

PDC ENERGY

**WELD COUNTY, COLORADO
NW SW SEC. 17 T5N R64W 6th P.M.
CECIL'S KERSEY FARM 17B-212**

**ORIGINAL WELLBORE
PROPOSAL #2**

Anticollision Report

16 September, 2015



Anticollision Report



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well CECIL'S KERSEY FARM 17B-212
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4636.0usft (Original Well Elev)
Reference Site:	NW SW SEC. 17 T5N R64W 6th P.M.	MD Reference:	KB-EST @ 4636.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	CECIL'S KERSEY FARM 17B-212	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 98.4usft	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	16/09/2015		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	11,239.0	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
NW SW SEC. 17 T5N R64W 6th P.M.						
CECIL'S KERSEY FARM 17B-214 - ORIGINAL WELLBC	1,250.0	1,250.0	15.0	9.6	2.796	CC
CECIL'S KERSEY FARM 17B-214 - ORIGINAL WELLBC	1,300.0	1,300.0	15.1	9.5	2.700	ES
CECIL'S KERSEY FARM 17B-214 - ORIGINAL WELLBC	7,283.4	7,055.2	87.4	43.0	1.967	SF
CECIL'S KERSEY FARM 17B-302 - ORIGINAL WELLBC	1,037.3	1,037.3	30.0	25.6	6.805	CC
CECIL'S KERSEY FARM 17B-302 - ORIGINAL WELLBC	11,239.4	11,329.5	222.6	-27.1	0.892	Level 1, ES, SF
CECIL'S KERSEY FARM 17B-304 - ORIGINAL WELLBC	1,138.1	1,138.1	15.0	10.1	3.085	CC
CECIL'S KERSEY FARM 17B-304 - ORIGINAL WELLBC	1,200.0	1,200.0	15.1	9.9	2.938	ES
CECIL'S KERSEY FARM 17B-304 - ORIGINAL WELLBC	7,512.7	6,896.2	122.4	76.1	2.640	SF
CECIL'S KERSEY FARM 17K-204 - ORIGINAL WELLBC	1,250.0	1,250.0	75.0	69.6	13.981	CC, ES
CECIL'S KERSEY FARM 17K-204 - ORIGINAL WELLBC	1,400.0	1,396.4	79.0	73.0	13.185	SF
CECIL'S KERSEY FARM 17K-232 - ORIGINAL WELLBC	1,250.0	1,250.0	60.0	54.6	11.184	CC
CECIL'S KERSEY FARM 17K-232 - ORIGINAL WELLBC	1,300.0	1,300.0	60.1	54.5	10.761	ES
CECIL'S KERSEY FARM 17K-232 - ORIGINAL WELLBC	11,239.4	11,293.7	758.9	505.1	2.990	SF
CECIL'S KERSEY FARM 17K-332 - ORIGINAL WELLBC	1,250.0	1,250.0	30.0	24.6	5.592	CC
CECIL'S KERSEY FARM 17K-332 - ORIGINAL WELLBC	1,300.0	1,300.0	30.1	24.5	5.387	ES
CECIL'S KERSEY FARM 17K-332 - ORIGINAL WELLBC	11,239.4	11,352.0	504.7	251.7	1.995	SF
CECIL'S KERSEY FARM 17K-334 - ORIGINAL WELLBC	1,250.0	1,250.0	45.0	39.6	8.388	CC
CECIL'S KERSEY FARM 17K-334 - ORIGINAL WELLBC	1,300.0	1,300.0	45.1	39.5	8.074	ES
CECIL'S KERSEY FARM 17K-334 - ORIGINAL WELLBC	1,476.4	1,475.8	47.3	40.9	7.462	SF
CECIL'S KERSEY FARM 17K-402 - ORIGINAL WELLBC	1,137.3	1,137.3	90.0	85.2	18.526	CC
CECIL'S KERSEY FARM 17K-402 - ORIGINAL WELLBC	1,181.1	1,180.5	90.1	85.1	17.835	ES
CECIL'S KERSEY FARM 17K-402 - ORIGINAL WELLBC	11,239.4	11,472.7	995.0	743.6	3.958	SF
CECIL'S KERSEY FARM 17K-404 - ORIGINAL WELLBC	1,037.1	1,037.1	105.0	100.6	23.824	CC
CECIL'S KERSEY FARM 17K-404 - ORIGINAL WELLBC	1,082.7	1,081.6	105.2	100.6	22.817	ES
CECIL'S KERSEY FARM 17K-404 - ORIGINAL WELLBC	8,366.1	6,579.6	1,266.8	1,200.9	19.231	SF
EXIST VERT B&H #1 - Wellbore #1 - Design #1	6,066.2	5,986.8	4,649.7	4,509.5	33.177	CC, ES, SF
