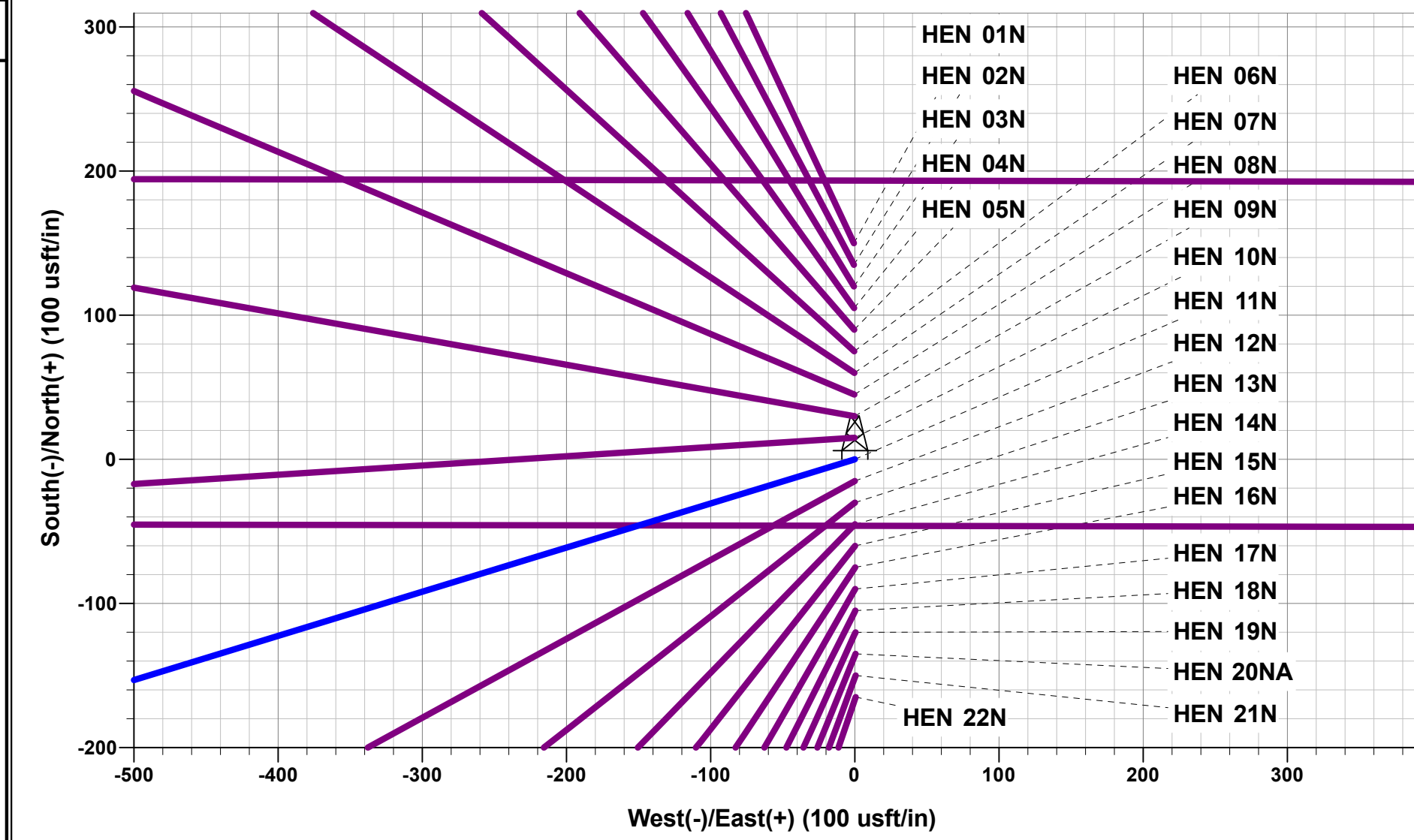




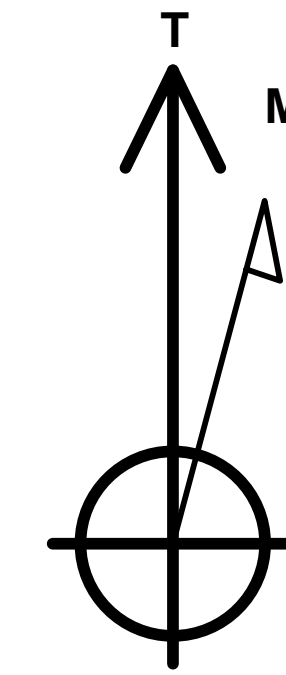
Project: WELD COUNTY, COLORADO (TRUE)  
 Site: SW NE SEC. 8 T4N R64W 6th P.M. (HEN)  
 Well: HEN 11N  
 Wellbore: ORIGINAL WELLBORE  
 Design: PROPOSAL #2

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Dep	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL: 2234ft FNL & 2044ft FEL of Sec 8
1400.00	0.00	0.00	1400.00	0.00	0.00	0.00	0.00	START NUDDGE (2°/100ft BUR)
2085.94	13.72	252.97	2079.40	-23.93	-78.15	-77.08	81.73	EOB TO 13.72° INC
5490.12	13.72	252.97	5386.47	-260.32	-850.09	-838.44	889.05	END OF TANGENT
6176.06	0.00	0.00	6065.87	-284.25	-928.23	-915.51	970.78	EOD TO VERTICAL
6276.06	0.00	0.00	6165.87	-284.25	-928.23	-915.51	970.78	KOP (8°/100ft BUR)
7213.56	75.00	90.10	6857.66	-285.18	-397.40	-385.10	1501.62	EP: 2517ft FNL & 2440ft FEL of Sec 8
7410.80	90.78	90.10	6882.00	-285.52	-202.29	-190.15	1696.72	HZ LANDING POINT
14738.87	90.78	90.11	6782.00	-298.68	7125.08	7131.34	9024.11	BHL: 2517ft FNL & 200ft FEL of Sec 9



PROPOSED LOCAL COORDINATES:  
 SHL: 2234ft FNL & 2044ft FEL of Sec 8  
 EP : 2517ft FNL & 2440ft FEL of Sec 8  
 BHL : 2517ft FNL & 200ft FEL of Sec 9

