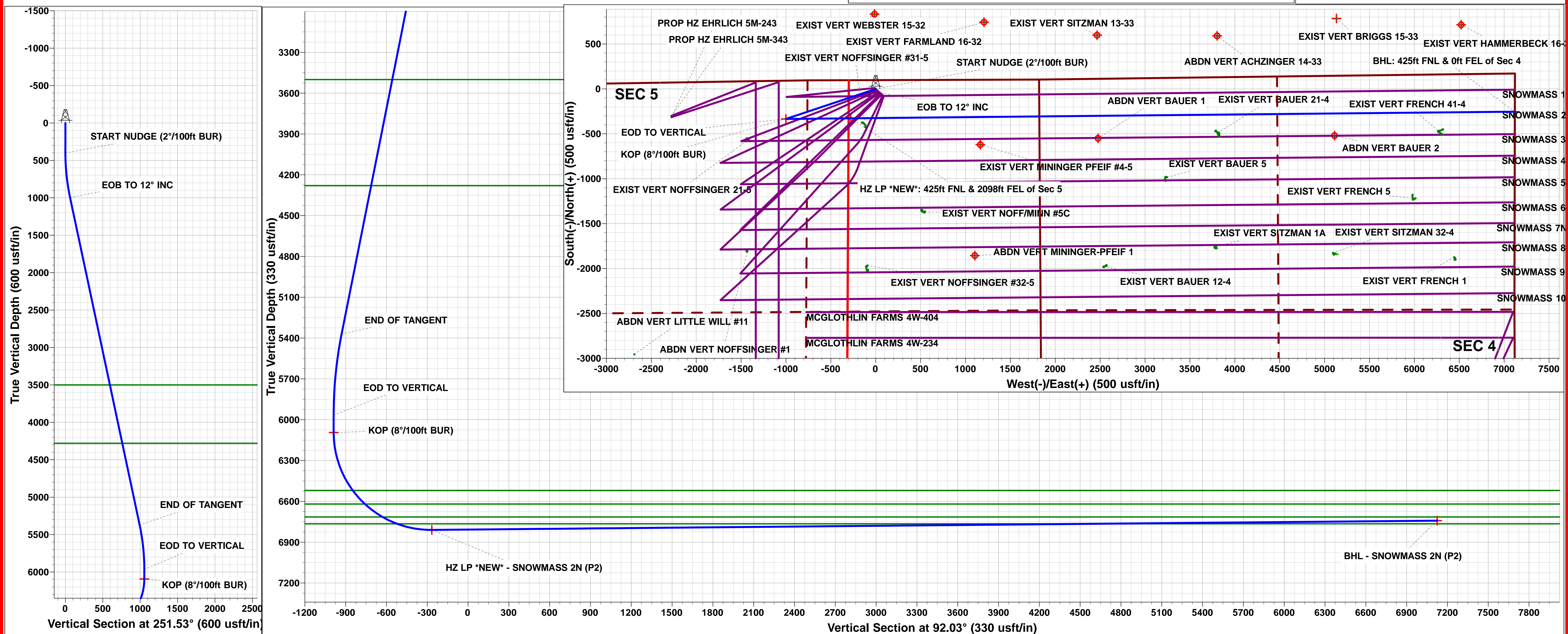


PROPOSED LOCAL COORDINATES:

- SHL: 98ft FNL & 1820ft FEL of Sec 5
- HZ LP *NEW*: 425ft FNL & 2098ft FEL of Sec 5
- BHL: 425ft FNL & 0ft FEL of Sec 4

Magnetic Field Data:

- Azimuths to True North
- Magnetic North: 8.16°
- Magnetic Field Strength: 52480.7snT
- Dip Angle: 66.92°
- Date: 13/01/2017
- Model: IGRF2015



