



Project: WELD COUNTY, COLORADO
Site: SE SE SEC. 6 T4N R64W 6th P.M.
Well: HAROLD 6Y-304
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #2

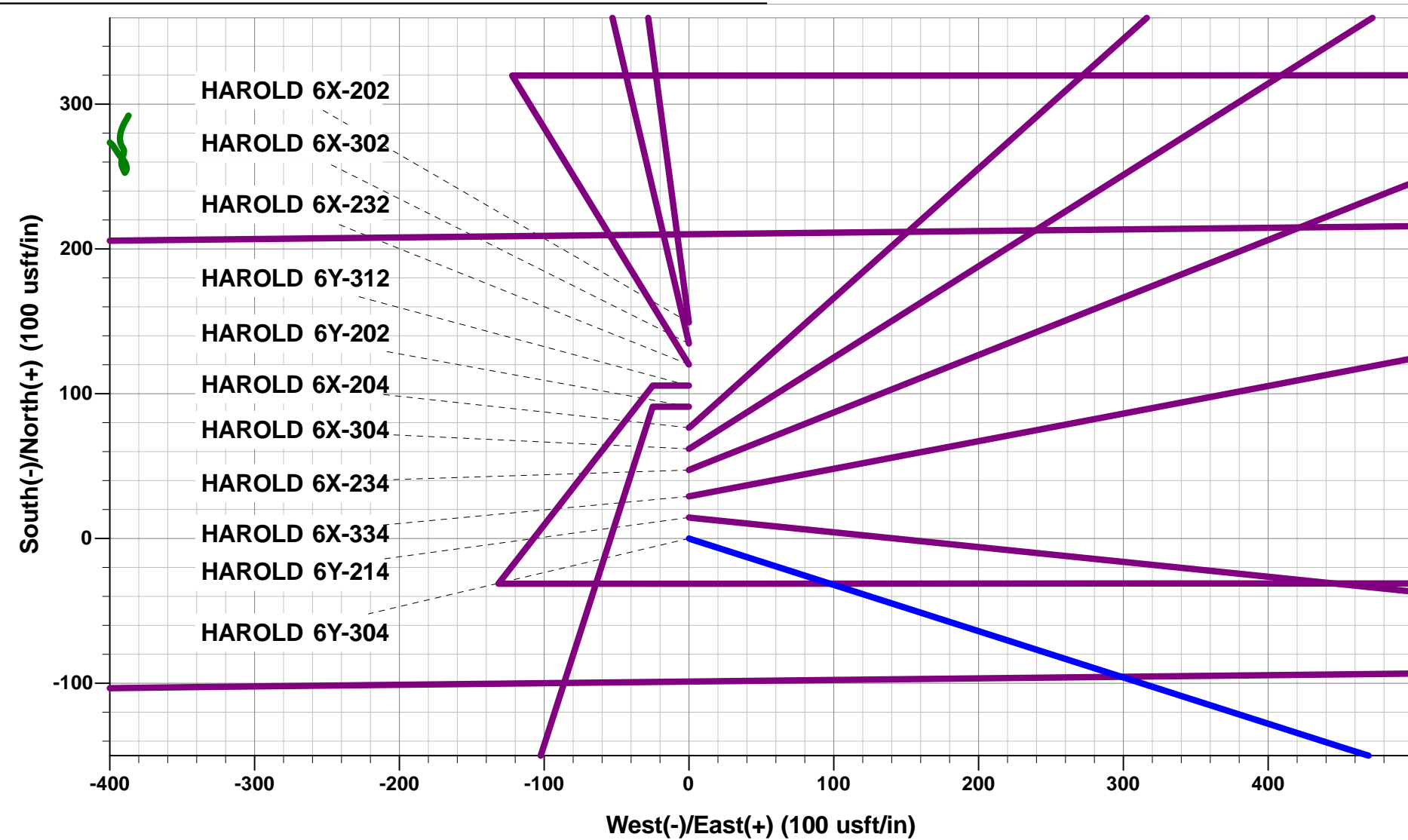


ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Dep	Annotation
0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	SHL: 487ft FSL & 436ft FEL of Sec 6
300.0	300.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDDGE (2°/100ft BUR)
895.6	900.0	12.00	107.73	-19.1	59.6	-57.7	62.6	EOB TO 12° INC
5216.2	5317.1	12.00	107.73	-298.7	934.4	-903.4	981.0	END OF TANGENT
5811.8	5917.1	0.00	0.00	-317.8	994.0	-961.1	1043.6	EOD TO VERTICAL
6233.8	6339.1	0.00	0.00	-317.8	994.0	-961.1	1043.6	KOP (8°/100ft BUR)
6939.1	7339.1	80.00	269.37	-324.3	402.2	-371.1	1635.4	80° INC: 158ft FSL & 25ft FEL of Sec 6
6950.0	7468.9	90.39	269.36	-325.7	273.0	-242.3	1764.6	HZ LP *NEW*: 158ft FSL & 153.8ft FEL of Sec 6
6920.0	11857.3	90.39	269.35	-374.9	-4115.0	4132.0	6152.8	BHL: 158ft FSL & 500ft FWL of Sec 6

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - HAROLD 6Y-304	6233.8	-317.8	994.0	40.334538	-104.581925
80° INC - HAROLD 6Y-304	6939.1	-324.3	402.2	40.334520	-104.584047
BHL - HAROLD 6Y-304 (P2)	6920.0	-374.9	-4115.0	40.334380	-104.600250
HZ LP *NEW* - HAROLD 6Y-304	6950.0	-325.7	273.4	40.334516	-104.584509



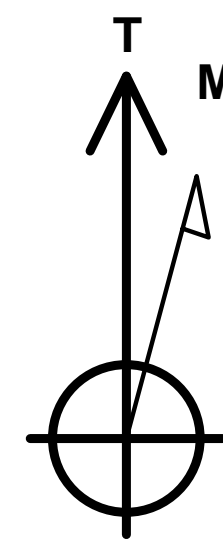
PROPOSED LOCAL COORDINATES:

SHL: 487ft FSL & 436ft FEL of Sec 6

80° INC: 158ft FSL & 25ft FEL of Sec 6

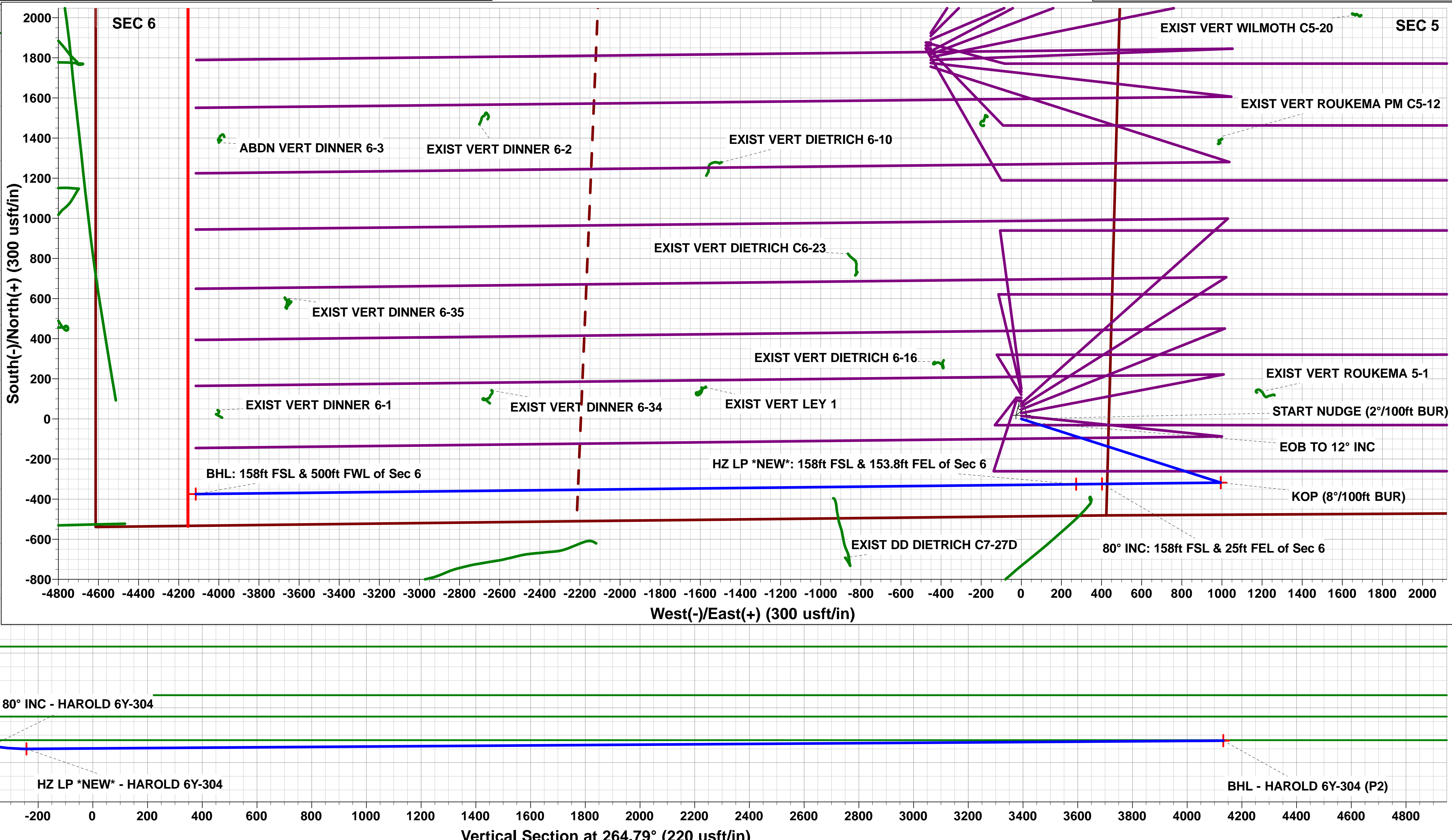