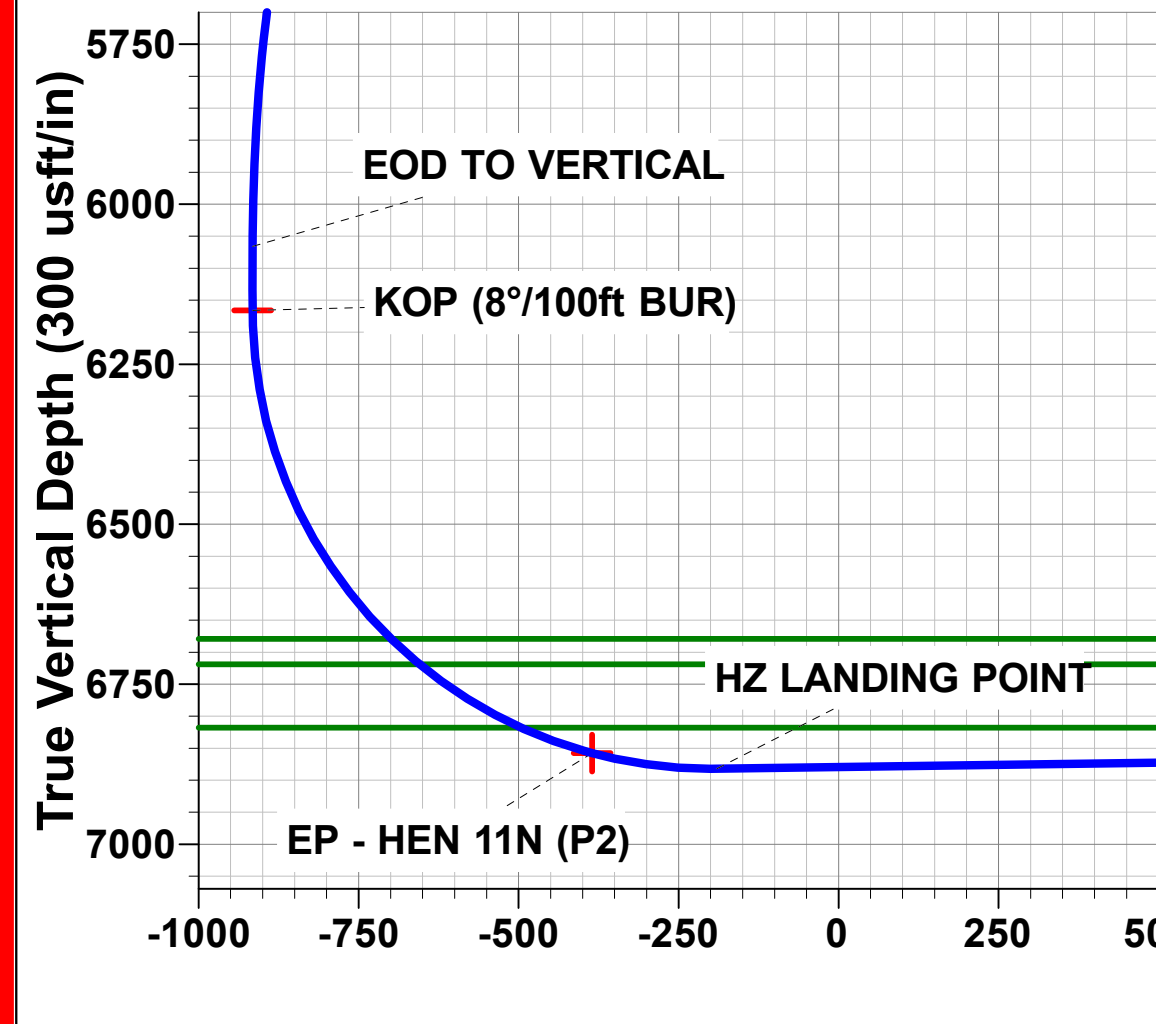
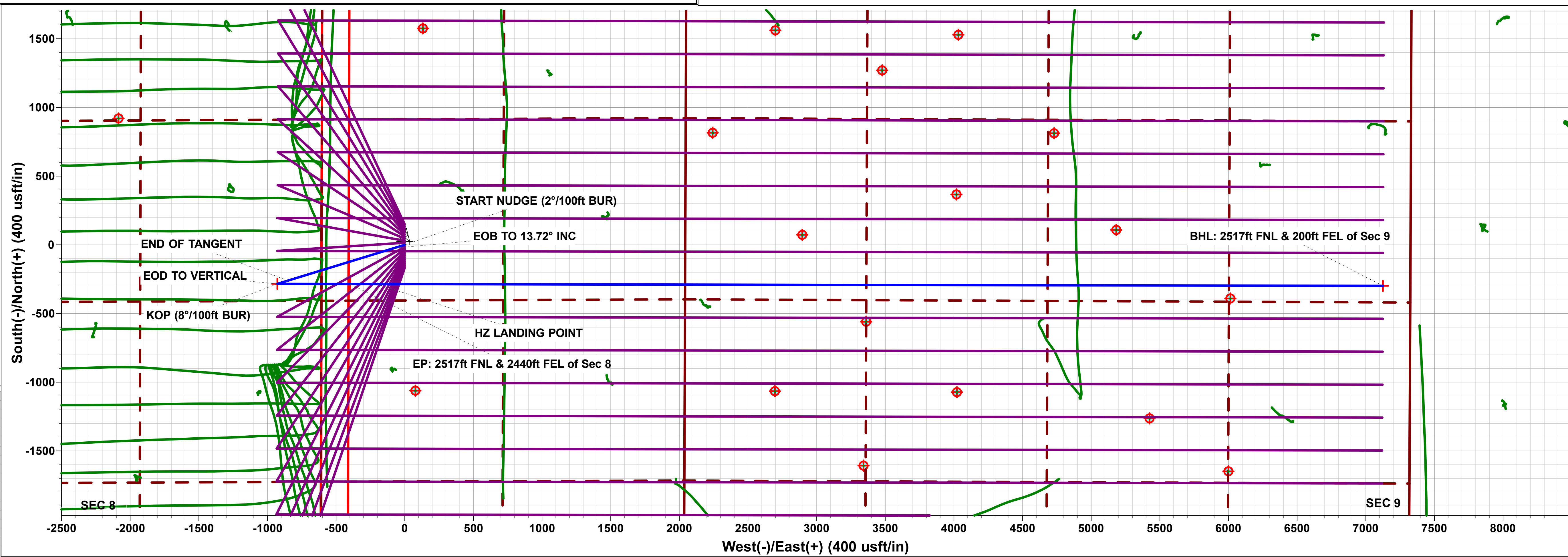
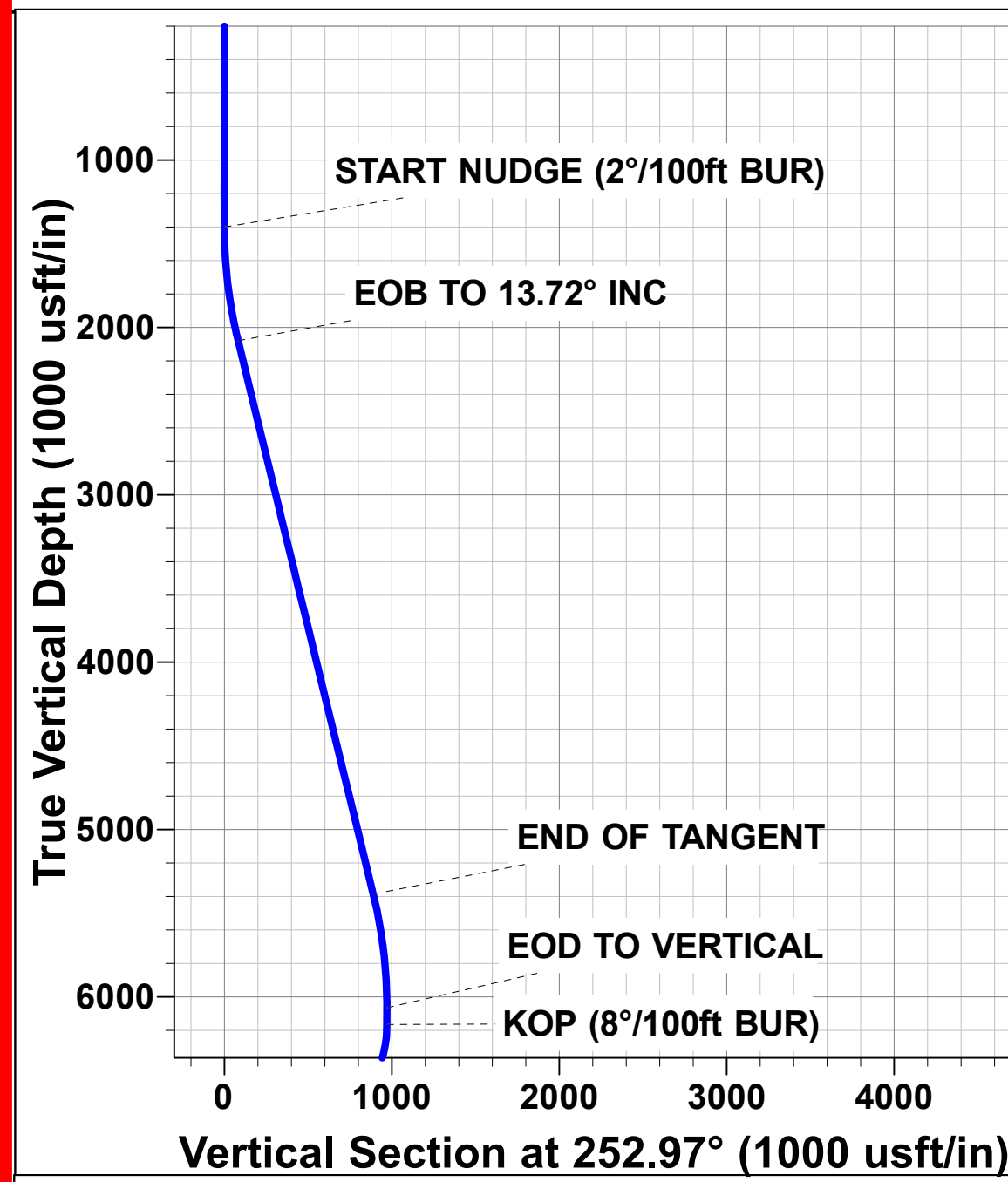


Azimuths to True North  
 Magnetic North: 7.76°

Magnetic Field  
 Strength: 51952.4nT  
 Dip Angle: 66.63°  
 Date: 2021-04-21  
 Model: IGRF2020

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BHL - HEN 11N (P2)	6782.00	-298.68	7125.08	1363461.52	3265759.12	40.327182	-104.546789
EP - HEN 11N (P2)	6857.66	-285.18	-397.40	1363396.33	3258237.22	40.327222	-104.573769
KOP - HEN 11N (P2)	6165.87	-284.25	-928.23	1363391.70	3257706.43	40.327224	-104.575673



