PDC ENERGY

WELD COUNTY, COLORADO
NW NE SEC 30 T4N R67W 6th P.M.
OLSON 30U-343

ORIGINAL WELLBORE
PROPOSAL #2

Anticollision Report

26 February, 2016

total

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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** 26/02/2016

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	12,041.2	PROPOSAL #2 (ORIGINAL WELLBORE)	MWD	MWD - Standard

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 30 T4N R67W 6th P.M.						
ABDN VERT MCCARTY 30-3 - Wellbore #1 - Wellbore #	11,943.8	6,330.0	1,784.6	1,713.2	24.991	CC
ABDN VERT MCCARTY 30-3 - Wellbore #1 - Wellbore #	12,000.0	6,330.0	1,785.5	1,713.1	24.678	ES
ABDN VERT MCCARTY 30-3 - Wellbore #1 - Wellbore #	12,041.2	6,330.0	1,787.2	1,714.2	24.468	SF
EXIST VERT BROWN 30-2 - Wellbore #1 - Wellbore #1	7,975.1	7,177.5	150.2	127.2	6.529	CC, ES, SF
EXIST VERT BROWN 30-31 - Wellbore #1 - Wellbore #1	3,171.6	3,051.1	163.3	150.3	12.607	CC, ES
EXIST VERT BROWN 30-31 - Wellbore #1 - Wellbore #1	3,248.0	3,117.8	167.5	154.0	12.417	SF
EXIST VERT BROWN MCCARTY 30-43 - Wellbore #1 -	10,536.1	7,173.2	136.0	82.2	2.528	CC, ES, SF
EXIST VERT BROWN-MCCARTY 30-5 - Wellbore #1 - V	9,202.7	7,165.8	137.3	104.7	4.208	CC, ES, SF
EXIST VERT MCCART 30-2 - Wellbore #1 - Wellbore #1	11,841.7	7,177.9	123.6	46.6	1.605	CC, ES, SF
EXIST VERT NYGREN 21-30 - Wellbore #1 - Design #1	1,450.0	1,451.0	1,237.9	1,206.8	39.762	CC
EXIST VERT NYGREN 21-30 - Wellbore #1 - Design #1	1,500.0	1,501.0	1,238.3	1,206.0	38.402	ES
EXIST VERT NYGREN 21-30 - Wellbore #1 - Design #1	7,972.4	7,222.4	2,909.9	2,745.0	17.652	SF
EXIST VERT SHULTZ 22-30 - Wellbore #1 - Design #1	1,450.0	1,446.0	1,141.4	1,110.4	36.723	CC
EXIST VERT SHULTZ 22-30 - Wellbore #1 - Design #1	1,500.0	1,496.0	1,141.9	1,109.7	35.470	ES
EXIST VERT SHULTZ 22-30 - Wellbore #1 - Design #1	9,547.2	7,200.4	2,593.8	2,414.9	14.498	SF
EXIST VERT SHULTZ 23-30 - Wellbore #1 - Design #1	1,450.0	1,448.0	2,282.5	2,251.4	73.386	CC
EXIST VERT SHULTZ 23-30 - Wellbore #1 - Design #1	1,500.0	1,498.0	2,282.8	2,250.6	70.863	ES
EXIST VERT SHULTZ 23-30 - Wellbore #1 - Design #1	10,900.0	7,183.8	2,626.9	2,425.3	13.030	SF
EXIST VERT SHULTZ FARM 30-32 - Wellbore #1 - Well	98.4	68.7	1,232.8	1,232.7	10,000.000	CC
EXIST VERT SHULTZ FARM 30-32 - Wellbore #1 - Well	200.0	168.0	1,233.1	1,232.6	2,650.794	ES
EXIST VERT SHULTZ FARM 30-32 - Wellbore #1 - Well	11,100.0	7,155.4	2,419.8	2,355.6	37.705	SF
EXIST VERT SHULTZ FARM 30-33 - Wellbore #1 - Well	10,569.6	7,153.3	1,431.3	1,376.5	26.122	CC
EXIST VERT SHULTZ FARM 30-33 - Wellbore #1 - Well	10,600.0	7,152.8	1,431.7	1,376.3	25.876	ES
EXIST VERT SHULTZ FARM 30-33 - Wellbore #1 - Well	11,220.4	7,142.9	1,572.3	1,505.9	23.675	SF
OLSON 30M-223 - ORIGINAL WELLBORE - PROPOSA	1,450.0	1,451.0	105.2	99.0	16.851	CC
OLSON 30M-223 - ORIGINAL WELLBORE - PROPOSA	1,476.4	1,477.4	105.3	99.0	16.559	ES
OLSON 30M-223 - ORIGINAL WELLBORE - PROPOSA	12,041.2	11,655.0	1,796.7	1,638.1	11.328	SF
OLSON 30M-323 - ORIGINAL WELLBORE - PROPOSA	1,450.0	1,451.0	90.1	83.9	14.437	CC
OLSON 30M-323 - ORIGINAL WELLBORE - PROPOSA	1,476.4	1,477.4	90.3	83.9	14.190	ES
OLSON 30M-323 - ORIGINAL WELLBORE - PROPOSA	12,041.2	11,747.1	1,540.8	1,381.9	9.698	SF
OLSON 30M-403 - ORIGINAL WELLBORE - PROPOSA	1,433.0	1,434.0	120.0	113.8	19.458	CC
OLSON 30M-403 - ORIGINAL WELLBORE - PROPOSA	1,450.0	1,451.0	120.0	113.8	19.219	ES
OLSON 30M-403 - ORIGINAL WELLBORE - PROPOSA	12,041.2	11,849.6	2,056.1	1,897.1	12.929	SF
OLSON 30R-203 - ORIGINAL WELLBORE - PROPOSA	1,450.0	1,450.0	45.2	39.0	7.243	CC
OLSON 30R-203 - ORIGINAL WELLBORE - PROPOSA	1,476.4	1,476.4	45.3	39.0	7.127	ES
OLSON 30R-203 - ORIGINAL WELLBORE - PROPOSA	12,041.2	11,747.9	807.5	656.2	5.338	SF
OLSON 30R-223 - ORIGINAL WELLBORE - PROPOSA	1,450.0	1,450.0	15.1	8.8	2.414	CC

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

Anticollision Report

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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 30 T4N R67W 6th P.M.						
OLSON 30R-223 - ORIGINAL WELLBORE - PROPOSA	1,476.4	1,476.4	15.2	8.8	2.387	ES
OLSON 30R-223 - ORIGINAL WELLBORE - PROPOSA	12,041.2	11,860.2	322.0	168.7	2.101	SF
OLSON 30R-243 - ORIGINAL WELLBORE - PROPOSA	1,450.0	1,451.0	75.1	68.8	12.022	CC
OLSON 30R-243 - ORIGINAL WELLBORE - PROPOSA	1,476.4	1,477.4	75.2	68.8	11.819	ES
OLSON 30R-243 - ORIGINAL WELLBORE - PROPOSA	12,041.2	11,668.5	1,296.9	1,138.7	8.200	SF
OLSON 30R-303 - ORIGINAL WELLBORE - PROPOSA	1,450.0	1,450.0	30.1	23.9	4.828	CC
OLSON 30R-303 - ORIGINAL WELLBORE - PROPOSA	1,476.4	1,476.4	30.2	23.9	4.757	ES
OLSON 30R-303 - ORIGINAL WELLBORE - PROPOSA	12,041.2	11,883.5	560.2	401.9	3.538	SF
OLSON 30R-343 - ORIGINAL WELLBORE - PROPOSA	1,450.0	1,451.0	60.0	53.8	9.609	CC
OLSON 30R-343 - ORIGINAL WELLBORE - PROPOSA	1,476.4	1,477.4	60.1	53.7	9.450	ES
OLSON 30R-343 - ORIGINAL WELLBORE - PROPOSA	12,041.2	11,791.4	1,050.4	891.8	6.626	SF
PROP HZ CHANDLER FARMS HD 20-389HN - Wellbore	7,350.0	9,233.5	370.1	288.5	4.534	SF
PROP HZ CHANDLER FARMS HD 20-389HN - Wellbore	7,443.9	9,235.2	351.9	277.4	4.720	CC, ES

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - ABDN VERT MCCARTY 30-3 - Wellbore #1 - Wellbore #1

Survey Program: 100-GYD_CT

Offset Site Error: 0.0 usft

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	1.5	1.5	0.0	0.0	176.12	-3,760.7	254.7	3,769.3				
98.4	98.4	128.2	128.2	0.1	0.1	176.13	-3,760.1	254.2	3,768.8	3,768.6	0.16	N/A	
100.0	100.0	129.5	129.5	0.1	0.1	176.13	-3,760.1	254.2	3,768.8	3,768.6	0.16	N/A	
196.8	196.8	224.6	224.6	0.3	0.2	176.15	-3,759.6	253.3	3,768.2	3,767.6	0.53	7,075.651	
200.0	200.0	229.9	229.9	0.3	0.2	176.15	-3,759.5	253.2	3,768.2	3,767.6	0.54	6,917.920	
295.3	295.3	357.4	357.4	0.5	0.3	176.19	-3,758.0	250.6	3,766.8	3,766.0	0.87	4,330.408	
300.0	300.0	362.5	362.4	0.5	0.3	176.19	-3,757.9	250.4	3,766.8	3,765.9	0.88	4,259.281	
393.7	393.7	453.6	453.5	0.7	0.4	176.22	-3,756.6	248.1	3,765.2	3,764.1	1.16	3,252.069	
400.0	400.0	459.3	459.2	0.8	0.4	176.22	-3,756.5	248.0	3,765.1	3,763.9	1.18	3,202.717	
492.1	492.1	549.3	549.1	1.0	0.5	176.26	-3,755.3	245.7	3,763.8	3,762.3	1.44	2,620.403	
500.0	500.0	557.4	557.3	1.0	0.5	176.26	-3,755.2	245.5	3,763.6	3,762.2	1.46	2,580.241	
590.5	590.5	645.0	644.9	1.2	0.5	176.29	-3,754.0	243.5	3,762.3	3,760.6	1.71	2,200.149	
600.0	600.0	653.6	653.5	1.2	0.5	176.29	-3,753.9	243.3	3,762.2	3,760.4	1.74	2,167.388	
689.0	689.0	743.7	743.5	1.4	0.6	176.32	-3,752.8	241.4	3,761.0	3,759.0	1.98	1,897.275	
700.0	700.0	756.3	756.2	1.4	0.6	176.32	-3,752.7	241.1	3,760.8	3,758.8	2.01	1,867.835	
787.4	787.4	844.4	844.2	1.6	0.6	176.35	-3,751.4	239.2	3,759.5	3,757.2	2.25	1,668.376	
800.0	800.0	855.8	855.5	1.7	0.6	176.36	-3,751.3	238.9	3,759.3	3,757.0	2.29	1,643.642	
885.8	885.8	933.7	933.4	1.9	0.7	176.38	-3,750.3	237.2	3,758.1	3,755.6	2.52	1,493.094	
900.0	900.0	946.7	946.4	1.9	0.7	176.39	-3,750.2	236.9	3,757.9	3,755.4	2.55	1,470.889	
984.2	984.2	1,025.3	1,025.0	2.1	0.7	176.41	-3,749.4	235.3	3,757.0	3,754.2	2.78	1,351.300	
1,000.0	1,000.0	1,040.5	1,040.2	2.1	0.7	176.41	-3,749.3	235.0	3,756.8	3,754.0	2.82	1,331.016	
1,082.7	1,082.7	1,120.1	1,119.8	2.3	0.7	176.44	-3,748.6	233.5	3,756.0	3,753.0	3.04	1,233.997	
1,100.0	1,100.0	1,136.6	1,136.3	2.3	0.8	176.44	-3,748.4	233.2	3,755.8	3,752.7	3.09	1,215.557	
1,181.1	1,181.1	1,212.6	1,212.3	2.5	0.8	176.46	-3,747.8	232.1	3,755.1	3,751.8	3.30	1,136.263	
1,200.0	1,200.0	1,229.4	1,229.0	2.6	0.8	176.46	-3,747.7	231.9	3,755.0	3,751.6	3.35	1,119.446	
1,279.5	1,279.5	1,300.0	1,299.7	2.7	0.8	176.47	-3,747.3	231.0	3,754.5	3,750.9	3.56	1,053.827	
1,300.0	1,300.0	1,321.5	1,321.1	2.8	0.8	176.48	-3,747.2	230.6	3,754.4	3,750.8	3.62	1,037.748	
1,377.9	1,377.9	1,403.6	1,403.2	3.0	0.9	176.50	-3,746.8	229.3	3,753.9	3,750.1	3.83	980.718	
1,400.0	1,400.0	1,427.9	1,427.6	3.0	0.9	176.50	-3,746.7	228.9	3,753.8	3,749.9	3.89	965.640	
1,450.0	1,450.0	1,483.2	1,482.8	3.1	0.9	176.52	-3,746.3	228.0	3,753.4	3,749.4	4.02	933.090	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
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Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - ABDN VERT MCCARTY 30-3 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,476.4	1,476.4	1,509.2	1,508.8	3.2	0.9	113.22	-3,746.1	227.6	3,753.2	3,749.2	4.00	938.472	
1,500.0	1,500.0	1,528.6	1,528.2	3.2	0.9	113.23	-3,746.0	227.4	3,753.1	3,749.1	4.06	925.269	
1,502.0	1,502.0	1,530.3	1,529.9	3.2	0.9	113.23	-3,746.0	227.3	3,753.1	3,749.1	4.06	924.179	
1,574.8	1,574.8	1,590.1	1,589.7	3.4	0.9	113.26	-3,745.7	226.6	3,753.6	3,749.4	4.23	886.682	
1,600.0	1,599.9	1,614.7	1,614.3	3.4	1.0	113.27	-3,745.6	226.3	3,754.0	3,749.7	4.29	874.230	
1,673.2	1,673.0	1,696.7	1,696.3	3.6	1.0	113.33	-3,745.3	225.3	3,755.6	3,751.1	4.48	838.603	
1,700.0	1,699.7	1,723.9	1,723.6	3.7	1.0	113.35	-3,745.1	225.0	3,756.3	3,751.7	4.54	826.468	
1,771.6	1,771.0	1,795.8	1,795.4	3.8	1.0	113.42	-3,744.7	224.1	3,758.7	3,753.9	4.73	794.520	
1,800.0	1,799.1	1,820.1	1,819.8	3.9	1.0	113.45	-3,744.6	223.8	3,759.8	3,755.0	4.80	782.857	
1,870.1	1,868.6	1,878.5	1,878.1	4.1	1.1	113.50	-3,744.4	223.0	3,763.3	3,758.3	4.99	753.912	
1,900.0	1,898.2	1,904.0	1,903.6	4.1	1.1	113.53	-3,744.4	222.6	3,765.1	3,760.0	5.07	742.226	
1,968.5	1,965.7	1,972.4	1,972.0	4.3	1.1	113.62	-3,744.4	221.8	3,769.7	3,764.4	5.28	714.405	
2,000.0	1,996.6	2,003.7	2,003.3	4.4	1.1	113.66	-3,744.3	221.5	3,772.0	3,766.7	5.37	702.357	
2,066.9	2,062.2	2,070.5	2,070.1	4.6	1.1	113.76	-3,744.3	220.9	3,777.4	3,771.9	5.59	675.638	
2,100.0	2,094.4	2,103.5	2,103.2	4.7	1.1	113.81	-3,744.2	220.7	3,780.4	3,774.7	5.70	663.225	
2,165.3	2,157.9	2,172.5	2,172.1	5.0	1.2	113.93	-3,744.0	220.1	3,786.6	3,780.6	5.94	637.189	
2,200.0	2,191.5	2,208.3	2,207.9	5.1	1.2	114.00	-3,743.9	219.9	3,790.1	3,784.0	6.07	624.295	
2,263.8	2,252.9	2,270.4	2,270.0	5.3	1.2	114.11	-3,743.7	219.3	3,797.1	3,790.7	6.34	599.262	
2,300.0	2,287.6	2,300.0	2,299.6	5.5	1.2	114.15	-3,743.5	219.1	3,801.3	3,794.8	6.49	586.006	
2,362.2	2,346.9	2,350.1	2,349.7	5.8	1.2	114.22	-3,743.4	218.5	3,809.2	3,802.4	6.78	562.182	
2,400.0	2,382.7	2,377.9	2,377.5	6.0	1.2	114.25	-3,743.5	218.3	3,814.4	3,807.4	6.95	548.750	
2,460.6	2,439.8	2,430.3	2,429.9	6.3	1.3	114.34	-3,743.6	217.7	3,823.3	3,816.1	7.27	525.988	
2,500.0	2,476.6	2,469.5	2,469.1	6.5	1.3	114.42	-3,743.7	217.4	3,829.5	3,822.0	7.48	512.220	
2,559.0	2,531.6	2,528.1	2,527.6	6.9	1.3	114.55	-3,743.8	217.0	3,839.2	3,831.3	7.82	490.631	
2,600.0	2,569.4	2,568.4	2,568.0	7.1	1.3	114.64	-3,743.9	216.6	3,846.2	3,838.1	8.07	476.833	
2,657.5	2,622.0	2,618.8	2,618.3	7.5	1.3	114.73	-3,743.9	216.0	3,856.5	3,848.1	8.44	456.787	
2,700.0	2,660.7	2,650.1	2,649.7	7.8	1.3	114.76	-3,744.0	215.6	3,864.6	3,855.9	8.72	443.119	
2,755.9	2,711.1	2,700.0	2,699.6	8.2	1.4	114.86	-3,744.2	214.9	3,875.9	3,866.7	9.13	424.623	
2,800.0	2,750.6	2,737.6	2,737.2	8.6	1.4	114.93	-3,744.4	214.4	3,885.2	3,875.7	9.45	411.229	
2,832.3	2,779.2	2,775.8	2,775.4	8.8	1.4	115.05	-3,744.4	213.8	3,892.1	3,882.4	9.70	401.367	
2,854.3	2,798.8	2,801.5	2,801.0	9.0	1.4	115.21	-3,744.4	213.4	3,896.9	3,887.1	9.87	394.893	
2,900.0	2,839.3	2,844.6	2,844.2	9.4	1.4	115.49	-3,744.4	212.8	3,906.9	3,896.7	10.22	382.231	
2,952.7	2,886.0	2,894.3	2,893.9	9.9	1.4	115.82	-3,744.3	211.8	3,918.5	3,907.9	10.64	368.364	
3,000.0	2,927.8	2,949.0	2,948.5	10.3	1.4	116.18	-3,744.1	210.7	3,928.9	3,917.9	11.01	356.887	
3,051.2	2,973.2	3,010.0	3,009.5	10.7	1.5	116.57	-3,743.6	209.5	3,940.1	3,928.7	11.42	345.080	
3,100.0	3,016.4	3,068.2	3,067.7	11.2	1.5	116.94	-3,742.9	208.6	3,950.8	3,938.9	11.81	334.615	
3,149.6	3,060.4	3,119.5	3,119.0	11.6	1.5	117.27	-3,742.2	207.9	3,961.5	3,949.3	12.21	324.495	
3,200.0	3,105.0	3,162.2	3,161.7	12.1	1.5	117.53	-3,741.5	207.4	3,972.6	3,959.9	12.62	314.867	
3,248.0	3,147.5	3,200.0	3,199.5	12.5	1.5	117.77	-3,741.0	207.1	3,983.2	3,970.2	13.01	306.165	
3,300.0	3,193.6	3,237.2	3,236.7	13.0	1.5	118.00	-3,740.5	206.9	3,994.9	3,981.5	13.44	297.309	
3,346.4	3,234.7	3,268.3	3,267.8	13.4	1.5	118.19	-3,740.2	206.7	4,005.6	3,991.7	13.82	289.806	
3,400.0	3,282.2	3,300.0	3,299.5	13.9	1.6	118.38	-3,740.0	206.6	4,018.1	4,003.8	14.26	281.699	
3,444.9	3,321.9	3,329.4	3,328.9	14.3	1.6	118.56	-3,739.9	206.4	4,028.8	4,014.2	14.63	275.296	
3,500.0	3,370.8	3,361.1	3,360.6	14.8	1.6	118.75	-3,739.9	206.2	4,042.3	4,027.2	15.09	267.904	
3,543.3	3,409.1	3,400.0	3,399.5	15.2	1.6	118.98	-3,740.1	206.0	4,053.1	4,037.7	15.44	262.462	
3,600.0	3,459.3	3,421.7	3,421.2	15.8	1.6	119.11	-3,740.3	205.8	4,067.5	4,051.6	15.91	255.609	
3,641.7	3,496.3	3,449.8	3,449.3	16.1	1.6	119.28	-3,740.5	205.5	4,078.3	4,062.1	16.26	250.869	
3,700.0	3,547.9	3,500.0	3,499.5	16.7	1.6	119.59	-3,741.1	204.8	4,093.7	4,076.9	16.74	244.592	
3,740.1	3,583.5	3,522.1	3,521.5	17.1	1.6	119.72	-3,741.4	204.3	4,104.4	4,087.3	17.07	240.463	
3,800.0	3,636.5	3,578.3	3,577.8	17.6	1.6	120.06	-3,742.1	203.1	4,120.4	4,102.9	17.55	234.734	
3,838.6	3,670.7	3,618.5	3,617.9	18.0	1.6	120.31	-3,742.6	202.0	4,130.8	4,113.0	17.86	231.240	
3,900.0	3,725.1	3,691.9	3,691.3	18.6	1.7	120.76	-3,743.1	199.9	4,147.3	4,129.0	18.35	226.015	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - ABDN VERT MCCARTY 30-3 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
3,937.0	3,757.9	3,726.6	3,725.9	18.9	1.7	120.97	-3,743.2	198.8	4,157.2	4,138.6	18.65	222.947	
4,000.0	3,813.7	3,781.8	3,781.1	19.5	1.7	121.30	-3,743.4	197.1	4,174.2	4,155.1	19.15	217.952	
4,035.4	3,845.1	3,811.9	3,811.3	19.9	1.7	121.48	-3,743.6	196.2	4,183.8	4,164.4	19.44	215.254	
4,100.0	3,902.3	3,864.5	3,863.8	20.5	1.7	121.80	-3,743.8	194.5	4,201.6	4,181.6	19.96	210.543	
4,133.8	3,932.2	3,892.0	3,891.3	20.8	1.7	121.97	-3,743.9	193.6	4,210.9	4,190.7	20.23	208.177	
4,200.0	3,990.8	3,939.3	3,938.6	21.5	1.7	122.25	-3,744.2	192.1	4,229.4	4,208.7	20.76	203.725	
4,232.3	4,019.4	3,961.8	3,961.0	21.8	1.7	122.38	-3,744.4	191.3	4,238.6	4,217.6	21.02	201.638	
4,300.0	4,079.4	4,010.8	4,010.0	22.4	1.8	122.67	-3,744.9	189.6	4,258.0	4,236.5	21.56	197.462	
4,330.7	4,106.6	4,036.7	4,035.9	22.7	1.8	122.83	-3,745.1	188.6	4,266.9	4,245.1	21.81	195.663	
4,400.0	4,168.0	4,095.3	4,094.4	23.4	1.8	123.17	-3,745.8	186.5	4,287.2	4,264.8	22.36	191.774	
4,429.1	4,193.8	4,123.9	4,123.0	23.7	1.8	123.34	-3,746.1	185.4	4,295.8	4,273.2	22.58	190.230	
4,500.0	4,256.6	4,195.9	4,195.0	24.4	1.8	123.76	-3,746.7	182.4	4,316.6	4,293.5	23.13	186.640	
4,527.5	4,281.0	4,221.5	4,220.5	24.6	1.8	123.91	-3,746.8	181.3	4,324.7	4,301.4	23.34	185.285	
4,600.0	4,345.2	4,287.5	4,286.5	25.3	1.9	124.30	-3,747.2	178.5	4,346.2	4,322.3	23.90	181.855	
4,626.0	4,368.2	4,311.0	4,309.9	25.6	1.9	124.43	-3,747.3	177.4	4,353.9	4,329.8	24.10	180.668	
4,700.0	4,433.8	4,377.0	4,375.9	26.3	1.9	124.82	-3,747.7	174.6	4,376.1	4,351.4	24.67	177.406	
4,724.4	4,455.4	4,398.8	4,397.7	26.5	1.9	124.94	-3,747.8	173.6	4,383.4	4,358.6	24.85	176.369	
4,800.0	4,522.3	4,467.5	4,466.3	27.3	1.9	125.33	-3,748.0	170.6	4,406.3	4,380.8	25.43	173.279	
4,822.8	4,542.6	4,488.3	4,487.1	27.5	1.9	125.45	-3,748.1	169.8	4,413.2	4,387.6	25.60	172.379	
4,900.0	4,610.9	4,554.7	4,553.5	28.2	1.9	125.83	-3,748.4	167.0	4,436.8	4,410.6	26.19	169.423	
4,921.2	4,629.8	4,572.8	4,571.5	28.4	2.0	125.93	-3,748.4	166.2	4,443.3	4,416.9	26.35	168.636	
5,000.0	4,699.5	4,638.8	4,637.5	29.2	2.0	126.30	-3,748.7	163.4	4,467.6	4,440.7	26.94	165.816	
5,019.7	4,716.9	4,655.2	4,653.8	29.4	2.0	126.39	-3,748.8	162.7	4,473.7	4,446.6	27.09	165.134	
5,100.0	4,788.1	4,720.3	4,718.9	30.2	2.0	126.75	-3,749.1	159.9	4,498.9	4,471.2	27.70	162.438	
5,118.1	4,804.1	4,734.3	4,732.9	30.4	2.0	126.82	-3,749.2	159.3	4,504.6	4,476.8	27.83	161.847	
5,200.0	4,876.7	4,800.0	4,798.5	31.1	2.0	127.18	-3,749.6	156.4	4,530.7	4,502.2	28.45	159.274	
5,216.5	4,891.3	4,810.5	4,808.9	31.3	2.0	127.24	-3,749.7	155.9	4,535.9	4,507.4	28.57	158.758	
5,300.0	4,965.3	4,875.3	4,873.8	32.1	2.1	127.59	-3,750.2	153.0	4,562.9	4,533.7	29.19	156.296	
5,314.9	4,978.5	4,886.9	4,885.3	32.3	2.1	127.65	-3,750.3	152.5	4,567.8	4,538.5	29.31	155.869	
5,400.0	5,053.8	4,965.0	4,963.3	33.1	2.1	128.07	-3,751.0	148.8	4,595.6	4,565.7	29.92	153.580	
5,413.4	5,065.7	4,977.8	4,976.1	33.2	2.1	128.14	-3,751.1	148.2	4,600.0	4,569.9	30.02	153.233	
5,508.2	5,149.7	5,061.1	5,059.3	34.2	2.1	128.58	-3,751.8	144.5	4,631.1	4,600.4	30.71	150.822	
5,511.8	5,152.9	5,064.2	5,062.4	34.2	2.1	128.61	-3,751.8	144.4	4,632.4	4,601.6	30.72	150.782	
5,600.0	5,231.7	5,148.6	5,146.8	34.9	2.1	129.50	-3,752.6	141.3	4,660.7	4,629.6	31.10	149.839	
5,610.2	5,240.9	5,159.3	5,157.5	35.0	2.1	129.60	-3,752.7	141.0	4,663.9	4,632.8	31.14	149.790	
5,700.0	5,322.5	5,259.9	5,258.0	35.7	2.2	130.48	-3,753.5	137.7	4,690.9	4,659.5	31.41	149.355	
5,708.6	5,330.4	5,270.1	5,268.2	35.7	2.2	130.56	-3,753.5	137.4	4,693.4	4,661.9	31.43	149.328	
5,800.0	5,414.6	5,363.3	5,361.3	36.3	2.2	131.33	-3,753.9	134.9	4,718.6	4,687.0	31.68	148.951	
5,807.1	5,421.2	5,370.1	5,368.1	36.4	2.2	131.39	-3,754.0	134.7	4,720.5	4,688.8	31.70	148.932	
5,900.0	5,508.1	5,479.4	5,477.4	36.9	2.3	132.14	-3,754.3	132.1	4,744.2	4,712.3	31.91	148.695	
5,905.5	5,513.3	5,486.5	5,484.5	37.0	2.3	132.18	-3,754.3	132.0	4,745.5	4,713.6	31.92	148.690	
6,000.0	5,602.8	5,610.0	5,608.0	37.5	2.3	132.90	-3,753.9	129.6	4,766.9	4,734.8	32.09	148.562	
6,003.9	5,606.5	5,615.0	5,613.0	37.5	2.3	132.93	-3,753.9	129.6	4,767.7	4,735.6	32.09	148.561	
6,100.0	5,698.5	5,735.5	5,733.4	38.0	2.3	133.55	-3,752.7	127.6	4,786.7	4,754.5	32.24	148.466	
6,102.3	5,700.7	5,738.3	5,736.2	38.0	2.3	133.56	-3,752.6	127.5	4,787.2	4,754.9	32.24	148.466	
6,200.0	5,795.2	5,829.8	5,827.8	38.4	2.4	134.04	-3,751.3	125.8	4,803.9	4,771.5	32.38	148.349	
6,200.8	5,795.9	5,830.3	5,828.3	38.4	2.4	134.04	-3,751.3	125.7	4,804.0	4,771.6	32.38	148.348	
6,299.2	5,891.9	5,900.0	5,897.9	38.8	2.4	134.40	-3,750.7	124.7	4,819.1	4,786.6	32.51	148.243	
6,300.0	5,892.7	5,900.0	5,897.9	38.8	2.4	134.41	-3,750.7	124.7	4,819.2	4,786.7	32.51	148.241	
6,397.6	5,988.5	5,984.2	5,982.2	39.1	2.4	134.74	-3,750.5	123.7	4,832.3	4,799.7	32.60	148.215	
6,400.0	5,990.9	5,986.5	5,984.4	39.1	2.4	134.75	-3,750.4	123.7	4,832.6	4,800.0	32.61	148.213	
6,496.0	6,085.8	6,072.4	6,070.3	39.4	2.4	135.02	-3,750.4	122.9	4,843.3	4,810.7	32.68	148.228	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - ABDN VERT MCCARTY 30-3 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,500.0	6,089.7	6,075.9	6,073.8	39.4	2.5	135.03	-3,750.4	122.8	4,843.7	4,811.1	32.68	148.225	
6,594.5	6,183.5	6,160.2	6,158.1	39.6	2.5	135.24	-3,750.6	122.2	4,852.2	4,819.5	32.73	148.251	
6,600.0	6,189.0	6,165.1	6,163.1	39.7	2.5	135.25	-3,750.6	122.2	4,852.6	4,819.9	32.73	148.248	
6,692.9	6,281.5	6,273.1	6,271.1	39.8	2.5	135.42	-3,751.0	121.7	4,858.7	4,825.9	32.77	148.260	
6,700.0	6,288.6	6,282.8	6,280.7	39.8	2.5	135.43	-3,751.0	121.7	4,859.1	4,826.3	32.78	148.252	
6,791.3	6,379.8	6,330.0	6,327.9	40.0	2.5	135.50	-3,751.1	121.5	4,862.7	4,829.9	32.80	148.257	
6,800.0	6,388.5	6,330.0	6,327.9	40.0	2.5	135.51	-3,751.1	121.5	4,863.0	4,830.2	32.80	148.252	
6,889.7	6,478.2	6,330.0	6,327.9	40.1	2.5	135.55	-3,751.1	121.5	4,866.0	4,833.2	32.81	148.317	
6,890.4	6,478.9	6,330.0	6,327.9	40.1	2.5	-161.14	-3,751.1	121.5	4,866.0	4,833.2	32.81	148.318	
6,900.0	6,488.5	6,330.0	6,327.9	40.1	2.5	-161.14	-3,751.1	121.5	4,866.3	4,833.5	32.82	148.289	
6,920.4	6,508.9	6,330.0	6,327.9	40.1	2.5	-161.14	-3,751.1	121.5	4,867.1	4,834.2	32.84	148.222	
6,950.0	6,538.5	6,330.0	6,327.9	40.1	2.5	18.84	-3,751.1	121.5	4,867.7	4,834.9	32.75	148.619	
6,988.2	6,576.6	6,330.0	6,327.9	40.1	2.5	18.86	-3,751.1	121.5	4,867.0	4,834.4	32.61	149.270	
7,000.0	6,588.3	6,330.0	6,327.9	40.1	2.5	18.87	-3,751.1	121.5	4,866.5	4,834.0	32.55	149.509	
7,050.0	6,637.8	6,330.0	6,327.9	40.1	2.5	18.98	-3,751.1	121.5	4,862.5	4,830.3	32.26	150.730	
7,086.6	6,673.6	6,330.0	6,327.9	40.1	2.5	19.10	-3,751.1	121.5	4,857.9	4,825.9	31.98	151.900	
7,100.0	6,686.6	6,330.0	6,327.9	40.1	2.5	19.15	-3,751.1	121.5	4,855.8	4,823.9	31.86	152.404	
7,150.0	6,734.6	6,330.0	6,327.9	40.0	2.5	19.41	-3,751.1	121.5	4,846.3	4,815.0	31.34	154.655	
7,185.0	6,767.5	6,330.0	6,327.9	39.9	2.5	19.64	-3,751.1	121.5	4,838.1	4,807.2	30.89	156.632	
7,200.0	6,781.4	6,330.0	6,327.9	39.9	2.5	19.75	-3,751.1	121.5	4,834.1	4,803.4	30.67	157.599	
7,250.0	6,827.0	6,330.0	6,327.9	39.8	2.5	20.17	-3,751.1	121.5	4,819.2	4,789.4	29.87	161.350	
7,283.4	6,856.6	6,330.0	6,327.9	39.8	2.5	20.51	-3,751.1	121.5	4,807.8	4,778.5	29.25	164.364	
7,300.0	6,871.0	6,330.0	6,327.9	39.7	2.5	20.70	-3,751.1	121.5	4,801.7	4,772.8	28.92	166.033	
7,350.0	6,913.2	6,330.0	6,327.9	39.6	2.5	21.33	-3,751.1	121.5	4,781.6	4,753.8	27.83	171.790	
7,381.9	6,939.1	6,330.0	6,327.9	39.5	2.5	21.79	-3,751.1	121.5	4,767.5	4,740.4	27.07	176.085	
7,400.0	6,953.4	6,330.0	6,327.9	39.4	2.5	22.08	-3,751.1	121.5	4,759.0	4,732.4	26.62	178.789	
7,450.0	6,991.5	6,330.0	6,327.9	39.3	2.5	22.96	-3,751.1	121.5	4,733.9	4,708.6	25.28	187.224	
7,480.3	7,013.5	6,330.0	6,327.9	39.2	2.5	23.58	-3,751.1	121.5	4,717.6	4,693.2	24.43	193.107	
7,500.0	7,027.3	6,330.0	6,327.9	39.1	2.5	24.01	-3,751.1	121.5	4,706.5	4,682.7	23.85	197.310	
7,550.0	7,060.5	6,330.0	6,327.9	39.0	2.5	25.24	-3,751.1	121.5	4,676.9	4,654.5	22.35	209.254	
7,578.7	7,078.4	6,330.0	6,327.9	38.8	2.5	26.04	-3,751.1	121.5	4,658.8	4,637.4	21.47	216.978	
7,600.0	7,091.0	6,330.0	6,327.9	38.8	2.5	26.68	-3,751.1	121.5	4,645.1	4,624.2	20.81	223.170	
7,650.0	7,118.7	6,330.0	6,327.9	38.6	2.5	28.39	-3,751.1	121.5	4,611.2	4,591.9	19.30	238.890	
7,677.1	7,132.5	6,330.0	6,327.9	38.5	2.5	29.44	-3,751.1	121.5	4,592.0	4,573.5	18.53	247.873	
7,700.0	7,143.4	6,330.0	6,327.9	38.4	2.5	30.40	-3,751.1	121.5	4,575.4	4,557.5	17.90	255.576	
7,750.0	7,165.0	6,330.0	6,327.9	38.2	2.5	32.79	-3,751.1	121.5	4,537.8	4,521.1	16.74	271.112	
7,775.6	7,174.9	6,330.0	6,327.9	38.1	2.5	34.18	-3,751.1	121.5	4,518.0	4,501.7	16.29	277.351	
7,800.0	7,183.5	6,330.0	6,327.9	38.1	2.5	35.63	-3,751.1	121.5	4,498.6	4,482.6	15.97	281.735	
7,850.0	7,198.6	6,330.0	6,327.9	37.9	2.5	39.04	-3,751.1	121.5	4,457.9	4,442.1	15.74	283.247	
7,874.0	7,204.7	6,330.0	6,327.9	37.8	2.5	40.91	-3,751.1	121.5	4,437.8	4,422.0	15.85	280.022	
7,900.0	7,210.4	6,330.0	6,327.9	37.7	2.5	43.13	-3,751.1	121.5	4,415.8	4,399.7	16.10	274.219	
7,950.0	7,218.8	6,330.0	6,327.9	37.6	2.5	48.06	-3,751.1	121.5	4,372.6	4,355.6	16.97	257.633	
7,972.4	7,221.4	6,330.0	6,327.9	37.5	2.5	50.57	-3,751.1	121.5	4,352.8	4,335.3	17.48	248.964	
8,000.0	7,223.7	6,330.0	6,327.9	37.4	2.5	53.96	-3,751.1	121.5	4,328.3	4,310.2	18.16	238.348	
8,050.0	7,225.1	6,330.0	6,327.9	37.3	2.5	60.95	-3,751.1	121.5	4,283.3	4,263.8	19.46	220.063	
8,055.3	7,225.0	6,330.0	6,327.9	37.3	2.5	61.75	-3,751.1	121.5	4,278.5	4,258.9	19.60	218.274	
8,070.8	7,224.8	6,330.0	6,327.9	37.3	2.5	61.75	-3,751.1	121.5	4,264.3	4,244.8	19.59	217.731	
8,100.0	7,224.4	6,330.0	6,327.9	37.2	2.5	61.75	-3,751.1	121.5	4,237.9	4,218.3	19.56	216.712	
8,169.3	7,223.5	6,330.0	6,327.9	37.1	2.5	61.75	-3,751.1	121.5	4,175.1	4,155.6	19.58	213.258	
8,200.0	7,223.0	6,330.0	6,327.9	37.1	2.5	61.76	-3,751.1	121.5	4,147.4	4,127.8	19.59	211.724	
8,267.7	7,222.1	6,330.0	6,327.9	37.0	2.5	61.76	-3,751.1	121.5	4,086.4	4,066.6	19.74	207.053	
8,300.0	7,221.7	6,330.0	6,327.9	37.0	2.5	61.76	-3,751.1	121.5	4,057.4	4,037.5	19.81	204.830	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - ABDN VERT MCCARTY 30-3 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
8,366.1	7,220.7	6,330.0	6,327.9	37.0	2.5	61.76	-3,751.1	121.5	3,998.1	3,978.0	20.08	199.153	
8,400.0	7,220.3	6,330.0	6,327.9	37.0	2.5	61.76	-3,751.1	121.5	3,967.8	3,947.6	20.21	196.356	
8,464.5	7,219.4	6,330.0	6,327.9	37.1	2.5	61.76	-3,751.1	121.5	3,910.2	3,889.7	20.57	190.069	
8,500.0	7,218.9	6,330.0	6,327.9	37.1	2.5	61.76	-3,751.1	121.5	3,878.7	3,858.0	20.77	186.727	
8,563.0	7,218.0	6,330.0	6,327.9	37.2	2.5	61.76	-3,751.1	121.5	3,822.9	3,801.7	21.22	180.127	
8,600.0	7,217.5	6,330.0	6,327.9	37.3	2.5	61.76	-3,751.1	121.5	3,790.2	3,768.7	21.49	176.389	
8,661.4	7,216.7	6,330.0	6,327.9	37.5	2.5	61.76	-3,751.1	121.5	3,736.2	3,714.2	22.01	169.751	
8,700.0	7,216.1	6,330.0	6,327.9	37.6	2.5	61.76	-3,751.1	121.5	3,702.3	3,680.0	22.34	165.750	
8,759.8	7,215.3	6,330.0	6,327.9	37.8	2.5	61.76	-3,751.1	121.5	3,650.0	3,627.1	22.91	159.288	
8,800.0	7,214.8	6,330.0	6,327.9	38.0	2.5	61.76	-3,751.1	121.5	3,615.0	3,591.7	23.30	155.142	
8,858.2	7,214.0	6,330.0	6,327.9	38.3	2.5	61.76	-3,751.1	121.5	3,564.5	3,540.6	23.92	149.003	
8,900.0	7,213.4	6,330.0	6,327.9	38.5	2.5	61.76	-3,751.1	121.5	3,528.4	3,504.0	24.37	144.811	
8,956.7	7,212.6	6,330.0	6,327.9	38.8	2.5	61.76	-3,751.1	121.5	3,479.6	3,454.6	25.02	139.086	
9,000.0	7,212.0	6,330.0	6,327.9	39.1	2.5	61.76	-3,751.1	121.5	3,442.5	3,417.0	25.51	134.921	
9,055.1	7,211.2	6,330.0	6,327.9	39.5	2.5	61.76	-3,751.1	121.5	3,395.5	3,369.3	26.19	129.654	
9,100.0	7,210.6	6,330.0	6,327.9	39.8	2.5	61.76	-3,751.1	121.5	3,357.4	3,330.7	26.74	125.574	
9,153.5	7,209.9	6,330.0	6,327.9	40.3	2.5	61.76	-3,751.1	121.5	3,312.2	3,284.7	27.42	120.777	
9,200.0	7,209.2	6,330.0	6,327.9	40.7	2.5	61.76	-3,751.1	121.5	3,273.1	3,245.1	28.02	116.817	
9,251.9	7,208.5	6,330.0	6,327.9	41.1	2.5	61.76	-3,751.1	121.5	3,229.7	3,201.0	28.71	112.479	
9,300.0	7,207.9	6,330.0	6,327.9	41.6	2.5	61.76	-3,751.1	121.5	3,189.8	3,160.4	29.35	108.664	
9,350.4	7,207.2	6,330.0	6,327.9	42.1	2.5	61.76	-3,751.1	121.5	3,148.1	3,118.1	30.05	104.763	
9,400.0	7,206.5	6,330.0	6,327.9	42.6	2.5	61.76	-3,751.1	121.5	3,107.4	3,076.6	30.73	101.107	
9,448.8	7,205.8	6,330.0	6,327.9	43.1	2.5	61.76	-3,751.1	121.5	3,067.6	3,036.1	31.43	97.611	
9,500.0	7,205.1	6,330.0	6,327.9	43.7	2.5	61.76	-3,751.1	121.5	3,026.1	2,993.9	32.15	94.120	
9,547.2	7,204.4	6,330.0	6,327.9	44.2	2.5	61.76	-3,751.1	121.5	2,988.0	2,955.2	32.84	90.998	
9,600.0	7,203.7	6,330.0	6,327.9	44.8	2.5	61.76	-3,751.1	121.5	2,945.9	2,912.3	33.60	87.673	
9,645.6	7,203.1	6,330.0	6,327.9	45.4	2.5	61.76	-3,751.1	121.5	2,909.7	2,875.4	34.28	84.889	
9,700.0	7,202.3	6,330.0	6,327.9	46.1	2.5	61.76	-3,751.1	121.5	2,867.0	2,831.9	35.08	81.729	
9,744.1	7,201.7	6,330.0	6,327.9	46.6	2.5	61.76	-3,751.1	121.5	2,832.6	2,796.9	35.74	79.252	
9,800.0	7,201.0	6,330.0	6,327.9	47.3	2.5	61.76	-3,751.1	121.5	2,789.4	2,752.8	36.58	76.253	
9,842.5	7,200.4	6,330.0	6,327.9	47.9	2.5	61.76	-3,751.1	121.5	2,756.9	2,719.6	37.23	74.051	
9,900.0	7,199.6	6,330.0	6,327.9	48.7	2.5	61.76	-3,751.1	121.5	2,713.3	2,675.2	38.10	71.207	
9,940.9	7,199.0	6,330.0	6,327.9	49.2	2.5	61.76	-3,751.1	121.5	2,682.6	2,643.9	38.74	69.254	
10,000.0	7,198.2	6,330.0	6,327.9	50.1	2.5	61.76	-3,751.1	121.5	2,638.8	2,599.1	39.65	66.559	
10,039.3	7,197.7	6,330.0	6,327.9	50.6	2.5	61.76	-3,751.1	121.5	2,609.9	2,569.7	40.26	64.828	
10,100.0	7,196.8	6,330.0	6,327.9	51.5	2.5	61.76	-3,751.1	121.5	2,566.0	2,524.8	41.20	62.276	
10,137.8	7,196.3	6,330.0	6,327.9	52.0	2.5	61.76	-3,751.1	121.5	2,539.0	2,497.2	41.80	60.745	
10,200.0	7,195.4	6,330.0	6,327.9	52.9	2.5	61.76	-3,751.1	121.5	2,495.1	2,452.4	42.78	58.331	
10,236.2	7,194.9	6,330.0	6,327.9	53.5	2.5	61.76	-3,751.1	121.5	2,470.0	2,426.6	43.35	56.978	
10,300.0	7,194.1	6,330.0	6,327.9	54.4	2.5	61.76	-3,751.1	121.5	2,426.3	2,381.9	44.36	54.696	
10,334.6	7,193.6	6,330.0	6,327.9	55.0	2.5	61.76	-3,751.1	121.5	2,403.0	2,358.1	44.91	53.503	
10,400.0	7,192.7	6,330.0	6,327.9	56.0	2.5	61.76	-3,751.1	121.5	2,359.7	2,313.7	45.96	51.347	
10,433.0	7,192.2	6,330.0	6,327.9	56.5	2.5	61.76	-3,751.1	121.5	2,338.2	2,291.7	46.49	50.299	
10,500.0	7,191.3	6,330.0	6,327.9	57.5	2.5	61.76	-3,751.1	121.5	2,295.5	2,248.0	47.56	48.265	
10,531.5	7,190.9	6,330.0	6,327.9	58.0	2.5	61.76	-3,751.1	121.5	2,275.9	2,227.8	48.07	47.345	
10,600.0	7,189.9	6,330.0	6,327.9	59.1	2.5	61.76	-3,751.1	121.5	2,234.0	2,184.8	49.18	45.429	
10,629.9	7,189.5	6,330.0	6,327.9	59.6	2.5	61.76	-3,751.1	121.5	2,216.1	2,166.5	49.66	44.625	
10,700.0	7,188.5	6,330.0	6,327.9	60.7	2.5	61.76	-3,751.1	121.5	2,175.3	2,124.5	50.80	42.822	
10,728.3	7,188.1	6,330.0	6,327.9	61.1	2.5	61.76	-3,751.1	121.5	2,159.2	2,108.0	51.26	42.123	
10,800.0	7,187.2	6,330.0	6,327.9	62.3	2.5	61.76	-3,751.1	121.5	2,119.7	2,067.3	52.43	40.431	
10,826.7	7,186.8	6,330.0	6,327.9	62.7	2.5	61.76	-3,751.1	121.5	2,105.4	2,052.5	52.87	39.826	
10,900.0	7,185.8	6,330.0	6,327.9	63.9	2.5	61.76	-3,751.1	121.5	2,067.4	2,013.4	54.06	38.241	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - ABDN VERT MCCARTY 30-3 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,925.2	7,185.4	6,330.0	6,327.9	64.3	2.5	61.76	-3,751.1	121.5	2,054.9	2,000.4	54.48	37.720	
11,000.0	7,184.4	6,330.0	6,327.9	65.6	2.5	61.76	-3,751.1	121.5	2,018.8	1,963.1	55.70	36.241	
11,023.6	7,184.1	6,330.0	6,327.9	66.0	2.5	61.76	-3,751.1	121.5	2,007.9	1,951.8	56.09	35.795	
11,100.0	7,183.0	6,330.0	6,327.9	67.2	2.5	61.76	-3,751.1	121.5	1,974.0	1,916.7	57.35	34.420	
11,122.0	7,182.7	6,330.0	6,327.9	67.6	2.5	61.76	-3,751.1	121.5	1,964.7	1,907.0	57.72	34.041	
11,200.0	7,181.6	6,330.0	6,327.9	68.9	2.5	61.76	-3,751.1	121.5	1,933.4	1,874.4	59.00	32.767	
11,220.4	7,181.3	6,330.0	6,327.9	69.3	2.5	61.76	-3,751.1	121.5	1,925.6	1,866.3	59.34	32.449	
11,300.0	7,180.2	6,330.0	6,327.9	70.6	2.5	61.76	-3,751.1	121.5	1,897.2	1,836.5	60.66	31.275	
11,318.9	7,180.0	6,330.0	6,327.9	70.9	2.5	61.76	-3,751.1	121.5	1,890.9	1,829.9	60.97	31.011	
11,400.0	7,178.9	6,330.0	6,327.9	72.3	2.5	61.76	-3,751.1	121.5	1,865.6	1,803.3	62.32	29.936	
11,417.3	7,178.6	6,330.0	6,327.9	72.6	2.5	61.76	-3,751.1	121.5	1,860.6	1,798.0	62.61	29.719	
11,500.0	7,177.5	6,330.0	6,327.9	74.0	2.5	61.76	-3,751.1	121.5	1,839.0	1,775.0	63.98	28.741	
11,515.7	7,177.3	6,330.0	6,327.9	74.3	2.5	61.76	-3,751.1	121.5	1,835.2	1,771.0	64.25	28.565	
11,600.0	7,176.1	6,330.0	6,327.9	75.7	2.5	61.76	-3,751.1	121.5	1,817.4	1,751.8	65.65	27.682	
11,614.1	7,175.9	6,330.0	6,327.9	76.0	2.5	61.76	-3,751.1	121.5	1,814.8	1,748.9	65.89	27.543	
11,700.0	7,174.7	6,330.0	6,327.9	77.5	2.5	61.76	-3,751.1	121.5	1,801.2	1,733.8	67.32	26.754	
11,712.6	7,174.5	6,330.0	6,327.9	77.7	2.5	61.76	-3,751.1	121.5	1,799.5	1,732.0	67.53	26.646	
11,800.0	7,173.3	6,330.0	6,327.9	79.2	2.5	61.76	-3,751.1	121.5	1,790.4	1,721.4	69.00	25.949	
11,811.0	7,173.2	6,330.0	6,327.9	79.4	2.5	61.76	-3,751.1	121.5	1,789.5	1,720.3	69.18	25.867	
11,900.0	7,172.0	6,330.0	6,327.9	81.0	2.5	61.76	-3,751.1	121.5	1,785.1	1,714.5	70.67	25.259	
11,909.4	7,171.8	6,330.0	6,327.9	81.1	2.5	61.76	-3,751.1	121.5	1,784.9	1,714.1	70.83	25.200	
11,943.8	7,171.3	6,330.0	6,327.9	81.7	2.5	61.76	-3,751.1	121.5	1,784.6	1,713.2	71.41	24.991	CC
12,000.0	7,170.6	6,330.0	6,327.9	82.7	2.5	61.76	-3,751.1	121.5	1,785.5	1,713.1	72.35	24.678	ES
12,007.8	7,170.5	6,330.0	6,327.9	82.9	2.5	61.76	-3,751.1	121.5	1,785.7	1,713.3	72.48	24.637	
12,041.2	7,170.0	6,330.0	6,327.9	83.5	2.5	61.76	-3,751.1	121.5	1,787.2	1,714.2	73.04	24.468	SF

