



Project: WELD COUNTY, COLORADO (TRUE)  
Site: SE NW SEC. 6 T3N R65W 6th P.M.  
Well: VEGA 7N  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #1

ANNOTATIONS

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: 2404ft FNL & 2596ft FWL of Sec 6
400.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	START NUDGE (2°/100ft BUR)
995.67	1000.05	12.00	203.40	-57.46	-24.86	-56.35	62.61	EOB TO 12° INC
4731.13	4818.97	12.00	203.40	-786.23	-340.19	-771.02	856.67	END OF TANGENT
5326.80	5419.02	0.00	0.00	-843.70	-365.05	-827.37	919.29	EOD TO VERTICAL
6471.80	6564.02	0.00	0.00	-843.70	-365.05	-827.37	919.29	KOP (8°/100ft BUR)
7188.00	7689.03	90.00	0.29	-127.50	-361.43	-111.98	1635.49	EP: 2530ft FNL & 2235ft FWL of Sec 6
7188.00	15362.81	90.00	0.30	7546.17	-321.86	7553.03	9309.27	BHL: 150ft FNL & 2235ft FWL of Sec 31

PROPOSED LOCAL COORDINATES:

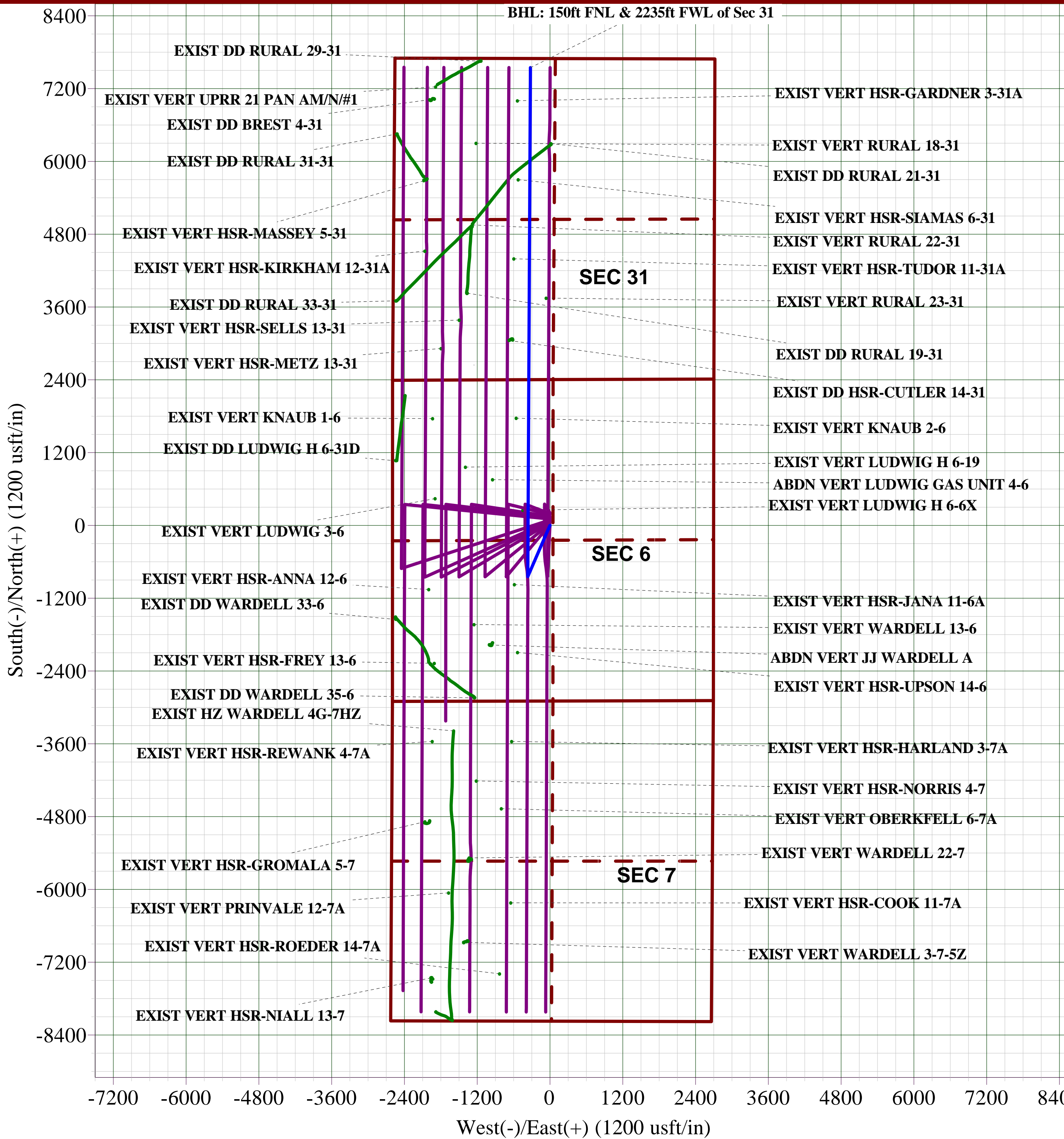
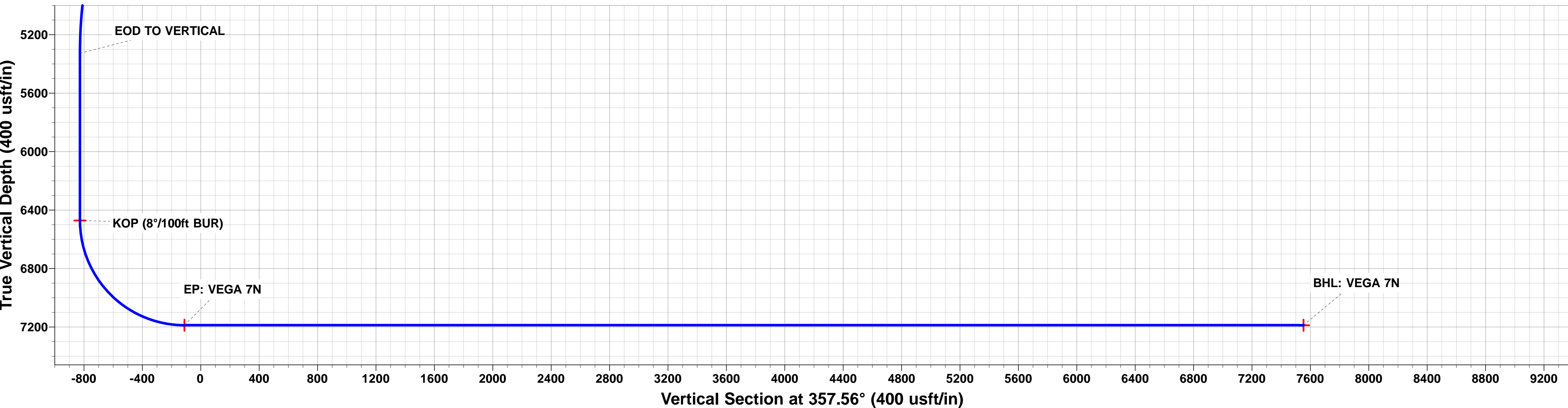
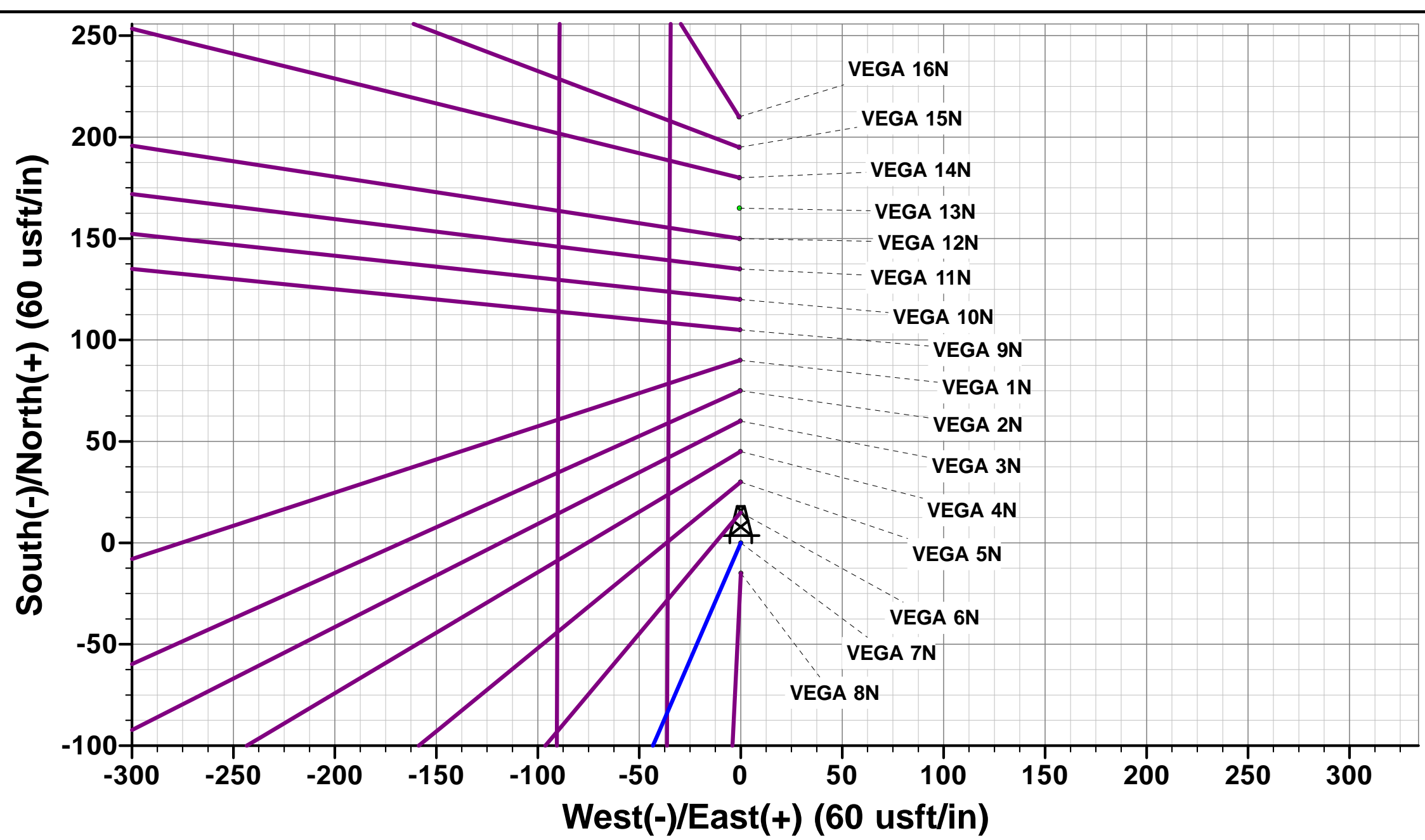
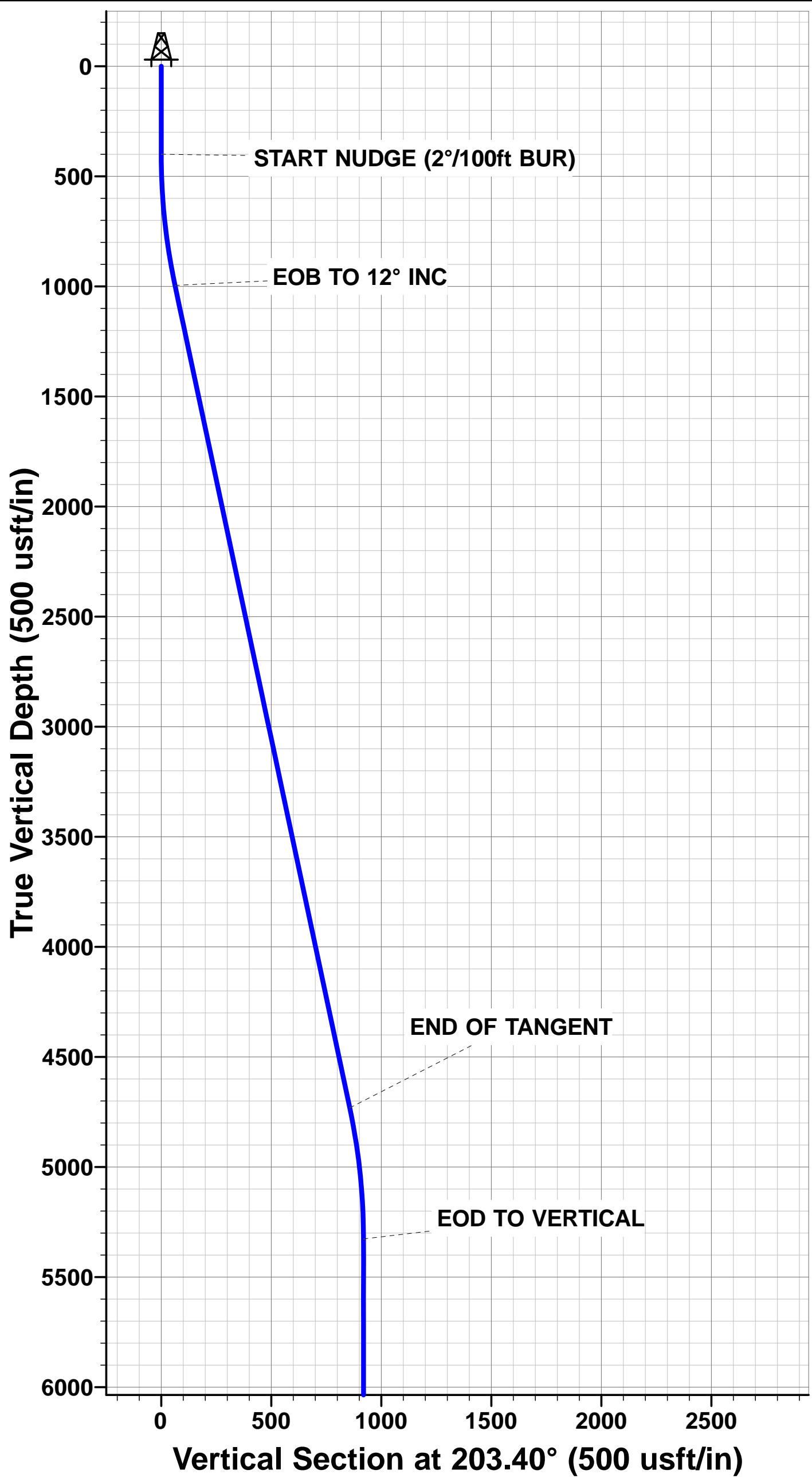
SHL: 2404ft FNL & 2596ft FWL of Sec 6