Vertical Section at 92.40° (300 usft/in)



## **PDC ENERGY**

**WELD COUNTY, COLORADO (TRUE)  
SW NE SEC. 8 T4N R64W 6th P.M. (HEN)  
HEN 11N**

**ORIGINAL WELLBORE  
PROPOSAL #2**

# **Anticollision Summary Report**

**19 June, 2022**



<b>Company:</b>	PDC ENERGY	<b>Local Co-ordinate Reference:</b>	Well HEN 11N
<b>Project:</b>	WELD COUNTY, COLORADO (TRUE)	<b>TVD Reference:</b>	KB 23ft @ 4802.00usft
<b>Reference Site:</b>	SW NE SEC. 8 T4N R64W 6th P.M. (HEN)	<b>MD Reference:</b>	KB 23ft @ 4802.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	HEN 11N	<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>	Database 1
<b>Reference Design:</b>	PROPOSAL #2	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	PROPOSAL #2		
<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 centre distance of 3,280.83usft	<b>Error Surface:</b>	Ellipsoid Separation
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	2022-06-19		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	14,738.87	PROPOSAL #2 (ORIGINAL WELLBORE)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor	Warning
			Between Centres (usft)	Between Ellipses (usft)		
SW NE SEC. 8 T4N R64W 6th P.M. (HEN)						
ABDN DD ALTER C 16-28D - Wellbore #1 - Wellbore #1	12,168.41	7,212.54	2,753.52	2,567.07	14.768	CC
ABDN DD ALTER C 16-28D - Wellbore #1 - Wellbore #1	12,300.00	7,212.95	2,756.66	2,566.19	14.473	ES
ABDN DD ALTER C 16-28D - Wellbore #1 - Wellbore #1	12,800.00	7,214.50	2,825.03	2,623.53	14.020	SF
ABDN DD ALTER C 16-29D - ORIGINAL WELLBORE - W	11,020.88	7,021.27	2,816.30	2,682.53	21.053	CC
ABDN DD ALTER C 16-29D - ORIGINAL WELLBORE - W	11,100.00	7,014.55	2,817.41	2,681.26	20.694	ES
ABDN DD ALTER C 16-29D - ORIGINAL WELLBORE - W	11,900.00	6,967.54	2,950.11	2,796.24	19.173	SF
ABDN DD ALTER C 16-29D - SIDETRACK - SIDETRAC	10,736.73	6,973.83	2,550.70	2,428.21	20.825	CC
ABDN DD ALTER C 16-29D - SIDETRACK - SIDETRAC	10,800.00	6,976.22	2,551.48	2,427.20	20.530	ES
ABDN DD ALTER C 16-29D - SIDETRACK - SIDETRAC	11,500.00	7,003.64	2,662.31	2,523.30	19.152	SF
ABDN HZ FRANKLIN C08-62HNX - ORIGINAL WELLBO	8,452.51	10,756.00	2,146.05	1,979.75	12.905	CC
ABDN HZ FRANKLIN C08-62HNX - ORIGINAL WELLBO	8,500.00	10,756.00	2,146.58	1,979.21	12.826	ES
ABDN HZ FRANKLIN C08-62HNX - ORIGINAL WELLBO	8,800.00	10,756.00	2,174.00	2,001.68	12.616	SF
ABDN HZ FRANKLIN C08-62HNX - SIDETRACK - SIDE	8,462.17	10,803.00	2,038.06	1,871.89	12.265	CC
ABDN HZ FRANKLIN C08-62HNX - SIDETRACK - SIDE	8,500.00	10,803.00	2,038.42	1,871.45	12.209	ES
ABDN HZ FRANKLIN C08-62HNX - SIDETRACK - SIDE	8,700.00	10,803.00	2,051.89	1,881.63	12.051	SF
ABDN VERT CONQUEST SWD 1-8 - Wellbore #1 - Des	9,435.74	6,767.41	2,229.08	2,021.80	10.754	CC
ABDN VERT CONQUEST SWD 1-8 - Wellbore #1 - Des	9,500.00	6,766.54	2,230.00	2,021.03	10.671	ES
ABDN VERT CONQUEST SWD 1-8 - Wellbore #1 - Des	9,900.00	6,761.08	2,276.90	2,058.77	10.438	SF
ABDN VERT COX 8-1 - Wellbore #1 - Wellbore #1	4,529.26	4,392.14	1,887.22	1,869.57	106.909	CC
ABDN VERT COX 8-1 - Wellbore #1 - Wellbore #1	4,600.00	4,451.13	1,887.46	1,869.43	104.684	ES
ABDN VERT COX 8-1 - Wellbore #1 - Wellbore #1	6,350.00	6,229.39	1,949.70	1,924.93	78.728	SF
ABDN VERT COX PM C 8-4 - Wellbore #1 - Wellbore #1	6,317.73	6,279.58	2,450.19	2,426.24	102.320	CC, ES
ABDN VERT COX PM C 8-4 - Wellbore #1 - Wellbore #1	6,350.00	6,314.26	2,450.62	2,426.66	102.256	SF
ABDN VERT COX PM C 8-5 - Wellbore #1 - Wellbore #1	6,283.08	6,182.93	1,918.73	1,898.59	95.263	CC, ES
ABDN VERT COX PM C 8-5 - Wellbore #1 - Wellbore #1	6,350.00	6,251.04	1,921.64	1,901.43	95.064	SF
ABDN VERT GEHRING 8-1514 - Wellbore #1 - Wellbore	8,035.57	6,808.87	1,702.54	1,664.52	44.779	CC
ABDN VERT GEHRING 8-1514 - Wellbore #1 - Wellbore	8,100.00	6,808.78	1,703.75	1,664.32	43.201	ES
ABDN VERT GEHRING 8-1514 - Wellbore #1 - Wellbore	8,900.00	6,807.60	1,909.41	1,855.75	35.581	SF
ABDN VERT GEHRING C 8-10X - Wellbore #1 - Wellbor	7,546.50	6,841.61	622.54	594.35	22.083	CC, ES
ABDN VERT GEHRING C 8-10X - Wellbore #1 - Wellbor	7,700.00	6,841.25	641.18	611.34	21.485	SF
ABDN VERT HAGEN 9-16 - Wellbore #1 - Design #1	14,072.80	6,659.11	2,285.88	1,952.54	6.858	CC
ABDN VERT HAGEN 9-16 - Wellbore #1 - Design #1	14,100.00	6,658.74	2,286.04	1,951.94	6.842	ES
ABDN VERT HAGEN 9-16 - Wellbore #1 - Design #1	14,300.00	6,656.00	2,297.14	1,958.43	6.782	SF
ABDN VERT HEISER 1 - Wellbore #1 - Design #1	7,692.13	6,834.17	775.36	609.33	4.670	CC
ABDN VERT HEISER 1 - Wellbore #1 - Design #1	7,700.00	6,834.06	775.40	609.24	4.667	ES, SF
ABDN VERT LEVI C 5-15 - Wellbore #1 - Wellbore #1	100.00	67.83	3,020.34	3,020.19	10,000.000	CC
ABDN VERT LEVI C 5-15 - Wellbore #1 - Wellbore #1	200.00	162.38	3,020.53	3,020.04	6,162.860	ES