EXIST VERT BRIGHT #2 - Wellbore #1 - Design #1	6,066.2	5,986.8	4,762.2	4,622.9	34.188	CC, ES, SF
EXIST VERT DUNN #22-18 - Wellbore #1 - Design #1	6,066.2	5,983.8	3,772.8	3,634.4	27.242	CC, ES, SF
EXIST VERT DUNN/MILLER #1 - Wellbore #1 - Design #	2,274.8	2,258.1	338.3	287.6	6.671	CC
EXIST VERT DUNN/MILLER #1 - Wellbore #1 - Design #	7,110.6	6,694.5	374.5	218.2	2.396	ES, SF
EXIST VERT DUNN/MILLER #17B - Wellbore #1 - Design	7,762.5	6,689.9	142.8	-25.5	0.849	Level 1, CC, ES, SF
EXIST VERT DUNN/MILLER #23-17 - Wellbore #1 - Design	8,411.5	6,685.6	516.6	332.6	2.807	CC, ES
EXIST VERT DUNN/MILLER #23-17 - Wellbore #1 - Design	8,464.5	6,685.4	519.4	333.9	2.801	SF
EXIST VERT GUNTHER #18-2 - Wellbore #1 - Design #	6,066.2	5,979.8	1,871.5	1,736.9	13.908	CC
EXIST VERT GUNTHER #18-2 - Wellbore #1 - Design #	6,102.3	6,016.0	1,871.8	1,731.5	13.338	ES
EXIST VERT GUNTHER #18-2 - Wellbore #1 - Design #	6,299.2	6,208.7	1,886.0	1,742.9	13.176	SF
EXIST VERT GUNTHER-PM B #18-7 - Wellbore #1 - We	6,082.0	6,041.0	2,731.5	2,712.4	142.996	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 CECIL'S KERSEY FARM 17B-212
Project:	WELD COUNTY, COLORADO	TVD Reference:	KB-EST @ 4636.0usft (Original Well Elev)
Reference Site:	NW SW SEC. 17 T5N R64W 6th P.M.	MD Reference:	KB-EST @ 4636.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	CECIL'S KERSEY FARM 17B-212	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 SW SEC. 17 T5N R64W 6th P.M.						
EXIST VERT GUNTHER-PM B #18-7 - Wellbore #1 - We	11,239.0	6,700.0	7,029.5	6,901.0	54.700	SF
EXIST VERT H&S #1 - Wellbore #1 - Design #1	9,951.0	6,683.9	223.1	-2.1	0.990	Level 1, CC, ES, SF
EXIST VERT HETTINGER #1 - Wellbore #1 - Design #1	6,066.2	5,983.8	804.3	665.9	5.811	CC, ES, SF
EXIST VERT HETTINGER #33-18 - Wellbore #1 - Desig	6,066.2	5,977.8	2,040.2	1,900.3	14.586	CC, ES, SF
EXIST VERT HETTINGER #34-18 - Wellbore #1 - Desig	6,066.2	5,982.8	2,212.0	2,072.5	15.860	CC, ES, SF
EXIST VERT HETTINGER #44-18 - Wellbore #1 - Desig	6,066.2	5,978.8	1,136.5	999.7	8.307	CC
EXIST VERT HETTINGER #44-18 - Wellbore #1 - Desig	6,100.0	6,012.6	1,137.0	998.7	8.218	ES
EXIST VERT HETTINGER #44-18 - Wellbore #1 - Desig	6,150.0	6,062.4	1,139.5	1,000.4	8.192	SF
EXIST VERT HOSHIKO #32-17 - Wellbore #1 - Design #	9,742.8	6,682.6	1,740.8	1,521.3	7.928	CC
EXIST VERT HOSHIKO #32-17 - Wellbore #1 - Design #	9,800.0	6,682.4	1,741.8	1,520.6	7.876	ES
EXIST VERT HOSHIKO #32-17 - Wellbore #1 - Design #	10,137.8	6,681.2	1,785.1	1,554.7	7.749	SF
EXIST VERT HOSHIKO #42-17 - Wellbore #1 - Design #	11,071.3	6,677.6	1,751.9	1,495.9	6.841	CC
EXIST VERT HOSHIKO #42-17 - Wellbore #1 - Design #	11,122.0	6,677.4	1,752.7	1,495.2	6.807	ES
EXIST VERT HOSHIKO #42-17 - Wellbore #1 - Design #	11,239.4	6,677.0	1,760.0	1,499.3	6.750	SF
EXIST VERT HOSHIKO/SOLIS #1 - Wellbore #1 - Wellb	9,753.2	6,658.6	1,142.5	1,054.7	13.013	CC
EXIST VERT HOSHIKO/SOLIS #1 - Wellbore #1 - Wellb	9,800.0	6,659.1	1,143.4	1,054.3	12.837	ES
EXIST VERT HOSHIKO/SOLIS #1 - Wellbore #1 - Wellb	10,137.8	6,662.6	1,205.4	1,107.1	12.258	SF