EP: 2530ft FNL & 2235ft FWL of Sec 6

BHL: 150ft FNL & 2235ft FWL of Sec 31

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP: VEGA 7N	6471.80	-843.70	-365.05	40.252761	-104.707663
EP: VEGA 7N	7188.00	-127.50	-361.43	40.254727	-104.707650
BHL: VEGA 7N	7188.00	7546.17	-321.86	40.275791	-104.707509



# **PDC ENERGY**

**WELD COUNTY, COLORADO  
SE NW SEC. 6 T3N R65W 6th P.M.  
VEGA 7N**

**ORIGINAL WELLBORE  
PROPOSAL #1**

## **Anticollision Report**

**24 January, 2018**



## Anticollision Report



<b>Company:</b>	PDC ENERGY	<b>Local Co-ordinate Reference:</b>	Well VEGA 7N
<b>Project:</b>	WELD COUNTY, COLORADO	<b>TVD Reference:</b>	WELL @ 4998.00usft (Original Well Elev)
<b>Reference Site:</b>	SE NW SEC. 6 T3N R65W 6th P.M.	<b>MD Reference:</b>	WELL @ 4998.00usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	VEGA 7N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 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 100.00usft	<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 9,999.98 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>	22/01/2018		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	15,362.81	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 NW SEC. 6 T3N R65W 6th P.M.						
ABDN VERT JJ WARDELL A - Wellbore #1 - Wellbore #1	6,568.50	6,465.56	1,285.49	1,268.54	75.830	CC, ES
ABDN VERT JJ WARDELL A - Wellbore #1 - Wellbore #1	15,362.81	7,100.00	9,534.14	9,386.17	64.437	SF
ABDN VERT LUDWIG GAS UNIT 4-6 - Wellbore #1 - De	8,568.83	7,166.00	590.61	550.57	14.749	CC, ES
ABDN VERT LUDWIG GAS UNIT 4-6 - Wellbore #1 - De	8,700.00	7,166.00	605.01	563.32	14.515	SF
EXIST DD BREST 4-31 - Wellbore #1 - Wellbore #1	14,825.36	7,016.70	1,658.30	1,519.62	11.958	CC, ES
EXIST DD BREST 4-31 - Wellbore #1 - Wellbore #1	15,200.00	7,016.35	1,700.10	1,554.29	11.660	SF
EXIST DD HSR-CUTLER 14-31 - Wellbore #1 - Wellbore	10,863.85	7,170.60	325.87	262.07	5.108	CC, ES
EXIST DD HSR-CUTLER 14-31 - Wellbore #1 - Wellbore	10,900.00	7,170.58	327.87	263.41	5.086	SF
EXIST DD LUDWIG H 6-31D - Wellbore #1 - Wellbore #1	8,870.72	7,304.66	2,185.63	2,133.60	42.004	CC
EXIST DD LUDWIG H 6-31D - Wellbore #1 - Wellbore #1	8,900.00	7,304.45	2,185.83	2,133.38	41.677	ES
EXIST DD LUDWIG H 6-31D - Wellbore #1 - Wellbore #1	10,600.00	7,291.66	2,787.00	2,705.83	34.335	SF
EXIST DD RURAL 19-31 - Wellbore #1 - Wellbore #1	11,639.26	7,230.70	1,019.95	919.34	10.138	CC, ES
EXIST DD RURAL 19-31 - Wellbore #1 - Wellbore #1	11,800.00	7,230.63	1,032.54	928.94	9.966	SF
EXIST DD RURAL 21-31 - Wellbore #1 - Wellbore #1	14,109.82	7,430.15	344.37	191.91	2.259	CC, ES, SF
EXIST DD RURAL 29-31 - Wellbore #1 - Wellbore #1	15,362.81	7,235.75	821.50	658.50	5.040	CC, ES, SF
EXIST DD RURAL 31-31 - Wellbore #1 - Wellbore #1	14,255.52	7,261.01	2,195.28	2,051.06	15.222	CC
EXIST DD RURAL 31-31 - Wellbore #1 - Wellbore #1	14,300.00	7,261.30	2,195.73	2,050.67	15.136	ES
EXIST DD RURAL 31-31 - Wellbore #1 - Wellbore #1	14,900.00	7,265.19	2,287.93	2,131.46	14.622	SF
EXIST DD RURAL 33-31 - Wellbore #1 - Wellbore #1	11,509.01	7,359.72	2,196.81	2,094.59	21.490	CC, ES
EXIST DD RURAL 33-31 - Wellbore #1 - Wellbore #1	12,400.00	7,349.55	2,370.62	2,251.75	19.944	SF
EXIST DD WARDELL 33-6 - Wellbore #1 - Wellbore #1	5,026.48	4,797.00	2,247.97	2,215.11	68.414	CC, ES
EXIST DD WARDELL 33-6 - Wellbore #1 - Wellbore #1	15,362.81	7,020.28	9,348.13	9,183.21	56.683	SF
EXIST DD WARDELL 35-6 - Wellbore #1 - Wellbore #1	5,353.70	5,267.92	2,158.03	2,128.78	73.786	CC, ES
