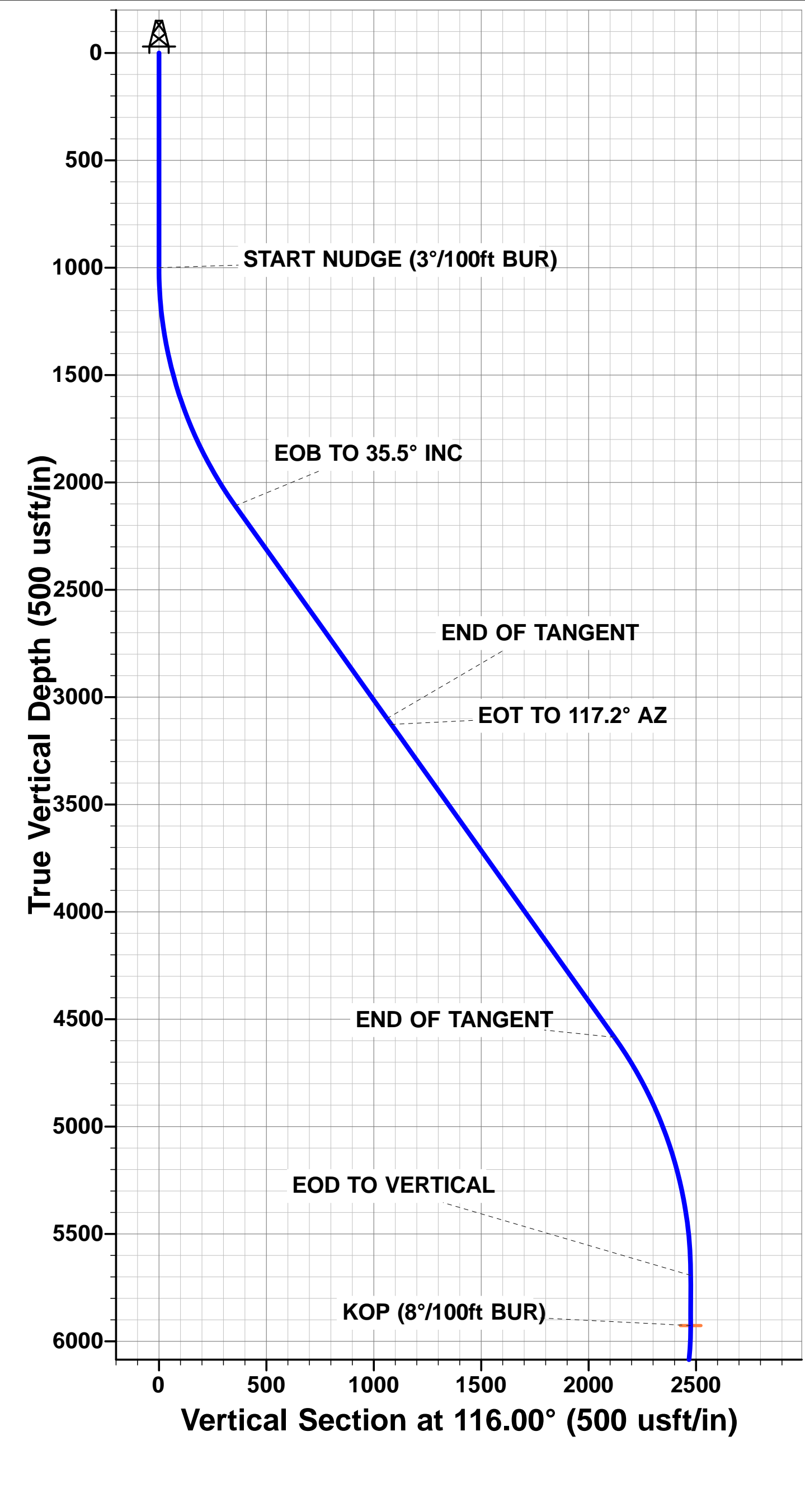




Project: WELD COUNTY, COLORADO  
Site: SE SW SEC. 3 T4N R64W 6th P.M.  
Well: POPHAM 18N  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #1

