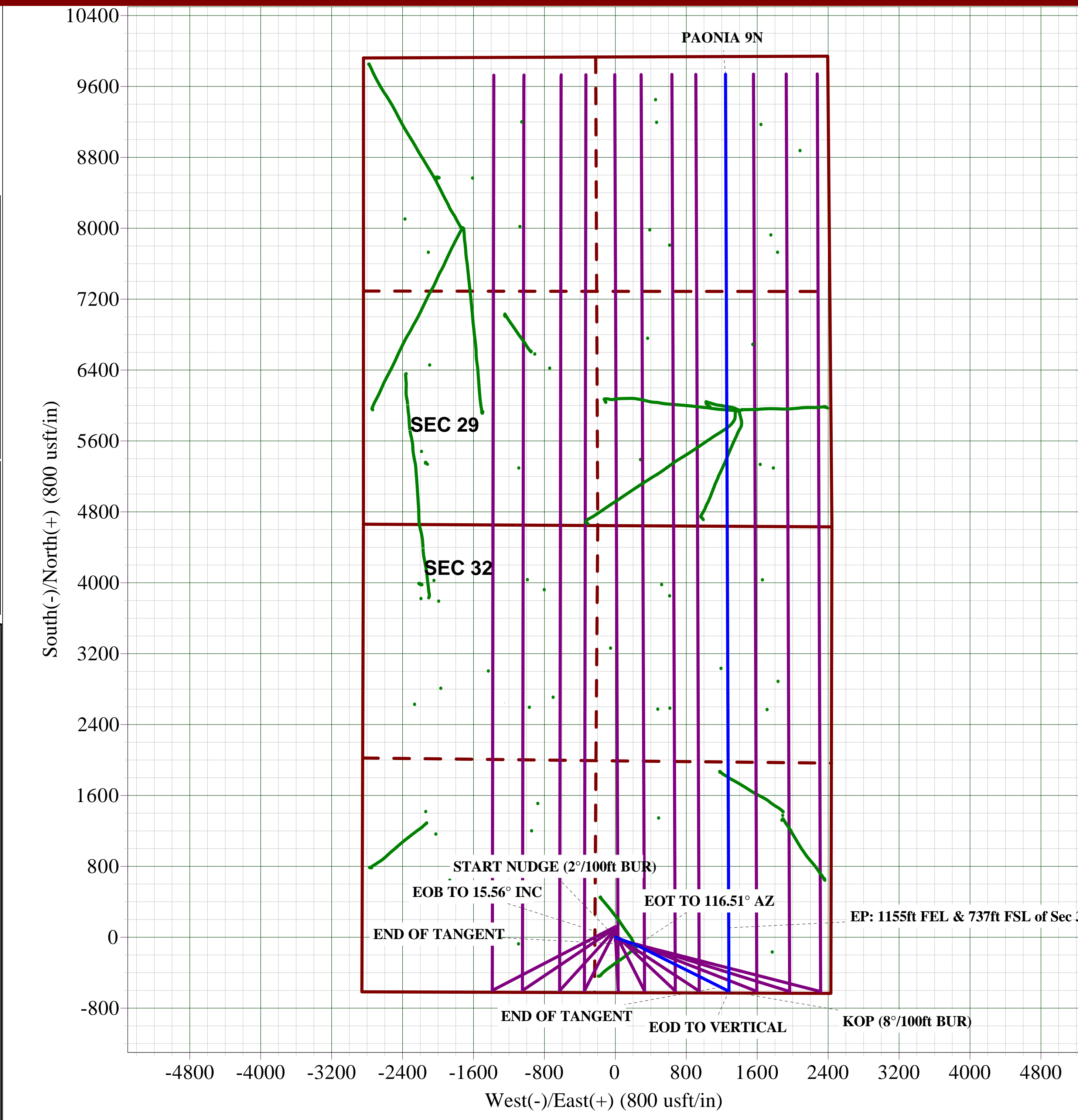
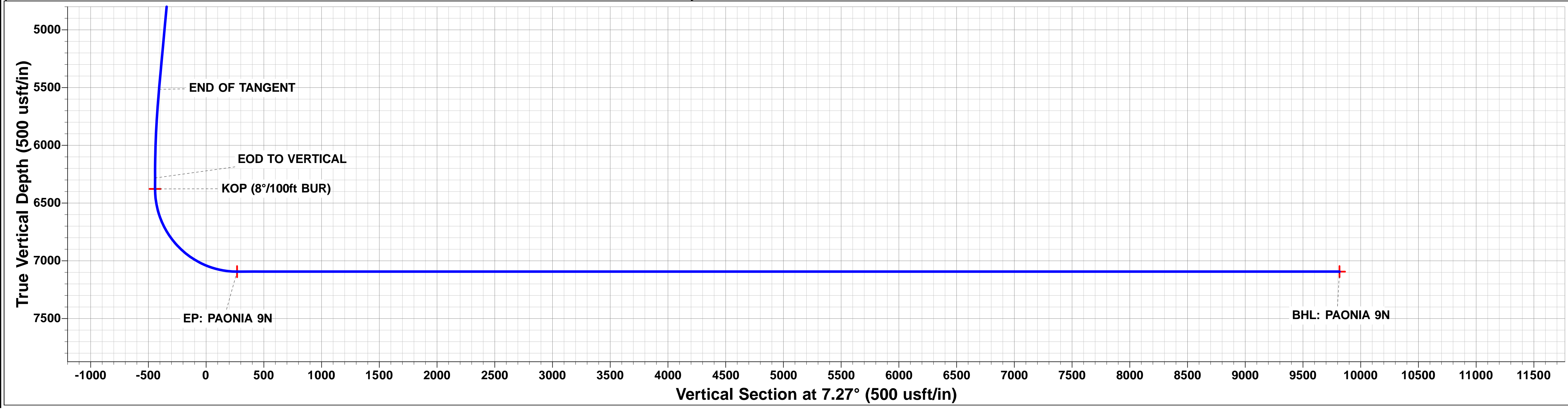
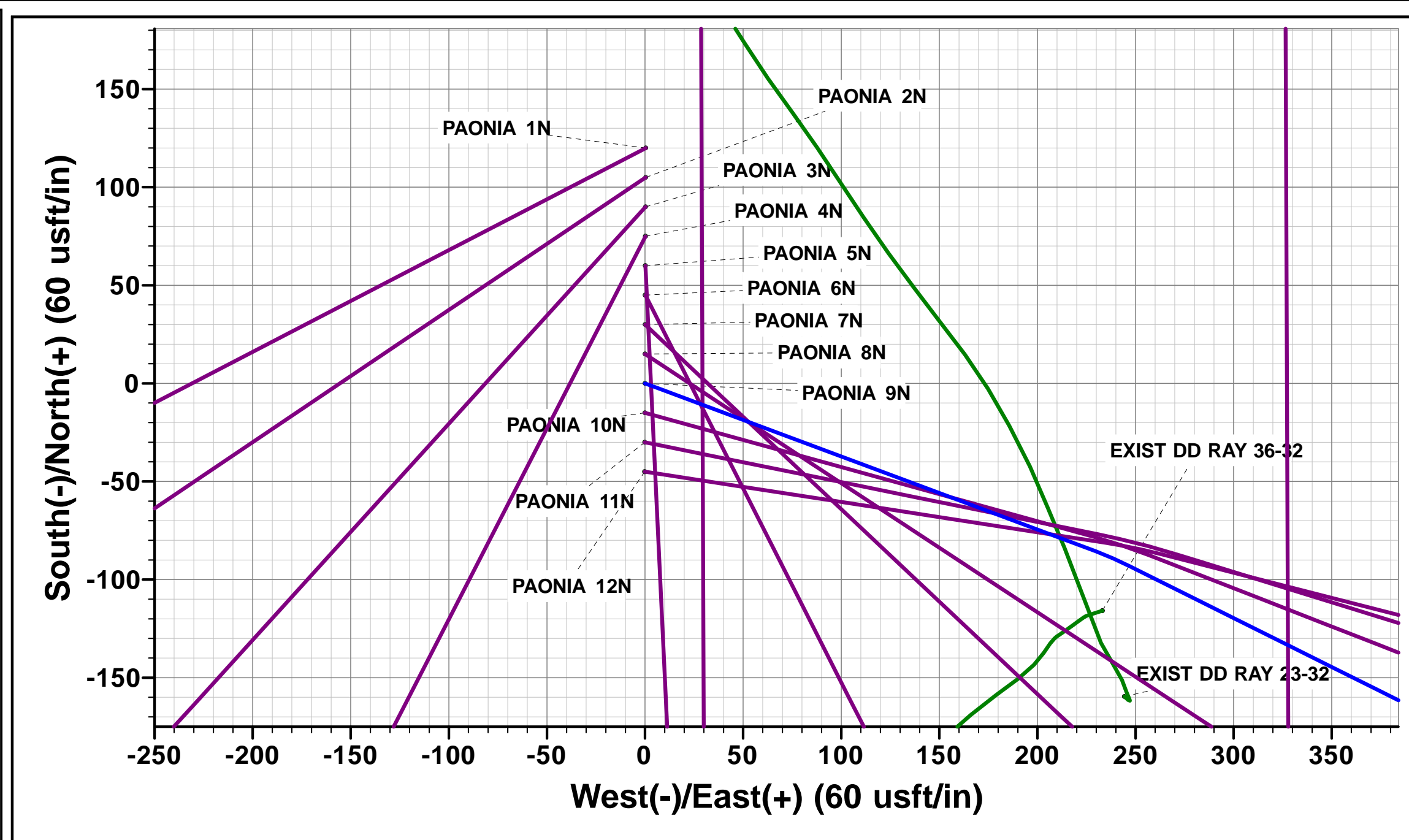
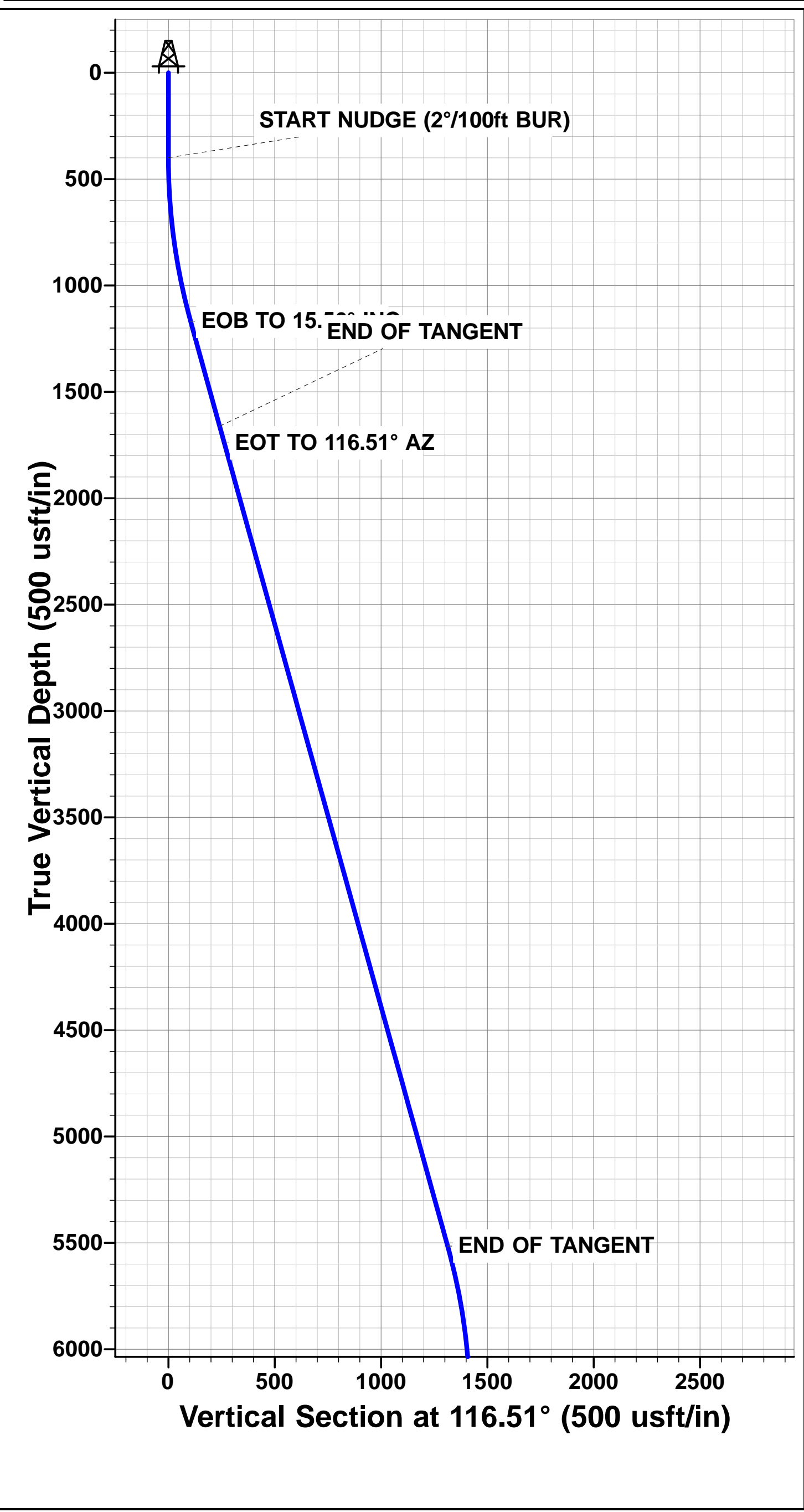




Project: WELD COUNTY, COLORADO
Site: SW SE SEC. 32 T4N R65W 6th P.M. (PAONIA)
Well: PAONIA 9N
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

ANNOTATIONS										PROPOSED LOCAL COORDINATES: SHL: 2434ft FEL & 625ft FSL of Sec 32 EP: 1155ft FEL & 737ft FSL of Sec 32 BHL: 1155ft FEL & 200ft FNL of Sec 29
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL: 2434ft FEL & 625ft FSL of Sec 32		
400.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	START NUDGE (2°/100ft BUR)		
1168.47	1178.00	15.56	110.42	-36.63	98.40	-23.88	104.99	EOB TO 15.56° INC		
1661.71	1690.00	15.56	110.42	-84.55	227.11	-55.12	242.34	END OF TANGENT		
1740.35	1771.63	15.55	116.51	-93.26	247.16	-61.22	264.22	EOT TO 116.51° AZ		
5515.38	5690.13	15.55	116.51	-562.21	1187.32	-407.37	1314.85	END OF TANGENT		
6283.49	6467.75	0.00	0.00	-609.03	1281.19	-441.93	1419.74	EOD TO VERTICAL		
6377.80	6562.07	0.00	0.00	-609.03	1281.19	-441.93	1419.74	KOP (8°/100ft BUR)		
7094.00	7687.08	90.00	359.79	107.18	1278.56	268.18	2135.96	EP: 1155ft FEL & 737ft FSL of Sec 32		
7094.00	17317.59	90.00	359.78	9737.62	1242.77	9816.60	11766.46	BHL: 1155ft FEL & 200ft FNL of Sec 29		

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP: PAONIA 9N	6377.80	-609.01	1281.18	40.261716	-104.681835
EP: PAONIA 9N	7094.00	107.18	1278.56	40.263682	-104.681844
BHL: PAONIA 9N	7094.00	9737.62	1242.77	40.290117	-104.681971



PDC ENERGY

WELD COUNTY, COLORADO

SW SE SEC. 32 T4N R65W 6th P.M. (PAONIA)

PAONIA 9N

ORIGINAL WELLBORE

PROPOSAL #1

Anticollision Report

13 December, 2017



Anticollision Report



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well PAONIA 9N
Project:	WELD COUNTY, COLORADO	TVD Reference:	WELL @ 4919.00usft (Original Well Elev)
Reference Site:	SW SE SEC. 32 T4N R65W 6th P.M. (PAONIA)	MD Reference:	WELL @ 4919.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	PAONIA 9N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 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 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	13/12/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	17,317.38	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
SE SE SEC. 32 T4N R65W 6th P.M. (CRAWFORD)						
EXIST DD RAY 39-32 - Wellbore #1 - Wellbore #1	8,233.60	7,169.60	1,081.46	1,038.19	24.993	CC, ES
EXIST DD RAY 39-32 - Wellbore #1 - Wellbore #1	8,600.00	7,171.56	1,141.84	1,093.74	23.742	SF
EXIST DD SPAYD 39-29 - Wellbore #1 - Wellbore #1	13,562.84	7,149.62	1,111.36	976.31	8.229	CC