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN 30-2 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	84.47	157.1	1,622.0	1,630.1				
98.4	98.4	55.7	55.7	0.1	0.0	84.47	157.1	1,621.9	1,629.5	1,629.4	0.12	N/A	
100.0	100.0	57.3	57.3	0.1	0.0	84.47	157.1	1,621.9	1,629.5	1,629.4	0.12	N/A	
170.7	170.7	126.7	126.7	0.2	0.1	84.47	157.0	1,621.9	1,629.5	1,629.2	0.30	5,363.268	
196.8	196.8	150.8	150.8	0.3	0.1	84.47	157.0	1,621.9	1,629.5	1,629.1	0.36	4,487.195	
200.0	200.0	153.7	153.7	0.3	0.1	84.47	157.0	1,621.9	1,629.5	1,629.1	0.37	4,400.717	
295.3	295.3	251.4	251.4	0.5	0.1	84.46	157.3	1,622.1	1,629.7	1,629.1	0.64	2,557.970	
300.0	300.0	256.8	256.8	0.5	0.1	84.46	157.3	1,622.1	1,629.7	1,629.0	0.65	2,495.150	
393.7	393.7	358.2	358.2	0.7	0.2	84.43	158.2	1,621.6	1,629.4	1,628.4	0.97	1,681.392	
400.0	400.0	364.8	364.8	0.8	0.2	84.43	158.3	1,621.6	1,629.3	1,628.3	0.99	1,645.482	
492.1	492.1	455.6	455.6	1.0	0.3	84.38	159.4	1,621.0	1,628.8	1,627.5	1.28	1,276.011	
500.0	500.0	463.1	463.1	1.0	0.3	84.38	159.5	1,620.9	1,628.8	1,627.5	1.30	1,253.052	
590.5	590.5	555.9	555.9	1.2	0.4	84.32	161.0	1,620.4	1,628.4	1,626.8	1.57	1,039.521	
600.0	600.0	566.1	566.1	1.2	0.4	84.32	161.2	1,620.3	1,628.3	1,626.8	1.59	1,021.441	
689.0	689.0	657.4	657.3	1.4	0.4	84.27	162.6	1,619.5	1,627.7	1,625.8	1.85	881.162	
700.0	700.0	668.3	668.3	1.4	0.5	84.26	162.8	1,619.4	1,627.6	1,625.7	1.88	866.646	
787.4	787.4	755.1	755.1	1.6	0.5	84.21	164.1	1,618.6	1,627.0	1,624.8	2.12	767.469	
800.0	800.0	767.6	767.5	1.7	0.5	84.20	164.4	1,618.5	1,626.9	1,624.7	2.15	755.086	
885.8	885.8	853.2	853.1	1.9	0.6	84.14	166.0	1,617.7	1,626.3	1,623.9	2.39	680.597	
900.0	900.0	867.4	867.3	1.9	0.6	84.13	166.3	1,617.6	1,626.2	1,623.7	2.43	669.711	
984.2	984.2	954.9	954.8	2.1	0.6	84.05	168.4	1,616.7	1,625.5	1,622.9	2.66	611.547	
1,000.0	1,000.0	971.6	971.5	2.1	0.6	84.04	168.8	1,616.5	1,625.4	1,622.7	2.70	601.765	
1,082.7	1,082.7	1,059.7	1,059.5	2.3	0.7	83.95	171.3	1,615.3	1,624.5	1,621.5	2.93	555.344	
1,100.0	1,100.0	1,078.2	1,078.0	2.3	0.7	83.93	171.9	1,615.0	1,624.2	1,621.3	2.97	546.518	
1,181.1	1,181.1	1,164.6	1,164.3	2.5	0.7	83.83	174.5	1,613.4	1,623.0	1,619.8	3.19	508.876	
1,200.0	1,200.0	1,184.7	1,184.4	2.6	0.7	83.80	175.2	1,612.9	1,622.7	1,619.4	3.24	500.840	
1,279.5	1,279.5	1,262.9	1,262.6	2.7	0.8	83.71	177.7	1,611.3	1,621.3	1,617.8	3.45	470.087	
1,300.0	1,300.0	1,282.7	1,282.4	2.8	0.8	83.68	178.3	1,610.9	1,621.0	1,617.5	3.50	462.796	
1,377.9	1,377.9	1,358.9	1,358.5	3.0	0.8	83.59	180.8	1,609.4	1,619.7	1,616.0	3.71	437.003	
1,400.0	1,400.0	1,380.5	1,380.1	3.0	0.8	83.56	181.5	1,609.0	1,619.4	1,615.6	3.76	430.219	
1,450.0	1,450.0	1,430.6	1,430.2	3.1	0.8	83.50	183.2	1,608.1	1,618.7	1,614.8	3.90	415.570	
1,476.4	1,476.4	1,457.4	1,456.9	3.2	0.8	20.16	184.1	1,607.6	1,618.2	1,614.2	3.93	412.171	
1,500.0	1,500.0	1,481.4	1,480.9	3.2	0.8	20.14	184.9	1,607.1	1,617.5	1,613.5	3.99	405.787	
1,574.8	1,574.8	1,559.5	1,559.0	3.4	0.9	20.09	187.6	1,605.5	1,614.1	1,610.0	4.17	386.745	
1,600.0	1,599.9	1,586.0	1,585.5	3.4	0.9	20.09	188.4	1,604.9	1,612.6	1,608.3	4.24	380.570	
1,673.2	1,673.0	1,661.9	1,661.3	3.6	0.9	20.10	190.7	1,603.2	1,606.7	1,602.2	4.42	363.110	
1,700.0	1,699.7	1,689.5	1,688.9	3.7	0.9	20.12	191.5	1,602.6	1,604.0	1,599.6	4.49	356.980	
1,771.6	1,771.0	1,760.1	1,759.4	3.8	1.0	20.19	193.2	1,600.9	1,595.9	1,591.2	4.68	341.096	
1,800.0	1,799.1	1,787.7	1,787.0	3.9	1.0	20.23	193.9	1,600.2	1,592.2	1,587.4	4.75	335.086	
1,870.1	1,868.6	1,854.7	1,853.9	4.1	1.0	20.35	195.4	1,598.8	1,582.0	1,577.1	4.93	320.616	
1,900.0	1,898.2	1,883.1	1,882.3	4.1	1.0	20.41	196.1	1,598.2	1,577.2	1,572.2	5.01	314.703	
1,968.5	1,965.7	1,949.0	1,948.3	4.3	1.0	20.58	197.6	1,596.8	1,565.3	1,560.1	5.19	301.334	
2,000.0	1,996.6	1,979.4	1,978.7	4.4	1.0	20.67	198.4	1,596.2	1,559.3	1,554.0	5.28	295.432	
2,066.9	2,062.2	2,044.0	2,043.2	4.6	1.1	20.88	200.0	1,595.0	1,545.5	1,540.0	5.46	282.942	
2,100.0	2,094.4	2,075.9	2,075.1	4.7	1.1	20.99	200.8	1,594.4	1,538.2	1,532.6	5.55	277.009	
2,165.3	2,157.9	2,139.5	2,138.6	5.0	1.1	21.25	202.4	1,593.2	1,522.7	1,517.0	5.74	265.236	
2,200.0	2,191.5	2,173.3	2,172.4	5.1	1.1	21.40	203.3	1,592.5	1,513.9	1,508.1	5.84	259.231	
2,263.8	2,252.9	2,235.9	2,235.0	5.3	1.1	21.70	205.0	1,591.3	1,496.8	1,490.8	6.03	248.035	
2,300.0	2,287.6	2,271.5	2,270.6	5.5	1.2	21.89	205.9	1,590.6	1,486.5	1,480.4	6.14	241.930	
2,362.2	2,346.9	2,331.9	2,330.9	5.8	1.2	22.25	207.5	1,589.3	1,467.8	1,461.5	6.34	231.403	
2,400.0	2,382.7	2,368.1	2,367.1	6.0	1.2	22.49	208.4	1,588.5	1,455.9	1,449.4	6.47	225.059	
2,460.6	2,439.8	2,426.4	2,425.4	6.3	1.2	22.91	209.9	1,587.2	1,435.8	1,429.1	6.68	214.952	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN 30-2 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,500.0	2,476.6	2,464.4	2,463.4	6.5	1.2	23.20	210.8	1,586.3	1,422.1	1,415.3	6.82	208.545	
2,559.0	2,531.6	2,520.0	2,518.9	6.9	1.3	23.68	212.0	1,584.9	1,400.8	1,393.7	7.04	198.885	
2,600.0	2,569.4	2,557.0	2,555.9	7.1	1.3	24.04	212.8	1,584.1	1,385.3	1,378.1	7.20	192.398	
2,657.5	2,622.0	2,608.8	2,607.7	7.5	1.3	24.57	213.8	1,582.8	1,362.9	1,355.5	7.44	183.214	
2,700.0	2,660.7	2,647.4	2,646.3	7.8	1.3	25.00	214.7	1,581.9	1,345.7	1,338.1	7.62	176.620	
2,755.9	2,711.1	2,697.7	2,696.5	8.2	1.3	25.60	215.8	1,580.7	1,322.4	1,314.5	7.88	167.868	
2,800.0	2,750.6	2,735.6	2,734.4	8.6	1.3	26.10	216.6	1,579.9	1,303.4	1,295.3	8.09	161.195	
2,832.3	2,779.2	2,763.1	2,761.9	8.8	1.3	26.49	217.2	1,579.3	1,289.2	1,281.0	8.25	156.305	
2,854.3	2,798.8	2,781.8	2,780.6	9.0	1.4	26.66	217.5	1,578.9	1,279.5	1,271.1	8.36	153.068	
2,900.0	2,839.3	2,821.1	2,819.9	9.4	1.4	27.04	218.2	1,578.0	1,259.3	1,250.7	8.59	146.574	
2,952.7	2,886.0	2,867.0	2,865.8	9.9	1.4	27.50	219.0	1,577.1	1,236.1	1,227.2	8.87	139.329	
3,000.0	2,927.8	2,908.3	2,907.1	10.3	1.4	27.92	219.7	1,576.3	1,215.4	1,206.2	9.13	133.136	
3,051.2	2,973.2	2,953.7	2,952.4	10.7	1.4	28.41	220.5	1,575.4	1,193.0	1,183.6	9.42	126.638	
3,100.0	3,016.4	2,997.0	2,995.7	11.2	1.4	28.89	221.2	1,574.5	1,171.7	1,162.0	9.71	120.728	
3,149.6	3,060.4	3,039.3	3,038.0	11.6	1.4	29.38	221.8	1,573.7	1,150.2	1,140.2	10.00	114.970	
3,200.0	3,105.0	3,082.2	3,080.9	12.1	1.5	29.91	222.2	1,572.9	1,128.4	1,118.1	10.32	109.393	
3,248.0	3,147.5	3,122.5	3,121.2	12.5	1.5	30.43	222.4	1,572.2	1,107.9	1,097.3	10.62	104.302	
3,300.0	3,193.6	3,165.5	3,164.2	13.0	1.5	31.01	222.6	1,571.6	1,085.8	1,074.9	10.96	99.064	
3,346.4	3,234.7	3,204.2	3,202.9	13.4	1.5	31.55	222.7	1,571.1	1,066.3	1,055.0	11.28	94.572	
3,400.0	3,282.2	3,250.0	3,248.7	13.9	1.5	32.22	222.7	1,570.6	1,044.0	1,032.4	11.65	89.618	
3,444.9	3,321.9	3,288.5	3,287.2	14.3	1.5	32.80	222.8	1,570.3	1,025.5	1,013.5	11.97	85.640	
3,500.0	3,370.8	3,337.1	3,335.8	14.8	1.5	33.56	222.9	1,569.8	1,002.9	990.5	12.39	80.956	
3,543.3	3,409.1	3,375.5	3,374.2	15.2	1.5	34.18	223.0	1,569.5	985.2	972.5	12.72	77.425	
3,600.0	3,459.3	3,426.0	3,424.7	15.8	1.6	35.03	223.1	1,569.0	962.3	949.1	13.18	73.008	
3,641.7	3,496.3	3,463.2	3,461.9	16.1	1.6	35.69	223.1	1,568.7	945.5	932.0	13.53	69.892	
3,700.0	3,547.9	3,514.4	3,513.1	16.7	1.6	36.63	223.2	1,568.1	922.2	908.2	14.02	65.759	
3,740.1	3,583.5	3,548.2	3,546.9	17.1	1.6	37.28	223.1	1,567.8	906.4	892.0	14.37	63.063	
3,800.0	3,636.5	3,600.0	3,598.7	17.6	1.6	38.31	223.0	1,567.5	883.1	868.2	14.91	59.220	
3,838.6	3,670.7	3,630.1	3,628.8	18.0	1.6	38.95	222.8	1,567.3	868.3	853.1	15.26	56.917	
3,900.0	3,725.1	3,680.4	3,679.1	18.6	1.6	40.05	222.3	1,567.2	845.3	829.5	15.83	53.406	
3,937.0	3,757.9	3,711.4	3,710.0	18.9	1.6	40.76	222.0	1,567.3	831.7	815.5	16.19	51.386	
4,000.0	3,813.7	3,766.2	3,764.8	19.5	1.6	42.06	221.4	1,567.5	809.0	792.2	16.82	48.100	
4,035.4	3,845.1	3,797.0	3,795.7	19.9	1.6	42.81	221.1	1,567.6	796.5	779.3	17.19	46.340	
4,100.0	3,902.3	3,855.5	3,854.2	20.5	1.6	44.30	220.5	1,567.8	773.9	756.0	17.89	43.261	
4,133.8	3,932.2	3,886.2	3,884.9	20.8	1.6	45.12	220.2	1,567.9	762.3	744.0	18.27	41.723	
4,200.0	3,990.8	3,945.7	3,944.4	21.5	1.6	46.77	219.7	1,568.0	739.9	720.9	19.04	38.870	
4,232.3	4,019.4	3,974.7	3,973.3	21.8	1.6	47.60	219.4	1,568.0	729.2	709.8	19.42	37.548	
4,300.0	4,079.4	4,035.2	4,033.9	22.4	1.6	49.42	218.8	1,568.0	707.1	686.9	20.25	34.922	
4,330.7	4,106.6	4,062.6	4,061.2	22.7	1.6	50.28	218.6	1,567.9	697.4	676.7	20.64	33.796	
4,400.0	4,168.0	4,123.9	4,122.6	23.4	1.6	52.28	217.9	1,567.8	675.9	654.4	21.53	31.400	
4,429.1	4,193.8	4,149.5	4,148.1	23.7	1.6	53.15	217.6	1,567.7	667.2	645.3	21.91	30.453	
4,500.0	4,256.6	4,211.9	4,210.5	24.4	1.6	55.35	216.9	1,567.6	646.7	623.8	22.86	28.288	
4,527.5	4,281.0	4,236.5	4,235.2	24.6	1.6	56.25	216.6	1,567.6	639.0	615.7	23.24	27.494	
4,600.0	4,345.2	4,301.3	4,299.9	25.3	1.6	58.70	215.9	1,567.4	619.5	595.3	24.25	25.543	
4,626.0	4,368.2	4,324.4	4,323.1	25.6	1.6	59.61	215.7	1,567.3	612.8	588.2	24.62	24.888	
4,700.0	4,433.8	4,390.4	4,389.1	26.3	1.6	62.28	215.2	1,567.1	594.7	569.0	25.68	23.154	
4,724.4	4,455.4	4,412.2	4,410.9	26.5	1.6	63.19	215.0	1,567.0	589.0	563.0	26.04	22.622	
4,800.0	4,522.3	4,479.8	4,478.5	27.3	1.6	66.10	214.6	1,566.8	572.5	545.4	27.14	21.098	
4,822.8	4,542.6	4,500.2	4,498.9	27.5	1.6	67.01	214.5	1,566.7	567.8	540.4	27.47	20.674	
4,900.0	4,610.9	4,569.1	4,567.7	28.2	1.6	70.14	214.2	1,566.4	553.3	524.7	28.58	19.357	
4,921.2	4,629.8	4,588.0	4,586.6	28.4	1.6	71.03	214.2	1,566.3	549.6	520.7	28.89	19.026	
5,000.0	4,699.5	4,658.1	4,656.7	29.2	1.7	74.38	214.0	1,565.9	537.3	507.3	30.00	17.912	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN 30-2 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,019.7	4,716.9	4,675.5	4,674.2	29.4	1.7	75.23	213.9	1,565.8	534.6	504.3	30.27	17.662	
5,100.0	4,788.1	4,746.7	4,745.3	30.2	1.7	78.77	213.8	1,565.4	525.0	493.6	31.34	16.748	
5,118.1	4,804.1	4,762.7	4,761.3	30.4	1.7	79.59	213.8	1,565.3	523.1	491.6	31.58	16.566	
5,200.0	4,876.7	4,834.6	4,833.2	31.1	1.7	83.28	213.6	1,564.9	516.6	484.0	32.60	15.848	
5,216.5	4,891.3	4,849.0	4,847.7	31.3	1.7	84.03	213.6	1,564.8	515.6	482.8	32.79	15.724	
5,300.0	4,965.3	4,922.1	4,920.8	32.1	1.7	87.85	213.3	1,564.4	512.6	478.8	33.72	15.198	
5,314.9	4,978.5	4,935.3	4,933.9	32.3	1.7	88.54	213.2	1,564.3	512.3	478.4	33.88	15.121	
5,342.9	5,003.2	4,959.9	4,958.5	32.5	1.7	89.84	213.1	1,564.2	512.2	478.0	34.17	14.991	
5,400.0	5,053.8	5,010.4	5,009.1	33.1	1.7	92.48	213.0	1,564.0	512.9	478.2	34.71	14.776	
5,413.4	5,065.7	5,022.3	5,020.9	33.2	1.7	93.11	212.9	1,563.9	513.2	478.4	34.83	14.735	
5,508.2	5,149.7	5,106.6	5,105.3	34.2	1.8	97.48	212.7	1,563.6	517.9	482.3	35.60	14.548	
5,511.8	5,152.9	5,109.9	5,108.5	34.2	1.8	97.66	212.7	1,563.5	518.2	482.6	35.62	14.546	
5,600.0	5,231.7	5,189.4	5,188.0	34.9	1.8	101.72	212.6	1,563.1	525.6	489.5	36.09	14.563	
5,610.2	5,240.9	5,198.7	5,197.3	35.0	1.8	102.18	212.5	1,563.1	526.6	490.5	36.13	14.578	
5,700.0	5,322.5	5,280.8	5,279.5	35.7	1.8	106.04	212.5	1,562.5	536.5	500.1	36.35	14.760	
5,708.6	5,330.4	5,288.8	5,287.4	35.7	1.8	106.40	212.6	1,562.5	537.5	501.2	36.36	14.784	
5,800.0	5,414.6	5,373.1	5,371.7	36.3	1.8	109.97	212.6	1,561.8	549.2	512.7	36.44	15.070	
5,807.1	5,421.2	5,379.6	5,378.2	36.4	1.8	110.24	212.6	1,561.7	550.1	513.7	36.44	15.096	
5,900.0	5,508.1	5,465.7	5,464.3	36.9	1.9	113.51	212.7	1,560.7	563.0	526.6	36.41	15.463	
5,905.5	5,513.3	5,470.8	5,469.4	37.0	1.9	113.70	212.7	1,560.7	563.7	527.3	36.40	15.487	
6,000.0	5,602.8	5,559.0	5,557.6	37.5	1.9	116.68	212.6	1,559.3	577.4	541.1	36.28	15.915	
6,003.9	5,606.5	5,562.7	5,561.3	37.5	1.9	116.80	212.6	1,559.2	577.9	541.6	36.27	15.934	
6,100.0	5,698.5	5,652.6	5,651.1	38.0	1.9	119.46	212.3	1,557.7	591.8	555.7	36.09	16.399	
6,102.3	5,700.7	5,654.8	5,653.3	38.0	1.9	119.52	212.3	1,557.6	592.1	556.0	36.08	16.410	
6,200.0	5,795.2	5,746.9	5,745.5	38.4	2.0	121.85	211.8	1,556.1	605.9	570.1	35.87	16.893	
6,200.8	5,795.9	5,747.7	5,746.2	38.4	2.0	121.87	211.8	1,556.1	606.0	570.2	35.87	16.897	
6,299.2	5,891.9	5,842.7	5,841.3	38.8	2.0	123.88	210.9	1,554.7	619.1	583.5	35.64	17.372	
6,300.0	5,892.7	5,843.5	5,842.0	38.8	2.0	123.89	210.9	1,554.7	619.2	583.6	35.64	17.376	
6,397.6	5,988.5	5,940.0	5,938.5	39.1	2.0	125.55	210.1	1,553.6	630.8	595.4	35.42	17.810	
6,400.0	5,990.9	5,942.4	5,940.9	39.1	2.0	125.59	210.1	1,553.5	631.1	595.7	35.42	17.819	
6,496.0	6,085.8	6,039.2	6,037.8	39.4	2.0	126.89	209.4	1,552.7	640.7	605.4	35.23	18.187	
6,500.0	6,089.7	6,043.3	6,041.8	39.4	2.0	126.94	209.4	1,552.7	641.0	605.8	35.22	18.200	
6,594.5	6,183.5	6,138.9	6,137.4	39.6	2.0	127.91	209.1	1,552.1	648.3	613.2	35.08	18.483	
6,600.0	6,189.0	6,144.4	6,142.9	39.7	2.1	127.96	209.1	1,552.1	648.7	613.6	35.07	18.496	
6,692.9	6,281.5	6,236.9	6,235.5	39.8	2.1	128.63	208.9	1,551.5	653.9	618.9	34.97	18.698	
6,700.0	6,288.6	6,244.1	6,242.6	39.8	2.1	128.67	208.9	1,551.4	654.2	619.2	34.97	18.710	
6,791.3	6,379.8	6,335.1	6,333.7	40.0	2.1	129.09	208.7	1,550.8	657.4	622.5	34.91	18.830	
6,800.0	6,388.5	6,343.7	6,342.2	40.0	2.1	129.12	208.7	1,550.7	657.6	622.7	34.91	18.836	
6,889.7	6,478.2	6,432.5	6,431.0	40.1	2.1	129.29	208.5	1,550.0	658.9	624.0	34.90	18.878	
6,890.4	6,478.9	6,433.1	6,431.6	40.1	2.1	-167.40	208.5	1,550.0	658.9	624.0	34.90	18.878	
6,900.0	6,488.5	6,442.6	6,441.1	40.1	2.1	-167.39	208.5	1,549.9	658.9	624.0	34.91	18.875	
6,920.4	6,508.9	6,462.8	6,461.3	40.1	2.1	-167.38	208.4	1,549.7	659.0	624.1	34.93	18.869	
6,950.0	6,538.5	6,492.1	6,490.6	40.1	2.2	12.66	208.3	1,549.4	658.6	623.7	34.85	18.899	
6,988.2	6,576.6	6,529.6	6,528.1	40.1	2.2	12.78	208.1	1,549.1	656.3	621.6	34.70	18.912	
7,000.0	6,588.3	6,541.1	6,539.7	40.1	2.2	12.83	208.1	1,549.0	655.2	620.6	34.65	18.911	
7,050.0	6,637.8	6,589.8	6,588.3	40.1	2.2	13.12	207.8	1,548.5	648.5	614.1	34.35	18.881	
7,086.6	6,673.6	6,626.1	6,624.6	40.1	2.2	13.43	207.6	1,548.2	641.5	607.4	34.05	18.841	
7,100.0	6,686.6	6,639.4	6,637.9	40.1	2.2	13.57	207.5	1,548.1	638.5	604.5	33.92	18.823	
7,150.0	6,734.6	6,688.5	6,687.0	40.0	2.2	14.17	207.2	1,547.8	625.1	591.7	33.34	18.749	
7,185.0	6,767.5	6,721.9	6,720.5	39.9	2.2	14.70	207.1	1,547.6	613.7	580.9	32.83	18.693	
7,200.0	6,781.4	6,736.0	6,734.5	39.9	2.2	14.95	207.0	1,547.6	608.4	575.8	32.59	18.670	
7,250.0	6,827.0	6,781.9	6,780.4	39.8	2.2	15.96	206.9	1,547.3	588.6	557.0	31.65	18.600	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN 30-2 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,283.4	6,856.6	6,811.6	6,810.1	39.8	2.2	16.79	206.8	1,547.1	573.7	542.8	30.90	18.563	
7,300.0	6,871.0	6,825.8	6,824.3	39.7	2.2	17.24	206.8	1,547.0	565.8	535.3	30.50	18.550	
7,350.0	6,913.2	6,867.7	6,866.2	39.6	2.2	18.85	206.6	1,546.6	540.2	511.1	29.15	18.534	
7,381.9	6,939.1	6,893.4	6,891.9	39.5	2.3	20.09	206.5	1,546.4	522.6	494.4	28.17	18.548	
7,400.0	6,953.4	6,907.7	6,906.2	39.4	2.3	20.88	206.5	1,546.3	512.0	484.5	27.57	18.569	
7,450.0	6,991.5	6,945.8	6,944.3	39.3	2.3	23.45	206.3	1,546.0	481.4	455.6	25.78	18.673	
7,480.3	7,013.5	6,967.8	6,966.3	39.2	2.3	25.32	206.2	1,545.8	461.7	437.1	24.59	18.772	
7,500.0	7,027.3	6,981.6	6,980.1	39.1	2.3	26.70	206.2	1,545.6	448.5	424.7	23.79	18.854	
7,550.0	7,060.5	7,014.9	7,013.4	39.0	2.3	30.83	206.0	1,545.3	413.6	392.0	21.68	19.078	
7,578.7	7,078.4	7,032.9	7,031.4	38.8	2.3	33.68	206.0	1,545.1	392.9	372.4	20.50	19.165	
7,600.0	7,091.0	7,045.6	7,044.1	38.8	2.3	36.05	205.9	1,545.0	377.2	357.5	19.68	19.166	
7,650.0	7,118.7	7,073.5	7,072.0	38.6	2.3	42.54	205.8	1,544.7	339.6	321.3	18.24	18.619	
7,677.1	7,132.5	7,087.3	7,085.8	38.5	2.3	46.63	205.8	1,544.5	318.8	300.9	17.90	17.812	
7,700.0	7,143.4	7,098.3	7,096.8	38.4	2.3	50.35	205.7	1,544.4	301.3	283.4	17.90	16.832	
7,750.0	7,165.0	7,119.9	7,118.4	38.2	2.3	59.17	205.7	1,544.2	263.3	244.6	18.74	14.054	
7,775.6	7,174.9	7,129.8	7,128.3	38.1	2.3	63.86	205.6	1,544.1	244.4	224.9	19.43	12.578	
7,800.0	7,183.5	7,138.5	7,137.0	38.1	2.3	68.30	205.6	1,544.0	226.8	206.7	20.12	11.276	
7,850.0	7,198.6	7,153.8	7,152.3	37.9	2.3	76.74	205.5	1,543.8	193.8	172.4	21.39	9.061	
7,874.0	7,204.7	7,160.0	7,158.5	37.8	2.3	80.25	205.5	1,543.7	180.1	158.2	21.88	8.230	
7,900.0	7,210.4	7,165.8	7,164.3	37.7	2.3	83.53	205.4	1,543.6	167.4	145.1	22.30	7.508	
7,950.0	7,218.8	7,174.5	7,173.0	37.6	2.3	88.06	205.4	1,543.6	152.2	129.4	22.85	6.661	
7,972.4	7,221.4	7,177.2	7,175.7	37.5	2.3	89.27	205.4	1,543.5	150.2	127.2	22.99	6.534	
7,975.1	7,221.6	7,177.5	7,176.0	37.5	2.3	89.38	205.4	1,543.5	150.2	127.2	23.00	6.529	CC, ES, SF
8,000.0	7,223.7	7,179.7	7,178.2	37.4	2.3	90.04	205.3	1,543.5	152.2	129.2	23.06	6.602	
8,050.0	7,225.1	7,181.5	7,179.9	37.3	2.3	89.38	205.3	1,543.5	167.7	144.8	22.94	7.311	
8,055.3	7,225.0	7,181.4	7,179.9	37.3	2.3	89.16	205.3	1,543.5	170.2	147.2	22.92	7.425	
8,070.8	7,224.8	7,181.3	7,179.8	37.3	2.3	89.12	205.3	1,543.5	178.0	155.1	22.91	7.768	
8,100.0	7,224.4	7,181.1	7,179.6	37.2	2.3	89.03	205.3	1,543.5	195.2	172.3	22.91	8.520	
8,169.3	7,223.5	7,180.6	7,179.1	37.1	2.3	88.84	205.3	1,543.5	245.3	222.3	22.99	10.670	
8,200.0	7,223.0	7,180.4	7,178.9	37.1	2.3	88.75	205.3	1,543.5	270.2	247.2	23.02	11.737	
8,267.7	7,222.1	7,179.9	7,178.3	37.0	2.3	88.56	205.3	1,543.5	328.6	305.4	23.22	14.156	
8,300.0	7,221.7	7,179.6	7,178.1	37.0	2.3	88.46	205.3	1,543.5	357.7	334.4	23.31	15.346	
8,366.1	7,220.7	7,179.1	7,177.6	37.0	2.3	88.27	205.4	1,543.5	418.6	395.0	23.60	17.734	
8,400.0	7,220.3	7,178.9	7,177.3	37.0	2.3	88.17	205.4	1,543.5	450.4	426.6	23.76	18.959	
8,464.5	7,219.4	7,178.4	7,176.9	37.1	2.3	87.99	205.4	1,543.5	511.7	487.5	24.15	21.191	
8,500.0	7,218.9	7,178.1	7,176.6	37.1	2.3	87.88	205.4	1,543.5	545.7	521.3	24.36	22.400	
8,563.0	7,218.0	7,177.6	7,176.1	37.2	2.3	87.70	205.4	1,543.5	606.5	581.6	24.83	24.424	
8,600.0	7,217.5	7,177.3	7,175.8	37.3	2.3	87.59	205.4	1,543.5	642.4	617.3	25.11	25.587	
8,661.4	7,216.7	7,176.8	7,175.3	37.5	2.3	87.41	205.4	1,543.5	702.2	676.6	25.64	27.384	
8,700.0	7,216.1	7,176.5	7,175.0	37.6	2.3	87.29	205.4	1,543.5	740.0	714.0	25.98	28.482	
8,759.8	7,215.3	7,176.1	7,174.6	37.8	2.3	87.12	205.4	1,543.5	798.7	772.1	26.57	30.055	
8,800.0	7,214.8	7,175.8	7,174.3	38.0	2.3	87.00	205.4	1,543.5	838.2	811.2	26.97	31.076	
8,858.2	7,214.0	7,175.3	7,173.8	38.3	2.3	86.82	205.4	1,543.5	895.5	867.9	27.61	32.439	
8,900.0	7,213.4	7,175.0	7,173.5	38.5	2.3	86.70	205.4	1,543.5	936.7	908.6	28.06	33.380	
8,956.7	7,212.6	7,174.5	7,173.0	38.8	2.3	86.52	205.4	1,543.6	992.7	964.0	28.73	34.551	
9,000.0	7,212.0	7,174.2	7,172.7	39.1	2.3	86.39	205.4	1,543.6	1,035.5	1,006.3	29.24	35.413	
9,055.1	7,211.2	7,173.7	7,172.2	39.5	2.3	86.23	205.4	1,543.6	1,090.1	1,060.1	29.93	36.415	
9,100.0	7,210.6	7,173.4	7,171.9	39.8	2.3	86.09	205.4	1,543.6	1,134.6	1,104.1	30.50	37.200	
9,153.5	7,209.9	7,172.9	7,171.4	40.3	2.3	85.92	205.4	1,543.6	1,187.6	1,156.4	31.21	38.056	
9,200.0	7,209.2	7,172.6	7,171.1	40.7	2.3	85.78	205.4	1,543.6	1,233.8	1,201.9	31.82	38.769	
9,251.9	7,208.5	7,172.1	7,170.6	41.1	2.3	85.62	205.4	1,543.6	1,285.3	1,252.8	32.54	39.498	
9,300.0	7,207.9	7,171.8	7,170.2	41.6	2.3	85.47	205.4	1,543.6	1,333.1	1,299.9	33.21	40.145	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN 30-2 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,350.4	7,207.2	7,171.3	7,169.8	42.1	2.3	85.31	205.4	1,543.6	1,383.1	1,349.2	33.93	40.767	
9,400.0	7,206.5	7,170.9	7,169.4	42.6	2.3	85.16	205.4	1,543.6	1,432.5	1,397.8	34.64	41.354	
9,448.8	7,205.8	7,170.5	7,169.0	43.1	2.3	85.00	205.4	1,543.6	1,481.0	1,445.6	35.36	41.884	
9,500.0	7,205.1	7,170.1	7,168.6	43.7	2.3	84.84	205.4	1,543.6	1,531.9	1,495.8	36.12	42.418	
9,547.2	7,204.4	7,169.7	7,168.2	44.2	2.3	84.69	205.4	1,543.6	1,579.0	1,542.1	36.83	42.870	
9,600.0	7,203.7	7,169.3	7,167.8	44.8	2.3	84.53	205.4	1,543.6	1,631.5	1,593.9	37.63	43.356	
9,645.6	7,203.1	7,168.9	7,167.4	45.4	2.3	84.38	205.4	1,543.6	1,677.0	1,638.6	38.34	43.742	
9,700.0	7,202.3	7,168.4	7,166.9	46.1	2.3	84.21	205.4	1,543.6	1,731.1	1,691.9	39.18	44.185	
9,744.1	7,201.7	7,168.0	7,166.5	46.6	2.3	84.06	205.4	1,543.6	1,775.0	1,735.1	39.87	44.516	
9,800.0	7,201.0	7,167.6	7,166.1	47.3	2.3	83.88	205.4	1,543.6	1,830.7	1,790.0	40.75	44.922	
9,842.5	7,200.4	7,167.2	7,165.7	47.9	2.3	83.75	205.4	1,543.6	1,873.1	1,831.7	41.43	45.206	
9,900.0	7,199.6	7,166.7	7,165.2	48.7	2.3	83.56	205.4	1,543.6	1,930.4	1,888.1	42.35	45.577	
9,940.9	7,199.0	7,166.4	7,164.8	49.2	2.3	83.42	205.4	1,543.6	1,971.2	1,928.2	43.02	45.822	
10,000.0	7,198.2	7,165.8	7,164.3	50.1	2.3	83.23	205.4	1,543.6	2,030.1	1,986.1	43.98	46.164	
10,039.3	7,197.7	7,165.5	7,164.0	50.6	2.3	83.10	205.4	1,543.7	2,069.4	2,024.7	44.62	46.375	
10,100.0	7,196.8	7,165.0	7,163.5	51.5	2.3	82.90	205.4	1,543.7	2,129.8	2,084.2	45.62	46.690	
10,137.8	7,196.3	7,164.6	7,163.1	52.0	2.3	82.78	205.4	1,543.7	2,167.5	2,121.3	46.24	46.873	
10,200.0	7,195.4	7,164.1	7,162.6	52.9	2.3	82.57	205.4	1,543.7	2,229.6	2,182.3	47.27	47.165	
10,236.2	7,194.9	7,163.8	7,162.3	53.5	2.3	82.45	205.4	1,543.7	2,265.7	2,217.8	47.88	47.323	
10,300.0	7,194.1	7,163.2	7,161.7	54.4	2.3	82.23	205.4	1,543.7	2,329.4	2,280.4	48.94	47.594	
10,334.6	7,193.6	7,162.9	7,161.4	55.0	2.3	82.12	205.4	1,543.7	2,363.9	2,314.4	49.53	47.732	
10,400.0	7,192.7	7,162.3	7,160.8	56.0	2.3	81.90	205.5	1,543.7	2,429.2	2,378.6	50.62	47.985	
10,433.0	7,192.2	7,162.0	7,160.5	56.5	2.3	81.79	205.5	1,543.7	2,462.2	2,411.0	51.18	48.104	
10,500.0	7,191.3	7,161.4	7,159.9	57.5	2.3	81.56	205.5	1,543.7	2,529.0	2,476.7	52.32	48.341	
10,531.5	7,190.9	7,161.1	7,159.6	58.0	2.3	81.45	205.5	1,543.7	2,560.4	2,507.6	52.85	48.445	
10,600.0	7,189.9	7,160.5	7,159.0	59.1	2.3	81.22	205.5	1,543.7	2,628.8	2,574.8	54.02	48.667	
10,629.9	7,189.5	7,160.2	7,158.7	59.6	2.3	81.11	205.5	1,543.7	2,658.7	2,604.1	54.53	48.759	
10,700.0	7,188.5	7,159.6	7,158.1	60.7	2.3	80.87	205.5	1,543.7	2,728.7	2,672.9	55.72	48.968	
10,728.3	7,188.1	7,159.3	7,157.8	61.1	2.3	80.77	205.5	1,543.7	2,756.9	2,700.7	56.21	49.048	
10,800.0	7,187.2	7,158.6	7,157.1	62.3	2.3	80.52	205.5	1,543.7	2,828.5	2,771.1	57.44	49.246	
10,826.7	7,186.8	7,158.4	7,156.9	62.7	2.3	80.43	205.5	1,543.7	2,855.2	2,797.3	57.90	49.316	
10,900.0	7,185.8	7,157.7	7,156.2	63.9	2.3	80.17	205.5	1,543.7	2,928.4	2,869.2	59.15	49.504	
10,925.2	7,185.4	7,157.5	7,156.0	64.3	2.3	80.09	205.5	1,543.7	2,953.5	2,893.9	59.59	49.566	
11,000.0	7,184.4	7,156.8	7,155.2	65.6	2.3	79.82	205.5	1,543.7	3,028.2	2,967.4	60.88	49.745	
11,023.6	7,184.1	7,156.5	7,155.0	66.0	2.3	79.74	205.5	1,543.8	3,051.8	2,990.5	61.28	49.799	
11,100.0	7,183.0	7,155.8	7,154.3	67.2	2.3	79.47	205.5	1,543.8	3,128.1	3,065.5	62.60	49.971	
11,122.0	7,182.7	7,155.6	7,154.1	67.6	2.3	79.39	205.5	1,543.8	3,150.1	3,087.1	62.98	50.018	
11,200.0	7,181.6	7,154.8	7,153.3	68.9	2.3	79.11	205.5	1,543.8	3,228.0	3,163.7	64.32	50.183	
11,220.4	7,181.3	7,154.6	7,153.1	69.3	2.3	79.04	205.5	1,543.8	3,248.4	3,183.8	64.68	50.225	
11,300.0	7,180.2	7,153.9	7,152.4	70.6	2.3	78.75	205.5	1,543.8	3,327.9	3,261.8	66.05	50.384	
11,318.9	7,180.0	7,153.7	7,152.2	70.9	2.3	78.68	205.5	1,543.8	3,346.8	3,280.4	66.38	50.420	
11,400.0	7,178.9	7,152.9	7,151.4	72.3	2.3	78.39	205.5	1,543.8	3,427.8	3,360.0	67.78	50.574	
11,417.3	7,178.6	7,152.7	7,151.2	72.6	2.3	78.32	205.5	1,543.8	3,445.1	3,377.0	68.08	50.606	
11,500.0	7,177.5	7,151.9	7,150.4	74.0	2.3	78.02	205.5	1,543.8	3,527.7	3,458.2	69.50	50.756	
11,515.7	7,177.3	7,151.7	7,150.2	74.3	2.3	77.97	205.5	1,543.8	3,543.4	3,473.6	69.78	50.783	
11,600.0	7,176.1	7,150.9	7,149.4	75.7	2.3	77.66	205.5	1,543.8	3,627.6	3,556.4	71.23	50.929	
11,614.1	7,175.9	7,150.7	7,149.2	76.0	2.3	77.60	205.5	1,543.8	3,641.7	3,570.3	71.47	50.953	
11,700.0	7,174.7	7,149.9	7,148.4	77.5	2.3	77.29	205.5	1,543.8	3,727.5	3,654.6	72.95	51.096	
11,712.6	7,174.5	7,149.8	7,148.2	77.7	2.3	77.24	205.5	1,543.8	3,740.1	3,666.9	73.17	51.116	
11,800.0	7,173.3	7,148.9	7,147.4	79.2	2.3	76.91	205.5	1,543.8	3,827.4	3,752.8	74.67	51.257	
11,811.0	7,173.2	7,148.7	7,147.2	79.4	2.3	76.87	205.5	1,543.8	3,838.4	3,763.6	74.86	51.274	
11,900.0	7,172.0	7,147.8	7,146.3	81.0	2.3	76.54	205.5	1,543.8	3,927.4	3,851.0	76.39	51.413	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN 30-2 - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 usft

Survey Program: 100-GYD_CT

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,909.4	7,171.8	7,147.7	7,146.2	81.1	2.3	76.50	205.5	1,543.8	3,936.8	3,860.2	76.55	51.427	
12,000.0	7,170.6	7,146.8	7,145.3	82.7	2.3	76.16	205.5	1,543.9	4,027.3	3,949.2	78.10	51.564	
12,007.8	7,170.5	7,146.7	7,145.2	82.9	2.3	76.13	205.5	1,543.9	4,035.1	3,956.9	78.24	51.576	
12,041.2	7,170.0	7,146.4	7,144.9	83.5	2.3	76.01	205.5	1,543.9	4,068.4	3,989.6	78.81	51.625	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN 30-31 - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 usft

Survey Program: 100-GYD_CT

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	44.70	409.1	404.8	576.3				
98.4	98.4	76.6	76.6	0.1	0.0	44.72	408.6	404.6	575.1	575.0	0.13	4,582.294	
100.0	100.0	78.4	78.4	0.1	0.0	44.72	408.6	404.6	575.1	574.9	0.13	4,485.832	
196.8	196.8	178.8	178.8	0.3	0.2	44.79	406.9	403.9	573.4	572.9	0.49	1,175.724	
200.0	200.0	182.0	182.0	0.3	0.2	44.79	406.8	403.9	573.4	572.9	0.50	1,146.559	
295.3	295.3	281.3	281.3	0.5	0.3	44.87	404.7	402.9	571.2	570.4	0.82	699.818	
300.0	300.0	286.3	286.2	0.5	0.3	44.88	404.5	402.8	571.1	570.3	0.83	687.011	
393.7	393.7	383.2	383.1	0.7	0.4	45.00	401.7	401.6	568.3	567.2	1.11	510.252	
400.0	400.0	389.7	389.6	0.8	0.4	45.00	401.5	401.5	568.1	567.0	1.13	501.591	
492.1	492.1	481.2	481.1	1.0	0.4	45.16	398.3	400.5	565.1	563.7	1.40	404.445	
500.0	500.0	489.0	488.8	1.0	0.4	45.17	398.0	400.4	564.9	563.4	1.42	397.856	
590.5	590.5	579.8	579.5	1.2	0.5	45.36	394.7	399.6	562.0	560.3	1.67	335.692	
600.0	600.0	589.3	589.0	1.2	0.5	45.37	394.4	399.6	561.7	560.0	1.70	330.286	
689.0	689.0	677.7	677.4	1.4	0.5	45.55	391.2	398.8	558.9	556.9	1.95	287.197	
700.0	700.0	688.7	688.3	1.4	0.6	45.57	390.8	398.7	558.5	556.6	1.98	282.615	
787.4	787.4	774.7	774.3	1.6	0.6	45.75	387.8	398.0	555.9	553.7	2.21	251.087	
800.0	800.0	787.1	786.7	1.7	0.6	45.77	387.4	397.9	555.5	553.3	2.25	247.106	
885.8	885.8	872.4	872.0	1.9	0.6	45.92	384.7	397.2	553.2	550.7	2.48	223.069	
900.0	900.0	886.5	886.1	1.9	0.7	45.95	384.2	397.1	552.8	550.3	2.52	219.530	
984.2	984.2	970.2	969.7	2.1	0.7	46.09	381.7	396.5	550.5	547.8	2.74	200.621	
1,000.0	1,000.0	985.8	985.3	2.1	0.7	46.12	381.2	396.4	550.1	547.3	2.79	197.432	
1,082.7	1,082.7	1,068.4	1,067.9	2.3	0.7	46.26	378.8	395.7	548.0	545.0	3.01	182.212	
1,100.0	1,100.0	1,085.7	1,085.2	2.3	0.7	46.29	378.2	395.6	547.5	544.5	3.05	179.303	
1,181.1	1,181.1	1,166.2	1,165.6	2.5	0.8	46.42	375.9	395.0	545.5	542.2	3.27	166.861	
1,200.0	1,200.0	1,184.9	1,184.3	2.6	0.8	46.45	375.4	394.9	545.0	541.7	3.32	164.202	
1,279.5	1,279.5	1,262.1	1,261.5	2.7	0.8	46.55	373.5	394.3	543.2	539.7	3.53	153.954	
1,300.0	1,300.0	1,281.9	1,281.3	2.8	0.8	46.58	373.0	394.2	542.8	539.2	3.58	151.530	
1,377.9	1,377.9	1,358.9	1,358.3	3.0	0.9	46.65	371.6	393.7	541.4	537.6	3.79	143.003	
1,400.0	1,400.0	1,380.9	1,380.3	3.0	0.9	46.67	371.2	393.5	541.0	537.2	3.84	140.761	
1,450.0	1,450.0	1,430.9	1,430.3	3.1	0.9	46.69	370.5	393.0	540.2	536.2	3.97	135.944	
1,476.4	1,476.4	1,457.3	1,456.7	3.2	0.9	-16.61	370.1	392.7	539.6	535.6	4.05	133.156	
1,500.0	1,500.0	1,481.0	1,480.4	3.2	0.9	-16.62	369.8	392.5	538.9	534.8	4.11	130.983	
1,574.8	1,574.8	1,556.0	1,555.3	3.4	0.9	-16.71	368.8	391.6	535.4	531.1	4.31	124.330	
1,600.0	1,599.9	1,581.2	1,580.6	3.4	0.9	-16.76	368.6	391.2	533.8	529.4	4.37	122.119	
1,673.2	1,673.0	1,654.4	1,653.8	3.6	1.0	-16.99	367.9	389.9	527.9	523.3	4.56	115.720	
1,700.0	1,699.7	1,681.1	1,680.5	3.7	1.0	-17.10	367.8	389.4	525.3	520.6	4.63	113.418	
1,771.6	1,771.0	1,752.2	1,751.5	3.8	1.0	-17.49	367.5	387.8	517.1	512.3	4.82	107.287	
1,800.0	1,799.1	1,780.1	1,779.4	3.9	1.0	-17.67	367.5	387.1	513.5	508.6	4.89	104.923	
1,870.1	1,868.6	1,848.8	1,848.1	4.1	1.0	-18.20	367.6	385.4	503.3	498.2	5.08	99.059	
1,900.0	1,898.2	1,878.0	1,877.3	4.1	1.0	-18.46	367.6	384.6	498.5	493.3	5.16	96.623	
1,968.5	1,965.7	1,944.4	1,943.7	4.3	1.1	-19.10	367.7	383.1	486.5	481.2	5.34	91.025	
2,000.0	1,996.6	1,974.8	1,974.1	4.4	1.1	-19.43	367.8	382.4	480.6	475.1	5.43	88.519	
2,066.9	2,062.2	2,039.4	2,038.7	4.6	1.1	-20.19	367.9	381.1	467.0	461.4	5.62	83.134	
2,100.0	2,094.4	2,071.3	2,070.5	4.7	1.1	-20.61	367.9	380.6	459.8	454.1	5.71	80.542	
2,165.3	2,157.9	2,134.3	2,133.5	5.0	1.1	-21.51	367.9	379.6	444.7	438.8	5.90	75.332	
2,200.0	2,191.5	2,167.7	2,166.9	5.1	1.1	-22.06	368.0	379.0	436.1	430.1	6.00	72.641	
2,263.8	2,252.9	2,229.2	2,228.4	5.3	1.1	-23.19	368.1	378.0	419.6	413.4	6.21	67.587	
2,300.0	2,287.6	2,264.1	2,263.3	5.5	1.2	-23.91	368.1	377.4	409.6	403.3	6.32	64.766	
2,362.2	2,346.9	2,323.6	2,322.8	5.8	1.2	-25.29	368.0	376.4	391.6	385.1	6.54	59.857	
2,400.0	2,382.7	2,359.3	2,358.5	6.0	1.2	-26.23	367.9	375.8	380.2	373.5	6.68	56.912	
2,460.6	2,439.8	2,416.2	2,415.4	6.3	1.2	-27.94	367.7	374.8	361.1	354.2	6.92	52.154	
2,500.0	2,476.6	2,452.9	2,452.0	6.5	1.2	-29.19	367.6	374.1	348.3	341.2	7.09	49.140	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN 30-31 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,559.0	2,531.6	2,507.4	2,506.6	6.9	1.2	-31.35	367.4	373.2	328.5	321.1	7.37	44.586	
2,600.0	2,569.4	2,545.1	2,544.2	7.1	1.2	-33.06	367.3	372.5	314.4	306.8	7.57	41.513	
2,657.5	2,622.0	2,597.5	2,596.6	7.5	1.3	-35.83	367.1	371.6	294.2	286.3	7.91	37.199	
2,700.0	2,660.7	2,635.8	2,635.0	7.8	1.3	-38.19	367.0	370.9	279.1	271.0	8.18	34.124	
2,755.9	2,711.1	2,685.8	2,685.0	8.2	1.3	-41.78	366.8	369.9	259.3	250.7	8.60	30.149	
2,800.0	2,750.6	2,725.3	2,724.5	8.6	1.3	-45.12	366.7	369.2	243.8	234.8	8.97	27.180	
2,832.3	2,779.2	2,754.1	2,753.3	8.8	1.3	-47.88	366.5	368.6	232.5	223.3	9.27	25.079	
2,854.3	2,798.8	2,773.7	2,772.9	9.0	1.3	-49.80	366.4	368.1	225.1	215.6	9.49	23.714	
2,900.0	2,839.3	2,814.0	2,813.1	9.4	1.3	-54.11	366.1	367.1	210.4	200.4	9.97	21.110	
2,952.7	2,886.0	2,860.1	2,859.2	9.9	1.4	-59.70	365.7	365.9	195.2	184.6	10.56	18.486	
3,000.0	2,927.8	2,901.3	2,900.4	10.3	1.4	-65.30	365.4	364.9	183.6	172.4	11.11	16.526	
3,051.2	2,973.2	2,946.1	2,945.1	10.7	1.4	-71.99	365.0	363.7	173.6	161.9	11.71	14.823	
3,100.0	3,016.4	2,988.7	2,987.7	11.2	1.4	-78.87	364.6	362.5	167.0	154.7	12.25	13.627	
3,149.6	3,060.4	3,032.0	3,031.0	11.6	1.4	-86.21	364.2	361.2	163.6	150.9	12.76	12.828	
3,171.6	3,079.8	3,051.1	3,050.2	11.8	1.4	-89.51	364.0	360.6	163.3	150.3	12.95	12.607	CC, ES
3,200.0	3,105.0	3,076.0	3,075.0	12.1	1.4	-93.78	363.8	359.9	163.9	150.7	13.18	12.435	
3,248.0	3,147.5	3,117.8	3,116.7	12.5	1.4	-100.86	363.3	358.6	167.5	154.0	13.49	12.417	SF
3,300.0	3,193.6	3,162.8	3,161.8	13.0	1.5	-108.14	362.8	357.2	175.1	161.3	13.73	12.754	
3,346.4	3,234.7	3,203.0	3,201.9	13.4	1.5	-114.17	362.3	355.8	184.6	170.8	13.86	13.323	
3,400.0	3,282.2	3,248.7	3,247.6	13.9	1.5	-120.40	361.7	354.1	198.5	184.6	13.94	14.243	
3,444.9	3,321.9	3,286.9	3,285.7	14.3	1.5	-125.07	361.2	352.6	212.2	198.2	13.97	15.193	
3,500.0	3,370.8	3,335.1	3,333.9	14.8	1.5	-130.28	360.6	350.5	231.0	217.0	13.96	16.548	
3,543.3	3,409.1	3,373.5	3,372.3	15.2	1.5	-133.94	360.0	349.0	246.8	232.8	13.94	17.706	
3,600.0	3,459.3	3,423.8	3,422.5	15.8	1.5	-138.12	359.1	347.2	268.5	254.6	13.91	19.303	
3,641.7	3,496.3	3,460.6	3,459.3	16.1	1.6	-140.81	358.5	346.1	285.1	271.2	13.89	20.517	
3,700.0	3,547.9	3,512.2	3,510.9	16.7	1.6	-144.12	357.6	344.5	308.9	295.0	13.89	22.243	
3,740.1	3,583.5	3,547.9	3,546.5	17.1	1.6	-146.12	357.0	343.6	325.7	311.8	13.90	23.437	
3,800.0	3,636.5	3,601.1	3,599.8	17.6	1.6	-148.76	356.2	342.3	351.2	337.3	13.93	25.208	
3,838.6	3,670.7	3,634.7	3,633.3	18.0	1.6	-150.24	355.8	341.6	367.9	353.9	13.97	26.328	
3,900.0	3,725.1	3,688.0	3,686.6	18.6	1.6	-152.34	355.1	340.3	394.9	380.8	14.05	28.097	
3,937.0	3,757.9	3,720.2	3,718.8	18.9	1.6	-153.48	354.6	339.6	411.4	397.2	14.11	29.147	
4,000.0	3,813.7	3,775.0	3,773.6	19.5	1.7	-155.23	353.9	338.2	439.7	425.5	14.23	30.906	
4,035.4	3,845.1	3,805.9	3,804.4	19.9	1.7	-156.12	353.5	337.5	455.8	441.5	14.30	31.874	
4,100.0	3,902.3	3,862.1	3,860.6	20.5	1.7	-157.61	352.8	336.1	485.3	470.9	14.44	33.604	
4,133.8	3,932.2	3,891.5	3,890.1	20.8	1.7	-158.31	352.4	335.4	500.9	486.4	14.52	34.489	
4,200.0	3,990.8	3,950.1	3,948.6	21.5	1.7	-159.60	351.7	334.0	531.5	516.8	14.69	36.183	
4,232.3	4,019.4	3,978.8	3,977.3	21.8	1.7	-160.18	351.3	333.3	546.5	531.7	14.78	36.984	
4,300.0	4,079.4	4,040.2	4,038.7	22.4	1.8	-161.30	350.7	332.0	577.9	562.9	14.96	38.622	
4,330.7	4,106.6	4,068.4	4,066.9	22.7	1.8	-161.78	350.5	331.5	592.1	577.0	15.05	39.339	
4,400.0	4,168.0	4,130.5	4,129.0	23.4	1.8	-162.73	350.1	330.5	624.0	608.8	15.26	40.890	
4,429.1	4,193.8	4,155.9	4,154.3	23.7	1.8	-163.09	350.0	330.1	637.5	622.1	15.35	41.518	
4,500.0	4,256.6	4,218.0	4,216.5	24.4	1.8	-163.90	349.7	329.1	670.4	654.8	15.59	43.004	
4,527.5	4,281.0	4,242.5	4,241.0	24.6	1.8	-164.20	349.7	328.7	683.1	667.5	15.68	43.563	
4,600.0	4,345.2	4,307.0	4,305.4	25.3	1.8	-164.92	349.6	327.7	716.8	700.9	15.93	44.988	
4,626.0	4,368.2	4,329.9	4,328.3	25.6	1.9	-165.16	349.6	327.4	728.9	712.9	16.03	45.482	
4,700.0	4,433.8	4,395.3	4,393.7	26.3	1.9	-165.79	349.6	326.4	763.3	747.0	16.29	46.852	
4,724.4	4,455.4	4,417.1	4,415.6	26.5	1.9	-165.99	349.7	326.0	774.7	758.3	16.38	47.290	
4,800.0	4,522.3	4,485.2	4,483.6	27.3	1.9	-166.57	349.9	325.1	809.9	793.2	16.66	48.605	
4,822.8	4,542.6	4,505.7	4,504.1	27.5	1.9	-166.73	350.0	324.8	820.5	803.7	16.75	48.988	
4,900.0	4,610.9	4,573.9	4,572.3	28.2	1.9	-167.23	350.4	323.9	856.3	839.3	17.04	50.247	
4,921.2	4,629.8	4,592.7	4,591.1	28.4	1.9	-167.36	350.5	323.6	866.2	849.1	17.12	50.583	
5,000.0	4,699.5	4,665.0	4,663.4	29.2	1.9	-167.83	351.1	322.7	902.8	885.3	17.43	51.798	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN 30-31 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,019.7	4,716.9	4,683.2	4,681.6	29.4	1.9	-167.94	351.2	322.5	911.9	894.4	17.50	52.092	
5,100.0	4,788.1	4,754.5	4,752.9	30.2	2.0	-168.36	351.9	321.9	949.0	931.1	17.82	53.250	
5,118.1	4,804.1	4,770.3	4,768.7	30.4	2.0	-168.44	352.1	321.7	957.3	939.4	17.89	53.505	
5,200.0	4,876.7	4,843.1	4,841.5	31.1	2.0	-168.83	352.7	321.0	995.2	977.0	18.22	54.627	
5,216.5	4,891.3	4,858.0	4,856.3	31.3	2.0	-168.91	352.8	320.9	1,002.9	984.6	18.29	54.847	
5,300.0	4,965.3	4,932.6	4,930.9	32.1	2.0	-169.27	353.5	320.3	1,041.5	1,022.8	18.62	55.929	
5,314.9	4,978.5	4,945.8	4,944.2	32.3	2.0	-169.33	353.6	320.2	1,048.4	1,029.7	18.68	56.118	
5,400.0	5,053.8	5,021.1	5,019.4	33.1	2.0	-169.67	354.1	319.6	1,087.7	1,068.7	19.03	57.165	
5,413.4	5,065.7	5,032.8	5,031.2	33.2	2.0	-169.73	354.2	319.5	1,093.9	1,074.8	19.08	57.325	
5,508.2	5,149.7	5,116.1	5,114.5	34.2	2.0	-170.09	354.6	318.9	1,137.8	1,118.3	19.47	58.435	
5,511.8	5,152.9	5,119.3	5,117.7	34.2	2.0	-170.11	354.6	318.9	1,139.4	1,120.0	19.48	58.487	
5,600.0	5,231.7	5,197.2	5,195.6	34.9	2.0	-170.56	354.9	318.4	1,179.1	1,159.3	19.76	59.670	
5,610.2	5,240.9	5,206.3	5,204.7	35.0	2.0	-170.61	354.9	318.3	1,183.5	1,163.7	19.79	59.809	
5,700.0	5,322.5	5,286.9	5,285.2	35.7	2.1	-171.00	355.1	317.7	1,221.1	1,201.1	20.04	60.950	
5,708.6	5,330.4	5,294.7	5,293.0	35.7	2.1	-171.03	355.2	317.6	1,224.6	1,204.6	20.06	61.058	
5,800.0	5,414.6	5,376.5	5,374.8	36.3	2.1	-171.38	355.2	316.9	1,260.2	1,239.9	20.28	62.130	
5,807.1	5,421.2	5,382.9	5,381.2	36.4	2.1	-171.41	355.2	316.9	1,262.9	1,242.6	20.30	62.212	
5,900.0	5,508.1	5,467.5	5,465.9	36.9	2.1	-171.72	355.1	316.1	1,296.3	1,275.8	20.50	63.224	
5,905.5	5,513.3	5,472.5	5,470.9	37.0	2.1	-171.73	355.0	316.0	1,298.2	1,277.7	20.51	63.283	
6,000.0	5,602.8	5,556.9	5,555.3	37.5	2.2	-172.01	354.6	315.1	1,329.3	1,308.6	20.69	64.246	
6,003.9	5,606.5	5,560.4	5,558.7	37.5	2.2	-172.02	354.5	315.1	1,330.6	1,309.9	20.70	64.286	
6,100.0	5,698.5	5,645.4	5,643.8	38.0	2.2	-172.28	353.6	313.9	1,359.6	1,338.7	20.85	65.217	
6,102.3	5,700.7	5,647.5	5,645.8	38.0	2.2	-172.28	353.6	313.9	1,360.3	1,339.4	20.85	65.240	
6,200.0	5,795.2	5,743.3	5,741.6	38.4	2.2	-172.54	352.0	312.4	1,386.9	1,365.9	20.97	66.134	
6,200.8	5,795.9	5,744.1	5,742.4	38.4	2.2	-172.54	352.0	312.4	1,387.1	1,366.1	20.97	66.141	
6,299.2	5,891.9	5,854.2	5,852.5	38.8	2.2	-172.76	350.9	311.4	1,409.9	1,388.8	21.06	66.934	
6,300.0	5,892.7	5,855.1	5,853.4	38.8	2.2	-172.76	350.9	311.3	1,410.1	1,389.0	21.06	66.939	
6,397.6	5,988.5	5,959.5	5,957.8	39.1	2.3	-172.92	350.5	311.1	1,428.6	1,407.5	21.12	67.639	
6,400.0	5,990.9	5,962.0	5,960.3	39.1	2.3	-172.93	350.5	311.1	1,429.0	1,407.9	21.12	67.655	
6,496.0	6,085.8	6,059.7	6,058.0	39.4	2.3	-173.04	350.3	311.2	1,443.7	1,422.5	21.14	68.302	
6,500.0	6,089.7	6,063.7	6,062.0	39.4	2.3	-173.05	350.3	311.2	1,444.2	1,423.1	21.14	68.326	
6,594.5	6,183.5	6,157.9	6,156.2	39.6	2.3	-173.13	350.3	311.3	1,455.3	1,434.2	21.12	68.910	
6,600.0	6,189.0	6,163.4	6,161.7	39.7	2.3	-173.14	350.3	311.3	1,455.9	1,434.7	21.12	68.940	
6,692.9	6,281.5	6,256.8	6,255.1	39.8	2.3	-173.20	350.2	311.5	1,463.6	1,442.5	21.08	69.436	
6,700.0	6,288.6	6,264.0	6,262.3	39.8	2.3	-173.20	350.2	311.5	1,464.0	1,443.0	21.08	69.468	
6,791.3	6,379.8	6,354.3	6,352.6	40.0	2.3	-173.24	350.2	311.7	1,468.5	1,447.4	21.02	69.867	
6,800.0	6,388.5	6,362.8	6,361.1	40.0	2.3	-173.24	350.2	311.7	1,468.7	1,447.7	21.01	69.898	
6,889.7	6,478.2	6,451.8	6,450.1	40.1	2.3	-173.25	350.2	311.7	1,470.1	1,449.1	20.95	70.175	
6,890.4	6,478.9	6,452.5	6,450.8	40.1	2.3	-109.94	350.2	311.7	1,470.1	1,449.1	20.95	70.177	
6,900.0	6,488.5	6,462.1	6,460.4	40.1	2.3	-109.94	350.3	311.7	1,470.1	1,449.1	20.96	70.131	
6,920.4	6,508.9	6,482.7	6,481.0	40.1	2.3	-109.93	350.3	311.7	1,470.1	1,449.1	20.99	70.029	
6,950.0	6,538.5	6,511.9	6,510.2	40.1	2.3	70.11	350.3	311.7	1,469.8	1,448.9	20.96	70.138	
6,988.2	6,576.6	6,548.6	6,546.9	40.1	2.3	70.26	350.3	311.7	1,469.0	1,448.0	20.92	70.215	
7,000.0	6,588.3	6,560.0	6,558.3	40.1	2.3	70.34	350.4	311.7	1,468.6	1,447.6	20.92	70.214	
7,050.0	6,637.8	6,607.7	6,606.0	40.1	2.3	70.77	350.3	311.6	1,466.2	1,445.3	20.91	70.119	
7,086.6	6,673.6	6,642.6	6,640.9	40.1	2.3	71.22	350.4	311.6	1,463.8	1,442.8	20.94	69.914	
7,100.0	6,686.6	6,655.3	6,653.6	40.1	2.3	71.41	350.4	311.5	1,462.8	1,441.8	20.96	69.804	
7,150.0	6,734.6	6,702.0	6,700.3	40.0	2.3	72.25	350.4	311.3	1,458.4	1,437.3	21.05	69.284	
7,185.0	6,767.5	6,734.8	6,733.1	39.9	2.3	72.94	350.5	311.2	1,454.7	1,433.6	21.15	68.794	
7,200.0	6,781.4	6,748.6	6,746.9	39.9	2.3	73.27	350.5	311.1	1,453.1	1,431.9	21.20	68.547	
7,250.0	6,827.0	6,794.0	6,792.3	39.8	2.3	74.45	350.4	311.0	1,447.0	1,425.6	21.40	67.618	
7,283.4	6,856.6	6,822.8	6,821.1	39.8	2.3	75.31	350.4	310.9	1,442.7	1,421.1	21.56	66.919	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN 30-31 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,300.0	6,871.0	6,836.7	6,835.0	39.7	2.3	75.75	350.4	310.8	1,440.4	1,418.8	21.64	66.548	
7,350.0	6,913.2	6,877.5	6,875.8	39.6	2.3	77.16	350.3	310.6	1,433.4	1,411.5	21.92	65.387	
7,381.9	6,939.1	6,902.7	6,901.0	39.5	2.3	78.10	350.3	310.4	1,428.8	1,406.7	22.11	64.628	
7,400.0	6,953.4	6,917.5	6,915.8	39.4	2.3	78.67	350.2	310.3	1,426.1	1,403.9	22.22	64.176	
7,450.0	6,991.5	6,956.9	6,955.1	39.3	2.4	80.27	350.2	310.1	1,418.8	1,396.3	22.53	62.970	
7,480.3	7,013.5	6,979.5	6,977.8	39.2	2.4	81.25	350.1	310.0	1,414.5	1,391.8	22.71	62.283	
7,500.0	7,027.3	6,993.8	6,992.1	39.1	2.4	81.89	350.1	310.0	1,411.7	1,388.9	22.82	61.860	
7,550.0	7,060.5	7,026.6	7,024.9	39.0	2.4	83.43	350.1	309.8	1,404.9	1,381.8	23.06	60.930	
7,578.7	7,078.4	7,044.1	7,042.4	38.8	2.4	84.27	350.0	309.7	1,401.3	1,378.1	23.17	60.477	
7,600.0	7,091.0	7,056.4	7,054.7	38.8	2.4	84.88	350.0	309.7	1,398.8	1,375.5	23.24	60.187	
7,650.0	7,118.7	7,083.3	7,081.6	38.6	2.4	86.23	350.1	309.5	1,393.5	1,370.1	23.37	59.641	
7,677.1	7,132.5	7,096.7	7,095.0	38.5	2.4	86.90	350.1	309.4	1,391.1	1,367.7	23.41	59.423	
7,700.0	7,143.4	7,108.0	7,106.3	38.4	2.4	87.45	350.1	309.4	1,389.3	1,365.9	23.44	59.281	
7,750.0	7,165.0	7,130.9	7,129.2	38.2	2.4	88.54	350.1	309.3	1,386.4	1,362.9	23.46	59.089	
7,775.6	7,174.9	7,141.3	7,139.6	38.1	2.4	89.02	350.1	309.2	1,385.4	1,361.9	23.46	59.054	
7,800.0	7,183.5	7,150.4	7,148.7	38.1	2.4	89.42	350.1	309.2	1,384.8	1,361.4	23.44	59.078	
7,825.5	7,191.6	7,159.0	7,157.3	38.0	2.4	89.77	350.1	309.1	1,384.6	1,361.2	23.42	59.127	
7,850.0	7,198.6	7,166.4	7,164.7	37.9	2.4	90.05	350.1	309.1	1,384.8	1,361.4	23.38	59.228	
7,874.0	7,204.7	7,172.9	7,171.2	37.8	2.4	90.26	350.1	309.1	1,385.4	1,362.0	23.35	59.339	
7,900.0	7,210.4	7,178.9	7,177.2	37.7	2.4	90.42	350.1	309.1	1,386.4	1,363.1	23.30	59.514	
7,950.0	7,218.8	7,187.8	7,186.1	37.6	2.4	90.51	350.1	309.0	1,389.8	1,366.6	23.20	59.911	
7,972.4	7,221.4	7,190.6	7,188.9	37.5	2.4	90.45	350.1	309.0	1,391.9	1,368.8	23.16	60.107	
8,000.0	7,223.7	7,193.0	7,191.3	37.4	2.4	90.31	350.1	309.0	1,395.0	1,371.9	23.10	60.397	
8,050.0	7,225.1	7,194.5	7,192.8	37.3	2.4	89.81	350.1	309.0	1,402.0	1,379.0	23.00	60.951	
8,055.3	7,225.0	7,194.5	7,192.8	37.3	2.4	89.74	350.1	309.0	1,402.8	1,379.8	22.99	61.013	
8,070.8	7,224.8	7,194.2	7,192.5	37.3	2.4	89.73	350.1	309.0	1,405.4	1,382.4	22.99	61.117	
8,100.0	7,224.4	7,193.8	7,192.1	37.2	2.4	89.71	350.1	309.0	1,410.7	1,387.7	23.00	61.333	
8,169.3	7,223.5	7,192.7	7,191.0	37.1	2.4	89.67	350.1	309.0	1,425.5	1,402.4	23.10	61.707	
8,200.0	7,223.0	7,192.3	7,190.6	37.1	2.4	89.65	350.1	309.0	1,433.1	1,410.0	23.15	61.916	
8,267.7	7,222.1	7,191.3	7,189.6	37.0	2.4	89.60	350.1	309.0	1,452.0	1,428.7	23.36	62.154	
8,300.0	7,221.7	7,190.8	7,189.1	37.0	2.4	89.58	350.1	309.0	1,462.1	1,438.6	23.47	62.309	
8,366.1	7,220.7	7,189.8	7,188.1	37.0	2.4	89.54	350.1	309.0	1,484.6	1,460.8	23.79	62.417	
8,400.0	7,220.3	7,189.3	7,187.6	37.0	2.4	89.52	350.1	309.0	1,497.2	1,473.2	23.95	62.513	
8,464.5	7,219.4	7,188.3	7,186.6	37.1	2.4	89.48	350.1	309.0	1,522.9	1,498.5	24.36	62.509	
8,500.0	7,218.9	7,187.7	7,186.0	37.1	2.4	89.46	350.1	309.0	1,538.0	1,513.4	24.59	62.547	
8,563.0	7,218.0	7,186.8	7,185.1	37.2	2.4	89.42	350.1	309.0	1,566.4	1,541.3	25.08	62.454	
8,600.0	7,217.5	7,186.2	7,184.5	37.3	2.4	89.40	350.1	309.0	1,584.1	1,558.7	25.37	62.437	
8,661.4	7,216.7	7,185.3	7,183.6	37.5	2.4	89.36	350.1	309.0	1,614.8	1,588.8	25.93	62.277	
8,700.0	7,216.1	7,184.7	7,183.0	37.6	2.4	89.33	350.1	309.0	1,635.0	1,608.7	26.28	62.214	
8,759.8	7,215.3	7,183.8	7,182.1	37.8	2.4	89.29	350.1	309.0	1,667.5	1,640.6	26.89	62.009	
8,800.0	7,214.8	7,183.2	7,181.5	38.0	2.4	89.27	350.1	309.0	1,690.2	1,662.9	27.30	61.907	
8,858.2	7,214.0	7,182.3	7,180.6	38.3	2.4	89.23	350.1	309.0	1,724.3	1,696.4	27.96	61.676	
8,900.0	7,213.4	7,181.6	7,179.9	38.5	2.4	89.21	350.1	309.1	1,749.5	1,721.1	28.43	61.545	
8,956.7	7,212.6	7,180.8	7,179.1	38.8	2.4	89.17	350.1	309.1	1,784.7	1,755.6	29.11	61.302	
9,000.0	7,212.0	7,180.1	7,178.4	39.1	2.4	89.14	350.1	309.1	1,812.3	1,782.7	29.64	61.149	
9,055.1	7,211.2	7,179.3	7,177.6	39.5	2.4	89.11	350.1	309.1	1,848.4	1,818.0	30.35	60.905	
9,100.0	7,210.6	7,178.6	7,176.9	39.8	2.4	89.08	350.1	309.1	1,878.4	1,847.5	30.93	60.737	
9,153.5	7,209.9	7,177.7	7,176.0	40.3	2.4	89.04	350.1	309.1	1,915.0	1,883.3	31.65	60.500	
9,200.0	7,209.2	7,177.0	7,175.3	40.7	2.4	89.01	350.1	309.1	1,947.4	1,915.1	32.28	60.323	
9,251.9	7,208.5	7,176.2	7,174.5	41.1	2.4	88.98	350.1	309.1	1,984.2	1,951.2	33.02	60.097	
9,300.0	7,207.9	7,175.5	7,173.8	41.6	2.4	88.95	350.1	309.1	2,018.9	1,985.2	33.70	59.915	
9,350.4	7,207.2	7,174.7	7,173.0	42.1	2.4	88.92	350.1	309.1	2,055.9	2,021.4	34.43	59.704	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN 30-31 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,400.0	7,206.5	7,173.9	7,172.2	42.6	2.4	88.89	350.1	309.1	2,092.8	2,057.7	35.16	59.521	
9,448.8	7,205.8	7,173.2	7,171.5	43.1	2.4	88.86	350.1	309.1	2,129.7	2,093.8	35.90	59.326	
9,500.0	7,205.1	7,172.4	7,170.7	43.7	2.4	88.82	350.1	309.1	2,168.8	2,132.1	36.67	59.144	
9,547.2	7,204.4	7,171.6	7,169.9	44.2	2.4	88.79	350.1	309.1	2,205.4	2,168.0	37.40	58.966	
9,600.0	7,203.7	7,170.8	7,169.1	44.8	2.4	88.76	350.1	309.1	2,246.7	2,208.5	38.22	58.787	
9,645.6	7,203.1	7,170.1	7,168.4	45.4	2.4	88.73	350.1	309.1	2,282.8	2,243.8	38.94	58.625	
9,700.0	7,202.3	7,169.3	7,167.6	46.1	2.4	88.69	350.1	309.1	2,326.2	2,286.4	39.80	58.450	
9,744.1	7,201.7	7,168.6	7,166.9	46.6	2.4	88.66	350.1	309.1	2,361.8	2,321.3	40.51	58.304	
9,800.0	7,201.0	7,167.7	7,166.0	47.3	2.4	88.63	350.1	309.1	2,407.3	2,365.9	41.41	58.135	
9,842.5	7,200.4	7,167.0	7,165.3	47.9	2.4	88.60	350.1	309.1	2,442.2	2,400.1	42.10	58.002	
9,900.0	7,199.6	7,166.1	7,164.4	48.7	2.4	88.56	350.1	309.1	2,489.8	2,446.7	43.05	57.839	
9,940.9	7,199.0	7,165.5	7,163.8	49.2	2.4	88.54	350.1	309.1	2,523.9	2,480.1	43.73	57.721	
10,000.0	7,198.2	7,164.6	7,162.9	50.1	2.4	88.50	350.1	309.1	2,573.5	2,528.8	44.71	57.564	
10,039.3	7,197.7	7,163.9	7,162.2	50.6	2.4	88.47	350.1	309.1	2,606.7	2,561.3	45.37	57.458	
10,100.0	7,196.8	7,163.0	7,161.3	51.5	2.4	88.43	350.1	309.1	2,658.3	2,611.9	46.39	57.307	
10,137.8	7,196.3	7,162.4	7,160.7	52.0	2.4	88.41	350.1	309.1	2,690.6	2,643.6	47.03	57.212	
10,200.0	7,195.4	7,161.4	7,159.7	52.9	2.4	88.37	350.1	309.1	2,744.1	2,696.0	48.09	57.068	
10,236.2	7,194.9	7,160.8	7,159.1	53.5	2.4	88.34	350.1	309.1	2,775.4	2,726.7	48.71	56.983	
10,300.0	7,194.1	7,159.8	7,158.1	54.4	2.4	88.30	350.1	309.1	2,830.9	2,781.1	49.80	56.845	
10,334.6	7,193.6	7,159.3	7,157.6	55.0	2.4	88.28	350.1	309.1	2,861.2	2,810.8	50.40	56.770	
10,400.0	7,192.7	7,158.2	7,156.5	56.0	2.4	88.24	350.1	309.1	2,918.5	2,867.0	51.53	56.638	
10,433.0	7,192.2	7,157.7	7,156.0	56.5	2.4	88.22	350.1	309.1	2,947.7	2,895.6	52.11	56.571	
10,500.0	7,191.3	7,156.6	7,154.9	57.5	2.4	88.17	350.1	309.1	3,006.9	2,953.6	53.27	56.444	
10,531.5	7,190.9	7,156.1	7,154.4	58.0	2.4	88.15	350.1	309.1	3,034.9	2,981.1	53.82	56.385	
10,600.0	7,189.9	7,155.1	7,153.3	59.1	2.4	88.10	350.1	309.1	3,096.0	3,041.0	55.03	56.264	
10,629.9	7,189.5	7,154.6	7,152.9	59.6	2.4	88.09	350.1	309.1	3,122.8	3,067.2	55.55	56.212	
10,700.0	7,188.5	7,153.5	7,151.7	60.7	2.4	88.04	350.1	309.1	3,185.8	3,129.0	56.79	56.096	
10,728.3	7,188.1	7,153.0	7,151.3	61.1	2.4	88.02	350.1	309.1	3,211.3	3,154.0	57.29	56.050	
10,800.0	7,187.2	7,151.9	7,150.1	62.3	2.4	87.97	350.1	309.2	3,276.1	3,217.5	58.57	55.939	
10,826.7	7,186.8	7,151.4	7,149.7	62.7	2.4	87.95	350.1	309.2	3,300.4	3,241.3	59.04	55.899	
10,900.0	7,185.8	7,150.2	7,148.5	63.9	2.4	87.91	350.1	309.2	3,367.0	3,306.6	60.35	55.793	
10,925.2	7,185.4	7,149.8	7,148.1	64.3	2.4	87.89	350.1	309.2	3,389.9	3,329.1	60.80	55.757	
11,000.0	7,184.4	7,148.6	7,146.9	65.6	2.4	87.84	350.1	309.2	3,458.4	3,396.2	62.14	55.656	
11,023.6	7,184.1	7,148.3	7,146.6	66.0	2.4	87.82	350.1	309.2	3,480.0	3,417.4	62.56	55.624	
11,100.0	7,183.0	7,147.0	7,145.3	67.2	2.4	87.77	350.1	309.2	3,550.2	3,486.3	63.94	55.528	
11,122.0	7,182.7	7,146.7	7,145.0	67.6	2.4	87.76	350.1	309.2	3,570.5	3,506.2	64.33	55.500	
11,200.0	7,181.6	7,145.4	7,143.7	68.9	2.4	87.71	350.1	309.2	3,642.5	3,576.8	65.74	55.407	
11,220.4	7,181.3	7,145.1	7,143.4	69.3	2.4	87.69	350.1	309.2	3,661.4	3,595.3	66.11	55.383	
11,300.0	7,180.2	7,143.8	7,142.1	70.6	2.4	87.64	350.1	309.2	3,735.2	3,667.6	67.55	55.295	
11,318.9	7,180.0	7,143.5	7,141.8	70.9	2.4	87.63	350.1	309.2	3,752.7	3,684.8	67.89	55.274	
11,400.0	7,178.9	7,142.2	7,140.5	72.3	2.4	87.57	350.1	309.2	3,828.2	3,758.8	69.37	55.189	
11,417.3	7,178.6	7,141.9	7,140.2	72.6	2.4	87.56	350.1	309.2	3,844.3	3,774.7	69.68	55.171	
11,500.0	7,177.5	7,140.5	7,138.8	74.0	2.4	87.50	350.1	309.2	3,921.6	3,850.4	71.19	55.089	
11,515.7	7,177.3	7,140.3	7,138.6	74.3	2.4	87.49	350.1	309.2	3,936.3	3,864.8	71.47	55.074	
11,600.0	7,176.1	7,138.9	7,137.2	75.7	2.4	87.44	350.1	309.2	4,015.3	3,942.3	73.01	54.995	
11,614.1	7,175.9	7,138.7	7,137.0	76.0	2.4	87.43	350.1	309.2	4,028.6	3,955.3	73.27	54.982	
11,700.0	7,174.7	7,137.3	7,135.6	77.5	2.4	87.37	350.1	309.2	4,109.3	4,034.5	74.84	54.907	
11,712.6	7,174.5	7,137.1	7,135.4	77.7	2.4	87.36	350.1	309.2	4,121.1	4,046.1	75.07	54.896	
11,800.0	7,173.3	7,135.6	7,133.9	79.2	2.4	87.30	350.1	309.2	4,203.6	4,126.9	76.67	54.824	
11,811.0	7,173.2	7,135.4	7,133.7	79.4	2.4	87.29	350.1	309.2	4,214.0	4,137.1	76.88	54.815	
11,900.0	7,172.0	7,134.0	7,132.3	81.0	2.4	87.23	350.1	309.2	4,298.1	4,219.6	78.51	54.746	
11,909.4	7,171.8	7,133.8	7,132.1	81.1	2.4	87.23	350.1	309.2	4,307.0	4,228.3	78.68	54.738	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN 30-31 - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 usft

Survey Program: 100-GYD_CT

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,000.0	7,170.6	7,132.3	7,130.6	82.7	2.4	87.16	350.1	309.2	4,392.9	4,312.5	80.35	54.671	
12,007.8	7,170.5	7,132.2	7,130.5	82.9	2.4	87.16	350.1	309.2	4,400.3	4,319.8	80.50	54.666	
12,041.2	7,170.0	7,131.7	7,129.9	83.5	2.4	87.14	350.1	309.2	4,432.0	4,350.9	81.11	54.642	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN MCCARTY 30-43 - Wellbore #1 - Wellbor

Offset Site Error: 0.0 usft

Survey Program: 100-GYD_CT

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	145.74	-2,378.9	1,620.2	2,878.2				
98.4	98.4	148.3	148.3	0.1	0.1	145.75	-2,377.4	1,618.5	2,876.8	2,876.6	0.21	N/A	
100.0	100.0	150.1	150.1	0.1	0.1	145.75	-2,377.4	1,618.5	2,876.8	2,876.6	0.22	N/A	
196.8	196.8	255.6	255.6	0.3	0.3	145.76	-2,375.4	1,616.5	2,874.3	2,873.7	0.57	5,047.646	
200.0	200.0	258.9	258.8	0.3	0.3	145.76	-2,375.4	1,616.5	2,874.2	2,873.7	0.58	4,960.947	
295.3	295.3	354.4	354.3	0.5	0.4	145.78	-2,373.6	1,614.5	2,871.7	2,870.8	0.87	3,311.470	
300.0	300.0	359.0	358.9	0.5	0.4	145.78	-2,373.5	1,614.4	2,871.5	2,870.7	0.88	3,259.386	
393.7	393.7	446.7	446.5	0.7	0.4	145.79	-2,371.9	1,612.7	2,869.1	2,867.9	1.15	2,501.159	
400.0	400.0	452.3	452.2	0.8	0.4	145.79	-2,371.8	1,612.6	2,868.9	2,867.8	1.16	2,463.516	
492.1	492.1	538.4	538.2	1.0	0.5	145.80	-2,370.5	1,611.0	2,866.8	2,865.4	1.42	2,019.007	
500.0	500.0	546.1	546.0	1.0	0.5	145.80	-2,370.3	1,610.9	2,866.6	2,865.2	1.44	1,988.328	
590.5	590.5	633.8	633.6	1.2	0.5	145.81	-2,369.1	1,609.3	2,864.6	2,863.0	1.69	1,694.547	
600.0	600.0	642.6	642.5	1.2	0.5	145.81	-2,369.0	1,609.1	2,864.4	2,862.7	1.72	1,669.127	
689.0	689.0	726.8	726.6	1.4	0.6	145.83	-2,368.1	1,607.4	2,862.7	2,860.7	1.96	1,462.820	
700.0	700.0	737.3	737.1	1.4	0.6	145.84	-2,368.0	1,607.2	2,862.4	2,860.5	1.99	1,440.835	
787.4	787.4	822.7	822.5	1.6	0.6	145.85	-2,367.2	1,605.6	2,860.8	2,858.6	2.22	1,287.247	
800.0	800.0	835.8	835.6	1.7	0.6	145.85	-2,367.0	1,605.4	2,860.6	2,858.3	2.26	1,267.695	
885.8	885.8	924.3	924.0	1.9	0.7	145.87	-2,366.1	1,603.7	2,858.9	2,856.4	2.49	1,148.960	
900.0	900.0	938.7	938.4	1.9	0.7	145.87	-2,366.0	1,603.4	2,858.6	2,856.1	2.53	1,131.530	
984.2	984.2	1,024.3	1,024.0	2.1	0.7	145.90	-2,365.2	1,601.5	2,857.0	2,854.2	2.75	1,037.982	
1,000.0	1,000.0	1,040.4	1,040.1	2.1	0.7	145.90	-2,365.0	1,601.1	2,856.6	2,853.8	2.79	1,022.220	
1,082.7	1,082.7	1,122.8	1,122.4	2.3	0.8	145.92	-2,364.2	1,599.3	2,854.9	2,851.9	3.01	947.054	
1,100.0	1,100.0	1,139.1	1,138.8	2.3	0.8	145.93	-2,364.1	1,599.0	2,854.6	2,851.5	3.06	932.849	
1,181.1	1,181.1	1,214.7	1,214.4	2.5	0.8	145.95	-2,363.4	1,597.3	2,853.0	2,849.8	3.27	871.725	
1,200.0	1,200.0	1,231.6	1,231.3	2.6	0.8	145.95	-2,363.3	1,597.0	2,852.7	2,849.4	3.32	858.695	
1,279.5	1,279.5	1,303.4	1,303.0	2.7	0.8	145.97	-2,363.0	1,595.4	2,851.5	2,847.9	3.53	807.864	
1,300.0	1,300.0	1,324.0	1,323.6	2.8	0.8	145.98	-2,362.9	1,595.0	2,851.2	2,847.6	3.58	795.568	
1,377.9	1,377.9	1,402.7	1,402.3	3.0	0.9	146.00	-2,362.6	1,593.5	2,850.0	2,846.2	3.79	751.963	
1,400.0	1,400.0	1,426.2	1,425.8	3.0	0.9	146.01	-2,362.4	1,593.0	2,849.7	2,845.8	3.85	740.424	
1,450.0	1,450.0	1,479.6	1,479.2	3.1	0.9	146.02	-2,362.1	1,592.0	2,848.9	2,844.9	3.98	715.507	
1,476.4	1,476.4	1,507.4	1,507.0	3.2	0.9	82.73	-2,361.9	1,591.4	2,848.4	2,844.3	4.07	700.121	
1,500.0	1,500.0	1,531.7	1,531.3	3.2	0.9	82.75	-2,361.8	1,590.9	2,848.0	2,843.8	4.13	689.830	
1,574.8	1,574.8	1,608.7	1,608.3	3.4	1.0	82.86	-2,361.3	1,589.1	2,846.4	2,842.1	4.31	659.728	
1,600.0	1,599.9	1,635.9	1,635.5	3.4	1.0	82.91	-2,361.2	1,588.4	2,845.8	2,841.4	4.38	650.129	
1,673.2	1,673.0	1,714.0	1,713.5	3.6	1.0	83.08	-2,360.8	1,586.3	2,843.7	2,839.2	4.56	623.143	
1,700.0	1,699.7	1,741.0	1,740.5	3.7	1.0	83.15	-2,360.6	1,585.5	2,842.9	2,838.3	4.63	613.883	
1,771.6	1,771.0	1,811.7	1,811.2	3.8	1.0	83.36	-2,360.1	1,583.6	2,840.6	2,835.7	4.82	589.548	
1,800.0	1,799.1	1,836.9	1,836.4	3.9	1.0	83.45	-2,360.0	1,582.9	2,839.6	2,834.7	4.89	580.481	
1,870.1	1,868.6	1,900.0	1,899.5	4.1	1.1	83.69	-2,359.6	1,581.3	2,837.3	2,832.2	5.08	557.996	
1,900.0	1,898.2	1,930.4	1,929.9	4.1	1.1	83.81	-2,359.5	1,580.6	2,836.2	2,831.1	5.17	548.711	
1,968.5	1,965.7	2,000.0	1,999.4	4.3	1.1	84.12	-2,359.0	1,578.9	2,833.7	2,828.4	5.38	526.927	
2,000.0	1,996.6	2,028.0	2,027.4	4.4	1.1	84.26	-2,358.8	1,578.3	2,832.6	2,827.1	5.47	517.517	
2,066.9	2,062.2	2,083.7	2,083.1	4.6	1.1	84.55	-2,358.6	1,577.1	2,830.2	2,824.5	5.70	496.802	
2,100.0	2,094.4	2,114.0	2,113.5	4.7	1.2	84.72	-2,358.5	1,576.5	2,829.0	2,823.2	5.81	486.986	
2,165.3	2,157.9	2,182.1	2,181.5	5.0	1.2	85.11	-2,358.2	1,575.2	2,826.7	2,820.6	6.06	466.408	
2,200.0	2,191.5	2,215.2	2,214.5	5.1	1.2	85.31	-2,358.0	1,574.6	2,825.4	2,819.2	6.19	456.129	
2,263.8	2,252.9	2,270.5	2,269.9	5.3	1.2	85.67	-2,357.8	1,573.5	2,823.1	2,816.6	6.47	436.338	
2,300.0	2,287.6	2,302.1	2,301.5	5.5	1.2	85.89	-2,357.7	1,572.9	2,821.8	2,815.2	6.63	425.738	
2,362.2	2,346.9	2,366.5	2,365.9	5.8	1.2	86.35	-2,357.5	1,571.7	2,819.7	2,812.8	6.94	406.435	
2,400.0	2,382.7	2,404.6	2,403.9	6.0	1.3	86.63	-2,357.4	1,570.9	2,818.4	2,811.3	7.13	395.431	
2,460.6	2,439.8	2,456.4	2,455.7	6.3	1.3	87.04	-2,357.2	1,569.9	2,816.4	2,808.9	7.47	377.181	
2,500.0	2,476.6	2,489.8	2,489.1	6.5	1.3	87.31	-2,357.1	1,569.3	2,815.2	2,807.5	7.69	366.119	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN MCCARTY 30-43 - Wellbore #1 - Wellbor