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 HEN 11N
<b>Project:</b>	WELD COUNTY, COLORADO (TRUE)	<b>TVD Reference:</b>	KB 23ft @ 4802.00usft
<b>Reference Site:</b>	SW NE SEC. 8 T4N R64W 6th P.M. (HEN)	<b>MD Reference:</b>	KB 23ft @ 4802.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	HEN 11N	<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>	Database 1
<b>Reference Design:</b>	PROPOSAL #2	<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
SW NE SEC. 8 T4N R64W 6th P.M. (HEN)						
ABDN VERT LEVI C 5-15 - Wellbore #1 - Wellbore #1	8,000.00	6,821.07	3,279.69	3,242.73	88.742	SF
ABDN VERT REINICK 1 - Wellbore #1 - Wellbore #1	13,843.22	6,676.14	872.45	677.43	4.474	CC, ES
ABDN VERT REINICK 1 - Wellbore #1 - Wellbore #1	13,900.00	6,674.95	874.30	678.36	4.462	SF
ABDN VERT REINICK 2 - Wellbore #1 - Wellbore #1	12,919.45	6,690.71	1,816.12	1,646.67	10.717	CC
ABDN VERT REINICK 2 - Wellbore #1 - Wellbore #1	13,000.00	6,690.72	1,817.91	1,646.49	10.605	ES
ABDN VERT REINICK 2 - Wellbore #1 - Wellbore #1	13,200.00	6,690.75	1,837.67	1,662.97	10.519	SF
ABDN VERT REINICK 9-7 - Wellbore #1 - Design #1	12,795.66	6,709.56	403.73	105.04	1.352	Level 3, CC
ABDN VERT REINICK 9-7 - Wellbore #1 - Design #1	12,800.00	6,709.50	403.75	104.99	1.351	Level 3, ES, SF
ABDN VERT RICHARDSON 10-12 - Wellbore #1 - Wellb	14,738.87	6,615.75	1,255.49	1,111.66	8.729	CC, ES, SF
ABDN VERT RUFF 1 - Wellbore #1 - Design #1	100.00	70.34	1,580.64	1,579.71	1,700.877	CC
ABDN VERT RUFF 1 - Wellbore #1 - Design #1	1,600.00	1,570.24	1,583.25	1,548.63	45.734	ES
ABDN VERT RUFF 1 - Wellbore #1 - Design #1	8,100.00	6,843.01	1,895.36	1,721.06	10.874	SF
ABDN VERT RYANN STATE C 16-27 - Wellbore #1 - We	13,514.81	6,725.00	2,964.39	2,778.45	15.943	CC
ABDN VERT RYANN STATE C 16-27 - Wellbore #1 - We	13,600.00	6,725.00	2,965.61	2,777.34	15.752	ES
ABDN VERT RYANN STATE C 16-27 - Wellbore #1 - We	14,100.00	6,725.00	3,021.59	2,823.06	15.220	SF
ABDN VERT RYDGREN 8-1 - Wellbore #1 - Wellbore #1	6,285.60	6,212.59	1,877.58	1,860.90	112.560	CC, ES
ABDN VERT RYDGREN 8-1 - Wellbore #1 - Wellbore #1	6,400.00	6,315.66	1,886.18	1,869.35	112.076	SF
ABDN VERT SLEDGE C 9-28 - Wellbore #1 - Design #1	12,288.58	6,747.49	2,282.17	1,996.85	7.999	CC
ABDN VERT SLEDGE C 9-28 - Wellbore #1 - Design #1	12,300.00	6,747.33	2,282.20	1,996.57	7.990	ES
ABDN VERT SLEDGE C 9-28 - Wellbore #1 - Design #1	12,600.00	6,743.24	2,303.31	2,011.17	7.884	SF
ABDN VERT SLEDGE C 9-29 - Wellbore #1 - Design #1	10,950.17	6,786.76	2,337.83	2,088.84	9.389	CC
ABDN VERT SLEDGE C 9-29 - Wellbore #1 - Design #1	11,000.00	6,786.08	2,338.36	2,088.06	9.342	ES
ABDN VERT SLEDGE C 9-29 - Wellbore #1 - Design #1	11,300.00	6,781.99	2,363.85	2,106.89	9.199	SF
ABDN VERT SMITH 1 - Wellbore #1 - Design #1	10,309.82	6,798.49	1,852.07	1,620.46	7.996	CC
ABDN VERT SMITH 1 - Wellbore #1 - Design #1	10,400.00	6,797.26	1,854.27	1,620.38	7.928	ES
ABDN VERT SMITH 1 - Wellbore #1 - Design #1	10,600.00	6,794.54	1,874.67	1,636.64	7.876	SF
ABDN VERT SMITH 2 - Wellbore #1 - Design #1	11,642.64	6,767.31	1,821.86	1,554.09	6.804	CC
ABDN VERT SMITH 2 - Wellbore #1 - Design #1	11,700.00	6,766.53	1,822.76	1,553.53	6.770	ES
ABDN VERT SMITH 2 - Wellbore #1 - Design #1	11,900.00	6,763.79	1,839.95	1,566.77	6.735	SF
ABDN VERT SMITH 3 - Wellbore #1 - Design #1	11,630.98	6,754.76	659.70	392.50	2.469	CC, ES, SF
ABDN VERT STATE 16-214 - Wellbore #1 - Wellbore #1						Out of range
<b>ABDN VERT THEA C 09-32 - Wellbore #1 - Wellbore #1</b>	<b>9,770.13</b>	<b>6,786.98</b>	<b>109.74</b>	<b>27.42</b>	<b>1.333</b>	<b>Level 3, CC, ES, SF</b>
EXIST DD ALTER C 09-24D - Wellbore #1 - Wellbore #1	12,377.11	7,260.35	1,413.23	1,216.97	7.201	CC
EXIST DD ALTER C 09-24D - Wellbore #1 - Wellbore #1	12,400.00	7,260.44	1,413.42	1,216.75	7.187	ES
EXIST DD ALTER C 09-24D - Wellbore #1 - Wellbore #1	12,500.00	7,260.85	1,418.56	1,220.80	7.173	SF
EXIST DD ALTER C 09-33D - Wellbore #1 - Wellbore #1	9,591.76	6,924.07	1,418.46	1,323.37	14.917	CC
EXIST DD ALTER C 09-33D - Wellbore #1 - Wellbore #1	9,600.00	6,923.94	1,418.48	1,323.12	14.874	ES
EXIST DD ALTER C 09-33D - Wellbore #1 - Wellbore #1	9,900.00	6,919.18	1,451.55	1,348.22	14.047	SF
EXIST DD BURMAN C 04-33D - Wellbore #1 - Wellbore						Out of range
EXIST DD BURMAN C 05-23D - Wellbore #1 - Wellbore						Out of range
EXIST DD BURMAN C05-24D - Wellbore #1 - Wellbore #						Out of range
EXIST DD NGL C1C - Wellbore #1 - Wellbore #1	100.00	21.88	3,241.78	3,241.67	10,000.000	CC
EXIST DD NGL C1C - Wellbore #1 - Wellbore #1	900.00	800.99	3,242.51	3,239.68	1,145.919	ES
EXIST DD NGL C1C - Wellbore #1 - Wellbore #1	1,500.00	1,095.99	3,274.34	3,269.49	674.978	SF
EXIST DD RUFF C 08-27D - Wellbore #1 - Wellbore #1	700.00	673.00	1,960.59	1,958.41	899.133	CC
EXIST DD RUFF C 08-27D - Wellbore #1 - Wellbore #1	1,000.00	965.00	1,961.68	1,958.25	572.172	ES
EXIST DD RUFF C 08-27D - Wellbore #1 - Wellbore #1	9,500.00	6,891.29	2,719.37	2,636.52	32.825	SF
EXIST DD SLEDGE C 9-30D - Wellbore #1 - Wellbore #1	9,580.64	6,883.81	2,755.20	2,659.71	28.853	CC
EXIST DD SLEDGE C 9-30D - Wellbore #1 - Wellbore #1	9,600.00	6,883.39	2,755.27	2,659.33	28.719	ES
EXIST DD SLEDGE C 9-30D - Wellbore #1 - Wellbore #1	10,500.00	6,864.34	2,904.47	2,792.46	25.930	SF
EXIST HZ CHALLENGER 1N - ORIGINAL WELLBORE -	0.00	0.00	1,218.80			
EXIST HZ CHALLENGER 1N - ORIGINAL WELLBORE -	200.00	188.00	1,218.98	1,218.48	2,450.770	ES