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: 1134ft FSL & 2356ft FWL of Sec 3	
1000.0	1000.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (3°/100ft BUR)	
2109.1	2183.3	35.50	115.45	-152.6	320.6	6.6	355.0	EOB TO 35.5° INC	
3099.6	3400.0	35.50	115.45	-456.2	958.5	19.6	1061.5	END OF TANGENT	
3127.1	3433.9	35.50	117.20	-464.9	976.2	19.7	1081.2	EOT TO 117.2° AZ	
4584.4	5223.9	35.50	117.20	-940.0	1900.6	7.2	2120.6	END OF TANGENT	
5693.5	6407.2	0.00	0.00	-1102.3	2216.4	2.9	2475.6	EOD TO VERTICAL	
5926.8	6640.5	0.00	0.00	-1102.3	2216.4	2.9	2475.6	KOP (8°/100ft BUR)	
6643.0	7768.1	90.22	0.32	-383.6	2220.4	647.8	3194.2	HZ LP: 737ft FSL & 690ft FEL of Sec 3	
6623.0	12658.2	90.24	0.32	4506.4	2247.9	5035.9	8084.3	BHL: 370ft FSL & 900ft FEL of Sec 34	

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP: POPHAM 18N	5926.8	-1102.6	2216.4	40.334213	-104.529558
EP: POPHAM 18N	6643.0	-383.5	2220.4	40.336187	-104.529543
BHL: POPHAM 18N	6623.0	4506.5	2247.9	40.349610	-104.529443