Offset Site Error: 0.0 usft

Survey Program: 100-GYD_CT

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,559.0	2,531.6	2,547.4	2,546.7	6.9	1.3	87.79	-2,357.0	1,568.2	2,813.5	2,805.4	8.06	348.870	
2,600.0	2,569.4	2,588.4	2,587.7	7.1	1.3	88.15	-2,356.9	1,567.4	2,812.3	2,804.0	8.33	337.743	
2,657.5	2,622.0	2,639.6	2,638.9	7.5	1.3	88.61	-2,356.7	1,566.3	2,810.8	2,802.1	8.73	321.804	
2,700.0	2,660.7	2,676.1	2,675.4	7.8	1.4	88.95	-2,356.6	1,565.6	2,809.8	2,800.8	9.04	310.909	
2,755.9	2,711.1	2,722.0	2,721.3	8.2	1.4	89.39	-2,356.5	1,564.7	2,808.7	2,799.3	9.48	296.389	
2,800.0	2,750.6	2,756.7	2,756.0	8.6	1.4	89.73	-2,356.4	1,564.1	2,808.1	2,798.3	9.82	285.851	
2,832.3	2,779.2	2,781.9	2,781.2	8.8	1.4	89.98	-2,356.4	1,563.7	2,807.8	2,797.7	10.09	278.162	
2,854.3	2,798.8	2,800.0	2,799.3	9.0	1.4	90.16	-2,356.4	1,563.4	2,807.7	2,797.4	10.28	273.010	
2,900.0	2,839.3	2,841.3	2,840.6	9.4	1.4	90.56	-2,356.4	1,562.9	2,807.5	2,796.8	10.68	262.899	
2,941.6	2,876.1	2,879.9	2,879.2	9.8	1.4	90.93	-2,356.4	1,562.3	2,807.4	2,796.4	11.05	254.150	
2,952.7	2,886.0	2,890.3	2,889.6	9.9	1.4	91.03	-2,356.3	1,562.2	2,807.4	2,796.3	11.15	251.895	
3,000.0	2,927.8	2,932.1	2,931.3	10.3	1.4	91.43	-2,356.2	1,561.6	2,807.5	2,796.0	11.56	242.803	
3,051.2	2,973.2	2,976.5	2,975.8	10.7	1.5	91.86	-2,356.2	1,561.0	2,807.9	2,795.8	12.02	233.517	
3,100.0	3,016.4	3,019.0	3,018.3	11.2	1.5	92.28	-2,356.2	1,560.3	2,808.4	2,795.9	12.46	225.312	
3,149.6	3,060.4	3,062.3	3,061.6	11.6	1.5	92.70	-2,356.1	1,559.7	2,809.1	2,796.2	12.92	217.456	
3,200.0	3,105.0	3,107.4	3,106.7	12.1	1.5	93.13	-2,356.0	1,559.1	2,810.1	2,796.7	13.38	210.031	
3,248.0	3,147.5	3,156.0	3,155.3	12.5	1.5	93.60	-2,355.9	1,558.5	2,811.1	2,797.3	13.83	203.330	
3,300.0	3,193.6	3,207.9	3,207.1	13.0	1.5	94.09	-2,355.5	1,558.1	2,812.3	2,798.0	14.31	196.560	
3,346.4	3,234.7	3,249.8	3,249.0	13.4	1.6	94.49	-2,355.1	1,557.8	2,813.6	2,798.8	14.74	190.832	
3,400.0	3,282.2	3,298.2	3,297.4	13.9	1.6	94.95	-2,354.6	1,557.5	2,815.2	2,799.9	15.25	184.656	
3,444.9	3,321.9	3,344.8	3,344.0	14.3	1.6	95.39	-2,354.0	1,557.2	2,816.6	2,801.0	15.67	179.750	
3,500.0	3,370.8	3,402.6	3,401.8	14.8	1.6	95.93	-2,353.1	1,557.0	2,818.5	2,802.3	16.19	174.090	
3,543.3	3,409.1	3,448.4	3,447.6	15.2	1.6	96.35	-2,352.3	1,556.9	2,820.0	2,803.4	16.60	169.886	
3,600.0	3,459.3	3,507.7	3,506.9	15.8	1.6	96.90	-2,350.8	1,557.0	2,822.0	2,804.9	17.13	164.701	
3,641.7	3,496.3	3,547.2	3,546.4	16.1	1.6	97.26	-2,349.8	1,557.2	2,823.6	2,806.1	17.53	161.088	
3,700.0	3,547.9	3,600.0	3,599.2	16.7	1.6	97.74	-2,348.3	1,557.5	2,826.0	2,807.9	18.08	156.326	
3,740.1	3,583.5	3,632.6	3,631.8	17.1	1.6	98.03	-2,347.4	1,557.7	2,827.8	2,809.3	18.46	153.210	
3,800.0	3,636.5	3,678.1	3,677.2	17.6	1.7	98.45	-2,346.3	1,557.9	2,830.8	2,811.7	19.02	148.825	
3,838.6	3,670.7	3,708.1	3,707.3	18.0	1.7	98.72	-2,345.6	1,558.0	2,832.9	2,813.5	19.39	146.139	
3,900.0	3,725.1	3,759.6	3,758.7	18.6	1.7	99.19	-2,344.6	1,558.0	2,836.6	2,816.6	19.96	142.085	
3,937.0	3,757.9	3,790.6	3,789.7	18.9	1.7	99.48	-2,344.0	1,558.0	2,839.0	2,818.7	20.31	139.760	
4,000.0	3,813.7	3,839.9	3,839.0	19.5	1.7	99.93	-2,343.2	1,558.0	2,843.4	2,822.5	20.91	136.006	
4,035.4	3,845.1	3,867.2	3,866.3	19.9	1.7	100.18	-2,342.8	1,558.0	2,846.0	2,824.8	21.24	133.995	
4,100.0	3,902.3	3,919.3	3,918.4	20.5	1.7	100.66	-2,342.1	1,558.1	2,851.2	2,829.4	21.85	130.514	
4,133.8	3,932.2	3,948.9	3,948.0	20.8	1.7	100.93	-2,341.7	1,558.1	2,854.0	2,831.9	22.16	128.774	
4,200.0	3,990.8	4,006.6	4,005.6	21.5	1.7	101.45	-2,341.0	1,558.1	2,859.9	2,837.1	22.78	125.535	
4,232.3	4,019.4	4,033.8	4,032.9	21.8	1.7	101.70	-2,340.7	1,558.1	2,862.8	2,839.8	23.08	124.025	
4,300.0	4,079.4	4,090.9	4,090.0	22.4	1.8	102.22	-2,340.1	1,558.1	2,869.4	2,845.6	23.71	121.004	
4,330.7	4,106.6	4,120.1	4,119.2	22.7	1.8	102.48	-2,339.8	1,558.0	2,872.4	2,848.4	24.00	119.698	
4,400.0	4,168.0	4,190.4	4,189.4	23.4	1.8	103.12	-2,339.0	1,557.8	2,879.5	2,854.8	24.64	116.883	
4,429.1	4,193.8	4,215.2	4,214.3	23.7	1.8	103.34	-2,338.6	1,557.8	2,882.5	2,857.6	24.90	115.744	
4,500.0	4,256.6	4,269.9	4,269.0	24.4	1.8	103.84	-2,338.0	1,557.5	2,890.2	2,864.7	25.56	113.092	
4,527.5	4,281.0	4,291.1	4,290.2	24.6	1.8	104.03	-2,337.8	1,557.4	2,893.4	2,867.6	25.81	112.106	
4,600.0	4,345.2	4,346.6	4,345.7	25.3	1.8	104.53	-2,337.4	1,557.0	2,902.0	2,875.5	26.47	109.629	
4,626.0	4,368.2	4,366.5	4,365.6	25.6	1.8	104.71	-2,337.3	1,556.9	2,905.2	2,878.5	26.71	108.779	
4,700.0	4,433.8	4,423.7	4,422.8	26.3	1.9	105.23	-2,337.2	1,556.5	2,914.9	2,887.5	27.38	106.470	
4,724.4	4,455.4	4,442.9	4,441.9	26.5	1.9	105.40	-2,337.2	1,556.4	2,918.1	2,890.6	27.60	105.745	
4,800.0	4,522.3	4,500.0	4,499.1	27.3	1.9	105.91	-2,337.2	1,556.1	2,928.7	2,900.4	28.27	103.586	
4,822.8	4,542.6	4,500.0	4,499.1	27.5	1.9	105.91	-2,337.2	1,556.1	2,932.1	2,903.6	28.49	102.923	
4,900.0	4,610.9	4,561.3	4,560.4	28.2	1.9	106.45	-2,337.6	1,555.9	2,943.8	2,914.7	29.17	100.933	
4,921.2	4,629.8	4,574.0	4,573.1	28.4	1.9	106.57	-2,337.8	1,555.8	2,947.3	2,917.9	29.36	100.398	
5,000.0	4,699.5	4,632.6	4,631.7	29.2	1.9	107.08	-2,338.7	1,555.9	2,960.4	2,930.4	30.05	98.530	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN MCCARTY 30-43 - Wellbore #1 - Wellbor — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,019.7	4,716.9	4,650.9	4,650.0	29.4	1.9	107.24	-2,339.0	1,555.9	2,963.8	2,933.6	30.21	98.093	
5,100.0	4,788.1	4,727.0	4,726.0	30.2	1.9	107.90	-2,340.2	1,556.0	2,977.7	2,946.8	30.90	96.379	
5,118.1	4,804.1	4,744.8	4,743.8	30.4	1.9	108.05	-2,340.5	1,556.0	2,980.9	2,949.9	31.05	96.009	
5,200.0	4,876.7	4,823.4	4,822.4	31.1	1.9	108.73	-2,341.5	1,555.9	2,995.4	2,963.7	31.73	94.391	
5,216.5	4,891.3	4,838.5	4,837.6	31.3	1.9	108.86	-2,341.7	1,555.8	2,998.4	2,966.5	31.87	94.073	
5,300.0	4,965.3	4,915.1	4,914.1	32.1	1.9	109.52	-2,342.6	1,555.5	3,013.6	2,981.1	32.57	92.525	
5,314.9	4,978.5	4,928.9	4,927.9	32.3	1.9	109.64	-2,342.8	1,555.4	3,016.4	2,983.7	32.70	92.257	
5,400.0	5,053.8	5,007.2	5,006.3	33.1	1.9	110.31	-2,343.6	1,554.9	3,032.3	2,998.9	33.40	90.787	
5,413.4	5,065.7	5,019.7	5,018.8	33.2	1.9	110.41	-2,343.8	1,554.8	3,034.9	3,001.3	33.51	90.564	
5,508.2	5,149.7	5,108.8	5,107.9	34.2	1.9	111.16	-2,344.6	1,554.4	3,053.1	3,018.8	34.29	89.046	
5,511.8	5,152.9	5,112.4	5,111.4	34.2	1.9	111.21	-2,344.6	1,554.3	3,053.8	3,019.5	34.31	89.007	
5,600.0	5,231.7	5,199.2	5,198.3	34.9	1.9	112.22	-2,345.2	1,553.9	3,070.5	3,035.7	34.85	88.098	
5,610.2	5,240.9	5,208.2	5,207.2	35.0	1.9	112.33	-2,345.2	1,553.8	3,072.4	3,037.5	34.90	88.026	
5,700.0	5,322.5	5,287.0	5,286.0	35.7	1.9	113.21	-2,345.7	1,553.5	3,088.7	3,053.3	35.34	87.395	
5,708.6	5,330.4	5,294.7	5,293.7	35.7	1.9	113.30	-2,345.7	1,553.4	3,090.2	3,054.8	35.38	87.345	
5,800.0	5,414.6	5,378.7	5,377.7	36.3	2.0	114.15	-2,346.2	1,553.2	3,106.0	3,070.2	35.77	86.826	
5,807.1	5,421.2	5,385.3	5,384.3	36.4	2.0	114.21	-2,346.3	1,553.2	3,107.2	3,071.4	35.80	86.794	
5,900.0	5,508.1	5,483.9	5,482.9	36.9	2.0	115.08	-2,346.7	1,553.1	3,122.1	3,086.0	36.14	86.392	
5,905.5	5,513.3	5,490.0	5,489.0	37.0	2.0	115.13	-2,346.7	1,553.1	3,122.9	3,086.8	36.16	86.374	
6,000.0	5,602.8	5,592.5	5,591.5	37.5	2.0	115.93	-2,346.7	1,553.1	3,136.6	3,100.2	36.45	86.049	
6,003.9	5,606.5	5,596.7	5,595.7	37.5	2.0	115.96	-2,346.7	1,553.1	3,137.1	3,100.7	36.46	86.039	
6,100.0	5,698.5	5,673.4	5,672.4	38.0	2.0	116.56	-2,346.7	1,552.9	3,149.8	3,113.1	36.75	85.709	
6,102.3	5,700.7	5,675.3	5,674.3	38.0	2.0	116.57	-2,346.7	1,552.9	3,150.1	3,113.4	36.76	85.703	
6,200.0	5,795.2	5,756.6	5,755.6	38.4	2.0	117.14	-2,347.1	1,552.4	3,162.2	3,125.2	37.00	85.454	
6,200.8	5,795.9	5,757.2	5,756.2	38.4	2.0	117.14	-2,347.1	1,552.4	3,162.3	3,125.3	37.01	85.452	
6,299.2	5,891.9	5,851.5	5,850.5	38.8	2.0	117.68	-2,347.8	1,552.0	3,173.3	3,136.1	37.21	85.286	
6,300.0	5,892.7	5,852.4	5,851.4	38.8	2.0	117.69	-2,347.8	1,552.0	3,173.4	3,136.2	37.21	85.285	
6,397.6	5,988.5	5,957.7	5,956.7	39.1	2.0	118.17	-2,348.5	1,552.1	3,182.7	3,145.3	37.37	85.169	
6,400.0	5,990.9	5,960.3	5,959.3	39.1	2.0	118.18	-2,348.5	1,552.1	3,182.9	3,145.5	37.37	85.165	
6,496.0	6,085.8	6,062.1	6,061.1	39.4	2.0	118.55	-2,348.8	1,552.5	3,190.3	3,152.8	37.51	85.056	
6,500.0	6,089.7	6,066.3	6,065.3	39.4	2.0	118.56	-2,348.8	1,552.6	3,190.5	3,153.0	37.51	85.049	
6,594.5	6,183.5	6,164.2	6,163.2	39.6	2.0	118.83	-2,349.0	1,553.4	3,196.1	3,158.5	37.63	84.938	
6,600.0	6,189.0	6,169.9	6,168.9	39.7	2.0	118.84	-2,349.0	1,553.5	3,196.4	3,158.8	37.64	84.929	
6,692.9	6,281.5	6,261.5	6,260.5	39.8	2.0	119.01	-2,349.1	1,554.6	3,200.3	3,162.6	37.73	84.816	
6,700.0	6,288.6	6,268.3	6,267.3	39.8	2.0	119.02	-2,349.1	1,554.7	3,200.5	3,162.8	37.74	84.804	
6,791.3	6,379.8	6,370.8	6,369.8	40.0	2.0	119.11	-2,349.2	1,556.5	3,202.8	3,165.0	37.82	84.685	
6,800.0	6,388.5	6,381.3	6,380.3	40.0	2.0	119.11	-2,349.1	1,556.7	3,202.9	3,165.1	37.83	84.667	
6,889.7	6,478.2	6,486.7	6,485.7	40.1	2.0	119.09	-2,348.7	1,559.5	3,203.1	3,165.2	37.90	84.506	
6,890.4	6,478.9	6,487.5	6,486.4	40.1	2.0	-177.60	-2,348.7	1,559.5	3,203.1	3,165.2	37.90	84.505	
6,900.0	6,488.5	6,498.7	6,497.6	40.1	2.0	-177.61	-2,348.6	1,559.9	3,203.0	3,165.1	37.91	84.479	
6,920.4	6,508.9	6,500.0	6,498.9	40.1	2.0	-177.61	-2,348.6	1,559.9	3,202.9	3,165.0	37.93	84.437	
6,950.0	6,538.5	6,534.6	6,533.5	40.1	2.0	2.38	-2,348.4	1,561.0	3,202.1	3,164.2	37.89	84.501	
6,988.2	6,576.6	6,561.7	6,560.5	40.1	2.0	2.38	-2,348.4	1,561.6	3,199.4	3,161.6	37.81	84.615	
7,000.0	6,588.3	6,570.0	6,568.9	40.1	2.0	2.38	-2,348.4	1,561.8	3,198.2	3,160.4	37.78	84.655	
7,050.0	6,637.8	6,600.0	6,598.9	40.1	2.0	2.40	-2,348.5	1,562.3	3,191.0	3,153.5	37.59	84.884	
7,086.6	6,673.6	6,630.6	6,629.5	40.1	2.0	2.42	-2,348.7	1,562.7	3,183.8	3,146.4	37.40	85.136	
7,100.0	6,686.6	6,639.9	6,638.8	40.1	2.0	2.43	-2,348.8	1,562.8	3,180.7	3,143.4	37.31	85.251	
7,150.0	6,734.6	6,674.2	6,673.1	40.0	2.0	2.48	-2,349.2	1,563.1	3,167.2	3,130.3	36.91	85.811	
7,185.0	6,767.5	6,700.0	6,698.9	39.9	1.9	2.53	-2,349.6	1,563.1	3,155.8	3,119.3	36.55	86.337	
7,200.0	6,781.4	6,714.3	6,713.1	39.9	2.0	2.55	-2,349.8	1,563.1	3,150.5	3,114.1	36.38	86.596	
7,250.0	6,827.0	6,773.9	6,772.8	39.8	2.0	2.66	-2,350.6	1,562.8	3,130.5	3,094.8	35.73	87.610	
7,283.4	6,856.6	6,809.0	6,807.8	39.8	2.0	2.75	-2,351.0	1,562.3	3,115.3	3,080.1	35.22	88.452	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN MCCARTY 30-43 - Wellbore #1 - Wellbor — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,300.0	6,871.0	6,822.3	6,821.2	39.7	2.0	2.80	-2,351.1	1,562.1	3,107.3	3,072.3	34.94	88.924	
7,350.0	6,913.2	6,861.5	6,860.4	39.6	2.0	2.96	-2,351.5	1,561.4	3,081.0	3,047.0	34.02	90.573	
7,381.9	6,939.1	6,885.6	6,884.5	39.5	2.0	3.08	-2,351.7	1,561.0	3,062.7	3,029.4	33.36	91.814	
7,400.0	6,953.4	6,900.0	6,898.8	39.4	2.0	3.15	-2,351.9	1,560.8	3,051.9	3,018.9	32.96	92.589	
7,450.0	6,991.5	6,937.0	6,935.8	39.3	2.0	3.39	-2,352.3	1,560.2	3,020.0	2,988.2	31.78	95.015	
7,480.3	7,013.5	6,958.9	6,957.8	39.2	2.0	3.56	-2,352.6	1,559.8	2,999.4	2,968.4	31.02	96.704	
7,500.0	7,027.3	6,972.7	6,971.6	39.1	2.0	3.68	-2,352.8	1,559.6	2,985.5	2,955.0	30.50	97.901	
7,550.0	7,060.5	7,005.9	7,004.7	39.0	2.0	4.03	-2,353.2	1,559.2	2,948.6	2,919.5	29.11	101.306	
7,578.7	7,078.4	7,023.4	7,022.2	38.8	2.0	4.27	-2,353.4	1,559.0	2,926.4	2,898.1	28.27	103.519	
7,600.0	7,091.0	7,035.8	7,034.6	38.8	2.0	4.47	-2,353.5	1,558.9	2,909.5	2,881.8	27.63	105.296	
7,650.0	7,118.7	7,063.1	7,061.9	38.6	2.0	5.03	-2,353.9	1,558.6	2,868.3	2,842.2	26.09	109.939	
7,677.1	7,132.5	7,076.7	7,075.5	38.5	2.0	5.40	-2,354.1	1,558.4	2,845.1	2,819.9	25.23	112.751	
7,700.0	7,143.4	7,087.5	7,086.3	38.4	2.0	5.75	-2,354.2	1,558.3	2,825.2	2,800.7	24.50	115.295	
7,750.0	7,165.0	7,110.9	7,109.8	38.2	2.0	6.74	-2,354.5	1,558.1	2,780.5	2,757.6	22.90	121.395	
7,775.6	7,174.9	7,122.8	7,121.6	38.1	2.0	7.39	-2,354.7	1,558.0	2,757.0	2,734.9	22.09	124.795	
7,800.0	7,183.5	7,133.2	7,132.0	38.1	2.0	8.14	-2,354.8	1,557.9	2,734.3	2,713.0	21.32	128.236	
7,850.0	7,198.6	7,151.5	7,150.4	37.9	2.0	10.24	-2,355.0	1,557.8	2,686.9	2,667.1	19.79	135.752	
7,874.0	7,204.7	7,158.9	7,157.7	37.8	2.0	11.66	-2,355.1	1,557.8	2,663.8	2,644.7	19.09	139.539	
7,900.0	7,210.4	7,165.9	7,164.7	37.7	2.0	13.69	-2,355.2	1,557.7	2,638.5	2,620.2	18.35	143.765	
7,950.0	7,218.8	7,176.2	7,175.0	37.6	2.0	20.24	-2,355.3	1,557.6	2,589.4	2,572.3	17.10	151.392	
7,972.4	7,221.4	7,179.5	7,178.3	37.5	2.0	25.46	-2,355.3	1,557.6	2,567.2	2,550.4	16.77	153.055	
8,000.0	7,223.7	7,182.4	7,181.2	37.4	2.0	36.33	-2,355.3	1,557.6	2,539.8	2,522.6	17.13	148.290	
8,050.0	7,225.1	7,184.6	7,183.4	37.3	2.0	86.73	-2,355.3	1,557.6	2,489.9	2,467.5	22.34	111.437	
8,055.3	7,225.0	7,184.6	7,183.4	37.3	2.0	94.43	-2,355.3	1,557.6	2,484.6	2,461.3	23.31	106.602	
8,070.8	7,224.8	7,184.5	7,183.3	37.3	2.0	94.40	-2,355.3	1,557.6	2,469.1	2,445.8	23.31	105.913	
8,100.0	7,224.4	7,184.3	7,183.1	37.2	2.0	94.33	-2,355.3	1,557.6	2,440.0	2,416.6	23.32	104.625	
8,169.3	7,223.5	7,184.0	7,182.8	37.1	2.0	94.18	-2,355.3	1,557.6	2,370.8	2,347.4	23.43	101.198	
8,200.0	7,223.0	7,183.8	7,182.6	37.1	2.0	94.12	-2,355.3	1,557.6	2,340.1	2,316.7	23.47	99.689	
8,267.7	7,222.1	7,183.5	7,182.3	37.0	2.0	93.97	-2,355.3	1,557.6	2,272.5	2,248.9	23.69	95.926	
8,300.0	7,221.7	7,183.3	7,182.1	37.0	2.0	93.90	-2,355.3	1,557.6	2,240.3	2,216.5	23.79	94.156	
8,366.1	7,220.7	7,183.0	7,181.8	37.0	2.0	93.76	-2,355.3	1,557.6	2,174.3	2,150.2	24.11	90.185	
8,400.0	7,220.3	7,182.8	7,181.6	37.0	2.0	93.69	-2,355.3	1,557.6	2,140.5	2,116.2	24.27	88.189	
8,464.5	7,219.4	7,182.5	7,181.3	37.1	2.0	93.56	-2,355.3	1,557.6	2,076.1	2,051.4	24.68	84.132	
8,500.0	7,218.9	7,182.3	7,181.1	37.1	2.0	93.48	-2,355.3	1,557.6	2,040.7	2,015.8	24.90	81.960	
8,563.0	7,218.0	7,182.0	7,180.8	37.2	2.0	93.35	-2,355.3	1,557.6	1,977.9	1,952.5	25.38	77.930	
8,600.0	7,217.5	7,181.8	7,180.6	37.3	2.0	93.27	-2,355.3	1,557.6	1,940.9	1,915.3	25.66	75.631	
8,661.4	7,216.7	7,181.5	7,180.3	37.5	2.0	93.15	-2,355.3	1,557.6	1,879.7	1,853.5	26.21	71.719	
8,700.0	7,216.1	7,181.3	7,180.1	37.6	2.0	93.07	-2,355.3	1,557.6	1,841.2	1,814.7	26.55	69.342	
8,759.8	7,215.3	7,181.0	7,179.8	37.8	2.0	92.95	-2,355.3	1,557.6	1,781.6	1,754.4	27.15	65.616	
8,800.0	7,214.8	7,180.8	7,179.6	38.0	2.0	92.87	-2,355.3	1,557.6	1,741.5	1,713.9	27.55	63.205	
8,858.2	7,214.0	7,180.5	7,179.3	38.3	2.0	92.75	-2,355.3	1,557.6	1,683.4	1,655.2	28.19	59.710	
8,900.0	7,213.4	7,180.3	7,179.1	38.5	2.0	92.66	-2,355.3	1,557.6	1,641.8	1,613.2	28.65	57.301	
8,956.7	7,212.6	7,180.1	7,178.9	38.8	2.0	92.55	-2,355.3	1,557.6	1,585.3	1,556.0	29.33	54.061	
9,000.0	7,212.0	7,179.9	7,178.7	39.1	2.0	92.47	-2,355.3	1,557.6	1,542.2	1,512.3	29.84	51.682	
9,055.1	7,211.2	7,179.6	7,178.4	39.5	2.0	92.36	-2,355.3	1,557.6	1,487.3	1,456.8	30.54	48.707	
9,100.0	7,210.6	7,179.4	7,178.2	39.8	2.0	92.27	-2,355.3	1,557.6	1,442.6	1,411.5	31.10	46.381	
9,153.5	7,209.9	7,179.1	7,177.9	40.3	2.0	92.16	-2,355.3	1,557.6	1,389.3	1,357.5	31.82	43.668	
9,200.0	7,209.2	7,178.9	7,177.7	40.7	2.0	92.07	-2,355.3	1,557.6	1,343.1	1,310.7	32.43	41.409	
9,251.9	7,208.5	7,178.7	7,177.5	41.1	2.0	91.97	-2,355.3	1,557.6	1,291.4	1,258.3	33.16	38.949	
9,300.0	7,207.9	7,178.5	7,177.3	41.6	2.0	91.88	-2,355.3	1,557.6	1,243.6	1,209.8	33.82	36.768	
9,350.4	7,207.2	7,178.2	7,177.0	42.1	2.0	91.78	-2,355.3	1,557.6	1,193.6	1,159.0	34.55	34.546	
9,400.0	7,206.5	7,178.0	7,176.8	42.6	2.0	91.69	-2,355.3	1,557.6	1,144.3	1,109.0	35.27	32.448	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN MCCARTY 30-43 - Wellbore #1 - Wellbor — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,448.8	7,205.8	7,177.8	7,176.6	43.1	2.0	91.60	-2,355.3	1,557.6	1,095.9	1,059.9	35.99	30.448	
9,500.0	7,205.1	7,177.6	7,176.4	43.7	2.0	91.50	-2,355.3	1,557.6	1,045.1	1,008.3	36.75	28.436	
9,547.2	7,204.4	7,177.3	7,176.2	44.2	2.0	91.41	-2,355.3	1,557.6	998.3	960.8	37.47	26.640	
9,600.0	7,203.7	7,177.1	7,175.9	44.8	2.0	91.31	-2,355.3	1,557.6	946.0	907.7	38.28	24.714	
9,645.6	7,203.1	7,176.9	7,175.7	45.4	2.0	91.23	-2,355.3	1,557.6	900.9	861.9	38.99	23.105	
9,700.0	7,202.3	7,176.7	7,175.5	46.1	2.0	91.13	-2,355.3	1,557.6	847.2	807.3	39.84	21.265	
9,744.1	7,201.7	7,176.5	7,175.3	46.6	2.0	91.05	-2,355.3	1,557.6	803.7	763.2	40.54	19.825	
9,800.0	7,201.0	7,176.2	7,175.0	47.3	2.0	90.95	-2,355.3	1,557.6	748.6	707.2	41.43	18.070	
9,842.5	7,200.4	7,176.1	7,174.9	47.9	2.0	90.87	-2,355.3	1,557.6	706.9	664.8	42.12	16.784	
9,900.0	7,199.6	7,175.8	7,174.6	48.7	2.0	90.76	-2,355.3	1,557.6	650.6	607.5	43.05	15.112	
9,940.9	7,199.0	7,175.6	7,174.4	49.2	2.0	90.69	-2,355.3	1,557.6	610.6	566.9	43.72	13.966	
10,000.0	7,198.2	7,175.4	7,174.2	50.1	2.0	90.58	-2,355.3	1,557.7	553.2	508.5	44.69	12.378	
10,039.3	7,197.7	7,175.2	7,174.0	50.6	2.0	90.51	-2,355.2	1,557.7	515.1	469.8	45.35	11.360	
10,100.0	7,196.8	7,175.0	7,173.8	51.5	2.0	90.41	-2,355.2	1,557.7	456.9	410.5	46.36	9.857	
10,137.8	7,196.3	7,174.8	7,173.6	52.0	2.0	90.34	-2,355.2	1,557.7	421.0	374.0	46.99	8.959	
10,200.0	7,195.4	7,174.5	7,173.3	52.9	2.0	90.23	-2,355.2	1,557.7	362.7	314.6	48.04	7.550	
10,236.2	7,194.9	7,174.4	7,173.2	53.5	2.0	90.17	-2,355.2	1,557.7	329.4	280.7	48.65	6.770	
10,300.0	7,194.1	7,174.1	7,172.9	54.4	2.0	90.06	-2,355.2	1,557.7	272.6	222.8	49.74	5.480	
10,334.6	7,193.6	7,174.0	7,172.8	55.0	2.0	90.00	-2,355.2	1,557.7	243.2	192.8	50.33	4.831	
10,400.0	7,192.7	7,173.7	7,172.5	56.0	2.0	89.88	-2,355.2	1,557.7	192.5	141.0	51.45	3.741	
10,433.0	7,192.2	7,173.6	7,172.4	56.5	2.0	89.83	-2,355.2	1,557.7	170.7	118.7	52.02	3.281	
10,500.0	7,191.3	7,173.3	7,172.1	57.5	2.0	89.71	-2,355.2	1,557.7	140.8	87.6	53.18	2.647	
10,531.5	7,190.9	7,173.2	7,172.0	58.0	2.0	89.66	-2,355.2	1,557.7	136.1	82.4	53.73	2.533	
10,536.1	7,190.8	7,173.2	7,172.0	58.1	2.0	89.65	-2,355.2	1,557.7	136.0	82.2	53.81	2.528	CC, ES, SF
10,600.0	7,189.9	7,172.9	7,171.7	59.1	2.0	89.54	-2,355.2	1,557.7	150.2	95.3	54.92	2.736	
10,629.9	7,189.5	7,172.8	7,171.6	59.6	2.0	89.49	-2,355.2	1,557.7	165.2	109.7	55.45	2.979	
10,700.0	7,188.5	7,172.5	7,171.3	60.7	2.0	89.38	-2,355.2	1,557.7	212.9	156.2	56.68	3.757	
10,728.3	7,188.1	7,172.4	7,171.2	61.1	2.0	89.33	-2,355.2	1,557.7	235.4	178.2	57.17	4.117	
10,800.0	7,187.2	7,172.1	7,170.9	62.3	2.0	89.21	-2,355.2	1,557.7	296.8	238.4	58.44	5.079	
10,826.7	7,186.8	7,172.0	7,170.8	62.7	2.0	89.17	-2,355.2	1,557.7	320.8	261.9	58.91	5.446	
10,900.0	7,185.8	7,171.7	7,170.5	63.9	2.0	89.05	-2,355.2	1,557.7	388.4	328.2	60.21	6.451	
10,925.2	7,185.4	7,171.6	7,170.4	64.3	2.0	89.00	-2,355.2	1,557.7	412.1	351.4	60.66	6.794	
11,000.0	7,184.4	7,171.3	7,170.1	65.6	2.0	88.88	-2,355.2	1,557.7	483.3	421.4	61.99	7.797	
11,023.6	7,184.1	7,171.2	7,170.1	66.0	2.0	88.84	-2,355.2	1,557.7	506.0	443.6	62.41	8.108	
11,100.0	7,183.0	7,171.0	7,169.8	67.2	2.0	88.72	-2,355.2	1,557.7	580.0	516.2	63.77	9.094	
11,122.0	7,182.7	7,170.9	7,169.7	67.6	2.0	88.69	-2,355.2	1,557.7	601.4	537.2	64.17	9.372	
11,200.0	7,181.6	7,170.6	7,169.4	68.9	2.0	88.56	-2,355.2	1,557.7	677.6	612.0	65.57	10.334	
11,220.4	7,181.3	7,170.5	7,169.3	69.3	2.0	88.53	-2,355.2	1,557.7	697.6	631.7	65.94	10.581	
11,300.0	7,180.2	7,170.2	7,169.0	70.6	2.0	88.40	-2,355.2	1,557.7	775.8	708.5	67.37	11.516	
11,318.9	7,180.0	7,170.1	7,168.9	70.9	2.0	88.37	-2,355.2	1,557.7	794.4	726.7	67.71	11.733	
11,400.0	7,178.9	7,169.8	7,168.6	72.3	2.0	88.25	-2,355.2	1,557.7	874.4	805.3	69.17	12.641	
11,417.3	7,178.6	7,169.8	7,168.6	72.6	2.0	88.22	-2,355.2	1,557.7	891.5	822.1	69.49	12.830	
11,500.0	7,177.5	7,169.5	7,168.3	74.0	2.0	88.09	-2,355.2	1,557.7	973.4	902.4	70.98	13.712	
11,515.7	7,177.3	7,169.4	7,168.2	74.3	2.0	88.07	-2,355.2	1,557.7	988.9	917.7	71.27	13.876	
11,600.0	7,176.1	7,169.1	7,167.9	75.7	2.0	87.94	-2,355.2	1,557.7	1,072.5	999.7	72.80	14.732	
11,614.1	7,175.9	7,169.0	7,167.9	76.0	2.0	87.92	-2,355.2	1,557.7	1,086.5	1,013.4	73.06	14.872	
11,700.0	7,174.7	7,168.7	7,167.5	77.5	2.0	87.79	-2,355.2	1,557.7	1,171.7	1,097.1	74.62	15.703	
11,712.6	7,174.5	7,168.7	7,167.5	77.7	2.0	87.77	-2,355.2	1,557.7	1,184.2	1,109.4	74.85	15.822	
11,800.0	7,173.3	7,168.4	7,167.2	79.2	2.0	87.64	-2,355.2	1,557.7	1,271.1	1,194.7	76.44	16.628	
11,811.0	7,173.2	7,168.3	7,167.1	79.4	2.0	87.62	-2,355.2	1,557.7	1,282.0	1,205.4	76.64	16.727	
11,900.0	7,172.0	7,168.0	7,166.8	81.0	2.0	87.49	-2,355.2	1,557.7	1,370.6	1,292.3	78.27	17.511	
11,909.4	7,171.8	7,168.0	7,166.8	81.1	2.0	87.47	-2,355.2	1,557.7	1,379.9	1,301.5	78.44	17.592	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN MCCARTY 30-43 - Wellbore #1 - Wellbor

Offset Site Error: 0.0 usft

Survey Program: 100-GYD_CT

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,000.0	7,170.6	7,167.7	7,166.5	82.7	2.0	87.34	-2,355.2	1,557.7	1,470.1	1,390.0	80.10	18.354	
12,007.8	7,170.5	7,167.7	7,166.5	82.9	2.0	87.33	-2,355.2	1,557.7	1,477.9	1,397.7	80.24	18.418	
12,041.2	7,170.0	7,167.5	7,166.3	83.5	2.0	87.28	-2,355.2	1,557.7	1,511.1	1,430.3	80.85	18.690	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN-MCCARTY 30-5 - Wellbore #1 - Wellbore — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	122.18	-1,014.5	1,612.3	1,905.4				
98.4	98.4	54.5	54.5	0.1	0.0	122.18	-1,014.5	1,612.3	1,904.9	1,904.8	0.12	N/A	
100.0	100.0	56.1	56.1	0.1	0.0	122.18	-1,014.5	1,612.3	1,904.9	1,904.8	0.12	N/A	
196.8	196.8	154.3	154.3	0.3	0.1	122.17	-1,014.2	1,612.5	1,904.9	1,904.5	0.45	4,252.874	
200.0	200.0	157.5	157.5	0.3	0.1	122.17	-1,014.2	1,612.5	1,904.9	1,904.4	0.46	4,140.834	
295.3	295.3	256.7	256.7	0.5	0.3	122.16	-1,013.8	1,612.5	1,904.7	1,904.0	0.78	2,434.752	
300.0	300.0	261.7	261.7	0.5	0.3	122.16	-1,013.8	1,612.5	1,904.7	1,903.9	0.80	2,391.031	
393.7	393.7	357.2	357.2	0.7	0.3	122.16	-1,013.6	1,612.2	1,904.4	1,903.3	1.07	1,783.903	
400.0	400.0	363.4	363.4	0.8	0.3	122.16	-1,013.6	1,612.2	1,904.3	1,903.3	1.09	1,754.965	
492.1	492.1	452.2	452.1	1.0	0.4	122.16	-1,013.6	1,611.8	1,904.0	1,902.7	1.34	1,423.743	
500.0	500.0	459.6	459.6	1.0	0.4	122.17	-1,013.6	1,611.8	1,904.0	1,902.7	1.36	1,401.337	
590.5	590.5	551.0	551.0	1.2	0.4	122.18	-1,013.9	1,611.5	1,903.9	1,902.3	1.61	1,185.603	
600.0	600.0	561.2	561.1	1.2	0.4	122.18	-1,013.9	1,611.4	1,903.9	1,902.2	1.63	1,166.751	
689.0	689.0	653.4	653.4	1.4	0.5	122.19	-1,013.9	1,611.0	1,903.5	1,901.7	1.88	1,014.627	
700.0	700.0	664.6	664.6	1.4	0.5	122.19	-1,013.9	1,610.9	1,903.5	1,901.6	1.91	998.481	
787.4	787.4	755.1	755.1	1.6	0.5	122.19	-1,013.8	1,610.5	1,903.0	1,900.9	2.15	887.084	
800.0	800.0	768.4	768.4	1.7	0.5	122.19	-1,013.8	1,610.4	1,903.0	1,900.8	2.18	873.081	
885.8	885.8	853.8	853.8	1.9	0.6	122.19	-1,013.5	1,609.9	1,902.4	1,900.0	2.41	789.519	
900.0	900.0	867.5	867.5	1.9	0.6	122.19	-1,013.5	1,609.8	1,902.3	1,899.8	2.45	777.343	
984.2	984.2	952.4	952.4	2.1	0.6	122.19	-1,013.2	1,609.4	1,901.8	1,899.1	2.67	711.991	
1,000.0	1,000.0	968.8	968.8	2.1	0.6	122.19	-1,013.1	1,609.3	1,901.7	1,899.0	2.71	700.960	
1,082.7	1,082.7	1,053.3	1,053.3	2.3	0.7	122.19	-1,012.9	1,608.7	1,901.1	1,898.1	2.93	648.506	
1,100.0	1,100.0	1,070.8	1,070.8	2.3	0.7	122.19	-1,012.8	1,608.6	1,900.9	1,898.0	2.98	638.524	
1,181.1	1,181.1	1,153.2	1,153.2	2.5	0.7	122.20	-1,012.5	1,608.0	1,900.3	1,897.1	3.19	595.752	
1,200.0	1,200.0	1,172.5	1,172.4	2.6	0.7	122.20	-1,012.4	1,607.9	1,900.1	1,896.9	3.24	586.612	
1,279.5	1,279.5	1,248.4	1,248.4	2.7	0.8	122.20	-1,012.1	1,607.3	1,899.5	1,896.0	3.44	551.452	
1,300.0	1,300.0	1,267.3	1,267.2	2.8	0.8	122.20	-1,012.1	1,607.2	1,899.3	1,895.9	3.50	543.133	
1,377.9	1,377.9	1,343.2	1,343.1	3.0	0.8	122.20	-1,011.9	1,606.8	1,899.0	1,895.3	3.70	513.812	
1,400.0	1,400.0	1,365.6	1,365.6	3.0	0.8	122.20	-1,011.9	1,606.8	1,898.9	1,895.1	3.75	506.120	
1,450.0	1,450.0	1,417.1	1,417.1	3.1	0.8	122.20	-1,011.7	1,606.6	1,898.6	1,894.7	3.88	489.460	
1,476.4	1,476.4	1,445.1	1,445.0	3.2	0.8	58.90	-1,011.5	1,606.4	1,898.4	1,894.4	4.00	474.178	
1,500.0	1,500.0	1,470.1	1,470.1	3.2	0.8	58.91	-1,011.5	1,606.3	1,898.0	1,894.0	4.06	466.986	
1,574.8	1,574.8	1,546.1	1,546.1	3.4	0.9	59.00	-1,011.2	1,605.7	1,896.3	1,892.0	4.25	445.866	
1,600.0	1,599.9	1,571.0	1,571.0	3.4	0.9	59.05	-1,011.2	1,605.5	1,895.4	1,891.1	4.32	439.120	
1,673.2	1,673.0	1,642.1	1,642.0	3.6	0.9	59.22	-1,010.9	1,605.0	1,892.4	1,887.9	4.50	420.301	
1,700.0	1,699.7	1,667.6	1,667.6	3.7	0.9	59.30	-1,010.9	1,604.8	1,891.1	1,886.5	4.57	413.804	
1,771.6	1,771.0	1,739.8	1,739.8	3.8	0.9	59.57	-1,010.9	1,604.3	1,887.0	1,882.3	4.76	396.641	
1,800.0	1,799.1	1,769.7	1,769.7	3.9	1.0	59.70	-1,010.9	1,604.1	1,885.1	1,880.3	4.83	390.063	
1,870.1	1,868.6	1,840.1	1,840.1	4.1	1.0	60.05	-1,010.8	1,603.4	1,879.8	1,874.8	5.03	374.019	
1,900.0	1,898.2	1,869.2	1,869.2	4.1	1.0	60.21	-1,010.8	1,603.2	1,877.3	1,872.2	5.11	367.460	
1,968.5	1,965.7	1,936.9	1,936.9	4.3	1.0	60.63	-1,010.6	1,602.6	1,871.0	1,865.7	5.31	352.266	
2,000.0	1,996.6	1,968.5	1,968.4	4.4	1.0	60.85	-1,010.6	1,602.3	1,867.8	1,862.4	5.41	345.540	
2,066.9	2,062.2	2,034.3	2,034.3	4.6	1.1	61.35	-1,010.5	1,601.7	1,860.6	1,855.0	5.62	330.929	
2,100.0	2,094.4	2,066.4	2,066.3	4.7	1.1	61.61	-1,010.5	1,601.3	1,856.8	1,851.1	5.73	323.999	
2,165.3	2,157.9	2,128.7	2,128.6	5.0	1.1	62.17	-1,010.5	1,600.7	1,848.8	1,842.8	5.97	309.863	
2,200.0	2,191.5	2,161.1	2,161.1	5.1	1.1	62.48	-1,010.4	1,600.5	1,844.4	1,838.3	6.09	302.682	
2,263.8	2,252.9	2,222.7	2,222.7	5.3	1.1	63.10	-1,010.3	1,600.1	1,835.8	1,829.4	6.36	288.855	
2,300.0	2,287.6	2,259.8	2,259.8	5.5	1.1	63.49	-1,010.1	1,599.8	1,830.7	1,824.2	6.51	281.319	
2,362.2	2,346.9	2,320.5	2,320.5	5.8	1.2	64.18	-1,009.8	1,599.3	1,821.4	1,814.6	6.80	267.921	
2,400.0	2,382.7	2,354.4	2,354.3	6.0	1.2	64.60	-1,009.6	1,599.0	1,815.6	1,808.6	6.98	260.175	
2,460.6	2,439.8	2,409.4	2,409.4	6.3	1.2	65.32	-1,009.5	1,598.6	1,806.1	1,798.8	7.30	247.393	
2,500.0	2,476.6	2,448.6	2,448.5	6.5	1.2	65.84	-1,009.4	1,598.3	1,799.7	1,792.2	7.52	239.463	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN-MCCARTY 30-5 - Wellbore #1 - Wellbore — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,559.0	2,531.6	2,506.2	2,506.1	6.9	1.2	66.66	-1,009.1	1,597.8	1,789.8	1,781.9	7.88	227.277	
2,600.0	2,569.4	2,542.3	2,542.2	7.1	1.2	67.20	-1,008.9	1,597.5	1,782.8	1,774.7	8.13	219.359	
2,657.5	2,622.0	2,592.6	2,592.5	7.5	1.3	68.00	-1,008.6	1,597.2	1,772.8	1,764.3	8.52	208.053	
2,700.0	2,660.7	2,631.2	2,631.1	7.8	1.3	68.63	-1,008.3	1,597.0	1,765.4	1,756.6	8.82	200.204	
2,755.9	2,711.1	2,682.0	2,681.9	8.2	1.3	69.49	-1,008.1	1,596.7	1,755.5	1,746.2	9.25	189.787	
2,800.0	2,750.6	2,720.2	2,720.1	8.6	1.3	70.18	-1,007.9	1,596.4	1,747.6	1,738.0	9.59	182.145	
2,832.3	2,779.2	2,747.1	2,747.1	8.8	1.3	70.68	-1,007.8	1,596.2	1,741.8	1,732.0	9.86	176.605	
2,854.3	2,798.8	2,765.5	2,765.5	9.0	1.3	70.95	-1,007.7	1,596.1	1,737.9	1,727.9	10.05	172.936	
2,900.0	2,839.3	2,803.9	2,803.8	9.4	1.3	71.51	-1,007.6	1,596.0	1,730.1	1,719.6	10.44	165.727	
2,952.7	2,886.0	2,851.7	2,851.6	9.9	1.3	72.22	-1,007.4	1,595.8	1,721.3	1,710.4	10.90	157.864	
3,000.0	2,927.8	2,894.5	2,894.4	10.3	1.4	72.86	-1,007.3	1,595.6	1,713.6	1,702.3	11.32	151.336	
3,051.2	2,973.2	2,938.8	2,938.7	10.7	1.4	73.53	-1,007.0	1,595.4	1,705.6	1,693.8	11.79	144.704	
3,100.0	3,016.4	2,980.7	2,980.6	11.2	1.4	74.17	-1,006.9	1,595.3	1,698.3	1,686.1	12.23	138.837	
3,149.6	3,060.4	3,023.5	3,023.5	11.6	1.4	74.82	-1,006.8	1,595.0	1,691.2	1,678.5	12.69	133.246	
3,200.0	3,105.0	3,067.3	3,067.2	12.1	1.4	75.50	-1,006.9	1,594.8	1,684.3	1,671.1	13.16	127.972	
3,248.0	3,147.5	3,109.0	3,109.0	12.5	1.4	76.16	-1,006.9	1,594.5	1,678.0	1,664.4	13.61	123.247	
3,300.0	3,193.6	3,154.6	3,154.5	13.0	1.4	76.88	-1,007.1	1,594.1	1,671.5	1,657.4	14.11	118.488	
3,346.4	3,234.7	3,195.2	3,195.2	13.4	1.5	77.52	-1,007.2	1,593.8	1,666.0	1,651.4	14.55	114.489	
3,400.0	3,282.2	3,244.6	3,244.6	13.9	1.5	78.31	-1,007.3	1,593.4	1,660.0	1,644.9	15.07	110.164	
3,444.9	3,321.9	3,286.2	3,286.1	14.3	1.5	78.98	-1,007.4	1,593.0	1,655.1	1,639.6	15.51	106.747	
3,500.0	3,370.8	3,337.0	3,336.9	14.8	1.5	79.81	-1,007.6	1,592.4	1,649.5	1,633.5	16.04	102.810	
3,543.3	3,409.1	3,376.8	3,376.7	15.2	1.5	80.46	-1,007.7	1,591.8	1,645.3	1,628.8	16.47	99.895	
3,600.0	3,459.3	3,427.0	3,426.9	15.8	1.5	81.28	-1,007.7	1,591.1	1,640.2	1,623.1	17.03	96.322	
3,641.7	3,496.3	3,462.8	3,462.7	16.1	1.5	81.87	-1,007.8	1,590.6	1,636.7	1,619.2	17.44	93.848	
3,700.0	3,547.9	3,512.8	3,512.7	16.7	1.6	82.70	-1,007.9	1,589.9	1,632.2	1,614.2	18.01	90.607	
3,740.1	3,583.5	3,547.3	3,547.2	17.1	1.6	83.27	-1,008.0	1,589.5	1,629.4	1,611.0	18.41	88.503	
3,800.0	3,636.5	3,598.8	3,598.7	17.6	1.6	84.13	-1,008.2	1,588.9	1,625.7	1,606.7	19.00	85.555	
3,838.6	3,670.7	3,630.4	3,630.3	18.0	1.6	84.66	-1,008.3	1,588.5	1,623.6	1,604.2	19.38	83.772	
3,900.0	3,725.1	3,680.7	3,680.6	18.6	1.6	85.49	-1,008.5	1,588.1	1,620.7	1,600.8	19.98	81.102	
3,937.0	3,757.9	3,712.2	3,712.1	18.9	1.6	86.02	-1,008.7	1,587.8	1,619.4	1,599.0	20.35	79.582	
4,000.0	3,813.7	3,769.6	3,769.5	19.5	1.6	86.97	-1,009.0	1,587.4	1,617.4	1,596.4	20.97	77.137	
4,035.4	3,845.1	3,800.0	3,799.9	19.9	1.6	87.48	-1,009.1	1,587.3	1,616.5	1,595.2	21.32	75.837	
4,100.0	3,902.3	3,854.7	3,854.6	20.5	1.7	88.39	-1,009.3	1,587.0	1,615.3	1,593.4	21.95	73.607	
4,133.8	3,932.2	3,882.4	3,882.3	20.8	1.7	88.86	-1,009.5	1,586.8	1,615.0	1,592.8	22.28	72.503	
4,177.4	3,970.8	3,920.3	3,920.2	21.2	1.7	89.49	-1,009.8	1,586.5	1,614.9	1,592.2	22.70	71.145	
4,200.0	3,990.8	3,941.2	3,941.1	21.5	1.7	89.84	-1,010.0	1,586.3	1,614.9	1,592.0	22.92	70.466	
4,232.3	4,019.4	3,971.0	3,970.9	21.8	1.7	90.34	-1,010.2	1,586.1	1,615.1	1,591.9	23.23	69.524	
4,300.0	4,079.4	4,029.4	4,029.2	22.4	1.7	91.32	-1,010.6	1,585.6	1,615.8	1,591.9	23.88	67.656	
4,330.7	4,106.6	4,054.1	4,053.9	22.7	1.7	91.74	-1,010.8	1,585.4	1,616.4	1,592.2	24.18	66.855	
4,400.0	4,168.0	4,110.7	4,110.5	23.4	1.7	92.69	-1,011.5	1,584.9	1,618.4	1,593.5	24.84	65.152	
4,429.1	4,193.8	4,136.4	4,136.3	23.7	1.7	93.13	-1,011.9	1,584.6	1,619.4	1,594.3	25.12	64.475	
4,500.0	4,256.6	4,198.9	4,198.8	24.4	1.7	94.19	-1,012.8	1,583.8	1,622.4	1,596.7	25.79	62.919	
4,527.5	4,281.0	4,222.0	4,221.8	24.6	1.7	94.58	-1,013.2	1,583.4	1,623.8	1,597.8	26.05	62.346	
4,600.0	4,345.2	4,282.5	4,282.3	25.3	1.8	95.60	-1,014.2	1,582.5	1,628.0	1,601.3	26.72	60.924	
4,626.0	4,368.2	4,304.8	4,304.6	25.6	1.8	95.98	-1,014.6	1,582.2	1,629.8	1,602.8	26.96	60.442	
4,700.0	4,433.8	4,376.1	4,375.9	26.3	1.8	97.18	-1,015.7	1,581.1	1,635.0	1,607.4	27.64	59.150	
4,724.4	4,455.4	4,399.7	4,399.4	26.5	1.8	97.58	-1,016.1	1,580.6	1,636.9	1,609.0	27.86	58.746	
4,800.0	4,522.3	4,467.4	4,467.1	27.3	1.8	98.71	-1,016.9	1,579.4	1,643.1	1,614.5	28.55	57.555	
4,822.8	4,542.6	4,487.8	4,487.6	27.5	1.8	99.05	-1,017.2	1,579.0	1,645.1	1,616.4	28.75	57.214	
4,900.0	4,610.9	4,557.3	4,557.0	28.2	1.8	100.21	-1,018.0	1,577.7	1,652.4	1,623.0	29.44	56.128	
4,921.2	4,629.8	4,576.4	4,576.2	28.4	1.8	100.53	-1,018.3	1,577.3	1,654.5	1,624.9	29.63	55.845	
5,000.0	4,699.5	4,645.9	4,645.6	29.2	1.9	101.67	-1,019.0	1,576.0	1,662.9	1,632.6	30.32	54.852	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN-MCCARTY 30-5 - Wellbore #1 - Wellbore — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,019.7	4,716.9	4,663.0	4,662.7	29.4	1.9	101.95	-1,019.2	1,575.6	1,665.2	1,634.7	30.49	54.618	
5,100.0	4,788.1	4,732.6	4,732.3	30.2	1.9	103.09	-1,020.0	1,574.1	1,674.8	1,643.6	31.18	53.719	
5,118.1	4,804.1	4,748.2	4,747.9	30.4	1.9	103.34	-1,020.2	1,573.9	1,677.1	1,645.8	31.33	53.528	
5,200.0	4,876.7	4,819.3	4,819.0	31.1	1.9	104.47	-1,020.9	1,573.0	1,688.0	1,656.0	32.02	52.714	
5,216.5	4,891.3	4,833.5	4,833.2	31.3	1.9	104.70	-1,021.0	1,572.9	1,690.4	1,658.2	32.16	52.560	
5,300.0	4,965.3	4,906.0	4,905.6	32.1	1.9	105.83	-1,021.8	1,572.0	1,702.6	1,669.7	32.85	51.828	
5,314.9	4,978.5	4,920.0	4,919.7	32.3	1.9	106.05	-1,022.0	1,571.9	1,704.9	1,671.9	32.97	51.707	
5,400.0	5,053.8	4,999.8	4,999.4	33.1	2.0	107.29	-1,022.7	1,570.9	1,718.2	1,684.5	33.65	51.061	
5,413.4	5,065.7	5,011.8	5,011.4	33.2	2.0	107.47	-1,022.8	1,570.8	1,720.3	1,686.6	33.76	50.964	
5,508.2	5,149.7	5,097.1	5,096.7	34.2	2.0	108.76	-1,023.3	1,569.9	1,736.2	1,701.7	34.50	50.324	
5,511.8	5,152.9	5,100.4	5,100.0	34.2	2.0	108.82	-1,023.4	1,569.9	1,736.8	1,702.3	34.52	50.310	
5,600.0	5,231.7	5,181.8	5,181.4	34.9	2.0	110.28	-1,023.8	1,569.3	1,751.8	1,716.8	35.04	49.995	
5,610.2	5,240.9	5,191.3	5,191.0	35.0	2.0	110.44	-1,023.8	1,569.2	1,753.6	1,718.5	35.09	49.980	
5,700.0	5,322.5	5,266.6	5,266.2	35.7	2.0	111.72	-1,024.2	1,568.6	1,768.7	1,733.2	35.49	49.833	
5,708.6	5,330.4	5,273.8	5,273.4	35.7	2.0	111.83	-1,024.3	1,568.6	1,770.1	1,734.6	35.53	49.825	
5,800.0	5,414.6	5,363.1	5,362.8	36.3	2.1	113.19	-1,024.9	1,567.5	1,785.3	1,749.4	35.86	49.784	
5,807.1	5,421.2	5,370.6	5,370.2	36.4	2.1	113.30	-1,025.0	1,567.4	1,786.4	1,750.5	35.88	49.786	
5,900.0	5,508.1	5,465.0	5,464.6	36.9	2.1	114.59	-1,025.1	1,566.0	1,800.7	1,764.5	36.16	49.794	
5,905.5	5,513.3	5,470.5	5,470.1	37.0	2.1	114.66	-1,025.1	1,565.9	1,801.5	1,765.3	36.18	49.797	
6,000.0	5,602.8	5,572.3	5,571.9	37.5	2.1	115.89	-1,024.8	1,564.6	1,814.7	1,778.3	36.41	49.846	
6,003.9	5,606.5	5,576.7	5,576.3	37.5	2.1	115.94	-1,024.8	1,564.5	1,815.2	1,778.8	36.41	49.850	
6,100.0	5,698.5	5,677.4	5,677.0	38.0	2.2	117.03	-1,023.7	1,562.8	1,827.0	1,790.4	36.61	49.906	
6,102.3	5,700.7	5,679.8	5,679.4	38.0	2.2	117.06	-1,023.7	1,562.8	1,827.3	1,790.7	36.61	49.908	
6,200.0	5,795.2	5,761.7	5,761.3	38.4	2.2	117.89	-1,022.8	1,561.0	1,838.1	1,801.3	36.80	49.943	
6,200.8	5,795.9	5,762.3	5,761.9	38.4	2.2	117.89	-1,022.8	1,561.0	1,838.2	1,801.4	36.80	49.944	
6,299.2	5,891.9	5,857.3	5,856.8	38.8	2.2	118.69	-1,022.5	1,559.6	1,848.4	1,811.5	36.95	50.029	
6,300.0	5,892.7	5,858.2	5,857.7	38.8	2.2	118.70	-1,022.5	1,559.6	1,848.5	1,811.5	36.95	50.030	
6,397.6	5,988.5	5,959.0	5,958.5	39.1	2.2	119.37	-1,021.7	1,559.3	1,856.8	1,819.7	37.06	50.105	
6,400.0	5,990.9	5,961.3	5,960.9	39.1	2.2	119.39	-1,021.7	1,559.4	1,857.0	1,819.9	37.06	50.105	
6,496.0	6,085.8	6,048.3	6,047.8	39.4	2.2	119.86	-1,021.2	1,559.7	1,863.8	1,826.6	37.16	50.154	
6,500.0	6,089.7	6,051.7	6,051.2	39.4	2.2	119.87	-1,021.2	1,559.7	1,864.0	1,826.9	37.17	50.155	
6,594.5	6,183.5	6,135.5	6,135.1	39.6	2.2	120.24	-1,021.2	1,559.5	1,869.7	1,832.5	37.24	50.205	
6,600.0	6,189.0	6,140.7	6,140.2	39.7	2.2	120.26	-1,021.2	1,559.5	1,870.0	1,832.8	37.25	50.206	
6,692.9	6,281.5	6,243.5	6,243.1	39.8	2.3	120.57	-1,021.4	1,559.3	1,874.3	1,837.0	37.30	50.252	
6,700.0	6,288.6	6,254.0	6,253.6	39.8	2.3	120.59	-1,021.4	1,559.3	1,874.5	1,837.2	37.30	50.254	
6,791.3	6,379.8	6,349.2	6,348.7	40.0	2.3	120.76	-1,020.5	1,558.9	1,876.0	1,838.6	37.34	50.235	
6,800.0	6,388.5	6,356.3	6,355.8	40.0	2.3	120.77	-1,020.4	1,558.9	1,876.1	1,838.7	37.35	50.229	
6,889.7	6,478.2	6,434.7	6,434.2	40.1	2.3	120.82	-1,020.2	1,558.5	1,876.6	1,839.2	37.40	50.183	
6,890.4	6,478.9	6,435.3	6,434.9	40.1	2.3	-175.87	-1,020.2	1,558.5	1,876.6	1,839.2	37.40	50.182	
6,900.0	6,488.5	6,444.5	6,444.0	40.1	2.3	-175.87	-1,020.2	1,558.4	1,876.6	1,839.2	37.40	50.171	
6,920.4	6,508.9	6,464.0	6,463.5	40.1	2.3	-175.86	-1,020.2	1,558.4	1,876.6	1,839.2	37.42	50.146	
6,950.0	6,538.5	6,492.2	6,491.8	40.1	2.3	4.14	-1,020.3	1,558.2	1,876.0	1,838.7	37.37	50.202	
6,988.2	6,576.6	6,530.2	6,529.7	40.1	2.3	4.17	-1,020.3	1,558.1	1,873.5	1,836.2	37.27	50.262	
7,000.0	6,588.3	6,542.0	6,541.6	40.1	2.3	4.18	-1,020.3	1,558.0	1,872.3	1,835.1	37.24	50.279	
7,050.0	6,637.8	6,591.8	6,591.4	40.1	2.4	4.25	-1,020.4	1,557.8	1,865.1	1,828.1	37.04	50.354	
7,086.6	6,673.6	6,626.4	6,626.0	40.1	2.4	4.31	-1,020.4	1,557.7	1,857.7	1,820.9	36.84	50.431	
7,100.0	6,686.6	6,638.8	6,638.4	40.1	2.4	4.34	-1,020.4	1,557.7	1,854.5	1,817.8	36.75	50.467	
7,150.0	6,734.6	6,684.7	6,684.2	40.0	2.4	4.47	-1,020.6	1,557.5	1,840.6	1,804.3	36.34	50.655	
7,185.0	6,767.5	6,717.4	6,716.9	39.9	2.4	4.58	-1,020.7	1,557.4	1,828.9	1,793.0	35.97	50.844	
7,200.0	6,781.4	6,731.7	6,731.2	39.9	2.4	4.63	-1,020.7	1,557.3	1,823.4	1,787.7	35.80	50.941	
7,250.0	6,827.0	6,778.5	6,778.0	39.8	2.4	4.84	-1,020.9	1,557.2	1,803.0	1,767.9	35.12	51.343	
7,283.4	6,856.6	6,809.0	6,808.5	39.8	2.4	5.00	-1,020.9	1,557.2	1,787.6	1,753.0	34.59	51.687	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN-MCCARTY 30-5 - Wellbore #1 - Wellbore — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,300.0	6,871.0	6,823.8	6,823.4	39.7	2.4	5.09	-1,021.0	1,557.2	1,779.4	1,745.1	34.30	51.881	
7,350.0	6,913.2	6,867.4	6,867.0	39.6	2.4	5.40	-1,021.0	1,557.2	1,752.8	1,719.5	33.34	52.576	
7,381.9	6,939.1	6,894.2	6,893.7	39.5	2.4	5.64	-1,021.1	1,557.2	1,734.3	1,701.7	32.66	53.109	
7,400.0	6,953.4	6,908.5	6,908.1	39.4	2.4	5.79	-1,021.1	1,557.1	1,723.3	1,691.1	32.24	53.449	
7,450.0	6,991.5	6,945.8	6,945.3	39.3	2.4	6.26	-1,021.1	1,557.0	1,691.1	1,660.1	31.01	54.532	
7,480.3	7,013.5	6,967.2	6,966.8	39.2	2.4	6.59	-1,021.1	1,556.9	1,670.3	1,640.1	30.20	55.302	
7,500.0	7,027.3	6,980.7	6,980.3	39.1	2.4	6.84	-1,021.1	1,556.9	1,656.3	1,626.7	29.65	55.857	
7,550.0	7,060.5	7,012.9	7,012.4	39.0	2.5	7.56	-1,021.2	1,556.7	1,619.1	1,591.0	28.17	57.467	
7,578.7	7,078.4	7,030.0	7,029.5	38.8	2.5	8.05	-1,021.2	1,556.6	1,596.8	1,569.5	27.28	58.538	
7,600.0	7,091.0	7,042.1	7,041.6	38.8	2.5	8.47	-1,021.3	1,556.6	1,579.8	1,553.2	26.59	59.413	
7,650.0	7,118.7	7,068.6	7,068.2	38.6	2.5	9.62	-1,021.4	1,556.5	1,538.4	1,513.5	24.91	61.758	
7,677.1	7,132.5	7,081.9	7,081.5	38.5	2.5	10.39	-1,021.4	1,556.4	1,515.2	1,491.2	23.97	63.223	
7,700.0	7,143.4	7,092.5	7,092.0	38.4	2.5	11.14	-1,021.5	1,556.4	1,495.3	1,472.1	23.15	64.582	
7,750.0	7,165.0	7,113.5	7,113.1	38.2	2.5	13.18	-1,021.6	1,556.4	1,450.5	1,429.2	21.34	67.963	
7,775.6	7,174.9	7,123.2	7,122.7	38.1	2.5	14.52	-1,021.6	1,556.4	1,427.1	1,406.7	20.41	69.911	
7,800.0	7,183.5	7,131.6	7,131.2	38.1	2.5	16.05	-1,021.7	1,556.4	1,404.4	1,384.8	19.53	71.916	
7,850.0	7,198.6	7,146.6	7,146.1	37.9	2.5	20.26	-1,021.8	1,556.4	1,357.1	1,339.2	17.83	76.103	
7,874.0	7,204.7	7,152.6	7,152.2	37.8	2.5	23.04	-1,021.8	1,556.4	1,334.0	1,316.8	17.16	77.759	
7,900.0	7,210.4	7,158.3	7,157.9	37.7	2.5	26.88	-1,021.8	1,556.4	1,308.8	1,292.2	16.63	78.703	
7,950.0	7,218.8	7,166.8	7,166.3	37.6	2.5	38.16	-1,021.9	1,556.4	1,259.9	1,243.0	16.88	74.629	
7,972.4	7,221.4	7,169.5	7,169.0	37.5	2.5	45.81	-1,021.9	1,556.4	1,237.7	1,220.0	17.79	69.566	
8,000.0	7,223.7	7,171.9	7,171.4	37.4	2.5	58.41	-1,021.9	1,556.4	1,210.5	1,190.9	19.52	61.999	
8,050.0	7,225.1	7,173.6	7,173.1	37.3	2.5	89.77	-1,021.9	1,556.4	1,160.8	1,137.7	23.14	50.169	
8,055.3	7,225.0	7,173.6	7,173.1	37.3	2.5	93.30	-1,021.9	1,556.4	1,155.6	1,132.0	23.59	48.990	
8,070.8	7,224.8	7,173.5	7,173.0	37.3	2.5	93.26	-1,021.9	1,556.4	1,140.1	1,116.5	23.59	48.329	
8,100.0	7,224.4	7,173.3	7,172.8	37.2	2.5	93.18	-1,021.9	1,556.4	1,111.2	1,087.6	23.60	47.093	
8,169.3	7,223.5	7,172.8	7,172.4	37.1	2.5	92.99	-1,021.9	1,556.4	1,042.5	1,018.8	23.69	44.001	
8,200.0	7,223.0	7,172.6	7,172.2	37.1	2.5	92.91	-1,021.9	1,556.4	1,012.0	988.3	23.74	42.639	
8,267.7	7,222.1	7,172.2	7,171.7	37.0	2.5	92.72	-1,021.9	1,556.4	945.0	921.1	23.94	39.470	
8,300.0	7,221.7	7,172.0	7,171.5	37.0	2.5	92.63	-1,021.9	1,556.4	913.1	889.0	24.04	37.980	
8,366.1	7,220.7	7,171.5	7,171.1	37.0	2.5	92.45	-1,021.9	1,556.4	847.8	823.4	24.35	34.818	
8,400.0	7,220.3	7,171.3	7,170.9	37.0	2.5	92.36	-1,021.9	1,556.4	814.3	789.8	24.51	33.231	
8,464.5	7,219.4	7,170.9	7,170.4	37.1	2.5	92.18	-1,021.9	1,556.4	750.8	725.9	24.90	30.149	
8,500.0	7,218.9	7,170.6	7,170.2	37.1	2.5	92.08	-1,021.9	1,556.4	716.0	690.9	25.12	28.501	
8,563.0	7,218.0	7,170.2	7,169.8	37.2	2.5	91.90	-1,021.9	1,556.4	654.3	628.7	25.60	25.563	
8,600.0	7,217.5	7,170.0	7,169.5	37.3	2.5	91.80	-1,021.9	1,556.4	618.1	592.3	25.87	23.890	
8,661.4	7,216.7	7,169.6	7,169.1	37.5	2.5	91.62	-1,021.9	1,556.4	558.4	532.0	26.41	21.143	
8,700.0	7,216.1	7,169.3	7,168.8	37.6	2.5	91.52	-1,021.9	1,556.4	521.1	494.4	26.75	19.479	
8,759.8	7,215.3	7,168.9	7,168.4	37.8	2.5	91.35	-1,021.9	1,556.4	463.7	436.3	27.34	16.957	
8,800.0	7,214.8	7,168.6	7,168.2	38.0	2.5	91.23	-1,021.9	1,556.4	425.5	397.7	27.74	15.336	
8,858.2	7,214.0	7,168.2	7,167.8	38.3	2.5	91.07	-1,021.9	1,556.4	370.8	342.4	28.38	13.067	
8,900.0	7,213.4	7,167.9	7,167.5	38.5	2.5	90.95	-1,021.9	1,556.4	332.4	303.5	28.83	11.528	
8,956.7	7,212.6	7,167.5	7,167.1	38.8	2.5	90.78	-1,021.9	1,556.4	281.7	252.2	29.50	9.551	
9,000.0	7,212.0	7,167.2	7,166.8	39.1	2.5	90.66	-1,021.9	1,556.4	244.8	214.8	30.01	8.158	
9,055.1	7,211.2	7,166.9	7,166.4	39.5	2.5	90.50	-1,021.9	1,556.4	201.6	170.9	30.70	6.566	
9,100.0	7,210.6	7,166.5	7,166.1	39.8	2.5	90.37	-1,021.9	1,556.4	171.4	140.2	31.26	5.484	
9,153.5	7,209.9	7,166.2	7,165.7	40.3	2.5	90.22	-1,021.9	1,556.4	145.8	113.9	31.97	4.561	
9,200.0	7,209.2	7,165.9	7,165.4	40.7	2.5	90.08	-1,021.9	1,556.4	137.3	104.7	32.58	4.214	
9,202.7	7,209.2	7,165.8	7,165.4	40.7	2.5	90.07	-1,021.9	1,556.4	137.3	104.7	32.62	4.208	CC, ES, SF
9,251.9	7,208.5	7,165.5	7,165.0	41.1	2.5	89.93	-1,021.9	1,556.4	145.8	112.5	33.30	4.379	
9,300.0	7,207.9	7,165.2	7,164.7	41.6	2.5	89.79	-1,021.9	1,556.4	168.3	134.3	33.96	4.954	
9,350.4	7,207.2	7,164.8	7,164.3	42.1	2.5	89.64	-1,021.9	1,556.4	201.6	166.9	34.69	5.813	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN-MCCARTY 30-5 - Wellbore #1 - Wellbore — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,400.0	7,206.5	7,164.5	7,164.0	42.6	2.5	89.50	-1,021.9	1,556.4	240.3	204.9	35.40	6.790	
9,448.8	7,205.8	7,164.1	7,163.7	43.1	2.5	89.35	-1,021.9	1,556.4	281.8	245.7	36.12	7.802	
9,500.0	7,205.1	7,163.7	7,163.3	43.7	2.5	89.20	-1,021.9	1,556.4	327.4	290.6	36.87	8.881	
9,547.2	7,204.4	7,163.4	7,163.0	44.2	2.5	89.06	-1,021.9	1,556.4	370.8	333.3	37.59	9.866	
9,600.0	7,203.7	7,163.0	7,162.6	44.8	2.5	88.91	-1,021.9	1,556.4	420.3	381.9	38.39	10.950	
9,645.6	7,203.1	7,162.7	7,162.3	45.4	2.5	88.77	-1,021.9	1,556.4	463.7	424.6	39.09	11.861	
9,700.0	7,202.3	7,162.3	7,161.9	46.1	2.5	88.61	-1,021.9	1,556.4	515.9	475.9	39.94	12.917	
9,744.1	7,201.7	7,162.0	7,161.5	46.6	2.5	88.48	-1,021.9	1,556.4	558.5	517.8	40.63	13.745	
9,800.0	7,201.0	7,161.6	7,161.1	47.3	2.5	88.31	-1,021.9	1,556.4	612.8	571.3	41.52	14.762	
9,842.5	7,200.4	7,161.3	7,160.8	47.9	2.5	88.18	-1,021.9	1,556.4	654.3	612.1	42.20	15.506	
9,900.0	7,199.6	7,160.9	7,160.4	48.7	2.5	88.01	-1,021.9	1,556.4	710.7	667.5	43.12	16.481	
9,940.9	7,199.0	7,160.6	7,160.1	49.2	2.5	87.88	-1,021.9	1,556.4	750.8	707.1	43.79	17.148	
10,000.0	7,198.2	7,160.2	7,159.7	50.1	2.5	87.70	-1,021.9	1,556.4	809.0	764.2	44.75	18.079	
10,039.3	7,197.7	7,159.9	7,159.4	50.6	2.5	87.58	-1,021.9	1,556.4	847.8	802.4	45.40	18.675	
10,100.0	7,196.8	7,159.4	7,159.0	51.5	2.5	87.40	-1,021.9	1,556.4	907.7	861.3	46.40	19.564	
10,137.8	7,196.3	7,159.1	7,158.7	52.0	2.5	87.28	-1,021.8	1,556.4	945.1	898.0	47.03	20.096	
10,200.0	7,195.4	7,158.7	7,158.2	52.9	2.5	87.09	-1,021.8	1,556.4	1,006.7	958.6	48.06	20.944	
10,236.2	7,194.9	7,158.4	7,158.0	53.5	2.5	86.98	-1,021.8	1,556.4	1,042.5	993.9	48.67	21.419	
10,300.0	7,194.1	7,157.9	7,157.5	54.4	2.5	86.78	-1,021.8	1,556.4	1,105.8	1,056.1	49.75	22.229	
10,334.6	7,193.6	7,157.7	7,157.2	55.0	2.5	86.68	-1,021.8	1,556.4	1,140.2	1,089.8	50.33	22.652	
10,400.0	7,192.7	7,157.2	7,156.7	56.0	2.5	86.47	-1,021.8	1,556.4	1,205.1	1,153.7	51.44	23.426	
10,433.0	7,192.2	7,157.0	7,156.5	56.5	2.5	86.37	-1,021.8	1,556.4	1,237.9	1,185.9	52.01	23.804	
10,500.0	7,191.3	7,156.5	7,156.0	57.5	2.5	86.16	-1,021.8	1,556.4	1,304.5	1,251.3	53.15	24.544	
10,531.5	7,190.9	7,156.2	7,155.8	58.0	2.5	86.06	-1,021.8	1,556.4	1,335.8	1,282.1	53.69	24.879	
10,600.0	7,189.9	7,155.7	7,155.2	59.1	2.5	85.85	-1,021.8	1,556.4	1,404.0	1,349.1	54.87	25.588	
10,629.9	7,189.5	7,155.5	7,155.0	59.6	2.5	85.76	-1,021.8	1,556.4	1,433.7	1,378.4	55.39	25.887	
10,700.0	7,188.5	7,154.9	7,154.5	60.7	2.5	85.54	-1,021.8	1,556.4	1,503.5	1,446.9	56.60	26.566	
10,728.3	7,188.1	7,154.7	7,154.3	61.1	2.5	85.45	-1,021.8	1,556.4	1,531.7	1,474.6	57.09	26.831	
10,800.0	7,187.2	7,154.2	7,153.7	62.3	2.5	85.22	-1,021.8	1,556.4	1,603.1	1,544.8	58.33	27.483	
10,826.7	7,186.8	7,154.0	7,153.5	62.7	2.5	85.13	-1,021.8	1,556.4	1,629.8	1,571.0	58.80	27.718	
10,900.0	7,185.8	7,153.4	7,153.0	63.9	2.5	84.90	-1,021.8	1,556.4	1,702.8	1,642.7	60.07	28.344	
10,925.2	7,185.4	7,153.2	7,152.8	64.3	2.5	84.82	-1,021.8	1,556.4	1,727.9	1,667.4	60.52	28.553	
11,000.0	7,184.4	7,152.6	7,152.2	65.6	2.5	84.58	-1,021.8	1,556.4	1,802.5	1,740.7	61.82	29.155	
11,023.6	7,184.1	7,152.5	7,152.0	66.0	2.5	84.51	-1,021.8	1,556.4	1,826.0	1,763.8	62.24	29.339	
11,100.0	7,183.0	7,151.9	7,151.4	67.2	2.5	84.26	-1,021.8	1,556.4	1,902.2	1,838.6	63.58	29.919	
11,122.0	7,182.7	7,151.7	7,151.3	67.6	2.5	84.19	-1,021.8	1,556.4	1,924.2	1,860.2	63.97	30.082	
11,200.0	7,181.6	7,151.1	7,150.6	68.9	2.5	83.94	-1,021.8	1,556.4	2,001.9	1,936.6	65.34	30.641	
11,220.4	7,181.3	7,150.9	7,150.5	69.3	2.5	83.87	-1,021.8	1,556.4	2,022.3	1,956.7	65.70	30.783	
11,300.0	7,180.2	7,150.3	7,149.9	70.6	2.5	83.62	-1,021.8	1,556.4	2,101.7	2,034.6	67.10	31.323	
11,318.9	7,180.0	7,150.2	7,149.7	70.9	2.5	83.55	-1,021.8	1,556.4	2,120.6	2,053.1	67.43	31.448	
11,400.0	7,178.9	7,149.5	7,149.1	72.3	2.5	83.29	-1,021.8	1,556.4	2,201.5	2,132.7	68.86	31.970	
11,417.3	7,178.6	7,149.4	7,148.9	72.6	2.5	83.23	-1,021.8	1,556.4	2,218.8	2,149.6	69.17	32.078	
11,500.0	7,177.5	7,148.7	7,148.3	74.0	2.5	82.96	-1,021.8	1,556.4	2,301.3	2,230.7	70.63	32.584	
11,515.7	7,177.3	7,148.6	7,148.2	74.3	2.5	82.91	-1,021.8	1,556.4	2,317.0	2,246.1	70.91	32.677	
11,600.0	7,176.1	7,147.9	7,147.5	75.7	2.5	82.64	-1,021.8	1,556.4	2,401.2	2,328.8	72.40	33.167	
11,614.1	7,175.9	7,147.8	7,147.4	76.0	2.5	82.59	-1,021.8	1,556.4	2,415.3	2,342.6	72.65	33.247	
11,700.0	7,174.7	7,147.1	7,146.7	77.5	2.5	82.31	-1,021.8	1,556.4	2,501.0	2,426.8	74.17	33.722	
11,712.6	7,174.5	7,147.0	7,146.6	77.7	2.5	82.26	-1,021.8	1,556.4	2,513.5	2,439.2	74.39	33.790	
11,800.0	7,173.3	7,146.3	7,145.9	79.2	2.5	81.98	-1,021.8	1,556.4	2,600.8	2,524.9	75.94	34.251	
11,811.0	7,173.2	7,146.2	7,145.8	79.4	2.5	81.94	-1,021.8	1,556.4	2,611.8	2,535.7	76.13	34.307	
11,900.0	7,172.0	7,145.5	7,145.1	81.0	2.5	81.64	-1,021.8	1,556.4	2,700.7	2,623.0	77.70	34.756	
11,909.4	7,171.8	7,145.4	7,145.0	81.1	2.5	81.61	-1,021.8	1,556.4	2,710.1	2,632.2	77.87	34.802	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT BROWN-MCCARTY 30-5 - Wellbore #1 - Wellbore