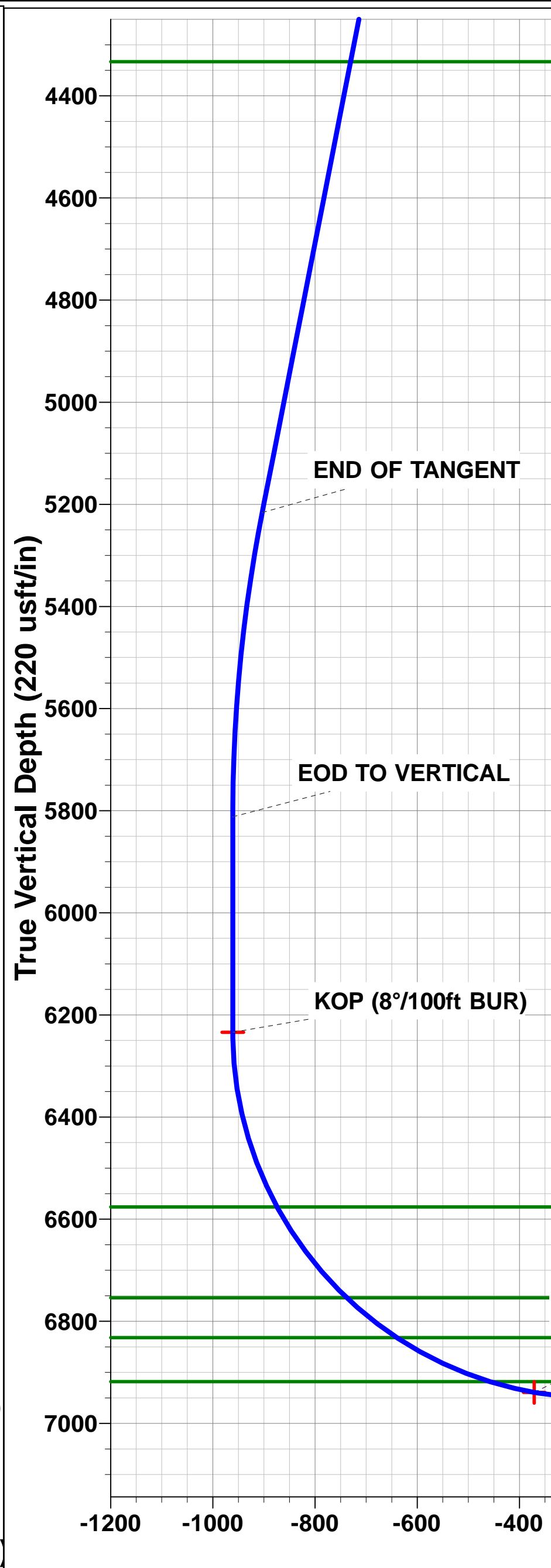
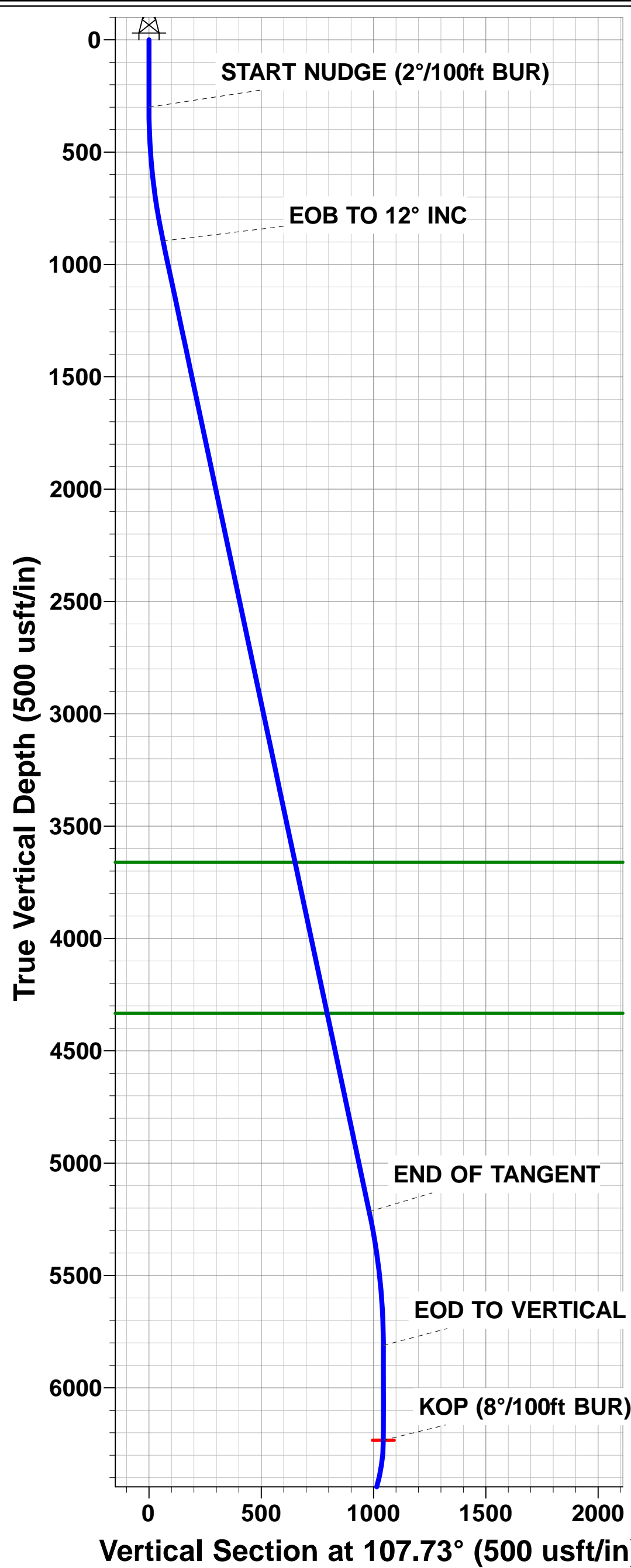
HZ LP *NEW*: 158ft FSL & 153.8ft FEL of Sec 6