# **PDC ENERGY**

**WELD COUNTY, COLORADO  
SE SW SEC. 3 T4N R64W 6th P.M.  
POPHAM 18N**

**ORIGINAL WELLBORE  
PROPOSAL #1**

## **Anticollision Report**

**19 September, 2017**



## Anticollision Report



<b>Company:</b>	PDC ENERGY	<b>Local Co-ordinate Reference:</b>	Well POPHAM 18N
<b>Project:</b>	WELD COUNTY, COLORADO	<b>TVD Reference:</b>	KB-EST @ 4683.0usft (Original Well Elev)
<b>Reference Site:</b>	SE SW SEC. 3 T4N R64W 6th P.M.	<b>MD Reference:</b>	KB-EST @ 4683.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	POPHAM 18N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	ORIGINAL WELLBORE	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	PROPOSAL #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	PROPOSAL #1		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD + Stations Interval 100.0usft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 10,000.0 usft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	19/09/2017		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	12,658.3	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 #	266.0	268.0	183.2	182.2	198.284	CC
POPHAM 10N - ORIGINAL WELLBORE - PROPOSAL #	300.0	302.0	183.2	182.1	170.216	ES
POPHAM 10N - ORIGINAL WELLBORE - PROPOSAL #	12,658.3	12,092.8	2,054.8	1,862.2	10.666	SF
POPHAM 11N - ORIGINAL WELLBORE - PROPOSAL #	300.0	299.0	105.0	103.9	98.142	CC, ES
POPHAM 11N - ORIGINAL WELLBORE - PROPOSAL #	12,658.3	12,141.3	1,824.6	1,624.1	9.099	SF
POPHAM 12N - ORIGINAL WELLBORE - PROPOSAL #	400.0	400.0	90.0	88.4	59.116	CC, ES
POPHAM 12N - ORIGINAL WELLBORE - PROPOSAL #	12,658.3	12,105.2	1,569.7	1,372.9	7.976	SF
POPHAM 13N - ORIGINAL WELLBORE - PROPOSAL #	500.0	499.0	75.0	73.0	38.081	CC, ES
POPHAM 13N - ORIGINAL WELLBORE - PROPOSAL #	12,658.3	12,220.4	1,306.2	1,109.4	6.638	SF
POPHAM 14N - ORIGINAL WELLBORE - PROPOSAL #	600.0	599.0	60.0	57.6	24.796	CC, ES
POPHAM 14N - ORIGINAL WELLBORE - PROPOSAL #	12,658.3	12,216.2	1,059.8	867.5	5.511	SF
POPHAM 15N - ORIGINAL WELLBORE - PROPOSAL #	700.0	700.0	45.0	42.1	15.676	CC, ES
POPHAM 15N - ORIGINAL WELLBORE - PROPOSAL #	12,658.3	12,363.3	787.0	590.5	4.005	SF
POPHAM 16N - ORIGINAL WELLBORE - PROPOSAL #	800.0	800.0	30.0	26.7	9.032	CC, ES
POPHAM 16N - ORIGINAL WELLBORE - PROPOSAL #	12,658.3	12,419.5	525.0	328.3	2.669	SF
POPHAM 17C - ORIGINAL WELLBORE - PROPOSAL #	900.0	900.0	15.0	11.3	3.992	CC, ES
POPHAM 17C - ORIGINAL WELLBORE - PROPOSAL #	12,658.3	12,647.9	326.0	148.1	1.832	SF
POPHAM 19N - ORIGINAL WELLBORE - PROPOSAL #	1,000.0	1,000.0	15.0	10.8	3.549	CC
POPHAM 19N - ORIGINAL WELLBORE - PROPOSAL #	3,400.0	3,411.2	42.0	-6.5	0.867	Level 1, ES, SF
POPHAM 1C - ORIGINAL WELLBORE - PROPOSAL #1	1,000.0	1,002.0	152.9	148.7	36.204	CC, ES
POPHAM 1C - ORIGINAL WELLBORE - PROPOSAL #1	12,658.3	12,832.6	4,491.7	4,306.5	24.255	SF
POPHAM 20N - ORIGINAL WELLBORE - PROPOSAL #	1,000.0	1,000.0	30.0	25.8	7.105	CC, ES
POPHAM 20N - ORIGINAL WELLBORE - PROPOSAL #	3,100.0	3,135.4	73.9	32.0	1.765	SF
POPHAM 2N - ORIGINAL WELLBORE - PROPOSAL #1	1,000.0	1,002.0	150.7	146.5	35.677	CC, ES
POPHAM 2N - ORIGINAL WELLBORE - PROPOSAL #1	12,658.3	12,551.9	4,240.3	4,048.0	22.043	SF
POPHAM 3N - ORIGINAL WELLBORE - PROPOSAL #1	966.0	968.0	150.0	145.9	36.849	CC
POPHAM 3N - ORIGINAL WELLBORE - PROPOSAL #1	1,000.0	1,000.0	150.0	145.8	35.556	ES
POPHAM 3N - ORIGINAL WELLBORE - PROPOSAL #1	12,658.3	12,502.5	4,019.1	3,826.2	20.834	SF
POPHAM 4N - ORIGINAL WELLBORE - PROPOSAL #1	866.0	868.0	150.7	147.1	41.623	CC
POPHAM 4N - ORIGINAL WELLBORE - PROPOSAL #1	900.0	900.0	150.7	147.0	39.988	ES
POPHAM 4N - ORIGINAL WELLBORE - PROPOSAL #1	12,658.3	12,369.5	3,745.4	3,553.0	19.466	SF
POPHAM 5N - ORIGINAL WELLBORE - PROPOSAL #1	766.0	768.0	153.0	149.8	48.242	CC
POPHAM 5N - ORIGINAL WELLBORE - PROPOSAL #1	800.0	800.0	153.0	149.7	46.090	ES
POPHAM 5N - ORIGINAL WELLBORE - PROPOSAL #1	12,658.3	12,319.8	3,473.4	3,279.8	17.944	SF
POPHAM 6N - ORIGINAL WELLBORE - PROPOSAL #1	666.0	668.0	156.6	153.9	57.546	CC
POPHAM 6N - ORIGINAL WELLBORE - PROPOSAL #1	700.0	700.0	156.6	153.8	54.575	ES
POPHAM 6N - ORIGINAL WELLBORE - PROPOSAL #1	12,658.3	12,189.4	3,196.6	3,005.8	16.755	SF