Offset Site Error: 0.0 usft

Survey Program: 100-GYD_CT

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,000.0	7,170.6	7,144.7	7,144.2	82.7	2.5	81.31	-1,021.8	1,556.4	2,800.6	2,721.1	79.47	35.239	
12,007.8	7,170.5	7,144.6	7,144.2	82.9	2.5	81.28	-1,021.8	1,556.4	2,808.4	2,728.8	79.61	35.276	
12,041.2	7,170.0	7,144.4	7,143.9	83.5	2.5	81.17	-1,021.8	1,556.4	2,841.7	2,761.5	80.20	35.432	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT MCCART 30-2 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	9.9	9.9	0.0	0.0	156.80	-3,682.7	1,578.1	4,006.6				
98.4	98.4	132.1	132.1	0.1	0.1	156.80	-3,682.2	1,577.9	4,006.1	4,005.9	0.16	N/A	
100.0	100.0	133.5	133.5	0.1	0.1	156.80	-3,682.1	1,577.9	4,006.1	4,005.9	0.16	N/A	
196.8	196.8	221.7	221.7	0.3	0.2	156.80	-3,681.6	1,577.8	4,005.5	4,005.0	0.53	7,570.822	
200.0	200.0	224.5	224.5	0.3	0.2	156.80	-3,681.6	1,577.8	4,005.5	4,005.0	0.54	7,438.565	
295.3	295.3	309.8	309.8	0.5	0.3	156.80	-3,681.3	1,577.9	4,005.2	4,004.4	0.82	4,868.097	
300.0	300.0	314.8	314.8	0.5	0.3	156.80	-3,681.3	1,577.9	4,005.2	4,004.4	0.84	4,786.619	
393.7	393.7	412.5	412.5	0.7	0.4	156.80	-3,681.0	1,578.0	4,005.0	4,003.9	1.11	3,604.290	
400.0	400.0	418.3	418.2	0.8	0.4	156.80	-3,681.0	1,578.0	4,005.0	4,003.8	1.13	3,549.362	
492.1	492.1	502.3	502.3	1.0	0.4	156.79	-3,680.8	1,578.1	4,004.8	4,003.4	1.38	2,903.502	
500.0	500.0	510.5	510.5	1.0	0.4	156.79	-3,680.8	1,578.1	4,004.8	4,003.4	1.40	2,861.784	
590.5	590.5	600.0	600.0	1.2	0.5	156.79	-3,680.6	1,578.1	4,004.7	4,003.1	1.63	2,457.993	
600.0	600.0	612.3	612.3	1.2	0.5	156.79	-3,680.6	1,578.1	4,004.7	4,003.0	1.65	2,425.743	
647.6	647.6	654.7	654.6	1.3	0.5	156.79	-3,680.6	1,578.1	4,004.6	4,002.9	1.76	2,276.104	
689.0	689.0	691.4	691.4	1.4	0.5	156.79	-3,680.6	1,578.1	4,004.7	4,002.8	1.85	2,160.528	
700.0	700.0	701.4	701.4	1.4	0.5	156.79	-3,680.6	1,578.1	4,004.7	4,002.8	1.88	2,130.940	
787.4	787.4	791.0	791.0	1.6	0.5	156.79	-3,680.6	1,578.3	4,004.8	4,002.7	2.12	1,890.140	
800.0	800.0	804.2	804.2	1.7	0.5	156.79	-3,680.7	1,578.3	4,004.8	4,002.6	2.15	1,861.263	
885.8	885.8	898.6	898.5	1.9	0.5	156.79	-3,680.6	1,578.3	4,004.8	4,002.4	2.35	1,703.921	
900.0	900.0	912.7	912.7	1.9	0.5	156.79	-3,680.6	1,578.3	4,004.7	4,002.3	2.39	1,678.885	
984.2	984.2	995.8	995.8	2.1	0.6	156.79	-3,680.5	1,578.4	4,004.6	4,002.0	2.59	1,543.244	
1,000.0	1,000.0	1,011.5	1,011.5	2.1	0.6	156.79	-3,680.4	1,578.4	4,004.6	4,002.0	2.63	1,521.211	
1,082.7	1,082.7	1,093.7	1,093.7	2.3	0.6	156.79	-3,680.4	1,578.3	4,004.5	4,001.7	2.83	1,416.702	
1,100.0	1,100.0	1,111.8	1,111.8	2.3	0.6	156.79	-3,680.3	1,578.3	4,004.5	4,001.6	2.87	1,395.697	
1,181.1	1,181.1	1,198.9	1,198.9	2.5	0.6	156.79	-3,680.2	1,578.2	4,004.3	4,001.3	3.07	1,302.997	
1,200.0	1,200.0	1,217.8	1,217.8	2.6	0.6	156.79	-3,680.1	1,578.2	4,004.3	4,001.2	3.12	1,282.340	
1,279.5	1,279.5	1,296.8	1,296.8	2.7	0.6	156.79	-3,679.9	1,578.2	4,004.1	4,000.8	3.33	1,201.978	
1,300.0	1,300.0	1,318.0	1,318.0	2.8	0.7	156.79	-3,679.9	1,578.2	4,004.0	4,000.6	3.38	1,182.914	
1,377.9	1,377.9	1,399.4	1,399.4	3.0	0.7	156.79	-3,679.6	1,578.1	4,003.8	4,000.2	3.59	1,115.554	
1,400.0	1,400.0	1,420.6	1,420.6	3.0	0.7	156.79	-3,679.6	1,578.1	4,003.7	4,000.1	3.64	1,098.521	
1,450.0	1,450.0	1,468.4	1,468.4	3.1	0.7	156.79	-3,679.4	1,578.0	4,003.5	3,999.8	3.77	1,061.815	
1,476.4	1,476.4	1,493.7	1,493.7	3.2	0.7	93.48	-3,679.4	1,577.9	4,003.5	3,999.6	3.89	1,029.003	
1,500.0	1,500.0	1,515.7	1,515.7	3.2	0.7	93.49	-3,679.4	1,577.9	4,003.4	3,999.5	3.95	1,014.238	
1,527.2	1,527.2	1,540.8	1,540.8	3.3	0.7	93.50	-3,679.3	1,577.8	4,003.4	3,999.4	4.01	998.425	
1,574.8	1,574.8	1,584.6	1,584.6	3.4	0.7	93.52	-3,679.3	1,577.8	4,003.5	3,999.4	4.12	971.956	
1,600.0	1,599.9	1,610.0	1,610.0	3.4	0.7	93.53	-3,679.3	1,577.8	4,003.5	3,999.4	4.18	958.158	
1,673.2	1,673.0	1,696.2	1,696.2	3.6	0.8	93.61	-3,679.1	1,577.7	4,003.7	3,999.3	4.36	917.335	
1,700.0	1,699.7	1,722.5	1,722.5	3.7	0.8	93.64	-3,679.0	1,577.7	4,003.7	3,999.3	4.43	903.320	
1,771.6	1,771.0	1,790.8	1,790.8	3.8	0.8	93.73	-3,678.7	1,577.7	4,003.9	3,999.3	4.62	866.424	
1,800.0	1,799.1	1,818.4	1,818.4	3.9	0.8	93.77	-3,678.6	1,577.7	4,004.0	3,999.3	4.70	852.446	
1,870.1	1,868.6	1,887.1	1,887.1	4.1	0.9	93.90	-3,678.4	1,577.7	4,004.4	3,999.5	4.90	817.742	
1,900.0	1,898.2	1,916.9	1,916.9	4.1	0.9	93.96	-3,678.3	1,577.7	4,004.7	3,999.7	4.98	803.728	
1,968.5	1,965.7	1,985.9	1,985.9	4.3	0.9	94.11	-3,678.0	1,577.8	4,005.3	4,000.1	5.20	770.960	
2,000.0	1,996.6	2,016.0	2,016.0	4.4	0.9	94.18	-3,677.9	1,577.9	4,005.6	4,000.3	5.29	756.826	
2,066.9	2,062.2	2,076.9	2,076.9	4.6	0.9	94.33	-3,677.6	1,578.1	4,006.5	4,000.9	5.52	725.812	
2,100.0	2,094.4	2,107.7	2,107.7	4.7	0.9	94.42	-3,677.5	1,578.2	4,007.0	4,001.3	5.63	711.294	
2,165.3	2,157.9	2,174.0	2,174.0	5.0	1.0	94.61	-3,677.3	1,578.4	4,008.1	4,002.2	5.89	680.928	
2,200.0	2,191.5	2,207.6	2,207.6	5.1	1.0	94.72	-3,677.2	1,578.5	4,008.7	4,002.7	6.02	665.908	
2,263.8	2,252.9	2,261.2	2,261.2	5.3	1.0	94.89	-3,677.0	1,578.7	4,010.1	4,003.9	6.29	637.450	
2,300.0	2,287.6	2,291.6	2,291.5	5.5	1.0	95.00	-3,677.0	1,578.8	4,011.1	4,004.6	6.45	622.236	
2,362.2	2,346.9	2,345.8	2,345.8	5.8	1.0	95.19	-3,677.0	1,578.9	4,012.9	4,006.2	6.74	595.267	
2,400.0	2,382.7	2,378.9	2,378.9	6.0	1.0	95.32	-3,677.1	1,578.9	4,014.2	4,007.3	6.92	579.995	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT MCCART 30-2 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,460.6	2,439.8	2,432.8	2,432.7	6.3	1.0	95.53	-3,677.3	1,578.8	4,016.4	4,009.2	7.25	553.868	
2,500.0	2,476.6	2,468.0	2,468.0	6.5	1.0	95.68	-3,677.5	1,578.8	4,018.0	4,010.6	7.47	537.956	
2,559.0	2,531.6	2,520.1	2,520.1	6.9	1.0	95.90	-3,677.8	1,578.6	4,020.7	4,012.8	7.84	513.100	
2,600.0	2,569.4	2,555.6	2,555.6	7.1	1.0	96.06	-3,678.0	1,578.5	4,022.7	4,014.6	8.09	497.096	
2,657.5	2,622.0	2,605.6	2,605.6	7.5	1.0	96.29	-3,678.4	1,578.2	4,025.7	4,017.2	8.49	473.974	
2,700.0	2,660.7	2,647.2	2,647.2	7.8	1.0	96.49	-3,678.8	1,577.9	4,028.1	4,019.3	8.79	458.123	
2,755.9	2,711.1	2,700.0	2,700.0	8.2	1.0	96.75	-3,679.1	1,577.6	4,031.5	4,022.3	9.23	436.915	
2,800.0	2,750.6	2,737.0	2,737.0	8.6	1.0	96.93	-3,679.4	1,577.3	4,034.3	4,024.8	9.57	421.536	
2,832.3	2,779.2	2,762.9	2,762.9	8.8	1.0	97.06	-3,679.6	1,577.1	4,036.6	4,026.7	9.84	410.308	
2,854.3	2,798.8	2,780.6	2,780.6	9.0	1.0	97.18	-3,679.8	1,577.0	4,038.1	4,028.1	10.03	402.801	
2,900.0	2,839.3	2,820.4	2,820.4	9.4	1.0	97.44	-3,680.1	1,576.7	4,041.5	4,031.1	10.41	388.095	
2,952.7	2,886.0	2,870.6	2,870.6	9.9	1.0	97.78	-3,680.6	1,576.3	4,045.5	4,034.6	10.87	372.079	
3,000.0	2,927.8	2,918.9	2,918.9	10.3	1.0	98.10	-3,680.9	1,575.9	4,049.2	4,037.9	11.28	358.841	
3,051.2	2,973.2	2,978.1	2,978.1	10.7	1.1	98.49	-3,681.2	1,575.4	4,053.2	4,041.4	11.74	345.287	
3,100.0	3,016.4	3,031.8	3,031.7	11.2	1.1	98.85	-3,681.4	1,574.8	4,057.0	4,044.8	12.17	333.248	
3,149.6	3,060.4	3,084.5	3,084.5	11.6	1.1	99.20	-3,681.4	1,574.1	4,060.8	4,048.2	12.62	321.699	
3,200.0	3,105.0	3,138.4	3,138.3	12.1	1.1	99.56	-3,681.3	1,573.3	4,064.8	4,051.7	13.08	310.769	
3,248.0	3,147.5	3,189.8	3,189.7	12.5	1.1	99.90	-3,681.2	1,572.5	4,068.7	4,055.1	13.52	300.932	
3,300.0	3,193.6	3,261.0	3,260.9	13.0	1.1	100.37	-3,680.7	1,571.3	4,072.8	4,058.8	14.00	290.953	
3,346.4	3,234.7	3,322.4	3,322.4	13.4	1.1	100.77	-3,679.8	1,570.3	4,076.3	4,061.9	14.43	282.521	
3,400.0	3,282.2	3,384.7	3,384.6	13.9	1.2	101.18	-3,678.6	1,569.5	4,080.3	4,065.4	14.92	273.424	
3,444.9	3,321.9	3,424.6	3,424.5	14.3	1.2	101.44	-3,677.8	1,569.2	4,083.7	4,068.4	15.34	266.224	
3,500.0	3,370.8	3,467.6	3,467.4	14.8	1.2	101.71	-3,676.8	1,568.9	4,088.1	4,072.2	15.85	257.926	
3,543.3	3,409.1	3,500.0	3,499.9	15.2	1.2	101.92	-3,676.1	1,568.8	4,091.6	4,075.4	16.25	251.755	
3,600.0	3,459.3	3,546.3	3,546.2	15.8	1.2	102.21	-3,675.2	1,568.8	4,096.5	4,079.8	16.78	244.124	
3,641.7	3,496.3	3,579.3	3,579.2	16.1	1.2	102.42	-3,674.5	1,568.8	4,100.3	4,083.1	17.17	238.798	
3,700.0	3,547.9	3,627.1	3,626.9	16.7	1.2	102.72	-3,673.6	1,568.9	4,105.7	4,088.0	17.71	231.774	
3,740.1	3,583.5	3,660.8	3,660.7	17.1	1.2	102.93	-3,673.0	1,569.0	4,109.6	4,091.5	18.09	227.173	
3,800.0	3,636.5	3,711.2	3,711.1	17.6	1.2	103.25	-3,672.1	1,569.0	4,115.5	4,096.9	18.65	220.682	
3,838.6	3,670.7	3,744.0	3,743.8	18.0	1.3	103.45	-3,671.6	1,569.0	4,119.4	4,100.4	19.01	216.699	
3,900.0	3,725.1	3,796.3	3,796.1	18.6	1.3	103.78	-3,670.7	1,569.2	4,125.9	4,106.3	19.58	210.682	
3,937.0	3,757.9	3,825.0	3,824.8	18.9	1.3	103.95	-3,670.2	1,569.3	4,129.9	4,109.9	19.93	207.225	
4,000.0	3,813.7	3,873.2	3,873.0	19.5	1.3	104.25	-3,669.5	1,569.5	4,136.9	4,116.4	20.52	201.630	
4,035.4	3,845.1	3,900.3	3,900.1	19.9	1.3	104.42	-3,669.2	1,569.5	4,141.0	4,120.1	20.85	198.626	
4,100.0	3,902.3	3,962.3	3,962.1	20.5	1.3	104.80	-3,668.4	1,569.7	4,148.6	4,127.1	21.45	193.412	
4,133.8	3,932.2	3,994.8	3,994.6	20.8	1.3	105.00	-3,667.9	1,569.9	4,152.6	4,130.8	21.76	190.796	
4,200.0	3,990.8	4,051.8	4,051.6	21.5	1.4	105.35	-3,667.1	1,570.1	4,160.6	4,138.2	22.38	185.917	
4,232.3	4,019.4	4,079.3	4,079.1	21.8	1.4	105.52	-3,666.7	1,570.2	4,164.6	4,141.9	22.68	183.636	
4,300.0	4,079.4	4,133.8	4,133.6	22.4	1.4	105.86	-3,666.0	1,570.5	4,173.2	4,149.9	23.31	179.061	
4,330.7	4,106.6	4,157.7	4,157.4	22.7	1.4	106.00	-3,665.7	1,570.6	4,177.2	4,153.6	23.59	177.072	
4,400.0	4,168.0	4,212.0	4,211.8	23.4	1.4	106.33	-3,665.2	1,571.0	4,186.5	4,162.2	24.23	172.775	
4,429.1	4,193.8	4,235.4	4,235.2	23.7	1.4	106.47	-3,664.9	1,571.2	4,190.5	4,166.0	24.50	171.043	
4,500.0	4,256.6	4,292.4	4,292.1	24.4	1.4	106.81	-3,664.4	1,571.6	4,200.4	4,175.2	25.15	167.003	
4,527.5	4,281.0	4,317.0	4,316.8	24.6	1.4	106.96	-3,664.2	1,571.8	4,204.3	4,178.9	25.40	165.498	
4,600.0	4,345.2	4,385.5	4,385.2	25.3	1.4	107.37	-3,663.7	1,572.4	4,214.8	4,188.7	26.07	161.702	
4,626.0	4,368.2	4,409.0	4,408.8	25.6	1.4	107.51	-3,663.4	1,572.6	4,218.6	4,192.3	26.30	160.390	
4,700.0	4,433.8	4,472.2	4,471.9	26.3	1.5	107.89	-3,662.9	1,573.1	4,229.6	4,202.7	26.98	156.789	
4,724.4	4,455.4	4,493.0	4,492.7	26.5	1.5	108.01	-3,662.7	1,573.3	4,233.3	4,206.1	27.20	155.645	
4,800.0	4,522.3	4,556.9	4,556.6	27.3	1.5	108.39	-3,662.2	1,573.7	4,245.0	4,217.1	27.88	152.233	
4,822.8	4,542.6	4,576.1	4,575.9	27.5	1.5	108.50	-3,662.1	1,573.8	4,248.5	4,220.4	28.09	151.239	
4,900.0	4,610.9	4,641.3	4,641.1	28.2	1.5	108.89	-3,661.7	1,574.3	4,260.8	4,232.0	28.79	147.999	
4,921.2	4,629.8	4,659.3	4,659.1	28.4	1.5	109.00	-3,661.6	1,574.4	4,264.3	4,235.3	28.98	147.138	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT MCCART 30-2 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,699.5	4,724.0	4,723.8	29.2	1.5	109.38	-3,661.2	1,574.7	4,277.2	4,247.5	29.69	144.065	
5,019.7	4,716.9	4,739.5	4,739.2	29.4	1.5	109.47	-3,661.2	1,574.7	4,280.5	4,250.6	29.87	143.323	
5,100.0	4,788.1	4,803.1	4,802.8	30.2	1.5	109.84	-3,661.0	1,574.8	4,294.2	4,263.6	30.59	140.400	
5,118.1	4,804.1	4,821.6	4,821.4	30.4	1.6	109.95	-3,661.0	1,574.8	4,297.3	4,266.6	30.75	139.766	
5,200.0	4,876.7	4,904.9	4,904.7	31.1	1.6	110.45	-3,660.7	1,574.7	4,311.6	4,280.1	31.47	136.992	
5,216.5	4,891.3	4,919.9	4,919.6	31.3	1.6	110.53	-3,660.6	1,574.7	4,314.5	4,282.9	31.62	136.446	
5,300.0	4,965.3	4,995.5	4,995.2	32.1	1.6	110.98	-3,660.2	1,574.5	4,329.2	4,296.9	32.36	133.785	
5,314.9	4,978.5	5,007.9	5,007.6	32.3	1.6	111.05	-3,660.1	1,574.5	4,331.9	4,299.4	32.49	133.321	
5,400.0	5,053.8	5,075.2	5,074.9	33.1	1.6	111.44	-3,659.9	1,574.5	4,347.4	4,314.1	33.25	130.762	
5,413.4	5,065.7	5,085.8	5,085.5	33.2	1.6	111.50	-3,659.8	1,574.5	4,349.9	4,316.5	33.36	130.373	
5,508.2	5,149.7	5,165.3	5,165.0	34.2	1.7	111.96	-3,659.6	1,574.5	4,367.7	4,333.5	34.20	127.711	
5,511.8	5,152.9	5,168.4	5,168.1	34.2	1.7	111.99	-3,659.6	1,574.5	4,368.4	4,334.1	34.22	127.637	
5,600.0	5,231.7	5,246.5	5,246.2	34.9	1.7	112.73	-3,659.5	1,574.5	4,384.8	4,349.9	34.83	125.887	
5,610.2	5,240.9	5,255.8	5,255.6	35.0	1.7	112.82	-3,659.5	1,574.5	4,386.6	4,351.7	34.89	125.738	
5,700.0	5,322.5	5,339.6	5,339.4	35.7	1.7	113.54	-3,659.3	1,574.5	4,402.4	4,367.1	35.37	124.453	
5,708.6	5,330.4	5,347.9	5,347.6	35.7	1.7	113.60	-3,659.3	1,574.5	4,403.9	4,368.5	35.42	124.346	
5,800.0	5,414.6	5,436.1	5,435.8	36.3	1.7	114.30	-3,659.1	1,574.3	4,419.0	4,383.1	35.86	123.221	
5,807.1	5,421.2	5,443.0	5,442.7	36.4	1.7	114.35	-3,659.0	1,574.3	4,420.1	4,384.2	35.89	123.146	
5,900.0	5,508.1	5,536.7	5,536.4	36.9	1.8	115.00	-3,658.7	1,574.0	4,434.2	4,397.9	36.30	122.160	
5,905.5	5,513.3	5,542.5	5,542.2	37.0	1.8	115.04	-3,658.6	1,574.0	4,435.0	4,398.7	36.32	122.110	
6,000.0	5,602.8	5,632.2	5,632.0	37.5	1.8	115.62	-3,658.1	1,574.1	4,448.0	4,411.4	36.69	121.235	
6,003.9	5,606.5	5,635.4	5,635.1	37.5	1.8	115.64	-3,658.1	1,574.1	4,448.6	4,411.9	36.70	121.204	
6,100.0	5,698.5	5,714.9	5,714.6	38.0	1.8	116.13	-3,657.9	1,574.3	4,460.8	4,423.7	37.04	120.435	
6,102.3	5,700.7	5,717.1	5,716.8	38.0	1.8	116.14	-3,657.9	1,574.3	4,461.1	4,424.0	37.05	120.420	
6,200.0	5,795.2	5,809.2	5,808.9	38.4	1.8	116.61	-3,657.7	1,574.4	4,472.3	4,434.9	37.34	119.770	
6,200.8	5,795.9	5,810.0	5,809.7	38.4	1.8	116.61	-3,657.7	1,574.4	4,472.3	4,435.0	37.34	119.766	
6,299.2	5,891.9	5,909.5	5,909.3	38.8	1.9	117.04	-3,657.5	1,574.5	4,482.2	4,444.6	37.60	119.204	
6,300.0	5,892.7	5,910.2	5,910.0	38.8	1.9	117.05	-3,657.5	1,574.5	4,482.3	4,444.6	37.60	119.199	
6,397.6	5,988.5	6,000.0	5,999.7	39.1	1.9	117.39	-3,657.4	1,574.5	4,490.7	4,452.9	37.81	118.770	
6,400.0	5,990.9	6,000.0	5,999.7	39.1	1.9	117.39	-3,657.4	1,574.5	4,490.8	4,453.0	37.82	118.757	
6,496.0	6,085.8	6,077.3	6,077.1	39.4	1.9	117.65	-3,657.6	1,574.7	4,497.9	4,459.9	37.98	118.435	
6,500.0	6,089.7	6,080.6	6,080.4	39.4	1.9	117.66	-3,657.6	1,574.7	4,498.2	4,460.2	37.98	118.421	
6,594.5	6,183.5	6,183.3	6,183.1	39.6	1.9	117.89	-3,657.9	1,575.0	4,503.8	4,465.7	38.10	118.197	
6,600.0	6,189.0	6,189.8	6,189.5	39.7	1.9	117.90	-3,657.9	1,575.0	4,504.1	4,466.0	38.11	118.181	
6,692.9	6,281.5	6,272.9	6,272.7	39.8	1.9	118.05	-3,658.1	1,575.0	4,508.0	4,469.8	38.20	118.002	
6,700.0	6,288.6	6,279.1	6,278.8	39.8	1.9	118.06	-3,658.1	1,575.0	4,508.2	4,470.0	38.21	117.986	
6,791.3	6,379.8	6,371.1	6,370.8	40.0	1.9	118.16	-3,658.5	1,574.9	4,510.8	4,472.5	38.27	117.863	
6,800.0	6,388.5	6,380.3	6,380.0	40.0	1.9	118.17	-3,658.5	1,574.9	4,510.9	4,472.7	38.28	117.847	
6,889.7	6,478.2	6,471.5	6,471.2	40.1	1.8	118.20	-3,658.8	1,574.9	4,511.9	4,473.6	38.32	117.744	
6,890.4	6,478.9	6,472.1	6,471.9	40.1	1.8	-178.49	-3,658.8	1,574.9	4,511.9	4,473.6	38.32	117.743	
6,900.0	6,488.5	6,481.8	6,481.5	40.1	1.8	-178.49	-3,658.9	1,574.9	4,511.9	4,473.6	38.33	117.724	
6,920.4	6,508.9	6,502.6	6,502.3	40.1	1.8	-178.49	-3,658.9	1,574.9	4,512.0	4,473.7	38.34	117.677	
6,950.0	6,538.5	6,536.7	6,536.4	40.1	1.8	1.51	-3,659.0	1,574.8	4,511.5	4,473.2	38.30	117.808	
6,988.2	6,576.6	6,580.6	6,580.3	40.1	1.8	1.52	-3,659.1	1,574.7	4,508.9	4,470.7	38.20	118.028	
7,000.0	6,588.3	6,594.2	6,593.9	40.1	1.8	1.52	-3,659.1	1,574.6	4,507.7	4,469.6	38.17	118.107	
7,050.0	6,637.8	6,636.5	6,636.3	40.1	1.8	1.54	-3,659.1	1,574.5	4,500.5	4,462.5	37.97	118.543	
7,086.6	6,673.6	6,666.0	6,665.8	40.1	1.8	1.56	-3,659.2	1,574.5	4,493.1	4,455.3	37.76	118.992	
7,100.0	6,686.6	6,676.7	6,676.5	40.1	1.8	1.57	-3,659.2	1,574.5	4,489.9	4,452.3	37.67	119.189	
7,150.0	6,734.6	6,722.2	6,722.0	40.0	1.8	1.61	-3,659.4	1,574.3	4,476.1	4,438.8	37.27	120.108	
7,185.0	6,767.5	6,759.3	6,759.0	39.9	1.8	1.64	-3,659.6	1,574.2	4,464.4	4,427.4	36.91	120.939	
7,200.0	6,781.4	6,774.9	6,774.7	39.9	1.8	1.66	-3,659.6	1,574.1	4,458.8	4,422.1	36.74	121.348	
7,250.0	6,827.0	6,820.0	6,819.7	39.8	1.8	1.72	-3,659.7	1,573.9	4,438.4	4,402.3	36.09	122.978	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT MCCART 30-2 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,283.4	6,856.6	6,845.5	6,845.3	39.8	1.8	1.77	-3,659.8	1,573.8	4,422.9	4,387.3	35.58	124.317	
7,300.0	6,871.0	6,857.9	6,857.7	39.7	1.8	1.80	-3,659.9	1,573.7	4,414.8	4,379.5	35.30	125.057	
7,350.0	6,913.2	6,900.0	6,899.7	39.6	1.8	1.89	-3,660.1	1,573.6	4,388.3	4,353.9	34.39	127.608	
7,381.9	6,939.1	6,919.0	6,918.8	39.5	1.8	1.96	-3,660.2	1,573.5	4,369.8	4,336.1	33.73	129.536	
7,400.0	6,953.4	6,933.1	6,932.8	39.4	1.8	2.01	-3,660.3	1,573.4	4,358.9	4,325.5	33.34	130.726	
7,450.0	6,991.5	6,970.4	6,970.2	39.3	1.8	2.15	-3,660.5	1,573.1	4,326.8	4,294.6	32.19	134.430	
7,480.3	7,013.5	6,992.0	6,991.7	39.2	1.8	2.25	-3,660.7	1,572.9	4,306.0	4,274.6	31.43	136.998	
7,500.0	7,027.3	7,008.1	7,007.8	39.1	1.8	2.33	-3,660.8	1,572.7	4,292.1	4,261.1	30.92	138.796	
7,550.0	7,060.5	7,055.7	7,055.4	39.0	1.9	2.56	-3,661.0	1,572.1	4,254.9	4,225.3	29.58	143.832	
7,578.7	7,078.4	7,081.2	7,080.9	38.8	1.9	2.72	-3,661.0	1,571.7	4,232.4	4,203.6	28.77	147.088	
7,600.0	7,091.0	7,099.1	7,098.8	38.8	1.9	2.85	-3,661.0	1,571.4	4,215.3	4,187.2	28.16	149.688	
7,650.0	7,118.7	7,146.7	7,146.4	38.6	1.9	3.25	-3,660.9	1,570.6	4,173.6	4,147.0	26.69	156.365	
7,677.1	7,132.5	7,170.2	7,169.9	38.5	1.9	3.51	-3,660.7	1,570.2	4,150.2	4,124.3	25.88	160.380	
7,700.0	7,143.4	7,188.6	7,188.3	38.4	1.9	3.76	-3,660.5	1,569.9	4,130.0	4,104.9	25.18	163.991	
7,750.0	7,165.0	7,216.1	7,215.8	38.2	1.9	4.45	-3,660.2	1,569.4	4,084.8	4,061.1	23.66	172.636	
7,775.6	7,174.9	7,226.8	7,226.5	38.1	1.9	4.90	-3,660.1	1,569.2	4,061.1	4,038.2	22.89	177.405	
7,800.0	7,183.5	7,236.1	7,235.7	38.1	1.9	5.42	-3,660.0	1,569.1	4,038.1	4,016.0	22.17	182.169	
7,850.0	7,198.6	7,252.2	7,251.9	37.9	1.9	6.91	-3,659.8	1,568.8	3,990.3	3,969.6	20.74	192.395	
7,874.0	7,204.7	7,258.7	7,258.4	37.8	1.9	7.96	-3,659.7	1,568.7	3,967.1	3,947.0	20.09	197.506	
7,900.0	7,210.4	7,264.7	7,264.3	37.7	1.9	9.49	-3,659.7	1,568.6	3,941.6	3,922.3	19.39	203.304	
7,950.0	7,218.8	7,273.2	7,272.9	37.6	1.9	14.93	-3,659.6	1,568.4	3,892.3	3,874.3	18.02	216.026	
7,972.4	7,221.4	7,275.8	7,275.5	37.5	1.9	19.88	-3,659.5	1,568.4	3,870.0	3,852.6	17.37	222.742	
8,000.0	7,223.7	7,278.0	7,277.6	37.4	1.9	32.55	-3,659.5	1,568.3	3,842.5	3,825.4	17.09	224.886	
8,050.0	7,225.1	7,278.8	7,278.5	37.3	1.9	119.43	-3,659.5	1,568.3	3,792.6	3,766.1	26.43	143.482	
8,055.3	7,225.0	7,278.7	7,278.4	37.3	1.9	128.16	-3,659.5	1,568.3	3,787.3	3,760.3	26.95	140.547	
8,070.8	7,224.8	7,278.2	7,277.9	37.3	1.9	128.04	-3,659.5	1,568.3	3,771.7	3,744.7	27.00	139.714	
8,100.0	7,224.4	7,277.4	7,277.1	37.2	1.9	127.80	-3,659.5	1,568.4	3,742.6	3,715.5	27.09	138.170	
8,169.3	7,223.5	7,275.4	7,275.0	37.1	1.9	127.22	-3,659.5	1,568.4	3,673.4	3,646.0	27.35	134.302	
8,200.0	7,223.0	7,274.5	7,274.1	37.1	1.9	126.97	-3,659.5	1,568.4	3,642.7	3,615.2	27.47	132.623	
8,267.7	7,222.1	7,272.5	7,272.2	37.0	1.9	126.39	-3,659.6	1,568.4	3,575.1	3,547.3	27.79	128.660	
8,300.0	7,221.7	7,271.6	7,271.2	37.0	1.9	126.12	-3,659.6	1,568.5	3,542.8	3,514.8	27.94	126.817	
8,366.1	7,220.7	7,269.6	7,269.3	37.0	1.9	125.55	-3,659.6	1,568.5	3,476.7	3,448.4	28.30	122.837	
8,400.0	7,220.3	7,268.7	7,268.3	37.0	1.9	125.26	-3,659.6	1,568.5	3,442.9	3,414.4	28.49	120.826	
8,464.5	7,219.4	7,266.8	7,266.5	37.1	1.9	124.70	-3,659.6	1,568.5	3,378.4	3,349.5	28.91	116.858	
8,500.0	7,218.9	7,265.8	7,265.5	37.1	1.9	124.39	-3,659.6	1,568.6	3,343.0	3,313.8	29.14	114.727	
8,563.0	7,218.0	7,264.0	7,263.7	37.2	1.9	123.83	-3,659.7	1,568.6	3,280.1	3,250.5	29.60	110.827	
8,600.0	7,217.5	7,262.9	7,262.6	37.3	1.9	123.50	-3,659.7	1,568.6	3,243.1	3,213.2	29.87	108.590	
8,661.4	7,216.7	7,261.2	7,260.9	37.5	1.9	122.94	-3,659.7	1,568.6	3,181.8	3,151.4	30.36	104.801	
8,700.0	7,216.1	7,260.1	7,259.8	37.6	1.9	122.59	-3,659.7	1,568.7	3,143.2	3,112.5	30.67	102.479	
8,759.8	7,215.3	7,258.4	7,258.1	37.8	1.9	122.04	-3,659.7	1,568.7	3,083.4	3,052.2	31.20	98.834	
8,800.0	7,214.8	7,257.2	7,256.9	38.0	1.9	121.68	-3,659.8	1,568.7	3,043.3	3,011.8	31.55	96.451	
8,858.2	7,214.0	7,255.6	7,255.3	38.3	1.9	121.13	-3,659.8	1,568.7	2,985.1	2,953.0	32.11	92.975	
8,900.0	7,213.4	7,254.4	7,254.1	38.5	1.9	120.74	-3,659.8	1,568.8	2,943.4	2,910.9	32.51	90.552	
8,956.7	7,212.6	7,252.8	7,252.5	38.8	1.9	120.21	-3,659.8	1,568.8	2,886.8	2,853.7	33.08	87.263	
9,000.0	7,212.0	7,251.6	7,251.3	39.1	1.9	119.80	-3,659.8	1,568.8	2,843.6	2,810.0	33.52	84.819	
9,055.1	7,211.2	7,250.1	7,249.8	39.5	1.9	119.27	-3,659.8	1,568.8	2,788.5	2,754.4	34.12	81.727	
9,100.0	7,210.6	7,248.8	7,248.5	39.8	1.9	118.84	-3,659.9	1,568.9	2,743.7	2,709.1	34.61	79.280	
9,153.5	7,209.9	7,247.4	7,247.1	40.3	1.9	118.32	-3,659.9	1,568.9	2,690.2	2,655.0	35.22	76.391	
9,200.0	7,209.2	7,246.1	7,245.8	40.7	1.9	117.86	-3,659.9	1,568.9	2,643.8	2,608.1	35.75	73.955	
9,251.9	7,208.5	7,244.6	7,244.3	41.1	1.9	117.35	-3,659.9	1,568.9	2,591.9	2,555.6	36.37	71.268	
9,300.0	7,207.9	7,243.3	7,243.0	41.6	1.9	116.87	-3,659.9	1,569.0	2,544.0	2,507.0	36.95	68.857	
9,350.4	7,207.2	7,241.9	7,241.6	42.1	1.9	116.37	-3,659.9	1,569.0	2,493.7	2,456.1	37.57	66.369	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT MCCART 30-2 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,400.0	7,206.5	7,240.6	7,240.3	42.6	1.9	115.87	-3,660.0	1,569.0	2,444.1	2,405.9	38.19	63.992	
9,448.8	7,205.8	7,239.2	7,238.9	43.1	1.9	115.38	-3,660.0	1,569.0	2,395.4	2,356.6	38.82	61.698	
9,500.0	7,205.1	7,237.9	7,237.5	43.7	1.9	114.86	-3,660.0	1,569.0	2,344.3	2,304.8	39.49	59.364	
9,547.2	7,204.4	7,236.6	7,236.3	44.2	1.9	114.38	-3,660.0	1,569.1	2,297.1	2,257.0	40.12	57.255	
9,600.0	7,203.7	7,235.1	7,234.8	44.8	1.9	113.83	-3,660.0	1,569.1	2,244.5	2,203.6	40.83	54.971	
9,645.6	7,203.1	7,233.9	7,233.6	45.4	1.9	113.36	-3,660.0	1,569.1	2,198.9	2,157.4	41.46	53.038	
9,700.0	7,202.3	7,232.4	7,232.1	46.1	1.9	112.80	-3,660.1	1,569.1	2,144.7	2,102.4	42.21	50.807	
9,744.1	7,201.7	7,231.3	7,230.9	46.6	1.9	112.34	-3,660.1	1,569.2	2,100.7	2,057.8	42.84	49.040	
9,800.0	7,201.0	7,229.8	7,229.4	47.3	1.9	111.75	-3,660.1	1,569.2	2,044.9	2,001.2	43.63	46.867	
9,842.5	7,200.4	7,228.6	7,228.3	47.9	1.9	111.30	-3,660.1	1,569.2	2,002.5	1,958.2	44.25	45.255	
9,900.0	7,199.6	7,227.1	7,226.8	48.7	1.9	110.69	-3,660.1	1,569.2	1,945.1	1,900.0	45.09	43.142	
9,940.9	7,199.0	7,226.0	7,225.7	49.2	1.9	110.25	-3,660.1	1,569.3	1,904.3	1,858.6	45.69	41.675	
10,000.0	7,198.2	7,224.4	7,224.1	50.1	1.9	109.62	-3,660.1	1,569.3	1,845.3	1,798.8	46.57	39.623	
10,039.3	7,197.7	7,223.4	7,223.1	50.6	1.9	109.19	-3,660.2	1,569.3	1,806.1	1,758.9	47.17	38.291	
10,100.0	7,196.8	7,221.8	7,221.5	51.5	1.9	108.54	-3,660.2	1,569.3	1,745.6	1,697.5	48.09	36.300	
10,137.8	7,196.3	7,220.8	7,220.5	52.0	1.9	108.13	-3,660.2	1,569.4	1,707.9	1,659.3	48.67	35.092	
10,200.0	7,195.4	7,219.2	7,218.8	52.9	1.9	107.45	-3,660.2	1,569.4	1,645.9	1,596.3	49.63	33.163	
10,236.2	7,194.9	7,218.2	7,217.9	53.5	1.9	107.05	-3,660.2	1,569.4	1,609.8	1,559.6	50.20	32.070	
10,300.0	7,194.1	7,216.5	7,216.2	54.4	1.9	106.35	-3,660.2	1,569.4	1,546.2	1,495.0	51.20	30.201	
10,334.6	7,193.6	7,215.6	7,215.3	55.0	1.9	105.97	-3,660.2	1,569.4	1,511.7	1,460.0	51.75	29.214	
10,400.0	7,192.7	7,213.9	7,213.6	56.0	1.9	105.25	-3,660.3	1,569.5	1,446.6	1,393.8	52.79	27.405	
10,433.0	7,192.2	7,213.1	7,212.8	56.5	1.9	104.88	-3,660.3	1,569.5	1,413.7	1,360.4	53.32	26.515	
10,500.0	7,191.3	7,211.3	7,211.0	57.5	1.9	104.14	-3,660.3	1,569.5	1,347.0	1,292.6	54.39	24.765	
10,531.5	7,190.9	7,210.5	7,210.2	58.0	1.9	103.78	-3,660.3	1,569.5	1,315.7	1,260.8	54.90	23.964	
10,600.0	7,189.9	7,208.8	7,208.5	59.1	1.9	103.02	-3,660.3	1,569.6	1,247.5	1,191.5	56.02	22.270	
10,629.9	7,189.5	7,208.0	7,207.7	59.6	1.9	102.68	-3,660.3	1,569.6	1,217.8	1,161.3	56.51	21.551	
10,700.0	7,188.5	7,206.2	7,205.9	60.7	1.9	101.89	-3,660.3	1,569.6	1,148.1	1,090.4	57.66	19.912	
10,728.3	7,188.1	7,205.5	7,205.2	61.1	1.9	101.57	-3,660.4	1,569.6	1,119.9	1,061.8	58.13	19.267	
10,800.0	7,187.2	7,203.7	7,203.3	62.3	1.9	100.77	-3,660.4	1,569.7	1,048.8	989.4	59.31	17.682	
10,826.7	7,186.8	7,203.0	7,202.7	62.7	1.9	100.46	-3,660.4	1,569.7	1,022.2	962.4	59.76	17.106	
10,900.0	7,185.8	7,201.1	7,200.8	63.9	1.9	99.63	-3,660.4	1,569.7	949.6	888.6	60.98	15.573	
10,925.2	7,185.4	7,200.5	7,200.2	64.3	1.9	99.35	-3,660.4	1,569.7	924.6	863.2	61.40	15.059	
11,000.0	7,184.4	7,198.5	7,198.2	65.6	1.9	98.46	-3,660.4	1,569.7	850.5	787.9	62.65	13.577	
11,023.6	7,184.1	7,197.9	7,197.6	66.0	1.9	98.17	-3,660.4	1,569.8	827.2	764.2	63.04	13.121	
11,100.0	7,183.0	7,195.9	7,195.5	67.2	1.9	97.26	-3,660.5	1,569.8	751.8	687.4	64.33	11.687	
11,122.0	7,182.7	7,195.3	7,195.0	67.6	1.9	97.00	-3,660.5	1,569.8	730.1	665.4	64.70	11.284	
11,200.0	7,181.6	7,193.3	7,193.0	68.9	1.9	96.08	-3,660.5	1,569.8	653.4	587.3	66.01	9.898	
11,220.4	7,181.3	7,192.7	7,192.4	69.3	1.9	95.85	-3,660.5	1,569.9	633.3	566.9	66.36	9.544	
11,300.0	7,180.2	7,190.7	7,190.4	70.6	1.9	94.93	-3,660.5	1,569.9	555.5	487.8	67.71	8.205	
11,318.9	7,180.0	7,190.3	7,190.0	70.9	1.9	94.71	-3,660.5	1,569.9	537.1	469.1	68.03	7.896	
11,400.0	7,178.9	7,188.3	7,188.0	72.3	1.9	93.79	-3,660.5	1,569.9	458.6	389.2	69.41	6.607	
11,417.3	7,178.6	7,187.8	7,187.5	72.6	1.9	93.59	-3,660.5	1,569.9	442.0	372.2	69.70	6.340	
11,500.0	7,177.5	7,185.8	7,185.5	74.0	1.9	92.67	-3,660.6	1,570.0	363.3	292.2	71.12	5.109	
11,515.7	7,177.3	7,185.4	7,185.1	74.3	1.9	92.50	-3,660.6	1,570.0	348.6	277.2	71.39	4.883	
11,600.0	7,176.1	7,183.4	7,183.2	75.7	1.9	91.57	-3,660.6	1,570.0	271.4	198.6	72.83	3.727	
11,614.1	7,175.9	7,183.1	7,182.8	76.0	1.9	91.42	-3,660.6	1,570.0	258.9	185.8	73.08	3.543	
11,700.0	7,174.7	7,181.1	7,180.8	77.5	1.9	90.49	-3,660.6	1,570.1	188.0	113.5	74.55	2.522	
11,712.6	7,174.5	7,180.8	7,180.5	77.7	1.9	90.36	-3,660.6	1,570.1	178.7	104.0	74.77	2.390	
11,800.0	7,173.3	7,178.8	7,178.5	79.2	1.9	89.44	-3,660.6	1,570.1	130.4	54.2	76.27	1.710	
11,811.0	7,173.2	7,178.6	7,178.3	79.4	1.9	89.32	-3,660.6	1,570.1	127.3	50.9	76.46	1.665	
11,841.7	7,172.8	7,177.9	7,177.6	79.9	1.9	89.00	-3,660.6	1,570.1	123.6	46.6	76.99	1.605	CC, ES, SF
11,900.0	7,172.0	7,176.6	7,176.3	81.0	1.9	88.40	-3,660.6	1,570.1	136.6	58.6	77.99	1.752	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT MCCART 30-2 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,909.4	7,171.8	7,176.4	7,176.1	81.1	1.9	88.30	-3,660.6	1,570.1	140.9	62.7	78.16	1.803	
12,000.0	7,170.6	7,174.4	7,174.1	82.7	1.9	87.39	-3,660.7	1,570.2	200.8	121.0	79.72	2.518	
12,007.8	7,170.5	7,174.2	7,173.9	82.9	1.9	87.31	-3,660.7	1,570.2	207.0	127.2	79.85	2.592	
12,041.2	7,170.0	7,173.5	7,173.2	83.5	1.9	86.97	-3,660.7	1,570.2	234.6	154.2	80.43	2.917	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT NYGREN 21-30 - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-INC

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-79.21	231.7	-1,216.1	1,237.9				
98.4	98.4	99.4	99.4	0.1	0.1	-79.21	231.7	-1,216.1	1,237.9	1,237.7	0.22	5,701.186	
100.0	100.0	101.0	101.0	0.1	0.2	-79.21	231.7	-1,216.1	1,237.9	1,237.7	0.25	5,037.398	
196.8	196.8	197.8	197.8	0.3	2.7	-79.21	231.7	-1,216.1	1,237.9	1,234.9	2.99	414.165	
200.0	200.0	201.0	201.0	0.3	2.8	-79.21	231.7	-1,216.1	1,237.9	1,234.9	3.07	402.871	
295.3	295.3	296.3	296.3	0.5	4.7	-79.21	231.7	-1,216.1	1,237.9	1,232.7	5.25	235.609	
300.0	300.0	301.0	301.0	0.5	4.8	-79.21	231.7	-1,216.1	1,237.9	1,232.6	5.36	230.870	
393.7	393.7	394.7	394.7	0.7	6.7	-79.21	231.7	-1,216.1	1,237.9	1,230.5	7.48	165.558	
400.0	400.0	401.0	401.0	0.8	6.9	-79.21	231.7	-1,216.1	1,237.9	1,230.3	7.62	162.469	
492.1	492.1	493.1	493.1	1.0	8.7	-79.21	231.7	-1,216.1	1,237.9	1,228.2	9.69	127.753	
500.0	500.0	501.0	501.0	1.0	8.9	-79.21	231.7	-1,216.1	1,237.9	1,228.1	9.87	125.462	
590.5	590.5	591.5	591.5	1.2	10.7	-79.21	231.7	-1,216.1	1,237.9	1,226.0	11.90	104.044	
600.0	600.0	601.0	601.0	1.2	10.9	-79.21	231.7	-1,216.1	1,237.9	1,225.8	12.11	102.223	
689.0	689.0	690.0	690.0	1.4	12.7	-79.21	231.7	-1,216.1	1,237.9	1,223.8	14.10	87.772	
700.0	700.0	701.0	701.0	1.4	12.9	-79.21	231.7	-1,216.1	1,237.9	1,223.6	14.35	86.261	
787.4	787.4	788.4	788.4	1.6	14.7	-79.21	231.7	-1,216.1	1,237.9	1,221.6	16.31	75.908	
800.0	800.0	801.0	801.0	1.7	14.9	-79.21	231.7	-1,216.1	1,237.9	1,221.3	16.59	74.617	
885.8	885.8	886.8	886.8	1.9	16.7	-79.21	231.7	-1,216.1	1,237.9	1,219.4	18.51	66.873	
900.0	900.0	901.0	901.0	1.9	16.9	-79.21	231.7	-1,216.1	1,237.9	1,219.1	18.83	65.746	
984.2	984.2	985.2	985.2	2.1	18.6	-79.21	231.7	-1,216.1	1,237.9	1,217.2	20.71	59.762	
1,000.0	1,000.0	1,001.0	1,001.0	2.1	19.0	-79.21	231.7	-1,216.1	1,237.9	1,216.9	21.07	58.762	
1,082.7	1,082.7	1,083.7	1,083.7	2.3	20.6	-79.21	231.7	-1,216.1	1,237.9	1,215.0	22.92	54.019	
1,100.0	1,100.0	1,101.0	1,101.0	2.3	21.0	-79.21	231.7	-1,216.1	1,237.9	1,214.6	23.30	53.120	
1,181.1	1,181.1	1,182.1	1,182.1	2.5	22.6	-79.21	231.7	-1,216.1	1,237.9	1,212.8	25.12	49.283	
1,200.0	1,200.0	1,201.0	1,201.0	2.6	23.0	-79.21	231.7	-1,216.1	1,237.9	1,212.4	25.54	48.467	
1,279.5	1,279.5	1,280.5	1,280.5	2.7	24.6	-79.21	231.7	-1,216.1	1,237.9	1,210.6	27.32	45.311	
1,300.0	1,300.0	1,301.0	1,301.0	2.8	25.0	-79.21	231.7	-1,216.1	1,237.9	1,210.2	27.78	44.564	
1,377.9	1,377.9	1,378.9	1,378.9	3.0	26.6	-79.21	231.7	-1,216.1	1,237.9	1,208.4	29.52	41.932	
1,400.0	1,400.0	1,401.0	1,401.0	3.0	27.0	-79.21	231.7	-1,216.1	1,237.9	1,207.9	30.02	41.243	
1,450.0	1,450.0	1,451.0	1,451.0	3.1	28.0	-79.21	231.7	-1,216.1	1,237.9	1,206.8	31.13	39.762	CC
1,476.4	1,476.4	1,477.4	1,477.4	3.2	28.5	-142.52	231.7	-1,216.1	1,238.0	1,206.3	31.72	39.029	
1,500.0	1,500.0	1,501.0	1,501.0	3.2	29.0	-142.53	231.7	-1,216.1	1,238.3	1,206.0	32.24	38.402	ES
1,574.8	1,574.8	1,575.8	1,575.8	3.4	30.5	-142.57	231.7	-1,216.1	1,240.1	1,206.2	33.89	36.593	
1,600.0	1,599.9	1,600.9	1,600.9	3.4	31.0	-142.59	231.7	-1,216.1	1,241.1	1,206.6	34.44	36.036	
1,673.2	1,673.0	1,674.0	1,674.0	3.6	32.5	-142.68	231.7	-1,216.1	1,244.8	1,208.8	36.03	34.554	
1,700.0	1,699.7	1,700.7	1,700.7	3.7	33.0	-142.72	231.7	-1,216.1	1,246.6	1,210.0	36.60	34.059	
1,771.6	1,771.0	1,772.0	1,772.0	3.8	34.5	-142.85	231.7	-1,216.1	1,252.3	1,214.2	38.13	32.845	
1,800.0	1,799.1	1,800.1	1,800.1	3.9	35.0	-142.91	231.7	-1,216.1	1,254.9	1,216.2	38.72	32.407	
1,870.1	1,868.6	1,869.6	1,869.6	4.1	36.4	-143.07	231.7	-1,216.1	1,262.5	1,222.3	40.19	31.413	
1,900.0	1,898.2	1,899.2	1,899.2	4.1	37.0	-143.15	231.7	-1,216.1	1,266.1	1,225.3	40.81	31.027	
1,968.5	1,965.7	1,966.7	1,966.7	4.3	38.4	-143.35	231.7	-1,216.1	1,275.4	1,233.2	42.21	30.218	
2,000.0	1,996.6	1,997.6	1,997.6	4.4	39.0	-143.45	231.7	-1,216.1	1,280.1	1,237.3	42.84	29.881	
2,066.9	2,062.2	2,063.2	2,063.2	4.6	40.3	-143.67	231.7	-1,216.1	1,291.1	1,246.9	44.18	29.226	
2,100.0	2,094.4	2,095.4	2,095.4	4.7	41.0	-143.79	231.7	-1,216.1	1,297.0	1,252.1	44.82	28.935	
2,165.3	2,157.9	2,158.9	2,158.9	5.0	42.3	-144.03	231.7	-1,216.1	1,309.6	1,263.5	46.09	28.412	
2,200.0	2,191.5	2,192.5	2,192.5	5.1	42.9	-144.17	231.7	-1,216.1	1,316.7	1,270.0	46.75	28.166	
2,263.8	2,252.9	2,253.9	2,253.9	5.3	44.2	-144.43	231.7	-1,216.1	1,330.9	1,282.9	47.95	27.755	
2,300.0	2,287.6	2,288.6	2,288.6	5.5	44.9	-144.58	231.7	-1,216.1	1,339.4	1,290.8	48.62	27.551	
2,362.2	2,346.9	2,347.9	2,347.9	5.8	46.1	-144.85	231.7	-1,216.1	1,355.1	1,305.3	49.75	27.239	
2,400.0	2,382.7	2,383.7	2,383.7	6.0	46.8	-145.02	231.7	-1,216.1	1,365.1	1,314.7	50.42	27.075	
2,460.6	2,439.8	2,440.8	2,440.8	6.3	47.9	-145.29	231.7	-1,216.1	1,382.1	1,330.6	51.48	26.847	
2,500.0	2,476.6	2,477.6	2,477.6	6.5	48.7	-145.47	231.7	-1,216.1	1,393.8	1,341.6	52.15	26.724	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT NYGREN 21-30 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-INC — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,559.0	2,531.6	2,532.6	2,532.6	6.9	49.8	-145.74	231.7	-1,216.1	1,412.1	1,358.9	53.15	26.570	
2,600.0	2,569.4	2,570.4	2,570.4	7.1	50.5	-145.93	231.7	-1,216.1	1,425.4	1,371.6	53.81	26.489	
2,657.5	2,622.0	2,623.0	2,623.0	7.5	51.6	-146.20	231.7	-1,216.1	1,445.0	1,390.2	54.73	26.400	
2,700.0	2,660.7	2,661.7	2,661.7	7.8	52.4	-146.40	231.7	-1,216.1	1,460.1	1,404.7	55.39	26.359	
2,755.9	2,711.1	2,712.1	2,712.1	8.2	53.4	-146.65	231.7	-1,216.1	1,480.8	1,424.6	56.25	26.327	
2,800.0	2,750.6	2,751.6	2,751.6	8.6	54.2	-146.86	231.7	-1,216.1	1,497.8	1,440.9	56.89	26.327	
2,832.3	2,779.2	2,780.2	2,780.2	8.8	54.7	-147.00	231.7	-1,216.1	1,510.6	1,453.3	57.36	26.337	
2,854.3	2,798.8	2,799.8	2,799.8	9.0	55.1	-147.20	231.7	-1,216.1	1,519.5	1,461.7	57.80	26.289	
2,900.0	2,839.3	2,840.3	2,840.3	9.4	56.0	-147.62	231.7	-1,216.1	1,538.0	1,479.3	58.71	26.194	
2,952.7	2,886.0	2,887.0	2,887.0	9.9	56.9	-148.09	231.7	-1,216.1	1,559.3	1,499.6	59.77	26.089	
3,000.0	2,927.8	2,928.8	2,928.8	10.3	57.7	-148.49	231.7	-1,216.1	1,578.6	1,517.9	60.72	25.999	
3,051.2	2,973.2	2,974.2	2,974.2	10.7	58.6	-148.93	231.7	-1,216.1	1,599.5	1,537.7	61.74	25.905	
3,100.0	3,016.4	3,017.4	3,017.4	11.2	59.5	-149.33	231.7	-1,216.1	1,619.5	1,556.8	62.72	25.820	
3,149.6	3,060.4	3,061.4	3,061.4	11.6	60.4	-149.73	231.7	-1,216.1	1,639.9	1,576.2	63.72	25.737	
3,200.0	3,105.0	3,106.0	3,106.0	12.1	61.3	-150.12	231.7	-1,216.1	1,660.7	1,596.0	64.73	25.658	
3,248.0	3,147.5	3,148.5	3,148.5	12.5	62.2	-150.49	231.7	-1,216.1	1,680.6	1,614.9	65.69	25.584	
3,300.0	3,193.6	3,194.6	3,194.6	13.0	63.1	-150.88	231.7	-1,216.1	1,702.2	1,635.5	66.73	25.509	
3,346.4	3,234.7	3,235.7	3,235.7	13.4	63.9	-151.22	231.7	-1,216.1	1,721.6	1,653.9	67.66	25.444	
3,400.0	3,282.2	3,283.2	3,283.2	13.9	64.9	-151.60	231.7	-1,216.1	1,743.9	1,675.2	68.73	25.373	
3,444.9	3,321.9	3,322.9	3,322.9	14.3	65.7	-151.92	231.7	-1,216.1	1,762.7	1,693.1	69.63	25.316	
3,500.0	3,370.8	3,371.8	3,371.8	14.8	66.6	-152.29	231.7	-1,216.1	1,785.9	1,715.2	70.73	25.250	
3,543.3	3,409.1	3,410.1	3,410.1	15.2	67.4	-152.58	231.7	-1,216.1	1,804.1	1,732.5	71.59	25.200	
3,600.0	3,459.3	3,460.3	3,460.3	15.8	68.4	-152.96	231.7	-1,216.1	1,828.1	1,755.3	72.72	25.137	
3,641.7	3,496.3	3,497.3	3,497.3	16.1	69.2	-153.22	231.7	-1,216.1	1,845.7	1,772.2	73.56	25.093	
3,700.0	3,547.9	3,548.9	3,548.9	16.7	70.2	-153.59	231.7	-1,216.1	1,870.4	1,795.7	74.72	25.034	
3,740.1	3,583.5	3,584.5	3,584.5	17.1	70.9	-153.83	231.7	-1,216.1	1,887.5	1,812.0	75.51	24.995	
3,800.0	3,636.5	3,637.5	3,637.5	17.6	72.0	-154.19	231.7	-1,216.1	1,913.0	1,836.3	76.70	24.940	
3,838.6	3,670.7	3,671.7	3,671.7	18.0	72.7	-154.42	231.7	-1,216.1	1,929.5	1,852.0	77.47	24.906	
3,900.0	3,725.1	3,726.1	3,726.1	18.6	73.8	-154.77	231.7	-1,216.1	1,955.7	1,877.1	78.69	24.854	
3,937.0	3,757.9	3,758.9	3,758.9	18.9	74.4	-154.98	231.7	-1,216.1	1,971.6	1,892.2	79.42	24.824	
4,000.0	3,813.7	3,814.7	3,814.7	19.5	75.6	-155.33	231.7	-1,216.1	1,998.6	1,918.0	80.67	24.775	
4,035.4	3,845.1	3,846.1	3,846.1	19.9	76.2	-155.52	231.7	-1,216.1	2,013.9	1,932.5	81.37	24.749	
4,100.0	3,902.3	3,903.3	3,903.3	20.5	77.3	-155.86	231.7	-1,216.1	2,041.7	1,959.0	82.65	24.703	
4,133.8	3,932.2	3,933.2	3,933.2	20.8	77.9	-156.04	231.7	-1,216.1	2,056.3	1,973.0	83.32	24.680	
4,200.0	3,990.8	3,991.8	3,991.8	21.5	79.1	-156.38	231.7	-1,216.1	2,084.9	2,000.3	84.63	24.636	
4,232.3	4,019.4	4,020.4	4,020.4	21.8	79.7	-156.54	231.7	-1,216.1	2,098.9	2,013.6	85.26	24.616	
4,300.0	4,079.4	4,080.4	4,080.4	22.4	80.9	-156.87	231.7	-1,216.1	2,128.2	2,041.6	86.60	24.575	
4,330.7	4,106.6	4,107.6	4,107.6	22.7	81.4	-157.02	231.7	-1,216.1	2,141.6	2,054.3	87.21	24.557	
4,400.0	4,168.0	4,169.0	4,169.0	23.4	82.7	-157.34	231.7	-1,216.1	2,171.7	2,083.1	88.57	24.519	
4,429.1	4,193.8	4,194.8	4,194.8	23.7	83.2	-157.48	231.7	-1,216.1	2,184.4	2,095.2	89.15	24.503	
4,500.0	4,256.6	4,257.6	4,257.6	24.4	84.5	-157.80	231.7	-1,216.1	2,215.3	2,124.7	90.54	24.467	
4,527.5	4,281.0	4,282.0	4,282.0	24.6	85.0	-157.92	231.7	-1,216.1	2,227.3	2,136.2	91.08	24.453	
4,600.0	4,345.2	4,346.2	4,346.2	25.3	86.2	-158.23	231.7	-1,216.1	2,259.0	2,166.4	92.51	24.419	
4,626.0	4,368.2	4,369.2	4,369.2	25.6	86.7	-158.35	231.7	-1,216.1	2,270.3	2,177.3	93.02	24.407	
4,700.0	4,433.8	4,434.8	4,434.8	26.3	88.0	-158.66	231.7	-1,216.1	2,302.7	2,208.3	94.47	24.374	
4,724.4	4,455.4	4,456.4	4,456.4	26.5	88.5	-158.76	231.7	-1,216.1	2,313.4	2,218.5	94.95	24.364	
4,800.0	4,522.3	4,523.3	4,523.3	27.3	89.8	-159.06	231.7	-1,216.1	2,346.6	2,250.2	96.44	24.333	
4,822.8	4,542.6	4,543.6	4,543.6	27.5	90.2	-159.15	231.7	-1,216.1	2,356.7	2,259.8	96.89	24.324	
4,900.0	4,610.9	4,611.9	4,611.9	28.2	91.6	-159.46	231.7	-1,216.1	2,390.6	2,292.2	98.40	24.295	
4,921.2	4,629.8	4,630.8	4,630.8	28.4	92.0	-159.54	231.7	-1,216.1	2,400.0	2,301.2	98.82	24.287	
5,000.0	4,699.5	4,700.5	4,700.5	29.2	93.4	-159.83	231.7	-1,216.1	2,434.7	2,334.4	100.36	24.260	
5,019.7	4,716.9	4,717.9	4,717.9	29.4	93.7	-159.91	231.7	-1,216.1	2,443.4	2,342.7	100.75	24.253	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT NYGREN 21-30 - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-INC