EXIST DD WARDELL 35-6 - Wellbore #1 - Wellbore #1	6,564.02	6,496.37	2,175.98	2,140.91	62.045	SF
EXIST HZ WARDELL 4G-7HZ - Wellbore #1 - Wellbore #	6,797.97	12,143.00	2,987.76	2,937.72	59.703	CC
EXIST HZ WARDELL 4G-7HZ - Wellbore #1 - Wellbore #	6,800.00	12,143.00	2,987.77	2,937.71	59.687	ES
EXIST HZ WARDELL 4G-7HZ - Wellbore #1 - Wellbore #	7,689.03	12,143.00	3,504.39	3,405.29	35.361	SF
EXIST VERT HSR-ANNA 12-6 - Wellbore #1 - Design #1	6,564.02	6,449.80	1,647.57	1,612.74	47.298	CC
EXIST VERT HSR-ANNA 12-6 - Wellbore #1 - Design #1	6,600.00	6,485.76	1,647.69	1,612.72	47.115	ES
EXIST VERT HSR-ANNA 12-6 - Wellbore #1 - Design #1	6,700.00	6,584.96	1,649.35	1,614.19	46.911	SF
EXIST VERT HSR-COOK 11-7A - Wellbore #1 - Design #	6,564.02	6,449.80	5,384.11	5,353.67	176.900	CC, ES
EXIST VERT HSR-COOK 11-7A - Wellbore #1 - Design #	11,500.00	7,165.99	9,908.51	9,818.81	110.459	SF
EXIST VERT HSR-FREY 13-6 - Wellbore #1 - Design #1	6,564.02	6,449.80	2,102.52	2,071.79	68.420	CC, ES
EXIST VERT HSR-FREY 13-6 - Wellbore #1 - Design #1	15,362.81	7,166.00	9,945.47	9,782.84	61.153	SF
EXIST VERT HSR-GARDNER 3-31A - Wellbore #1 - Des	14,814.89	7,166.00	212.41	60.21	1.396	Level 3, CC, ES, SF
EXIST VERT HSR-GROMALA 5-7 - Wellbore #1 - Wellbo	6,571.74	6,506.82	4,393.74	4,377.08	263.657	CC, ES
EXIST VERT HSR-GROMALA 5-7 - Wellbore #1 - Wellbo	12,700.00	7,296.66	9,920.92	9,823.14	101.455	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 VEGA 7N
<b>Project:</b>	WELD COUNTY, COLORADO	<b>TVD Reference:</b>	WELL @ 4998.00usft (Original Well Elev)
<b>Reference Site:</b>	SE NW SEC. 6 T3N R65W 6th P.M.	<b>MD Reference:</b>	WELL @ 4998.00usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	VEGA 7N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 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						
SE NW SEC. 6 T3N R65W 6th P.M.						
EXIST VERT HSR-HARLAND 3-7A - Wellbore #1 - Desig	6,564.02	6,449.80	2,731.11	2,700.91	90.429	CC, ES
EXIST VERT HSR-HARLAND 3-7A - Wellbore #1 - Desig	14,200.00	7,166.00	9,949.74	9,809.21	70.803	SF
EXIST VERT HSR-JANA 11-6A - Wellbore #1 - Design #1	6,564.02	6,449.80	258.45	226.31	8.043	CC, ES
EXIST VERT HSR-JANA 11-6A - Wellbore #1 - Design #1	6,600.00	6,485.76	258.91	226.67	8.031	SF
EXIST VERT HSR-KIRKHAM 12-31A - Wellbore #1 - Des	12,329.90	7,165.99	1,726.04	1,620.84	16.407	CC, ES
EXIST VERT HSR-KIRKHAM 12-31A - Wellbore #1 - Des	12,900.00	7,165.99	1,817.76	1,701.83	15.680	SF
EXIST VERT HSR-MASSEY 5-31 - Wellbore #1 - Wellbo	13,488.96	7,052.45	1,748.62	1,635.44	15.449	CC
EXIST VERT HSR-MASSEY 5-31 - Wellbore #1 - Wellbo	13,500.00	7,052.22	1,748.66	1,635.26	15.421	ES
EXIST VERT HSR-MASSEY 5-31 - Wellbore #1 - Wellbo	14,000.00	7,042.09	1,821.74	1,698.87	14.826	SF
EXIST VERT HSR-METZ 13-31 - Wellbore #1 - Design #	10,724.77	7,165.99	1,449.97	1,374.54	19.222	CC, ES
EXIST VERT HSR-METZ 13-31 - Wellbore #1 - Design #	11,200.00	7,165.99	1,525.87	1,441.72	18.133	SF
EXIST VERT HSR-NIAL 13-7 - Wellbore #1 - Wellbore #	5,734.72	5,625.23	6,796.13	6,780.48	434.498	CC
EXIST VERT HSR-NIAL 13-7 - Wellbore #1 - Wellbore #	5,900.00	5,778.12	6,796.27	6,780.35	426.797	ES
EXIST VERT HSR-NIAL 13-7 - Wellbore #1 - Wellbore #	10,200.00	7,123.00	9,974.88	9,922.95	192.110	SF
EXIST VERT HSR-NORRIS 4-7 - Wellbore #1 - Design #	6,564.02	6,449.80	3,474.32	3,444.70	117.294	CC, ES
EXIST VERT HSR-NORRIS 4-7 - Wellbore #1 - Design #	13,500.00	7,165.99	9,935.11	9,807.85	78.069	SF
EXIST VERT HSR-REWANK 4-7A - Wellbore #1 - Desig	6,564.02	6,449.80	3,142.06	3,112.56	106.519	CC, ES