PDC ENERGY

**WELD COUNTY, COLORADO
NW NE SEC. 5 T5N R64W 6th P.M.
SNOWMASS 2N**

**ORIGINAL WELLBORE
PROPOSAL #2**

Anticollision Report

08 March, 2017



Anticollision Report



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well SNOWMASS 2N
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4657.0usft (Original Well Elev)
Reference Site:	NW NE SEC. 5 T5N R64W 6th P.M.	MD Reference:	KB-EST @ 4657.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	SNOWMASS 2N	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 08/03/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	14,730.5	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
Offset Well - Wellbore - Design						
NW NE SEC. 5 T5N R64W 6th P.M.						
ABDN VERT ACHZINGER 14-33 - Wellbore #1 - Design	11,421.7	6,752.3	877.8	616.1	3.354	CC, ES
ABDN VERT ACHZINGER 14-33 - Wellbore #1 - Design	11,500.0	6,751.6	881.3	617.4	3.340	SF
ABDN VERT BAUER 1 - Wellbore #1 - Design #1	10,084.2	6,805.6	249.7	24.1	1.107	Level 2, CC, ES, SF
ABDN VERT BAUER 2 - Wellbore #1 - Design #1	12,719.1	6,740.4	246.2	-51.2	0.828	Level 1, CC, ES, SF
EXIST HZ LUCCI STATE B3-69HNL - Wellbore #1 - Wel	14,730.5	17,000.0	638.8	128.2	1.251	Level 3, CC, ES, SF
EXIST VERT BAUER 21-4 - Wellbore #1 - Wellbore #1	11,393.9	6,500.0	308.9	221.5	3.533	CC
EXIST VERT BAUER 21-4 - Wellbore #1 - Wellbore #1	11,400.0	6,500.0	309.0	221.4	3.530	ES, SF
EXIST VERT BAUER 5 - Wellbore #1 - Wellbore #1	10,850.7	6,700.0	692.6	580.3	6.166	CC, ES
EXIST VERT BAUER 5 - Wellbore #1 - Wellbore #1	11,000.0	6,700.0	708.5	592.1	6.086	SF
EXIST VERT BRIGGS 15-33 - Wellbore #1 - Design #1	12,753.1	6,745.1	1,057.4	759.0	3.543	CC
EXIST VERT BRIGGS 15-33 - Wellbore #1 - Design #1	12,800.0	6,744.6	1,058.4	758.7	3.531	ES
EXIST VERT BRIGGS 15-33 - Wellbore #1 - Design #1	12,900.0	6,743.7	1,067.6	765.1	3.529	SF
EXIST VERT FARMLAND 16-32 - Wellbore #1 - Design #	8,826.8	6,785.2	1,055.8	863.7	5.496	CC, ES
EXIST VERT FARMLAND 16-32 - Wellbore #1 - Design #	9,000.0	6,783.6	1,069.9	873.3	5.443	SF
EXIST VERT FRENCH 41-4 - Wellbore #1 - Wellbore #1	13,924.6	6,400.0	370.9	253.0	3.146	CC, ES, SF
EXIST VERT FRENCH 5 - Wellbore #1 - Wellbore #1	13,583.2	6,700.0	912.2	723.9	4.844	CC
EXIST VERT FRENCH 5 - Wellbore #1 - Wellbore #1	13,600.0	6,700.0	912.4	723.6	4.833	ES
EXIST VERT FRENCH 5 - Wellbore #1 - Wellbore #1	13,700.0	6,700.0	919.7	728.1	4.801	SF
EXIST VERT GRANADOS #4-3 - Wellbore #1 - Design #	14,730.5	6,717.0	759.1	406.0	2.150	CC, ES, SF