BHL: 158ft FSL & 500ft FWL of Sec 6



Azimuths to True North
Magnetic North: 8.13°

Magnetic Field
Strength: 52400.9snT
Dip Angle: 66.84°
Date: 04/04/2017
Model: IGRF2015



PDC ENERGY

**WELD COUNTY, COLORADO
SE SE SEC. 6 T4N R64W 6th P.M.
HAROLD 6Y-304**

**ORIGINAL WELLBORE
PROPOSAL #2**

Anticollision Report

26 June, 2017



Anticollision Report



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well HAROLD 6Y-304
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4810.0usft (Original Well Elev)
Reference Site:	SE SE SEC. 6 T4N R64W 6th P.M.	MD Reference:	KB-EST @ 4810.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	HAROLD 6Y-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	Offset TVD Reference:	Offset Datum

Reference	PROPOSAL #2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.0usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0 us	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date 26/06/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	11,857.3	PROPOSAL #2 (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
NE SE SEC. 6 T4N R64W 6th P.M.						
ABDN VERT DINNER 6-3 - Wellbore #1 - Wellbore #1	11,694.7	7,000.0	1,779.2	1,647.1	13.466	CC
ABDN VERT DINNER 6-3 - Wellbore #1 - Wellbore #1	11,700.0	7,000.0	1,779.3	1,647.0	13.451	ES
ABDN VERT DINNER 6-3 - Wellbore #1 - Wellbore #1	11,857.3	7,000.0	1,786.7	1,650.0	13.077	SF
ABDN VERT KUIS C5-7 - Wellbore #1 - Wellbore #1	5,754.8	5,461.8	4,247.2	4,223.3	177.557	CC, ES
ABDN VERT KUIS C5-7 - Wellbore #1 - Wellbore #1	11,857.3	6,748.5	8,585.9	8,449.6	62.962	SF
ABDN VERT LEY 2 - Wellbore #1 - Wellbore #1	337.8	340.0	1,475.0	1,474.3	1,913.879	CC, ES
ABDN VERT LEY 2 - Wellbore #1 - Wellbore #1	11,300.0	6,900.0	3,870.1	3,749.0	31.951	SF
ABDN VERT MCCLINTOCK 1 - Wellbore #1 - Wellbore #1	6,025.0	5,813.9	8,230.9	8,207.2	347.303	CC
ABDN VERT MCCLINTOCK 1 - Wellbore #1 - Wellbore #1	6,100.0	5,868.1	8,231.0	8,207.2	345.755	ES
ABDN VERT MCCLINTOCK 1 - Wellbore #1 - Wellbore #1	8,500.0	6,764.2	9,952.1	9,905.4	212.927	SF
ABDN VERT NIKOLORIC C5-5 - Wellbore #1 - Wellbore #1	1,244.6	1,151.0	3,057.4	3,053.2	723.433	CC
ABDN VERT NIKOLORIC C5-5 - Wellbore #1 - Wellbore #1	1,500.0	1,400.0	3,057.6	3,052.1	559.222	ES
ABDN VERT NIKOLORIC C5-5 - Wellbore #1 - Wellbore #1	11,857.3	6,859.0	6,164.1	6,027.7	45.195	SF
EXIST DD ARD PC C6-18D - Wellbore #1 - Wellbore #1	9,648.6	7,100.0	3,700.3	3,606.4	39.438	CC
EXIST DD ARD PC C6-18D - Wellbore #1 - Wellbore #1	9,700.0	7,100.0	3,700.6	3,605.4	38.873	ES
EXIST DD ARD PC C6-18D - Wellbore #1 - Wellbore #1	11,857.3	7,054.4	4,309.1	4,155.0	27.957	SF
EXIST DD ARD PC C6-20D - Wellbore #1 - Wellbore #1	11,001.8	7,024.2	2,576.3	2,446.7	19.878	CC
EXIST DD ARD PC C6-20D - Wellbore #1 - Wellbore #1	11,100.0	7,019.2	2,578.1	2,445.8	19.488	ES
EXIST DD ARD PC C6-20D - Wellbore #1 - Wellbore #1	11,857.3	6,983.1	2,714.3	2,561.2	17.727	SF
EXIST DD ARD PC C6-21D - Wellbore #1 - Wellbore #1	9,685.4	7,091.8	2,507.6	2,413.1	26.545	CC
EXIST DD ARD PC C6-21D - Wellbore #1 - Wellbore #1	9,800.0	7,084.6	2,510.2	2,412.6	25.740	ES
EXIST DD ARD PC C6-21D - Wellbore #1 - Wellbore #1	11,500.0	6,980.6	3,093.5	2,949.8	21.535	SF
EXIST DD BURMAN C4-32D - Wellbore #1 - Wellbore #1	2,387.7	1,493.5	4,822.1	4,812.1	485.724	CC
EXIST DD BURMAN C4-32D - Wellbore #1 - Wellbore #1	2,400.0	1,498.0	4,822.1	4,812.1	483.042	ES
EXIST DD BURMAN C4-32D - Wellbore #1 - Wellbore #1	11,500.0	7,166.0	9,930.7	9,781.6	66.574	SF
EXIST DD BURMAN C4-33D - Wellbore #1 - Wellbore #1	2,512.6	1,602.1	4,853.0	4,841.9	436.414	CC
EXIST DD BURMAN C4-33D - Wellbore #1 - Wellbore #1	2,900.0	1,947.6	4,853.9	4,840.4	358.126	ES
EXIST DD BURMAN C4-33D - Wellbore #1 - Wellbore #1	11,800.0	6,962.0	9,968.5	9,813.2	64.178	SF
EXIST DD BURMAN C5-17D - Wellbore #1 - Wellbore #1	3,380.9	2,748.4	4,728.5	4,703.0	185.252	CC
EXIST DD BURMAN C5-17D - Wellbore #1 - Wellbore #1	3,400.0	2,755.1	4,728.6	4,702.9	184.318	ES
EXIST DD BURMAN C5-17D - Wellbore #1 - Wellbore #1	11,857.3	7,204.0	9,327.0	9,170.9	59.758	SF
EXIST DD BURMAN C5-21D - Wellbore #1 - Wellbore #1	6,341.4	6,529.3	3,427.4	3,368.1	57.814	CC, ES
EXIST DD BURMAN C5-21D - Wellbore #1 - Wellbore #1	11,857.3	7,125.4	7,817.9	7,650.5	46.703	SF
EXIST DD BURMAN C5-22D - Wellbore #1 - Wellbore #1	6,117.3	6,120.1	4,218.7	4,186.0	128.876	CC
EXIST DD BURMAN C5-22D - Wellbore #1 - Wellbore #1	6,350.0	6,310.0	4,219.8	4,174.6	93.317	ES
EXIST DD BURMAN C5-22D - Wellbore #1 - Wellbore #1	11,857.3	6,936.6	8,832.2	8,679.9	58.002	SF
EXIST DD BURMAN C5-23D - Wellbore #1 - Wellbore #1	6,107.3	6,009.6	3,602.5	3,566.1	98.774	CC