EXIST DD SPAYD 39-29 - Wellbore #1 - Wellbore #1	13,600.00	7,149.56	1,111.99	976.23	8.191	ES
EXIST DD SPAYD 39-29 - Wellbore #1 - Wellbore #1	13,700.00	7,149.40	1,119.80	982.14	8.135	SF
EXIST VERT HSR-KOCH 16-32 - Wellbore #1 - Design #	7,350.00	6,988.13	492.67	457.44	13.985	SF
EXIST VERT HSR-KOCH 16-32 - Wellbore #1 - Design #	7,407.12	7,011.98	489.93	454.96	14.013	CC, ES
SW SE SEC. 32 T4N R65W 6th P.M. (PAONIA)						
ABDN VERT BOHLENDER 2 - Wellbore #1 - Design #1	15,504.58	4,856.00	2,294.14	2,215.48	29.164	CC, ES
ABDN VERT BOHLENDER 2 - Wellbore #1 - Design #1	16,100.00	4,856.00	2,370.15	2,286.58	28.361	SF
ABDN VERT BOHLENDER 31-29 #3 - Wellbore #1 - Des	16,780.76	4,736.00	2,483.54	2,390.49	26.689	CC
ABDN VERT BOHLENDER 31-29 #3 - Wellbore #1 - Des	16,800.00	4,736.00	2,483.62	2,390.38	26.639	ES
ABDN VERT BOHLENDER 31-29 #3 - Wellbore #1 - Des	17,317.59	4,736.00	2,540.90	2,442.92	25.934	SF
ABDN VERT HAMBERT R G 32-4 - Wellbore #1 - Design	11,620.71	7,093.95	3,310.18	3,212.01	33.719	CC
ABDN VERT HAMBERT R G 32-4 - Wellbore #1 - Design	11,700.00	7,093.95	3,311.13	3,211.48	33.227	ES
ABDN VERT HAMBERT R G 32-4 - Wellbore #1 - Design	13,700.00	7,093.95	3,909.04	3,771.67	28.457	SF
ABDN VERT HSR-MAYA 4-29 - Wellbore #1 - Wellbore #	16,149.32	7,000.00	3,261.79	3,092.08	19.220	CC
ABDN VERT HSR-MAYA 4-29 - Wellbore #1 - Wellbore #	16,200.00	7,000.00	3,262.18	3,091.51	19.113	ES
ABDN VERT HSR-MAYA 4-29 - Wellbore #1 - Wellbore #	17,317.59	7,000.00	3,464.69	3,272.67	18.043	SF
ABDN VERT MUSICK MCCLINTOCK 3 - Wellbore #1 - W	11,573.28	4,521.19	4,308.40	4,239.45	62.484	CC
ABDN VERT MUSICK MCCLINTOCK 3 - Wellbore #1 - W	11,600.00	4,521.19	4,308.48	4,239.11	62.108	ES
ABDN VERT MUSICK MCCLINTOCK 3 - Wellbore #1 - W	15,900.00	4,521.19	6,105.93	5,968.39	44.395	SF
ABDN VERT NGL C3 - Wellbore #1 - Design #1	11,417.25	7,093.95	3,456.89	3,362.51	36.629	CC
ABDN VERT NGL C3 - Wellbore #1 - Design #1	11,500.00	7,093.95	3,457.88	3,361.96	36.051	ES
ABDN VERT NGL C3 - Wellbore #1 - Design #1	13,800.00	7,093.95	4,198.50	4,059.23	30.148	SF
ABDN VERT UPRR 21 PAN AM A#1 - Wellbore #1 - Wel	12,929.85	7,100.00	3,378.11	3,269.44	31.088	CC
ABDN VERT UPRR 21 PAN AM A#1 - Wellbore #1 - Wel	13,000.00	7,100.00	3,378.83	3,268.84	30.720	ES
ABDN VERT UPRR 21 PAN AM A#1 - Wellbore #1 - Wel	14,900.00	7,100.00	3,910.62	3,764.57	26.775	SF
EXIST DD NGL C3A - Wellbore #1 - Wellbore #1	13,468.26	7,342.00	3,587.20	3,431.14	22.987	CC
EXIST DD NGL C3A - Wellbore #1 - Wellbore #1	13,500.00	7,342.00	3,587.34	3,430.68	22.899	ES
EXIST DD NGL C3A - Wellbore #1 - Wellbore #1	15,300.00	8,160.86	3,980.05	3,785.40	20.447	SF