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 HEN 11N
<b>Project:</b>	WELD COUNTY, COLORADO (TRUE)	<b>TVD Reference:</b>	KB 23ft @ 4802.00usft
<b>Reference Site:</b>	SW NE SEC. 8 T4N R64W 6th P.M. (HEN)	<b>MD Reference:</b>	KB 23ft @ 4802.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	HEN 11N	<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>	Database 1
<b>Reference Design:</b>	PROPOSAL #2	<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
SW NE SEC. 8 T4N R64W 6th P.M. (HEN)						
EXIST HZ CHALLENGER 1N - ORIGINAL WELLBORE -	9,000.00	6,432.84	3,220.35	3,152.47	47.442	SF
EXIST HZ CHALLENGER 1N - SIDETRACK - SIDETRA	0.00	0.00	1,218.80			
EXIST HZ CHALLENGER 1N - SIDETRACK - SIDETRA	200.00	188.00	1,218.98	1,218.48	2,450.770	ES
EXIST HZ CHALLENGER 1N - SIDETRACK - SIDETRA	9,000.00	6,432.84	3,220.35	3,152.47	47.442	SF
EXIST HZ CHALLENGER 2N - Wellbore #1 - Wellbore #	303.53	294.99	1,206.58	1,205.58	1,206.686	CC
EXIST HZ CHALLENGER 2N - Wellbore #1 - Wellbore #	400.00	377.82	1,206.91	1,205.53	871.426	ES
EXIST HZ CHALLENGER 2N - Wellbore #1 - Wellbore #	8,700.00	6,471.00	2,841.27	2,780.59	46.821	SF
EXIST HZ CHALLENGER 3N - Wellbore #1 - Wellbore #	205.51	196.71	1,196.17	1,195.60	2,129.347	CC
EXIST HZ CHALLENGER 3N - Wellbore #1 - Wellbore #	449.67	441.12	1,196.39	1,194.76	736.195	ES
EXIST HZ CHALLENGER 3N - Wellbore #1 - Wellbore #	8,300.00	6,376.00	2,407.02	2,356.06	47.240	SF
EXIST HZ CHALLENGER 4N - Wellbore #1 - Wellbore #	0.00	0.00	1,185.61			
EXIST HZ CHALLENGER 4N - Wellbore #1 - Wellbore #	100.00	87.23	1,185.74	1,185.57	6,932.322	ES
EXIST HZ CHALLENGER 4N - Wellbore #1 - Wellbore #	7,900.00	6,525.22	1,927.82	1,883.31	43.310	SF
EXIST HZ CHALLENGER 5N - Wellbore #1 - Wellbore #	2,649.21	2,575.14	1,110.09	1,097.52	88.352	CC, ES
EXIST HZ CHALLENGER 5N - Wellbore #1 - Wellbore #	6,750.00	6,591.92	1,421.05	1,385.70	40.201	SF
EXIST HZ CHALLENGER 6N - Wellbore #1 - Wellbore #	3,914.89	3,884.89	1,031.15	1,009.74	48.146	CC, ES
EXIST HZ CHALLENGER 6N - Wellbore #1 - Wellbore #	6,800.00	6,664.00	1,159.11	1,123.37	32.430	SF
EXIST HZ CHALLENGER 7N - Wellbore #1 - Wellbore #	3,919.22	3,898.75	745.67	723.93	34.295	CC, ES
EXIST HZ CHALLENGER 7N - Wellbore #1 - Wellbore #	6,750.00	6,640.41	896.46	860.84	25.165	SF
EXIST HZ CHALLENGER 8N - Wellbore #1 - Wellbore #	4,326.93	4,325.27	532.74	507.79	21.358	CC, ES
EXIST HZ CHALLENGER 8N - Wellbore #1 - Wellbore #	6,750.69	6,655.89	612.21	576.53	17.155	SF
EXIST HZ CHALLENGER 9N - Wellbore #1 - Wellbore #	4,474.93	4,471.61	327.74	301.45	12.469	CC
EXIST HZ CHALLENGER 9N - Wellbore #1 - Wellbore #	4,500.00	4,495.94	327.79	301.33	12.388	ES
EXIST HZ CHALLENGER 9N - Wellbore #1 - Wellbore #	6,661.61	6,621.59	376.81	340.51	10.380	SF
EXIST HZ FRANKLIN C17-69HN - Wellbore #1 - Wellbor	7,877.03	10,197.00	2,664.39	2,528.65	19.629	CC
EXIST HZ FRANKLIN C17-69HN - Wellbore #1 - Wellbor	8,600.00	10,846.00	2,674.44	2,503.54	15.649	ES
EXIST HZ FRANKLIN C17-69HN - Wellbore #1 - Wellbor	9,100.00	10,846.00	2,734.42	2,553.60	15.123	SF
EXIST HZ HAROLD 6X-232 - Wellbore #1 - Wellbore #1						Out of range
EXIST HZ HAROLD 6X-202 - Wellbore #1 - Wellbore #1						Out of range
EXIST HZ HAROLD 6Y-202 - Wellbore #1 - Wellbore #1	9,762.59	12,523.14	2,716.42	2,472.05	11.116	CC
EXIST HZ HAROLD 6Y-202 - Wellbore #1 - Wellbore #1	14,738.87	17,440.48	2,756.24	2,236.40	5.302	ES, SF
EXIST HZ HAROLD 6Y-312 - Wellbore #1 - Wellbore #1	8,921.71	11,746.55	2,940.19	2,742.04	14.839	CC
EXIST HZ HAROLD 6Y-312 - Wellbore #1 - Wellbore #1	14,738.87	17,594.80	2,957.47	2,435.36	5.664	ES, SF
EXIST HZ JAGGED 10N - Wellbore #1 - Wellbore #1	0.00	0.00	1,320.95			
EXIST HZ JAGGED 10N - Wellbore #1 - Wellbore #1	100.00	93.28	1,321.10	1,320.92	7,498.662	ES
EXIST HZ JAGGED 10N - Wellbore #1 - Wellbore #1	8,600.00	6,365.00	2,616.46	2,553.61	41.628	SF
EXIST HZ JAGGED 11N - Wellbore #1 - Wellbore #1	394.48	371.82	1,332.24	1,330.87	970.061	CC
EXIST HZ JAGGED 11N - Wellbore #1 - Wellbore #1	400.00	375.44	1,332.25	1,330.85	956.178	ES
EXIST HZ JAGGED 11N - Wellbore #1 - Wellbore #1	8,800.00	6,365.00	2,917.91	2,848.74	42.182	SF
EXIST HZ JAGGED 12N - Wellbore #1 - Wellbore #1	0.00	0.00	1,343.64			
EXIST HZ JAGGED 12N - Wellbore #1 - Wellbore #1	9,000.00	6,320.19	3,181.80	3,107.53	42.845	SF
EXIST HZ JAGGED 1N - Wellbore #1 - Wellbore #1	4,597.09	4,577.80	34.97	5.09	1.170	Level 3, CC
EXIST HZ JAGGED 1N - Wellbore #1 - Wellbore #1	4,600.00	4,580.47	34.98	5.06	1.169	Level 3, ES, SF
EXIST HZ JAGGED 2N - Wellbore #1 - Wellbore #1	6,639.44	6,600.71	114.00	77.83	3.152	CC, ES, SF
EXIST HZ JAGGED 3N - Wellbore #1 - Wellbore #1	6,650.00	6,610.77	327.79	291.42	9.011	SF
EXIST HZ JAGGED 3N - Wellbore #1 - Wellbore #1	6,686.29	6,623.28	326.04	290.03	9.055	CC, ES
EXIST HZ JAGGED 4N - Wellbore #1 - Wellbore #1	6,600.00	6,509.26	629.06	592.91	17.399	SF
EXIST HZ JAGGED 4N - Wellbore #1 - Wellbore #1	6,642.89	6,525.75	627.99	592.07	17.481	CC, ES
EXIST HZ JAGGED 5N - Wellbore #1 - Wellbore #1	6,650.00	6,622.38	874.60	838.48	24.213	SF
EXIST HZ JAGGED 5N - Wellbore #1 - Wellbore #1	6,715.45	6,643.15	872.36	836.46	24.301	CC, ES
EXIST HZ JAGGED 6N - Wellbore #1 - Wellbore #1	4,658.16	4,514.28	1,004.53	977.86	37.666	CC
EXIST HZ JAGGED 6N - Wellbore #1 - Wellbore #1	4,700.00	4,555.00	1,004.71	977.73	37.233	ES
EXIST HZ JAGGED 6N - Wellbore #1 - Wellbore #1	6,550.00	6,472.48	1,108.78	1,072.03	30.175	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 HEN 11N
<b>Project:</b>	WELD COUNTY, COLORADO (TRUE)	<b>TVD Reference:</b>	KB 23ft @ 4802.00usft
<b>Reference Site:</b>	SW NE SEC. 8 T4N R64W 6th P.M. (HEN)	<b>MD Reference:</b>	KB 23ft @ 4802.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	HEN 11N	<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>	Database 1
<b>Reference Design:</b>	PROPOSAL #2	<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 NE SEC. 8 T4N R64W 6th P.M. (HEN)						
EXIST HZ JAGGED 7N - Wellbore #1 - Wellbore #1	4,050.41	3,886.00	1,167.05	1,144.48	51.717	CC
EXIST HZ JAGGED 7N - Wellbore #1 - Wellbore #1	4,100.00	3,922.59	1,167.28	1,144.41	51.035	ES
EXIST HZ JAGGED 7N - Wellbore #1 - Wellbore #1	6,276.06	6,106.74	1,315.68	1,278.88	35.753	SF
EXIST HZ JAGGED 8N - Wellbore #1 - Wellbore #1	3,708.51	3,521.62	1,247.77	1,227.76	62.353	CC, ES
EXIST HZ JAGGED 8N - Wellbore #1 - Wellbore #1	6,300.00	6,113.14	1,472.17	1,435.03	39.637	SF
EXIST HZ JAGGED 9N - Wellbore #1 - Wellbore #1	0.00	0.00	1,309.96			
EXIST HZ JAGGED 9N - Wellbore #1 - Wellbore #1	443.21	442.29	1,310.74	1,309.14	818.408	ES
EXIST HZ JAGGED 9N - Wellbore #1 - Wellbore #1	8,300.00	6,365.00	2,287.60	2,232.03	41.162	SF
EXIST HZ MARK ALTER C16-79HN - Wellbore #1 - Well	9,776.06	6,206.00	2,338.42	2,245.24	25.096	CC
EXIST HZ MARK ALTER C16-79HN - Wellbore #1 - Well	9,900.00	6,226.37	2,341.30	2,244.70	24.238	ES
EXIST HZ MARK ALTER C16-79HN - Wellbore #1 - Well	10,500.00	6,253.00	2,446.91	2,338.22	22.512	SF
EXIST HZ NORTHRUP C 08-73HN - Wellbore #1 - Wellb	8,343.89	8,869.49	14.67	-17.84	0.451	Level 3, CC, ES, SF
EXIST HZ NORTHRUP C 08-75HN - Wellbore #1 - Wellb	7,072.43	9,191.62	100.24	70.18	3.335	CC
EXIST HZ NORTHRUP C 08-75HN - Wellbore #1 - Wellb	7,100.00	9,191.22	104.47	68.63	2.915	ES
EXIST HZ NORTHRUP C 08-75HN - Wellbore #1 - Wellb	7,150.00	9,190.54	129.99	82.27	2.724	SF
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	14,738.87	6,462.59	2,439.78	2,209.69	10.604	CC, ES, SF
EXIST HZ SANDY HILLS PC C17-67HN - Wellbore #1 -						Out of range
EXIST HZ STOCKLEY C15-79HN - Wellbore #1 - Wellbo	14,738.87	13,772.00	393.25	152.34	1.632	CC, ES, SF
EXIST HZ ZANE ALTER C 09-21 - Wellbore #1 - Wellbor	12,505.52	8,091.05	700.49	645.05	12.636	CC, ES, SF
EXIST VERT ALTER C 9-23 - Wellbore #1 - Design #1	13,615.45	6,680.46	1,352.02	1,031.03	4.212	CC, ES
EXIST VERT ALTER C 9-23 - Wellbore #1 - Design #1	13,700.00	6,679.31	1,354.66	1,031.64	4.194	SF
EXIST VERT ALTER C 9-25 - Wellbore #1 - Design #1	10,957.50	6,739.28	1,315.07	1,066.83	5.298	CC
EXIST VERT ALTER C 9-25 - Wellbore #1 - Design #1	11,000.00	6,738.70	1,315.76	1,066.37	5.276	ES
EXIST VERT ALTER C 9-25 - Wellbore #1 - Design #1	11,100.00	6,737.33	1,322.77	1,071.21	5.258	SF
EXIST VERT AMANDA ALTER C 9-20 - Wellbore #1 - De	10,974.99	6,754.28	267.65	18.68	1.075	Level 3, CC, ES, SF
EXIST VERT BARTON C 15-29 - Wellbore #1 - Design #	14,738.87	6,636.42	2,859.57	2,542.80	9.027	CC, ES, SF
EXIST VERT BENNER 1 - Wellbore #1 - Wellbore #1	9,095.60	6,789.65	515.03	450.85	8.025	CC
EXIST VERT BENNER 1 - Wellbore #1 - Wellbore #1	9,100.00	6,789.54	515.05	450.77	8.013	ES, SF
EXIST VERT CONNELL 14-4 - Wellbore #1 - Wellbore #						Out of range
EXIST VERT CONNELL 3 - Wellbore #1 - Wellbore #1	11,653.46	6,720.59	3,223.44	3,089.28	24.027	CC
EXIST VERT CONNELL 3 - Wellbore #1 - Wellbore #1	11,700.00	6,718.98	3,223.77	3,088.36	23.806	ES
EXIST VERT CONNELL 3 - Wellbore #1 - Wellbore #1	12,200.00	6,700.00	3,269.39	3,122.44	22.247	SF
EXIST VERT CONNELL C 4-25 - Wellbore #1 - Wellbore						Out of range
EXIST VERT COX 8-19D - Wellbore #1 - Design #1	6,276.06	6,153.87	1,669.62	1,524.60	11.513	CC
EXIST VERT COX 8-19D - Wellbore #1 - Design #1	6,300.00	6,177.81	1,669.89	1,524.37	11.475	ES
EXIST VERT COX 8-19D - Wellbore #1 - Design #1	6,500.00	6,374.18	1,693.90	1,544.54	11.342	SF
EXIST VERT COX PM C 8-6 - Wellbore #1 - Wellbore #1	5,745.47	5,594.40	756.77	733.38	32.354	CC, ES
EXIST VERT COX PM C 8-6 - Wellbore #1 - Wellbore #1	6,276.06	6,123.97	773.44	749.00	31.650	SF
EXIST VERT CPC HARLESS 17-1 - Wellbore #1 - Wellb						Out of range
EXIST VERT EMBRICK C 10-19 - Wellbore #1 - Wellbor	14,738.87	6,661.45	1,781.10	1,642.45	12.846	CC, ES, SF
EXIST VERT ENGLAND 8-3-17 - Wellbore #1 - Wellbore	6,280.57	6,180.29	1,398.27	1,381.93	85.578	CC, ES
EXIST VERT ENGLAND 8-3-17 - Wellbore #1 - Wellbore	6,350.00	6,251.06	1,401.48	1,385.04	85.223	SF
EXIST VERT ENGLAND 8-35 - Wellbore #1 - Wellbore #	6,166.54	6,046.37	1,740.32	1,720.86	89.435	CC
EXIST VERT ENGLAND 8-35 - Wellbore #1 - Wellbore #	6,176.06	6,055.92	1,740.33	1,720.85	89.362	ES
EXIST VERT ENGLAND 8-35 - Wellbore #1 - Wellbore #	6,350.00	6,229.50	1,743.05	1,723.32	88.372	SF
EXIST VERT GEHRING 1 - Wellbore #1 - Wellbore #1	8,954.61	6,797.93	1,986.93	1,926.47	32.863	CC
EXIST VERT GEHRING 1 - Wellbore #1 - Wellbore #1	9,000.00	6,797.69	1,987.45	1,925.81	32.244	ES
EXIST VERT GEHRING 1 - Wellbore #1 - Wellbore #1	9,700.00	6,794.08	2,122.14	2,046.53	28.067	SF
EXIST VERT GEHRING 8-914 - Wellbore #1 - Wellbore #	9,085.02	6,822.13	662.74	598.80	10.365	CC
EXIST VERT GEHRING 8-914 - Wellbore #1 - Wellbore #	9,100.00	6,821.93	662.91	598.59	10.305	ES
EXIST VERT GEHRING 8-914 - Wellbore #1 - Wellbore #	9,200.00	6,820.60	672.64	606.57	10.180	SF
EXIST VERT HAGEN 9-10 - Wellbore #1 - Design #1	13,040.48	6,696.78	967.39	662.14	3.169	CC, ES