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



<b>Company:</b>	PDC ENERGY	<b>Local Co-ordinate Reference:</b>	Well POPHAM 18N
<b>Project:</b>	WELD COUNTY, COLORADO	<b>TVD Reference:</b>	KB-EST @ 4683.0usft (Original Well Elev)
<b>Reference Site:</b>	SE SW SEC. 3 T4N R64W 6th P.M.	<b>MD Reference:</b>	KB-EST @ 4683.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	POPHAM 18N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	ORIGINAL WELLBORE	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	PROPOSAL #1	<b>Offset TVD Reference:</b>	Offset Datum

## Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
SE SW SEC. 3 T4N R64W 6th P.M.						
POPHAM 7N - ORIGINAL WELLBORE - PROPOSAL #1	566.0	568.0	161.6	159.3	71.106	CC
POPHAM 7N - ORIGINAL WELLBORE - PROPOSAL #1	600.0	600.0	161.6	159.2	66.752	ES
POPHAM 7N - ORIGINAL WELLBORE - PROPOSAL #1	12,658.3	12,204.0	2,935.7	2,741.1	15.088	SF
POPHAM 8N - ORIGINAL WELLBORE - PROPOSAL #1	466.0	468.0	167.8	165.9	92.040	CC
POPHAM 8N - ORIGINAL WELLBORE - PROPOSAL #1	500.0	500.0	167.8	165.8	85.117	ES
POPHAM 8N - ORIGINAL WELLBORE - PROPOSAL #1	12,658.3	12,123.9	2,667.7	2,470.4	13.526	SF
POPHAM 9N - ORIGINAL WELLBORE - PROPOSAL #1	366.3	367.3	175.0	173.6	127.504	CC
POPHAM 9N - ORIGINAL WELLBORE - PROPOSAL #1	400.0	400.0	175.0	173.5	115.012	ES
POPHAM 9N - ORIGINAL WELLBORE - PROPOSAL #1	12,658.3	12,138.8	2,369.1	2,171.0	11.958	SF
SE SW SEC. 3 T4N R64W 6th P.M. (OFFSETS FOR POPHAM)						
ABDN VERT HOFF 31-10 - Wellbore #1 - Wellbore #1	4,322.3	3,806.2	1,205.2	1,167.3	31.757	CC
ABDN VERT HOFF 31-10 - Wellbore #1 - Wellbore #1	4,400.0	3,867.4	1,206.1	1,167.1	30.934	ES
ABDN VERT HOFF 31-10 - Wellbore #1 - Wellbore #1	5,200.0	4,496.9	1,317.1	1,269.2	27.473	SF
EXIST DD HOFFMAN C 02-33D - Wellbore #1 - Wellbore	8,354.3	7,420.1	547.8	488.4	9.227	CC, ES
EXIST DD HOFFMAN C 02-33D - Wellbore #1 - Wellbore	8,400.0	7,419.5	549.7	489.9	9.202	SF
EXIST HZ SUDEN 34M-223 - Wellbore #1 - Wellbore #1	12,658.3	11,092.0	1,287.1	1,105.2	7.076	CC, ES, SF
EXIST HZ SUDEN 34M-423 - Wellbore #1 - Wellbore #1	12,658.3	11,065.0	1,535.1	1,356.6	8.601	CC, ES, SF
EXIST HZ SUDEN 34R-203 - Wellbore #1 - Wellbore #1	12,658.3	11,081.0	588.2	406.4	3.236	CC, ES, SF
EXIST HZ SUDEN 34R-323 - Wellbore #1 - Wellbore #1	12,658.3	11,162.0	156.1	67.6	1.765	CC, ES, SF
EXIST HZ SUDEN 34R-343 - Wellbore #1 - Wellbore #1	12,658.3	11,135.0	840.4	658.6	4.624	CC, ES, SF
EXIST HZ SUDEN 34R-423 - Wellbore #1 - Wellbore #1	12,658.3	11,245.0	294.0	149.6	2.035	CC, ES, SF
EXIST HZ SUDEN 34U-243 - Wellbore #1 - Wellbore #1	12,658.3	11,118.0	506.8	323.2	2.761	CC, ES, SF
EXIST HZ SUDEN 34U-403 - Wellbore #1 - Wellbore #1	12,658.3	11,309.0	859.3	680.7	4.812	CC, ES, SF