EXIST VERT HAMMERBECK 16-33 - Wellbore #1 - Des	14,142.0	6,732.4	973.8	636.9	2.891	CC, ES
EXIST VERT HAMMERBECK 16-33 - Wellbore #1 - Des	14,200.0	6,731.8	975.5	637.0	2.882	SF
EXIST VERT MININGER PFEIF #4-5 - Wellbore #1 - Des	8,772.0	6,779.7	307.4	116.7	1.612	CC, ES, SF
EXIST VERT NOFFSINGER/MINN #5C - Wellbore #1 - V	8,122.5	6,763.9	1,031.0	990.1	25.196	CC, ES
EXIST VERT NOFFSINGER/MINN #5C - Wellbore #1 - V	8,800.0	6,760.9	1,233.7	1,176.2	21.468	SF
EXIST VERT SITZMAN 13-33 - Wellbore #1 - Design #1	10,084.7	6,764.6	898.7	673.4	3.990	CC
EXIST VERT SITZMAN 13-33 - Wellbore #1 - Design #1	10,100.0	6,764.4	898.8	673.1	3.983	ES
EXIST VERT SITZMAN 13-33 - Wellbore #1 - Design #1	10,200.0	6,763.5	906.0	677.7	3.968	SF
EXIST VERT WEBSTER 15-32 - Wellbore #1 - Design #	400.0	386.0	833.3	825.5	107.430	CC
EXIST VERT WEBSTER 15-32 - Wellbore #1 - Design #	600.0	585.8	835.4	823.2	68.359	ES
EXIST VERT WEBSTER 15-32 - Wellbore #1 - Design #	7,800.0	6,791.6	1,173.4	1,005.3	6.979	SF
SNOWMASS 10N - ORIGINAL WELLBORE - PROPOSAL	300.0	300.0	119.7	118.6	111.644	CC, ES
SNOWMASS 10N - ORIGINAL WELLBORE - PROPOSAL	14,730.5	16,156.5	2,020.2	1,563.7	4.425	SF
SNOWMASS 1C - ORIGINAL WELLBORE - PROPOSAL	300.0	300.0	15.3	14.2	14.275	CC
SNOWMASS 1C - ORIGINAL WELLBORE - PROPOSAL	14,730.5	14,785.2	263.3	-146.2	0.643	Level 1, ES, SF
SNOWMASS 3N - ORIGINAL WELLBORE - PROPOSAL	400.0	400.0	14.9	13.3	9.764	CC
SNOWMASS 3N - ORIGINAL WELLBORE - PROPOSAL	14,730.5	15,299.7	258.0	-180.2	0.589	Level 1, ES, SF
SNOWMASS 4N - ORIGINAL WELLBORE - PROPOSAL	400.0	400.0	29.9	28.4	19.665	CC, 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 SNOWMASS 2N
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4657.0usft (Original Well Elev)
Reference Site:	NW NE SEC. 5 T5N R64W 6th P.M.	MD Reference:	KB-EST @ 4657.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	SNOWMASS 2N	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
NW NE SEC. 5 T5N R64W 6th P.M.						
SNOWMASS 4N - ORIGINAL WELLBORE - PROPOSAL	14,730.5	15,736.3	490.0	32.6	1.071	Level 2, SF
SNOWMASS 5N - ORIGINAL WELLBORE - PROPOSAL	400.0	400.0	45.0	43.5	29.567	CC, ES
SNOWMASS 5N - ORIGINAL WELLBORE - PROPOSAL	14,730.5	15,407.0	732.9	283.3	1.630	SF
SNOWMASS 6N - ORIGINAL WELLBORE - PROPOSAL	400.0	400.0	59.8	58.3	39.331	CC, ES
SNOWMASS 6N - ORIGINAL WELLBORE - PROPOSAL	14,730.5	15,878.1	1,009.9	552.6	2.208	SF