EXIST DD RAY 23-32 - Wellbore #1 - Wellbore #1	1,828.99	1,794.57	44.11	34.54	4.610	CC, ES, SF
EXIST DD RAY 24-32 - Wellbore #1 - Wellbore #1	9,443.31	7,195.78	92.19	32.32	1.540	CC, ES, SF
EXIST DD RAY 36-32 - Wellbore #1 - Wellbore #1	1,678.64	1,645.31	47.50	38.88	5.510	CC, ES
EXIST DD RAY 36-32 - Wellbore #1 - Wellbore #1	1,700.00	1,665.82	47.85	39.07	5.450	SF

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 PAONIA 9N
Project:	WELD COUNTY, COLORADO	TVD Reference:	WELL @ 4919.00usft (Original Well Elev)
Reference Site:	SW SE SEC. 32 T4N R65W 6th P.M. (PAONIA)	MD Reference:	WELL @ 4919.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	PAONIA 9N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 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
SW SE SEC. 32 T4N R65W 6th P.M. (PAONIA)						
EXIST DD RURAL LAND G32-33D - Wellbore #1 - Wellb	0.00	15.10	2,486.65			
EXIST DD RURAL LAND G32-33D - Wellbore #1 - Wellb	100.00	109.47	2,486.80	2,486.61	10,000.000	ES
EXIST DD RURAL LAND G32-33D - Wellbore #1 - Wellb	16,600.00	7,269.04	9,150.13	8,955.55	47.024	SF
EXIST DD SPAYD 19-29 - Wellbore #1 - Wellbore #1	13,521.33	7,502.62	2,753.62	2,595.90	17.459	CC
EXIST DD SPAYD 19-29 - Wellbore #1 - Wellbore #1	13,600.00	7,502.41	2,754.74	2,595.53	17.302	ES
EXIST DD SPAYD 19-29 - Wellbore #1 - Wellbore #1	14,400.00	7,500.20	2,890.41	2,716.01	16.573	SF
EXIST DD SPAYD 20-29 - Wellbore #1 - Wellbore #1	13,584.46	7,130.29	214.15	79.76	1.594	CC, ES, SF
EXIST DD SPAYD 22-29 - Wellbore #1 - Wellbore #1	14,610.68	7,088.23	2,501.81	2,346.91	16.151	CC
EXIST DD SPAYD 22-29 - Wellbore #1 - Wellbore #1	14,700.00	7,086.59	2,503.40	2,346.81	15.987	ES
EXIST DD SPAYD 22-29 - Wellbore #1 - Wellbore #1	15,400.00	7,073.04	2,623.33	2,453.45	15.443	SF
EXIST DD SPAYD 23-29 - Wellbore #1 - Wellbore #1	13,621.54	7,363.95	1,365.85	1,227.83	9.896	CC, ES
EXIST DD SPAYD 23-29 - Wellbore #1 - Wellbore #1	13,900.00	7,360.44	1,393.94	1,250.64	9.728	SF
EXIST DD SPAYD 30-29 - Wellbore #1 - Wellbore #1	17,317.59	7,487.31	4,025.28	3,797.11	17.642	CC, ES, SF
EXIST DD SPAYD 33-29 - Wellbore #1 - Wellbore #1	13,554.42	7,595.77	3,998.53	3,839.76	25.185	CC
EXIST DD SPAYD 33-29 - Wellbore #1 - Wellbore #1	13,600.00	7,595.31	3,998.79	3,839.15	25.050	ES
EXIST DD SPAYD 33-29 - Wellbore #1 - Wellbore #1	15,500.00	7,576.89	4,446.68	4,250.93	22.716	SF
EXIST DD SPAYD 36-29 - Wellbore #1 - Wellbore #1	12,266.19	7,525.66	1,588.82	1,464.77	12.808	CC
EXIST DD SPAYD 36-29 - Wellbore #1 - Wellbore #1	12,300.00	7,525.18	1,589.18	1,464.50	12.746	ES
EXIST DD SPAYD 36-29 - Wellbore #1 - Wellbore #1	12,700.00	7,519.54	1,646.97	1,514.75	12.456	SF
EXIST DD SPAYD 37-29 - Wellbore #1 - Wellbore #1	12,309.95	7,274.26	281.33	159.96	2.318	CC, ES, SF