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	4,788.1	4,789.1	4,789.1	30.2	95.1	-160.20	231.7	-1,216.1	2,478.9	2,376.6	102.32	24.227	
5,118.1	4,804.1	4,805.1	4,805.1	30.4	95.5	-160.26	231.7	-1,216.1	2,486.9	2,384.2	102.67	24.221	
5,200.0	4,876.7	4,877.7	4,877.7	31.1	96.9	-160.55	231.7	-1,216.1	2,523.1	2,418.8	104.28	24.196	
5,216.5	4,891.3	4,892.3	4,892.3	31.3	97.2	-160.61	231.7	-1,216.1	2,530.4	2,425.8	104.60	24.192	
5,300.0	4,965.3	4,966.3	4,966.3	32.1	98.7	-160.89	231.7	-1,216.1	2,567.4	2,461.2	106.23	24.168	
5,314.9	4,978.5	4,979.5	4,979.5	32.3	99.0	-160.94	231.7	-1,216.1	2,574.1	2,467.6	106.53	24.164	
5,400.0	5,053.8	5,054.8	5,054.8	33.1	100.5	-161.22	231.7	-1,216.1	2,611.8	2,503.6	108.19	24.141	
5,413.4	5,065.7	5,066.7	5,066.7	33.2	100.7	-161.26	231.7	-1,216.1	2,617.8	2,509.3	108.45	24.138	
5,508.2	5,149.7	5,150.7	5,150.7	34.2	102.4	-161.57	231.7	-1,216.1	2,659.9	2,549.6	110.30	24.114	
5,511.8	5,152.9	5,153.9	5,153.9	34.2	102.5	-161.59	231.7	-1,216.1	2,661.5	2,551.1	110.42	24.103	
5,600.0	5,231.7	5,232.7	5,232.7	34.9	104.1	-162.11	231.7	-1,216.1	2,699.6	2,586.2	113.35	23.815	
5,610.2	5,240.9	5,241.9	5,241.9	35.0	104.3	-162.17	231.7	-1,216.1	2,703.8	2,590.1	113.69	23.782	
5,700.0	5,322.5	5,323.5	5,323.5	35.7	105.9	-162.64	231.7	-1,216.1	2,739.9	2,623.2	116.64	23.491	
5,708.6	5,330.4	5,331.4	5,331.4	35.7	106.1	-162.69	231.7	-1,216.1	2,743.2	2,626.3	116.92	23.463	
5,800.0	5,414.6	5,415.6	5,415.6	36.3	107.7	-163.12	231.7	-1,216.1	2,777.2	2,657.3	119.89	23.165	
5,807.1	5,421.2	5,422.2	5,422.2	36.4	107.9	-163.15	231.7	-1,216.1	2,779.7	2,659.6	120.11	23.142	
5,900.0	5,508.1	5,509.1	5,509.1	36.9	109.6	-163.53	231.7	-1,216.1	2,811.4	2,688.3	123.09	22.840	
5,905.5	5,513.3	5,514.3	5,514.3	37.0	109.7	-163.55	231.7	-1,216.1	2,813.2	2,689.9	123.26	22.823	
6,000.0	5,602.8	5,603.8	5,603.8	37.5	111.5	-163.90	231.7	-1,216.1	2,842.5	2,716.2	126.23	22.519	
6,003.9	5,606.5	5,607.5	5,607.5	37.5	111.6	-163.91	231.7	-1,216.1	2,843.6	2,717.3	126.35	22.506	
6,100.0	5,698.5	5,699.5	5,699.5	38.0	113.5	-164.22	231.7	-1,216.1	2,870.3	2,741.1	129.29	22.201	
6,102.3	5,700.7	5,701.7	5,701.7	38.0	113.5	-164.22	231.7	-1,216.1	2,871.0	2,741.6	129.36	22.193	
6,200.0	5,795.2	5,796.2	5,796.2	38.4	115.4	-164.49	231.7	-1,216.1	2,895.0	2,762.7	132.26	21.888	
6,200.8	5,795.9	5,796.9	5,796.9	38.4	115.4	-164.49	231.7	-1,216.1	2,895.2	2,762.9	132.29	21.886	
6,299.2	5,891.9	5,892.9	5,892.9	38.8	117.3	-164.72	231.7	-1,216.1	2,916.3	2,781.2	135.11	21.584	
6,300.0	5,892.7	5,893.7	5,893.7	38.8	117.4	-164.72	231.7	-1,216.1	2,916.4	2,781.3	135.14	21.581	
6,397.6	5,988.5	5,989.5	5,989.5	39.1	119.3	-164.91	231.7	-1,216.1	2,934.1	2,796.3	137.83	21.288	
6,400.0	5,990.9	5,991.9	5,991.9	39.1	119.3	-164.92	231.7	-1,216.1	2,934.5	2,796.6	137.89	21.281	
6,496.0	6,085.8	6,086.8	6,086.8	39.4	121.2	-165.07	231.7	-1,216.1	2,948.8	2,808.4	140.43	20.999	
6,500.0	6,089.7	6,090.7	6,090.7	39.4	121.3	-165.07	231.7	-1,216.1	2,949.3	2,808.8	140.53	20.988	
6,594.5	6,183.5	6,184.5	6,184.5	39.6	123.2	-165.18	231.7	-1,216.1	2,960.3	2,817.4	142.89	20.717	
6,600.0	6,189.0	6,190.0	6,190.0	39.7	123.3	-165.19	231.7	-1,216.1	2,960.8	2,817.8	143.03	20.701	
6,692.9	6,281.5	6,282.5	6,282.5	39.8	125.2	-165.27	231.7	-1,216.1	2,968.4	2,823.2	145.22	20.442	
6,700.0	6,288.6	6,289.6	6,289.6	39.8	125.3	-165.27	231.7	-1,216.1	2,968.9	2,823.5	145.38	20.422	
6,791.3	6,379.8	6,380.8	6,380.8	40.0	127.2	-165.32	231.7	-1,216.1	2,973.4	2,826.0	147.39	20.174	
6,800.0	6,388.5	6,389.5	6,389.5	40.0	127.3	-165.32	231.7	-1,216.1	2,973.6	2,826.1	147.57	20.150	
6,889.7	6,478.2	6,479.2	6,479.2	40.1	129.1	-165.33	231.7	-1,216.1	2,975.0	2,825.6	149.41	19.912	
6,890.4	6,478.9	6,479.9	6,479.9	40.1	129.2	-102.02	231.7	-1,216.1	2,975.0	2,825.6	149.42	19.911	
6,900.0	6,488.5	6,489.5	6,489.5	40.1	129.3	-102.02	231.7	-1,216.1	2,975.0	2,825.4	149.62	19.883	
6,920.4	6,508.9	6,509.9	6,509.9	40.1	129.8	-102.02	231.7	-1,216.1	2,975.0	2,825.0	150.06	19.825	
6,950.0	6,538.5	6,539.5	6,539.5	40.1	130.3	78.00	231.7	-1,216.1	2,974.9	2,824.3	150.65	19.747	
6,988.2	6,576.6	6,577.6	6,577.6	40.1	131.1	78.09	231.7	-1,216.1	2,974.4	2,823.0	151.40	19.646	
7,000.0	6,588.3	6,589.3	6,589.3	40.1	131.4	78.13	231.7	-1,216.1	2,974.1	2,822.5	151.63	19.614	
7,050.0	6,637.8	6,638.8	6,638.8	40.1	132.3	78.38	231.7	-1,216.1	2,972.6	2,820.0	152.60	19.480	
7,086.6	6,673.6	6,674.6	6,674.6	40.1	133.1	78.64	231.7	-1,216.1	2,971.1	2,817.8	153.30	19.381	
7,100.0	6,686.6	6,687.6	6,687.6	40.1	133.3	78.75	231.7	-1,216.1	2,970.4	2,816.9	153.56	19.344	
7,150.0	6,734.6	6,735.6	6,735.6	40.0	134.3	79.23	231.7	-1,216.1	2,967.6	2,813.1	154.52	19.206	
7,185.0	6,767.5	6,768.5	6,768.5	39.9	135.0	79.62	231.7	-1,216.1	2,965.3	2,810.2	155.18	19.109	
7,200.0	6,781.4	6,782.4	6,782.4	39.9	135.2	79.80	231.7	-1,216.1	2,964.3	2,808.8	155.47	19.067	
7,250.0	6,827.0	6,828.0	6,828.0	39.8	136.2	80.47	231.7	-1,216.1	2,960.4	2,804.0	156.43	18.925	
7,283.4	6,856.6	6,857.6	6,857.6	39.8	136.7	80.96	231.7	-1,216.1	2,957.6	2,800.5	157.06	18.830	
7,300.0	6,871.0	6,872.0	6,872.0	39.7	137.0	81.21	231.7	-1,216.1	2,956.1	2,798.7	157.38	18.783	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT NYGREN 21-30 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-INC — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,350.0	6,913.2	6,914.2	6,914.2	39.6	137.9	82.01	231.7	-1,216.1	2,951.5	2,793.2	158.33	18.641	
7,381.9	6,939.1	6,940.1	6,940.1	39.5	138.4	82.55	231.7	-1,216.1	2,948.5	2,789.5	158.93	18.552	
7,400.0	6,953.4	6,954.4	6,954.4	39.4	138.7	82.86	231.7	-1,216.1	2,946.7	2,787.4	159.26	18.502	
7,450.0	6,991.5	6,992.5	6,992.5	39.3	139.5	83.73	231.7	-1,216.1	2,941.8	2,781.6	160.16	18.367	
7,480.3	7,013.5	7,014.5	7,014.5	39.2	139.9	84.26	231.7	-1,216.1	2,938.8	2,778.1	160.69	18.289	
7,500.0	7,027.3	7,028.3	7,028.3	39.1	140.2	84.61	231.7	-1,216.1	2,936.8	2,775.8	161.02	18.239	
7,550.0	7,060.5	7,061.5	7,061.5	39.0	140.8	85.48	231.7	-1,216.1	2,932.0	2,770.2	161.80	18.121	
7,578.7	7,078.4	7,079.4	7,079.4	38.8	141.2	85.97	231.7	-1,216.1	2,929.3	2,767.1	162.22	18.058	
7,600.0	7,091.0	7,092.0	7,092.0	38.8	141.5	86.32	231.7	-1,216.1	2,927.4	2,764.9	162.51	18.014	
7,650.0	7,118.7	7,119.7	7,119.7	38.6	142.0	87.12	231.7	-1,216.1	2,923.1	2,760.0	163.12	17.920	
7,677.1	7,132.5	7,133.5	7,133.5	38.5	142.3	87.52	231.7	-1,216.1	2,921.0	2,757.6	163.41	17.875	
7,700.0	7,143.4	7,144.4	7,144.4	38.4	142.5	87.85	231.7	-1,216.1	2,919.3	2,755.7	163.63	17.841	
7,750.0	7,165.0	7,166.0	7,166.0	38.2	142.9	88.50	231.7	-1,216.1	2,916.0	2,752.0	164.04	17.776	
7,775.6	7,174.9	7,175.9	7,175.9	38.1	143.1	88.79	231.7	-1,216.1	2,914.5	2,750.3	164.21	17.748	
7,800.0	7,183.5	7,184.5	7,184.5	38.1	143.3	89.05	231.7	-1,216.1	2,913.3	2,749.0	164.35	17.726	
7,850.0	7,198.6	7,199.6	7,199.6	37.9	143.6	89.49	231.7	-1,216.1	2,911.4	2,746.8	164.58	17.690	
7,874.0	7,204.7	7,205.7	7,205.7	37.8	143.7	89.66	231.7	-1,216.1	2,910.7	2,746.0	164.67	17.676	
7,900.0	7,210.4	7,211.4	7,211.4	37.7	143.9	89.81	231.7	-1,216.1	2,910.2	2,745.4	164.73	17.666	
7,948.7	7,218.6	7,219.6	7,219.6	37.6	144.0	90.00	231.7	-1,216.1	2,909.8	2,744.9	164.82	17.654	
7,950.0	7,218.8	7,219.8	7,219.8	37.6	144.0	90.00	231.7	-1,216.1	2,909.8	2,744.9	164.82	17.654	
7,972.4	7,221.4	7,222.4	7,222.4	37.5	144.1	90.05	231.7	-1,216.1	2,909.9	2,745.0	164.85	17.652	SF
8,000.0	7,223.7	7,224.7	7,224.7	37.4	144.1	90.06	231.7	-1,216.1	2,910.2	2,745.3	164.86	17.653	
8,050.0	7,225.1	7,226.1	7,226.1	37.3	144.2	89.99	231.7	-1,216.1	2,911.5	2,746.7	164.84	17.662	
8,055.3	7,225.0	7,226.0	7,226.0	37.3	144.2	89.97	231.7	-1,216.1	2,911.7	2,746.9	164.84	17.664	
8,070.8	7,224.8	7,225.8	7,225.8	37.3	144.2	89.97	231.7	-1,216.1	2,912.3	2,747.5	164.84	17.668	
8,100.0	7,224.4	7,225.4	7,225.4	37.2	144.1	89.96	231.7	-1,216.1	2,913.7	2,748.8	164.84	17.676	
8,169.3	7,223.5	7,224.5	7,224.5	37.1	144.1	89.94	231.7	-1,216.1	2,918.1	2,753.2	164.93	17.693	
8,200.0	7,223.0	7,224.0	7,224.0	37.1	144.1	89.93	231.7	-1,216.1	2,920.6	2,755.6	164.96	17.704	
8,267.7	7,222.1	7,223.1	7,223.1	37.0	144.1	89.91	231.7	-1,216.1	2,927.2	2,762.0	165.17	17.723	
8,300.0	7,221.7	7,222.7	7,222.7	37.0	144.1	89.90	231.7	-1,216.1	2,930.8	2,765.6	165.26	17.735	
8,366.1	7,220.7	7,221.7	7,221.7	37.0	144.1	89.89	231.7	-1,216.1	2,939.5	2,773.9	165.57	17.754	
8,400.0	7,220.3	7,221.3	7,221.3	37.0	144.1	89.88	231.7	-1,216.1	2,944.5	2,778.8	165.73	17.767	
8,464.5	7,219.4	7,220.4	7,220.4	37.1	144.0	89.86	231.7	-1,216.1	2,955.1	2,788.9	166.12	17.788	
8,500.0	7,218.9	7,219.9	7,219.9	37.1	144.0	89.85	231.7	-1,216.1	2,961.5	2,795.1	166.34	17.803	
8,563.0	7,218.0	7,219.0	7,219.0	37.2	144.0	89.83	231.7	-1,216.1	2,973.8	2,807.0	166.82	17.826	
8,600.0	7,217.5	7,218.5	7,218.5	37.3	144.0	89.82	231.7	-1,216.1	2,981.7	2,814.6	167.10	17.843	
8,661.4	7,216.7	7,217.7	7,217.7	37.5	144.0	89.81	231.7	-1,216.1	2,995.7	2,828.0	167.65	17.869	
8,700.0	7,216.1	7,217.1	7,217.1	37.6	144.0	89.80	231.7	-1,216.1	3,005.1	2,837.1	167.99	17.888	
8,759.8	7,215.3	7,216.3	7,216.3	37.8	144.0	89.78	231.7	-1,216.1	3,020.6	2,852.0	168.59	17.917	
8,800.0	7,214.8	7,215.8	7,215.8	38.0	143.9	89.77	231.7	-1,216.1	3,031.6	2,862.6	168.99	17.939	
8,858.2	7,214.0	7,215.0	7,215.0	38.3	143.9	89.75	231.7	-1,216.1	3,048.5	2,878.9	169.63	17.971	
8,900.0	7,213.4	7,214.4	7,214.4	38.5	143.9	89.74	231.7	-1,216.1	3,061.2	2,891.1	170.09	17.997	
8,956.7	7,212.6	7,213.6	7,213.6	38.8	143.9	89.73	231.7	-1,216.1	3,079.3	2,908.5	170.77	18.032	
9,000.0	7,212.0	7,213.0	7,213.0	39.1	143.9	89.71	231.7	-1,216.1	3,093.7	2,922.4	171.28	18.062	
9,055.1	7,211.2	7,212.2	7,212.2	39.5	143.9	89.70	231.7	-1,216.1	3,112.9	2,940.9	171.98	18.100	
9,100.0	7,210.6	7,211.6	7,211.6	39.8	143.9	89.69	231.7	-1,216.1	3,129.1	2,956.5	172.55	18.135	
9,153.5	7,209.9	7,210.9	7,210.9	40.3	143.9	89.67	231.7	-1,216.1	3,149.2	2,975.9	173.26	18.176	
9,200.0	7,209.2	7,210.2	7,210.2	40.7	143.8	89.66	231.7	-1,216.1	3,167.2	2,993.4	173.88	18.215	
9,251.9	7,208.5	7,209.5	7,209.5	41.1	143.8	89.65	231.7	-1,216.1	3,188.1	3,013.5	174.60	18.259	
9,300.0	7,207.9	7,208.9	7,208.9	41.6	143.8	89.63	231.7	-1,216.1	3,208.0	3,032.8	175.27	18.303	
9,350.4	7,207.2	7,208.2	7,208.2	42.1	143.8	89.62	231.7	-1,216.1	3,229.6	3,053.6	176.00	18.350	
9,400.0	7,206.5	7,207.5	7,207.5	42.6	143.8	89.61	231.7	-1,216.1	3,251.4	3,074.7	176.71	18.399	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT NYGREN 21-30 - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-INC

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,448.8	7,205.8	7,206.8	7,206.8	43.1	143.8	89.59	231.7	-1,216.1	3,273.5	3,096.0	177.44	18.449	
9,500.0	7,205.1	7,206.1	7,206.1	43.7	143.8	89.58	231.7	-1,216.1	3,297.2	3,119.0	178.20	18.503	
9,547.2	7,204.4	7,205.4	7,205.4	44.2	143.7	89.57	231.7	-1,216.1	3,319.7	3,140.8	178.92	18.554	
9,600.0	7,203.7	7,204.7	7,204.7	44.8	143.7	89.55	231.7	-1,216.1	3,345.4	3,165.7	179.72	18.614	
9,645.6	7,203.1	7,204.1	7,204.1	45.4	143.7	89.54	231.7	-1,216.1	3,368.2	3,187.8	180.43	18.667	
9,700.0	7,202.3	7,203.3	7,203.3	46.1	143.7	89.52	231.7	-1,216.1	3,395.9	3,214.6	181.28	18.733	
9,744.1	7,201.7	7,202.7	7,202.7	46.6	143.7	89.51	231.7	-1,216.1	3,418.8	3,236.8	181.98	18.787	
9,800.0	7,201.0	7,202.0	7,202.0	47.3	143.7	89.50	231.7	-1,216.1	3,448.5	3,265.6	182.87	18.858	
9,842.5	7,200.4	7,201.4	7,201.4	47.9	143.7	89.49	231.7	-1,216.1	3,471.5	3,288.0	183.55	18.913	
9,900.0	7,199.6	7,200.6	7,200.6	48.7	143.6	89.47	231.7	-1,216.1	3,503.2	3,318.7	184.48	18.989	
9,940.9	7,199.0	7,200.0	7,200.0	49.2	143.6	89.46	231.7	-1,216.1	3,526.1	3,341.0	185.15	19.045	
10,000.0	7,198.2	7,199.2	7,199.2	50.1	143.6	89.44	231.7	-1,216.1	3,559.8	3,373.7	186.12	19.127	
10,039.3	7,197.7	7,198.7	7,198.7	50.6	143.6	89.43	231.7	-1,216.1	3,582.7	3,395.9	186.77	19.182	
10,100.0	7,196.8	7,197.8	7,197.8	51.5	143.6	89.42	231.7	-1,216.1	3,618.4	3,430.6	187.77	19.270	
10,137.8	7,196.3	7,197.3	7,197.3	52.0	143.6	89.41	231.7	-1,216.1	3,640.9	3,452.5	188.41	19.325	
10,200.0	7,195.4	7,196.4	7,196.4	52.9	143.6	89.39	231.7	-1,216.1	3,678.7	3,489.2	189.45	19.418	
10,236.2	7,194.9	7,195.9	7,195.9	53.5	143.6	89.38	231.7	-1,216.1	3,700.9	3,510.9	190.06	19.472	
10,300.0	7,194.1	7,195.1	7,195.1	54.4	143.5	89.36	231.7	-1,216.1	3,740.7	3,549.6	191.14	19.570	
10,334.6	7,193.6	7,194.6	7,194.6	55.0	143.5	89.35	231.7	-1,216.1	3,762.6	3,570.8	191.73	19.624	
10,400.0	7,192.7	7,193.7	7,193.7	56.0	143.5	89.33	231.7	-1,216.1	3,804.3	3,611.5	192.85	19.727	
10,433.0	7,192.2	7,193.2	7,193.2	56.5	143.5	89.32	231.7	-1,216.1	3,825.7	3,632.3	193.41	19.780	
10,500.0	7,191.3	7,192.3	7,192.3	57.5	143.5	89.31	231.7	-1,216.1	3,869.5	3,674.9	194.57	19.888	
10,531.5	7,190.9	7,191.9	7,191.9	58.0	143.5	89.30	231.7	-1,216.1	3,890.3	3,695.2	195.11	19.939	
10,600.0	7,189.9	7,190.9	7,190.9	59.1	143.4	89.28	231.7	-1,216.1	3,936.1	3,739.8	196.30	20.052	
10,629.9	7,189.5	7,190.5	7,190.5	59.6	143.4	89.27	231.7	-1,216.1	3,956.3	3,759.5	196.82	20.102	
10,700.0	7,188.5	7,189.5	7,189.5	60.7	143.4	89.25	231.7	-1,216.1	4,004.2	3,806.1	198.04	20.219	
10,728.3	7,188.1	7,189.1	7,189.1	61.1	143.4	89.24	231.7	-1,216.1	4,023.7	3,825.1	198.53	20.267	
10,800.0	7,187.2	7,188.2	7,188.2	62.3	143.4	89.22	231.7	-1,216.1	4,073.5	3,873.7	199.79	20.389	
10,826.7	7,186.8	7,187.8	7,187.8	62.7	143.4	89.22	231.7	-1,216.1	4,092.3	3,892.0	200.26	20.435	
10,900.0	7,185.8	7,186.8	7,186.8	63.9	143.4	89.20	231.7	-1,216.1	4,144.1	3,942.5	201.55	20.561	
10,925.2	7,185.4	7,186.4	7,186.4	64.3	143.4	89.19	231.7	-1,216.1	4,162.0	3,960.0	201.99	20.605	
11,000.0	7,184.4	7,185.4	7,185.4	65.6	143.3	89.17	231.7	-1,216.1	4,215.9	4,012.5	203.32	20.736	
11,023.6	7,184.1	7,185.1	7,185.1	66.0	143.3	89.16	231.7	-1,216.1	4,233.0	4,029.2	203.73	20.777	
11,100.0	7,183.0	7,184.0	7,184.0	67.2	143.3	89.14	231.7	-1,216.1	4,288.8	4,083.7	205.09	20.912	
11,122.0	7,182.7	7,183.7	7,183.7	67.6	143.3	89.14	231.7	-1,216.1	4,305.0	4,099.5	205.48	20.951	
11,200.0	7,181.6	7,182.6	7,182.6	68.9	143.3	89.12	231.7	-1,216.1	4,362.8	4,155.9	206.87	21.089	
11,220.4	7,181.3	7,182.3	7,182.3	69.3	143.3	89.11	231.7	-1,216.1	4,378.0	4,170.8	207.24	21.126	
11,300.0	7,180.2	7,181.2	7,181.2	70.6	143.3	89.09	231.7	-1,216.1	4,437.8	4,229.1	208.66	21.268	
11,318.9	7,180.0	7,181.0	7,181.0	70.9	143.2	89.08	231.7	-1,216.1	4,452.0	4,243.0	209.00	21.302	
11,400.0	7,178.9	7,179.9	7,179.9	72.3	143.2	89.06	231.7	-1,216.1	4,513.7	4,303.3	210.45	21.448	
11,417.3	7,178.6	7,179.6	7,179.6	72.6	143.2	89.06	231.7	-1,216.1	4,527.0	4,316.2	210.76	21.479	
11,500.0	7,177.5	7,178.5	7,178.5	74.0	143.2	89.03	231.7	-1,216.1	4,590.6	4,378.4	212.25	21.628	
11,515.7	7,177.3	7,178.3	7,178.3	74.3	143.2	89.03	231.7	-1,216.1	4,602.8	4,390.3	212.53	21.657	
11,600.0	7,176.1	7,177.1	7,177.1	75.7	143.2	89.01	231.7	-1,216.1	4,668.4	4,454.3	214.05	21.810	
11,614.1	7,175.9	7,176.9	7,176.9	76.0	143.2	89.00	231.7	-1,216.1	4,679.5	4,465.2	214.31	21.835	
11,700.0	7,174.7	7,175.7	7,175.7	77.5	143.1	88.98	231.7	-1,216.1	4,747.0	4,531.1	215.86	21.991	
11,712.6	7,174.5	7,175.5	7,175.5	77.7	143.1	88.98	231.7	-1,216.1	4,756.9	4,540.8	216.09	22.014	
11,800.0	7,173.3	7,174.3	7,174.3	79.2	143.1	88.95	231.7	-1,216.1	4,826.4	4,608.7	217.67	22.173	
11,811.0	7,173.2	7,174.2	7,174.2	79.4	143.1	88.95	231.7	-1,216.1	4,835.2	4,617.3	217.87	22.193	
11,900.0	7,172.0	7,173.0	7,173.0	81.0	143.1	88.92	231.7	-1,216.1	4,906.5	4,687.0	219.49	22.355	
11,909.4	7,171.8	7,172.8	7,172.8	81.1	143.1	88.92	231.7	-1,216.1	4,914.1	4,694.5	219.66	22.372	
12,000.0	7,170.6	7,171.6	7,171.6	82.7	143.1	88.90	231.7	-1,216.1	4,987.4	4,766.1	221.30	22.536	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT NYGREN 21-30 - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-INC

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,007.8	7,170.5	7,171.5	7,171.5	82.9	143.1	88.90	231.7	-1,216.1	4,993.8	4,772.3	221.45	22.551	
12,041.2	7,170.0	7,171.0	7,171.0	83.5	143.0	88.89	231.7	-1,216.1	5,020.9	4,798.9	222.05	22.611	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ 22-30 - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-INC

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-133.13	-780.3	-833.1	1,141.5				
98.4	98.4	94.4	94.4	0.1	0.2	-133.13	-780.3	-833.1	1,141.4	1,141.2	0.27	4,175.983	
100.0	100.0	96.0	96.0	0.1	0.2	-133.13	-780.3	-833.1	1,141.4	1,141.2	0.28	4,102.213	
196.8	196.8	192.8	192.8	0.3	2.6	-133.13	-780.3	-833.1	1,141.4	1,138.5	2.90	393.456	
200.0	200.0	196.0	196.0	0.3	2.7	-133.13	-780.3	-833.1	1,141.4	1,138.5	2.99	381.820	
295.3	295.3	291.3	291.3	0.5	4.7	-133.13	-780.3	-833.1	1,141.4	1,136.3	5.19	219.728	
300.0	300.0	296.0	296.0	0.5	4.8	-133.13	-780.3	-833.1	1,141.4	1,136.1	5.30	215.239	
393.7	393.7	389.7	389.7	0.7	6.7	-133.13	-780.3	-833.1	1,141.4	1,134.0	7.42	153.805	
400.0	400.0	396.0	396.0	0.8	6.8	-133.13	-780.3	-833.1	1,141.4	1,133.9	7.56	150.911	
492.1	492.1	488.1	488.1	1.0	8.7	-133.13	-780.3	-833.1	1,141.4	1,131.8	9.64	118.462	
500.0	500.0	496.0	496.0	1.0	8.8	-133.13	-780.3	-833.1	1,141.4	1,131.6	9.81	116.324	
590.5	590.5	586.5	586.5	1.2	10.7	-133.13	-780.3	-833.1	1,141.4	1,129.6	11.84	96.369	
600.0	600.0	596.0	596.0	1.2	10.8	-133.13	-780.3	-833.1	1,141.4	1,129.4	12.06	94.674	
689.0	689.0	685.0	685.0	1.4	12.6	-133.13	-780.3	-833.1	1,141.4	1,127.4	14.05	81.236	
700.0	700.0	696.0	696.0	1.4	12.9	-133.13	-780.3	-833.1	1,141.4	1,127.1	14.30	79.833	
787.4	787.4	783.4	783.4	1.6	14.6	-133.13	-780.3	-833.1	1,141.4	1,125.2	16.26	70.219	
800.0	800.0	796.0	796.0	1.7	14.9	-133.13	-780.3	-833.1	1,141.4	1,124.9	16.54	69.020	
885.8	885.8	881.8	881.8	1.9	16.6	-133.13	-780.3	-833.1	1,141.4	1,123.0	18.46	61.836	
900.0	900.0	896.0	896.0	1.9	16.9	-133.13	-780.3	-833.1	1,141.4	1,122.7	18.78	60.791	
984.2	984.2	980.2	980.2	2.1	18.6	-133.13	-780.3	-833.1	1,141.4	1,120.8	20.66	55.243	
1,000.0	1,000.0	996.0	996.0	2.1	18.9	-133.13	-780.3	-833.1	1,141.4	1,120.4	21.01	54.316	
1,082.7	1,082.7	1,078.7	1,078.7	2.3	20.6	-133.13	-780.3	-833.1	1,141.4	1,118.6	22.86	49.921	
1,100.0	1,100.0	1,096.0	1,096.0	2.3	20.9	-133.13	-780.3	-833.1	1,141.4	1,118.2	23.25	49.089	
1,181.1	1,181.1	1,177.1	1,177.1	2.5	22.6	-133.13	-780.3	-833.1	1,141.4	1,116.4	25.07	45.536	
1,200.0	1,200.0	1,196.0	1,196.0	2.6	22.9	-133.13	-780.3	-833.1	1,141.4	1,116.0	25.49	44.780	
1,279.5	1,279.5	1,275.5	1,275.5	2.7	24.5	-133.13	-780.3	-833.1	1,141.4	1,114.2	27.27	41.859	
1,300.0	1,300.0	1,296.0	1,296.0	2.8	24.9	-133.13	-780.3	-833.1	1,141.4	1,113.7	27.73	41.167	
1,377.9	1,377.9	1,373.9	1,373.9	3.0	26.5	-133.13	-780.3	-833.1	1,141.4	1,112.0	29.47	38.732	
1,400.0	1,400.0	1,396.0	1,396.0	3.0	27.0	-133.13	-780.3	-833.1	1,141.4	1,111.5	29.96	38.094	
1,450.0	1,450.0	1,446.0	1,446.0	3.1	28.0	-133.13	-780.3	-833.1	1,141.4	1,110.4	31.08	36.723	CC
1,476.4	1,476.4	1,472.4	1,472.4	3.2	28.5	163.56	-780.3	-833.1	1,141.6	1,109.9	31.67	36.047	
1,500.0	1,500.0	1,496.0	1,496.0	3.2	29.0	163.57	-780.3	-833.1	1,141.9	1,109.7	32.19	35.470	ES
1,574.8	1,574.8	1,570.8	1,570.8	3.4	30.5	163.59	-780.3	-833.1	1,144.1	1,110.2	33.83	33.818	
1,600.0	1,599.9	1,595.9	1,595.9	3.4	31.0	163.60	-780.3	-833.1	1,145.2	1,110.8	34.38	33.314	
1,673.2	1,673.0	1,669.0	1,669.0	3.6	32.4	163.64	-780.3	-833.1	1,149.8	1,113.8	35.95	31.986	
1,700.0	1,699.7	1,695.7	1,695.7	3.7	33.0	163.66	-780.3	-833.1	1,151.9	1,115.4	36.51	31.547	
1,771.6	1,771.0	1,767.0	1,767.0	3.8	34.4	163.72	-780.3	-833.1	1,158.8	1,120.7	38.01	30.483	
1,800.0	1,799.1	1,795.1	1,795.1	3.9	35.0	163.75	-780.3	-833.1	1,161.9	1,123.3	38.60	30.104	
1,870.1	1,868.6	1,864.6	1,864.6	4.1	36.4	163.82	-780.3	-833.1	1,171.0	1,130.9	40.02	29.258	
1,900.0	1,898.2	1,894.2	1,894.2	4.1	37.0	163.86	-780.3	-833.1	1,175.3	1,134.7	40.62	28.936	
1,968.5	1,965.7	1,961.7	1,961.7	4.3	38.3	163.95	-780.3	-833.1	1,186.4	1,144.4	41.96	28.272	
2,000.0	1,996.6	1,992.6	1,992.6	4.4	39.0	164.00	-780.3	-833.1	1,192.0	1,149.5	42.57	28.002	
2,066.9	2,062.2	2,058.2	2,058.2	4.6	40.3	164.10	-780.3	-833.1	1,205.1	1,161.2	43.83	27.492	
2,100.0	2,094.4	2,090.4	2,090.4	4.7	40.9	164.16	-780.3	-833.1	1,212.0	1,167.6	44.44	27.273	
2,165.3	2,157.9	2,153.9	2,153.9	5.0	42.2	164.27	-780.3	-833.1	1,226.9	1,181.3	45.62	26.892	
2,200.0	2,191.5	2,187.5	2,187.5	5.1	42.9	164.33	-780.3	-833.1	1,235.4	1,189.2	46.23	26.722	
2,263.8	2,252.9	2,248.9	2,248.9	5.3	44.1	164.45	-780.3	-833.1	1,252.0	1,204.7	47.33	26.454	
2,300.0	2,287.6	2,283.6	2,283.6	5.5	44.8	164.52	-780.3	-833.1	1,262.0	1,214.1	47.93	26.331	
2,362.2	2,346.9	2,342.9	2,342.9	5.8	46.0	164.65	-780.3	-833.1	1,280.2	1,231.3	48.94	26.161	
2,400.0	2,382.7	2,378.7	2,378.7	6.0	46.7	164.73	-780.3	-833.1	1,291.9	1,242.4	49.53	26.084	
2,460.6	2,439.8	2,435.8	2,435.8	6.3	47.9	164.85	-780.3	-833.1	1,311.6	1,261.2	50.45	25.997	
2,500.0	2,476.6	2,472.6	2,472.6	6.5	48.6	164.93	-780.3	-833.1	1,325.0	1,274.0	51.03	25.968	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ 22-30 - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-INC

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,559.0	2,531.6	2,527.6	2,527.6	6.9	49.7	165.06	-780.3	-833.1	1,346.1	1,294.3	51.86	25.955	
2,600.0	2,569.4	2,565.4	2,565.4	7.1	50.5	165.14	-780.3	-833.1	1,361.4	1,309.0	52.41	25.974	
2,657.5	2,622.0	2,618.0	2,618.0	7.5	51.5	165.26	-780.3	-833.1	1,383.7	1,330.6	53.17	26.027	
2,700.0	2,660.7	2,656.7	2,656.7	7.8	52.3	165.35	-780.3	-833.1	1,400.9	1,347.3	53.69	26.093	
2,755.9	2,711.1	2,707.1	2,707.1	8.2	53.3	165.46	-780.3	-833.1	1,424.4	1,370.1	54.35	26.206	
2,800.0	2,750.6	2,746.6	2,746.6	8.6	54.1	165.55	-780.3	-833.1	1,443.6	1,388.8	54.85	26.322	
2,832.3	2,779.2	2,775.2	2,775.2	8.8	54.7	165.62	-780.3	-833.1	1,458.1	1,402.9	55.19	26.418	
2,854.3	2,798.8	2,794.8	2,794.8	9.0	55.1	165.72	-780.3	-833.1	1,468.1	1,412.4	55.62	26.396	
2,900.0	2,839.3	2,835.3	2,835.3	9.4	55.9	165.92	-780.3	-833.1	1,488.7	1,432.2	56.49	26.352	
2,952.7	2,886.0	2,882.0	2,882.0	9.9	56.8	166.14	-780.3	-833.1	1,512.6	1,455.1	57.51	26.302	
3,000.0	2,927.8	2,923.8	2,923.8	10.3	57.7	166.33	-780.3	-833.1	1,534.1	1,475.6	58.42	26.259	
3,051.2	2,973.2	2,969.2	2,969.2	10.7	58.6	166.54	-780.3	-833.1	1,557.3	1,497.9	59.41	26.213	
3,100.0	3,016.4	3,012.4	3,012.4	11.2	59.5	166.73	-780.3	-833.1	1,579.5	1,519.1	60.35	26.171	
3,149.6	3,060.4	3,056.4	3,056.4	11.6	60.4	166.92	-780.3	-833.1	1,602.0	1,540.7	61.31	26.128	
3,200.0	3,105.0	3,101.0	3,101.0	12.1	61.3	167.10	-780.3	-833.1	1,624.9	1,562.6	62.29	26.086	
3,248.0	3,147.5	3,143.5	3,143.5	12.5	62.1	167.28	-780.3	-833.1	1,646.7	1,583.5	63.22	26.047	
3,300.0	3,193.6	3,189.6	3,189.6	13.0	63.0	167.46	-780.3	-833.1	1,670.4	1,606.2	64.23	26.006	
3,346.4	3,234.7	3,230.7	3,230.7	13.4	63.9	167.61	-780.3	-833.1	1,691.6	1,626.4	65.14	25.970	
3,400.0	3,282.2	3,278.2	3,278.2	13.9	64.8	167.79	-780.3	-833.1	1,715.9	1,649.8	66.18	25.930	
3,444.9	3,321.9	3,317.9	3,317.9	14.3	65.6	167.94	-780.3	-833.1	1,736.4	1,669.4	67.05	25.897	
3,500.0	3,370.8	3,366.8	3,366.8	14.8	66.6	168.11	-780.3	-833.1	1,761.5	1,693.4	68.12	25.858	
3,543.3	3,409.1	3,405.1	3,405.1	15.2	67.4	168.24	-780.3	-833.1	1,781.3	1,712.3	68.97	25.828	
3,600.0	3,459.3	3,455.3	3,455.3	15.8	68.4	168.41	-780.3	-833.1	1,807.2	1,737.1	70.07	25.790	
3,641.7	3,496.3	3,492.3	3,492.3	16.1	69.1	168.53	-780.3	-833.1	1,826.2	1,755.3	70.89	25.762	
3,700.0	3,547.9	3,543.9	3,543.9	16.7	70.2	168.70	-780.3	-833.1	1,852.8	1,780.8	72.02	25.725	
3,740.1	3,583.5	3,579.5	3,579.5	17.1	70.9	168.81	-780.3	-833.1	1,871.2	1,798.4	72.81	25.700	
3,800.0	3,636.5	3,632.5	3,632.5	17.6	71.9	168.97	-780.3	-833.1	1,898.5	1,824.6	73.98	25.664	
3,838.6	3,670.7	3,666.7	3,666.7	18.0	72.6	169.07	-780.3	-833.1	1,916.2	1,841.5	74.73	25.641	
3,900.0	3,725.1	3,721.1	3,721.1	18.6	73.7	169.23	-780.3	-833.1	1,944.3	1,868.4	75.93	25.606	
3,937.0	3,757.9	3,753.9	3,753.9	18.9	74.4	169.33	-780.3	-833.1	1,961.2	1,884.6	76.66	25.585	
4,000.0	3,813.7	3,809.7	3,809.7	19.5	75.5	169.48	-780.3	-833.1	1,990.1	1,912.2	77.89	25.551	
4,035.4	3,845.1	3,841.1	3,841.1	19.9	76.1	169.57	-780.3	-833.1	2,006.3	1,927.7	78.58	25.531	
4,100.0	3,902.3	3,898.3	3,898.3	20.5	77.3	169.72	-780.3	-833.1	2,035.9	1,956.0	79.84	25.498	
4,133.8	3,932.2	3,928.2	3,928.2	20.8	77.9	169.80	-780.3	-833.1	2,051.4	1,970.9	80.51	25.481	
4,200.0	3,990.8	3,986.8	3,986.8	21.5	79.1	169.95	-780.3	-833.1	2,081.7	1,999.9	81.80	25.448	
4,232.3	4,019.4	4,015.4	4,015.4	21.8	79.6	170.02	-780.3	-833.1	2,096.5	2,014.0	82.43	25.432	
4,300.0	4,079.4	4,075.4	4,075.4	22.4	80.8	170.16	-780.3	-833.1	2,127.5	2,043.8	83.76	25.400	
4,330.7	4,106.6	4,102.6	4,102.6	22.7	81.4	170.23	-780.3	-833.1	2,141.6	2,057.2	84.36	25.386	
4,400.0	4,168.0	4,164.0	4,164.0	23.4	82.6	170.37	-780.3	-833.1	2,173.4	2,087.7	85.72	25.355	
4,429.1	4,193.8	4,189.8	4,189.8	23.7	83.1	170.43	-780.3	-833.1	2,186.8	2,100.5	86.29	25.342	
4,500.0	4,256.6	4,252.6	4,252.6	24.4	84.4	170.57	-780.3	-833.1	2,219.3	2,131.6	87.68	25.312	
4,527.5	4,281.0	4,277.0	4,277.0	24.6	84.9	170.62	-780.3	-833.1	2,231.9	2,143.7	88.22	25.300	
4,600.0	4,345.2	4,341.2	4,341.2	25.3	86.2	170.76	-780.3	-833.1	2,265.2	2,175.6	89.64	25.271	
4,626.0	4,368.2	4,364.2	4,364.2	25.6	86.7	170.81	-780.3	-833.1	2,277.1	2,187.0	90.15	25.260	
4,700.0	4,433.8	4,429.8	4,429.8	26.3	88.0	170.95	-780.3	-833.1	2,311.1	2,219.5	91.60	25.231	
4,724.4	4,455.4	4,451.4	4,451.4	26.5	88.4	170.99	-780.3	-833.1	2,322.4	2,230.3	92.08	25.222	
4,800.0	4,522.3	4,518.3	4,518.3	27.3	89.8	171.12	-780.3	-833.1	2,357.1	2,263.5	93.56	25.193	
4,822.8	4,542.6	4,538.6	4,538.6	27.5	90.2	171.16	-780.3	-833.1	2,367.6	2,273.6	94.01	25.185	
4,900.0	4,610.9	4,606.9	4,606.9	28.2	91.5	171.29	-780.3	-833.1	2,403.1	2,307.5	95.52	25.157	
4,921.2	4,629.8	4,625.8	4,625.8	28.4	91.9	171.33	-780.3	-833.1	2,412.8	2,316.9	95.94	25.150	
5,000.0	4,699.5	4,695.5	4,695.5	29.2	93.3	171.46	-780.3	-833.1	2,449.1	2,351.6	97.48	25.122	
5,019.7	4,716.9	4,712.9	4,712.9	29.4	93.7	171.49	-780.3	-833.1	2,458.1	2,360.2	97.87	25.116	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ 22-30 - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-INC

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	4,788.1	4,784.1	4,784.1	30.2	95.1	171.62	-780.3	-833.1	2,495.1	2,395.6	99.45	25.089	
5,118.1	4,804.1	4,800.1	4,800.1	30.4	95.4	171.64	-780.3	-833.1	2,503.4	2,403.6	99.80	25.083	
5,200.0	4,876.7	4,872.7	4,872.7	31.1	96.9	171.77	-780.3	-833.1	2,541.1	2,439.7	101.41	25.057	
5,216.5	4,891.3	4,887.3	4,887.3	31.3	97.2	171.79	-780.3	-833.1	2,548.7	2,446.9	101.73	25.052	
5,300.0	4,965.3	4,961.3	4,961.3	32.1	98.7	171.92	-780.3	-833.1	2,587.1	2,483.7	103.37	25.027	
5,314.9	4,978.5	4,974.5	4,974.5	32.3	98.9	171.94	-780.3	-833.1	2,594.0	2,490.3	103.67	25.022	
5,400.0	5,053.8	5,049.8	5,049.8	33.1	100.4	172.06	-780.3	-833.1	2,633.1	2,527.8	105.34	24.997	
5,413.4	5,065.7	5,061.7	5,061.7	33.2	100.7	172.08	-780.3	-833.1	2,639.3	2,533.7	105.60	24.993	
5,508.2	5,149.7	5,145.7	5,145.7	34.2	102.4	172.20	-780.3	-833.1	2,683.0	2,575.5	107.46	24.967	
5,511.8	5,152.9	5,148.9	5,148.9	34.2	102.4	172.21	-780.3	-833.1	2,684.6	2,577.0	107.59	24.952	
5,600.0	5,231.7	5,227.7	5,227.7	34.9	104.0	172.44	-780.3	-833.1	2,724.0	2,613.2	110.74	24.599	
5,610.2	5,240.9	5,236.9	5,236.9	35.0	104.2	172.47	-780.3	-833.1	2,728.4	2,617.3	111.09	24.559	
5,700.0	5,322.5	5,318.5	5,318.5	35.7	105.8	172.68	-780.3	-833.1	2,765.6	2,651.4	114.23	24.212	
5,708.6	5,330.4	5,326.4	5,326.4	35.7	106.0	172.69	-780.3	-833.1	2,769.1	2,654.6	114.53	24.179	
5,800.0	5,414.6	5,410.6	5,410.6	36.3	107.7	172.88	-780.3	-833.1	2,804.1	2,686.5	117.66	23.833	
5,807.1	5,421.2	5,417.2	5,417.2	36.4	107.8	172.89	-780.3	-833.1	2,806.7	2,688.8	117.89	23.807	
5,900.0	5,508.1	5,504.1	5,504.1	36.9	109.6	173.06	-780.3	-833.1	2,839.4	2,718.4	121.01	23.465	
5,905.5	5,513.3	5,509.3	5,509.3	37.0	109.7	173.07	-780.3	-833.1	2,841.3	2,720.1	121.19	23.445	
6,000.0	5,602.8	5,598.8	5,598.8	37.5	111.5	173.22	-780.3	-833.1	2,871.5	2,747.2	124.28	23.105	
6,003.9	5,606.5	5,602.5	5,602.5	37.5	111.6	173.23	-780.3	-833.1	2,872.6	2,748.2	124.40	23.092	
6,100.0	5,698.5	5,694.5	5,694.5	38.0	113.4	173.36	-780.3	-833.1	2,900.2	2,772.7	127.45	22.756	
6,102.3	5,700.7	5,696.7	5,696.7	38.0	113.5	173.36	-780.3	-833.1	2,900.8	2,773.3	127.52	22.748	
6,200.0	5,795.2	5,791.2	5,791.2	38.4	115.4	173.47	-780.3	-833.1	2,925.6	2,795.1	130.51	22.417	
6,200.8	5,795.9	5,791.9	5,791.9	38.4	115.4	173.48	-780.3	-833.1	2,925.8	2,795.2	130.53	22.414	
6,299.2	5,891.9	5,887.9	5,887.9	38.8	117.3	173.57	-780.3	-833.1	2,947.5	2,814.0	133.43	22.090	
6,300.0	5,892.7	5,888.7	5,888.7	38.8	117.3	173.57	-780.3	-833.1	2,947.6	2,814.2	133.45	22.087	
6,397.6	5,988.5	5,984.5	5,984.5	39.1	119.2	173.65	-780.3	-833.1	2,965.9	2,829.7	136.20	21.776	
6,400.0	5,990.9	5,986.9	5,986.9	39.1	119.3	173.66	-780.3	-833.1	2,966.3	2,830.0	136.27	21.768	
6,496.0	6,085.8	6,081.8	6,081.8	39.4	121.2	173.72	-780.3	-833.1	2,980.9	2,842.1	138.84	21.471	
6,500.0	6,089.7	6,085.7	6,085.7	39.4	121.3	173.72	-780.3	-833.1	2,981.5	2,842.5	138.94	21.459	
6,594.5	6,183.5	6,179.5	6,179.5	39.6	123.2	173.77	-780.3	-833.1	2,992.7	2,851.4	141.33	21.175	
6,600.0	6,189.0	6,185.0	6,185.0	39.7	123.3	173.77	-780.3	-833.1	2,993.3	2,851.8	141.47	21.159	
6,692.9	6,281.5	6,277.5	6,277.5	39.8	125.1	173.81	-780.3	-833.1	3,001.1	2,857.5	143.67	20.889	
6,700.0	6,288.6	6,284.6	6,284.6	39.8	125.3	173.81	-780.3	-833.1	3,001.6	2,857.8	143.83	20.869	
6,791.3	6,379.8	6,375.8	6,375.8	40.0	127.1	173.83	-780.3	-833.1	3,006.2	2,860.3	145.84	20.613	
6,800.0	6,388.5	6,384.5	6,384.5	40.0	127.3	173.83	-780.3	-833.1	3,006.5	2,860.4	146.03	20.589	
6,889.7	6,478.2	6,474.2	6,474.2	40.1	129.1	173.84	-780.3	-833.1	3,007.9	2,860.0	147.84	20.345	
6,890.4	6,478.9	6,474.9	6,474.9	40.1	129.1	-122.86	-780.3	-833.1	3,007.9	2,860.0	147.86	20.343	
6,900.0	6,488.5	6,484.5	6,484.5	40.1	129.3	-122.86	-780.3	-833.1	3,007.9	2,859.8	148.06	20.315	
6,920.4	6,508.9	6,504.9	6,504.9	40.1	129.7	-122.86	-780.3	-833.1	3,007.9	2,859.4	148.51	20.254	
6,950.0	6,538.5	6,534.5	6,534.5	40.1	130.3	57.18	-780.3	-833.1	3,007.6	2,858.6	148.97	20.189	
6,988.2	6,576.6	6,572.6	6,572.6	40.1	131.1	57.31	-780.3	-833.1	3,006.1	2,856.7	149.44	20.117	
7,000.0	6,588.3	6,584.3	6,584.3	40.1	131.3	57.38	-780.3	-833.1	3,005.5	2,855.9	149.55	20.097	
7,050.0	6,637.8	6,633.8	6,633.8	40.1	132.3	57.76	-780.3	-833.1	3,001.6	2,851.7	149.90	20.023	
7,086.6	6,673.6	6,669.6	6,669.6	40.1	133.0	58.15	-780.3	-833.1	2,997.5	2,847.5	150.03	19.979	
7,100.0	6,686.6	6,682.6	6,682.6	40.1	133.3	58.32	-780.3	-833.1	2,995.8	2,845.7	150.06	19.964	
7,150.0	6,734.6	6,730.6	6,730.6	40.0	134.2	59.07	-780.3	-833.1	2,988.2	2,838.2	150.07	19.912	
7,185.0	6,767.5	6,763.5	6,763.5	39.9	134.9	59.70	-780.3	-833.1	2,981.9	2,831.9	150.04	19.875	
7,200.0	6,781.4	6,777.4	6,777.4	39.9	135.2	59.99	-780.3	-833.1	2,979.0	2,829.0	150.02	19.858	
7,250.0	6,827.0	6,823.0	6,823.0	39.8	136.1	61.09	-780.3	-833.1	2,968.1	2,818.2	149.97	19.791	
7,283.4	6,856.6	6,852.6	6,852.6	39.8	136.7	61.92	-780.3	-833.1	2,960.0	2,810.0	149.99	19.735	
7,300.0	6,871.0	6,867.0	6,867.0	39.7	137.0	62.36	-780.3	-833.1	2,955.7	2,805.7	150.02	19.702	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ 22-30 - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-INC

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,350.0	6,913.2	6,909.2	6,909.2	39.6	137.8	63.79	-780.3	-833.1	2,941.9	2,791.7	150.25	19.581	
7,381.9	6,939.1	6,935.1	6,935.1	39.5	138.4	64.78	-780.3	-833.1	2,932.5	2,782.0	150.51	19.483	
7,400.0	6,953.4	6,949.4	6,949.4	39.4	138.6	65.38	-780.3	-833.1	2,926.9	2,776.2	150.71	19.421	
7,450.0	6,991.5	6,987.5	6,987.5	39.3	139.4	67.10	-780.3	-833.1	2,910.7	2,759.2	151.45	19.219	
7,480.3	7,013.5	7,009.5	7,009.5	39.2	139.9	68.20	-780.3	-833.1	2,900.3	2,748.3	152.03	19.077	
7,500.0	7,027.3	7,023.3	7,023.3	39.1	140.1	68.94	-780.3	-833.1	2,893.5	2,741.0	152.47	18.977	
7,550.0	7,060.5	7,056.5	7,056.5	39.0	140.8	70.89	-780.3	-833.1	2,875.4	2,721.7	153.74	18.703	
7,578.7	7,078.4	7,074.4	7,074.4	38.8	141.2	72.05	-780.3	-833.1	2,864.8	2,710.2	154.57	18.533	
7,600.0	7,091.0	7,087.0	7,087.0	38.8	141.4	72.92	-780.3	-833.1	2,856.8	2,701.5	155.22	18.405	
7,650.0	7,118.7	7,114.7	7,114.7	38.6	142.0	75.00	-780.3	-833.1	2,837.6	2,680.8	156.81	18.096	
7,677.1	7,132.5	7,128.5	7,128.5	38.5	142.2	76.14	-780.3	-833.1	2,827.0	2,669.3	157.69	17.928	
7,700.0	7,143.4	7,139.4	7,139.4	38.4	142.5	77.10	-780.3	-833.1	2,818.1	2,659.7	158.42	17.789	
7,750.0	7,165.0	7,161.0	7,161.0	38.2	142.9	79.20	-780.3	-833.1	2,798.4	2,638.5	159.96	17.495	
7,775.6	7,174.9	7,170.9	7,170.9	38.1	143.1	80.26	-780.3	-833.1	2,788.3	2,627.6	160.69	17.352	
7,800.0	7,183.5	7,179.5	7,179.5	38.1	143.3	81.26	-780.3	-833.1	2,778.8	2,617.4	161.34	17.222	
7,850.0	7,198.6	7,194.6	7,194.6	37.9	143.6	83.26	-780.3	-833.1	2,759.3	2,596.7	162.52	16.978	
7,874.0	7,204.7	7,200.7	7,200.7	37.8	143.7	84.19	-780.3	-833.1	2,750.0	2,587.0	163.01	16.871	
7,900.0	7,210.4	7,206.4	7,206.4	37.7	143.8	85.16	-780.3	-833.1	2,740.1	2,576.7	163.46	16.764	
7,950.0	7,218.8	7,214.8	7,214.8	37.6	144.0	86.96	-780.3	-833.1	2,721.4	2,557.3	164.13	16.580	
7,972.4	7,221.4	7,217.4	7,217.4	37.5	144.0	87.72	-780.3	-833.1	2,713.2	2,548.9	164.37	16.507	
8,000.0	7,223.7	7,219.7	7,219.7	37.4	144.1	88.62	-780.3	-833.1	2,703.3	2,538.8	164.58	16.426	
8,050.0	7,225.1	7,221.1	7,221.1	37.3	144.1	90.13	-780.3	-833.1	2,686.0	2,521.2	164.81	16.297	
8,055.3	7,225.0	7,221.0	7,221.0	37.3	144.1	90.28	-780.3	-833.1	2,684.2	2,519.4	164.83	16.285	
8,070.8	7,224.8	7,220.8	7,220.8	37.3	144.1	90.28	-780.3	-833.1	2,679.0	2,514.2	164.82	16.254	
8,100.0	7,224.4	7,220.4	7,220.4	37.2	144.1	90.27	-780.3	-833.1	2,669.4	2,504.6	164.82	16.196	
8,169.3	7,223.5	7,219.5	7,219.5	37.1	144.1	90.25	-780.3	-833.1	2,647.9	2,483.0	164.91	16.056	
8,200.0	7,223.0	7,219.0	7,219.0	37.1	144.1	90.24	-780.3	-833.1	2,638.9	2,473.9	164.95	15.998	
8,267.7	7,222.1	7,218.1	7,218.1	37.0	144.0	90.22	-780.3	-833.1	2,620.2	2,455.0	165.15	15.865	
8,300.0	7,221.7	7,217.7	7,217.7	37.0	144.0	90.21	-780.3	-833.1	2,611.8	2,446.5	165.25	15.805	
8,366.1	7,220.7	7,216.7	7,216.7	37.0	144.0	90.19	-780.3	-833.1	2,595.9	2,430.3	165.56	15.679	
8,400.0	7,220.3	7,216.3	7,216.3	37.0	144.0	90.18	-780.3	-833.1	2,588.3	2,422.6	165.72	15.619	
8,464.5	7,219.4	7,215.4	7,215.4	37.1	144.0	90.16	-780.3	-833.1	2,575.1	2,409.0	166.12	15.502	
8,500.0	7,218.9	7,214.9	7,214.9	37.1	144.0	90.14	-780.3	-833.1	2,568.5	2,402.1	166.34	15.442	
8,563.0	7,218.0	7,214.0	7,214.0	37.2	144.0	90.12	-780.3	-833.1	2,557.9	2,391.1	166.81	15.334	
8,600.0	7,217.5	7,213.5	7,213.5	37.3	144.0	90.11	-780.3	-833.1	2,552.4	2,385.3	167.10	15.275	
8,661.4	7,216.7	7,212.7	7,212.7	37.5	143.9	90.09	-780.3	-833.1	2,544.5	2,376.8	167.64	15.178	
8,700.0	7,216.1	7,212.1	7,212.1	37.6	143.9	90.08	-780.3	-833.1	2,540.2	2,372.2	167.98	15.122	
8,759.8	7,215.3	7,211.3	7,211.3	37.8	143.9	90.06	-780.3	-833.1	2,534.8	2,366.2	168.58	15.036	
8,800.0	7,214.8	7,210.8	7,210.8	38.0	143.9	90.05	-780.3	-833.1	2,531.9	2,362.9	168.98	14.983	
8,858.2	7,214.0	7,210.0	7,210.0	38.3	143.9	90.03	-780.3	-833.1	2,528.8	2,359.2	169.63	14.908	
8,900.0	7,213.4	7,209.4	7,209.4	38.5	143.9	90.02	-780.3	-833.1	2,527.5	2,357.4	170.09	14.860	
8,956.7	7,212.6	7,208.6	7,208.6	38.8	143.9	90.00	-780.3	-833.1	2,526.8	2,356.0	170.76	14.797	
8,961.1	7,212.5	7,208.5	7,208.5	38.9	143.9	90.00	-780.3	-833.1	2,526.8	2,355.9	170.81	14.793	
9,000.0	7,212.0	7,208.0	7,208.0	39.1	143.8	89.99	-780.3	-833.1	2,527.1	2,355.8	171.27	14.754	
9,055.1	7,211.2	7,207.2	7,207.2	39.5	143.8	89.97	-780.3	-833.1	2,528.5	2,356.5	171.97	14.703	
9,100.0	7,210.6	7,206.6	7,206.6	39.8	143.8	89.96	-780.3	-833.1	2,530.6	2,358.0	172.54	14.667	
9,153.5	7,209.9	7,205.9	7,205.9	40.3	143.8	89.94	-780.3	-833.1	2,534.1	2,360.8	173.25	14.626	
9,200.0	7,209.2	7,205.2	7,205.2	40.7	143.8	89.93	-780.3	-833.1	2,538.0	2,364.1	173.87	14.597	
9,251.9	7,208.5	7,204.5	7,204.5	41.1	143.8	89.91	-780.3	-833.1	2,543.4	2,368.8	174.59	14.568	
9,300.0	7,207.9	7,203.9	7,203.9	41.6	143.8	89.89	-780.3	-833.1	2,549.4	2,374.1	175.26	14.546	
9,350.4	7,207.2	7,203.2	7,203.2	42.1	143.7	89.88	-780.3	-833.1	2,556.6	2,380.6	175.99	14.527	
9,400.0	7,206.5	7,202.5	7,202.5	42.6	143.7	89.86	-780.3	-833.1	2,564.6	2,387.9	176.70	14.514	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ 22-30 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-INC — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,448.8	7,205.8	7,201.8	7,201.8	43.1	143.7	89.85	-780.3	-833.1	2,573.4	2,395.9	177.43	14.504	
9,500.0	7,205.1	7,201.1	7,201.1	43.7	143.7	89.83	-780.3	-833.1	2,583.6	2,405.4	178.19	14.499	
9,547.2	7,204.4	7,200.4	7,200.4	44.2	143.7	89.82	-780.3	-833.1	2,593.8	2,414.9	178.91	14.498	SF
9,600.0	7,203.7	7,199.7	7,199.7	44.8	143.7	89.80	-780.3	-833.1	2,606.2	2,426.5	179.71	14.502	
9,645.6	7,203.1	7,199.1	7,199.1	45.4	143.7	89.79	-780.3	-833.1	2,617.8	2,437.4	180.42	14.509	
9,700.0	7,202.3	7,198.3	7,198.3	46.1	143.6	89.77	-780.3	-833.1	2,632.5	2,451.3	181.27	14.523	
9,744.1	7,201.7	7,197.7	7,197.7	46.6	143.6	89.75	-780.3	-833.1	2,645.2	2,463.3	181.97	14.537	
9,800.0	7,201.0	7,197.0	7,197.0	47.3	143.6	89.74	-780.3	-833.1	2,662.3	2,479.5	182.85	14.560	
9,842.5	7,200.4	7,196.4	7,196.4	47.9	143.6	89.72	-780.3	-833.1	2,676.0	2,492.5	183.54	14.580	
9,900.0	7,199.6	7,195.6	7,195.6	48.7	143.6	89.71	-780.3	-833.1	2,695.5	2,511.0	184.47	14.612	
9,940.9	7,199.0	7,195.0	7,195.0	49.2	143.6	89.69	-780.3	-833.1	2,710.0	2,524.9	185.14	14.638	
10,000.0	7,198.2	7,194.2	7,194.2	50.1	143.6	89.67	-780.3	-833.1	2,731.9	2,545.8	186.10	14.680	
10,039.3	7,197.7	7,193.7	7,193.7	50.6	143.6	89.66	-780.3	-833.1	2,747.1	2,560.4	186.75	14.710	
10,100.0	7,196.8	7,192.8	7,192.8	51.5	143.5	89.64	-780.3	-833.1	2,771.5	2,583.7	187.76	14.761	
10,137.8	7,196.3	7,192.3	7,192.3	52.0	143.5	89.63	-780.3	-833.1	2,787.2	2,598.8	188.39	14.795	
10,200.0	7,195.4	7,191.4	7,191.4	52.9	143.5	89.61	-780.3	-833.1	2,814.1	2,624.6	189.43	14.855	
10,236.2	7,194.9	7,190.9	7,190.9	53.5	143.5	89.60	-780.3	-833.1	2,830.2	2,640.1	190.05	14.892	
10,300.0	7,194.1	7,190.1	7,190.1	54.4	143.5	89.58	-780.3	-833.1	2,859.5	2,668.4	191.12	14.961	
10,334.6	7,193.6	7,189.6	7,189.6	55.0	143.5	89.57	-780.3	-833.1	2,875.9	2,684.1	191.71	15.001	
10,400.0	7,192.7	7,188.7	7,188.7	56.0	143.5	89.55	-780.3	-833.1	2,907.6	2,714.8	192.83	15.079	
10,433.0	7,192.2	7,188.2	7,188.2	56.5	143.4	89.54	-780.3	-833.1	2,924.1	2,730.7	193.40	15.120	
10,500.0	7,191.3	7,187.3	7,187.3	57.5	143.4	89.52	-780.3	-833.1	2,958.4	2,763.8	194.55	15.206	
10,531.5	7,190.9	7,186.9	7,186.9	58.0	143.4	89.51	-780.3	-833.1	2,974.9	2,779.8	195.09	15.249	
10,600.0	7,189.9	7,185.9	7,185.9	59.1	143.4	89.49	-780.3	-833.1	3,011.6	2,815.3	196.28	15.344	
10,629.9	7,189.5	7,185.5	7,185.5	59.6	143.4	89.48	-780.3	-833.1	3,028.0	2,831.2	196.80	15.386	
10,700.0	7,188.5	7,184.5	7,184.5	60.7	143.4	89.46	-780.3	-833.1	3,067.2	2,869.1	198.02	15.489	
10,728.3	7,188.1	7,184.1	7,184.1	61.1	143.4	89.45	-780.3	-833.1	3,083.3	2,884.8	198.51	15.532	
10,800.0	7,187.2	7,183.2	7,183.2	62.3	143.3	89.42	-780.3	-833.1	3,124.9	2,925.2	199.77	15.643	
10,826.7	7,186.8	7,182.8	7,182.8	62.7	143.3	89.42	-780.3	-833.1	3,140.7	2,940.5	200.24	15.685	
10,900.0	7,185.8	7,181.8	7,181.8	63.9	143.3	89.39	-780.3	-833.1	3,184.8	2,983.3	201.53	15.803	
10,925.2	7,185.4	7,181.4	7,181.4	64.3	143.3	89.38	-780.3	-833.1	3,200.2	2,998.2	201.97	15.845	
11,000.0	7,184.4	7,180.4	7,180.4	65.6	143.3	89.36	-780.3	-833.1	3,246.6	3,043.3	203.30	15.970	
11,023.6	7,184.1	7,180.1	7,180.1	66.0	143.3	89.35	-780.3	-833.1	3,261.5	3,057.8	203.71	16.010	
11,100.0	7,183.0	7,179.0	7,179.0	67.2	143.3	89.33	-780.3	-833.1	3,310.3	3,105.3	205.07	16.142	
11,122.0	7,182.7	7,178.7	7,178.7	67.6	143.3	89.32	-780.3	-833.1	3,324.6	3,119.1	205.46	16.181	
11,200.0	7,181.6	7,177.6	7,177.6	68.9	143.2	89.30	-780.3	-833.1	3,375.8	3,168.9	206.85	16.320	
11,220.4	7,181.3	7,177.3	7,177.3	69.3	143.2	89.29	-780.3	-833.1	3,389.4	3,182.2	207.22	16.357	
11,300.0	7,180.2	7,176.2	7,176.2	70.6	143.2	89.27	-780.3	-833.1	3,442.9	3,234.3	208.64	16.502	
11,318.9	7,180.0	7,176.0	7,176.0	70.9	143.2	89.26	-780.3	-833.1	3,455.8	3,246.8	208.98	16.537	
11,400.0	7,178.9	7,174.9	7,174.9	72.3	143.2	89.24	-780.3	-833.1	3,511.6	3,301.2	210.43	16.688	
11,417.3	7,178.6	7,174.6	7,174.6	72.6	143.2	89.23	-780.3	-833.1	3,523.6	3,312.9	210.74	16.720	
11,500.0	7,177.5	7,173.5	7,173.5	74.0	143.1	89.20	-780.3	-833.1	3,581.8	3,369.5	212.23	16.877	
11,515.7	7,177.3	7,173.3	7,173.3	74.3	143.1	89.20	-780.3	-833.1	3,592.9	3,380.4	212.51	16.907	
11,600.0	7,176.1	7,172.1	7,172.1	75.7	143.1	89.17	-780.3	-833.1	3,653.3	3,439.3	214.03	17.069	
11,614.1	7,175.9	7,171.9	7,171.9	76.0	143.1	89.17	-780.3	-833.1	3,663.5	3,449.3	214.29	17.097	
11,700.0	7,174.7	7,170.7	7,170.7	77.5	143.1	89.14	-780.3	-833.1	3,726.2	3,510.3	215.84	17.264	
11,712.6	7,174.5	7,170.5	7,170.5	77.7	143.1	89.14	-780.3	-833.1	3,735.4	3,519.4	216.06	17.288	
11,800.0	7,173.3	7,169.3	7,169.3	79.2	143.1	89.11	-780.3	-833.1	3,800.3	3,582.6	217.65	17.461	
11,811.0	7,173.2	7,169.2	7,169.2	79.4	143.1	89.11	-780.3	-833.1	3,808.5	3,590.6	217.85	17.482	
11,900.0	7,172.0	7,168.0	7,168.0	81.0	143.0	89.08	-780.3	-833.1	3,875.5	3,656.1	219.46	17.659	
11,909.4	7,171.8	7,167.8	7,167.8	81.1	143.0	89.08	-780.3	-833.1	3,882.7	3,663.0	219.63	17.678	
12,000.0	7,170.6	7,166.6	7,166.6	82.7	143.0	89.05	-780.3	-833.1	3,951.9	3,730.6	221.28	17.859	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ 22-30 - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-INC