SNOWMASS 7N - ORIGINAL WELLBORE - PROPOSAL	400.0	400.0	74.9	73.4	49.233	CC, ES
SNOWMASS 7N - ORIGINAL WELLBORE - PROPOSAL	14,730.5	15,556.6	1,243.0	792.4	2.759	SF
SNOWMASS 8N - ORIGINAL WELLBORE - PROPOSAL	400.0	400.0	89.8	88.3	58.996	CC, ES
SNOWMASS 8N - ORIGINAL WELLBORE - PROPOSAL	14,730.5	16,001.5	1,455.1	997.4	3.179	SF
SNOWMASS 9N - ORIGINAL WELLBORE - PROPOSAL	400.0	400.0	104.8	103.3	68.898	CC, ES
SNOWMASS 9N - ORIGINAL WELLBORE - PROPOSAL	14,730.5	15,692.3	1,727.1	1,277.4	3.840	SF
NW NW SEC. 5 T5N R64W 6th P.M.						
ABDN VERT LITTLE WILL #11 - Wellbore #1 - Design #1	6,200.3	6,052.8	3,116.6	2,973.9	21.833	CC, ES, SF
ABDN VERT NOFFSINGER #1 - Wellbore #1 - Wellbore	6,226.5	6,105.7	1,530.5	1,507.4	66.203	CC, ES
ABDN VERT NOFFSINGER #1 - Wellbore #1 - Wellbore	14,730.5	6,400.0	8,703.5	8,489.3	40.637	SF
EHRlich 5M-243 - ORIGINAL WELLBORE - PROPOSAL	6,450.0	6,866.8	298.5	251.7	6.382	SF
EHRlich 5M-243 - ORIGINAL WELLBORE - PROPOSAL	6,600.0	6,987.7	251.2	215.0	6.950	ES
EHRlich 5M-243 - ORIGINAL WELLBORE - PROPOSAL	6,617.0	6,997.8	250.6	215.5	7.142	CC
EHRlich 5M-343 - ORIGINAL WELLBORE - PROPOSAL	6,250.0	6,358.2	525.4	479.3	11.412	SF
EHRlich 5M-343 - ORIGINAL WELLBORE - PROPOSAL	6,500.0	6,786.9	493.5	456.1	13.212	ES
EHRlich 5M-343 - ORIGINAL WELLBORE - PROPOSAL	6,523.3	6,812.1	492.9	456.7	13.592	CC
EXIST VERT NOFFSINGER #21-5 - Wellbore #1 - Wellbore	6,062.0	5,936.5	474.5	457.7	28.224	CC
EXIST VERT NOFFSINGER #21-5 - Wellbore #1 - Wellbore	6,072.3	5,946.7	474.5	448.9	18.513	ES
EXIST VERT NOFFSINGER #21-5 - Wellbore #1 - Wellbore	6,200.3	6,075.4	475.0	449.2	18.421	SF
EXIST VERT NOFFSINGER #31-5 - Wellbore #1 - Wellbore	7,499.3	6,500.0	305.5	285.5	15.265	CC
EXIST VERT NOFFSINGER #31-5 - Wellbore #1 - Wellbore	7,500.0	6,500.0	305.5	285.5	15.262	ES, SF
EXIST VERT NOFFSINGER #32-5 - Wellbore #1 - Wellbore	7,499.7	6,799.3	1,640.0	1,611.0	56.637	CC
EXIST VERT NOFFSINGER #32-5 - Wellbore #1 - Wellbore	7,500.0	6,799.3	1,640.0	1,611.0	56.629	ES
EXIST VERT NOFFSINGER #32-5 - Wellbore #1 - Wellbore	11,100.0	6,704.8	3,955.3	3,835.8	33.088	SF
EXIST VERT PLUMB #B5-11 - Wellbore #1 - Wellbore #	6,293.7	6,232.1	2,896.4	2,872.4	121.032	CC, ES
EXIST VERT PLUMB #B5-11 - Wellbore #1 - Wellbore #	14,730.5	6,750.0	9,184.4	8,964.0	41.665	SF
EXIST VERT PLUMB B5-14 - Wellbore #1 - Wellbore #1	6,020.4	5,832.5	4,029.1	4,004.8	165.505	CC, ES
EXIST VERT PLUMB B5-14 - Wellbore #1 - Wellbore #1	14,730.5	6,619.2	9,450.0	9,229.9	42.924	SF