EXIST VERT HOWARD #14-18 - Wellbore #1 - Design #	6,066.2	5,984.8	4,791.2	4,651.1	34.206	CC, ES, SF
EXIST VERT HOWARD #24-18 - Wellbore #1 - Design #	6,066.2	5,986.8	3,314.7	3,174.9	23.703	CC, ES, SF
EXIST VERT MASON #1 - Wellbore #1 - Design #1	6,066.2	5,983.8	3,329.6	3,189.5	23.768	CC, ES, SF
EXIST VERT MILLER #1 - Wellbore #1 - Wellbore #1	7,062.4	6,683.8	963.5	940.4	41.649	CC, ES
EXIST VERT MILLER #1 - Wellbore #1 - Wellbore #1	8,563.0	6,693.3	1,782.0	1,726.5	32.121	SF
EXIST VERT MILLER #2 - Wellbore #1 - Wellbore #1	8,430.8	6,679.4	972.2	920.0	18.618	CC
EXIST VERT MILLER #2 - Wellbore #1 - Wellbore #1	8,464.5	6,679.4	972.8	919.7	18.324	ES
EXIST VERT MILLER #2 - Wellbore #1 - Wellbore #1	8,900.0	6,679.7	1,079.5	1,015.0	16.729	SF
EXIST VERT SCHAUMBERG #12-17 - Wellbore #1 - De	1,250.0	1,242.0	1,655.7	1,628.4	60.575	CC
EXIST VERT SCHAUMBERG #12-17 - Wellbore #1 - De	7,283.4	6,693.7	1,701.0	1,542.2	10.713	ES
EXIST VERT SCHAUMBERG #12-17 - Wellbore #1 - De	7,677.1	6,692.2	1,753.4	1,587.1	10.539	SF
EXIST VERT SOLIS #43-17 - Wellbore #1 - Design #1	11,065.9	6,689.7	254.6	-1.4	0.994	Level 1, CC, ES, SF
EXIST VERT SOLIS #44-17 - Wellbore #1 - Wellbore #1	11,239.4	6,666.7	713.2	584.9	5.556	CC, ES, SF
EXIST VERT STEINMETZ #1 - Wellbore #1 - Design #1	8,411.7	6,690.6	1,719.2	1,535.1	9.337	CC
EXIST VERT STEINMETZ #1 - Wellbore #1 - Design #1	8,464.5	6,690.4	1,720.0	1,534.6	9.273	ES
EXIST VERT STEINMETZ #1 - Wellbore #1 - Design #1	8,858.2	6,688.9	1,776.3	1,580.5	9.072	SF
SE SE SEC. 18 T5N R64W 6th P.M.						
GILLHAM 18X-102 - ORIGINAL WELLBORE - PROPOS	6,787.5	7,678.2	435.8	381.1	7.960	CC
GILLHAM 18X-102 - ORIGINAL WELLBORE - PROPOS	11,239.4	12,108.1	455.3	183.7	1.676	ES, SF
GILLHAM 18X-104 - ORIGINAL WELLBORE - PROPOS	6,570.6	6,641.3	332.8	293.2	8.394	CC, ES, SF
GILLHAM 18X-232 - ORIGINAL WELLBORE - PROPOS	7,050.6	8,009.1	870.9	808.2	13.908	CC
GILLHAM 18X-232 - ORIGINAL WELLBORE - PROPOS	11,239.4	12,196.9	871.8	588.9	3.082	ES, SF
GILLHAM 18X-234 - ORIGINAL WELLBORE - PROPOS	6,652.3	6,651.9	760.9	721.6	19.362	CC, ES, SF
GILLHAM 18X-332 - ORIGINAL WELLBORE - PROPOS	11,239.4	12,286.4	655.1	372.3	2.316	CC, ES, SF
GILLHAM 18X-334 - ORIGINAL WELLBORE - PROPOS	6,710.5	6,676.2	542.8	503.0	13.645	CC, ES, SF
GILLHAM 18Y-202 - ORIGINAL WELLBORE - PROPOS	7,050.0	8,043.8	1,394.7	1,333.0	22.601	CC
GILLHAM 18Y-202 - ORIGINAL WELLBORE - PROPOS	11,239.4	12,232.1	1,395.4	1,113.5	4.949	ES, SF
GILLHAM 18Y-214 - ORIGINAL WELLBORE - PROPOS	3,871.3	3,815.6	1,086.5	1,061.2	42.932	CC
GILLHAM 18Y-214 - ORIGINAL WELLBORE - PROPOS	3,937.0	3,874.3	1,086.9	1,060.9	41.929	ES
GILLHAM 18Y-214 - ORIGINAL WELLBORE - PROPOS	8,100.0	6,400.0	1,836.7	1,775.8	30.144	SF
GILLHAM 18Y-312 - ORIGINAL WELLBORE - PROPOS	11,239.4	12,302.9	1,187.6	905.5	4.210	CC, ES, SF
GILLHAM 18Y-314 - ORIGINAL WELLBORE - PROPOS	4,177.7	4,139.5	977.1	949.3	35.164	CC
GILLHAM 18Y-314 - ORIGINAL WELLBORE - PROPOS	4,232.3	4,189.1	977.4	949.1	34.569	ES
GILLHAM 18Y-314 - ORIGINAL WELLBORE - PROPOS	6,791.3	6,690.8	1,095.6	1,055.1	27.050	SF

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