EXIST VERT BOHLENDER 29-13 - Wellbore #1 - Design	15,393.71	7,093.97	637.52	467.94	3.759	CC
EXIST VERT BOHLENDER 29-13 - Wellbore #1 - Design	15,400.00	7,093.97	637.55	467.85	3.757	ES, SF
EXIST VERT BOHLENDER 29-3 - Wellbore #1 - Design	15,309.07	7,090.97	578.60	410.63	3.445	CC, ES, SF
EXIST VERT BOHLENDER 32-29 #1 - Wellbore #1 - Des	15,567.95	7,093.97	860.91	688.00	4.979	CC
EXIST VERT BOHLENDER 32-29 #1 - Wellbore #1 - Des	15,600.00	7,093.97	861.50	687.99	4.965	ES, SF
EXIST VERT CLYDE MARSHALL 1 - Wellbore #1 - Desi	400.00	400.00	1,529.67	1,528.15	1,005.262	CC, ES
EXIST VERT CLYDE MARSHALL 1 - Wellbore #1 - Desi	14,100.00	4,765.00	6,206.71	6,104.11	60.498	SF
EXIST VERT CPC BOHLENDER 29-1 - Wellbore #1 - De	16,752.37	7,093.99	396.99	201.48	2.031	CC, ES, SF
EXIST VERT CPC BOHLENDER 29-2 - Wellbore #1 - De	17,037.31	7,093.99	790.41	589.46	3.933	CC, ES
EXIST VERT CPC BOHLENDER 29-2 - Wellbore #1 - De	17,100.00	7,094.00	792.89	590.74	3.922	SF
EXIST VERT HAMBERT G 32-4X - Wellbore #1 - Design	11,386.98	7,093.95	3,257.21	3,163.40	34.720	CC
EXIST VERT HAMBERT G 32-4X - Wellbore #1 - Design	11,400.00	7,093.95	3,257.24	3,163.18	34.631	ES
EXIST VERT HAMBERT G 32-4X - Wellbore #1 - Design	13,500.00	7,093.95	3,882.54	3,748.96	29.067	SF
EXIST VERT HAMBERT R G 32-1 - Wellbore #1 - Desig	11,614.24	7,093.95	394.61	296.56	4.025	CC, ES, SF
EXIST VERT HAMBERT R G 32-2 - Wellbore #1 - Desig	11,437.37	7,093.95	652.16	557.41	6.883	CC, ES
EXIST VERT HAMBERT R G 32-2 - Wellbore #1 - Desig	11,500.00	7,093.95	655.16	559.24	6.830	SF
EXIST VERT HAMBERT R G 32-3 - Wellbore #1 - Desig	11,511.84	7,093.95	2,066.63	1,970.49	21.496	CC, ES
EXIST VERT HAMBERT R G 32-3 - Wellbore #1 - Desig	12,300.00	7,093.95	2,211.82	2,100.91	19.943	SF
EXIST VERT HAMBERT R G 32-6 - Wellbore #1 - Desig	10,186.38	7,093.96	2,239.01	2,167.25	31.202	CC
EXIST VERT HAMBERT R G 32-6 - Wellbore #1 - Desig	10,200.00	7,093.96	2,239.05	2,167.04	31.096	ES
EXIST VERT HAMBERT R G 32-6 - Wellbore #1 - Desig	11,500.00	7,093.95	2,595.90	2,499.98	27.064	SF
EXIST VERT HAMBERT R G 32-7 - Wellbore #1 - Desig	10,159.16	7,093.96	790.80	719.54	11.096	CC, ES
EXIST VERT HAMBERT R G 32-7 - Wellbore #1 - Desig	10,300.00	7,093.96	803.25	729.44	10.882	SF
EXIST VERT HAMBERT R G 32-8 - Wellbore #1 - Desig	10,467.51	7,093.96	566.81	489.95	7.375	CC, ES
EXIST VERT HAMBERT R G 32-8 - Wellbore #1 - Desig	10,500.00	7,093.96	567.74	490.29	7.331	SF
EXIST VERT HSR-CARTER 11-29 - Wellbore #1 - Design	14,010.76	7,093.96	1,995.87	1,852.60	13.931	CC, ES
EXIST VERT HSR-CARTER 11-29 - Wellbore #1 - Design	14,500.00	7,093.96	2,054.96	1,902.39	13.469	SF