EXIST VERT BATES 1 - Wellbore #1 - Wellbore #1	10,373.1	6,619.1	1,227.7	1,167.8	20.500	CC
EXIST VERT BATES 1 - Wellbore #1 - Wellbore #1	10,400.0	6,619.0	1,227.9	1,167.6	20.345	ES
EXIST VERT BATES 1 - Wellbore #1 - Wellbore #1	10,800.0	6,617.5	1,299.7	1,232.2	19.257	SF
EXIST VERT BATES C #3-2 - Wellbore #1 - Wellbore #1	11,653.5	6,580.2	1,362.6	1,279.2	16.340	CC
EXIST VERT BATES C #3-2 - Wellbore #1 - Wellbore #1	11,700.0	6,581.9	1,363.4	1,279.1	16.178	ES
EXIST VERT BATES C #3-2 - Wellbore #1 - Wellbore #1	12,100.0	6,596.8	1,433.8	1,341.9	15.602	SF
EXIST VERT BRANCH 1-3 - Wellbore #1 - Wellbore #1	11,633.9	6,593.9	51.2	-31.7	0.617	Level 1, CC, ES, SF
EXIST VERT ECKHARDT 34-34 - Wellbore #1 - Wellbor	12,658.3	6,475.0	1,053.3	952.3	10.428	CC, ES, SF
EXIST VERT ECKHARDT 44-34 - Wellbore #1 - Wellbor	12,658.3	6,300.0	475.1	390.0	5.581	CC, ES, SF
EXIST VERT FLACK 1 - Wellbore #1 - Wellbore #1	1,013.1	1,022.5	2,191.2	2,188.4	792.897	CC, ES
EXIST VERT FLACK 1 - Wellbore #1 - Wellbore #1	12,600.0	6,605.7	3,423.2	3,322.2	33.898	SF
EXIST VERT FLACK 5 - Wellbore #1 - Wellbore #1	0.0	0.0	2,976.6			
EXIST VERT FLACK 5 - Wellbore #1 - Wellbore #1	12,658.3	6,584.5	3,513.6	3,411.7	34.449	SF
EXIST VERT GALE C 3-25 - Wellbore #1 - Wellbore #1	1,001.3	988.9	861.2	858.5	316.771	CC, ES
EXIST VERT GALE C 3-25 - Wellbore #1 - Wellbore #1	12,658.3	6,519.2	5,305.6	5,203.9	52.165	SF
EXIST VERT KAISER 8-3 - Wellbore #1 - Wellbore #1	10,304.2	6,612.3	36.7	-21.3	0.633	Level 1, CC, ES, SF
EXIST VERT KISSLER #3-1 - Wellbore #1 - Wellbore #1	3,275.8	2,967.6	47.1	23.1	1.963	CC, ES, SF
EXIST VERT KISSLER 3-2 - Wellbore #1 - Wellbore #1	9,016.2	6,601.6	41.5	3.7	1.097	Level 2, CC, ES, SF
EXIST VERT MURPHY 1 - Wellbore #1 - Wellbore #1	100.0	76.5	615.0	614.8	3,663.126	CC, ES
EXIST VERT MURPHY 1 - Wellbore #1 - Wellbore #1	12,658.3	6,500.0	5,667.0	5,565.2	55.642	SF
EXIST VERT OSTER 3-1014 - Wellbore #1 - Wellbore #1	1,871.7	1,803.8	1,262.2	1,255.9	200.516	CC
EXIST VERT OSTER 3-1014 - Wellbore #1 - Wellbore #1	1,900.0	1,829.4	1,262.2	1,255.7	193.457	ES
EXIST VERT OSTER 3-1014 - Wellbore #1 - Wellbore #1	10,200.0	6,632.0	1,752.5	1,695.8	30.861	SF
EXIST VERT OSTER 3-1614 - Wellbore #1 - Wellbore #1	7,874.4	6,586.9	171.3	142.8	6.003	CC, ES, SF
EXIST VERT OSTER 3-23 - Wellbore #1 - Wellbore #1	8,469.6	6,500.0	680.3	650.2	22.621	CC, ES
EXIST VERT OSTER 3-23 - Wellbore #1 - Wellbore #1	8,600.0	6,500.0	692.7	661.3	22.103	SF
EXIST VERT WELD 2 - Wellbore #1 - Wellbore #1	0.0	15.0	992.0			
EXIST VERT WELD 2 - Wellbore #1 - Wellbore #1	100.0	113.7	992.0	991.8	4,742.541	ES
EXIST VERT WELD 2 - Wellbore #1 - Wellbore #1	12,658.3	6,661.8	4,425.1	4,323.0	43.337	SF