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 HEN 11N
<b>Project:</b>	WELD COUNTY, COLORADO (TRUE)	<b>TVD Reference:</b>	KB 23ft @ 4802.00usft
<b>Reference Site:</b>	SW NE SEC. 8 T4N R64W 6th P.M. (HEN)	<b>MD Reference:</b>	KB 23ft @ 4802.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	HEN 11N	<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>	Database 1
<b>Reference Design:</b>	PROPOSAL #2	<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
SW NE SEC. 8 T4N R64W 6th P.M. (HEN)						
EXIST VERT HAGEN 9-10 - Wellbore #1 - Design #1	13,100.00	6,695.96	969.22	662.60	3.161	SF
EXIST VERT HAGEN 9-15 - Wellbore #1 - Design #1	12,765.96	6,690.36	2,287.11	1,989.64	7.688	CC
EXIST VERT HAGEN 9-15 - Wellbore #1 - Design #1	12,800.00	6,689.89	2,287.36	1,988.95	7.665	ES
EXIST VERT HAGEN 9-15 - Wellbore #1 - Design #1	13,100.00	6,685.79	2,311.37	2,006.36	7.578	SF
EXIST VERT HAGEN 9-9 - Wellbore #1 - Wellbore #1	13,948.54	6,734.16	908.19	710.56	4.595	CC, ES
EXIST VERT HAGEN 9-9 - Wellbore #1 - Wellbore #1	14,000.00	6,730.48	909.64	710.82	4.575	SF
EXIST VERT HARLESS PM C 17-2 - Wellbore #1 - Desi						Out of range
EXIST VERT JOHNSON 9-11 - Wellbore #1 - Design #1	11,637.15	6,727.91	779.31	512.48	2.921	CC, ES
EXIST VERT JOHNSON 9-11 - Wellbore #1 - Design #1	11,700.00	6,727.06	781.84	513.66	2.915	SF
EXIST VERT JOHNSON 9-13 - Wellbore #1 - Wellbore #	10,349.74	6,813.30	2,080.56	1,982.49	21.214	CC
EXIST VERT JOHNSON 9-13 - Wellbore #1 - Wellbore #	10,400.00	6,813.00	2,081.17	1,981.72	20.926	ES
EXIST VERT JOHNSON 9-13 - Wellbore #1 - Wellbore #	10,900.00	6,809.94	2,152.09	2,042.34	19.608	SF
EXIST VERT MCCLINTOCK C 4-15 - Wellbore #1 - Well						Out of range
EXIST VERT NGL C1A - Wellbore #1 - Design #1	9,340.61	6,772.71	2,518.15	2,313.31	12.293	CC
EXIST VERT NGL C1A - Wellbore #1 - Design #1	9,400.00	6,771.90	2,518.85	2,312.44	12.203	ES
EXIST VERT NGL C1A - Wellbore #1 - Design #1	9,900.00	6,765.08	2,579.52	2,361.52	11.833	SF
EXIST VERT NGL C1B - Wellbore #1 - Design #1	9,235.40	6,780.14	2,325.99	2,123.82	11.505	CC
EXIST VERT NGL C1B - Wellbore #1 - Design #1	9,300.00	6,779.26	2,326.88	2,123.02	11.414	ES
EXIST VERT NGL C1B - Wellbore #1 - Design #1	9,800.00	6,772.45	2,393.52	2,178.38	11.126	SF
EXIST VERT REINICK 10-5 - Wellbore #1 - Wellbore #1	14,738.87	6,640.93	845.83	759.49	9.796	CC, ES, SF
EXIST VERT REINICK 1-10-4-64 - Wellbore #1 - Wellbo	14,738.87	6,676.89	2,139.08	1,939.50	10.718	CC, ES, SF
EXIST VERT REINICK 3 - Wellbore #1 - Wellbore #1	14,224.82	6,685.48	1,793.16	1,587.44	8.716	CC
EXIST VERT REINICK 3 - Wellbore #1 - Wellbore #1	14,300.00	6,685.27	1,794.74	1,587.20	8.648	ES
EXIST VERT REINICK 3 - Wellbore #1 - Wellbore #1	14,400.00	6,685.00	1,801.70	1,592.39	8.608	SF
EXIST VERT REINICK C 10-31 - Wellbore #1 - Wellbore	14,630.97	6,700.00	1,151.04	933.96	5.302	CC, ES
EXIST VERT REINICK C 10-31 - Wellbore #1 - Wellbore	14,700.00	6,700.00	1,153.11	934.69	5.279	SF
EXIST VERT REINICK C 9-18 - Wellbore #1 - Design #1	12,341.40	6,738.04	1,106.65	820.08	3.862	CC, ES
EXIST VERT REINICK C 9-18 - Wellbore #1 - Design #1	12,400.00	6,737.24	1,108.20	820.35	3.850	SF
EXIST VERT REINICK C 9-22 - Wellbore #1 - Design #1	13,627.63	6,690.19	93.67	-227.77	0.291	Level 3, CC, ES, SF
EXIST VERT REISTAD 1 - Wellbore #1 - Wellbore #1	100.00	53.42	3,207.97	3,207.83	10,000.00	CC
EXIST VERT REISTAD 1 - Wellbore #1 - Wellbore #1	9,100.00	6,800.00	3,221.67	3,157.28	50.037	ES
EXIST VERT REISTAD 1 - Wellbore #1 - Wellbore #1	9,600.00	6,787.00	3,274.62	3,198.31	42.910	SF
EXIST VERT RICHARDSON 10-13 - Wellbore #1 - Desig	14,738.87	6,635.00	2,184.64	1,857.94	6.687	CC, ES, SF
EXIST VERT ROHR 15-414 - Wellbore #1 - Wellbore #1						Out of range
EXIST VERT ROHR C 15-19 - Wellbore #1 - Wellbore #1						Out of range
EXIST VERT RUFF 8-114 - Wellbore #1 - Wellbore #1	8,651.74	6,826.58	1,556.34	1,503.75	29.594	CC
EXIST VERT RUFF 8-114 - Wellbore #1 - Wellbore #1	8,700.00	6,825.14	1,557.09	1,503.30	28.951	ES
EXIST VERT RUFF 8-114 - Wellbore #1 - Wellbore #1	9,200.00	6,808.74	1,650.00	1,586.97	26.177	SF
EXIST VERT RUFF 8-714 - Wellbore #1 - Wellbore #1	345.63	323.55	513.99	513.05	547.436	CC
EXIST VERT RUFF 8-714 - Wellbore #1 - Wellbore #1	400.00	377.19	514.03	512.94	471.591	ES
EXIST VERT RUFF 8-714 - Wellbore #1 - Wellbore #1	8,200.00	6,832.71	688.56	647.84	16.907	SF
EXIST VERT RUFF C 8-1 - Wellbore #1 - Design #1	9,286.19	6,827.45	2,043.25	1,838.76	9.992	CC
EXIST VERT RUFF C 8-1 - Wellbore #1 - Design #1	9,300.00	6,827.26	2,043.29	1,838.45	9.975	ES
EXIST VERT RUFF C 8-1 - Wellbore #1 - Design #1	9,700.00	6,821.81	2,084.72	1,870.99	9.754	SF
EXIST VERT RYANN STATE C 16-1 - Wellbore #1 - Wel						Out of range
EXIST VERT RYDGREN 8-31 - Wellbore #1 - Wellbore #	6,120.70	5,969.82	810.79	787.91	35.436	CC, ES
EXIST VERT RYDGREN 8-31 - Wellbore #1 - Wellbore #	6,300.00	6,144.88	812.86	789.71	35.108	SF
EXIST VERT SLEDGE C 9-31 - Wellbore #1 - Design #1	9,854.23	6,795.34	1,105.48	886.35	5.045	CC
EXIST VERT SLEDGE C 9-31 - Wellbore #1 - Design #1	9,900.00	6,794.71	1,106.43	886.19	5.024	ES
EXIST VERT SLEDGE C 9-31 - Wellbore #1 - Design #1	10,000.00	6,793.35	1,115.05	892.92	5.020	SF
EXIST VERT SMITH 9-5 - Wellbore #1 - Design #1	10,508.67	6,776.03	363.89	127.28	1.538	CC, ES, SF
EXIST VERT SMITH C 9-19 - Wellbore #1 - Design #1	11,088.29	6,782.87	1,562.12	1,309.39	6.181	CC