EXIST VERT HSR-CROUSE 5-29 - Wellbore #1 - Design	15,324.20	7,093.97	3,359.69	3,191.43	19.968	CC
EXIST VERT HSR-CROUSE 5-29 - Wellbore #1 - Design	15,400.00	7,093.97	3,360.54	3,190.84	19.803	ES
EXIST VERT HSR-CROUSE 5-29 - Wellbore #1 - Design	16,600.00	7,093.99	3,593.76	3,401.16	18.659	SF
EXIST VERT HSR-DICERSON 14-29A - Wellbore #1 - D	12,886.36	7,093.95	2,348.87	2,226.91	19.259	CC
EXIST VERT HSR-DICERSON 14-29A - Wellbore #1 - D	12,900.00	7,093.95	2,348.91	2,226.69	19.219	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 PAONIA 9N
Project:	WELD COUNTY, COLORADO	TVD Reference:	WELL @ 4919.00usft (Original Well Elev)
Reference Site:	SW SE SEC. 32 T4N R65W 6th P.M. (PAONIA)	MD Reference:	WELL @ 4919.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	PAONIA 9N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 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
SW SE SEC. 32 T4N R65W 6th P.M. (PAONIA)						
EXIST VERT HSR-DICERSON 14-29A - Wellbore #1 - D	13,700.00	7,093.95	2,485.80	2,348.43	18.096	SF
EXIST VERT HSR-FRISBIE 16-29A - Wellbore #1 - Desi	12,916.33	7,093.95	374.53	252.00	3.057	CC, ES, SF
EXIST VERT HSR-FROELICH 12-29A - Wellbore #1 - De	14,052.32	7,093.96	3,348.92	3,204.87	23.248	CC
EXIST VERT HSR-FROELICH 12-29A - Wellbore #1 - De	14,100.00	7,093.96	3,349.26	3,204.30	23.105	ES
EXIST VERT HSR-FROELICH 12-29A - Wellbore #1 - De	15,500.00	7,093.97	3,648.42	3,476.82	21.260	SF
EXIST VERT HSR-HARRISON 9-32 - Wellbore #1 - Des	8,955.48	7,093.98	614.08	563.54	12.149	CC, ES
EXIST VERT HSR-HARRISON 9-32 - Wellbore #1 - Des	9,100.00	7,093.98	630.86	577.98	11.930	SF
EXIST VERT HSR-MUNDS 13.29 - Wellbore #1 - Design	13,077.04	7,093.95	3,445.00	3,319.43	27.436	CC
EXIST VERT HSR-MUNDS 13.29 - Wellbore #1 - Design	13,100.00	7,093.95	3,445.07	3,319.07	27.342	ES
EXIST VERT HSR-MUNDS 13.29 - Wellbore #1 - Design	14,900.00	7,093.96	3,897.57	3,737.40	24.333	SF
EXIST VERT HSR-NICHOLS 15-32 - Wellbore #1 - Desig	7,955.48	7,093.99	495.24	457.80	13.228	CC, ES
EXIST VERT HSR-NICHOLS 15-32 - Wellbore #1 - Desig	8,000.00	7,093.99	497.23	459.42	13.149	SF
EXIST VERT HSR-RAY 3-29 - Wellbore #1 - Design #1	16,791.63	7,093.99	2,300.06	2,103.80	11.719	CC
EXIST VERT HSR-RAY 3-29 - Wellbore #1 - Design #1	16,800.00	7,093.99	2,300.08	2,103.66	11.710	ES
EXIST VERT HSR-RAY 3-29 - Wellbore #1 - Design #1	17,300.00	7,094.00	2,355.57	2,149.60	11.436	SF
EXIST VERT HSR-SALISBURY 6-29 - Wellbore #1 - Des	15,610.62	7,093.97	2,325.47	2,151.75	13.386	CC, ES
EXIST VERT HSR-SALISBURY 6-29 - Wellbore #1 - Des	16,200.00	7,093.98	2,399.00	2,214.03	12.970	SF
EXIST VERT HSR-TEAGLE 10-29A - Wellbore #1 - Desi	14,344.34	7,093.96	889.46	739.85	5.945	CC, ES