Anticollision Report



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well SNOWMASS 2N
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4657.0usft (Original Well Elev)
Reference Site:	NW NE SEC. 5 T5N R64W 6th P.M.	MD Reference:	KB-EST @ 4657.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	SNOWMASS 2N	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	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
SE SE SEC. 4 T5N R64W 6th P.M.						
ABDN VERT ACHZIGER B5-9 - Wellbore #1 - Wellbore #	8,785.7	6,785.0	2,783.0	2,726.1	48.869	CC
ABDN VERT ACHZIGER B5-9 - Wellbore #1 - Wellbore #	8,900.0	6,782.9	2,785.4	2,725.5	46.512	ES
ABDN VERT ACHZIGER B5-9 - Wellbore #1 - Wellbore #	12,700.0	6,703.0	4,802.2	4,638.6	29.358	SF
ABDN VERT MININGER-PFEIF 1 - Wellbore #1 - Design	8,698.5	6,782.3	1,541.7	1,354.9	8.253	CC
ABDN VERT MININGER-PFEIF 1 - Wellbore #1 - Design	8,700.0	6,782.3	1,541.7	1,354.9	8.252	ES
ABDN VERT MININGER-PFEIF 1 - Wellbore #1 - Design	9,000.0	6,779.6	1,570.9	1,376.4	8.077	SF
EXIST DD MILLAGE 13-3D - Wellbore #1 - Wellbore #1	14,730.5	6,730.8	2,839.8	2,607.4	12.220	CC, ES, SF
EXIST VERT ACHZINGER 1 - Wellbore #1 - Wellbore #1	9,828.2	6,754.6	2,806.0	2,721.5	33.206	CC
EXIST VERT ACHZINGER 1 - Wellbore #1 - Wellbore #1	9,900.0	6,753.1	2,806.9	2,720.5	32.471	ES
EXIST VERT ACHZINGER 1 - Wellbore #1 - Wellbore #1	12,400.0	6,717.2	3,806.1	3,650.9	24.516	SF
EXIST VERT BAUER 12-4 - Wellbore #1 - Design #1	10,164.5	6,765.8	1,670.3	1,442.7	7.340	CC
EXIST VERT BAUER 12-4 - Wellbore #1 - Design #1	10,200.0	6,765.5	1,670.7	1,442.2	7.311	ES
EXIST VERT BAUER 12-4 - Wellbore #1 - Design #1	10,500.0	6,762.7	1,703.7	1,467.0	7.199	SF
EXIST VERT BAUER 12-4 - Wellbore #1 - Wellbore #1	10,135.2	6,528.0	1,694.1	1,601.8	18.344	CC
EXIST VERT BAUER 12-4 - Wellbore #1 - Wellbore #1	10,200.0	6,528.0	1,695.4	1,601.3	18.017	ES
EXIST VERT BAUER 12-4 - Wellbore #1 - Wellbore #1	11,000.0	6,528.0	1,902.1	1,786.3	16.425	SF
EXIST VERT FLACK 5-3 - Wellbore #1 - Design #1	14,730.5	6,711.0	1,692.3	1,339.1	4.791	CC, ES, SF
EXIST VERT FRENCH 1 - Wellbore #1 - Wellbore #1	14,041.6	6,714.5	1,640.2	1,439.1	8.156	CC
EXIST VERT FRENCH 1 - Wellbore #1 - Wellbore #1	14,100.0	6,714.2	1,641.3	1,438.5	8.095	ES
EXIST VERT FRENCH 1 - Wellbore #1 - Wellbore #1	14,400.0	6,712.7	1,678.9	1,467.8	7.952	SF
EXIST VERT OGRADY 1 - Wellbore #1 - Wellbore #1	12,668.4	6,740.9	2,900.9	2,738.1	17.821	CC