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

<b>Company:</b>	PDC ENERGY	<b>Local Co-ordinate Reference:</b>	Well POPHAM 18N
<b>Project:</b>	WELD COUNTY, COLORADO	<b>TVD Reference:</b>	KB-EST @ 4683.0usft (Original Well Elev)
<b>Reference Site:</b>	SE SW SEC. 3 T4N R64W 6th P.M.	<b>MD Reference:</b>	KB-EST @ 4683.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	POPHAM 18N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	ORIGINAL WELLBORE	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	PROPOSAL #1	<b>Offset TVD Reference:</b>	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						
SW SW SEC. 34 T5N R64W 6th P.M.						
ABDN VERT CARROLL E FLACK 1 - Wellbore #1 - Desi	1,000.0	996.0	891.0	869.9	42.279	CC
ABDN VERT CARROLL E FLACK 1 - Wellbore #1 - Desi	1,100.0	1,096.0	892.9	869.6	38.364	ES
ABDN VERT CARROLL E FLACK 1 - Wellbore #1 - Desi	9,600.0	6,631.6	2,655.3	2,478.0	14.977	SF
EXIST DD LOEFFLER C 10-30 - Wellbore #1 - Wellbore	1,016.0	1,036.9	1,636.0	1,632.4	456.646	CC, ES
EXIST DD LOEFFLER C 10-30 - Wellbore #1 - Wellbore	12,658.3	6,709.5	7,052.5	6,934.2	59.633	SF
EXIST HZ CHESNUT 27G-203 - Wellbore #1 - Wellbore	12,658.3	13,751.9	4,267.8	4,027.9	17.790	CC, ES, SF
EXIST HZ CHESNUT 27G-423 - Wellbore #1 - Wellbore	12,658.3	13,972.0	3,908.5	3,667.0	16.182	CC, ES, SF
EXIST HZ CHESNUT 27K-203 - Wellbore #1 - Wellbore	12,658.3	13,900.0	3,221.6	2,981.8	13.434	CC, ES, SF
EXIST HZ CHESNUT 27K-323 - Wellbore #1 - Wellbore	12,658.3	14,120.0	2,613.3	2,384.6	11.426	CC, ES, SF
EXIST HZ CHESNUT 27K-343 - Wellbore #1 - Wellbore	12,658.3	13,920.0	3,581.0	3,340.2	14.868	CC, ES, SF
EXIST HZ CHESNUT 27K-403 - Wellbore #1 - Wellbore	12,658.3	14,160.0	2,926.4	2,697.9	12.806	CC, ES, SF
EXIST HZ CHESNUT 27O-243 - Wellbore #1 - Wellbore	12,658.3	14,066.0	2,264.3	2,035.3	9.888	CC, ES, SF
EXIST HZ CHESNUT 27O-303 - Wellbore #1 - Wellbore	12,658.3	14,196.0	1,943.2	1,712.9	8.439	CC, ES, SF
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	7,200.0	11,108.9	229.6	99.0	1.758	ES, SF
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	7,241.7	11,110.9	224.5	101.1	1.819	CC
EXIST VERT ATKINSON-GALE 3-13 - Wellbore #1 - We	508.0	500.0	1,605.1	1,603.7	1,130.690	CC
EXIST VERT ATKINSON-GALE 3-13 - Wellbore #1 - We	600.0	584.9	1,605.3	1,603.7	975.892	ES
EXIST VERT ATKINSON-GALE 3-13 - Wellbore #1 - We	12,658.3	6,659.9	6,199.8	6,097.6	60.682	SF
EXIST VERT BAILEY 14-34 - Wellbore #1 - Wellbore #1	12,658.3	6,525.0	3,801.1	3,699.0	37.230	CC, ES, SF