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

Anticollision Report



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well HAROLD 6Y-304
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4810.0usft (Original Well Elev)
Reference Site:	SE SE SEC. 6 T4N R64W 6th P.M.	MD Reference:	KB-EST @ 4810.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	HAROLD 6Y-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	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
NE SE SEC. 6 T4N R64W 6th P.M.						
EXIST DD BURMAN C5-23D - Wellbore #1 - Wellbore #1	6,300.0	6,191.8	3,602.9	3,565.9	97.315	ES
EXIST DD BURMAN C5-23D - Wellbore #1 - Wellbore #1	11,857.3	6,800.0	8,617.6	8,469.4	58.154	SF
EXIST DD BURMAN C5-24D - Wellbore #1 - Wellbore #1	6,339.1	6,468.7	2,476.6	2,423.5	46.643	CC, ES
EXIST DD BURMAN C5-24D - Wellbore #1 - Wellbore #1	11,857.3	7,062.8	7,406.1	7,240.1	44.624	SF
EXIST DD DIETRICH C7-27 - Wellbore #1 - Wellbore #1	8,680.4	6,950.0	57.0	5.7	1.112	Level 2, CC, ES, SF
EXIST DD DIETRICH C8-30D - Wellbore #1 - Wellbore #1	7,397.7	7,335.1	65.8	13.0	1.246	Level 2, CC, ES
EXIST DD DIETRICH C8-30D - Wellbore #1 - Wellbore #1	7,400.0	7,335.3	65.9	13.0	1.246	Level 2, SF
EXIST DD RUFF C8-27D - Wellbore #1 - Wellbore #1	5,904.7	5,802.1	3,396.7	3,368.8	121.922	CC
EXIST DD RUFF C8-27D - Wellbore #1 - Wellbore #1	5,917.1	5,811.0	3,396.7	3,359.3	90.899	ES
EXIST DD RUFF C8-27D - Wellbore #1 - Wellbore #1	11,400.0	6,857.0	8,053.3	7,931.8	66.235	SF
EXIST DD SLEDGE C9-30D - Wellbore #1 - Wellbore #1	6,339.1	6,433.6	4,650.9	4,608.2	108.943	ES
EXIST DD SLEDGE C9-30D - Wellbore #1 - Wellbore #1	6,356.6	6,458.0	4,650.7	4,613.5	125.063	CC
EXIST DD SLEDGE C9-30D - Wellbore #1 - Wellbore #1	11,857.3	7,098.0	9,749.9	9,608.5	68.951	SF
EXIST DD WRIGHT-GOIN C7-28D - Wellbore #1 - Wellbore #1	9,879.5	7,299.9	259.4	139.7	2.167	CC, ES
EXIST DD WRIGHT-GOIN C7-28D - Wellbore #1 - Wellbore #1	9,900.0	7,298.6	260.2	140.0	2.164	SF
EXIST HZ COALVIEW G2-63-1HN - Wellbore #1 - Wellbore #1	11,857.3	6,646.0	1,145.9	1,007.3	8.270	CC, ES, SF
EXIST HZ COALVIEW G2-64-1HN - Wellbore #1 - Wellbore #1	11,857.3	6,685.1	1,698.1	1,551.9	11.615	CC, ES, SF
EXIST HZ COALVIEW G2-65-1HN - Wellbore #1 - Wellbore #1	11,857.3	6,739.0	2,241.1	2,092.9	15.129	CC, ES, SF
EXIST HZ COALVIEW G2-66-1HN - Wellbore #1 - Wellbore #1	11,857.3	6,710.6	2,880.9	2,732.5	19.412	CC, ES, SF
EXIST HZ LOWER LATHAM PC G12-69HN - Wellbore #1 - Wellbore #1	11,857.3	12,060.0	382.9	97.6	1.342	Level 3, CC, ES, SF
EXIST HZ NORTHRUP C8-73HN - Wellbore #1 - Wellbore #1	6,339.1	6,357.0	3,415.2	3,375.9	86.926	ES
EXIST HZ NORTHRUP C8-73HN - Wellbore #1 - Wellbore #1	6,358.2	6,370.0	3,414.9	3,386.4	119.785	CC
EXIST HZ NORTHRUP C8-73HN - Wellbore #1 - Wellbore #1	11,857.3	6,737.0	8,506.4	8,370.9	62.789	SF
EXIST HZ NORTHRUP C8-75HN - Wellbore #1 - Wellbore #1	5,880.8	5,812.4	2,105.5	2,077.8	76.090	CC
EXIST HZ NORTHRUP C8-75HN - Wellbore #1 - Wellbore #1	5,917.1	5,849.7	2,105.7	2,063.7	50.132	ES
EXIST HZ NORTHRUP C8-75HN - Wellbore #1 - Wellbore #1	6,339.1	6,298.8	2,109.1	2,066.1	49.031	SF
EXIST HZ SCHMIDT PC C6-79HN - Wellbore #1 - Wellbore #1	11,857.3	12,505.0	631.1	479.4	4.160	CC, ES, SF
EXIST VERT COBB 6-1 - Wellbore #1 - Wellbore #1	10,267.8	6,900.0	3,146.1	3,053.3	33.927	CC
EXIST VERT COBB 6-1 - Wellbore #1 - Wellbore #1	10,400.0	6,895.1	3,148.8	3,052.5	32.690	ES
EXIST VERT COBB 6-1 - Wellbore #1 - Wellbore #1	11,857.3	6,821.4	3,523.9	3,387.5	25.849	SF
EXIST VERT COBB 6-23 - Wellbore #1 - Wellbore #1	11,620.9	6,904.0	3,315.6	3,185.6	25.496	CC
EXIST VERT COBB 6-23 - Wellbore #1 - Wellbore #1	11,700.0	6,902.2	3,316.6	3,184.3	25.082	ES
EXIST VERT COBB 6-23 - Wellbore #1 - Wellbore #1	11,857.3	6,900.0	3,324.0	3,187.4	24.338	SF
EXIST VERT CONNELL C4-20 - Wellbore #1 - Wellbore #1	5,879.5	5,614.2	6,453.9	6,432.7	304.271	CC
EXIST VERT CONNELL C4-20 - Wellbore #1 - Wellbore #1	5,917.1	5,649.8	6,454.1	6,432.5	298.315	ES
EXIST VERT CONNELL C4-20 - Wellbore #1 - Wellbore #1	10,400.0	6,800.0	9,906.2	9,809.7	102.722	SF
EXIST VERT CONNELL 14-4 - Wellbore #1 - Wellbore #1	5,912.0	5,747.7	5,379.4	5,361.2	294.808	CC
EXIST VERT CONNELL 14-4 - Wellbore #1 - Wellbore #1	6,204.7	6,049.1	5,379.5	5,354.4	214.063	ES
EXIST VERT CONNELL 14-4 - Wellbore #1 - Wellbore #1	11,300.0	6,800.0	9,917.9	9,798.6	83.158	SF
EXIST VERT CONNELL 2 - Wellbore #1 - Wellbore #1	5,989.8	5,816.0	5,785.9	5,763.4	256.467	CC
EXIST VERT CONNELL 2 - Wellbore #1 - Wellbore #1	6,000.0	5,823.2	5,785.9	5,763.4	256.316	ES
EXIST VERT CONNELL 2 - Wellbore #1 - Wellbore #1	11,000.0	6,841.1	9,918.8	9,806.2	88.061	SF
EXIST VERT CONNELL 3 - Wellbore #1 - Wellbore #1	6,339.1	6,253.1	6,746.8	6,722.0	271.191	ES
EXIST VERT CONNELL 3 - Wellbore #1 - Wellbore #1	6,348.2	6,261.5	6,746.8	6,728.2	362.853	CC
EXIST VERT CONNELL 3 - Wellbore #1 - Wellbore #1	10,000.0	6,800.0	9,983.5	9,900.1	119.603	SF
EXIST VERT CONNELL C 4-5 - Wellbore #1 - Wellbore #1	5,900.0	5,740.5	6,172.2	6,149.8	276.346	ES
EXIST VERT CONNELL C 4-5 - Wellbore #1 - Wellbore #1	6,060.5	5,863.8	6,171.7	6,151.0	297.639	CC
EXIST VERT CONNELL C 4-5 - Wellbore #1 - Wellbore #1	10,900.0	6,800.0	9,960.4	9,850.5	90.562	SF
EXIST VERT CONNELL C4-11 - Wellbore #1 - Wellbore #1	5,903.2	5,675.8	7,017.8	6,998.2	357.974	CC
EXIST VERT CONNELL C4-11 - Wellbore #1 - Wellbore #1	6,339.1	6,144.8	7,018.4	6,995.0	300.120	ES
EXIST VERT CONNELL C4-11 - Wellbore #1 - Wellbore #1	9,800.0	6,800.0	9,989.5	9,909.5	124.878	SF
EXIST VERT CONNELL C4-25 - Wellbore #1 - Wellbore #1	5,802.0	5,400.0	6,316.7	6,298.0	336.755	CC
EXIST VERT CONNELL C4-25 - Wellbore #1 - Wellbore #1	5,917.1	5,491.2	6,319.0	6,295.5	268.531	ES