EXIST VERT HSR-TEAGLE 10-29A - Wellbore #1 - Desi	14,400.00	7,093.96	891.20	740.54	5.915	SF
EXIST VERT HSR-WILLIAM 10-32A - Wellbore #1 - Des	8,931.05	7,093.98	785.54	735.38	15.661	CC, ES
EXIST VERT HSR-WILLIAM 10-32A - Wellbore #1 - Des	9,100.00	7,093.98	803.50	750.62	15.194	SF
EXIST VERT HSR-WRIGHT 9-29A - Wellbore #1 - Desig	14,271.11	7,093.96	295.50	147.29	1.994	CC, ES, SF
EXIST VERT MARSHALL 32-11G - Wellbore #1 - Design	400.00	400.00	1,747.31	1,745.79	1,148.290	CC, ES
EXIST VERT MARSHALL 32-11G - Wellbore #1 - Design	10,700.00	7,093.96	2,678.31	2,597.20	33.022	SF
EXIST VERT MARSHALL 32-12G - Wellbore #1 - Design	400.00	400.00	2,336.60	2,335.08	1,535.556	CC, ES
EXIST VERT MARSHALL 32-12G - Wellbore #1 - Design	13,500.00	7,093.95	5,776.25	5,642.68	43.244	SF
EXIST VERT MARSHALL 32-14G - Wellbore #1 - Design	400.00	400.00	1,094.91	1,093.39	719.548	CC, ES
EXIST VERT MARSHALL 32-14G - Wellbore #1 - Design	12,700.00	7,093.95	5,700.32	5,581.88	48.127	SF
EXIST VERT MARSHALL G 32-13JI - Wellbore #1 - Des	400.00	400.00	2,393.87	2,392.35	1,573.193	CC, ES
EXIST VERT MARSHALL G 32-13JI - Wellbore #1 - Des	16,900.00	7,093.99	9,946.26	9,747.93	50.150	SF
EXIST VERT MEL SMOOKLER GAS UNIT 1 - Wellbore	400.00	400.00	1,976.43	1,974.91	1,298.862	CC, ES
EXIST VERT MEL SMOOKLER GAS UNIT 1 - Wellbore	13,800.00	7,093.95	6,389.39	6,250.13	45.880	SF
EXIST VERT MUSICK 1-32 - Wellbore #1 - Design #1	10,596.87	7,093.96	2,700.14	2,620.92	34.085	CC
EXIST VERT MUSICK 1-32 - Wellbore #1 - Design #1	10,600.00	7,093.96	2,700.14	2,620.87	34.061	ES
EXIST VERT MUSICK 1-32 - Wellbore #1 - Design #1	12,300.00	7,093.95	3,192.39	3,081.48	28.785	SF
EXIST VERT MUSICK GAS UNIT 1 - Wellbore #1 - Desi	10,616.23	7,093.96	76.15	-3.42	0.957	Level 1, CC, ES, SF
EXIST VERT MUSICK MCCLINTOCK 2 - Wellbore #1 - D	400.00	400.00	2,800.18	2,798.66	1,840.205	CC, ES
EXIST VERT MUSICK MCCLINTOCK 2 - Wellbore #1 - D	13,000.00	4,755.00	4,081.22	3,998.26	49.193	SF
EXIST VERT MUSICK MCCLINTOCK 4 - Wellbore #1 - D	10,149.58	4,750.00	2,385.33	2,351.24	69.975	CC, ES
EXIST VERT MUSICK MCCLINTOCK 4 - Wellbore #1 - D	11,500.00	4,750.00	2,741.07	2,696.56	61.592	SF
EXIST VERT MUSICK MCCLINTOCK 6 - Wellbore #1 - D	400.00	400.00	3,432.23	3,430.71	2,255.577	CC, ES
EXIST VERT MUSICK MCCLINTOCK 6 - Wellbore #1 - D	14,900.00	4,750.00	6,015.71	5,886.95	46.724	SF
EXIST VERT MUSICK MCCLINTOCK 7 - Wellbore #1 - D	10,170.34	4,739.00	2,444.24	2,412.20	76.271	CC
EXIST VERT MUSICK MCCLINTOCK 7 - Wellbore #1 - D	10,200.00	4,739.00	2,444.42	2,412.13	75.694	ES
EXIST VERT MUSICK MCCLINTOCK 7 - Wellbore #1 - D	11,800.00	4,739.00	2,937.71	2,891.86	64.072	SF