EXIST VERT HSR-REWANK 4-7A - Wellbore #1 - Desig	14,100.00	7,166.00	9,976.29	9,837.66	71.964	SF
EXIST VERT HSR-ROEDER 14-7A - Wellbore #1 - Desig	6,564.02	6,449.80	6,563.34	6,533.01	216.341	CC, ES
EXIST VERT HSR-ROEDER 14-7A - Wellbore #1 - Desig	10,400.00	7,165.99	9,985.63	9,916.07	143.566	SF
EXIST VERT HSR-SELLS 13-31 - Wellbore #1 - Design	11,196.21	7,165.99	1,153.74	1,069.66	13.722	CC
EXIST VERT HSR-SELLS 13-31 - Wellbore #1 - Design	11,200.00	7,165.99	1,153.75	1,069.60	13.711	ES
EXIST VERT HSR-SELLS 13-31 - Wellbore #1 - Design	11,500.00	7,165.99	1,193.07	1,103.37	13.300	SF
EXIST VERT HSR-SIAMAS 6-31 - Wellbore #1 - Design	13,514.47	7,165.99	191.70	64.16	1.503	CC, ES, SF
EXIST VERT HSR-TUDOR 11-31A - Wellbore #1 - Desig	12,209.91	7,165.99	257.51	154.56	2.501	CC, ES, SF
EXIST VERT HSR-UPSON 14-6 - Wellbore #1 - Design #	6,564.02	6,449.80	1,261.32	1,231.29	42.002	CC, ES, SF
EXIST VERT KNAUB 1-6 - Wellbore #1 - Design #1	9,569.28	7,165.99	1,583.69	1,528.67	28.782	CC
EXIST VERT KNAUB 1-6 - Wellbore #1 - Design #1	9,600.00	7,165.99	1,583.99	1,528.45	28.520	ES
EXIST VERT KNAUB 1-6 - Wellbore #1 - Design #1	10,400.00	7,165.99	1,788.35	1,718.79	25.712	SF
EXIST VERT KNAUB 2-6 - Wellbore #1 - Design #1	9,583.50	7,165.99	205.00	149.74	3.710	CC, ES
EXIST VERT KNAUB 2-6 - Wellbore #1 - Design #1	9,600.00	7,165.99	205.66	150.12	3.703	SF
EXIST VERT LUDWIG 3-6 - Wellbore #1 - Design #1	8,250.79	7,166.00	1,535.21	1,498.42	41.723	CC, ES
EXIST VERT LUDWIG 3-6 - Wellbore #1 - Design #1	9,400.00	7,165.99	1,917.71	1,865.51	36.733	SF
EXIST VERT LUDWIG H 6-19 - Wellbore #1 - Design #1	8,773.13	7,166.00	1,037.38	994.72	24.314	CC
EXIST VERT LUDWIG H 6-19 - Wellbore #1 - Design #1	8,800.00	7,166.00	1,037.73	994.70	24.118	ES
EXIST VERT LUDWIG H 6-19 - Wellbore #1 - Design #1	9,200.00	7,165.99	1,121.78	1,072.79	22.901	SF
EXIST VERT LUDWIG H 6-6X - Wellbore #1 - Design #1	8,067.90	7,166.00	87.07	51.52	2.449	CC, ES, SF
EXIST VERT OBERKFE 6-7A - Wellbore #1 - Design #	6,564.02	6,449.80	3,850.42	3,820.30	127.813	CC, ES
EXIST VERT OBERKFE 6-7A - Wellbore #1 - Design #	13,100.00	7,165.99	9,963.62	9,843.92	83.238	SF
EXIST VERT PRINVALE 12-7A - Wellbore #1 - Design #	6,564.02	6,449.80	5,374.49	5,344.86	181.412	CC, ES
EXIST VERT PRINVALE 12-7A - Wellbore #1 - Design #	11,600.00	7,165.99	9,929.94	9,838.38	108.451	SF
EXIST VERT RURAL 18-31 - Wellbore #1 - Design #1	14,111.96	7,166.00	889.64	750.78	6.407	CC, ES
EXIST VERT RURAL 18-31 - Wellbore #1 - Design #1	14,200.00	7,166.00	893.98	753.45	6.362	SF
EXIST VERT RURAL 22-31 - Wellbore #1 - Design #1	12,764.86	7,165.99	944.92	831.54	8.334	CC
EXIST VERT RURAL 22-31 - Wellbore #1 - Design #1	12,800.00	7,165.99	945.58	831.53	8.291	ES
EXIST VERT RURAL 22-31 - Wellbore #1 - Design #1	12,900.00	7,165.99	954.54	838.61	8.234	SF
EXIST VERT RURAL 23-31 - Wellbore #1 - Design #1	11,564.20	7,165.99	278.85	187.95	3.068	CC, ES, SF
EXIST VERT UPRR 21 PAN AM/N#1 - Wellbore #1 - De	15,037.43	4,686.00	2,930.56	2,832.71	29.951	CC
EXIST VERT UPRR 21 PAN AM/N#1 - Wellbore #1 - De	15,100.00	4,686.00	2,931.23	2,832.64	29.733	ES
EXIST VERT UPRR 21 PAN AM/N#1 - Wellbore #1 - De	15,362.81	4,686.00	2,948.57	2,846.87	28.994	SF
EXIST VERT WARDELL 13-6 - Wellbore #1 - Design #1	6,564.02	6,449.80	1,188.26	1,157.42	38.528	CC, ES
EXIST VERT WARDELL 13-6 - Wellbore #1 - Design #1	6,600.00	6,485.76	1,188.86	1,157.92	38.428	SF
EXIST VERT WARDELL 22-7 - Wellbore #1 - Wellbore #	6,590.30	6,652.76	4,770.87	4,753.82	279.878	CC, ES