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

Anticollision Report



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well HAROLD 6Y-304
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Site Error:	0.0 usft	North Reference:	True
Reference Well:	HAROLD 6Y-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	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
NE SE SEC. 6 T4N R64W 6th P.M.						
EXIST VERT CONNELL C4-25 - Wellbore #1 - Wellbore	10,400.0	6,162.4	9,981.4	9,895.9	116.731	SF
EXIST VERT DIETRICH 6-10 - Wellbore #1 - Wellbore #	9,294.9	6,950.0	1,558.7	1,491.9	23.334	CC
EXIST VERT DIETRICH 6-10 - Wellbore #1 - Wellbore #	9,300.0	6,950.0	1,558.7	1,491.8	23.287	ES
EXIST VERT DIETRICH 6-10 - Wellbore #1 - Wellbore #	10,300.0	6,950.0	1,854.7	1,760.9	19.783	SF
EXIST VERT DIETRICH 6-16 - Wellbore #1 - Wellbore #	309.2	288.8	516.4	515.6	693.770	CC, ES
EXIST VERT DIETRICH 6-16 - Wellbore #1 - Wellbore #	8,400.0	6,700.0	719.7	676.9	16.804	SF
EXIST VERT DIETRICH C6-23 - Wellbore #1 - Wellbore	8,546.5	6,942.3	1,069.2	1,021.4	22.332	CC, ES
EXIST VERT DIETRICH C6-23 - Wellbore #1 - Wellbore	9,200.0	6,935.3	1,253.1	1,188.7	19.445	SF
EXIST VERT DINNER 6-1 - Wellbore #1 - Wellbore #1	11,722.8	6,948.3	380.2	247.1	2.857	CC, ES, SF
EXIST VERT DINNER 6-2 - Wellbore #1 - Wellbore #1	10,381.3	7,000.0	1,853.5	1,757.4	19.282	CC
EXIST VERT DINNER 6-2 - Wellbore #1 - Wellbore #1	10,400.0	7,000.0	1,853.6	1,757.0	19.182	ES
EXIST VERT DINNER 6-2 - Wellbore #1 - Wellbore #1	11,400.0	7,000.0	2,115.0	1,991.0	17.048	SF
EXIST VERT DINNER 6-34 - Wellbore #1 - Wellbore #1	10,386.0	6,950.0	436.0	339.8	4.532	CC
EXIST VERT DINNER 6-34 - Wellbore #1 - Wellbore #1	10,400.0	6,950.0	436.2	339.6	4.516	ES, SF
EXIST VERT DINNER 6-35 - Wellbore #1 - Wellbore #1	11,380.1	6,982.0	954.1	830.8	7.738	CC
EXIST VERT DINNER 6-35 - Wellbore #1 - Wellbore #1	11,400.0	6,981.6	954.3	830.4	7.706	ES
EXIST VERT DINNER 6-35 - Wellbore #1 - Wellbore #1	11,600.0	6,977.4	979.1	849.7	7.568	SF
EXIST VERT EHRlich 1 - Wellbore #1 - Wellbore #1	6,172.6	5,954.6	7,482.5	7,460.4	338.505	CC, ES
EXIST VERT EHRlich 1 - Wellbore #1 - Wellbore #1	9,400.0	6,800.0	9,957.8	9,888.2	143.072	SF
EXIST VERT HINKLE 23-5 - Wellbore #1 - Wellbore #1	6,343.8	6,195.2	2,303.1	2,277.9	91.283	CC, ES
EXIST VERT HINKLE 23-5 - Wellbore #1 - Wellbore #1	11,857.3	6,738.8	6,812.4	6,676.4	50.065	SF
EXIST VERT HINKLE 24-5 - Wellbore #1 - Wellbore #1	6,339.1	6,196.0	1,519.9	1,497.4	67.590	ES
EXIST VERT HINKLE 24-5 - Wellbore #1 - Wellbore #1	6,341.2	6,198.2	1,519.9	1,498.5	70.941	CC
EXIST VERT HINKLE 24-5 - Wellbore #1 - Wellbore #1	11,857.3	6,600.0	6,543.2	6,420.3	53.240	SF
EXIST VERT LEVI C5-15 - Wellbore #1 - Wellbore #1	5,871.9	5,688.6	3,099.1	3,080.0	161.871	CC
EXIST VERT LEVI C5-15 - Wellbore #1 - Wellbore #1	5,917.1	5,732.5	3,099.4	3,076.0	131.967	ES
EXIST VERT LEVI C5-15 - Wellbore #1 - Wellbore #1	11,857.3	6,771.2	8,189.7	8,057.4	61.884	SF
EXIST VERT LEY 1 - Wellbore #1 - Wellbore #1	9,324.7	6,945.9	495.8	428.4	7.350	CC, ES
EXIST VERT LEY 1 - Wellbore #1 - Wellbore #1	9,400.0	6,943.9	501.5	432.1	7.222	SF
EXIST VERT MCCLINTOCK C4-15 - Wellbore #1 - Wellb	6,339.1	6,233.6	8,182.9	8,158.2	331.275	ES
EXIST VERT MCCLINTOCK C4-15 - Wellbore #1 - Wellb	6,347.8	6,242.9	8,182.9	8,163.7	426.449	CC
EXIST VERT MCCLINTOCK C4-15 - Wellbore #1 - Wellb	8,500.0	6,700.0	9,924.1	9,878.3	217.024	SF
EXIST VERT OPDYKE/HINKLE 1 - Wellbore #1 - Wellbo	5,900.0	5,735.0	3,325.1	3,302.8	149.709	ES
EXIST VERT OPDYKE/HINKLE 1 - Wellbore #1 - Wellbo	5,925.6	5,758.2	3,325.0	3,304.3	160.909	CC
EXIST VERT OPDYKE/HINKLE 1 - Wellbore #1 - Wellbo	11,857.3	6,600.0	8,138.6	8,003.6	60.269	SF
EXIST VERT REISTAD 5-1 - Wellbore #1 - Wellbore #1	5,913.7	5,753.5	4,099.1	4,080.6	220.722	CC
EXIST VERT REISTAD 5-1 - Wellbore #1 - Wellbore #1	5,917.1	5,756.2	4,099.1	4,075.2	171.397	ES
EXIST VERT REISTAD 5-1 - Wellbore #1 - Wellbore #1	11,857.3	6,850.0	9,198.0	9,062.8	68.016	SF
EXIST VERT REISTAD C5-9 - Wellbore #1 - Wellbore #1	6,339.1	6,200.0	4,239.1	4,216.0	183.174	ES
EXIST VERT REISTAD C5-9 - Wellbore #1 - Wellbore #1	6,344.8	6,210.9	4,239.1	4,217.9	199.566	CC
EXIST VERT REISTAD C5-9 - Wellbore #1 - Wellbore #1	11,857.3	6,773.0	9,188.4	9,051.9	67.325	SF
EXIST VERT ROUKEMA 5-1 - Wellbore #1 - Wellbore #1	5,714.5	5,557.7	500.7	475.8	20.122	CC, ES
EXIST VERT ROUKEMA 5-1 - Wellbore #1 - Wellbore #1	6,350.0	6,195.9	510.2	484.5	19.811	SF
EXIST VERT ROUKEMA PM C5-12 - Wellbore #1 - Well	3,116.6	3,018.9	1,621.5	1,608.1	121.143	CC
EXIST VERT ROUKEMA PM C5-12 - Wellbore #1 - Well	3,500.0	3,400.0	1,622.4	1,607.2	106.565	ES
EXIST VERT ROUKEMA PM C5-12 - Wellbore #1 - Well	11,857.3	6,900.0	5,386.5	5,250.0	39.461	SF
EXIST VERT SITZMAN 4-714 - Wellbore #1 - Design #1	6,339.1	6,129.8	8,749.4	8,607.4	61.626	CC, ES
EXIST VERT SITZMAN 4-714 - Wellbore #1 - Design #1	8,000.0	6,842.3	9,927.7	9,758.9	58.823	SF
EXIST VERT SITZMAN C4-22 - Wellbore #1 - Wellbore #	6,339.1	6,127.3	9,078.6	9,055.2	387.948	ES
EXIST VERT SITZMAN C4-22 - Wellbore #1 - Wellbore #	6,339.5	6,127.6	9,078.6	9,058.2	446.087	CC
EXIST VERT SITZMAN C4-22 - Wellbore #1 - Wellbore #	7,700.0	6,750.0	9,996.7	9,967.1	336.945	SF
EXIST VERT SLEDGE C9-28 - Wellbore #1 - Design #1	6,339.1	6,161.8	7,360.7	7,215.7	50.748	CC, ES
EXIST VERT SLEDGE C9-28 - Wellbore #1 - Design #1	9,300.0	6,865.5	9,908.9	9,710.2	49.867	SF