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 HEN 11N
<b>Project:</b>	WELD COUNTY, COLORADO (TRUE)	<b>TVD Reference:</b>	KB 23ft @ 4802.00usft
<b>Reference Site:</b>	SW NE SEC. 8 T4N R64W 6th P.M. (HEN)	<b>MD Reference:</b>	KB 23ft @ 4802.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	HEN 11N	<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>	Database 1
<b>Reference Design:</b>	PROPOSAL #2	<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 NE SEC. 8 T4N R64W 6th P.M. (HEN)						
EXIST VERT SMITH C 9-19 - Wellbore #1 - Design #1	11,100.00	6,782.71	1,562.16	1,309.13	6.174	ES
EXIST VERT SMITH C 9-19 - Wellbore #1 - Design #1	11,300.00	6,779.99	1,576.40	1,319.25	6.130	SF
EXIST VERT STATE 16-314 - Wellbore #1 - Design #1	11,623.81	6,713.83	3,210.72	2,944.55	12.063	CC
EXIST VERT STATE 16-314 - Wellbore #1 - Design #1	11,700.00	6,712.79	3,211.62	2,943.36	11.972	ES
EXIST VERT STATE 16-314 - Wellbore #1 - Design #1	12,200.00	6,705.96	3,262.00	2,982.10	11.654	SF
EXIST VERT STATE 16-414 - Wellbore #1 - Design #1						Out of range
EXIST VERT VERN JOHNSON 1-A - Wellbore #1 - Design #1	11,682.78	6,717.25	2,141.00	1,873.12	7.993	CC
EXIST VERT VERN JOHNSON 1-A - Wellbore #1 - Design #1	11,700.00	6,717.02	2,141.07	1,872.71	7.978	ES
EXIST VERT VERN JOHNSON 1-A - Wellbore #1 - Design #1	12,000.00	6,712.92	2,164.36	1,889.15	7.864	SF
EXIST VERT VERN JOHNSON 2 - Wellbore #1 - Design #1	10,310.90	6,763.51	774.58	543.64	3.354	CC, ES
EXIST VERT VERN JOHNSON 2 - Wellbore #1 - Design #1	10,400.00	6,762.29	779.69	546.89	3.349	SF
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1	14,237.37	6,624.12	3,273.85	3,067.64	15.876	CC
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1	14,300.00	6,623.54	3,274.45	3,066.55	15.750	ES
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1	14,400.00	6,622.63	3,277.89	3,067.47	15.578	SF
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore #1						Out of range
EXIST VERT WILMOTH C 4-23 - Wellbore #1 - Wellbore #1						Out of range
EXIST VERT WILMOTH C 4-24 - Wellbore #1 - Wellbore #1						Out of range
EXIST VERT WILMOTH C 9-27 - Wellbore #1 - Wellbore #1	13,571.85	6,718.33	2,716.25	2,528.99	14.505	CC
EXIST VERT WILMOTH C 9-27 - Wellbore #1 - Wellbore #1	13,600.00	6,717.85	2,716.40	2,528.38	14.447	ES
EXIST VERT WILMOTH C 9-27 - Wellbore #1 - Wellbore #1	14,100.00	6,709.50	2,767.11	2,569.34	13.992	SF
HEN 01N - ORIGINAL WELLBORE - PROPOSAL #2	300.00	300.00	149.95	148.88	139.861	CC, ES
HEN 01N - ORIGINAL WELLBORE - PROPOSAL #2	14,738.87	15,028.62	2,396.61	1,959.77	5.486	SF
HEN 02N - ORIGINAL WELLBORE - PROPOSAL #2	400.00	400.00	134.98	133.46	88.703	CC, ES
HEN 02N - ORIGINAL WELLBORE - PROPOSAL #2	14,738.87	15,017.44	2,157.25	1,720.76	4.942	SF
HEN 03N - ORIGINAL WELLBORE - PROPOSAL #2	500.00	500.00	119.97	118.00	60.860	CC, ES
HEN 03N - ORIGINAL WELLBORE - PROPOSAL #2	14,738.87	14,885.07	1,917.24	1,480.47	4.390	SF
HEN 04N - ORIGINAL WELLBORE - PROPOSAL #2	600.00	600.00	104.95	102.53	43.356	CC, ES
HEN 04N - ORIGINAL WELLBORE - PROPOSAL #2	14,738.87	14,887.59	1,678.24	1,241.66	3.844	SF
HEN 05N - ORIGINAL WELLBORE - PROPOSAL #2	700.00	700.00	89.95	87.08	31.338	CC, ES
HEN 05N - ORIGINAL WELLBORE - PROPOSAL #2	14,738.87	14,765.52	1,437.93	1,001.00	3.291	SF
HEN 06N - ORIGINAL WELLBORE - PROPOSAL #2	716.33	717.33	74.97	72.03	25.450	CC
HEN 06N - ORIGINAL WELLBORE - PROPOSAL #2	800.00	800.98	74.98	71.65	22.569	ES
HEN 06N - ORIGINAL WELLBORE - PROPOSAL #2	14,738.87	14,797.71	1,199.25	763.10	2.750	SF
HEN 07N - ORIGINAL WELLBORE - PROPOSAL #2	900.00	900.00	59.97	56.20	15.909	CC, ES
HEN 07N - ORIGINAL WELLBORE - PROPOSAL #2	14,738.87	14,692.17	958.62	521.79	2.194	SF
HEN 08N - ORIGINAL WELLBORE - PROPOSAL #2	1,000.00	1,000.00	44.99	40.77	10.665	CC, ES
HEN 08N - ORIGINAL WELLBORE - PROPOSAL #2	14,738.87	14,744.08	721.43	288.03	1.665	SF
HEN 09N - ORIGINAL WELLBORE - PROPOSAL #2	1,100.00	1,100.00	29.98	25.31	6.422	CC
HEN 09N - ORIGINAL WELLBORE - PROPOSAL #2	1,200.00	1,199.77	30.34	25.23	5.941	ES
HEN 09N - ORIGINAL WELLBORE - PROPOSAL #2	14,738.87	14,693.85	479.31	43.17	1.099	Level 3, SF
HEN 10N - ORIGINAL WELLBORE - PROPOSAL #2	1,400.00	1,400.00	14.97	8.96	2.488	CC
HEN 10N - ORIGINAL WELLBORE - PROPOSAL #2	14,738.87	14,785.18	249.66	-48.10	0.838	Level 3, ES, SF
HEN 12N - ORIGINAL WELLBORE - PROPOSAL #2	1,300.00	1,300.00	15.01	9.44	2.696	CC
HEN 12N - ORIGINAL WELLBORE - PROPOSAL #2	14,738.87	14,839.84	251.11	-41.83	0.857	Level 3, ES, SF
HEN 13N - ORIGINAL WELLBORE - PROPOSAL #2	1,200.00	1,200.00	30.02	24.90	5.866	CC, ES
HEN 13N - ORIGINAL WELLBORE - PROPOSAL #2	14,738.87	14,796.68	479.31	43.62	1.100	Level 3, SF
HEN 14N - ORIGINAL WELLBORE - PROPOSAL #2	1,100.00	1,100.00	45.03	40.36	9.645	CC, ES
HEN 14N - ORIGINAL WELLBORE - PROPOSAL #2	14,738.87	14,908.23	722.83	292.14	1.678	SF
HEN 15N - ORIGINAL WELLBORE - PROPOSAL #2	1,000.00	1,000.00	60.00	55.78	14.222	CC, ES
HEN 15N - ORIGINAL WELLBORE - PROPOSAL #2	14,738.87	14,877.74	958.58	522.77	2.200	SF
HEN 16N - ORIGINAL WELLBORE - PROPOSAL #2	900.00	900.00	74.98	71.21	19.891	CC, ES
HEN 16N - ORIGINAL WELLBORE - PROPOSAL #2	14,738.87	14,965.04	1,200.26	765.82	2.763	SF