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,007.8	7,170.5	7,166.5	7,166.5	82.9	143.0	89.05	-780.3	-833.1	3,957.9	3,736.5	221.42	17.875	
12,041.2	7,170.0	7,166.0	7,166.0	83.5	143.0	89.03	-780.3	-833.1	3,983.6	3,761.6	222.03	17.942	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ 23-30 - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-INC

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-157.80	-2,113.3	-862.4	2,282.5				
98.4	98.4	96.4	96.4	0.1	0.2	-157.80	-2,113.3	-862.4	2,282.5	2,282.3	0.25	9,069.994	
100.0	100.0	98.0	98.0	0.1	0.2	-157.80	-2,113.3	-862.4	2,282.5	2,282.3	0.26	8,910.796	
196.8	196.8	194.8	194.8	0.3	2.6	-157.80	-2,113.3	-862.4	2,282.5	2,279.6	2.94	777.470	
200.0	200.0	198.0	198.0	0.3	2.7	-157.80	-2,113.3	-862.4	2,282.5	2,279.5	3.02	754.662	
295.3	295.3	293.3	293.3	0.5	4.7	-157.80	-2,113.3	-862.4	2,282.5	2,277.3	5.22	437.385	
300.0	300.0	298.0	298.0	0.5	4.8	-157.80	-2,113.3	-862.4	2,282.5	2,277.2	5.33	428.494	
393.7	393.7	391.7	391.7	0.7	6.7	-157.80	-2,113.3	-862.4	2,282.5	2,275.1	7.44	306.634	
400.0	400.0	398.0	398.0	0.8	6.8	-157.80	-2,113.3	-862.4	2,282.5	2,274.9	7.59	300.883	
492.1	492.1	490.1	490.1	1.0	8.7	-157.80	-2,113.3	-862.4	2,282.5	2,272.9	9.66	236.349	
500.0	500.0	498.0	498.0	1.0	8.8	-157.80	-2,113.3	-862.4	2,282.5	2,272.7	9.83	232.094	
590.5	590.5	588.5	588.5	1.2	10.7	-157.80	-2,113.3	-862.4	2,282.5	2,270.6	11.87	192.356	
600.0	600.0	598.0	598.0	1.2	10.9	-157.80	-2,113.3	-862.4	2,282.5	2,270.4	12.08	188.980	
689.0	689.0	687.0	687.0	1.4	12.7	-157.80	-2,113.3	-862.4	2,282.5	2,268.4	14.07	162.201	
700.0	700.0	698.0	698.0	1.4	12.9	-157.80	-2,113.3	-862.4	2,282.5	2,268.2	14.32	159.402	
787.4	787.4	785.4	785.4	1.6	14.6	-157.80	-2,113.3	-862.4	2,282.5	2,266.2	16.28	140.232	
800.0	800.0	798.0	798.0	1.7	14.9	-157.80	-2,113.3	-862.4	2,282.5	2,266.0	16.56	137.842	
885.8	885.8	883.8	883.8	1.9	16.6	-157.80	-2,113.3	-862.4	2,282.5	2,264.0	18.48	123.511	
900.0	900.0	898.0	898.0	1.9	16.9	-157.80	-2,113.3	-862.4	2,282.5	2,263.7	18.80	121.425	
984.2	984.2	982.2	982.2	2.1	18.6	-157.80	-2,113.3	-862.4	2,282.5	2,261.8	20.68	110.356	
1,000.0	1,000.0	998.0	998.0	2.1	18.9	-157.80	-2,113.3	-862.4	2,282.5	2,261.5	21.04	108.506	
1,082.7	1,082.7	1,080.7	1,080.7	2.3	20.6	-157.80	-2,113.3	-862.4	2,282.5	2,259.6	22.89	99.735	
1,100.0	1,100.0	1,098.0	1,098.0	2.3	20.9	-157.80	-2,113.3	-862.4	2,282.5	2,259.2	23.27	98.074	
1,181.1	1,181.1	1,179.1	1,179.1	2.5	22.6	-157.80	-2,113.3	-862.4	2,282.5	2,257.4	25.09	90.981	
1,200.0	1,200.0	1,198.0	1,198.0	2.6	23.0	-157.80	-2,113.3	-862.4	2,282.5	2,257.0	25.51	89.473	
1,279.5	1,279.5	1,277.5	1,277.5	2.7	24.6	-157.80	-2,113.3	-862.4	2,282.5	2,255.2	27.29	83.640	
1,300.0	1,300.0	1,298.0	1,298.0	2.8	25.0	-157.80	-2,113.3	-862.4	2,282.5	2,254.8	27.75	82.260	
1,377.9	1,377.9	1,375.9	1,375.9	3.0	26.5	-157.80	-2,113.3	-862.4	2,282.5	2,253.0	29.49	77.396	
1,400.0	1,400.0	1,398.0	1,398.0	3.0	27.0	-157.80	-2,113.3	-862.4	2,282.5	2,252.5	29.98	76.123	
1,450.0	1,450.0	1,448.0	1,448.0	3.1	28.0	-157.80	-2,113.3	-862.4	2,282.5	2,251.4	31.10	73.386	CC
1,476.4	1,476.4	1,474.4	1,474.4	3.2	28.5	138.89	-2,113.3	-862.4	2,282.6	2,250.9	31.69	72.029	
1,500.0	1,500.0	1,498.0	1,498.0	3.2	29.0	138.89	-2,113.3	-862.4	2,282.8	2,250.6	32.21	70.863	ES
1,574.8	1,574.8	1,572.8	1,572.8	3.4	30.5	138.91	-2,113.3	-862.4	2,284.6	2,250.7	33.86	67.466	
1,600.0	1,599.9	1,597.9	1,597.9	3.4	31.0	138.92	-2,113.3	-862.4	2,285.5	2,251.1	34.41	66.412	
1,673.2	1,673.0	1,671.0	1,671.0	3.6	32.5	138.95	-2,113.3	-862.4	2,289.1	2,253.1	36.01	63.571	
1,700.0	1,699.7	1,697.7	1,697.7	3.7	33.0	138.96	-2,113.3	-862.4	2,290.7	2,254.1	36.59	62.612	
1,771.6	1,771.0	1,769.0	1,769.0	3.8	34.4	139.01	-2,113.3	-862.4	2,296.1	2,258.0	38.13	60.226	
1,800.0	1,799.1	1,797.1	1,797.1	3.9	35.0	139.03	-2,113.3	-862.4	2,298.6	2,259.9	38.73	59.355	
1,870.1	1,868.6	1,866.6	1,866.6	4.1	36.4	139.09	-2,113.3	-862.4	2,305.8	2,265.6	40.21	57.344	
1,900.0	1,898.2	1,896.2	1,896.2	4.1	37.0	139.11	-2,113.3	-862.4	2,309.2	2,268.4	40.83	56.550	
1,968.5	1,965.7	1,963.7	1,963.7	4.3	38.4	139.18	-2,113.3	-862.4	2,318.0	2,275.7	42.26	54.851	
2,000.0	1,996.6	1,994.6	1,994.6	4.4	39.0	139.22	-2,113.3	-862.4	2,322.4	2,279.5	42.90	54.130	
2,066.9	2,062.2	2,060.2	2,060.2	4.6	40.3	139.30	-2,113.3	-862.4	2,332.8	2,288.5	44.27	52.691	
2,100.0	2,094.4	2,092.4	2,092.4	4.7	40.9	139.34	-2,113.3	-862.4	2,338.3	2,293.4	44.94	52.036	
2,165.3	2,157.9	2,155.9	2,155.9	5.0	42.2	139.42	-2,113.3	-862.4	2,350.2	2,303.9	46.25	50.818	
2,200.0	2,191.5	2,189.5	2,189.5	5.1	42.9	139.47	-2,113.3	-862.4	2,356.9	2,310.0	46.93	50.224	
2,263.8	2,252.9	2,250.9	2,250.9	5.3	44.1	139.56	-2,113.3	-862.4	2,370.2	2,322.0	48.18	49.194	
2,300.0	2,287.6	2,285.6	2,285.6	5.5	44.8	139.61	-2,113.3	-862.4	2,378.3	2,329.4	48.88	48.656	
2,362.2	2,346.9	2,344.9	2,344.9	5.8	46.0	139.71	-2,113.3	-862.4	2,392.9	2,342.8	50.07	47.786	
2,400.0	2,382.7	2,380.7	2,380.7	6.0	46.7	139.76	-2,113.3	-862.4	2,402.3	2,351.5	50.79	47.302	
2,460.6	2,439.8	2,437.8	2,437.8	6.3	47.9	139.86	-2,113.3	-862.4	2,418.2	2,366.3	51.93	46.570	
2,500.0	2,476.6	2,474.6	2,474.6	6.5	48.6	139.92	-2,113.3	-862.4	2,429.1	2,376.4	52.65	46.137	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ 23-30 - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-INC

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,559.0	2,531.6	2,529.6	2,529.6	6.9	49.7	140.00	-2,113.3	-862.4	2,446.2	2,392.5	53.74	45.524	
2,600.0	2,569.4	2,567.4	2,567.4	7.1	50.5	140.07	-2,113.3	-862.4	2,458.7	2,404.2	54.47	45.139	
2,657.5	2,622.0	2,620.0	2,620.0	7.5	51.6	140.15	-2,113.3	-862.4	2,476.9	2,421.4	55.50	44.630	
2,700.0	2,660.7	2,658.7	2,658.7	7.8	52.3	140.21	-2,113.3	-862.4	2,491.0	2,434.8	56.24	44.292	
2,755.9	2,711.1	2,709.1	2,709.1	8.2	53.3	140.29	-2,113.3	-862.4	2,510.3	2,453.1	57.22	43.873	
2,800.0	2,750.6	2,748.6	2,748.6	8.6	54.1	140.34	-2,113.3	-862.4	2,526.1	2,468.2	57.97	43.579	
2,832.3	2,779.2	2,777.2	2,777.2	8.8	54.7	140.38	-2,113.3	-862.4	2,538.1	2,479.5	58.51	43.376	
2,854.3	2,798.8	2,796.8	2,796.8	9.0	55.1	140.53	-2,113.3	-862.4	2,546.3	2,487.3	58.99	43.168	
2,900.0	2,839.3	2,837.3	2,837.3	9.4	55.9	140.81	-2,113.3	-862.4	2,563.5	2,503.5	59.96	42.751	
2,952.7	2,886.0	2,884.0	2,884.0	9.9	56.9	141.14	-2,113.3	-862.4	2,583.3	2,522.3	61.10	42.284	
3,000.0	2,927.8	2,925.8	2,925.8	10.3	57.7	141.43	-2,113.3	-862.4	2,601.2	2,539.1	62.11	41.883	
3,051.2	2,973.2	2,971.2	2,971.2	10.7	58.6	141.74	-2,113.3	-862.4	2,620.7	2,557.4	63.21	41.461	
3,100.0	3,016.4	3,014.4	3,014.4	11.2	59.5	142.03	-2,113.3	-862.4	2,639.3	2,575.0	64.26	41.075	
3,149.6	3,060.4	3,058.4	3,058.4	11.6	60.4	142.33	-2,113.3	-862.4	2,658.2	2,592.9	65.32	40.694	
3,200.0	3,105.0	3,103.0	3,103.0	12.1	61.3	142.62	-2,113.3	-862.4	2,677.6	2,611.2	66.40	40.323	
3,248.0	3,147.5	3,145.5	3,145.5	12.5	62.1	142.90	-2,113.3	-862.4	2,696.0	2,628.6	67.44	39.980	
3,300.0	3,193.6	3,191.6	3,191.6	13.0	63.1	143.19	-2,113.3	-862.4	2,716.1	2,647.6	68.55	39.623	
3,346.4	3,234.7	3,232.7	3,232.7	13.4	63.9	143.45	-2,113.3	-862.4	2,734.1	2,664.6	69.55	39.313	
3,400.0	3,282.2	3,280.2	3,280.2	13.9	64.8	143.75	-2,113.3	-862.4	2,754.9	2,684.2	70.69	38.970	
3,444.9	3,321.9	3,319.9	3,319.9	14.3	65.6	143.99	-2,113.3	-862.4	2,772.4	2,700.7	71.65	38.691	
3,500.0	3,370.8	3,368.8	3,368.8	14.8	66.6	144.29	-2,113.3	-862.4	2,793.9	2,721.1	72.83	38.362	
3,543.3	3,409.1	3,407.1	3,407.1	15.2	67.4	144.52	-2,113.3	-862.4	2,810.9	2,737.1	73.76	38.110	
3,600.0	3,459.3	3,457.3	3,457.3	15.8	68.4	144.82	-2,113.3	-862.4	2,833.2	2,758.2	74.97	37.793	
3,641.7	3,496.3	3,494.3	3,494.3	16.1	69.1	145.03	-2,113.3	-862.4	2,849.6	2,773.8	75.86	37.567	
3,700.0	3,547.9	3,545.9	3,545.9	16.7	70.2	145.33	-2,113.3	-862.4	2,872.6	2,795.5	77.09	37.261	
3,740.1	3,583.5	3,581.5	3,581.5	17.1	70.9	145.53	-2,113.3	-862.4	2,888.5	2,810.6	77.95	37.057	
3,800.0	3,636.5	3,634.5	3,634.5	17.6	72.0	145.83	-2,113.3	-862.4	2,912.3	2,833.1	79.22	36.763	
3,838.6	3,670.7	3,668.7	3,668.7	18.0	72.6	146.02	-2,113.3	-862.4	2,927.6	2,847.6	80.04	36.579	
3,900.0	3,725.1	3,723.1	3,723.1	18.6	73.7	146.32	-2,113.3	-862.4	2,952.2	2,870.8	81.33	36.296	
3,937.0	3,757.9	3,755.9	3,755.9	18.9	74.4	146.50	-2,113.3	-862.4	2,967.0	2,884.8	82.12	36.131	
4,000.0	3,813.7	3,811.7	3,811.7	19.5	75.5	146.80	-2,113.3	-862.4	2,992.2	2,908.8	83.45	35.858	
4,035.4	3,845.1	3,843.1	3,843.1	19.9	76.2	146.96	-2,113.3	-862.4	3,006.4	2,922.2	84.19	35.709	
4,100.0	3,902.3	3,900.3	3,900.3	20.5	77.3	147.26	-2,113.3	-862.4	3,032.4	2,946.9	85.55	35.446	
4,133.8	3,932.2	3,930.2	3,930.2	20.8	77.9	147.42	-2,113.3	-862.4	3,046.1	2,959.8	86.26	35.312	
4,200.0	3,990.8	3,988.8	3,988.8	21.5	79.1	147.71	-2,113.3	-862.4	3,072.8	2,985.2	87.65	35.057	
4,232.3	4,019.4	4,017.4	4,017.4	21.8	79.7	147.86	-2,113.3	-862.4	3,085.9	2,997.6	88.33	34.937	
4,300.0	4,079.4	4,077.4	4,077.4	22.4	80.9	148.16	-2,113.3	-862.4	3,113.4	3,023.7	89.75	34.692	
4,330.7	4,106.6	4,104.6	4,104.6	22.7	81.4	148.29	-2,113.3	-862.4	3,125.9	3,035.5	90.39	34.583	
4,400.0	4,168.0	4,166.0	4,166.0	23.4	82.6	148.59	-2,113.3	-862.4	3,154.1	3,062.3	91.83	34.346	
4,429.1	4,193.8	4,191.8	4,191.8	23.7	83.2	148.71	-2,113.3	-862.4	3,166.0	3,073.6	92.44	34.249	
4,500.0	4,256.6	4,254.6	4,254.6	24.4	84.4	149.01	-2,113.3	-862.4	3,195.0	3,101.1	93.92	34.020	
4,527.5	4,281.0	4,279.0	4,279.0	24.6	84.9	149.12	-2,113.3	-862.4	3,206.3	3,111.8	94.49	33.933	
4,600.0	4,345.2	4,343.2	4,343.2	25.3	86.2	149.42	-2,113.3	-862.4	3,236.1	3,140.1	95.99	33.711	
4,626.0	4,368.2	4,366.2	4,366.2	25.6	86.7	149.53	-2,113.3	-862.4	3,246.8	3,150.2	96.53	33.634	
4,700.0	4,433.8	4,431.8	4,431.8	26.3	88.0	149.82	-2,113.3	-862.4	3,277.2	3,179.2	98.07	33.419	
4,724.4	4,455.4	4,453.4	4,453.4	26.5	88.4	149.92	-2,113.3	-862.4	3,287.3	3,188.7	98.57	33.350	
4,800.0	4,522.3	4,520.3	4,520.3	27.3	89.8	150.21	-2,113.3	-862.4	3,318.6	3,218.4	100.13	33.142	
4,822.8	4,542.6	4,540.6	4,540.6	27.5	90.2	150.30	-2,113.3	-862.4	3,328.0	3,227.4	100.60	33.081	
4,900.0	4,610.9	4,608.9	4,608.9	28.2	91.6	150.60	-2,113.3	-862.4	3,360.0	3,257.8	102.19	32.879	
4,921.2	4,629.8	4,627.8	4,627.8	28.4	91.9	150.68	-2,113.3	-862.4	3,368.8	3,266.2	102.63	32.825	
5,000.0	4,699.5	4,697.5	4,697.5	29.2	93.3	150.97	-2,113.3	-862.4	3,401.6	3,297.3	104.25	32.629	
5,019.7	4,716.9	4,714.9	4,714.9	29.4	93.7	151.04	-2,113.3	-862.4	3,409.8	3,305.1	104.66	32.581	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ 23-30 - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-INC

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	4,788.1	4,786.1	4,786.1	30.2	95.1	151.34	-2,113.3	-862.4	3,443.3	3,337.0	106.30	32.391	
5,118.1	4,804.1	4,802.1	4,802.1	30.4	95.4	151.40	-2,113.3	-862.4	3,450.8	3,344.2	106.67	32.349	
5,200.0	4,876.7	4,874.7	4,874.7	31.1	96.9	151.69	-2,113.3	-862.4	3,485.1	3,376.8	108.35	32.165	
5,216.5	4,891.3	4,889.3	4,889.3	31.3	97.2	151.75	-2,113.3	-862.4	3,492.0	3,383.3	108.69	32.128	
5,300.0	4,965.3	4,963.3	4,963.3	32.1	98.7	152.04	-2,113.3	-862.4	3,527.0	3,416.6	110.40	31.949	
5,314.9	4,978.5	4,976.5	4,976.5	32.3	98.9	152.09	-2,113.3	-862.4	3,533.3	3,422.6	110.70	31.918	
5,400.0	5,053.8	5,051.8	5,051.8	33.1	100.5	152.38	-2,113.3	-862.4	3,569.1	3,456.7	112.44	31.744	
5,413.4	5,065.7	5,063.7	5,063.7	33.2	100.7	152.43	-2,113.3	-862.4	3,574.7	3,462.0	112.71	31.717	
5,508.2	5,149.7	5,147.7	5,147.7	34.2	102.4	152.74	-2,113.3	-862.4	3,614.7	3,500.0	114.64	31.532	
5,511.8	5,152.9	5,150.9	5,150.9	34.2	102.5	152.77	-2,113.3	-862.4	3,616.2	3,501.5	114.75	31.514	
5,600.0	5,231.7	5,229.7	5,229.7	34.9	104.0	153.40	-2,113.3	-862.4	3,652.3	3,534.8	117.48	31.090	
5,610.2	5,240.9	5,238.9	5,238.9	35.0	104.2	153.47	-2,113.3	-862.4	3,656.3	3,538.6	117.79	31.042	
5,700.0	5,322.5	5,320.5	5,320.5	35.7	105.9	154.06	-2,113.3	-862.4	3,690.6	3,570.1	120.52	30.621	
5,708.6	5,330.4	5,328.4	5,328.4	35.7	106.0	154.11	-2,113.3	-862.4	3,693.8	3,573.0	120.79	30.581	
5,800.0	5,414.6	5,412.6	5,412.6	36.3	107.7	154.64	-2,113.3	-862.4	3,726.0	3,602.5	123.57	30.154	
5,807.1	5,421.2	5,419.2	5,419.2	36.4	107.9	154.68	-2,113.3	-862.4	3,728.4	3,604.7	123.78	30.122	
5,900.0	5,508.1	5,506.1	5,506.1	36.9	109.6	155.16	-2,113.3	-862.4	3,758.6	3,632.0	126.58	29.693	
5,905.5	5,513.3	5,511.3	5,511.3	37.0	109.7	155.19	-2,113.3	-862.4	3,760.3	3,633.5	126.75	29.668	
6,000.0	5,602.8	5,600.8	5,600.8	37.5	111.5	155.62	-2,113.3	-862.4	3,788.2	3,658.6	129.56	29.239	
6,003.9	5,606.5	5,604.5	5,604.5	37.5	111.6	155.64	-2,113.3	-862.4	3,789.3	3,659.6	129.67	29.222	
6,100.0	5,698.5	5,696.5	5,696.5	38.0	113.4	156.02	-2,113.3	-862.4	3,814.7	3,682.2	132.48	28.796	
6,102.3	5,700.7	5,698.7	5,698.7	38.0	113.5	156.03	-2,113.3	-862.4	3,815.3	3,682.8	132.54	28.785	
6,200.0	5,795.2	5,793.2	5,793.2	38.4	115.4	156.37	-2,113.3	-862.4	3,838.2	3,702.9	135.33	28.363	
6,200.8	5,795.9	5,793.9	5,793.9	38.4	115.4	156.37	-2,113.3	-862.4	3,838.4	3,703.0	135.35	28.360	
6,299.2	5,891.9	5,889.9	5,889.9	38.8	117.3	156.67	-2,113.3	-862.4	3,858.5	3,720.4	138.07	27.946	
6,300.0	5,892.7	5,890.7	5,890.7	38.8	117.3	156.67	-2,113.3	-862.4	3,858.6	3,720.5	138.09	27.942	
6,397.6	5,988.5	5,986.5	5,986.5	39.1	119.3	156.91	-2,113.3	-862.4	3,875.5	3,734.8	140.70	27.544	
6,400.0	5,990.9	5,988.9	5,988.9	39.1	119.3	156.92	-2,113.3	-862.4	3,875.9	3,735.2	140.77	27.535	
6,496.0	6,085.8	6,083.8	6,083.8	39.4	121.2	157.11	-2,113.3	-862.4	3,889.5	3,746.3	143.23	27.156	
6,500.0	6,089.7	6,087.7	6,087.7	39.4	121.3	157.12	-2,113.3	-862.4	3,890.0	3,746.7	143.33	27.140	
6,594.5	6,183.5	6,181.5	6,181.5	39.6	123.2	157.26	-2,113.3	-862.4	3,900.5	3,754.8	145.65	26.780	
6,600.0	6,189.0	6,187.0	6,187.0	39.7	123.3	157.27	-2,113.3	-862.4	3,901.0	3,755.2	145.78	26.760	
6,692.9	6,281.5	6,279.5	6,279.5	39.8	125.2	157.37	-2,113.3	-862.4	3,908.3	3,760.3	147.94	26.419	
6,700.0	6,288.6	6,286.6	6,286.6	39.8	125.3	157.38	-2,113.3	-862.4	3,908.7	3,760.6	148.10	26.393	
6,791.3	6,379.8	6,377.8	6,377.8	40.0	127.1	157.43	-2,113.3	-862.4	3,913.0	3,762.9	150.10	26.070	
6,800.0	6,388.5	6,386.5	6,386.5	40.0	127.3	157.44	-2,113.3	-862.4	3,913.2	3,763.0	150.28	26.040	
6,889.7	6,478.2	6,476.2	6,476.2	40.1	129.1	157.46	-2,113.3	-862.4	3,914.6	3,762.4	152.11	25.734	
6,890.4	6,478.9	6,476.9	6,476.9	40.1	129.1	-139.23	-2,113.3	-862.4	3,914.6	3,762.4	152.13	25.732	
6,900.0	6,488.5	6,486.5	6,486.5	40.1	129.3	-139.23	-2,113.3	-862.4	3,914.6	3,762.2	152.33	25.698	
6,920.4	6,508.9	6,506.9	6,506.9	40.1	129.7	-139.23	-2,113.3	-862.4	3,914.6	3,761.8	152.77	25.624	
6,950.0	6,538.5	6,536.5	6,536.5	40.1	130.3	40.80	-2,113.3	-862.4	3,914.1	3,760.9	153.17	25.554	
6,988.2	6,576.6	6,574.6	6,574.6	40.1	131.1	40.92	-2,113.3	-862.4	3,912.1	3,758.7	153.41	25.500	
7,000.0	6,588.3	6,586.3	6,586.3	40.1	131.3	40.98	-2,113.3	-862.4	3,911.2	3,757.8	153.43	25.492	
7,050.0	6,637.8	6,635.8	6,635.8	40.1	132.3	41.35	-2,113.3	-862.4	3,905.7	3,752.5	153.18	25.497	
7,086.6	6,673.6	6,671.6	6,671.6	40.1	133.0	41.72	-2,113.3	-862.4	3,900.0	3,747.3	152.70	25.541	
7,100.0	6,686.6	6,684.6	6,684.6	40.1	133.3	41.88	-2,113.3	-862.4	3,897.6	3,745.2	152.46	25.565	
7,150.0	6,734.6	6,732.6	6,732.6	40.0	134.3	42.61	-2,113.3	-862.4	3,887.0	3,735.7	151.32	25.688	
7,185.0	6,767.5	6,765.5	6,765.5	39.9	134.9	43.22	-2,113.3	-862.4	3,878.1	3,727.8	150.31	25.801	
7,200.0	6,781.4	6,779.4	6,779.4	39.9	135.2	43.52	-2,113.3	-862.4	3,873.9	3,724.1	149.83	25.855	
7,250.0	6,827.0	6,825.0	6,825.0	39.8	136.1	44.63	-2,113.3	-862.4	3,858.4	3,710.3	148.11	26.051	
7,283.4	6,856.6	6,854.6	6,854.6	39.8	136.7	45.48	-2,113.3	-862.4	3,846.8	3,699.9	146.89	26.188	
7,300.0	6,871.0	6,869.0	6,869.0	39.7	137.0	45.94	-2,113.3	-862.4	3,840.7	3,694.4	146.29	26.254	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ 23-30 - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-INC

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,350.0	6,913.2	6,911.2	6,911.2	39.6	137.9	47.48	-2,113.3	-862.4	3,820.7	3,676.2	144.53	26.435	
7,381.9	6,939.1	6,937.1	6,937.1	39.5	138.4	48.57	-2,113.3	-862.4	3,807.0	3,663.4	143.54	26.523	
7,400.0	6,953.4	6,951.4	6,951.4	39.4	138.7	49.24	-2,113.3	-862.4	3,798.8	3,655.7	143.03	26.559	
7,450.0	6,991.5	6,989.5	6,989.5	39.3	139.4	51.24	-2,113.3	-862.4	3,774.9	3,632.9	141.98	26.588	
7,480.3	7,013.5	7,011.5	7,011.5	39.2	139.9	52.57	-2,113.3	-862.4	3,759.5	3,617.9	141.64	26.542	
7,500.0	7,027.3	7,025.3	7,025.3	39.1	140.1	53.48	-2,113.3	-862.4	3,749.2	3,607.7	141.57	26.484	
7,550.0	7,060.5	7,058.5	7,058.5	39.0	140.8	55.98	-2,113.3	-862.4	3,722.0	3,580.0	141.94	26.222	
7,578.7	7,078.4	7,076.4	7,076.4	38.8	141.2	57.52	-2,113.3	-862.4	3,705.7	3,563.1	142.54	25.997	
7,600.0	7,091.0	7,089.0	7,089.0	38.8	141.4	58.72	-2,113.3	-862.4	3,693.3	3,550.1	143.17	25.797	
7,650.0	7,118.7	7,116.7	7,116.7	38.6	142.0	61.70	-2,113.3	-862.4	3,663.4	3,518.1	145.23	25.225	
7,677.1	7,132.5	7,130.5	7,130.5	38.5	142.3	63.41	-2,113.3	-862.4	3,646.7	3,500.0	146.65	24.867	
7,700.0	7,143.4	7,141.4	7,141.4	38.4	142.5	64.91	-2,113.3	-862.4	3,632.4	3,484.4	147.97	24.549	
7,750.0	7,165.0	7,163.0	7,163.0	38.2	142.9	68.31	-2,113.3	-862.4	3,600.5	3,449.3	151.16	23.820	
7,775.6	7,174.9	7,172.9	7,172.9	38.1	143.1	70.12	-2,113.3	-862.4	3,583.9	3,431.0	152.88	23.443	
7,800.0	7,183.5	7,181.5	7,181.5	38.1	143.3	71.88	-2,113.3	-862.4	3,567.9	3,413.4	154.51	23.092	
7,850.0	7,198.6	7,196.6	7,196.6	37.9	143.6	75.57	-2,113.3	-862.4	3,534.8	3,377.1	157.72	22.412	
7,874.0	7,204.7	7,202.7	7,202.7	37.8	143.7	77.36	-2,113.3	-862.4	3,518.8	3,359.7	159.13	22.112	
7,900.0	7,210.4	7,208.4	7,208.4	37.7	143.8	79.31	-2,113.3	-862.4	3,501.5	3,340.9	160.52	21.814	
7,950.0	7,218.8	7,216.8	7,216.8	37.6	144.0	83.06	-2,113.3	-862.4	3,468.0	3,305.3	162.70	21.315	
7,972.4	7,221.4	7,219.4	7,219.4	37.5	144.1	84.72	-2,113.3	-862.4	3,453.0	3,289.5	163.45	21.126	
8,000.0	7,223.7	7,221.7	7,221.7	37.4	144.1	86.75	-2,113.3	-862.4	3,434.5	3,270.4	164.15	20.924	
8,050.0	7,225.1	7,223.1	7,223.1	37.3	144.1	90.32	-2,113.3	-862.4	3,401.4	3,236.5	164.85	20.633	
8,055.3	7,225.0	7,223.0	7,223.0	37.3	144.1	90.69	-2,113.3	-862.4	3,397.9	3,233.0	164.88	20.608	
8,070.8	7,224.8	7,222.8	7,222.8	37.3	144.1	90.69	-2,113.3	-862.4	3,387.7	3,222.8	164.89	20.545	
8,100.0	7,224.4	7,222.4	7,222.4	37.2	144.1	90.68	-2,113.3	-862.4	3,368.6	3,203.7	164.89	20.430	
8,169.3	7,223.5	7,221.5	7,221.5	37.1	144.1	90.66	-2,113.3	-862.4	3,323.9	3,158.9	164.98	20.148	
8,200.0	7,223.0	7,221.0	7,221.0	37.1	144.1	90.65	-2,113.3	-862.4	3,304.3	3,139.3	165.02	20.024	
8,267.7	7,222.1	7,220.1	7,220.1	37.0	144.1	90.63	-2,113.3	-862.4	3,261.9	3,096.6	165.22	19.742	
8,300.0	7,221.7	7,219.7	7,219.7	37.0	144.1	90.62	-2,113.3	-862.4	3,241.9	3,076.6	165.32	19.610	
8,366.1	7,220.7	7,218.7	7,218.7	37.0	144.0	90.60	-2,113.3	-862.4	3,201.7	3,036.0	165.63	19.330	
8,400.0	7,220.3	7,218.3	7,218.3	37.0	144.0	90.59	-2,113.3	-862.4	3,181.4	3,015.6	165.79	19.190	
8,464.5	7,219.4	7,217.4	7,217.4	37.1	144.0	90.57	-2,113.3	-862.4	3,143.4	2,977.2	166.19	18.915	
8,500.0	7,218.9	7,216.9	7,216.9	37.1	144.0	90.55	-2,113.3	-862.4	3,122.9	2,956.5	166.41	18.766	
8,563.0	7,218.0	7,216.0	7,216.0	37.2	144.0	90.54	-2,113.3	-862.4	3,087.1	2,920.2	166.89	18.498	
8,600.0	7,217.5	7,215.5	7,215.5	37.3	144.0	90.52	-2,113.3	-862.4	3,066.5	2,899.4	167.17	18.344	
8,661.4	7,216.7	7,214.7	7,214.7	37.5	144.0	90.50	-2,113.3	-862.4	3,033.0	2,865.3	167.71	18.084	
8,700.0	7,216.1	7,214.1	7,214.1	37.6	143.9	90.49	-2,113.3	-862.4	3,012.4	2,844.4	168.06	17.925	
8,759.8	7,215.3	7,213.3	7,213.3	37.8	143.9	90.47	-2,113.3	-862.4	2,981.2	2,812.6	168.66	17.676	
8,800.0	7,214.8	7,212.8	7,212.8	38.0	143.9	90.46	-2,113.3	-862.4	2,960.7	2,791.7	169.06	17.513	
8,858.2	7,214.0	7,212.0	7,212.0	38.3	143.9	90.44	-2,113.3	-862.4	2,931.8	2,762.1	169.70	17.276	
8,900.0	7,213.4	7,211.4	7,211.4	38.5	143.9	90.43	-2,113.3	-862.4	2,911.6	2,741.4	170.16	17.111	
8,956.7	7,212.6	7,210.6	7,210.6	38.8	143.9	90.41	-2,113.3	-862.4	2,884.9	2,714.0	170.84	16.887	
9,000.0	7,212.0	7,210.0	7,210.0	39.1	143.9	90.40	-2,113.3	-862.4	2,865.0	2,693.7	171.35	16.720	
9,055.1	7,211.2	7,209.2	7,209.2	39.5	143.8	90.38	-2,113.3	-862.4	2,840.6	2,668.5	172.05	16.510	
9,100.0	7,210.6	7,208.6	7,208.6	39.8	143.8	90.37	-2,113.3	-862.4	2,821.3	2,648.7	172.62	16.344	
9,153.5	7,209.9	7,207.9	7,207.9	40.3	143.8	90.35	-2,113.3	-862.4	2,799.0	2,625.7	173.33	16.149	
9,200.0	7,209.2	7,207.2	7,207.2	40.7	143.8	90.34	-2,113.3	-862.4	2,780.4	2,606.5	173.95	15.984	
9,251.9	7,208.5	7,206.5	7,206.5	41.1	143.8	90.32	-2,113.3	-862.4	2,760.4	2,585.7	174.67	15.803	
9,300.0	7,207.9	7,205.9	7,205.9	41.6	143.8	90.31	-2,113.3	-862.4	2,742.6	2,567.3	175.34	15.642	
9,350.4	7,207.2	7,205.2	7,205.2	42.1	143.8	90.29	-2,113.3	-862.4	2,724.8	2,548.7	176.06	15.476	
9,400.0	7,206.5	7,204.5	7,204.5	42.6	143.8	90.28	-2,113.3	-862.4	2,708.0	2,531.2	176.78	15.318	
9,448.8	7,205.8	7,203.8	7,203.8	43.1	143.7	90.26	-2,113.3	-862.4	2,692.3	2,514.8	177.50	15.167	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ 23-30 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

Survey Program: 0-INC — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,500.0	7,205.1	7,203.1	7,203.1	43.7	143.7	90.25	-2,113.3	-862.4	2,676.6	2,498.4	178.26	15.015	
9,547.2	7,204.4	7,202.4	7,202.4	44.2	143.7	90.23	-2,113.3	-862.4	2,663.0	2,484.0	178.98	14.878	
9,600.0	7,203.7	7,201.7	7,201.7	44.8	143.7	90.21	-2,113.3	-862.4	2,648.7	2,468.9	179.79	14.732	
9,645.6	7,203.1	7,201.1	7,201.1	45.4	143.7	90.20	-2,113.3	-862.4	2,637.1	2,456.6	180.50	14.610	
9,700.0	7,202.3	7,200.3	7,200.3	46.1	143.7	90.18	-2,113.3	-862.4	2,624.2	2,442.9	181.34	14.471	
9,744.1	7,201.7	7,199.7	7,199.7	46.6	143.7	90.17	-2,113.3	-862.4	2,614.6	2,432.6	182.04	14.363	
9,800.0	7,201.0	7,199.0	7,199.0	47.3	143.6	90.15	-2,113.3	-862.4	2,603.4	2,420.5	182.93	14.232	
9,842.5	7,200.4	7,198.4	7,198.4	47.9	143.6	90.14	-2,113.3	-862.4	2,595.7	2,412.1	183.62	14.136	
9,900.0	7,199.6	7,197.6	7,197.6	48.7	143.6	90.12	-2,113.3	-862.4	2,586.3	2,401.8	184.54	14.015	
9,940.9	7,199.0	7,197.0	7,197.0	49.2	143.6	90.11	-2,113.3	-862.4	2,580.4	2,395.2	185.21	13.932	
10,000.0	7,198.2	7,196.2	7,196.2	50.1	143.6	90.09	-2,113.3	-862.4	2,573.0	2,386.8	186.18	13.820	
10,039.3	7,197.7	7,195.7	7,195.7	50.6	143.6	90.08	-2,113.3	-862.4	2,568.8	2,381.9	186.83	13.749	
10,100.0	7,196.8	7,194.8	7,194.8	51.5	143.6	90.06	-2,113.3	-862.4	2,563.5	2,375.6	187.84	13.647	
10,137.8	7,196.3	7,194.3	7,194.3	52.0	143.5	90.05	-2,113.3	-862.4	2,560.9	2,372.4	188.47	13.588	
10,200.0	7,195.4	7,193.4	7,193.4	52.9	143.5	90.03	-2,113.3	-862.4	2,557.8	2,368.3	189.51	13.497	
10,236.2	7,194.9	7,192.9	7,192.9	53.5	143.5	90.02	-2,113.3	-862.4	2,556.7	2,366.6	190.12	13.448	
10,294.3	7,194.1	7,192.1	7,192.1	54.3	143.5	90.00	-2,113.3	-862.4	2,556.1	2,365.0	191.11	13.375	
10,300.0	7,194.1	7,192.1	7,192.1	54.4	143.5	90.00	-2,113.3	-862.4	2,556.1	2,364.9	191.20	13.369	
10,334.6	7,193.6	7,191.6	7,191.6	55.0	143.5	89.99	-2,113.3	-862.4	2,556.4	2,364.6	191.79	13.329	
10,400.0	7,192.7	7,190.7	7,190.7	56.0	143.5	89.97	-2,113.3	-862.4	2,558.3	2,365.4	192.91	13.262	
10,433.0	7,192.2	7,190.2	7,190.2	56.5	143.5	89.96	-2,113.3	-862.4	2,559.8	2,366.4	193.48	13.231	
10,500.0	7,191.3	7,189.3	7,189.3	57.5	143.4	89.94	-2,113.3	-862.4	2,564.3	2,369.7	194.63	13.176	
10,531.5	7,190.9	7,188.9	7,188.9	58.0	143.4	89.93	-2,113.3	-862.4	2,567.1	2,371.9	195.17	13.153	
10,600.0	7,189.9	7,187.9	7,187.9	59.1	143.4	89.91	-2,113.3	-862.4	2,574.3	2,377.9	196.36	13.110	
10,629.9	7,189.5	7,187.5	7,187.5	59.6	143.4	89.90	-2,113.3	-862.4	2,578.0	2,381.1	196.88	13.095	
10,700.0	7,188.5	7,186.5	7,186.5	60.7	143.4	89.87	-2,113.3	-862.4	2,588.1	2,390.0	198.10	13.065	
10,728.3	7,188.1	7,186.1	7,186.1	61.1	143.4	89.87	-2,113.3	-862.4	2,592.7	2,394.1	198.59	13.055	
10,800.0	7,187.2	7,185.2	7,185.2	62.3	143.4	89.84	-2,113.3	-862.4	2,605.6	2,405.8	199.85	13.038	
10,826.7	7,186.8	7,184.8	7,184.8	62.7	143.4	89.84	-2,113.3	-862.4	2,610.9	2,410.6	200.32	13.034	
10,900.0	7,185.8	7,183.8	7,183.8	63.9	143.3	89.81	-2,113.3	-862.4	2,626.9	2,425.3	201.61	13.030	SF
10,925.2	7,185.4	7,183.4	7,183.4	64.3	143.3	89.80	-2,113.3	-862.4	2,632.8	2,430.7	202.05	13.030	
11,000.0	7,184.4	7,182.4	7,182.4	65.6	143.3	89.78	-2,113.3	-862.4	2,651.7	2,448.3	203.38	13.038	
11,023.6	7,184.1	7,182.1	7,182.1	66.0	143.3	89.77	-2,113.3	-862.4	2,658.1	2,454.3	203.79	13.043	
11,100.0	7,183.0	7,181.0	7,181.0	67.2	143.3	89.75	-2,113.3	-862.4	2,680.0	2,474.9	205.15	13.064	
11,122.0	7,182.7	7,180.7	7,180.7	67.6	143.3	89.74	-2,113.3	-862.4	2,686.7	2,481.2	205.54	13.071	
11,200.0	7,181.6	7,179.6	7,179.6	68.9	143.3	89.72	-2,113.3	-862.4	2,711.8	2,504.8	206.93	13.105	
11,220.4	7,181.3	7,179.3	7,179.3	69.3	143.2	89.71	-2,113.3	-862.4	2,718.7	2,511.4	207.30	13.115	
11,300.0	7,180.2	7,178.2	7,178.2	70.6	143.2	89.69	-2,113.3	-862.4	2,746.8	2,538.1	208.72	13.160	
11,318.9	7,180.0	7,178.0	7,178.0	70.9	143.2	89.68	-2,113.3	-862.4	2,753.8	2,544.7	209.06	13.172	
11,400.0	7,178.9	7,176.9	7,176.9	72.3	143.2	89.66	-2,113.3	-862.4	2,784.9	2,574.4	210.51	13.229	
11,417.3	7,178.6	7,176.6	7,176.6	72.6	143.2	89.65	-2,113.3	-862.4	2,791.9	2,581.0	210.82	13.243	
11,500.0	7,177.5	7,175.5	7,175.5	74.0	143.2	89.63	-2,113.3	-862.4	2,826.1	2,613.8	212.31	13.311	
11,515.7	7,177.3	7,175.3	7,175.3	74.3	143.2	89.62	-2,113.3	-862.4	2,832.9	2,620.3	212.59	13.325	
11,600.0	7,176.1	7,174.1	7,174.1	75.7	143.1	89.60	-2,113.3	-862.4	2,870.2	2,656.1	214.11	13.405	
11,614.1	7,175.9	7,173.9	7,173.9	76.0	143.1	89.59	-2,113.3	-862.4	2,876.7	2,662.3	214.37	13.419	
11,700.0	7,174.7	7,172.7	7,172.7	77.5	143.1	89.56	-2,113.3	-862.4	2,917.1	2,701.1	215.92	13.510	
11,712.6	7,174.5	7,172.5	7,172.5	77.7	143.1	89.56	-2,113.3	-862.4	2,923.1	2,707.0	216.15	13.524	
11,800.0	7,173.3	7,171.3	7,171.3	79.2	143.1	89.53	-2,113.3	-862.4	2,966.5	2,748.8	217.73	13.625	
11,811.0	7,173.2	7,171.2	7,171.2	79.4	143.1	89.53	-2,113.3	-862.4	2,972.1	2,754.2	217.93	13.638	
11,900.0	7,172.0	7,170.0	7,170.0	81.0	143.1	89.50	-2,113.3	-862.4	3,018.5	2,799.0	219.55	13.749	
11,909.4	7,171.8	7,169.8	7,169.8	81.1	143.1	89.50	-2,113.3	-862.4	3,023.5	2,803.8	219.72	13.761	
12,000.0	7,170.6	7,168.6	7,168.6	82.7	143.0	89.47	-2,113.3	-862.4	3,072.9	2,851.5	221.37	13.881	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ 23-30 - Wellbore #1 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-INC