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

Anticollision Report



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well HAROLD 6Y-304
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4810.0usft (Original Well Elev)
Reference Site:	SE SE SEC. 6 T4N R64W 6th P.M.	MD Reference:	KB-EST @ 4810.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	HAROLD 6Y-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	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
NE SE SEC. 6 T4N R64W 6th P.M.						
EXIST VERT SLEDGE C9-29 - Wellbore #1 - Design #1	6,339.1	6,180.8	6,021.3	5,876.1	41.457	CC, ES, SF
EXIST VERT SMITH-REEVES 42-5 - Wellbore #1 - Well	5,785.5	5,469.2	5,274.0	5,251.3	232.509	CC
EXIST VERT SMITH-REEVES 42-5 - Wellbore #1 - Well	6,340.2	6,169.9	5,274.3	5,250.9	225.217	ES
EXIST VERT SMITH-REEVES 42-5 - Wellbore #1 - Well	11,857.3	6,550.0	9,862.1	9,726.3	72.661	SF
EXIST VERT WILMOTH 6-1 - Wellbore #1 - Wellbore #1	9,061.4	6,900.0	3,089.3	3,028.6	50.927	CC
EXIST VERT WILMOTH 6-1 - Wellbore #1 - Wellbore #1	9,100.0	6,900.0	3,089.6	3,027.9	50.106	ES
EXIST VERT WILMOTH 6-1 - Wellbore #1 - Wellbore #1	11,857.3	11,857.3	4,166.7	4,029.8	30.430	SF
EXIST VERT WILMOTH 6-14 - Wellbore #1 - Wellbore #	289.8	258.8	2,691.0	2,690.4	4,599.565	CC
EXIST VERT WILMOTH 6-14 - Wellbore #1 - Wellbore #	300.0	268.2	2,691.0	2,690.4	4,372.061	ES
EXIST VERT WILMOTH 6-14 - Wellbore #1 - Wellbore #	11,857.3	6,950.0	5,066.4	4,930.0	37.148	SF
EXIST VERT WILMOTH C4-23 - Wellbore #1 - Wellbore	6,339.1	6,256.1	8,816.3	8,791.8	360.319	ES
EXIST VERT WILMOTH C4-23 - Wellbore #1 - Wellbore	6,352.2	6,292.4	8,816.2	8,797.1	461.525	CC
EXIST VERT WILMOTH C4-23 - Wellbore #1 - Wellbore	7,900.0	6,800.0	9,950.5	9,917.4	300.017	SF
EXIST VERT WILMOTH C4-24 - Wellbore #1 - Wellbore	6,257.0	6,050.0	7,614.2	7,589.9	313.470	CC, ES
EXIST VERT WILMOTH C4-24 - Wellbore #1 - Wellbore	9,100.0	6,700.0	9,957.1	9,896.0	163.088	SF
EXIST VERT WILMOTH C5-20 - Wellbore #1 - Wellbore	5,900.0	5,747.0	2,426.0	2,400.7	96.069	ES
EXIST VERT WILMOTH C5-20 - Wellbore #1 - Wellbore	6,022.9	5,860.1	2,425.5	2,409.2	148.194	CC
EXIST VERT WILMOTH C5-20 - Wellbore #1 - Wellbore	11,857.3	6,850.0	6,279.6	6,143.3	46.062	SF
EXIST VERT WILMOTH C5-6 - Wellbore #1 - Wellbore #	5,745.1	5,531.6	3,485.8	3,460.8	139.474	CC, ES
EXIST VERT WILMOTH C5-6 - Wellbore #1 - Wellbore #	11,857.3	6,826.8	7,370.8	7,234.4	54.032	SF
EXIST VERT WILMOTH C9-27 - Wellbore #1 - Wellbore	6,339.1	6,128.2	8,631.3	8,606.3	345.851	ES, SF
EXIST VERT WILMOTH C9-27 - Wellbore #1 - Wellbore	6,339.6	6,128.6	8,631.3	8,613.5	484.396	CC
JUDY 6D-212 - ORIGINAL WELLBORE - PROPOSAL #	6,550.0	7,652.3	1,824.5	1,764.3	30.305	SF
JUDY 6D-212 - ORIGINAL WELLBORE - PROPOSAL #	6,950.0	7,435.5	1,784.6	1,731.1	33.318	ES
JUDY 6D-212 - ORIGINAL WELLBORE - PROPOSAL #	7,013.1	7,385.9	1,784.2	1,731.9	34.157	CC
JUDY 6D-312 - ORIGINAL WELLBORE - PROPOSAL #	6,600.0	7,734.4	1,564.5	1,504.2	25.948	SF
JUDY 6D-312 - ORIGINAL WELLBORE - PROPOSAL #	7,050.0	7,454.7	1,512.2	1,460.3	29.141	ES
JUDY 6D-312 - ORIGINAL WELLBORE - PROPOSAL #	7,140.7	7,374.0	1,511.5	1,461.5	30.216	CC
JUDY 6S-202 - ORIGINAL WELLBORE - PROPOSAL #1	300.0	308.0	1,943.9	1,942.9	1,783.246	CC, ES
JUDY 6S-202 - ORIGINAL WELLBORE - PROPOSAL #1	11,857.3	6,300.0	4,769.6	4,624.9	32.961	SF
JUDY 6S-204 - ORIGINAL WELLBORE - PROPOSAL #2	300.0	308.0	1,859.0	1,857.9	1,705.336	CC, ES
JUDY 6S-204 - ORIGINAL WELLBORE - PROPOSAL #2	11,857.3	11,976.9	2,426.8	2,155.3	8.937	SF
JUDY 6S-212 - ORIGINAL WELLBORE - PROPOSAL #1	263.8	271.8	1,975.9	1,974.9	2,130.898	CC
JUDY 6S-212 - ORIGINAL WELLBORE - PROPOSAL #1	300.0	300.0	1,975.9	1,974.8	1,842.934	ES
JUDY 6S-212 - ORIGINAL WELLBORE - PROPOSAL #1	11,800.0	6,322.3	4,993.7	4,848.1	34.319	SF
JUDY 6S-214 - ORIGINAL WELLBORE - PROPOSAL #2	300.0	308.0	1,887.3	1,886.2	1,731.283	CC, ES
JUDY 6S-214 - ORIGINAL WELLBORE - PROPOSAL #2	11,857.3	12,041.6	2,987.9	2,716.7	11.014	SF
JUDY 6S-234 - ORIGINAL WELLBORE - PROPOSAL #2	300.0	309.0	1,830.8	1,829.7	1,675.955	CC
JUDY 6S-234 - ORIGINAL WELLBORE - PROPOSAL #2	11,857.3	11,957.3	1,926.1	1,654.7	7.096	ES, SF
JUDY 6S-302 - ORIGINAL WELLBORE - PROPOSAL #1	300.0	308.0	1,961.7	1,960.6	1,799.502	CC, ES
JUDY 6S-302 - ORIGINAL WELLBORE - PROPOSAL #1	11,857.3	6,350.0	4,893.0	4,746.5	33.408	SF
JUDY 6S-314 - ORIGINAL WELLBORE - PROPOSAL #2	300.0	308.0	1,873.2	1,872.1	1,718.306	CC, ES
JUDY 6S-314 - ORIGINAL WELLBORE - PROPOSAL #2	11,857.3	12,096.0	2,739.7	2,468.3	10.097	SF
JUDY 6S-332 - ORIGINAL WELLBORE - PROPOSAL #1	263.8	271.8	1,929.8	1,928.8	2,081.198	CC
JUDY 6S-332 - ORIGINAL WELLBORE - PROPOSAL #1	300.0	306.9	1,929.8	1,928.7	1,775.441	ES
JUDY 6S-332 - ORIGINAL WELLBORE - PROPOSAL #1	10,800.0	6,400.0	3,720.2	3,603.5	31.872	SF
JUDY 6S-334 - ORIGINAL WELLBORE - PROPOSAL #2	300.0	309.0	1,844.9	1,843.8	1,688.886	CC, ES
JUDY 6S-334 - ORIGINAL WELLBORE - PROPOSAL #2	11,857.3	12,050.7	2,164.1	1,892.3	7.963	SF
JUDY 6X-314 - ORIGINAL WELLBORE - PROPOSAL #2	7,201.0	7,373.2	1,597.7	1,543.9	29.695	CC
JUDY 6X-314 - ORIGINAL WELLBORE - PROPOSAL #2	11,857.3	12,008.3	1,599.3	1,328.1	5.895	ES, SF