EXIST VERT MUSICK-MCCLINTOCK 1 - Wellbore #1 - D	11,564.49	4,803.00	2,408.15	2,362.78	53.082	CC
EXIST VERT MUSICK-MCCLINTOCK 1 - Wellbore #1 - D	11,600.00	4,803.00	2,408.41	2,362.73	52.719	ES
EXIST VERT MUSICK-MCCLINTOCK 1 - Wellbore #1 - D	12,700.00	4,803.00	2,662.44	2,606.86	47.909	SF
EXIST VERT MUSICK-MCCLINTOCK 5 - Wellbore #1 - D	11,625.85	4,752.00	3,251.58	3,183.58	47.819	CC
EXIST VERT MUSICK-MCCLINTOCK 5 - Wellbore #1 - D	11,700.00	4,752.00	3,252.43	3,183.39	47.110	ES
EXIST VERT MUSICK-MCCLINTOCK 5 - Wellbore #1 - D	13,800.00	4,752.00	3,911.47	3,812.74	39.616	SF
EXIST VERT NGL C3B - Wellbore #1 - Design #1	16,455.68	7,093.98	836.69	646.84	4.407	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 PAONIA 9N
Project:	WELD COUNTY, COLORADO	TVD Reference:	WELL @ 4919.00usft (Original Well Elev)
Reference Site:	SW SE SEC. 32 T4N R65W 6th P.M. (PAONIA)	MD Reference:	WELL @ 4919.00usft (Original Well Elev)
Site Error:	0.00 usft	North Reference:	True
Reference Well:	PAONIA 9N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 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 Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
SW SE SEC. 32 T4N R65W 6th P.M. (PAONIA)						
EXIST VERT NGL C3B - Wellbore #1 - Design #1	16,500.00	7,093.98	837.86	647.17	4.394	SF
EXIST VERT R G 32-5 - Wellbore #1 - Design #1	400.00	400.00	3,471.34	3,469.82	2,281.273	CC
EXIST VERT R G 32-5 - Wellbore #1 - Design #1	10,300.00	7,093.96	3,534.50	3,460.69	47.886	ES
EXIST VERT R G 32-5 - Wellbore #1 - Design #1	13,500.00	7,093.95	4,818.56	4,684.98	36.074	SF
EXIST VERT SPAYD 5-29 - Wellbore #1 - Design #1	15,700.09	7,093.97	3,621.62	3,446.19	20.645	CC
EXIST VERT SPAYD 5-29 - Wellbore #1 - Design #1	15,800.00	7,093.97	3,623.00	3,445.67	20.431	ES
EXIST VERT SPAYD 5-29 - Wellbore #1 - Design #1	17,100.00	7,094.00	3,882.76	3,680.60	19.207	SF
EXIST VERT UPRR 21 PAN AM D #1 - Wellbore #1 - De	14,171.67	4,730.00	3,203.97	3,102.02	31.427	CC
EXIST VERT UPRR 21 PAN AM D #1 - Wellbore #1 - De	14,200.00	4,730.00	3,204.10	3,101.75	31.307	ES
EXIST VERT UPRR 21 PAN AM D #1 - Wellbore #1 - De	15,600.00	4,730.00	3,507.92	3,386.04	28.781	SF
EXIST VERT UPRR 21 PAN AM D #2 - Wellbore #1 - De	12,875.72	7,093.95	522.26	400.50	4.289	CC, ES
EXIST VERT UPRR 21 PAN AM D #2 - Wellbore #1 - De	12,900.00	7,093.95	522.83	400.61	4.278	SF
EXIST VERT UPRR 21 PAN AM G #1 - Wellbore #1 - De	16,160.17	4,660.00	3,754.15	3,612.41	26.488	CC
EXIST VERT UPRR 21 PAN AM G #1 - Wellbore #1 - De	16,200.00	4,660.00	3,754.36	3,612.01	26.376	ES
EXIST VERT UPRR 21 PAN AM G #1 - Wellbore #1 - De	17,317.59	4,660.00	3,928.51	3,769.06	24.638	SF
EXIST VERT UPRR PAN AM "J"1 - Wellbore #1 - Design	12,975.95	7,093.95	975.73	852.08	7.891	CC