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,007.8	7,170.5	7,168.5	7,168.5	82.9	143.0	89.47	-2,113.3	-862.4	3,077.2	2,855.7	221.51	13.892	
12,041.2	7,170.0	7,168.0	7,168.0	83.5	143.0	89.46	-2,113.3	-862.4	3,095.9	2,873.8	222.12	13.938	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ FARM 30-32 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	178.09	-1,232.1	41.0	1,233.1				
98.4	98.4	68.7	68.7	0.1	0.0	178.09	-1,232.1	41.0	1,232.8	1,232.7	0.11	N/A	CC
100.0	100.0	70.3	70.3	0.1	0.0	178.09	-1,232.1	41.0	1,232.8	1,232.7	0.12	N/A	
196.8	196.8	164.9	164.9	0.3	0.1	178.09	-1,232.4	41.1	1,233.0	1,232.6	0.45	2,722.092	
200.0	200.0	168.0	168.0	0.3	0.2	178.09	-1,232.4	41.0	1,233.1	1,232.6	0.47	2,650.794	ES
295.3	295.3	263.5	263.5	0.5	0.3	178.10	-1,232.7	40.9	1,233.4	1,232.6	0.78	1,571.348	
300.0	300.0	268.3	268.3	0.5	0.3	178.10	-1,232.7	40.9	1,233.4	1,232.6	0.80	1,542.777	
393.7	393.7	361.7	361.7	0.7	0.3	178.11	-1,233.0	40.7	1,233.7	1,232.6	1.08	1,144.987	
400.0	400.0	367.9	367.9	0.8	0.3	178.11	-1,233.0	40.7	1,233.7	1,232.6	1.10	1,125.841	
492.1	492.1	459.1	459.1	1.0	0.4	178.13	-1,233.4	40.3	1,234.0	1,232.7	1.36	909.350	
500.0	500.0	466.9	466.9	1.0	0.4	178.13	-1,233.4	40.3	1,234.1	1,232.7	1.38	894.867	
590.5	590.5	554.6	554.6	1.2	0.5	178.16	-1,233.9	39.5	1,234.5	1,232.9	1.63	758.083	
600.0	600.0	563.6	563.6	1.2	0.5	178.17	-1,233.9	39.4	1,234.6	1,232.9	1.65	746.294	
689.0	689.0	651.9	651.9	1.4	0.5	178.21	-1,234.6	38.5	1,235.3	1,233.4	1.90	651.275	
700.0	700.0	663.2	663.1	1.4	0.5	178.22	-1,234.7	38.4	1,235.3	1,233.4	1.93	641.183	
787.4	787.4	750.4	750.4	1.6	0.6	178.26	-1,235.4	37.4	1,236.0	1,233.8	2.16	571.825	
800.0	800.0	762.8	762.7	1.7	0.6	178.27	-1,235.4	37.3	1,236.0	1,233.9	2.19	563.129	
885.8	885.8	846.5	846.5	1.9	0.6	178.31	-1,236.2	36.5	1,236.8	1,234.3	2.42	510.601	
900.0	900.0	860.3	860.3	1.9	0.6	178.32	-1,236.3	36.4	1,236.9	1,234.4	2.46	502.902	
984.2	984.2	942.0	942.0	2.1	0.7	178.37	-1,237.2	35.1	1,237.8	1,235.1	2.68	461.711	
1,000.0	1,000.0	957.3	957.2	2.1	0.7	178.39	-1,237.4	34.9	1,238.0	1,235.2	2.72	454.781	
1,082.7	1,082.7	1,037.6	1,037.5	2.3	0.7	178.45	-1,238.5	33.4	1,239.0	1,236.1	2.94	421.755	
1,100.0	1,100.0	1,054.5	1,054.4	2.3	0.7	178.47	-1,238.7	33.1	1,239.3	1,236.3	2.98	415.476	
1,181.1	1,181.1	1,133.8	1,133.7	2.5	0.7	178.53	-1,239.9	31.8	1,240.5	1,237.3	3.19	388.523	
1,200.0	1,200.0	1,152.3	1,152.2	2.6	0.8	178.54	-1,240.2	31.5	1,240.8	1,237.5	3.24	382.769	
1,279.5	1,279.5	1,229.5	1,229.3	2.7	0.8	178.60	-1,241.5	30.3	1,242.1	1,238.7	3.45	360.440	
1,300.0	1,300.0	1,248.9	1,248.8	2.8	0.8	178.62	-1,241.9	29.9	1,242.5	1,239.0	3.50	355.153	
1,377.9	1,377.9	1,324.7	1,324.5	3.0	0.8	178.69	-1,243.5	28.5	1,244.0	1,240.3	3.70	336.415	
1,400.0	1,400.0	1,347.1	1,346.9	3.0	0.8	178.71	-1,243.9	28.1	1,244.5	1,240.7	3.75	331.464	
1,450.0	1,450.0	1,397.9	1,397.7	3.1	0.9	178.75	-1,244.9	27.1	1,245.5	1,241.6	3.88	320.769	
1,476.4	1,476.4	1,424.6	1,424.4	3.2	0.9	115.46	-1,245.5	26.6	1,246.0	1,242.0	4.00	311.736	
1,500.0	1,500.0	1,448.5	1,448.3	3.2	0.9	115.49	-1,245.9	26.2	1,246.6	1,242.6	4.06	307.244	
1,574.8	1,574.8	1,522.5	1,522.2	3.4	0.9	115.59	-1,247.4	25.0	1,249.0	1,244.8	4.24	294.270	
1,600.0	1,599.9	1,546.2	1,546.0	3.4	0.9	115.64	-1,247.8	24.6	1,250.1	1,245.8	4.31	290.226	
1,673.2	1,673.0	1,618.6	1,618.4	3.6	1.0	115.83	-1,249.5	23.2	1,253.8	1,249.3	4.49	278.942	
1,700.0	1,699.7	1,649.6	1,649.4	3.7	1.0	115.94	-1,250.1	22.5	1,255.2	1,250.7	4.56	275.059	
1,771.6	1,771.0	1,728.9	1,728.5	3.8	1.0	116.28	-1,251.2	20.4	1,259.4	1,254.6	4.75	264.950	
1,800.0	1,799.1	1,757.9	1,757.6	3.9	1.0	116.43	-1,251.5	19.6	1,261.2	1,256.4	4.83	261.280	
1,870.1	1,868.6	1,833.8	1,833.4	4.1	1.0	116.87	-1,252.2	17.1	1,266.1	1,261.0	5.02	252.209	
1,900.0	1,898.2	1,868.6	1,868.2	4.1	1.0	117.10	-1,252.3	15.9	1,268.2	1,263.1	5.10	248.577	
1,968.5	1,965.7	1,939.5	1,939.0	4.3	1.1	117.60	-1,252.2	13.2	1,273.5	1,268.2	5.30	240.138	
2,000.0	1,996.6	1,969.4	1,968.9	4.4	1.1	117.82	-1,252.1	12.1	1,276.3	1,270.9	5.40	236.540	
2,066.9	2,062.2	2,033.0	2,032.5	4.6	1.1	118.32	-1,252.1	9.7	1,282.8	1,277.2	5.61	228.579	
2,100.0	2,094.4	2,064.4	2,063.9	4.7	1.1	118.59	-1,252.1	8.4	1,286.4	1,280.6	5.72	224.919	
2,165.3	2,157.9	2,127.5	2,126.9	5.0	1.1	119.15	-1,252.1	5.8	1,294.1	1,288.2	5.96	217.304	
2,200.0	2,191.5	2,161.8	2,161.1	5.1	1.1	119.46	-1,252.1	4.5	1,298.6	1,292.5	6.08	213.594	
2,263.8	2,252.9	2,221.2	2,220.6	5.3	1.2	120.02	-1,252.1	2.2	1,307.5	1,301.2	6.34	206.374	
2,300.0	2,287.6	2,251.9	2,251.2	5.5	1.2	120.30	-1,252.1	1.1	1,313.1	1,306.6	6.48	202.601	
2,362.2	2,346.9	2,304.6	2,303.9	5.8	1.2	120.80	-1,252.4	-0.5	1,323.5	1,316.8	6.76	195.744	
2,400.0	2,382.7	2,339.2	2,338.5	6.0	1.2	121.13	-1,252.8	-1.5	1,330.4	1,323.5	6.93	191.905	
2,460.6	2,439.8	2,394.4	2,393.6	6.3	1.2	121.68	-1,253.3	-3.0	1,342.3	1,335.1	7.24	185.408	
2,500.0	2,476.6	2,428.9	2,428.1	6.5	1.2	122.02	-1,253.7	-3.9	1,350.6	1,343.1	7.44	181.591	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ FARM 30-32 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,559.0	2,531.6	2,480.0	2,479.2	6.9	1.3	122.53	-1,254.3	-5.3	1,363.8	1,356.0	7.77	175.600	
2,600.0	2,569.4	2,515.4	2,514.6	7.1	1.3	122.89	-1,254.9	-6.2	1,373.5	1,365.5	7.99	171.839	
2,657.5	2,622.0	2,565.3	2,564.5	7.5	1.3	123.40	-1,255.7	-7.6	1,388.1	1,379.7	8.35	166.330	
2,700.0	2,660.7	2,602.0	2,601.2	7.8	1.3	123.78	-1,256.3	-8.5	1,399.5	1,390.9	8.60	162.657	
2,755.9	2,711.1	2,650.5	2,649.7	8.2	1.3	124.29	-1,257.2	-9.8	1,415.3	1,406.3	8.98	157.667	
2,800.0	2,750.6	2,688.5	2,687.6	8.6	1.3	124.68	-1,258.0	-10.8	1,428.4	1,419.1	9.27	154.129	
2,832.3	2,779.2	2,715.6	2,714.7	8.8	1.3	124.97	-1,258.5	-11.6	1,438.3	1,428.8	9.49	151.516	
2,854.3	2,798.8	2,733.8	2,732.9	9.0	1.4	125.27	-1,258.9	-12.1	1,445.3	1,435.6	9.65	149.828	
2,900.0	2,839.3	2,771.7	2,770.7	9.4	1.4	125.90	-1,259.7	-13.2	1,459.9	1,449.9	9.96	146.564	
2,952.7	2,886.0	2,815.6	2,814.7	9.9	1.4	126.62	-1,260.6	-14.5	1,477.0	1,466.7	10.33	143.007	
3,000.0	2,927.8	2,855.6	2,854.6	10.3	1.4	127.26	-1,261.6	-15.7	1,492.6	1,482.0	10.65	140.119	
3,051.2	2,973.2	2,900.0	2,899.0	10.7	1.4	127.96	-1,262.6	-17.1	1,509.8	1,498.8	11.01	137.161	
3,100.0	3,016.4	2,945.6	2,944.6	11.2	1.4	128.67	-1,263.6	-18.4	1,526.4	1,515.1	11.34	134.632	
3,149.6	3,060.4	2,993.4	2,992.3	11.6	1.4	129.39	-1,264.6	-19.8	1,543.3	1,531.6	11.67	132.204	
3,200.0	3,105.0	3,039.6	3,038.5	12.1	1.5	130.07	-1,265.4	-21.1	1,560.6	1,548.6	12.01	129.948	
3,248.0	3,147.5	3,083.2	3,082.1	12.5	1.5	130.71	-1,266.1	-22.4	1,577.2	1,564.9	12.33	127.918	
3,300.0	3,193.6	3,135.6	3,134.5	13.0	1.5	131.47	-1,266.8	-24.1	1,595.3	1,582.6	12.67	125.958	
3,346.4	3,234.7	3,185.3	3,184.1	13.4	1.5	132.16	-1,267.2	-25.5	1,611.4	1,598.4	12.96	124.320	
3,400.0	3,282.2	3,245.3	3,244.1	13.9	1.5	132.98	-1,267.3	-27.0	1,629.8	1,616.5	13.29	122.650	
3,444.9	3,321.9	3,296.6	3,295.3	14.3	1.5	133.67	-1,267.0	-28.2	1,645.1	1,631.5	13.56	121.318	
3,500.0	3,370.8	3,349.8	3,348.6	14.8	1.6	134.37	-1,266.5	-29.3	1,663.8	1,649.9	13.90	119.708	
3,543.3	3,409.1	3,391.3	3,390.1	15.2	1.6	134.90	-1,266.0	-30.1	1,678.6	1,664.4	14.16	118.535	
3,600.0	3,459.3	3,441.4	3,440.1	15.8	1.6	135.53	-1,265.3	-31.0	1,698.1	1,683.5	14.51	117.046	
3,641.7	3,496.3	3,477.7	3,476.4	16.1	1.6	135.97	-1,264.9	-31.6	1,712.5	1,697.7	14.76	116.000	
3,700.0	3,547.9	3,527.6	3,526.3	16.7	1.6	136.57	-1,264.3	-32.3	1,732.9	1,717.8	15.12	114.630	
3,740.1	3,583.5	3,561.4	3,560.1	17.1	1.6	136.97	-1,263.9	-32.9	1,747.1	1,731.7	15.36	113.732	
3,800.0	3,636.5	3,611.8	3,610.5	17.6	1.6	137.56	-1,263.5	-33.7	1,768.5	1,752.7	15.72	112.492	
3,838.6	3,670.7	3,644.4	3,643.1	18.0	1.6	137.93	-1,263.2	-34.3	1,782.4	1,766.4	15.95	111.734	
3,900.0	3,725.1	3,696.3	3,695.0	18.6	1.6	138.51	-1,262.8	-35.1	1,804.8	1,788.4	16.32	110.614	
3,937.0	3,757.9	3,727.5	3,726.2	18.9	1.7	138.85	-1,262.7	-35.6	1,818.4	1,801.8	16.53	109.971	
4,000.0	3,813.7	3,780.5	3,779.2	19.5	1.7	139.42	-1,262.4	-36.4	1,841.7	1,824.8	16.90	108.959	
4,035.4	3,845.1	3,810.4	3,809.0	19.9	1.7	139.74	-1,262.3	-36.9	1,855.0	1,837.9	17.11	108.427	
4,100.0	3,902.3	3,865.0	3,863.7	20.5	1.7	140.30	-1,262.1	-37.8	1,879.4	1,861.9	17.48	107.521	
4,133.8	3,932.2	3,893.6	3,892.3	20.8	1.7	140.60	-1,262.1	-38.4	1,892.2	1,874.6	17.67	107.072	
4,200.0	3,990.8	3,951.0	3,949.6	21.5	1.7	141.18	-1,261.9	-39.5	1,917.6	1,899.5	18.04	106.271	
4,232.3	4,019.4	3,979.0	3,977.7	21.8	1.7	141.46	-1,261.9	-40.0	1,930.0	1,911.8	18.22	105.905	
4,300.0	4,079.4	4,042.6	4,041.2	22.4	1.8	142.08	-1,261.6	-41.3	1,956.2	1,937.6	18.59	105.241	
4,330.7	4,106.6	4,072.6	4,071.2	22.7	1.8	142.37	-1,261.4	-42.0	1,968.1	1,949.3	18.75	104.965	
4,400.0	4,168.0	4,139.9	4,138.5	23.4	1.8	143.02	-1,260.6	-43.8	1,994.9	1,975.8	19.11	104.406	
4,429.1	4,193.8	4,168.1	4,166.7	23.7	1.8	143.29	-1,260.2	-44.5	2,006.1	1,986.9	19.25	104.188	
4,500.0	4,256.6	4,234.3	4,232.9	24.4	1.8	143.91	-1,259.1	-46.2	2,033.6	2,013.9	19.62	103.672	
4,527.5	4,281.0	4,259.2	4,257.8	24.6	1.8	144.14	-1,258.6	-46.8	2,044.2	2,024.5	19.76	103.475	
4,600.0	4,345.2	4,327.6	4,326.1	25.3	1.8	144.76	-1,257.4	-48.5	2,072.4	2,052.3	20.12	103.016	
4,626.0	4,368.2	4,353.9	4,352.4	25.6	1.8	144.99	-1,256.9	-49.0	2,082.6	2,062.3	20.24	102.874	
4,700.0	4,433.8	4,422.8	4,421.2	26.3	1.8	145.58	-1,255.6	-50.3	2,111.3	2,090.7	20.61	102.439	
4,724.4	4,455.4	4,442.2	4,440.7	26.5	1.9	145.74	-1,255.2	-50.6	2,120.8	2,100.1	20.74	102.277	
4,800.0	4,522.3	4,502.8	4,501.2	27.3	1.9	146.23	-1,254.3	-51.5	2,150.6	2,129.5	21.12	101.813	
4,822.8	4,542.6	4,523.8	4,522.3	27.5	1.9	146.40	-1,254.0	-51.8	2,159.6	2,138.4	21.24	101.698	
4,900.0	4,610.9	4,595.0	4,593.5	28.2	1.9	146.96	-1,253.0	-52.8	2,190.3	2,168.7	21.61	101.337	
4,921.2	4,629.8	4,621.1	4,619.6	28.4	1.9	147.16	-1,252.6	-53.2	2,198.7	2,177.0	21.71	101.299	
5,000.0	4,699.5	4,717.3	4,715.7	29.2	1.9	147.88	-1,250.5	-53.6	2,229.4	2,207.3	22.04	101.143	
5,019.7	4,716.9	4,734.3	4,732.7	29.4	1.9	148.00	-1,250.1	-53.6	2,237.0	2,214.9	22.14	101.052	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ FARM 30-32 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	4,788.1	4,803.5	4,801.9	30.2	1.9	148.49	-1,248.6	-53.5	2,268.2	2,245.7	22.52	100.709	
5,118.1	4,804.1	4,819.3	4,817.6	30.4	1.9	148.60	-1,248.2	-53.5	2,275.3	2,252.7	22.61	100.633	
5,200.0	4,876.7	4,890.7	4,889.0	31.1	1.9	149.09	-1,246.7	-53.4	2,307.4	2,284.4	23.00	100.311	
5,216.5	4,891.3	4,900.0	4,898.4	31.3	1.9	149.15	-1,246.5	-53.4	2,313.9	2,290.9	23.09	100.218	
5,300.0	4,965.3	4,959.9	4,958.3	32.1	1.9	149.54	-1,245.5	-53.5	2,347.2	2,323.7	23.51	99.843	
5,314.9	4,978.5	4,969.9	4,968.2	32.3	1.9	149.61	-1,245.4	-53.5	2,353.3	2,329.7	23.59	99.778	
5,400.0	5,053.8	5,033.8	5,032.1	33.1	1.9	150.02	-1,244.9	-53.8	2,388.0	2,364.0	24.01	99.470	
5,413.4	5,065.7	5,045.1	5,043.5	33.2	1.9	150.09	-1,244.8	-53.9	2,393.5	2,369.4	24.07	99.431	
5,508.2	5,149.7	5,124.3	5,122.7	34.2	2.0	150.58	-1,244.4	-54.2	2,432.6	2,408.1	24.53	99.165	
5,511.8	5,152.9	5,127.3	5,125.6	34.2	2.0	150.61	-1,244.4	-54.2	2,434.1	2,409.6	24.54	99.193	
5,600.0	5,231.7	5,200.0	5,198.3	34.9	2.0	151.40	-1,244.3	-54.5	2,469.7	2,445.0	24.74	99.821	
5,610.2	5,240.9	5,207.5	5,205.9	35.0	2.0	151.48	-1,244.2	-54.6	2,473.7	2,449.0	24.76	99.913	
5,700.0	5,322.5	5,282.6	5,281.0	35.7	2.0	152.21	-1,244.2	-55.1	2,507.8	2,482.9	24.90	100.703	
5,708.6	5,330.4	5,289.9	5,288.3	35.7	2.0	152.28	-1,244.2	-55.2	2,511.0	2,486.1	24.91	100.783	
5,800.0	5,414.6	5,363.6	5,361.9	36.3	2.0	152.92	-1,244.4	-55.9	2,543.5	2,518.4	25.05	101.548	
5,807.1	5,421.2	5,369.2	5,367.6	36.4	2.0	152.97	-1,244.4	-55.9	2,545.9	2,520.9	25.06	101.610	
5,900.0	5,508.1	5,450.8	5,449.1	36.9	2.0	153.58	-1,244.9	-56.8	2,576.7	2,551.6	25.17	102.385	
5,905.5	5,513.3	5,455.9	5,454.3	37.0	2.1	153.61	-1,245.0	-56.8	2,578.5	2,553.3	25.17	102.434	
6,000.0	5,602.8	5,532.9	5,531.2	37.5	2.1	154.14	-1,245.5	-57.8	2,607.2	2,582.0	25.27	103.181	
6,003.9	5,606.5	5,535.6	5,533.9	37.5	2.1	154.16	-1,245.5	-57.8	2,608.4	2,583.1	25.27	103.212	
6,100.0	5,698.5	5,600.0	5,598.3	38.0	2.1	154.59	-1,246.6	-58.7	2,635.6	2,610.2	25.36	103.932	
6,102.3	5,700.7	5,600.0	5,598.3	38.0	2.1	154.60	-1,246.6	-58.7	2,636.2	2,610.9	25.36	103.949	
6,200.0	5,795.2	5,665.6	5,663.9	38.4	2.1	154.99	-1,248.2	-60.1	2,662.0	2,636.6	25.43	104.685	
6,200.8	5,795.9	5,666.1	5,664.4	38.4	2.1	154.99	-1,248.2	-60.1	2,662.2	2,636.8	25.43	104.691	
6,299.2	5,891.9	5,770.8	5,769.0	38.8	2.1	155.43	-1,251.0	-63.5	2,686.1	2,660.7	25.46	105.501	
6,300.0	5,892.7	5,772.0	5,770.2	38.8	2.1	155.43	-1,251.0	-63.5	2,686.3	2,660.8	25.46	105.507	
6,397.6	5,988.5	5,946.0	5,944.1	39.1	2.2	155.91	-1,252.8	-66.5	2,704.7	2,679.3	25.45	106.285	
6,400.0	5,990.9	5,948.7	5,946.9	39.1	2.2	155.91	-1,252.8	-66.5	2,705.1	2,679.7	25.45	106.299	
6,496.0	6,085.8	6,047.5	6,045.6	39.4	2.2	156.17	-1,252.9	-67.0	2,719.0	2,693.6	25.45	106.838	
6,500.0	6,089.7	6,051.1	6,049.3	39.4	2.2	156.18	-1,252.9	-67.0	2,719.5	2,694.1	25.45	106.856	
6,594.5	6,183.5	6,142.2	6,140.3	39.6	2.3	156.35	-1,253.4	-67.3	2,730.4	2,705.0	25.45	107.294	
6,600.0	6,189.0	6,147.8	6,146.0	39.7	2.3	156.36	-1,253.4	-67.3	2,730.9	2,705.5	25.45	107.314	
6,692.9	6,281.5	6,244.4	6,242.5	39.8	2.3	156.49	-1,254.0	-67.3	2,738.6	2,713.2	25.44	107.656	
6,700.0	6,288.6	6,251.9	6,250.0	39.8	2.3	156.49	-1,254.1	-67.3	2,739.1	2,713.7	25.44	107.675	
6,791.3	6,379.8	6,340.6	6,338.8	40.0	2.3	156.56	-1,254.7	-67.0	2,743.7	2,718.3	25.42	107.919	
6,800.0	6,388.5	6,348.3	6,346.4	40.0	2.3	156.56	-1,254.7	-67.0	2,744.0	2,718.6	25.42	107.934	
6,889.7	6,478.2	6,432.5	6,430.6	40.1	2.3	156.57	-1,255.6	-66.9	2,745.9	2,720.5	25.41	108.072	
6,890.4	6,478.9	6,433.2	6,431.3	40.1	2.3	-140.12	-1,255.6	-66.9	2,745.9	2,720.5	25.41	108.072	
6,900.0	6,488.5	6,443.1	6,441.2	40.1	2.3	-140.12	-1,255.7	-66.9	2,746.0	2,720.5	25.42	108.016	
6,920.4	6,508.9	6,464.2	6,462.3	40.1	2.3	-140.12	-1,255.9	-66.9	2,746.1	2,720.6	25.45	107.887	
6,950.0	6,538.5	6,494.7	6,492.8	40.1	2.3	39.89	-1,256.2	-66.8	2,745.8	2,720.5	25.34	108.365	
6,988.2	6,576.6	6,535.6	6,533.7	40.1	2.3	40.02	-1,256.6	-66.8	2,744.1	2,718.9	25.14	109.167	
7,000.0	6,588.3	6,548.3	6,546.5	40.1	2.3	40.08	-1,256.7	-66.8	2,743.2	2,718.1	25.06	109.463	
7,050.0	6,637.8	6,600.0	6,598.1	40.1	2.3	40.45	-1,257.0	-66.7	2,737.8	2,713.2	24.68	110.921	
7,086.6	6,673.6	6,630.1	6,628.2	40.1	2.3	40.83	-1,257.2	-66.7	2,732.3	2,707.9	24.35	112.212	
7,100.0	6,686.6	6,640.6	6,638.7	40.1	2.3	40.99	-1,257.2	-66.8	2,729.9	2,705.7	24.21	112.745	
7,150.0	6,734.6	6,679.2	6,677.4	40.0	2.3	41.70	-1,257.6	-66.9	2,719.6	2,695.9	23.65	114.986	
7,185.0	6,767.5	6,700.0	6,698.1	39.9	2.3	42.27	-1,257.8	-67.0	2,711.0	2,687.8	23.21	116.778	
7,200.0	6,781.4	6,717.4	6,715.5	39.9	2.3	42.59	-1,258.0	-67.1	2,706.9	2,683.9	23.00	117.672	
7,250.0	6,827.0	6,755.0	6,753.1	39.8	2.3	43.68	-1,258.5	-67.4	2,692.0	2,669.7	22.29	120.799	
7,283.4	6,856.6	6,779.5	6,777.6	39.8	2.3	44.52	-1,258.9	-67.7	2,680.8	2,659.0	21.78	123.095	
7,300.0	6,871.0	6,800.0	6,798.1	39.7	2.4	45.04	-1,259.2	-67.9	2,674.9	2,653.4	21.51	124.367	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ FARM 30-32 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,350.0	6,913.2	6,839.7	6,837.8	39.6	2.4	46.60	-1,259.8	-68.4	2,655.7	2,634.9	20.73	128.098	
7,381.9	6,939.1	6,872.0	6,870.0	39.5	2.4	47.80	-1,260.3	-68.6	2,642.2	2,622.0	20.25	130.482	
7,400.0	6,953.4	6,889.8	6,887.9	39.4	2.4	48.52	-1,260.6	-68.8	2,634.2	2,614.2	19.99	131.794	
7,450.0	6,991.5	6,933.8	6,931.9	39.3	2.4	50.68	-1,261.1	-69.0	2,610.7	2,591.4	19.36	134.818	
7,480.3	7,013.5	6,958.6	6,956.7	39.2	2.4	52.10	-1,261.4	-69.2	2,595.6	2,576.6	19.08	136.061	
7,500.0	7,027.3	6,974.2	6,972.3	39.1	2.4	53.08	-1,261.5	-69.2	2,585.5	2,566.5	18.93	136.598	
7,550.0	7,060.5	7,009.9	7,008.0	39.0	2.4	55.73	-1,261.8	-69.5	2,558.6	2,539.9	18.73	136.620	
7,578.7	7,078.4	7,027.1	7,025.2	38.8	2.4	57.33	-1,261.9	-69.6	2,542.5	2,523.8	18.73	135.742	
7,600.0	7,091.0	7,039.3	7,037.3	38.8	2.4	58.56	-1,262.0	-69.6	2,530.4	2,511.6	18.78	134.739	
7,650.0	7,118.7	7,066.0	7,064.0	38.6	2.4	61.62	-1,262.2	-69.8	2,501.0	2,481.9	19.07	131.173	
7,677.1	7,132.5	7,079.3	7,077.4	38.5	2.4	63.37	-1,262.3	-69.9	2,484.6	2,465.3	19.31	128.698	
7,700.0	7,143.4	7,089.8	7,087.9	38.4	2.4	64.89	-1,262.4	-70.0	2,470.6	2,451.1	19.53	126.494	
7,750.0	7,165.0	7,111.8	7,109.9	38.2	2.4	68.35	-1,262.6	-70.2	2,439.5	2,419.4	20.10	121.345	
7,775.6	7,174.9	7,122.3	7,120.3	38.1	2.4	70.18	-1,262.6	-70.3	2,423.4	2,403.0	20.42	118.687	
7,800.0	7,183.5	7,131.4	7,129.5	38.1	2.4	71.95	-1,262.7	-70.4	2,407.9	2,387.2	20.71	116.282	
7,850.0	7,198.6	7,147.6	7,145.6	37.9	2.4	75.61	-1,262.8	-70.5	2,375.9	2,354.6	21.28	111.660	
7,874.0	7,204.7	7,154.1	7,152.2	37.8	2.5	77.36	-1,262.9	-70.6	2,360.4	2,338.9	21.53	109.611	
7,900.0	7,210.4	7,160.2	7,158.3	37.7	2.5	79.26	-1,262.9	-70.6	2,343.7	2,321.9	21.78	107.585	
7,950.0	7,218.8	7,169.3	7,167.4	37.6	2.5	82.84	-1,263.0	-70.7	2,311.7	2,289.4	22.23	103.996	
7,972.4	7,221.4	7,172.2	7,170.3	37.5	2.5	84.41	-1,263.0	-70.7	2,297.4	2,275.0	22.42	102.485	
8,000.0	7,223.7	7,174.8	7,172.9	37.4	2.5	86.30	-1,263.0	-70.7	2,279.9	2,257.3	22.63	100.753	
8,050.0	7,225.1	7,176.6	7,174.7	37.3	2.5	89.56	-1,263.0	-70.7	2,248.6	2,225.6	23.01	97.705	
8,055.3	7,225.0	7,176.6	7,174.7	37.3	2.5	89.90	-1,263.0	-70.7	2,245.3	2,222.3	23.06	97.389	
8,070.8	7,224.8	7,176.5	7,174.6	37.3	2.5	89.89	-1,263.0	-70.7	2,235.7	2,212.7	23.06	96.957	
8,100.0	7,224.4	7,176.3	7,174.4	37.2	2.5	89.89	-1,263.0	-70.7	2,217.9	2,194.9	23.07	96.156	
8,169.3	7,223.5	7,175.8	7,173.9	37.1	2.5	89.87	-1,263.0	-70.7	2,176.7	2,153.5	23.17	93.936	
8,200.0	7,223.0	7,175.6	7,173.7	37.1	2.5	89.86	-1,263.0	-70.7	2,158.8	2,135.6	23.22	92.978	
8,267.7	7,222.1	7,175.1	7,173.2	37.0	2.5	89.85	-1,263.0	-70.7	2,120.5	2,097.1	23.44	90.469	
8,300.0	7,221.7	7,174.9	7,173.0	37.0	2.5	89.84	-1,263.0	-70.7	2,102.8	2,079.2	23.54	89.310	
8,366.1	7,220.7	7,174.4	7,172.5	37.0	2.5	89.82	-1,263.0	-70.7	2,067.6	2,043.7	23.87	86.618	
8,400.0	7,220.3	7,174.2	7,172.2	37.0	2.5	89.82	-1,263.0	-70.7	2,050.1	2,026.1	24.04	85.292	
8,464.5	7,219.4	7,173.7	7,171.8	37.1	2.5	89.80	-1,263.0	-70.7	2,018.0	1,993.5	24.45	82.523	
8,500.0	7,218.9	7,173.5	7,171.5	37.1	2.5	89.79	-1,263.0	-70.7	2,001.0	1,976.4	24.68	81.070	
8,563.0	7,218.0	7,173.0	7,171.1	37.2	2.5	89.78	-1,263.0	-70.7	1,972.1	1,946.9	25.18	78.323	
8,600.0	7,217.5	7,172.8	7,170.8	37.3	2.5	89.77	-1,263.0	-70.7	1,955.9	1,930.4	25.47	76.788	
8,661.4	7,216.7	7,172.3	7,170.4	37.5	2.5	89.76	-1,263.0	-70.7	1,930.2	1,904.1	26.03	74.142	
8,700.0	7,216.1	7,172.1	7,170.1	37.6	2.5	89.75	-1,263.0	-70.7	1,914.8	1,888.4	26.39	72.568	
8,759.8	7,215.3	7,171.6	7,169.7	37.8	2.5	89.73	-1,263.0	-70.7	1,892.4	1,865.4	27.00	70.082	
8,800.0	7,214.8	7,171.4	7,169.4	38.0	2.5	89.73	-1,263.0	-70.7	1,878.2	1,850.8	27.42	68.508	
8,858.2	7,214.0	7,170.9	7,169.0	38.3	2.5	89.71	-1,263.0	-70.7	1,859.1	1,831.0	28.07	66.219	
8,900.0	7,213.4	7,170.7	7,168.7	38.5	2.5	89.70	-1,263.0	-70.7	1,846.3	1,817.8	28.55	64.679	
8,956.7	7,212.6	7,170.3	7,168.3	38.8	2.5	89.69	-1,263.0	-70.7	1,830.4	1,801.2	29.24	62.609	
9,000.0	7,212.0	7,170.0	7,168.0	39.1	2.5	89.68	-1,263.0	-70.7	1,819.4	1,789.6	29.76	61.128	
9,055.1	7,211.2	7,169.6	7,167.6	39.5	2.5	89.67	-1,263.0	-70.7	1,806.7	1,776.3	30.48	59.282	
9,100.0	7,210.6	7,169.2	7,167.3	39.8	2.5	89.66	-1,263.0	-70.7	1,797.6	1,766.6	31.06	57.879	
9,153.5	7,209.9	7,168.9	7,166.9	40.3	2.5	89.64	-1,263.0	-70.7	1,788.1	1,756.4	31.79	56.254	
9,200.0	7,209.2	7,168.5	7,166.6	40.7	2.5	89.63	-1,263.0	-70.7	1,781.2	1,748.8	32.42	54.942	
9,251.9	7,208.5	7,168.2	7,166.3	41.1	2.5	89.62	-1,263.0	-70.7	1,774.8	1,741.7	33.16	53.528	
9,300.0	7,207.9	7,167.8	7,165.9	41.6	2.5	89.61	-1,263.0	-70.7	1,770.3	1,736.4	33.84	52.314	
9,350.4	7,207.2	7,167.5	7,165.6	42.1	2.5	89.60	-1,263.0	-70.7	1,766.9	1,732.3	34.58	51.096	
9,400.0	7,206.5	7,167.2	7,165.2	42.6	2.5	89.59	-1,263.0	-70.7	1,764.9	1,729.6	35.31	49.986	
9,444.0	7,205.9	7,166.8	7,164.9	43.0	2.5	89.58	-1,263.0	-70.6	1,764.4	1,728.4	35.97	49.045	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ FARM 30-32 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,448.8	7,205.8	7,166.8	7,164.9	43.1	2.5	89.58	-1,263.0	-70.6	1,764.4	1,728.4	36.05	48.946	
9,500.0	7,205.1	7,166.5	7,164.5	43.7	2.5	89.57	-1,263.0	-70.6	1,765.3	1,728.5	36.82	47.940	
9,547.2	7,204.4	7,166.1	7,164.2	44.2	2.5	89.56	-1,263.0	-70.6	1,767.4	1,729.9	37.56	47.061	
9,600.0	7,203.7	7,165.8	7,163.8	44.8	2.5	89.54	-1,263.0	-70.6	1,771.3	1,732.9	38.38	46.157	
9,645.6	7,203.1	7,165.4	7,163.5	45.4	2.5	89.53	-1,262.9	-70.6	1,775.9	1,736.8	39.10	45.419	
9,700.0	7,202.3	7,165.1	7,163.1	46.1	2.5	89.52	-1,262.9	-70.6	1,782.9	1,742.9	39.96	44.614	
9,744.1	7,201.7	7,164.8	7,162.8	46.6	2.5	89.51	-1,262.9	-70.6	1,789.7	1,749.1	40.67	44.002	
9,800.0	7,201.0	7,164.4	7,162.4	47.3	2.5	89.50	-1,262.9	-70.6	1,799.9	1,758.4	41.58	43.291	
9,842.5	7,200.4	7,164.1	7,162.1	47.9	2.5	89.49	-1,262.9	-70.6	1,808.8	1,766.6	42.28	42.787	
9,900.0	7,199.6	7,163.7	7,161.7	48.7	2.5	89.48	-1,262.9	-70.6	1,822.4	1,779.1	43.22	42.165	
9,940.9	7,199.0	7,163.4	7,161.5	49.2	2.5	89.47	-1,262.9	-70.6	1,833.0	1,789.1	43.90	41.754	
10,000.0	7,198.2	7,163.0	7,161.0	50.1	2.5	89.45	-1,262.9	-70.6	1,849.9	1,805.0	44.89	41.215	
10,039.3	7,197.7	7,162.7	7,160.8	50.6	2.5	89.44	-1,262.9	-70.6	1,862.1	1,816.6	45.55	40.882	
10,100.0	7,196.8	7,162.3	7,160.4	51.5	2.5	89.43	-1,262.9	-70.6	1,882.4	1,835.8	46.57	40.420	
10,137.8	7,196.3	7,162.0	7,160.1	52.0	2.5	89.42	-1,262.9	-70.6	1,895.9	1,848.7	47.21	40.155	
10,200.0	7,195.4	7,161.6	7,159.7	52.9	2.5	89.41	-1,262.9	-70.6	1,919.5	1,871.3	48.27	39.763	
10,236.2	7,194.9	7,161.3	7,159.4	53.5	2.5	89.40	-1,262.9	-70.6	1,934.1	1,885.2	48.90	39.554	
10,300.0	7,194.1	7,160.9	7,159.0	54.4	2.5	89.39	-1,262.9	-70.6	1,961.1	1,911.1	49.99	39.225	
10,334.6	7,193.6	7,160.7	7,158.7	55.0	2.5	89.38	-1,262.9	-70.6	1,976.4	1,925.8	50.60	39.063	
10,400.0	7,192.7	7,160.2	7,158.3	56.0	2.5	89.36	-1,262.9	-70.6	2,006.7	1,955.0	51.73	38.793	
10,433.0	7,192.2	7,160.0	7,158.1	56.5	2.5	89.36	-1,262.9	-70.6	2,022.7	1,970.4	52.31	38.669	
10,500.0	7,191.3	7,159.5	7,157.6	57.5	2.5	89.34	-1,262.9	-70.6	2,056.3	2,002.8	53.48	38.451	
10,531.5	7,190.9	7,159.3	7,157.4	58.0	2.5	89.33	-1,262.9	-70.6	2,072.6	2,018.6	54.03	38.359	
10,600.0	7,189.9	7,158.8	7,156.9	59.1	2.5	89.32	-1,262.9	-70.6	2,109.4	2,054.1	55.24	38.187	
10,629.9	7,189.5	7,158.6	7,156.7	59.6	2.5	89.31	-1,262.9	-70.6	2,125.9	2,070.1	55.77	38.121	
10,700.0	7,188.5	7,158.1	7,156.2	60.7	2.5	89.30	-1,262.9	-70.6	2,165.8	2,108.8	57.01	37.991	
10,728.3	7,188.1	7,158.0	7,156.0	61.1	2.5	89.29	-1,262.9	-70.6	2,182.3	2,124.8	57.51	37.945	
10,800.0	7,187.2	7,157.5	7,155.5	62.3	2.5	89.27	-1,262.9	-70.6	2,225.2	2,166.5	58.79	37.852	
10,826.7	7,186.8	7,157.3	7,155.3	62.7	2.5	89.27	-1,262.9	-70.6	2,241.6	2,182.4	59.27	37.823	
10,900.0	7,185.8	7,156.8	7,154.8	63.9	2.5	89.25	-1,262.9	-70.6	2,287.6	2,227.0	60.58	37.763	
10,925.2	7,185.4	7,156.6	7,154.7	64.3	2.5	89.25	-1,262.9	-70.6	2,303.7	2,242.6	61.03	37.747	
11,000.0	7,184.4	7,156.1	7,154.2	65.6	2.5	89.23	-1,262.9	-70.6	2,352.5	2,290.1	62.37	37.716	
11,023.6	7,184.1	7,155.9	7,154.0	66.0	2.5	89.22	-1,262.9	-70.6	2,368.1	2,305.3	62.80	37.710	
11,100.0	7,183.0	7,155.4	7,153.5	67.2	2.5	89.21	-1,262.9	-70.6	2,419.8	2,355.6	64.18	37.705 SF	
11,122.0	7,182.7	7,155.3	7,153.3	67.6	2.5	89.20	-1,262.9	-70.6	2,434.9	2,370.3	64.58	37.706	
11,200.0	7,181.6	7,154.7	7,152.8	68.9	2.5	89.19	-1,262.9	-70.6	2,489.3	2,423.3	65.99	37.723	
11,220.4	7,181.3	7,154.6	7,152.7	69.3	2.5	89.18	-1,262.9	-70.6	2,503.7	2,437.4	66.36	37.730	
11,300.0	7,180.2	7,154.0	7,152.1	70.6	2.5	89.16	-1,262.9	-70.6	2,560.8	2,493.0	67.80	37.767	
11,318.9	7,180.0	7,153.9	7,152.0	70.9	2.5	89.16	-1,262.9	-70.6	2,574.5	2,506.4	68.15	37.778	
11,400.0	7,178.9	7,153.4	7,151.4	72.3	2.5	89.14	-1,262.9	-70.5	2,634.2	2,564.5	69.63	37.833	
11,417.3	7,178.6	7,153.2	7,151.3	72.6	2.5	89.14	-1,262.9	-70.5	2,647.0	2,577.1	69.94	37.846	
11,500.0	7,177.5	7,152.7	7,150.7	74.0	2.4	89.12	-1,262.9	-70.5	2,709.2	2,637.8	71.45	37.916	
11,515.7	7,177.3	7,152.6	7,150.6	74.3	2.4	89.12	-1,262.9	-70.5	2,721.2	2,649.5	71.74	37.930	
11,600.0	7,176.1	7,152.0	7,150.1	75.7	2.4	89.10	-1,262.9	-70.5	2,785.9	2,712.6	73.29	38.014	
11,614.1	7,175.9	7,151.9	7,150.0	76.0	2.4	89.09	-1,262.9	-70.5	2,796.9	2,723.3	73.55	38.029	
11,700.0	7,174.7	7,151.3	7,149.4	77.5	2.4	89.07	-1,262.8	-70.5	2,864.0	2,788.9	75.12	38.124	
11,712.6	7,174.5	7,151.2	7,149.3	77.7	2.4	89.07	-1,262.8	-70.5	2,873.9	2,798.5	75.35	38.138	
11,800.0	7,173.3	7,150.6	7,148.7	79.2	2.4	89.05	-1,262.8	-70.5	2,943.4	2,866.4	76.96	38.244	
11,811.0	7,173.2	7,150.6	7,148.6	79.4	2.4	89.05	-1,262.8	-70.5	2,952.2	2,875.0	77.17	38.258	
11,900.0	7,172.0	7,150.0	7,148.0	81.0	2.4	89.03	-1,262.8	-70.5	3,024.0	2,945.2	78.81	38.372	
11,909.4	7,171.8	7,149.9	7,148.0	81.1	2.4	89.03	-1,262.8	-70.5	3,031.7	2,952.7	78.98	38.384	
12,000.0	7,170.6	7,149.3	7,147.4	82.7	2.4	89.01	-1,262.8	-70.5	3,105.8	3,025.1	80.66	38.507	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ FARM 30-32 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,007.8	7,170.5	7,149.2	7,147.3	82.9	2.4	89.01	-1,262.8	-70.5	3,112.2	3,031.4	80.80	38.517	
12,041.2	7,170.0	7,149.0	7,147.1	83.5	2.4	89.00	-1,262.8	-70.5	3,139.8	3,058.4	81.42	38.564	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ FARM 30-33 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	171.04	-2,368.3	373.3	2,397.6				
98.4	98.4	74.1	74.1	0.1	0.0	171.04	-2,368.5	373.3	2,397.7	2,397.6	0.11	N/A	
100.0	100.0	75.5	75.5	0.1	0.0	171.04	-2,368.5	373.3	2,397.7	2,397.6	0.11	N/A	
196.8	196.8	177.6	177.6	0.3	0.2	171.05	-2,368.9	373.0	2,398.1	2,397.6	0.45	5,287.897	
200.0	200.0	181.2	181.2	0.3	0.2	171.05	-2,368.9	373.0	2,398.1	2,397.6	0.47	5,145.437	
295.3	295.3	276.3	276.3	0.5	0.3	171.06	-2,369.0	372.6	2,398.1	2,397.4	0.78	3,070.477	
300.0	300.0	280.8	280.8	0.5	0.3	171.06	-2,369.0	372.6	2,398.1	2,397.4	0.80	3,012.903	
393.7	393.7	370.7	370.7	0.7	0.3	171.07	-2,369.2	372.4	2,398.3	2,397.3	1.06	2,255.166	
400.0	400.0	376.7	376.7	0.8	0.3	171.07	-2,369.3	372.4	2,398.4	2,397.3	1.08	2,218.727	
492.1	492.1	464.6	464.6	1.0	0.4	171.07	-2,369.6	372.4	2,398.7	2,397.4	1.34	1,791.800	
500.0	500.0	472.1	472.1	1.0	0.4	171.07	-2,369.6	372.4	2,398.8	2,397.4	1.36	1,762.725	
590.5	590.5	564.2	564.2	1.2	0.4	171.07	-2,370.1	372.5	2,399.2	2,397.6	1.61	1,487.845	
600.0	600.0	574.1	574.1	1.2	0.4	171.07	-2,370.1	372.5	2,399.3	2,397.6	1.64	1,464.128	
689.0	689.0	666.7	666.7	1.4	0.5	171.07	-2,370.5	372.4	2,399.6	2,397.7	1.88	1,276.726	
700.0	700.0	678.2	678.2	1.4	0.5	171.07	-2,370.5	372.4	2,399.6	2,397.7	1.91	1,256.968	
787.4	787.4	763.1	763.1	1.6	0.5	171.08	-2,370.8	372.2	2,399.8	2,397.7	2.13	1,125.439	
800.0	800.0	775.1	775.1	1.7	0.5	171.08	-2,370.8	372.2	2,399.9	2,397.7	2.16	1,108.981	
885.8	885.8	862.9	862.9	1.9	0.6	171.07	-2,371.1	372.4	2,400.2	2,397.8	2.39	1,005.293	
900.0	900.0	877.9	877.9	1.9	0.6	171.07	-2,371.1	372.4	2,400.2	2,397.8	2.42	989.783	
984.2	984.2	961.8	961.8	2.1	0.6	171.07	-2,371.3	372.6	2,400.4	2,397.8	2.65	907.514	
1,000.0	1,000.0	977.2	977.2	2.1	0.6	171.07	-2,371.3	372.6	2,400.5	2,397.8	2.69	893.694	
1,082.7	1,082.7	1,057.9	1,057.9	2.3	0.6	171.07	-2,371.6	372.6	2,400.7	2,397.8	2.89	829.320	
1,100.0	1,100.0	1,074.8	1,074.8	2.3	0.7	171.07	-2,371.7	372.6	2,400.8	2,397.8	2.94	817.133	
1,181.1	1,181.1	1,160.4	1,160.4	2.5	0.7	171.08	-2,372.0	372.2	2,401.1	2,397.9	3.15	763.153	
1,200.0	1,200.0	1,181.1	1,181.1	2.6	0.7	171.08	-2,372.1	372.1	2,401.1	2,397.9	3.20	751.441	
1,279.5	1,279.5	1,257.4	1,257.4	2.7	0.7	171.09	-2,372.2	371.9	2,401.2	2,397.8	3.40	707.268	
1,300.0	1,300.0	1,276.3	1,276.3	2.8	0.7	171.09	-2,372.3	371.8	2,401.3	2,397.8	3.45	696.833	
1,377.9	1,377.9	1,354.1	1,354.1	3.0	0.8	171.10	-2,372.6	371.7	2,401.5	2,397.9	3.64	659.111	
1,400.0	1,400.0	1,376.9	1,376.9	3.0	0.8	171.10	-2,372.7	371.6	2,401.6	2,397.9	3.70	649.078	
1,450.0	1,450.0	1,427.3	1,427.3	3.1	0.8	171.10	-2,372.8	371.4	2,401.7	2,397.9	3.83	627.436	
1,476.4	1,476.4	1,453.4	1,453.4	3.2	0.8	107.80	-2,372.9	371.3	2,401.9	2,397.9	3.96	607.007	
1,500.0	1,500.0	1,476.7	1,476.7	3.2	0.8	107.80	-2,373.0	371.2	2,402.0	2,398.0	4.02	598.049	
1,574.8	1,574.8	1,553.8	1,553.8	3.4	0.8	107.85	-2,373.3	370.8	2,402.9	2,398.7	4.20	572.083	
1,600.0	1,599.9	1,580.2	1,580.2	3.4	0.8	107.88	-2,373.4	370.7	2,403.3	2,399.1	4.26	563.888	
1,673.2	1,673.0	1,657.9	1,657.9	3.6	0.9	107.97	-2,373.5	370.2	2,404.9	2,400.4	4.44	541.214	
1,700.0	1,699.7	1,686.5	1,686.4	3.7	0.9	108.02	-2,373.5	370.0	2,405.5	2,401.0	4.51	533.449	
1,771.6	1,771.0	1,752.9	1,752.9	3.8	0.9	108.14	-2,373.6	369.4	2,407.7	2,403.0	4.69	513.240	
1,800.0	1,799.1	1,778.3	1,778.2	3.9	0.9	108.20	-2,373.6	369.1	2,408.8	2,404.0	4.76	505.707	
1,870.1	1,868.6	1,851.2	1,851.2	4.1	0.9	108.38	-2,373.9	368.1	2,411.9	2,407.0	4.96	486.704	
1,900.0	1,898.2	1,884.6	1,884.6	4.1	0.9	108.48	-2,374.0	367.6	2,413.4	2,408.3	5.04	478.977	
1,968.5	1,965.7	1,946.5	1,946.4	4.3	1.0	108.67	-2,374.1	366.7	2,417.0	2,411.8	5.24	461.125	
2,000.0	1,996.6	1,973.2	1,973.1	4.4	1.0	108.75	-2,374.2	366.2	2,419.0	2,413.7	5.33	453.436	
2,066.9	2,062.2	2,038.3	2,038.2	4.6	1.0	108.98	-2,374.6	365.1	2,423.7	2,418.2	5.56	436.133	
2,100.0	2,094.4	2,074.2	2,074.1	4.7	1.0	109.13	-2,374.8	364.5	2,426.3	2,420.6	5.67	428.004	
2,165.3	2,157.9	2,137.8	2,137.8	5.0	1.0	109.39	-2,375.0	363.3	2,431.6	2,425.6	5.91	411.219	
2,200.0	2,191.5	2,169.3	2,169.2	5.1	1.0	109.52	-2,375.1	362.8	2,434.6	2,428.6	6.04	402.955	
2,263.8	2,252.9	2,225.1	2,225.0	5.3	1.1	109.76	-2,375.4	361.8	2,440.8	2,434.5	6.31	386.825	
2,300.0	2,287.6	2,255.4	2,255.4	5.5	1.1	109.89	-2,375.7	361.3	2,444.7	2,438.3	6.46	378.214	
2,362.2	2,346.9	2,308.5	2,308.4	5.8	1.1	110.13	-2,376.2	360.4	2,452.0	2,445.2	6.76	362.637	
2,400.0	2,382.7	2,345.1	2,345.0	6.0	1.1	110.32	-2,376.6	359.7	2,456.7	2,449.7	6.94	353.810	
2,460.6	2,439.8	2,403.4	2,403.3	6.3	1.1	110.62	-2,377.2	358.4	2,464.7	2,457.5	7.27	338.948	
2,500.0	2,476.6	2,441.2	2,441.1	6.5	1.1	110.83	-2,377.6	357.6	2,470.3	2,462.8	7.48	330.081	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ FARM 30-33 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,559.0	2,531.6	2,497.7	2,497.5	6.9	1.2	111.15	-2,378.1	356.3	2,479.0	2,471.2	7.84	316.218	
2,600.0	2,569.4	2,531.1	2,530.9	7.1	1.2	111.32	-2,378.4	355.7	2,485.5	2,477.4	8.09	307.378	
2,657.5	2,622.0	2,577.1	2,576.9	7.5	1.2	111.56	-2,378.9	354.7	2,495.2	2,486.7	8.47	294.560	
2,700.0	2,660.7	2,613.9	2,613.7	7.8	1.2	111.77	-2,379.4	353.9	2,502.8	2,494.0	8.76	285.850	
2,755.9	2,711.1	2,670.3	2,670.1	8.2	1.2	112.12	-2,380.1	352.6	2,513.3	2,504.1	9.17	274.093	
2,800.0	2,750.6	2,710.8	2,710.6	8.6	1.2	112.36	-2,380.5	351.7	2,521.9	2,512.5	9.49	265.609	
2,832.3	2,779.2	2,734.7	2,734.5	8.8	1.2	112.49	-2,380.8	351.1	2,528.5	2,518.8	9.75	259.399	
2,854.3	2,798.8	2,751.0	2,750.8	9.0	1.3	112.66	-2,381.0	350.7	2,533.2	2,523.3	9.92	255.293	
2,900.0	2,839.3	2,784.7	2,784.5	9.4	1.3	113.01	-2,381.5	350.0	2,543.0	2,532.7	10.28	247.280	
2,952.7	2,886.0	2,827.5	2,827.2	9.9	1.3	113.45	-2,382.2	349.0	2,554.6	2,543.9	10.71	238.518	
3,000.0	2,927.8	2,868.1	2,867.8	10.3	1.3	113.86	-2,382.9	348.1	2,565.2	2,554.1	11.09	231.286	
3,051.2	2,973.2	2,913.0	2,912.7	10.7	1.3	114.32	-2,383.6	347.0	2,576.8	2,565.3	11.51	223.884	
3,100.0	3,016.4	2,958.4	2,958.1	11.2	1.3	114.78	-2,384.4	345.8	2,588.1	2,576.2	11.90	217.395	
3,149.6	3,060.4	3,005.5	3,005.1	11.6	1.3	115.26	-2,385.1	344.5	2,599.6	2,587.3	12.31	211.171	
3,200.0	3,105.0	3,063.3	3,062.9	12.1	1.4	115.83	-2,385.8	343.0	2,611.4	2,598.7	12.72	205.377	
3,248.0	3,147.5	3,117.0	3,116.6	12.5	1.4	116.37	-2,386.1	341.6	2,622.6	2,609.5	13.10	200.158	
3,300.0	3,193.6	3,171.8	3,171.4	13.0	1.4	116.91	-2,386.3	340.0	2,634.7	2,621.2	13.52	194.910	
3,346.4	3,234.7	3,220.1	3,219.7	13.4	1.4	117.38	-2,386.2	338.6	2,645.6	2,631.7	13.89	190.477	
3,400.0	3,282.2	3,275.2	3,274.7	13.9	1.4	117.91	-2,386.0	337.1	2,658.1	2,643.8	14.32	185.680	
3,444.9	3,321.9	3,320.3	3,319.8	14.3	1.4	118.35	-2,385.7	336.0	2,668.7	2,654.0	14.67	181.869	
3,500.0	3,370.8	3,374.1	3,373.6	14.8	1.5	118.86	-2,385.3	334.6	2,681.7	2,666.6	15.11	177.480	
3,543.3	3,409.1	3,419.9	3,419.4	15.2	1.5	119.29	-2,384.8	333.4	2,692.0	2,676.6	15.45	174.238	
3,600.0	3,459.3	3,486.7	3,486.1	15.8	1.5	119.92	-2,383.8	331.4	2,705.4	2,689.6	15.89	170.299	
3,641.7	3,496.3	3,529.0	3,528.4	16.1	1.5	120.32	-2,382.9	329.8	2,715.3	2,699.1	16.21	167.505	
3,700.0	3,547.9	3,584.7	3,584.0	16.7	1.5	120.85	-2,381.6	327.8	2,729.2	2,712.5	16.66	163.808	
3,740.1	3,583.5	3,617.3	3,616.6	17.1	1.5	121.15	-2,380.8	326.7	2,738.8	2,721.9	16.98	161.339	
3,800.0	3,636.5	3,660.1	3,659.4	17.6	1.5	121.55	-2,380.0	325.1	2,753.6	2,736.1	17.45	157.820	
3,838.6	3,670.7	3,687.7	3,687.0	18.0	1.5	121.80	-2,379.5	324.2	2,763.3	2,745.5	17.75	155.665	
3,900.0	3,725.1	3,736.8	3,736.0	18.6	1.5	122.25	-2,378.7	322.4	2,779.0	2,760.8	18.23	152.442	
3,937.0	3,757.9	3,767.5	3,766.7	18.9	1.6	122.53	-2,378.2	321.4	2,788.7	2,770.1	18.52	150.599	
4,000.0	3,813.7	3,819.1	3,818.3	19.5	1.6	122.99	-2,377.5	319.5	2,805.3	2,786.3	19.00	147.626	
4,035.4	3,845.1	3,847.5	3,846.7	19.9	1.6	123.25	-2,377.1	318.5	2,814.8	2,795.5	19.28	146.031	
4,100.0	3,902.3	3,900.0	3,899.1	20.5	1.6	123.71	-2,376.6	316.8	2,832.4	2,812.6	19.77	143.276	
4,133.8	3,932.2	3,929.3	3,928.4	20.8	1.6	123.97	-2,376.3	315.8	2,841.7	2,821.7	20.02	141.909	
4,200.0	3,990.8	3,987.8	3,986.9	21.5	1.6	124.48	-2,375.7	314.0	2,860.1	2,839.6	20.52	139.376	
4,232.3	4,019.4	4,018.2	4,017.3	21.8	1.6	124.74	-2,375.3	313.0	2,869.1	2,848.4	20.76	138.210	
4,300.0	4,079.4	4,085.3	4,084.3	22.4	1.6	125.30	-2,374.6	311.3	2,888.2	2,867.0	21.25	135.896	
4,330.7	4,106.6	4,115.5	4,114.6	22.7	1.7	125.55	-2,374.2	310.7	2,896.9	2,875.4	21.48	134.891	
4,400.0	4,168.0	4,183.3	4,182.4	23.4	1.7	126.09	-2,373.3	309.7	2,916.5	2,894.6	21.97	132.724	
4,429.1	4,193.8	4,212.8	4,211.8	23.7	1.7	126.33	-2,372.9	309.4	2,924.8	2,902.6	22.18	131.856	
4,500.0	4,256.6	4,287.7	4,286.7	24.4	1.7	126.92	-2,371.7	308.6	2,945.0	2,922.3	22.68	129.859	
4,527.5	4,281.0	4,312.8	4,311.8	24.6	1.7	127.11	-2,371.2	308.3	2,952.8	2,929.9	22.87	129.088	
4,600.0	4,345.2	4,371.1	4,370.1	25.3	1.7	127.56	-2,370.2	307.6	2,973.6	2,950.2	23.40	127.101	
4,626.0	4,368.2	4,392.0	4,391.0	25.6	1.7	127.73	-2,369.8	307.3	2,981.2	2,957.6	23.58	126.419	
4,700.0	4,433.8	4,445.6	4,444.6	26.3	1.7	128.14	-2,369.0	306.5	3,003.0	2,978.9	24.12	124.509	
4,724.4	4,455.4	4,462.9	4,461.9	26.5	1.7	128.27	-2,368.8	306.3	3,010.3	2,986.0	24.30	123.904	
4,800.0	4,522.3	4,515.8	4,514.7	27.3	1.7	128.67	-2,368.3	305.5	3,033.4	3,008.5	24.84	122.101	
4,822.8	4,542.6	4,531.1	4,530.1	27.5	1.7	128.78	-2,368.2	305.3	3,040.4	3,015.4	25.01	121.572	
4,900.0	4,610.9	4,583.1	4,582.1	28.2	1.7	129.16	-2,368.1	304.7	3,064.7	3,039.1	25.57	119.863	
4,921.2	4,629.8	4,600.0	4,598.9	28.4	1.8	129.28	-2,368.1	304.5	3,071.5	3,045.8	25.72	119.425	
5,000.0	4,699.5	4,661.9	4,660.9	29.2	1.8	129.73	-2,368.4	304.0	3,096.9	3,070.6	26.28	117.847	
5,019.7	4,716.9	4,678.2	4,677.1	29.4	1.8	129.84	-2,368.5	303.9	3,103.3	3,076.9	26.42	117.472	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ FARM 30-33 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	4,788.1	4,749.5	4,748.4	30.2	1.8	130.34	-2,369.0	303.4	3,129.6	3,102.6	26.97	116.034	
5,118.1	4,804.1	4,766.1	4,765.0	30.4	1.8	130.46	-2,369.0	303.3	3,135.6	3,108.5	27.09	115.725	
5,200.0	4,876.7	4,841.2	4,840.1	31.1	1.8	130.97	-2,369.4	302.7	3,162.6	3,135.0	27.65	114.383	
5,216.5	4,891.3	4,856.3	4,855.3	31.3	1.8	131.08	-2,369.5	302.6	3,168.1	3,140.3	27.76	114.122	
5,300.0	4,965.3	4,931.6	4,930.5	32.1	1.9	131.58	-2,369.8	302.1	3,195.9	3,167.6	28.32	112.848	
5,314.9	4,978.5	4,944.7	4,943.7	32.3	1.9	131.67	-2,369.8	302.0	3,200.9	3,172.5	28.42	112.627	
5,400.0	5,053.8	5,020.9	5,019.8	33.1	1.9	132.18	-2,370.1	301.4	3,229.5	3,200.5	28.98	111.423	
5,413.4	5,065.7	5,033.5	5,032.5	33.2	1.9	132.26	-2,370.1	301.3	3,234.0	3,204.9	29.07	111.244	
5,508.2	5,149.7	5,121.3	5,120.2	34.2	1.9	132.83	-2,370.3	300.6	3,266.1	3,236.4	29.69	110.015	
5,511.8	5,152.9	5,124.4	5,123.4	34.2	1.9	132.87	-2,370.3	300.6	3,267.3	3,237.6	29.70	110.006	
5,600.0	5,231.7	5,201.9	5,200.8	34.9	2.0	133.80	-2,370.5	300.0	3,296.5	3,266.4	30.03	109.773	
5,610.2	5,240.9	5,211.6	5,210.5	35.0	2.0	133.91	-2,370.5	299.9	3,299.7	3,269.7	30.06	109.788	
5,700.0	5,322.5	5,297.5	5,296.4	35.7	2.0	134.80	-2,370.6	299.3	3,327.6	3,297.3	30.28	109.878	
5,708.6	5,330.4	5,305.9	5,304.8	35.7	2.0	134.88	-2,370.6	299.2	3,330.1	3,299.8	30.30	109.895	
5,800.0	5,414.6	5,394.9	5,393.9	36.3	2.0	135.71	-2,370.5	298.5	3,356.4	3,325.9	30.50	110.046	
5,807.1	5,421.2	5,400.0	5,398.9	36.4	2.0	135.77	-2,370.5	298.5	3,358.4	3,327.8	30.51	110.058	
5,900.0	5,508.1	5,473.9	5,472.8	36.9	2.0	136.45	-2,370.5	297.8	3,383.1	3,352.4	30.70	110.186	
5,905.5	5,513.3	5,478.2	5,477.1	37.0	2.0	136.49	-2,370.5	297.8	3,384.6	3,353.8	30.71	110.199	
6,000.0	5,602.8	5,559.7	5,558.6	37.5	2.1	137.15	-2,370.9	296.9	3,408.0	3,377.1	30.87	110.390	
6,003.9	5,606.5	5,563.2	5,562.1	37.5	2.1	137.17	-2,370.9	296.9	3,408.9	3,378.0	30.88	110.402	
6,100.0	5,698.5	5,640.1	5,639.0	38.0	2.1	137.75	-2,371.2	295.7	3,430.7	3,399.7	31.01	110.616	
6,102.3	5,700.7	5,641.8	5,640.7	38.0	2.1	137.76	-2,371.2	295.7	3,431.2	3,400.2	31.02	110.623	
6,200.0	5,795.2	5,720.3	5,719.1	38.4	2.1	138.29	-2,371.9	294.1	3,451.5	3,420.4	31.13	110.885	
6,200.8	5,795.9	5,721.1	5,720.0	38.4	2.1	138.29	-2,371.9	294.1	3,451.7	3,420.6	31.13	110.888	
6,299.2	5,891.9	5,825.6	5,824.5	38.8	2.2	138.82	-2,372.8	292.0	3,469.7	3,438.5	31.20	111.211	
6,300.0	5,892.7	5,826.3	5,825.2	38.8	2.2	138.82	-2,372.8	292.0	3,469.9	3,438.7	31.20	111.213	
6,397.6	5,988.5	5,914.0	5,912.8	39.1	2.2	139.23	-2,373.6	290.4	3,485.4	3,454.1	31.26	111.495	
6,400.0	5,990.9	5,916.2	5,915.0	39.1	2.2	139.24	-2,373.7	290.3	3,485.7	3,454.5	31.26	111.500	
6,496.0	6,085.8	6,000.0	5,998.8	39.4	2.2	139.57	-2,374.6	288.6	3,498.7	3,467.4	31.31	111.762	
6,500.0	6,089.7	6,006.6	6,005.4	39.4	2.2	139.59	-2,374.7	288.5	3,499.2	3,467.9	31.31	111.773	
6,594.5	6,183.5	6,088.2	6,087.0	39.6	2.2	139.84	-2,376.0	287.1	3,509.9	3,478.5	31.34	112.001	
6,600.0	6,189.0	6,093.0	6,091.8	39.7	2.2	139.85	-2,376.1	287.0	3,510.4	3,479.1	31.34	112.010	
6,692.9	6,281.5	6,189.4	6,188.2	39.8	2.3	140.05	-2,377.9	285.7	3,518.6	3,487.2	31.36	112.189	
6,700.0	6,288.6	6,196.9	6,195.6	39.8	2.3	140.07	-2,378.0	285.6	3,519.1	3,487.8	31.37	112.196	
6,791.3	6,379.8	6,284.3	6,283.0	40.0	2.3	140.20	-2,379.4	284.0	3,524.7	3,493.3	31.38	112.331	
6,800.0	6,388.5	6,292.6	6,291.3	40.0	2.3	140.21	-2,379.6	283.8	3,525.1	3,493.7	31.38	112.337	
6,889.7	6,478.2	6,391.6	6,390.3	40.1	2.3	140.29	-2,380.9	281.4	3,528.2	3,496.8	31.39	112.408	
6,890.4	6,478.9	6,392.3	6,391.0	40.1	2.3	-156.40	-2,380.9	281.4	3,528.2	3,496.8	31.39	112.408	
6,900.0	6,488.5	6,400.0	6,398.7	40.1	2.3	-156.40	-2,381.0	281.2	3,528.4	3,497.0	31.40	112.378	
6,920.4	6,508.9	6,419.8	6,418.4	40.1	2.3	-156.39	-2,381.2	280.8	3,528.8	3,497.4	31.42	112.306	
6,950.0	6,538.5	6,445.0	6,443.7	40.1	2.3	23.62	-2,381.6	280.1	3,528.9	3,497.6	31.32	112.656	
6,988.2	6,576.6	6,477.6	6,476.2	40.1	2.4	23.69	-2,382.0	279.3	3,527.4	3,496.3	31.15	113.248	
7,000.0	6,588.3	6,487.6	6,486.3	40.1	2.4	23.73	-2,382.2	279.0	3,526.6	3,495.5	31.08	113.467	
7,050.0	6,637.8	6,535.8	6,534.4	40.1	2.4	23.96	-2,382.9	277.7	3,521.1	3,490.4	30.73	114.576	
7,086.6	6,673.6	6,572.4	6,571.0	40.1	2.4	24.22	-2,383.4	276.7	3,515.2	3,484.8	30.40	115.613	
7,100.0	6,686.6	6,585.7	6,584.3	40.1	2.4	24.34	-2,383.6	276.3	3,512.6	3,482.3	30.27	116.054	
7,150.0	6,734.6	6,635.2	6,633.8	40.0	2.4	24.85	-2,384.3	274.9	3,500.8	3,471.2	29.67	117.987	
7,185.0	6,767.5	6,669.3	6,667.9	39.9	2.4	25.30	-2,384.8	273.9	3,490.8	3,461.6	29.17	119.656	
7,200.0	6,781.4	6,683.7	6,682.3	39.9	2.4	25.52	-2,385.0	273.4	3,486.1	3,457.1	28.94	120.468	
7,250.0	6,827.0	6,727.5	6,726.0	39.8	2.4	26.34	-2,385.5	272.1	3,468.4	3,440.3	28.06	123.591	
7,283.4	6,856.6	6,754.8	6,753.3	39.8	2.5	26.98	-2,385.9	271.3	3,454.9	3,427.5	27.40	126.084	
7,300.0	6,871.0	6,768.0	6,766.5	39.7	2.5	27.33	-2,386.1	270.9	3,447.8	3,420.8	27.05	127.465	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ FARM 30-33 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,350.0	6,913.2	6,810.5	6,809.0	39.6	2.5	28.53	-2,386.6	269.5	3,424.6	3,398.7	25.90	132.228	
7,381.9	6,939.1	6,846.3	6,844.7	39.5	2.5	29.48	-2,387.1	268.4	3,408.3	3,383.2	25.10	135.817	
7,400.0	6,953.4	6,866.1	6,864.5	39.4	2.5	30.06	-2,387.3	267.8	3,398.6	3,374.0	24.61	138.070	
7,450.0	6,991.5	6,922.8	6,921.2	39.3	2.5	31.92	-2,387.8	266.3	3,370.0	3,346.7	23.24	145.038	
7,480.3	7,013.5	6,959.8	6,958.2	39.2	2.5	33.24	-2,388.1	265.6	3,351.4	3,329.0	22.37	149.800	
7,500.0	7,027.3	6,982.9	6,981.3	39.1	2.5	34.17	-2,388.1	265.2	3,338.8	3,317.0	21.80	153.121	
7,550.0	7,060.5	7,021.2	7,019.6	39.0	2.5	36.66	-2,388.2	264.7	3,305.3	3,284.9	20.43	161.770	
7,578.7	7,078.4	7,037.6	7,036.0	38.8	2.5	38.22	-2,388.2	264.5	3,285.2	3,265.5	19.71	166.678	
7,600.0	7,091.0	7,049.3	7,047.7	38.8	2.6	39.48	-2,388.3	264.3	3,269.9	3,250.7	19.21	170.184	
7,650.0	7,118.7	7,074.7	7,073.2	38.6	2.6	42.77	-2,388.3	263.9	3,232.8	3,214.5	18.29	176.749	
7,677.1	7,132.5	7,087.5	7,085.9	38.5	2.6	44.78	-2,388.3	263.7	3,211.9	3,194.0	17.97	178.693	
7,700.0	7,143.4	7,100.0	7,098.4	38.4	2.6	46.65	-2,388.4	263.4	3,194.1	3,176.3	17.82	179.220	
7,750.0	7,165.0	7,126.0	7,124.4	38.2	2.6	51.22	-2,388.4	263.0	3,154.1	3,136.1	17.92	176.030	
7,775.6	7,174.9	7,139.5	7,137.9	38.1	2.6	53.86	-2,388.4	262.8	3,133.1	3,114.9	18.19	172.279	
7,800.0	7,183.5	7,151.2	7,149.6	38.1	2.6	56.54	-2,388.4	262.6	3,112.8	3,094.3	18.54	167.910	
7,850.0	7,198.6	7,171.6	7,170.0	37.9	2.6	62.53	-2,388.3	262.3	3,070.7	3,051.2	19.49	157.565	
7,874.0	7,204.7	7,179.7	7,178.1	37.8	2.6	65.62	-2,388.3	262.1	3,050.2	3,030.2	20.00	152.529	
7,900.0	7,210.4	7,187.3	7,185.7	37.7	2.6	69.11	-2,388.3	262.0	3,027.8	3,007.3	20.54	147.443	
7,950.0	7,218.8	7,198.3	7,196.7	37.6	2.6	76.12	-2,388.2	261.9	2,984.5	2,963.0	21.51	138.721	
7,972.4	7,221.4	7,200.0	7,198.4	37.5	2.6	79.28	-2,388.2	261.9	2,965.0	2,943.1	21.91	135.298	
8,000.0	7,223.7	7,200.0	7,198.4	37.4	2.6	83.15	-2,388.2	261.9	2,941.0	2,918.6	22.37	131.462	
8,050.0	7,225.1	7,200.0	7,198.4	37.3	2.6	90.22	-2,388.2	261.9	2,897.4	2,874.2	23.23	124.726	
8,055.3	7,225.0	7,200.0	7,198.4	37.3	2.6	90.96	-2,388.2	261.9	2,892.9	2,869.5	23.33	124.020	
8,070.8	7,224.8	7,200.0	7,198.4	37.3	2.6	90.96	-2,388.2	261.9	2,879.3	2,856.0	23.33	123.411	
8,100.0	7,224.4	7,200.0	7,198.4	37.2	2.6	90.96	-2,388.2	261.9	2,854.1	2,830.7	23.34	122.275	
8,169.3	7,223.5	7,200.0	7,198.4	37.1	2.6	90.96	-2,388.2	261.9	2,794.4	2,770.9	23.45	119.140	
8,200.0	7,223.0	7,200.0	7,198.4	37.1	2.6	90.96	-2,388.2	261.9	2,768.0	2,744.5	23.50	117.766	
8,267.7	7,222.1	7,200.0	7,198.4	37.0	2.6	90.96	-2,388.2	261.9	2,710.3	2,686.6	23.73	114.207	
8,300.0	7,221.7	7,199.7	7,198.1	37.0	2.6	90.95	-2,388.2	261.9	2,683.0	2,659.1	23.84	112.548	
8,366.1	7,220.7	7,198.1	7,196.5	37.0	2.6	90.89	-2,388.2	261.9	2,627.3	2,603.1	24.16	108.751	
8,400.0	7,220.3	7,197.3	7,195.7	37.0	2.6	90.85	-2,388.2	261.9	2,598.9	2,574.6	24.32	106.852	
8,464.5	7,219.4	7,195.7	7,194.1	37.1	2.6	90.79	-2,388.2	261.9	2,545.3	2,520.6	24.73	102.907	
8,500.0	7,218.9	7,194.9	7,193.3	37.1	2.6	90.76	-2,388.2	261.9	2,516.1	2,491.1	24.96	100.804	
8,563.0	7,218.0	7,193.4	7,191.8	37.2	2.6	90.70	-2,388.2	261.9	2,464.6	2,439.1	25.45	96.838	
8,600.0	7,217.5	7,192.5	7,190.9	37.3	2.6	90.66	-2,388.2	262.0	2,434.5	2,408.8	25.74	94.587	
8,661.4	7,216.7	7,191.1	7,189.5	37.5	2.6	90.60	-2,388.2	262.0	2,385.1	2,358.9	26.29	90.710	
8,700.0	7,216.1	7,190.2	7,188.6	37.6	2.6	90.57	-2,388.2	262.0	2,354.4	2,327.7	26.64	88.366	
8,759.8	7,215.3	7,188.8	7,187.2	37.8	2.6	90.51	-2,388.2	262.0	2,307.2	2,279.9	27.25	84.658	
8,800.0	7,214.8	7,187.9	7,186.3	38.0	2.6	90.48	-2,388.2	262.0	2,275.8	2,248.2	27.66	82.271	
8,858.2	7,214.0	7,186.6	7,185.0	38.3	2.6	90.43	-2,388.3	262.0	2,230.8	2,202.5	28.31	78.789	
8,900.0	7,213.4	7,185.7	7,184.1	38.5	2.6	90.39	-2,388.3	262.0	2,199.0	2,170.2	28.78	76.404	
8,956.7	7,212.6	7,184.4	7,182.8	38.8	2.6	90.34	-2,388.3	262.1	2,156.3	2,126.8	29.46	73.182	
9,000.0	7,212.0	7,183.5	7,181.9	39.1	2.6	90.30	-2,388.3	262.1	2,124.1	2,094.1	29.99	70.832	
9,055.1	7,211.2	7,182.3	7,180.7	39.5	2.6	90.25	-2,388.3	262.1	2,083.7	2,053.0	30.69	67.885	
9,100.0	7,210.6	7,181.3	7,179.7	39.8	2.6	90.21	-2,388.3	262.1	2,051.3	2,020.0	31.27	65.597	
9,153.5	7,209.9	7,180.2	7,178.6	40.3	2.6	90.17	-2,388.3	262.1	2,013.3	1,981.3	31.99	62.928	
9,200.0	7,209.2	7,179.2	7,177.6	40.7	2.6	90.13	-2,388.3	262.1	1,980.9	1,948.3	32.62	60.724	
9,251.9	7,208.5	7,178.1	7,176.5	41.1	2.6	90.09	-2,388.3	262.2	1,945.4	1,912.0	33.35	58.326	
9,300.0	7,207.9	7,177.1	7,175.5	41.6	2.6	90.05	-2,388.3	262.2	1,913.2	1,879.1	34.03	56.219	
9,350.4	7,207.2	7,176.1	7,174.4	42.1	2.6	90.00	-2,388.3	262.2	1,880.1	1,845.4	34.77	54.079	
9,400.0	7,206.5	7,175.0	7,173.4	42.6	2.6	89.96	-2,388.3	262.2	1,848.3	1,812.8	35.49	52.079	
9,448.8	7,205.8	7,174.0	7,172.4	43.1	2.6	89.92	-2,388.3	262.2	1,817.9	1,781.6	36.22	50.182	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ FARM 30-33 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

Survey Program: 100-GYD_CT — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,500.0	7,205.1	7,173.0	7,171.4	43.7	2.6	89.88	-2,388.3	262.2	1,786.8	1,749.8	37.00	48.297	
9,547.2	7,204.4	7,172.1	7,170.5	44.2	2.6	89.84	-2,388.3	262.2	1,758.9	1,721.2	37.72	46.625	
9,600.0	7,203.7	7,171.0	7,169.4	44.8	2.6	89.80	-2,388.3	262.3	1,728.8	1,690.2	38.54	44.858	
9,645.6	7,203.1	7,170.1	7,168.5	45.4	2.6	89.77	-2,388.3	262.3	1,703.6	1,664.3	39.26	43.394	
9,700.0	7,202.3	7,169.1	7,167.5	46.1	2.6	89.72	-2,388.3	262.3	1,674.7	1,634.6	40.12	41.747	
9,744.1	7,201.7	7,168.2	7,166.6	46.6	2.6	89.69	-2,388.3	262.3	1,652.3	1,611.5	40.82	40.473	
9,800.0	7,201.0	7,167.2	7,165.5	47.3	2.6	89.65	-2,388.3	262.3	1,625.1	1,583.4	41.72	38.948	
9,842.5	7,200.4	7,166.3	7,164.7	47.9	2.6	89.62	-2,388.3	262.3	1,605.4	1,563.0	42.42	37.847	
9,900.0	7,199.6	7,165.3	7,163.7	48.7	2.6	89.57	-2,388.3	262.3	1,580.2	1,536.8	43.36	36.445	
9,940.9	7,199.0	7,164.5	7,162.9	49.2	2.6	89.54	-2,388.3	262.4	1,563.3	1,519.3	44.04	35.500	
10,000.0	7,198.2	7,163.4	7,161.8	50.1	2.6	89.50	-2,388.3	262.4	1,540.5	1,495.5	45.02	34.221	
10,039.3	7,197.7	7,162.7	7,161.1	50.6	2.6	89.47	-2,388.3	262.4	1,526.4	1,480.7	45.68	33.418	
10,100.0	7,196.8	7,161.6	7,160.0	51.5	2.6	89.42	-2,388.3	262.4	1,506.4	1,459.7	46.69	32.261	
10,137.8	7,196.3	7,160.9	7,159.3	52.0	2.6	89.40	-2,388.3	262.4	1,495.0	1,447.7	47.33	31.585	
10,200.0	7,195.4	7,159.8	7,158.2	52.9	2.6	89.35	-2,388.3	262.4	1,478.3	1,429.9	48.39	30.549	
10,236.2	7,194.9	7,159.1	7,157.5	53.5	2.6	89.33	-2,388.3	262.4	1,469.6	1,420.6	49.01	29.986	
10,300.0	7,194.1	7,158.0	7,156.4	54.4	2.6	89.28	-2,388.3	262.5	1,456.5	1,406.4	50.10	29.070	
10,334.6	7,193.6	7,157.4	7,155.8	55.0	2.6	89.26	-2,388.4	262.5	1,450.5	1,399.8	50.70	28.608	
10,400.0	7,192.7	7,156.2	7,154.6	56.0	2.6	89.21	-2,388.4	262.5	1,441.3	1,389.5	51.83	27.808	
10,433.0	7,192.2	7,155.7	7,154.1	56.5	2.6	89.19	-2,388.4	262.5	1,437.8	1,385.4	52.41	27.436	
10,500.0	7,191.3	7,154.5	7,152.9	57.5	2.6	89.14	-2,388.4	262.5	1,433.0	1,379.4	53.57	26.749	
10,531.5	7,190.9	7,154.0	7,152.4	58.0	2.6	89.12	-2,388.4	262.5	1,431.8	1,377.7	54.12	26.454	
10,569.6	7,190.3	7,153.3	7,151.7	58.6	2.6	89.09	-2,388.4	262.5	1,431.3	1,376.5	54.79	26.122	CC
10,600.0	7,189.9	7,152.8	7,151.2	59.1	2.6	89.07	-2,388.4	262.5	1,431.7	1,376.3	55.33	25.876	ES
10,629.9	7,189.5	7,152.3	7,150.7	59.6	2.6	89.05	-2,388.4	262.6	1,432.6	1,376.7	55.85	25.649	
10,700.0	7,188.5	7,151.2	7,149.5	60.7	2.6	89.01	-2,388.4	262.6	1,437.3	1,380.2	57.09	25.175	
10,728.3	7,188.1	7,150.7	7,149.1	61.1	2.6	88.99	-2,388.4	262.6	1,440.1	1,382.5	57.59	25.005	
10,800.0	7,187.2	7,149.5	7,147.9	62.3	2.6	88.94	-2,388.4	262.6	1,449.7	1,390.9	58.86	24.628	
10,826.7	7,186.8	7,149.1	7,147.5	62.7	2.6	88.92	-2,388.4	262.6	1,454.2	1,394.9	59.34	24.506	
10,900.0	7,185.8	7,147.9	7,146.3	63.9	2.6	88.88	-2,388.4	262.6	1,468.9	1,408.3	60.65	24.221	
10,925.2	7,185.4	7,147.5	7,145.9	64.3	2.6	88.86	-2,388.4	262.6	1,474.8	1,413.7	61.10	24.138	
11,000.0	7,184.4	7,146.3	7,144.7	65.6	2.6	88.81	-2,388.4	262.6	1,494.6	1,432.2	62.44	23.937	
11,023.6	7,184.1	7,145.9	7,144.3	66.0	2.6	88.80	-2,388.4	262.7	1,501.6	1,438.7	62.86	23.887	
11,100.0	7,183.0	7,144.7	7,143.1	67.2	2.6	88.75	-2,388.4	262.7	1,526.4	1,462.2	64.24	23.762	
11,122.0	7,182.7	7,144.4	7,142.8	67.6	2.6	88.74	-2,388.4	262.7	1,534.2	1,469.6	64.63	23.737	
11,200.0	7,181.6	7,143.2	7,141.6	68.9	2.6	88.69	-2,388.4	262.7	1,564.0	1,497.9	66.04	23.681	
11,220.4	7,181.3	7,142.9	7,141.2	69.3	2.6	88.68	-2,388.4	262.7	1,572.3	1,505.9	66.41	23.675	SF
11,300.0	7,180.2	7,141.6	7,140.0	70.6	2.6	88.63	-2,388.4	262.7	1,606.9	1,539.0	67.85	23.682	
11,318.9	7,180.0	7,141.4	7,139.7	70.9	2.6	88.62	-2,388.4	262.7	1,615.5	1,547.3	68.20	23.689	
11,400.0	7,178.9	7,140.1	7,138.5	72.3	2.6	88.57	-2,388.4	262.7	1,654.7	1,585.0	69.67	23.751	
11,417.3	7,178.6	7,139.9	7,138.3	72.6	2.6	88.56	-2,388.4	262.8	1,663.4	1,593.5	69.98	23.769	
11,500.0	7,177.5	7,138.6	7,137.0	74.0	2.6	88.51	-2,388.4	262.8	1,707.1	1,635.6	71.49	23.878	
11,515.7	7,177.3	7,138.4	7,136.8	74.3	2.6	88.50	-2,388.4	262.8	1,715.7	1,643.9	71.78	23.902	
11,600.0	7,176.1	7,137.2	7,135.6	75.7	2.6	88.45	-2,388.4	262.8	1,763.5	1,690.2	73.32	24.053	
11,614.1	7,175.9	7,137.0	7,135.4	76.0	2.6	88.44	-2,388.4	262.8	1,771.8	1,698.3	73.58	24.081	
11,700.0	7,174.7	7,135.7	7,134.1	77.5	2.6	88.39	-2,388.4	262.8	1,823.8	1,748.6	75.15	24.268	
11,712.6	7,174.5	7,135.6	7,134.0	77.7	2.6	88.38	-2,388.4	262.8	1,831.6	1,756.2	75.38	24.298	
11,800.0	7,173.3	7,134.3	7,132.7	79.2	2.6	88.33	-2,388.4	262.8	1,887.4	1,810.4	76.99	24.516	
11,811.0	7,173.2	7,134.2	7,132.6	79.4	2.6	88.33	-2,388.4	262.8	1,894.5	1,817.4	77.19	24.545	
11,900.0	7,172.0	7,132.9	7,131.3	81.0	2.6	88.28	-2,388.4	262.9	1,954.0	1,875.2	78.82	24.789	
11,909.4	7,171.8	7,132.8	7,131.2	81.1	2.6	88.27	-2,388.4	262.9	1,960.4	1,881.4	79.00	24.816	
12,000.0	7,170.6	7,131.5	7,129.9	82.7	2.6	88.22	-2,388.4	262.9	2,023.4	1,942.7	80.67	25.083	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - EXIST VERT SHULTZ FARM 30-33 - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 usft