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

Anticollision Report



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well HAROLD 6Y-304
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4810.0usft (Original Well Elev)
Reference Site:	SE SE SEC. 6 T4N R64W 6th P.M.	MD Reference:	KB-EST @ 4810.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	HAROLD 6Y-304	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	ORIGINAL WELLBORE	Database:	EDM 5000.1 Single User Db
Reference Design:	PROPOSAL #2	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
SE SE SEC. 6 T4N R64W 6th P.M.						
HAROLD 6X-202 - ORIGINAL WELLBORE - PROPOSA	266.3	267.3	149.4	148.4	161.822	CC
HAROLD 6X-202 - ORIGINAL WELLBORE - PROPOSA	300.0	300.0	149.4	148.3	139.320	ES
HAROLD 6X-202 - ORIGINAL WELLBORE - PROPOSA	6,600.0	7,667.1	1,304.9	1,251.3	24.336	SF
HAROLD 6X-204 - ORIGINAL WELLBORE - PROPOSA	300.0	301.0	76.5	75.4	71.212	CC, ES
HAROLD 6X-204 - ORIGINAL WELLBORE - PROPOSA	11,857.3	11,897.9	1,319.4	1,049.1	4.881	SF
HAROLD 6X-232 - ORIGINAL WELLBORE - PROPOSA	300.0	301.0	120.2	119.1	111.898	CC, ES
HAROLD 6X-232 - ORIGINAL WELLBORE - PROPOSA	6,800.0	7,527.5	662.9	612.0	13.021	SF
HAROLD 6X-234 - ORIGINAL WELLBORE - PROPOSA	300.0	300.0	47.4	46.3	44.174	CC, ES
HAROLD 6X-234 - ORIGINAL WELLBORE - PROPOSA	11,857.3	11,798.1	771.0	502.0	2.866	SF
HAROLD 6X-302 - ORIGINAL WELLBORE - PROPOSA	300.0	301.0	134.8	133.7	125.462	CC
HAROLD 6X-302 - ORIGINAL WELLBORE - PROPOSA	311.8	312.8	134.8	133.7	119.761	ES
HAROLD 6X-302 - ORIGINAL WELLBORE - PROPOSA	6,700.0	7,672.4	995.5	943.4	19.080	SF
HAROLD 6X-304 - ORIGINAL WELLBORE - PROPOSA	300.0	301.0	61.9	60.9	57.648	CC, ES
HAROLD 6X-304 - ORIGINAL WELLBORE - PROPOSA	11,857.3	11,897.9	1,023.8	754.0	3.796	SF
HAROLD 6X-334 - ORIGINAL WELLBORE - PROPOSA	300.0	300.0	29.1	28.1	27.184	CC, ES
HAROLD 6X-334 - ORIGINAL WELLBORE - PROPOSA	11,857.3	11,849.9	539.3	269.6	2.000	SF
HAROLD 6Y-202 - ORIGINAL WELLBORE - PROPOSA	7,050.0	7,376.0	60.7	14.1	1.303	Level 3, ES, SF
HAROLD 6Y-202 - ORIGINAL WELLBORE - PROPOSA	7,059.5	7,368.0	60.5	14.3	1.308	Level 3, CC
HAROLD 6Y-214 - ORIGINAL WELLBORE - PROPOSA	300.0	300.0	14.6	13.5	13.596	CC
HAROLD 6Y-214 - ORIGINAL WELLBORE - PROPOSA	11,857.3	11,779.3	240.0	-18.9	0.927	Level 1, ES, SF
HAROLD 6Y-312 - ORIGINAL WELLBORE - PROPOSA	266.5	267.5	105.6	104.7	114.366	CC
HAROLD 6Y-312 - ORIGINAL WELLBORE - PROPOSA	300.0	301.0	105.6	104.6	98.345	ES
HAROLD 6Y-312 - ORIGINAL WELLBORE - PROPOSA	7,150.0	7,361.4	297.0	252.2	6.634	SF
SW SW SEC. 34 T5N R64W 6th P.M.						
BAILEY 34I-223 - ORIGINAL WELLBORE - PROPOSAL						Out of range
BAILEY 34I-303 - ORIGINAL WELLBORE - PROPOSAL						Out of range
EXIST DD LOEFFLER C 10-30 - Wellbore #1 - Wellbore						Out of range
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	5,712.1	4,859.0	9,914.6	9,887.8	370.303	CC
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	5,917.1	5,714.0	9,916.1	9,881.1	282.575	ES
EXIST HZ OREDIGGER C10-69HN - Wellbore #1 - Well	6,339.1	5,937.0	9,920.4	9,884.4	275.419	SF
EXIST VERT ATKINSON-GALE 3-13 - Wellbore #1 - We						Out of range
EXIST VERT DONES 1 - Wellbore #1 - Wellbore #1						Out of range
EXIST VERT MILLAGE 12-3 - Wellbore #1 - Wellbore #1						Out of range
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	6,339.1	6,139.3	9,974.8	9,951.8	433.091	ES, SF
EXIST VERT SITZMAN 2 - Wellbore #1 - Wellbore #1	6,340.9	6,141.7	9,974.8	9,954.0	480.906	CC
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1	6,339.1	6,133.9	9,318.6	9,293.6	372.558	ES, SF
EXIST VERT WILMOTH 1 - Wellbore #1 - Wellbore #1	6,340.4	6,135.3	9,318.6	9,300.0	501.443	CC
EXIST VERT WILMOTH 4-9I4 - Wellbore #1 - Wellbore #	5,841.2	5,400.0	9,681.9	9,662.6	501.640	CC
EXIST VERT WILMOTH 4-9I4 - Wellbore #1 - Wellbore #	5,917.1	5,484.8	9,682.9	9,659.4	412.736	ES
EXIST VERT WILMOTH 4-9I4 - Wellbore #1 - Wellbore #	6,339.1	6,022.9	9,687.4	9,663.4	403.212	SF
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	5,909.2	5,654.2	9,903.0	9,885.1	554.862	CC
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	5,917.1	5,669.0	9,903.0	9,879.3	417.792	ES
EXIST VERT WILMOTH C 3-33 - Wellbore #1 - Wellbore	6,339.1	6,100.0	9,903.6	9,879.4	409.118	SF

Offset Design												NE SE SEC. 6 T4N R64W 6th P.M. - ABDN VERT DINNER 6-3 - Wellbore #1 - Wellbore #1		Offset Site Error:		0.0 usft	
Survey Program: 100-GYD_CT														Offset Well Error:		0.0 usft	
Reference		Offset		Semi Major Axis			Distance										
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning				
0.0	0.0	51.5	51.5	0.0	0.0	-71.00	1,377.4	-4,000.3	4,230.8								

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