EXIST VERT UPRR PAN AM "J"1 - Wellbore #1 - Design	13,000.00	7,093.95	976.03	851.92	7.864	ES
EXIST VERT UPRR PAN AM "J"1 - Wellbore #1 - Design	13,100.00	7,093.95	983.59	857.59	7.806	SF
EXIST VERT VERN MARSHALL 1 - Wellbore #1 - Desig	400.00	400.00	2,568.28	2,566.75	1,687.805	CC, ES
EXIST VERT VERN MARSHALL 1 - Wellbore #1 - Desig	17,000.00	4,785.00	8,986.17	8,820.69	54.305	SF
EXIST VERT WEINMASTER G 32-18 - Wellbore #1 - De	10,849.66	7,093.96	1,321.25	1,237.39	15.756	CC, ES
EXIST VERT WEINMASTER G 32-18 - Wellbore #1 - De	11,200.00	7,093.95	1,366.91	1,276.57	15.131	SF
PAONIA 10N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	300.00	15.01	13.94	14.000	CC
PAONIA 10N - ORIGINAL WELLBORE - PROPOSAL #1	17,317.59	17,485.24	327.54	-36.90	0.899	Level 1, ES, SF
PAONIA 11N - ORIGINAL WELLBORE - PROPOSAL #1	200.00	200.00	30.02	29.40	48.215	CC
PAONIA 11N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	299.76	30.41	29.35	28.681	ES
PAONIA 11N - ORIGINAL WELLBORE - PROPOSAL #1	17,317.59	17,517.88	684.86	302.68	1.792	SF
PAONIA 12N - ORIGINAL WELLBORE - PROPOSAL #1	100.00	100.00	44.99	44.82	259.962	CC, ES
PAONIA 12N - ORIGINAL WELLBORE - PROPOSAL #1	17,317.59	17,705.30	1,038.68	658.05	2.729	SF
PAONIA 1N - ORIGINAL WELLBORE - PROPOSAL #1	400.00	400.00	119.97	118.45	78.844	CC, ES
PAONIA 1N - ORIGINAL WELLBORE - PROPOSAL #1	17,317.59	17,446.39	2,613.81	2,237.68	6.949	SF
PAONIA 2N - ORIGINAL WELLBORE - PROPOSAL #1	400.00	400.00	104.99	103.47	68.998	CC, ES
PAONIA 2N - ORIGINAL WELLBORE - PROPOSAL #1	17,317.59	17,225.02	2,267.53	1,894.15	6.073	SF
PAONIA 3N - ORIGINAL WELLBORE - PROPOSAL #1	400.00	400.00	89.98	88.46	59.135	CC, ES
PAONIA 3N - ORIGINAL WELLBORE - PROPOSAL #1	17,317.59	17,224.16	1,853.96	1,476.96	4.918	SF
PAONIA 4N - ORIGINAL WELLBORE - PROPOSAL #1	400.00	400.00	74.97	73.45	49.271	CC, ES
PAONIA 4N - ORIGINAL WELLBORE - PROPOSAL #1	17,317.59	17,159.50	1,570.22	1,202.14	4.266	SF
PAONIA 5N - ORIGINAL WELLBORE - PROPOSAL #1	400.00	400.00	60.00	58.48	39.431	CC, ES
PAONIA 5N - ORIGINAL WELLBORE - PROPOSAL #1	17,317.59	17,189.92	1,249.76	872.08	3.309	SF
PAONIA 6N - ORIGINAL WELLBORE - PROPOSAL #1	400.00	400.00	44.99	43.47	29.567	CC, ES
PAONIA 6N - ORIGINAL WELLBORE - PROPOSAL #1	17,317.59	17,288.76	956.06	577.81	2.528	SF
PAONIA 7N - ORIGINAL WELLBORE - PROPOSAL #1	400.00	400.00	29.98	28.46	19.704	CC, ES
PAONIA 7N - ORIGINAL WELLBORE - PROPOSAL #1	17,317.59	17,222.20	604.88	224.92	1.592	SF
PAONIA 8N - ORIGINAL WELLBORE - PROPOSAL #1	400.00	400.00	14.97	13.45	9.840	CC
PAONIA 8N - ORIGINAL WELLBORE - PROPOSAL #1	17,317.59	17,346.80	346.82	-24.51	0.934	Level 1, ES, SF