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

## Anticollision Report



<b>Company:</b>	PDC ENERGY	<b>Local Co-ordinate Reference:</b>	Well VEGA 7N
<b>Project:</b>	WELD COUNTY, COLORADO	<b>TVD Reference:</b>	WELL @ 4998.00usft (Original Well Elev)
<b>Reference Site:</b>	SE NW SEC. 6 T3N R65W 6th P.M.	<b>MD Reference:</b>	WELL @ 4998.00usft (Original Well Elev)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	VEGA 7N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 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						
SE NW SEC. 6 T3N R65W 6th P.M.						
EXIST VERT WARDELL 22-7 - Wellbore #1 - Wellbore #	12,200.00	7,300.00	9,915.85	9,827.74	112.543	SF
EXIST VERT WARDELL 3-7-5Z - Wellbore #1 - Wellbore	5,345.33	5,081.99	6,111.81	6,096.81	407.401	CC, ES
EXIST VERT WARDELL 3-7-5Z - Wellbore #1 - Wellbore	10,800.00	7,300.00	9,914.60	9,851.75	157.751	SF
VEGA 10N - ORIGINAL WELLBORE - PROPOSAL #1	400.00	400.00	120.00	118.48	78.862	CC, ES
VEGA 10N - ORIGINAL WELLBORE - PROPOSAL #1	2,600.00	2,478.11	606.47	589.39	35.511	SF
VEGA 11N - ORIGINAL WELLBORE - PROPOSAL #1	400.00	400.00	134.97	133.45	88.702	CC, ES
VEGA 11N - ORIGINAL WELLBORE - PROPOSAL #1	6,600.00	8,336.60	1,499.83	1,452.54	31.718	SF
VEGA 12N - ORIGINAL WELLBORE - PROPOSAL #1	400.00	400.00	150.02	148.50	98.590	CC, ES
VEGA 12N - ORIGINAL WELLBORE - PROPOSAL #1	7,200.00	8,038.95	962.61	922.92	24.253	SF
VEGA 14N - ORIGINAL WELLBORE - PROPOSAL #1	400.00	400.00	179.97	178.44	118.269	CC, ES
VEGA 14N - ORIGINAL WELLBORE - PROPOSAL #1	7,764.69	7,413.23	329.20	293.80	9.299	SF
VEGA 15N - ORIGINAL WELLBORE - PROPOSAL #1	7,477.95	7,576.97	48.90	11.63	1.312	Level 3, CC, ES, SF
VEGA 16N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	300.00	209.99	208.91	195.857	CC, ES
VEGA 16N - ORIGINAL WELLBORE - PROPOSAL #1	7,700.00	7,420.13	272.23	236.91	7.706	SF
VEGA 1N - ORIGINAL WELLBORE - PROPOSAL #1	400.00	400.00	90.02	88.50	59.159	CC, ES
VEGA 1N - ORIGINAL WELLBORE - PROPOSAL #1	15,362.81	15,842.93	2,084.58	1,792.15	7.129	SF
VEGA 2N - ORIGINAL WELLBORE - PROPOSAL #1	400.00	400.00	74.97	73.45	49.271	CC, ES
VEGA 2N - ORIGINAL WELLBORE - PROPOSAL #1	15,362.81	15,879.05	1,701.78	1,409.34	5.819	SF
VEGA 3N - ORIGINAL WELLBORE - PROPOSAL #1	400.00	400.00	60.04	58.52	39.455	CC, ES
VEGA 3N - ORIGINAL WELLBORE - PROPOSAL #1	15,362.81	15,687.04	1,426.73	1,133.72	4.869	SF