EXIST VERT OGRADY 1 - Wellbore #1 - Wellbore #1	12,700.0	6,740.8	2,901.1	2,737.4	17.727	ES
EXIST VERT OGRADY 1 - Wellbore #1 - Wellbore #1	14,100.0	6,736.1	3,234.9	3,032.2	15.960	SF
EXIST VERT OGRADY 43-4 - Wellbore #1 - Wellbore #1	14,032.7	6,686.2	3,041.5	2,840.7	15.151	CC
EXIST VERT OGRADY 43-4 - Wellbore #1 - Wellbore #1	14,100.0	6,686.3	3,042.2	2,839.6	15.014	ES
EXIST VERT OGRADY 43-4 - Wellbore #1 - Wellbore #1	14,730.5	6,687.2	3,120.5	2,900.3	14.169	SF
EXIST VERT SITZMAN 1A - Wellbore #1 - Wellbore #1	11,396.1	6,700.0	1,489.2	1,361.6	11.672	CC
EXIST VERT SITZMAN 1A - Wellbore #1 - Wellbore #1	11,400.0	6,700.0	1,489.2	1,361.5	11.662	ES
EXIST VERT SITZMAN 1A - Wellbore #1 - Wellbore #1	11,900.0	6,700.0	1,572.1	1,430.6	11.108	SF
EXIST VERT SITZMAN 23-4 - Wellbore #1 - Wellbore #1	11,568.8	6,600.0	2,895.3	2,763.1	21.896	CC
EXIST VERT SITZMAN 23-4 - Wellbore #1 - Wellbore #1	11,600.0	6,600.0	2,895.5	2,762.4	21.755	ES
EXIST VERT SITZMAN 23-4 - Wellbore #1 - Wellbore #1	13,300.0	6,600.0	3,373.4	3,193.2	18.713	SF
EXIST VERT SITZMAN 32-4 - Wellbore #1 - Design #1	12,740.1	6,737.2	1,562.7	1,264.6	5.242	CC
EXIST VERT SITZMAN 32-4 - Wellbore #1 - Design #1	12,800.0	6,736.6	1,563.9	1,264.1	5.216	ES
EXIST VERT SITZMAN 32-4 - Wellbore #1 - Design #1	13,000.0	6,734.8	1,584.2	1,278.9	5.188	SF
EXIST VERT SITZMAN 32-4 - Wellbore #1 - Wellbore #1	12,689.3	6,475.0	1,573.3	1,411.7	9.734	CC
EXIST VERT SITZMAN 32-4 - Wellbore #1 - Wellbore #1	12,700.0	6,475.0	1,573.4	1,411.5	9.716	ES
EXIST VERT SITZMAN 32-4 - Wellbore #1 - Wellbore #1	13,100.0	6,475.0	1,626.1	1,453.1	9.404	SF
MCGLOTHLIN FARMS 4W-234 - ORIGINAL WELLBORI	6,750.0	14,507.5	2,441.9	2,204.1	10.269	SF
MCGLOTHLIN FARMS 4W-234 - ORIGINAL WELLBORI	6,800.0	14,496.0	2,440.9	2,203.5	10.284	ES
MCGLOTHLIN FARMS 4W-234 - ORIGINAL WELLBORI	6,862.6	14,447.8	2,440.5	2,204.6	10.346	CC
MCGLOTHLIN FARMS 4W-404 - ORIGINAL WELLBORI	6,750.0	14,720.3	2,166.6	1,929.0	9.120	SF
MCGLOTHLIN FARMS 4W-404 - ORIGINAL WELLBORI	6,950.0	14,588.8	2,157.4	1,923.7	9.230	ES
MCGLOTHLIN FARMS 4W-404 - ORIGINAL WELLBORI	7,096.7	14,455.1	2,156.1	1,925.7	9.357	CC

Offset Design		NW NE SEC. 5 T5N R64W 6th P.M. - ABDN VERT ACHZINGER 14-33 - Wellbore #1 - Design #1								Offset Site Error:	0.0 usft
Survey Program: 0-INC										Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	

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