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<b>Company:</b>	PDC ENERGY	<b>Local Co-ordinate Reference:</b>	Well HEN 11N
<b>Project:</b>	WELD COUNTY, COLORADO (TRUE)	<b>TVD Reference:</b>	KB 23ft @ 4802.00usft
<b>Reference Site:</b>	SW NE SEC. 8 T4N R64W 6th P.M. (HEN)	<b>MD Reference:</b>	KB 23ft @ 4802.00usft
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	HEN 11N	<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>	Database 1
<b>Reference Design:</b>	PROPOSAL #2	<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 NE SEC. 8 T4N R64W 6th P.M. (HEN)						
HEN 17N - ORIGINAL WELLBORE - PROPOSAL #2	800.00	800.00	89.98	86.66	27.105	CC, ES
HEN 17N - ORIGINAL WELLBORE - PROPOSAL #2	14,738.87	14,966.03	1,437.87	1,002.28	3.301	SF
HEN 18N - ORIGINAL WELLBORE - PROPOSAL #2	700.00	700.00	104.99	102.12	36.580	CC, ES
HEN 18N - ORIGINAL WELLBORE - PROPOSAL #2	14,738.87	15,093.23	1,678.77	1,243.89	3.860	SF
HEN 19N - ORIGINAL WELLBORE - PROPOSAL #2	600.00	600.00	120.00	117.58	49.573	CC, ES
HEN 19N - ORIGINAL WELLBORE - PROPOSAL #2	14,738.87	15,090.25	1,917.21	1,481.86	4.404	SF
HEN 20NA - ORIGINAL WELLBORE - PROPOSAL #2	500.00	499.00	134.98	133.01	68.553	CC, ES
HEN 20NA - ORIGINAL WELLBORE - PROPOSAL #2	14,738.87	15,111.10	2,157.63	1,722.44	4.958	SF
HEN 21N - ORIGINAL WELLBORE - PROPOSAL #2	400.00	399.00	149.99	148.47	98.713	CC, ES
HEN 21N - ORIGINAL WELLBORE - PROPOSAL #2	14,738.87	15,320.70	2,397.32	1,962.54	5.514	SF
HEN 22N - ORIGINAL WELLBORE - PROPOSAL #2	300.00	298.00	165.00	163.93	154.543	CC, ES
HEN 22N - ORIGINAL WELLBORE - PROPOSAL #2	14,738.87	15,355.99	2,636.16	2,201.23	6.061	SF