VEGA 4N - ORIGINAL WELLBORE - PROPOSAL #1	400.00	400.00	45.03	43.51	29.591	CC, ES
VEGA 4N - ORIGINAL WELLBORE - PROPOSAL #1	15,362.81	15,648.91	1,137.95	845.73	3.894	SF
VEGA 5N - ORIGINAL WELLBORE - PROPOSAL #1	400.00	400.00	29.98	28.46	19.704	CC, ES
VEGA 5N - ORIGINAL WELLBORE - PROPOSAL #1	15,362.81	15,454.20	704.87	411.34	2.401	SF
VEGA 6N - ORIGINAL WELLBORE - PROPOSAL #1	400.00	400.00	15.01	13.49	9.864	CC, ES
VEGA 6N - ORIGINAL PROPOSAL - PROPOSAL #1	15,362.81	15,471.60	364.97	78.75	1.275	Level 3, SF
VEGA 8N - ORIGINAL WELLBORE - PROPOSAL #1	300.00	300.00	14.97	13.90	13.966	CC, ES
VEGA 8N - ORIGINAL WELLBORE - PROPOSAL #1	15,362.81	15,435.69	335.87	47.91	1.166	Level 2, SF
VEGA 9N - ORIGINAL WELLBORE - PROPOSAL #1	400.00	400.00	104.99	103.47	68.998	CC, ES
VEGA 9N - ORIGINAL WELLBORE - PROPOSAL #1	2,200.00	2,104.66	475.29	461.67	34.890	SF

<b>Offset Design</b> SE NW SEC. 6 T3N R65W 6th P.M. - ABDN VERT JJ WARDELL A - Wellbore #1 - Wellbore #1										<b>Offset Site Error:</b>	0.00 usft
<b>Survey Program:</b> 100-GYD_CT										<b>Offset Well Error:</b>	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)			
0.00	0.00	0.00	0.00	0.00	0.00	-153.97	-1,933.63	-944.33	2,151.99		
100.00	100.00	81.79	81.78	0.09	0.09	-153.97	-1,933.56	-944.43	2,151.89	0.17	N/A
200.00	200.00	188.64	188.64	0.31	0.21	-153.96	-1,933.24	-944.68	2,151.72	0.52	4,134.731
256.13	256.13	237.13	237.13	0.44	0.23	-153.95	-1,933.07	-944.76	2,151.59	0.67	3,216.808
300.00	300.00	272.84	272.83	0.54	0.24	-153.95	-1,933.09	-944.88	2,151.67	0.78	2,772.847
400.00	400.00	362.46	362.46	0.76	0.30	-153.94	-1,933.53	-945.38	2,152.36	1.05	2,040.921
500.00	499.98	479.45	479.44	0.96	0.36	2.68	-1,933.99	-946.18	2,151.30	1.32	1,630.666
600.00	599.84	575.45	575.43	1.16	0.41	2.71	-1,933.71	-946.80	2,146.10	1.58	1,361.411
700.00	699.45	666.78	666.76	1.38	0.46	2.74	-1,933.79	-947.61	2,137.85	1.85	1,157.520
800.00	798.70	761.41	761.40	1.64	0.51	2.77	-1,934.36	-948.11	2,126.45	2.13	998.038
900.00	897.47	863.29	863.27	1.95	0.55	2.80	-1,935.20	-948.34	2,111.66	2.43	868.830
1,000.05	995.67	965.76	965.74	2.31	0.59	2.84	-1,935.97	-948.17	2,093.18	2.74	763.099
1,100.00	1,093.44	1,061.72	1,061.70	2.71	0.62	2.86	-1,936.55	-948.14	2,072.94	3.02	686.660
1,200.00	1,191.25	1,155.85	1,155.82	3.13	0.66	2.88	-1,937.15	-948.45	2,052.87	3.30	622.447

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