EXIST VERT BAILEY 24-34 - Wellbore #1 - Wellbore #1	12,658.3	6,500.0	2,511.8	2,410.1	24.679	CC, ES, SF
EXIST VERT BAILEY 5 - Wellbore #1 - Wellbore #1	12,658.3	6,602.8	3,239.1	3,136.4	31.557	CC, ES, SF
EXIST VERT DONES 1 - Wellbore #1 - Wellbore #1	1,000.0	997.5	1,873.6	1,870.9	674.413	ES
EXIST VERT DONES 1 - Wellbore #1 - Wellbore #1	1,002.5	1,000.0	1,873.6	1,870.9	682.670	CC
EXIST VERT DONES 1 - Wellbore #1 - Wellbore #1	12,658.3	6,678.4	5,355.5	5,253.4	52.410	SF
EXIST VERT ECKHARDT 1 - Wellbore #1 - Design #1	12,658.3	6,623.0	5,010.4	4,777.8	21.548	CC, ES, SF
EXIST VERT FLACK 21-3 - Wellbore #1 - Design #1	11,803.7	6,618.6	2,346.9	2,130.6	10.849	CC, ES
EXIST VERT FLACK 21-3 - Wellbore #1 - Design #1	12,300.0	6,616.5	2,398.8	2,173.1	10.631	SF
EXIST VERT MILLAGE 12-3 - Wellbore #1 - Wellbore #1	0.0	12.6	2,692.9			
EXIST VERT MILLAGE 12-3 - Wellbore #1 - Wellbore #1	12,658.3	6,590.2	4,875.0	4,773.0	47.781	SF
EXIST VERT MILLEGE 1 - Wellbore #1 - Wellbore #1	0.0	0.0	3,736.6			
EXIST VERT MILLEGE 1 - Wellbore #1 - Wellbore #1	1,000.0	1,002.2	3,736.7	3,734.2	1,496.814	ES
EXIST VERT MILLEGE 1 - Wellbore #1 - Wellbore #1	12,658.3	6,624.2	4,089.1	3,987.1	40.072	SF
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	1,000.0	1,016.4	3,652.2	3,649.5	1,352.405	ES
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	1,004.4	1,020.6	3,652.2	3,649.6	1,356.499	CC
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	12,658.3	6,525.0	5,666.2	5,564.3	55.607	SF
EXIST VERT SITZMAN 4-114 - Wellbore #1 - Design #1	1,000.0	1,015.0	4,560.3	4,539.1	214.390	CC, ES
EXIST VERT SITZMAN 4-114 - Wellbore #1 - Design #1	12,658.3	6,638.0	5,081.0	4,848.3	21.838	SF
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1	0.0	6.9	3,081.6			
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1	12,658.3	6,760.0	7,236.7	7,134.3	70.677	SF
EXIST VERT WILMOTH 4-914 - Wellbore #1 - Wellbore #	1,008.1	1,029.0	3,019.1	3,016.3	1,096.498	CC, ES
EXIST VERT WILMOTH 4-914 - Wellbore #1 - Wellbore #	12,658.3	6,700.0	6,215.7	6,113.4	60.737	SF
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	1,006.0	1,015.5	2,554.6	2,551.8	933.344	CC, ES
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	12,658.3	6,642.9	6,460.8	6,359.1	63.512	SF

<b>Offset Design</b> 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
0.0	0.0	2.0	2.0	0.0	0.0	-124.34	-103.3	-151.2	183.2		

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