Survey Program: 100-GYD_CT

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,007.8	7,170.5	7,131.4	7,129.8	82.9	2.6	88.22	-2,388.4	262.9	2,029.0	1,948.1	80.81	25.107	
12,041.2	7,170.0	7,131.0	7,129.4	83.5	2.6	88.20	-2,388.4	262.9	2,052.7	1,971.3	81.43	25.209	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30M-223 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-88.42	2.9	-105.2	105.2				
98.4	98.4	99.4	99.4	0.1	0.1	-88.42	2.9	-105.2	105.2	105.0	0.17	616.004	
100.0	100.0	101.0	101.0	0.1	0.1	-88.42	2.9	-105.2	105.2	105.0	0.18	600.139	
196.8	196.8	197.8	197.8	0.3	0.3	-88.42	2.9	-105.2	105.2	104.6	0.61	172.289	
200.0	200.0	201.0	201.0	0.3	0.3	-88.42	2.9	-105.2	105.2	104.6	0.62	168.384	
295.3	295.3	296.3	296.3	0.5	0.5	-88.42	2.9	-105.2	105.2	104.2	1.05	99.906	
300.0	300.0	301.0	301.0	0.5	0.5	-88.42	2.9	-105.2	105.2	104.1	1.07	97.931	
393.7	393.7	394.7	394.7	0.7	0.7	-88.42	2.9	-105.2	105.2	103.7	1.50	70.350	
400.0	400.0	401.0	401.0	0.8	0.8	-88.42	2.9	-105.2	105.2	103.7	1.52	69.043	
492.1	492.1	493.1	493.1	1.0	1.0	-88.42	2.9	-105.2	105.2	103.3	1.94	54.289	
500.0	500.0	501.0	501.0	1.0	1.0	-88.42	2.9	-105.2	105.2	103.2	1.97	53.315	
590.5	590.5	591.5	591.5	1.2	1.2	-88.42	2.9	-105.2	105.2	102.8	2.38	44.199	
600.0	600.0	601.0	601.0	1.2	1.2	-88.42	2.9	-105.2	105.2	102.8	2.42	43.424	
689.0	689.0	690.0	690.0	1.4	1.4	-88.42	2.9	-105.2	105.2	102.4	2.82	37.271	
700.0	700.0	701.0	701.0	1.4	1.4	-88.42	2.9	-105.2	105.2	102.3	2.87	36.628	
787.4	787.4	788.4	788.4	1.6	1.6	-88.42	2.9	-105.2	105.2	101.9	3.27	32.221	
800.0	800.0	801.0	801.0	1.7	1.7	-88.42	2.9	-105.2	105.2	101.9	3.32	31.672	
885.8	885.8	886.8	886.8	1.9	1.9	-88.42	2.9	-105.2	105.2	101.5	3.71	28.376	
900.0	900.0	901.0	901.0	1.9	1.9	-88.42	2.9	-105.2	105.2	101.4	3.77	27.897	
984.2	984.2	985.2	985.2	2.1	2.1	-88.42	2.9	-105.2	105.2	101.1	4.15	25.351	
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	-88.42	2.9	-105.2	105.2	101.0	4.22	24.926	
1,082.7	1,082.7	1,083.7	1,083.7	2.3	2.3	-88.42	2.9	-105.2	105.2	100.6	4.59	22.909	
1,100.0	1,100.0	1,101.0	1,101.0	2.3	2.3	-88.42	2.9	-105.2	105.2	100.5	4.67	22.527	
1,181.1	1,181.1	1,182.1	1,182.1	2.5	2.5	-88.42	2.9	-105.2	105.2	100.2	5.04	20.896	
1,200.0	1,200.0	1,201.0	1,201.0	2.6	2.6	-88.42	2.9	-105.2	105.2	100.1	5.12	20.549	
1,279.5	1,279.5	1,280.5	1,280.5	2.7	2.7	-88.42	2.9	-105.2	105.2	99.7	5.48	19.208	
1,300.0	1,300.0	1,301.0	1,301.0	2.8	2.8	-88.42	2.9	-105.2	105.2	99.6	5.57	18.891	
1,377.9	1,377.9	1,378.9	1,378.9	3.0	3.0	-88.42	2.9	-105.2	105.2	99.3	5.92	17.772	
1,400.0	1,400.0	1,401.0	1,401.0	3.0	3.0	-88.42	2.9	-105.2	105.2	99.2	6.02	17.480	
1,450.0	1,450.0	1,451.0	1,451.0	3.1	3.1	-88.42	2.9	-105.2	105.2	99.0	6.24	16.851	CC
1,476.4	1,476.4	1,477.4	1,477.4	3.2	3.2	-151.76	2.9	-105.2	105.3	99.0	6.36	16.559	ES
1,500.0	1,500.0	1,501.0	1,501.0	3.2	3.2	-151.83	2.9	-105.2	105.6	99.1	6.46	16.336	
1,574.8	1,574.8	1,575.8	1,575.8	3.4	3.4	-152.39	2.9	-105.2	107.6	100.8	6.79	15.857	
1,600.0	1,599.9	1,600.9	1,600.9	3.4	3.5	-152.67	2.9	-105.2	108.7	101.8	6.89	15.765	
1,673.2	1,673.0	1,674.0	1,674.0	3.6	3.6	-153.75	2.9	-105.2	112.9	105.7	7.21	15.672	
1,700.0	1,699.7	1,700.7	1,700.7	3.7	3.7	-154.22	2.9	-105.2	114.9	107.6	7.32	15.702	
1,771.6	1,771.0	1,772.0	1,772.0	3.8	3.8	-155.63	2.9	-105.2	121.4	113.8	7.62	15.928	
1,800.0	1,799.1	1,800.1	1,800.1	3.9	3.9	-156.23	2.9	-105.2	124.4	116.7	7.74	16.077	
1,870.1	1,868.6	1,869.6	1,869.6	4.1	4.1	-157.79	2.9	-105.2	133.1	125.1	8.03	16.571	
1,900.0	1,898.2	1,899.2	1,899.2	4.1	4.1	-158.47	2.9	-105.2	137.3	129.1	8.15	16.839	
1,968.5	1,965.7	1,966.7	1,966.7	4.3	4.3	-160.03	2.9	-105.2	148.1	139.7	8.43	17.559	
2,000.0	1,996.6	1,997.6	1,997.6	4.4	4.4	-160.74	2.9	-105.2	153.6	145.0	8.56	17.944	
2,066.9	2,062.2	2,063.2	2,063.2	4.6	4.5	-162.19	2.9	-105.2	166.5	157.6	8.83	18.852	
2,100.0	2,094.4	2,095.4	2,095.4	4.7	4.6	-162.88	2.9	-105.2	173.4	164.4	8.96	19.353	
2,165.3	2,157.9	2,159.1	2,159.1	5.0	4.7	-164.18	2.9	-105.2	188.2	179.0	9.22	20.418	
2,200.0	2,191.5	2,193.1	2,193.1	5.1	4.8	-164.75	3.2	-105.2	196.6	187.3	9.35	21.024	
2,263.8	2,252.9	2,255.7	2,255.6	5.3	4.9	-165.46	4.9	-105.2	212.9	203.3	9.60	22.172	
2,300.0	2,287.6	2,291.1	2,291.1	5.5	5.0	-165.69	6.4	-105.2	222.7	212.9	9.74	22.855	
2,362.2	2,346.9	2,352.0	2,351.8	5.8	5.1	-165.86	10.0	-105.1	240.1	230.2	9.98	24.052	
2,400.0	2,382.7	2,388.8	2,388.6	6.0	5.2	-165.83	12.9	-105.1	251.2	241.1	10.13	24.793	
2,460.6	2,439.8	2,447.8	2,447.3	6.3	5.4	-165.62	18.4	-105.1	269.8	259.4	10.38	25.997	
2,500.0	2,476.6	2,486.0	2,485.2	6.5	5.5	-165.39	22.6	-105.1	282.3	271.8	10.53	26.797	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30M-223 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,559.0	2,531.6	2,543.0	2,541.8	6.9	5.6	-164.94	29.8	-105.1	301.8	291.0	10.78	27.988	
2,600.0	2,569.4	2,582.4	2,580.7	7.1	5.7	-164.55	35.5	-105.0	315.8	304.9	10.96	28.829	
2,657.5	2,622.0	2,637.4	2,635.0	7.5	5.8	-163.94	44.3	-105.0	336.2	325.0	11.21	29.983	
2,700.0	2,660.7	2,677.9	2,674.9	7.8	5.9	-163.43	51.4	-105.0	351.9	340.5	11.41	30.844	
2,755.9	2,711.1	2,730.8	2,726.8	8.2	6.1	-162.72	61.6	-104.9	373.2	361.5	11.68	31.936	
2,800.0	2,750.6	2,772.3	2,767.4	8.6	6.2	-162.13	70.2	-104.9	390.5	378.6	11.91	32.794	
2,832.3	2,779.2	2,802.5	2,796.9	8.8	6.3	-161.68	76.9	-104.9	403.5	391.4	12.08	33.409	
2,854.3	2,798.8	2,823.1	2,816.9	9.0	6.3	-161.43	81.6	-104.8	412.5	400.3	12.23	33.732	
2,900.0	2,839.3	2,865.8	2,858.4	9.4	6.5	-160.87	91.9	-104.8	431.0	418.5	12.55	34.359	
2,952.7	2,886.0	2,914.4	2,905.4	9.9	6.6	-160.20	104.2	-104.7	452.4	439.5	12.93	34.998	
3,000.0	2,927.8	2,957.4	2,947.0	10.3	6.8	-159.65	115.1	-104.7	471.5	458.3	13.28	35.514	
3,051.2	2,973.2	3,004.0	2,992.0	10.7	6.9	-159.10	127.0	-104.6	492.3	478.6	13.67	36.021	
3,100.0	3,016.4	3,048.4	3,035.0	11.2	7.1	-158.62	138.3	-104.6	512.2	498.1	14.05	36.455	
3,149.6	3,060.4	3,093.5	3,078.6	11.6	7.2	-158.16	149.9	-104.5	532.3	517.9	14.44	36.856	
3,200.0	3,105.0	3,139.4	3,123.0	12.1	7.4	-157.73	161.6	-104.5	552.9	538.0	14.85	37.222	
3,248.0	3,147.5	3,183.1	3,165.2	12.5	7.6	-157.35	172.7	-104.5	572.5	557.2	15.25	37.537	
3,300.0	3,193.6	3,230.4	3,211.0	13.0	7.8	-156.97	184.8	-104.4	593.7	578.0	15.69	37.847	
3,346.4	3,234.7	3,272.7	3,251.9	13.4	7.9	-156.65	195.6	-104.4	612.7	596.6	16.08	38.094	
3,400.0	3,282.2	3,321.4	3,299.0	13.9	8.1	-156.31	208.0	-104.3	634.6	618.1	16.55	38.356	
3,444.9	3,321.9	3,362.3	3,338.5	14.3	8.3	-156.04	218.4	-104.3	653.0	636.1	16.94	38.550	
3,500.0	3,370.8	3,412.5	3,387.0	14.8	8.5	-155.72	231.2	-104.2	675.6	658.2	17.43	38.771	
3,543.3	3,409.1	3,451.9	3,425.1	15.2	8.7	-155.49	241.2	-104.2	693.4	675.6	17.81	38.922	
3,600.0	3,459.3	3,503.5	3,475.0	15.8	8.9	-155.20	254.4	-104.1	716.7	698.3	18.32	39.109	
3,641.7	3,496.3	3,541.5	3,511.7	16.1	9.1	-155.01	264.1	-104.1	733.8	715.1	18.71	39.227	
3,700.0	3,547.9	3,594.5	3,563.0	16.7	9.3	-154.74	277.6	-104.0	757.7	738.5	19.24	39.383	
3,740.1	3,583.5	3,631.0	3,598.3	17.1	9.4	-154.57	286.9	-104.0	774.2	754.6	19.61	39.477	
3,800.0	3,636.5	3,685.5	3,651.0	17.6	9.7	-154.33	300.8	-103.9	798.8	778.7	20.17	39.607	
3,838.6	3,670.7	3,720.6	3,684.9	18.0	9.8	-154.18	309.8	-103.9	814.7	794.2	20.53	39.681	
3,900.0	3,725.1	3,776.5	3,739.0	18.6	10.1	-153.95	324.0	-103.8	840.0	818.9	21.11	39.790	
3,937.0	3,757.9	3,810.2	3,771.6	18.9	10.2	-153.82	332.6	-103.8	855.2	833.7	21.46	39.848	
4,000.0	3,813.7	3,867.5	3,827.0	19.5	10.5	-153.62	347.3	-103.7	881.1	859.1	22.06	39.939	
4,035.4	3,845.1	3,899.8	3,858.2	19.9	10.7	-153.50	355.5	-103.7	895.7	873.3	22.40	39.985	
4,100.0	3,902.3	3,958.6	3,915.0	20.5	10.9	-153.31	370.5	-103.6	922.3	899.3	23.02	40.060	
4,133.8	3,932.2	3,989.4	3,944.8	20.8	11.1	-153.21	378.3	-103.6	936.3	912.9	23.35	40.096	
4,200.0	3,990.8	4,049.6	4,003.0	21.5	11.3	-153.02	393.7	-103.5	963.5	939.5	23.99	40.158	
4,232.3	4,019.4	4,078.9	4,031.4	21.8	11.5	-152.94	401.2	-103.5	976.8	952.5	24.31	40.186	
4,300.0	4,079.4	4,140.6	4,091.0	22.4	11.8	-152.76	416.9	-103.4	1,004.8	979.8	24.97	40.238	
4,330.7	4,106.6	4,168.5	4,118.0	22.7	11.9	-152.69	424.0	-103.4	1,017.4	992.2	25.27	40.258	
4,400.0	4,168.0	4,231.6	4,179.0	23.4	12.2	-152.53	440.1	-103.3	1,046.0	1,020.1	25.95	40.301	
4,429.1	4,193.8	4,258.1	4,204.7	23.7	12.3	-152.46	446.9	-103.3	1,058.0	1,031.8	26.24	40.317	
4,500.0	4,256.6	4,322.6	4,267.0	24.4	12.6	-152.30	463.3	-103.2	1,087.3	1,060.3	26.94	40.352	
4,527.5	4,281.0	4,347.7	4,291.3	24.6	12.8	-152.25	469.7	-103.2	1,098.6	1,071.4	27.22	40.364	
4,600.0	4,345.2	4,413.6	4,355.0	25.3	13.1	-152.10	486.5	-103.1	1,128.5	1,100.6	27.94	40.392	
4,626.0	4,368.2	4,437.3	4,377.9	25.6	13.2	-152.05	492.6	-103.1	1,139.3	1,111.1	28.20	40.400	
4,700.0	4,433.8	4,504.6	4,443.0	26.3	13.5	-151.91	509.7	-103.0	1,169.8	1,140.9	28.94	40.422	
4,724.4	4,455.4	4,526.8	4,464.5	26.5	13.6	-151.86	515.4	-103.0	1,179.9	1,150.7	29.19	40.428	
4,800.0	4,522.3	4,595.7	4,531.1	27.3	14.0	-151.73	532.9	-102.9	1,211.1	1,181.2	29.94	40.445	
4,822.8	4,542.6	4,616.4	4,551.1	27.5	14.1	-151.69	538.2	-102.9	1,220.5	1,190.4	30.17	40.449	
4,900.0	4,610.9	4,686.7	4,619.1	28.2	14.4	-151.57	556.2	-102.8	1,252.4	1,221.5	30.95	40.462	
4,921.2	4,629.8	4,706.0	4,637.8	28.4	14.5	-151.53	561.1	-102.8	1,261.2	1,230.0	31.17	40.465	
5,000.0	4,699.5	4,777.7	4,707.1	29.2	14.8	-151.41	579.4	-102.7	1,293.7	1,261.8	31.97	40.473	
5,019.7	4,716.9	4,795.6	4,724.4	29.4	14.9	-151.38	583.9	-102.7	1,301.9	1,269.7	32.16	40.475	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30M-223 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	4,788.1	4,868.7	4,795.1	30.2	15.3	-151.27	602.6	-102.6	1,335.0	1,302.1	32.98	40.480	
5,118.1	4,804.1	4,885.2	4,811.0	30.4	15.4	-151.24	606.8	-102.6	1,342.5	1,309.4	33.16	40.480	
5,200.0	4,876.7	4,959.7	4,883.1	31.1	15.7	-151.13	625.8	-102.5	1,376.4	1,342.4	34.00	40.483	
5,216.5	4,891.3	4,974.8	4,897.6	31.3	15.8	-151.11	629.6	-102.5	1,383.2	1,349.0	34.17	40.483	
5,300.0	4,965.3	5,050.7	4,971.1	32.1	16.2	-151.00	649.0	-102.4	1,417.7	1,382.7	35.02	40.482	
5,314.9	4,978.5	5,064.3	4,984.2	32.3	16.3	-150.98	652.5	-102.4	1,423.9	1,388.7	35.17	40.482	
5,400.0	5,053.8	5,141.7	5,059.1	33.1	16.6	-150.88	672.2	-102.3	1,459.0	1,423.0	36.04	40.479	
5,413.4	5,065.7	5,153.9	5,070.9	33.2	16.7	-150.86	675.3	-102.3	1,464.6	1,428.4	36.18	40.479	
5,508.2	5,149.7	5,240.2	5,154.3	34.2	17.1	-150.75	697.3	-102.2	1,503.7	1,466.6	37.15	40.474	
5,511.8	5,152.9	5,243.5	5,157.5	34.2	17.2	-150.77	698.2	-102.2	1,505.3	1,468.1	37.19	40.472	
5,600.0	5,231.7	5,324.3	5,235.6	34.9	17.6	-151.02	718.8	-102.1	1,540.5	1,502.4	38.14	40.391	
5,610.2	5,240.9	5,333.7	5,244.7	35.0	17.6	-151.04	721.2	-102.1	1,544.5	1,506.2	38.25	40.383	
5,700.0	5,322.5	5,416.9	5,325.1	35.7	18.0	-151.21	742.4	-102.0	1,577.9	1,538.7	39.18	40.278	
5,708.6	5,330.4	5,424.9	5,332.9	35.7	18.1	-151.22	744.4	-102.0	1,581.0	1,541.8	39.26	40.266	
5,800.0	5,414.6	5,510.5	5,415.6	36.3	18.5	-151.31	766.3	-101.9	1,612.5	1,572.3	40.20	40.110	
5,807.1	5,421.2	5,517.1	5,422.1	36.4	18.5	-151.31	768.0	-101.9	1,614.8	1,574.5	40.27	40.097	
5,900.0	5,508.1	5,605.0	5,507.0	36.9	19.0	-151.33	790.4	-101.8	1,644.2	1,602.9	41.21	39.893	
5,905.5	5,513.3	5,610.2	5,512.0	37.0	19.0	-151.33	791.7	-101.8	1,645.8	1,604.5	41.27	39.880	
6,000.0	5,602.8	5,700.2	5,599.1	37.5	19.4	-151.27	814.6	-101.7	1,673.0	1,630.8	42.21	39.634	
6,003.9	5,606.5	5,704.0	5,602.7	37.5	19.5	-151.26	815.6	-101.7	1,674.0	1,631.8	42.25	39.623	
6,100.0	5,698.5	5,796.6	5,692.4	38.0	19.9	-151.14	838.8	-101.6	1,698.9	1,655.8	43.16	39.367	
6,102.3	5,700.7	5,798.9	5,694.7	38.0	19.9	-151.14	839.3	-101.6	1,699.5	1,656.3	43.18	39.361	
6,200.0	5,795.2	5,894.7	5,788.0	38.4	20.3	-151.03	860.5	-101.5	1,721.9	1,677.9	43.95	39.179	
6,200.8	5,795.9	5,895.4	5,788.8	38.4	20.3	-151.03	860.6	-101.5	1,722.1	1,678.1	43.96	39.178	
6,299.2	5,891.9	5,993.1	5,884.7	38.8	20.6	-150.96	878.9	-101.4	1,741.7	1,697.1	44.64	39.015	
6,300.0	5,892.7	5,993.9	5,885.5	38.8	20.6	-150.96	879.1	-101.4	1,741.9	1,697.2	44.65	39.014	
6,397.6	5,988.5	6,091.6	5,982.1	39.1	20.9	-150.92	894.1	-101.4	1,758.4	1,713.2	45.23	38.875	
6,400.0	5,990.9	6,094.0	5,984.4	39.1	20.9	-150.92	894.4	-101.4	1,758.8	1,713.5	45.25	38.871	
6,496.0	6,085.8	6,191.0	6,080.7	39.4	21.1	-150.91	906.0	-101.3	1,772.1	1,726.4	45.72	38.756	
6,500.0	6,089.7	6,195.0	6,084.7	39.4	21.1	-150.91	906.4	-101.3	1,772.6	1,726.8	45.74	38.750	
6,594.5	6,183.5	6,290.9	6,180.3	39.6	21.3	-150.93	914.5	-101.3	1,782.7	1,736.6	46.11	38.659	
6,600.0	6,189.0	6,296.6	6,185.9	39.7	21.4	-150.93	914.8	-101.3	1,783.2	1,737.1	46.13	38.653	
6,692.9	6,281.5	6,391.3	6,280.5	39.8	21.5	-150.98	919.5	-101.3	1,790.3	1,743.9	46.40	38.584	
6,700.0	6,288.6	6,398.5	6,287.7	39.8	21.5	-150.98	919.7	-101.3	1,790.7	1,744.3	46.42	38.578	
6,791.3	6,379.8	6,491.6	6,380.8	40.0	21.7	-151.05	921.0	-101.3	1,794.8	1,748.2	46.58	38.529	
6,800.0	6,388.5	6,500.3	6,389.5	40.0	21.7	-151.06	921.0	-101.3	1,795.1	1,748.5	46.60	38.523	
6,889.7	6,478.2	6,597.8	6,486.8	40.1	21.7	-151.25	916.2	-101.3	1,796.2	1,749.5	46.61	38.537	
6,890.4	6,478.9	6,598.5	6,487.5	40.1	21.7	-87.94	916.1	-101.3	1,796.1	1,749.5	46.61	38.538	
6,900.0	6,488.5	6,608.9	6,497.9	40.1	21.7	-87.98	914.8	-101.3	1,796.1	1,749.5	46.60	38.545	
6,920.4	6,508.9	6,631.1	6,519.8	40.1	21.7	-88.08	911.6	-101.3	1,796.0	1,749.4	46.57	38.565	
6,950.0	6,538.5	6,662.9	6,551.0	40.1	21.7	91.76	905.7	-101.3	1,795.8	1,749.3	46.52	38.607	
6,988.2	6,576.6	6,703.5	6,590.5	40.1	21.6	91.56	896.2	-101.3	1,795.7	1,749.3	46.40	38.702	
7,000.0	6,588.3	6,716.0	6,602.6	40.1	21.6	91.50	892.9	-101.3	1,795.6	1,749.3	46.35	38.739	
7,050.0	6,637.8	6,768.4	6,652.4	40.1	21.5	91.23	876.5	-101.3	1,795.4	1,749.3	46.11	38.939	
7,086.6	6,673.6	6,806.4	6,687.6	40.1	21.4	91.03	862.4	-101.3	1,795.3	1,749.4	45.88	39.129	
7,100.0	6,686.6	6,820.2	6,700.2	40.1	21.3	90.96	856.8	-101.3	1,795.2	1,749.4	45.79	39.204	
7,150.0	6,734.6	6,871.3	6,745.9	40.0	21.1	90.68	834.0	-101.3	1,795.1	1,749.7	45.41	39.529	
7,185.0	6,767.5	6,906.7	6,776.6	39.9	21.0	90.48	816.4	-101.3	1,795.0	1,749.9	45.11	39.792	
7,200.0	6,781.4	6,921.7	6,789.3	39.9	20.9	90.40	808.4	-101.3	1,795.0	1,750.0	44.98	39.909	
7,250.0	6,827.0	6,971.5	6,830.3	39.8	20.7	90.12	780.2	-101.3	1,795.0	1,750.5	44.50	40.338	
7,272.1	6,846.6	6,993.3	6,847.7	39.8	20.6	90.00	766.9	-101.3	1,795.0	1,750.7	44.27	40.544	
7,283.4	6,856.6	7,004.5	6,856.3	39.8	20.5	89.94	759.9	-101.3	1,795.0	1,750.8	44.16	40.651	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30M-223 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,300.0	6,871.0	7,020.7	6,868.8	39.7	20.5	89.85	749.5	-101.3	1,795.0	1,751.0	43.98	40.810	
7,350.0	6,913.2	7,069.3	6,904.7	39.6	20.2	89.57	716.7	-101.3	1,795.0	1,751.6	43.45	41.317	
7,381.9	6,939.1	7,100.0	6,926.2	39.5	20.1	89.40	694.8	-101.3	1,795.1	1,752.0	43.09	41.657	
7,400.0	6,953.4	7,117.3	6,937.9	39.4	20.0	89.30	682.0	-101.3	1,795.1	1,752.2	42.89	41.851	
7,450.0	6,991.5	7,164.8	6,968.3	39.3	19.7	89.03	645.6	-101.3	1,795.2	1,752.9	42.34	42.404	
7,480.3	7,013.5	7,193.4	6,985.4	39.2	19.6	88.87	622.7	-101.3	1,795.3	1,753.3	42.00	42.746	
7,500.0	7,027.3	7,211.9	6,996.0	39.1	19.5	88.77	607.6	-101.3	1,795.4	1,753.6	41.79	42.966	
7,550.0	7,060.5	7,258.4	7,020.9	39.0	19.2	88.52	568.3	-101.3	1,795.6	1,754.3	41.25	43.526	
7,578.7	7,078.4	7,284.9	7,034.0	38.8	19.1	88.37	545.1	-101.3	1,795.7	1,754.8	40.96	43.841	
7,600.0	7,091.0	7,304.5	7,043.0	38.8	19.0	88.27	527.8	-101.3	1,795.8	1,755.1	40.75	44.073	
7,650.0	7,118.7	7,350.0	7,062.2	38.6	18.8	88.03	486.6	-101.3	1,796.1	1,755.8	40.28	44.595	
7,677.1	7,132.5	7,374.8	7,071.6	38.5	18.8	87.91	463.6	-101.3	1,796.2	1,756.2	40.04	44.858	
7,700.0	7,143.4	7,395.5	7,078.8	38.4	18.7	87.80	444.2	-101.3	1,796.3	1,756.5	39.85	45.079	
7,750.0	7,165.0	7,440.4	7,092.5	38.2	18.5	87.58	401.4	-101.3	1,796.6	1,757.1	39.47	45.513	
7,775.6	7,174.9	7,463.3	7,098.4	38.1	18.5	87.47	379.3	-101.3	1,796.7	1,757.4	39.31	45.708	
7,800.0	7,183.5	7,485.0	7,103.4	38.1	18.4	87.37	358.2	-101.3	1,796.9	1,757.7	39.16	45.887	
7,850.0	7,198.6	7,529.3	7,111.5	37.9	18.4	87.18	314.6	-101.3	1,797.2	1,758.3	38.91	46.192	
7,874.0	7,204.7	7,550.0	7,114.4	37.8	18.3	87.09	294.2	-101.3	1,797.3	1,758.5	38.81	46.313	
7,900.0	7,210.4	7,573.4	7,116.9	37.7	18.3	86.99	271.0	-101.3	1,797.5	1,758.8	38.72	46.422	
7,950.0	7,218.8	7,617.1	7,119.6	37.6	18.3	86.82	227.3	-101.3	1,797.8	1,759.2	38.60	46.572	
7,972.4	7,221.4	7,636.7	7,120.0	37.5	18.3	86.75	207.7	-101.3	1,797.9	1,759.3	38.58	46.607	
8,000.0	7,223.7	7,663.5	7,119.9	37.4	18.3	86.67	180.9	-101.3	1,798.0	1,759.5	38.56	46.624	
8,050.0	7,225.1	7,713.4	7,119.8	37.3	18.4	86.61	131.0	-101.3	1,798.1	1,759.5	38.63	46.552	
8,055.3	7,225.0	7,718.7	7,119.8	37.3	18.4	86.61	125.7	-101.3	1,798.1	1,759.5	38.64	46.533	
8,070.8	7,224.8	7,734.3	7,119.8	37.3	18.5	86.62	110.1	-101.3	1,798.1	1,759.4	38.69	46.480	
8,100.0	7,224.4	7,763.4	7,119.7	37.2	18.5	86.63	81.0	-101.3	1,798.1	1,759.3	38.77	46.382	
8,169.3	7,223.5	7,832.7	7,119.5	37.1	18.8	86.65	11.7	-101.3	1,798.0	1,758.9	39.11	45.969	
8,200.0	7,223.0	7,863.4	7,119.5	37.1	18.9	86.67	-19.0	-101.3	1,798.0	1,758.7	39.30	45.752	
8,267.7	7,222.1	7,931.1	7,119.3	37.0	19.3	86.69	-86.7	-101.3	1,798.0	1,758.1	39.88	45.082	
8,300.0	7,221.7	7,963.4	7,119.2	37.0	19.5	86.70	-119.0	-101.3	1,798.0	1,757.8	40.19	44.735	
8,366.1	7,220.7	8,029.5	7,119.0	37.0	20.0	86.73	-185.1	-101.3	1,797.9	1,756.9	40.98	43.869	
8,400.0	7,220.3	8,063.4	7,119.0	37.0	20.2	86.74	-219.0	-101.3	1,797.9	1,756.5	41.42	43.408	
8,464.5	7,219.4	8,128.0	7,118.8	37.1	20.8	86.76	-283.5	-101.3	1,797.8	1,755.5	42.39	42.411	
8,500.0	7,218.9	8,163.4	7,118.7	37.1	21.1	86.77	-319.0	-101.3	1,797.8	1,754.9	42.95	41.855	
8,563.0	7,218.0	8,226.4	7,118.6	37.2	21.8	86.80	-382.0	-101.3	1,797.8	1,753.7	44.08	40.787	
8,600.0	7,217.5	8,263.4	7,118.5	37.3	22.1	86.81	-419.0	-101.3	1,797.8	1,753.0	44.76	40.160	
8,661.4	7,216.7	8,324.8	7,118.3	37.5	22.8	86.83	-480.4	-101.3	1,797.7	1,751.7	46.01	39.071	
8,700.0	7,216.1	8,363.4	7,118.2	37.6	23.3	86.85	-519.0	-101.3	1,797.7	1,750.9	46.82	38.396	
8,759.8	7,215.3	8,423.2	7,118.1	37.8	24.0	86.87	-578.8	-101.3	1,797.7	1,749.5	48.16	37.324	
8,800.0	7,214.8	8,463.4	7,118.0	38.0	24.5	86.88	-619.0	-101.3	1,797.6	1,748.5	49.09	36.620	
8,858.2	7,214.0	8,521.6	7,117.8	38.3	25.3	86.90	-677.2	-101.3	1,797.6	1,747.1	50.51	35.591	
8,900.0	7,213.4	8,563.4	7,117.7	38.5	25.8	86.92	-719.0	-101.3	1,797.6	1,746.0	51.54	34.875	
8,956.7	7,212.6	8,620.0	7,117.6	38.8	26.6	86.94	-775.6	-101.3	1,797.5	1,744.5	53.02	33.906	
9,000.0	7,212.0	8,663.4	7,117.5	39.1	27.2	86.95	-819.0	-101.3	1,797.5	1,743.4	54.16	33.189	
9,055.1	7,211.2	8,718.5	7,117.3	39.5	28.0	86.97	-874.1	-101.3	1,797.5	1,741.8	55.67	32.289	
9,100.0	7,210.6	8,763.4	7,117.2	39.8	28.7	86.99	-918.9	-101.3	1,797.5	1,740.5	56.91	31.582	
9,153.5	7,209.9	8,816.9	7,117.1	40.3	29.5	87.01	-972.5	-101.3	1,797.4	1,739.0	58.44	30.754	
9,200.0	7,209.2	8,863.4	7,117.0	40.7	30.2	87.03	-1,018.9	-101.3	1,797.4	1,737.6	59.79	30.063	
9,251.9	7,208.5	8,915.3	7,116.9	41.1	31.0	87.05	-1,070.9	-101.3	1,797.4	1,736.0	61.33	29.307	
9,300.0	7,207.9	8,963.3	7,116.7	41.6	31.7	87.06	-1,118.9	-101.3	1,797.3	1,734.6	62.77	28.635	
9,350.4	7,207.2	9,013.7	7,116.6	42.1	32.5	87.08	-1,169.3	-101.3	1,797.3	1,733.0	64.31	27.950	
9,400.0	7,206.5	9,063.3	7,116.5	42.6	33.3	87.10	-1,218.9	-101.3	1,797.3	1,731.4	65.83	27.300	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30M-223 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,448.8	7,205.8	9,112.1	7,116.4	43.1	34.1	87.12	-1,267.7	-101.3	1,797.3	1,729.9	67.36	26.680	
9,500.0	7,205.1	9,163.3	7,116.2	43.7	34.9	87.13	-1,318.9	-101.3	1,797.2	1,728.2	68.98	26.055	
9,547.2	7,204.4	9,210.6	7,116.1	44.2	35.7	87.15	-1,366.1	-101.3	1,797.2	1,726.7	70.49	25.496	
9,600.0	7,203.7	9,263.3	7,116.0	44.8	36.6	87.17	-1,418.9	-101.3	1,797.2	1,725.0	72.19	24.894	
9,645.6	7,203.1	9,309.0	7,115.9	45.4	37.3	87.19	-1,464.6	-101.3	1,797.1	1,723.5	73.68	24.391	
9,700.0	7,202.3	9,363.3	7,115.8	46.1	38.3	87.21	-1,518.9	-101.3	1,797.1	1,721.6	75.46	23.815	
9,744.1	7,201.7	9,407.4	7,115.6	46.6	39.0	87.22	-1,563.0	-101.3	1,797.1	1,720.2	76.92	23.362	
9,800.0	7,201.0	9,463.3	7,115.5	47.3	40.0	87.24	-1,618.9	-101.3	1,797.1	1,718.3	78.79	22.809	
9,842.5	7,200.4	9,505.8	7,115.4	47.9	40.7	87.26	-1,661.4	-101.3	1,797.0	1,716.8	80.21	22.403	
9,900.0	7,199.6	9,563.3	7,115.3	48.7	41.7	87.28	-1,718.9	-101.3	1,797.0	1,714.8	82.15	21.873	
9,940.9	7,199.0	9,604.2	7,115.2	49.2	42.4	87.29	-1,759.8	-101.3	1,797.0	1,713.4	83.55	21.509	
10,000.0	7,198.2	9,663.3	7,115.0	50.1	43.4	87.31	-1,818.9	-101.3	1,796.9	1,711.4	85.56	21.001	
10,039.3	7,197.7	9,702.7	7,114.9	50.6	44.1	87.33	-1,858.2	-101.3	1,796.9	1,710.0	86.91	20.675	
10,100.0	7,196.8	9,763.3	7,114.8	51.5	45.1	87.35	-1,918.9	-101.3	1,796.9	1,707.9	89.01	20.188	
10,137.8	7,196.3	9,801.1	7,114.7	52.0	45.8	87.36	-1,956.7	-101.3	1,796.9	1,706.6	90.32	19.895	
10,200.0	7,195.4	9,863.3	7,114.5	52.9	46.9	87.39	-2,018.9	-101.3	1,796.8	1,704.4	92.48	19.429	
10,236.2	7,194.9	9,899.5	7,114.4	53.5	47.6	87.40	-2,055.1	-101.3	1,796.8	1,703.1	93.75	19.166	
10,300.0	7,194.1	9,963.3	7,114.3	54.4	48.7	87.42	-2,118.9	-101.3	1,796.8	1,700.8	95.99	18.719	
10,334.6	7,193.6	9,997.9	7,114.2	55.0	49.3	87.44	-2,153.5	-101.3	1,796.8	1,699.6	97.21	18.484	
10,400.0	7,192.7	10,063.3	7,114.0	56.0	50.5	87.46	-2,218.9	-101.3	1,796.7	1,697.2	99.51	18.055	
10,433.0	7,192.2	10,096.3	7,113.9	56.5	51.1	87.47	-2,251.9	-101.3	1,796.7	1,696.0	100.69	17.845	
10,500.0	7,191.3	10,163.3	7,113.8	57.5	52.3	87.49	-2,318.9	-101.3	1,796.7	1,693.6	103.07	17.432	
10,531.5	7,190.9	10,194.7	7,113.7	58.0	52.8	87.51	-2,350.3	-101.3	1,796.7	1,692.5	104.19	17.244	
10,600.0	7,189.9	10,263.3	7,113.5	59.1	54.1	87.53	-2,418.8	-101.3	1,796.6	1,690.0	106.64	16.848	
10,629.9	7,189.5	10,293.2	7,113.4	59.6	54.6	87.54	-2,448.7	-101.3	1,796.6	1,688.9	107.71	16.680	
10,700.0	7,188.5	10,363.3	7,113.3	60.7	55.9	87.57	-2,518.8	-101.3	1,796.6	1,686.4	110.23	16.299	
10,728.3	7,188.1	10,391.6	7,113.2	61.1	56.4	87.58	-2,547.2	-101.3	1,796.6	1,685.3	111.25	16.149	
10,800.0	7,187.2	10,463.3	7,113.0	62.3	57.7	87.60	-2,618.8	-101.3	1,796.5	1,682.7	113.83	15.782	
10,826.7	7,186.8	10,490.0	7,112.9	62.7	58.2	87.61	-2,645.6	-101.3	1,796.5	1,681.7	114.80	15.649	
10,900.0	7,185.8	10,563.2	7,112.8	63.9	59.5	87.64	-2,718.8	-101.3	1,796.5	1,679.0	117.46	15.295	
10,925.2	7,185.4	10,588.4	7,112.7	64.3	60.0	87.65	-2,744.0	-101.3	1,796.5	1,678.1	118.37	15.177	
11,000.0	7,184.4	10,663.2	7,112.5	65.6	61.4	87.67	-2,818.8	-101.3	1,796.4	1,675.3	121.09	14.835	
11,023.6	7,184.1	10,686.8	7,112.4	66.0	61.8	87.68	-2,842.4	-101.3	1,796.4	1,674.5	121.95	14.731	
11,100.0	7,183.0	10,763.2	7,112.3	67.2	63.2	87.71	-2,918.8	-101.3	1,796.4	1,671.7	124.74	14.401	
11,122.0	7,182.7	10,785.3	7,112.2	67.6	63.6	87.72	-2,940.8	-101.3	1,796.4	1,670.8	125.55	14.309	
11,200.0	7,181.6	10,863.2	7,112.0	68.9	65.0	87.75	-3,018.8	-101.3	1,796.3	1,667.9	128.40	13.990	
11,220.4	7,181.3	10,883.7	7,111.9	69.3	65.4	87.75	-3,039.3	-101.3	1,796.3	1,667.2	129.15	13.909	
11,300.0	7,180.2	10,963.2	7,111.7	70.6	66.9	87.78	-3,118.8	-101.3	1,796.3	1,664.2	132.07	13.601	
11,318.9	7,180.0	10,982.1	7,111.7	70.9	67.2	87.79	-3,137.7	-101.3	1,796.3	1,663.5	132.76	13.530	
11,400.0	7,178.9	11,063.2	7,111.5	72.3	68.7	87.82	-3,218.8	-101.3	1,796.3	1,660.5	135.75	13.232	
11,417.3	7,178.6	11,080.5	7,111.5	72.6	69.0	87.83	-3,236.1	-101.3	1,796.3	1,659.9	136.39	13.170	
11,500.0	7,177.5	11,163.2	7,111.2	74.0	70.6	87.85	-3,318.8	-101.3	1,796.2	1,656.8	139.44	12.882	
11,515.7	7,177.3	11,178.9	7,111.2	74.3	70.9	87.86	-3,334.5	-101.3	1,796.2	1,656.2	140.02	12.828	
11,600.0	7,176.1	11,263.2	7,111.0	75.7	72.4	87.89	-3,418.8	-101.3	1,796.2	1,653.0	143.14	12.549	
11,614.1	7,175.9	11,277.3	7,111.0	76.0	72.7	87.90	-3,432.9	-101.3	1,796.2	1,652.5	143.66	12.503	
11,700.0	7,174.7	11,363.2	7,110.7	77.5	74.3	87.93	-3,518.8	-101.3	1,796.1	1,649.3	146.84	12.232	
11,712.6	7,174.5	11,375.8	7,110.7	77.7	74.5	87.93	-3,531.3	-101.3	1,796.1	1,648.8	147.31	12.193	
11,800.0	7,173.3	11,463.2	7,110.5	79.2	76.2	87.96	-3,618.8	-101.3	1,796.1	1,645.5	150.55	11.930	
11,811.0	7,173.2	11,474.2	7,110.5	79.4	76.4	87.97	-3,629.8	-101.3	1,796.1	1,645.1	150.96	11.898	
11,900.0	7,172.0	11,563.2	7,110.2	81.0	78.0	88.00	-3,718.8	-101.3	1,796.0	1,641.8	154.27	11.642	
11,909.4	7,171.8	11,572.6	7,110.2	81.1	78.2	88.00	-3,728.2	-101.3	1,796.0	1,641.4	154.62	11.616	
11,976.2	7,170.9	11,639.4	7,110.0	82.3	79.4	88.03	-3,795.0	-101.3	1,796.0	1,638.9	157.11	11.432	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30M-223 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,000.0	7,170.6	11,655.0	7,110.0	82.7	79.7	88.03	-3,810.6	-101.3	1,796.0	1,638.2	157.84	11.378	
12,007.8	7,170.5	11,655.0	7,110.0	82.9	79.7	88.03	-3,810.6	-101.3	1,796.1	1,638.1	157.99	11.368	
12,041.2	7,170.0	11,655.0	7,110.0	83.5	79.7	88.03	-3,810.6	-101.3	1,796.7	1,638.1	158.61	11.328	SF

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30M-323 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-88.38	2.5	-90.1	90.1				
98.4	98.4	99.4	99.4	0.1	0.1	-88.38	2.5	-90.1	90.1	90.0	0.17	527.778	
100.0	100.0	101.0	101.0	0.1	0.1	-88.38	2.5	-90.1	90.1	90.0	0.18	514.185	
196.8	196.8	197.8	197.8	0.3	0.3	-88.38	2.5	-90.1	90.1	89.5	0.61	147.613	
200.0	200.0	201.0	201.0	0.3	0.3	-88.38	2.5	-90.1	90.1	89.5	0.62	144.268	
295.3	295.3	296.3	296.3	0.5	0.5	-88.38	2.5	-90.1	90.1	89.1	1.05	85.597	
300.0	300.0	301.0	301.0	0.5	0.5	-88.38	2.5	-90.1	90.1	89.1	1.07	83.905	
393.7	393.7	394.7	394.7	0.7	0.7	-88.38	2.5	-90.1	90.1	88.7	1.50	60.274	
400.0	400.0	401.0	401.0	0.8	0.8	-88.38	2.5	-90.1	90.1	88.6	1.52	59.154	
492.1	492.1	493.1	493.1	1.0	1.0	-88.38	2.5	-90.1	90.1	88.2	1.94	46.514	
500.0	500.0	501.0	501.0	1.0	1.0	-88.38	2.5	-90.1	90.1	88.2	1.97	45.679	
590.5	590.5	591.5	591.5	1.2	1.2	-88.38	2.5	-90.1	90.1	87.8	2.38	37.868	
600.0	600.0	601.0	601.0	1.2	1.2	-88.38	2.5	-90.1	90.1	87.7	2.42	37.205	
689.0	689.0	690.0	690.0	1.4	1.4	-88.38	2.5	-90.1	90.1	87.3	2.82	31.933	
700.0	700.0	701.0	701.0	1.4	1.4	-88.38	2.5	-90.1	90.1	87.3	2.87	31.382	
787.4	787.4	788.4	788.4	1.6	1.6	-88.38	2.5	-90.1	90.1	86.9	3.27	27.606	
800.0	800.0	801.0	801.0	1.7	1.7	-88.38	2.5	-90.1	90.1	86.8	3.32	27.136	
885.8	885.8	886.8	886.8	1.9	1.9	-88.38	2.5	-90.1	90.1	86.4	3.71	24.312	
900.0	900.0	901.0	901.0	1.9	1.9	-88.38	2.5	-90.1	90.1	86.4	3.77	23.901	
984.2	984.2	985.2	985.2	2.1	2.1	-88.38	2.5	-90.1	90.1	86.0	4.15	21.720	
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	-88.38	2.5	-90.1	90.1	85.9	4.22	21.356	
1,082.7	1,082.7	1,083.7	1,083.7	2.3	2.3	-88.38	2.5	-90.1	90.1	85.6	4.59	19.628	
1,100.0	1,100.0	1,101.0	1,101.0	2.3	2.3	-88.38	2.5	-90.1	90.1	85.5	4.67	19.301	
1,181.1	1,181.1	1,182.1	1,182.1	2.5	2.5	-88.38	2.5	-90.1	90.1	85.1	5.04	17.903	
1,200.0	1,200.0	1,201.0	1,201.0	2.6	2.6	-88.38	2.5	-90.1	90.1	85.0	5.12	17.606	
1,279.5	1,279.5	1,280.5	1,280.5	2.7	2.7	-88.38	2.5	-90.1	90.1	84.7	5.48	16.457	
1,300.0	1,300.0	1,301.0	1,301.0	2.8	2.8	-88.38	2.5	-90.1	90.1	84.6	5.57	16.185	
1,377.9	1,377.9	1,378.9	1,378.9	3.0	3.0	-88.38	2.5	-90.1	90.1	84.2	5.92	15.227	
1,400.0	1,400.0	1,401.0	1,401.0	3.0	3.0	-88.38	2.5	-90.1	90.1	84.1	6.02	14.976	
1,450.0	1,450.0	1,451.0	1,451.0	3.1	3.1	-88.38	2.5	-90.1	90.1	83.9	6.24	14.437	CC
1,476.4	1,476.4	1,477.4	1,477.4	3.2	3.2	-151.73	2.5	-90.1	90.3	83.9	6.36	14.190	ES
1,500.0	1,500.0	1,501.0	1,501.0	3.2	3.2	-151.82	2.5	-90.1	90.5	84.1	6.46	14.005	
1,574.8	1,574.8	1,575.8	1,575.8	3.4	3.4	-152.47	2.5	-90.1	92.5	85.8	6.79	13.637	
1,600.0	1,599.9	1,600.9	1,600.9	3.4	3.5	-152.80	2.5	-90.1	93.6	86.7	6.89	13.580	
1,673.2	1,673.0	1,674.0	1,674.0	3.6	3.6	-154.04	2.5	-90.1	97.9	90.7	7.21	13.583	
1,700.0	1,699.7	1,700.7	1,700.7	3.7	3.7	-154.58	2.5	-90.1	99.9	92.6	7.32	13.645	
1,771.6	1,771.0	1,772.0	1,772.0	3.8	3.8	-156.17	2.5	-90.1	106.4	98.7	7.62	13.956	
1,800.0	1,799.1	1,800.1	1,800.1	3.9	3.9	-156.85	2.5	-90.1	109.4	101.7	7.74	14.137	
1,870.1	1,868.6	1,869.6	1,869.6	4.1	4.1	-158.57	2.5	-90.1	118.1	110.1	8.03	14.708	
1,900.0	1,898.2	1,899.2	1,899.2	4.1	4.1	-159.32	2.5	-90.1	122.3	114.2	8.15	15.007	
1,968.5	1,965.7	1,966.7	1,966.7	4.3	4.3	-160.99	2.5	-90.1	133.2	124.8	8.43	15.796	
2,000.0	1,996.6	1,997.6	1,997.6	4.4	4.4	-161.74	2.5	-90.1	138.7	130.2	8.56	16.212	
2,066.9	2,062.2	2,063.5	2,063.5	4.6	4.5	-163.26	2.6	-90.1	151.7	142.8	8.83	17.181	
2,100.0	2,094.4	2,096.6	2,096.6	4.7	4.6	-163.88	2.9	-90.0	158.5	149.5	8.96	17.692	
2,165.3	2,157.9	2,162.0	2,162.0	5.0	4.7	-164.71	4.7	-89.5	172.6	163.4	9.22	18.721	
2,200.0	2,191.5	2,196.7	2,196.7	5.1	4.8	-164.97	6.2	-89.1	180.4	171.0	9.35	19.284	
2,263.8	2,252.9	2,260.7	2,260.5	5.3	4.9	-165.17	10.0	-88.1	195.3	185.7	9.61	20.321	
2,300.0	2,287.6	2,297.0	2,296.7	5.5	5.0	-165.15	12.8	-87.4	204.0	194.3	9.75	20.926	
2,362.2	2,346.9	2,359.3	2,358.7	5.8	5.2	-164.93	18.7	-85.8	219.6	209.6	10.00	21.960	
2,400.0	2,382.7	2,397.2	2,396.3	6.0	5.3	-164.69	22.8	-84.7	229.4	219.2	10.15	22.590	
2,460.6	2,439.8	2,457.8	2,456.5	6.3	5.4	-164.19	30.5	-82.6	245.6	235.2	10.41	23.590	
2,500.0	2,476.6	2,497.2	2,495.4	6.5	5.5	-163.79	36.2	-81.1	256.5	245.9	10.58	24.245	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30M-323 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,559.0	2,531.6	2,556.1	2,553.5	6.9	5.6	-163.10	45.6	-78.6	273.3	262.5	10.85	25.194	
2,600.0	2,569.4	2,596.9	2,593.6	7.1	5.7	-162.57	52.8	-76.6	285.4	274.3	11.04	25.856	
2,657.5	2,622.0	2,654.1	2,649.6	7.5	5.9	-161.77	63.8	-73.7	302.8	291.5	11.33	26.734	
2,700.0	2,660.7	2,696.3	2,690.8	7.8	6.0	-161.14	72.7	-71.3	316.1	304.6	11.54	27.384	
2,755.9	2,711.1	2,751.6	2,744.6	8.2	6.2	-160.27	85.1	-68.0	334.1	322.3	11.86	28.179	
2,800.0	2,750.6	2,793.6	2,785.3	8.6	6.3	-159.61	95.1	-65.3	348.9	336.7	12.11	28.809	
2,832.3	2,779.2	2,823.8	2,814.6	8.8	6.4	-159.18	102.3	-63.4	360.0	347.7	12.30	29.264	
2,854.3	2,798.8	2,844.4	2,834.6	9.0	6.5	-158.96	107.2	-62.1	367.8	355.3	12.46	29.512	
2,900.0	2,839.3	2,887.1	2,876.0	9.4	6.6	-158.54	117.3	-59.3	383.8	371.0	12.79	29.998	
2,952.7	2,886.0	2,936.4	2,923.7	9.9	6.8	-158.09	129.0	-56.2	402.3	389.1	13.19	30.497	
3,000.0	2,927.8	2,980.6	2,966.5	10.3	7.0	-157.72	139.6	-53.4	419.0	405.4	13.55	30.910	
3,051.2	2,973.2	3,028.4	3,012.9	10.7	7.1	-157.36	150.9	-50.3	437.0	423.0	13.96	31.309	
3,100.0	3,016.4	3,074.0	3,057.1	11.2	7.3	-157.03	161.8	-47.4	454.2	439.9	14.35	31.658	
3,149.6	3,060.4	3,120.4	3,102.0	11.6	7.5	-156.73	172.8	-44.5	471.7	456.9	14.75	31.976	
3,200.0	3,105.0	3,167.5	3,147.7	12.1	7.7	-156.44	184.0	-41.5	489.5	474.3	15.17	32.271	
3,248.0	3,147.5	3,212.4	3,191.2	12.5	7.9	-156.19	194.7	-38.6	506.4	490.9	15.57	32.525	
3,300.0	3,193.6	3,260.9	3,238.3	13.0	8.1	-155.93	206.2	-35.5	524.8	508.8	16.01	32.774	
3,346.4	3,234.7	3,304.4	3,280.3	13.4	8.2	-155.72	216.6	-32.7	541.2	524.8	16.41	32.976	
3,400.0	3,282.2	3,354.4	3,328.9	13.9	8.4	-155.49	228.5	-29.5	560.2	543.3	16.88	33.187	
3,444.9	3,321.9	3,396.3	3,369.5	14.3	8.6	-155.30	238.4	-26.9	576.0	558.8	17.27	33.348	
3,500.0	3,370.8	3,447.9	3,419.4	14.8	8.8	-155.09	250.7	-23.6	595.6	577.8	17.76	33.527	
3,543.3	3,409.1	3,488.3	3,458.6	15.2	9.0	-154.94	260.3	-21.0	610.9	592.7	18.15	33.656	
3,600.0	3,459.3	3,541.3	3,510.0	15.8	9.2	-154.74	272.9	-17.6	631.0	612.3	18.66	33.808	
3,641.7	3,496.3	3,580.3	3,547.8	16.1	9.4	-154.61	282.2	-15.1	645.7	626.7	19.04	33.910	
3,700.0	3,547.9	3,634.8	3,600.6	16.7	9.6	-154.43	295.2	-11.7	666.4	646.8	19.58	34.040	
3,740.1	3,583.5	3,672.3	3,637.0	17.1	9.8	-154.32	304.1	-9.3	680.6	660.7	19.95	34.121	
3,800.0	3,636.5	3,728.2	3,691.2	17.6	10.1	-154.15	317.4	-5.7	701.8	681.3	20.50	34.233	
3,838.6	3,670.7	3,764.3	3,726.1	18.0	10.2	-154.05	326.0	-3.4	715.5	694.6	20.86	34.297	
3,900.0	3,725.1	3,821.7	3,781.7	18.6	10.5	-153.90	339.6	0.3	737.3	715.8	21.44	34.392	
3,937.0	3,757.9	3,856.3	3,815.3	18.9	10.6	-153.81	347.8	2.5	750.4	728.6	21.79	34.443	
4,000.0	3,813.7	3,915.1	3,872.3	19.5	10.9	-153.67	361.8	6.2	772.7	750.4	22.38	34.525	
4,035.4	3,845.1	3,948.2	3,904.4	19.9	11.0	-153.59	369.7	8.3	785.3	762.6	22.72	34.565	
4,100.0	3,902.3	4,008.6	3,962.9	20.5	11.3	-153.46	384.1	12.2	808.2	784.9	23.34	34.635	
4,133.8	3,932.2	4,040.2	3,993.6	20.8	11.5	-153.39	391.6	14.2	820.2	796.6	23.66	34.667	
4,200.0	3,990.8	4,102.1	4,053.5	21.5	11.8	-153.26	406.3	18.1	843.7	819.4	24.30	34.726	
4,232.3	4,019.4	4,132.2	4,082.7	21.8	11.9	-153.21	413.5	20.1	855.2	830.6	24.61	34.752	
4,300.0	4,079.4	4,195.5	4,144.1	22.4	12.2	-153.09	428.5	24.1	879.2	853.9	25.26	34.802	
4,330.7	4,106.6	4,224.2	4,171.9	22.7	12.3	-153.04	435.4	25.9	890.1	864.5	25.56	34.822	
4,400.0	4,168.0	4,289.0	4,234.6	23.4	12.6	-152.92	450.8	30.1	914.7	888.5	26.24	34.865	
4,429.1	4,193.8	4,316.2	4,261.0	23.7	12.8	-152.88	457.2	31.8	925.0	898.5	26.52	34.881	
4,500.0	4,256.6	4,382.4	4,325.2	24.4	13.1	-152.77	473.0	36.0	950.2	923.0	27.21	34.917	
4,527.5	4,281.0	4,408.2	4,350.2	24.6	13.2	-152.73	479.1	37.7	960.0	932.5	27.48	34.929	
4,600.0	4,345.2	4,475.9	4,415.8	25.3	13.5	-152.63	495.2	42.0	985.7	957.5	28.20	34.960	
4,626.0	4,368.2	4,500.2	4,439.3	25.6	13.6	-152.60	501.0	43.5	994.9	966.5	28.45	34.969	
4,700.0	4,433.8	4,569.3	4,506.4	26.3	14.0	-152.50	517.5	47.9	1,021.2	992.0	29.18	34.995	
4,724.4	4,455.4	4,592.1	4,528.5	26.5	14.1	-152.47	522.9	49.4	1,029.9	1,000.5	29.42	35.002	
4,800.0	4,522.3	4,662.8	4,597.0	27.3	14.4	-152.38	539.7	53.9	1,056.7	1,026.6	30.17	35.023	
4,822.8	4,542.6	4,684.1	4,617.6	27.5	14.5	-152.35	544.8	55.3	1,064.8	1,034.4	30.40	35.029	
4,900.0	4,610.9	4,756.3	4,687.5	28.2	14.8	-152.27	561.9	59.9	1,092.3	1,061.1	31.17	35.046	
4,921.2	4,629.8	4,776.1	4,706.8	28.4	14.9	-152.24	566.6	61.1	1,099.8	1,068.4	31.38	35.050	
5,000.0	4,699.5	4,849.7	4,778.1	29.2	15.3	-152.16	584.1	65.8	1,127.8	1,095.6	32.16	35.064	
5,019.7	4,716.9	4,868.1	4,795.9	29.4	15.4	-152.14	588.5	67.0	1,134.8	1,102.4	32.36	35.067	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30M-323 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	4,788.1	4,943.2	4,868.7	30.2	15.7	-152.06	606.4	71.8	1,163.3	1,130.2	33.16	35.078	
5,118.1	4,804.1	4,960.1	4,885.1	30.4	15.8	-152.04	610.4	72.9	1,169.7	1,136.4	33.35	35.080	
5,200.0	4,876.7	5,036.6	4,959.3	31.1	16.2	-151.97	628.6	77.7	1,198.9	1,164.7	34.17	35.089	
5,216.5	4,891.3	5,052.1	4,974.2	31.3	16.3	-151.95	632.3	78.7	1,204.7	1,170.4	34.33	35.090	
5,300.0	4,965.3	5,130.1	5,049.8	32.1	16.7	-151.88	650.8	83.7	1,234.4	1,199.2	35.17	35.096	
5,314.9	4,978.5	5,144.1	5,063.4	32.3	16.7	-151.86	654.2	84.6	1,239.7	1,204.4	35.32	35.097	
5,400.0	5,053.8	5,223.5	5,140.4	33.1	17.1	-151.79	673.1	89.7	1,269.9	1,233.7	36.18	35.101	
5,413.4	5,065.7	5,236.0	5,152.5	33.2	17.2	-151.78	676.0	90.5	1,274.7	1,238.4	36.31	35.102	
5,508.2	5,149.7	5,324.6	5,238.4	34.2	17.6	-151.71	697.1	96.1	1,308.4	1,271.1	37.27	35.105	
5,511.8	5,152.9	5,328.0	5,241.7	34.2	17.6	-151.72	697.9	96.3	1,309.7	1,272.3	37.31	35.103	
5,600.0	5,231.7	5,410.9	5,322.0	34.9	18.0	-151.92	717.6	101.6	1,339.8	1,301.5	38.24	35.035	
5,610.2	5,240.9	5,420.5	5,331.4	35.0	18.1	-151.94	719.9	102.2	1,343.1	1,304.8	38.34	35.028	
5,700.0	5,322.5	5,505.7	5,413.9	35.7	18.5	-152.06	740.2	107.7	1,371.2	1,332.0	39.26	34.924	
5,708.6	5,330.4	5,514.0	5,421.9	35.7	18.5	-152.07	742.1	108.2	1,373.8	1,334.5	39.35	34.912	
5,800.0	5,414.6	5,601.4	5,506.7	36.3	19.0	-152.10	762.9	113.8	1,399.7	1,359.5	40.28	34.751	
5,807.1	5,421.2	5,608.2	5,513.3	36.4	19.0	-152.10	764.6	114.2	1,401.6	1,361.3	40.35	34.737	
5,900.0	5,508.1	5,697.8	5,600.1	36.9	19.4	-152.05	785.9	119.9	1,425.3	1,384.0	41.29	34.522	
5,905.5	5,513.3	5,703.2	5,605.3	37.0	19.5	-152.05	787.1	120.2	1,426.6	1,385.3	41.34	34.509	
6,000.0	5,602.8	5,794.9	5,694.1	37.5	19.9	-151.92	809.0	126.1	1,447.9	1,405.6	42.28	34.244	
6,003.9	5,606.5	5,798.7	5,697.8	37.5	19.9	-151.91	809.9	126.3	1,448.7	1,406.4	42.32	34.232	
6,100.0	5,698.5	5,889.4	5,785.8	38.0	20.4	-151.72	831.4	132.1	1,467.6	1,424.4	43.23	33.947	
6,102.3	5,700.7	5,891.5	5,787.8	38.0	20.4	-151.72	831.8	132.2	1,468.0	1,424.8	43.25	33.941	
6,200.0	5,795.2	5,976.5	5,870.7	38.4	20.7	-151.56	850.2	137.1	1,484.9	1,440.9	44.00	33.751	
6,200.8	5,795.9	5,977.2	5,871.4	38.4	20.7	-151.55	850.3	137.2	1,485.0	1,441.0	44.00	33.750	
6,299.2	5,891.9	6,063.5	5,956.0	38.8	21.0	-151.42	866.5	141.5	1,499.8	1,455.1	44.66	33.581	
6,300.0	5,892.7	6,064.2	5,956.7	38.8	21.0	-151.42	866.6	141.5	1,499.9	1,455.2	44.67	33.580	
6,397.6	5,988.5	6,150.2	6,041.6	39.1	21.2	-151.31	880.2	145.2	1,512.4	1,467.1	45.24	33.432	
6,400.0	5,990.9	6,152.3	6,043.7	39.1	21.2	-151.30	880.5	145.3	1,512.7	1,467.4	45.25	33.429	
6,496.0	6,085.8	6,237.4	6,128.0	39.4	21.5	-151.22	891.5	148.2	1,522.7	1,477.0	45.72	33.302	
6,500.0	6,089.7	6,240.9	6,131.4	39.4	21.5	-151.22	891.9	148.3	1,523.1	1,477.3	45.74	33.297	
6,594.5	6,183.5	6,324.9	6,214.9	39.6	21.7	-151.15	900.3	150.6	1,530.8	1,484.7	46.12	33.190	
6,600.0	6,189.0	6,329.8	6,219.8	39.7	21.7	-151.15	900.7	150.7	1,531.2	1,485.0	46.14	33.185	
6,692.9	6,281.5	6,412.6	6,302.4	39.8	21.9	-151.11	906.5	152.2	1,536.6	1,490.2	46.43	33.096	
6,700.0	6,288.6	6,418.9	6,308.7	39.8	21.9	-151.11	906.8	152.3	1,536.9	1,490.5	46.45	33.090	
6,791.3	6,379.8	6,500.0	6,389.8	40.0	22.0	-151.09	910.1	153.2	1,540.1	1,493.5	46.64	33.018	
6,800.0	6,388.5	6,508.2	6,397.9	40.0	22.0	-151.09	910.3	153.3	1,540.3	1,493.7	46.66	33.012	
6,889.7	6,478.2	6,589.5	6,479.2	40.1	22.1	-151.09	911.1	153.5	1,541.4	1,494.6	46.77	32.954	
6,890.4	6,478.9	6,590.1	6,479.9	40.1	22.1	-87.78	911.1	153.5	1,541.4	1,494.6	46.77	32.954	
6,900.0	6,488.5	6,599.7	6,489.5	40.1	22.1	-87.78	911.1	153.5	1,541.4	1,494.6	46.80	32.938	
6,920.4	6,508.9	6,621.1	6,510.9	40.1	22.2	-87.79	911.0	153.5	1,541.4	1,494.5	46.84	32.906	
6,950.0	6,538.5	6,653.4	6,543.1	40.1	22.2	92.19	909.8	153.5	1,541.3	1,494.4	46.89	32.870	
6,988.2	6,576.6	6,695.0	6,584.5	40.1	22.2	92.16	906.0	153.5	1,541.3	1,494.4	46.90	32.866	
7,000.0	6,588.3	6,707.8	6,597.3	40.1	22.2	92.15	904.3	153.5	1,541.3	1,494.4	46.89	32.869	
7,050.0	6,637.8	6,762.1	6,650.7	40.1	22.1	92.09	894.8	153.5	1,541.2	1,494.4	46.80	32.933	
7,086.6	6,673.6	6,801.8	6,689.2	40.1	22.1	92.05	885.4	153.5	1,541.2	1,494.5	46.67	33.020	
7,100.0	6,686.6	6,816.3	6,703.2	40.1	22.1	92.03	881.4	153.5	1,541.2	1,494.6	46.62	33.060	
7,150.0	6,734.6	6,870.3	6,754.3	40.0	21.9	91.95	864.0	153.5	1,541.1	1,494.7	46.35	33.247	
7,185.0	6,767.5	6,908.0	6,789.1	39.9	21.8	91.89	849.6	153.5	1,541.0	1,494.9	46.12	33.413	
7,200.0	6,781.4	6,924.1	6,803.8	39.9	21.8	91.86	843.0	153.5	1,541.0	1,495.0	46.01	33.491	
7,250.0	6,827.0	6,977.7	6,851.4	39.8	21.6	91.76	818.3	153.5	1,540.9	1,495.3	45.60	33.789	
7,283.4	6,856.6	7,013.4	6,882.0	39.8	21.4	91.69	800.0	153.5	1,540.9	1,495.6	45.30	34.019	
7,300.0	6,871.0	7,031.0	6,896.8	39.7	21.4	91.66	790.4	153.5	1,540.9	1,495.7	45.14	34.137	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30M-323 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,350.0	6,913.2	7,084.1	6,939.8	39.6	21.1	91.54	759.3	153.5	1,540.8	1,496.1	44.62	34.530	
7,381.9	6,939.1	7,117.8	6,965.9	39.5	21.0	91.47	737.9	153.5	1,540.7	1,496.4	44.27	34.802	
7,400.0	6,953.4	7,137.0	6,980.2	39.4	20.9	91.42	725.2	153.5	1,540.7	1,496.6	44.07	34.961	
7,450.0	6,991.5	7,189.5	7,017.8	39.3	20.6	91.29	688.5	153.5	1,540.6	1,497.1	43.49	35.422	
7,480.3	7,013.5	7,221.3	7,039.1	39.2	20.4	91.21	665.0	153.5	1,540.6	1,497.4	43.14	35.714	
7,500.0	7,027.3	7,241.8	7,052.4	39.1	20.3	91.16	649.3	153.5	1,540.5	1,497.6	42.90	35.906	
7,550.0	7,060.5	7,293.8	7,083.9	39.0	20.0	91.02	608.0	153.5	1,540.5	1,498.1	42.32	36.401	
7,578.7	7,078.4	7,323.5	7,100.5	38.8	19.9	90.94	583.3	153.5	1,540.4	1,498.4	41.99	36.686	
7,600.0	7,091.0	7,345.5	7,112.2	38.8	19.8	90.87	564.7	153.5	1,540.4	1,498.6	41.75	36.898	
7,650.0	7,118.7	7,396.9	7,137.1	38.6	19.5	90.72	519.8	153.5	1,540.3	1,499.1	41.20	37.383	
7,677.1	7,132.5	7,424.6	7,149.2	38.5	19.4	90.64	494.8	153.5	1,540.3	1,499.4	40.93	37.633	
7,700.0	7,143.4	7,448.0	7,158.6	38.4	19.3	90.57	473.5	153.5	1,540.3	1,499.6	40.70	37.843	
7,750.0	7,165.0	7,498.7	7,176.7	38.2	19.1	90.42	426.0	153.5	1,540.2	1,500.0	40.25	38.266	
7,775.6	7,174.9	7,524.6	7,184.6	38.1	19.0	90.34	401.4	153.5	1,540.2	1,500.2	40.05	38.457	
7,800.0	7,183.5	7,549.2	7,191.3	38.1	18.9	90.26	377.7	153.5	1,540.2	1,500.4	39.86	38.638	
7,850.0	7,198.6	7,599.4	7,202.4	37.9	18.7	90.10	328.8	153.5	1,540.2	1,500.7	39.54	38.949	
7,874.0	7,204.7	7,623.3	7,206.5	37.8	18.7	90.03	305.2	153.5	1,540.2	1,500.8	39.43	39.064	
7,882.5	7,206.7	7,631.8	7,207.7	37.8	18.7	90.00	296.8	153.5	1,540.2	1,500.8	39.39	39.105	
7,900.0	7,210.4	7,649.2	7,210.0	37.7	18.6	89.95	279.6	153.5	1,540.2	1,500.9	39.30	39.188	
7,950.0	7,218.8	7,698.8	7,214.1	37.6	18.6	89.79	230.2	153.5	1,540.2	1,501.1	39.14	39.348	
7,972.4	7,221.4	7,721.0	7,214.9	37.5	18.5	89.72	208.0	153.5	1,540.2	1,501.1	39.11	39.384	
8,000.0	7,223.7	7,748.2	7,214.9	37.4	18.5	89.64	180.8	153.5	1,540.2	1,501.2	39.07	39.421	
8,050.0	7,225.1	7,798.1	7,214.3	37.3	18.6	89.56	130.8	153.5	1,540.3	1,501.2	39.09	39.398	
8,055.3	7,225.0	7,803.4	7,214.3	37.3	18.6	89.56	125.6	153.5	1,540.3	1,501.1	39.11	39.387	
8,070.8	7,224.8	7,819.0	7,214.1	37.3	18.6	89.56	110.0	153.5	1,540.3	1,501.1	39.15	39.338	
8,100.0	7,224.4	7,848.1	7,213.8	37.2	18.7	89.57	80.9	153.5	1,540.3	1,501.0	39.24	39.249	
8,169.3	7,223.5	7,917.4	7,213.0	37.1	18.8	89.57	11.6	153.5	1,540.3	1,500.7	39.58	38.916	
8,200.0	7,223.0	7,948.1	7,212.6	37.1	19.0	89.58	-19.1	153.5	1,540.3	1,500.5	39.77	38.728	
8,267.7	7,222.1	8,015.8	7,211.9	37.0	19.3	89.58	-86.8	153.5	1,540.3	1,499.9	40.34	38.182	
8,300.0	7,221.7	8,048.1	7,211.5	37.0	19.5	89.59	-119.1	153.5	1,540.3	1,499.6	40.65	37.887	
8,366.1	7,220.7	8,114.3	7,210.8	37.0	20.0	89.59	-185.3	153.5	1,540.2	1,498.8	41.43	37.176	
8,400.0	7,220.3	8,148.1	7,210.4	37.0	20.3	89.60	-219.1	153.5	1,540.2	1,498.4	41.87	36.785	
8,464.5	7,219.4	8,212.7	7,209.7	37.1	20.8	89.60	-283.7	153.5	1,540.2	1,497.4	42.83	35.963	
8,500.0	7,218.9	8,248.1	7,209.3	37.1	21.2	89.61	-319.1	153.5	1,540.2	1,496.9	43.39	35.494	
8,563.0	7,218.0	8,311.1	7,208.6	37.2	21.8	89.61	-382.1	153.5	1,540.2	1,495.7	44.50	34.610	
8,600.0	7,217.5	8,348.1	7,208.2	37.3	22.2	89.62	-419.1	153.5	1,540.2	1,495.1	45.19	34.082	
8,661.4	7,216.7	8,409.5	7,207.5	37.5	22.8	89.62	-480.5	153.5	1,540.2	1,493.8	46.42	33.178	
8,700.0	7,216.1	8,448.1	7,207.1	37.6	23.3	89.63	-519.1	153.5	1,540.2	1,493.0	47.23	32.609	
8,759.8	7,215.3	8,508.0	7,206.4	37.8	24.0	89.63	-578.9	153.5	1,540.2	1,491.7	48.56	31.716	
8,800.0	7,214.8	8,548.1	7,205.9	38.0	24.5	89.63	-619.1	153.5	1,540.2	1,490.8	49.49	31.123	
8,858.2	7,214.0	8,606.4	7,205.3	38.3	25.3	89.64	-677.3	153.5	1,540.2	1,489.3	50.89	30.264	
8,900.0	7,213.4	8,648.1	7,204.8	38.5	25.9	89.64	-719.1	153.5	1,540.2	1,488.3	51.93	29.661	
8,956.7	7,212.6	8,704.8	7,204.2	38.8	26.6	89.65	-775.8	153.5	1,540.2	1,486.9	53.39	28.850	
9,000.0	7,212.0	8,748.1	7,203.7	39.1	27.2	89.65	-819.1	153.5	1,540.2	1,485.7	54.53	28.245	
9,055.1	7,211.2	8,803.2	7,203.1	39.5	28.0	89.66	-874.2	153.5	1,540.2	1,484.2	56.03	27.491	
9,100.0	7,210.6	8,848.1	7,202.6	39.8	28.7	89.66	-919.1	153.5	1,540.2	1,483.0	57.27	26.894	
9,153.5	7,209.9	8,901.7	7,202.0	40.3	29.5	89.67	-972.6	153.5	1,540.2	1,481.4	58.79	26.198	
9,200.0	7,209.2	8,948.1	7,201.5	40.7	30.2	89.67	-1,019.1	153.5	1,540.2	1,480.1	60.13	25.614	
9,251.9	7,208.5	9,000.1	7,200.9	41.1	31.0	89.68	-1,071.0	153.5	1,540.2	1,478.6	61.66	24.978	
9,300.0	7,207.9	9,048.1	7,200.3	41.6	31.7	89.68	-1,119.1	153.5	1,540.2	1,477.1	63.10	24.410	
9,350.4	7,207.2	9,098.5	7,199.8	42.1	32.5	89.69	-1,169.4	153.5	1,540.2	1,475.6	64.63	23.832	
9,400.0	7,206.5	9,148.1	7,199.2	42.6	33.3	89.69	-1,219.1	153.5	1,540.2	1,474.1	66.15	23.282	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30M-323 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,448.8	7,205.8	9,196.9	7,198.7	43.1	34.1	89.70	-1,267.9	153.5	1,540.2	1,472.6	67.68	22.759	
9,500.0	7,205.1	9,248.1	7,198.1	43.7	34.9	89.70	-1,319.1	153.5	1,540.2	1,470.9	69.29	22.229	
9,547.2	7,204.4	9,295.4	7,197.6	44.2	35.7	89.71	-1,366.3	153.5	1,540.2	1,469.4	70.79	21.757	
9,600.0	7,203.7	9,348.1	7,197.0	44.8	36.6	89.71	-1,419.0	153.5	1,540.2	1,467.7	72.49	21.248	
9,645.6	7,203.1	9,393.8	7,196.5	45.4	37.3	89.72	-1,464.7	153.5	1,540.2	1,466.3	73.97	20.821	
9,700.0	7,202.3	9,448.1	7,195.9	46.1	38.2	89.72	-1,519.0	153.5	1,540.2	1,464.5	75.75	20.333	
9,744.1	7,201.7	9,492.2	7,195.4	46.6	39.0	89.73	-1,563.1	153.5	1,540.2	1,463.0	77.21	19.949	
9,800.0	7,201.0	9,548.1	7,194.7	47.3	39.9	89.73	-1,619.0	153.5	1,540.2	1,461.2	79.06	19.481	
9,842.5	7,200.4	9,590.6	7,194.3	47.9	40.7	89.74	-1,661.5	153.5	1,540.2	1,459.7	80.49	19.136	
9,900.0	7,199.6	9,648.1	7,193.6	48.7	41.6	89.74	-1,719.0	153.5	1,540.2	1,457.8	82.42	18.687	
9,940.9	7,199.0	9,689.0	7,193.2	49.2	42.3	89.74	-1,759.9	153.5	1,540.2	1,456.4	83.81	18.377	
10,000.0	7,198.2	9,748.1	7,192.5	50.1	43.4	89.75	-1,819.0	153.5	1,540.2	1,454.4	85.82	17.946	
10,039.3	7,197.7	9,787.5	7,192.0	50.6	44.1	89.75	-1,858.4	153.5	1,540.2	1,453.1	87.17	17.669	
10,100.0	7,196.8	9,848.1	7,191.4	51.5	45.1	89.76	-1,919.0	153.5	1,540.2	1,451.0	89.26	17.256	
10,137.8	7,196.3	9,885.9	7,190.9	52.0	45.8	89.76	-1,956.8	153.5	1,540.2	1,449.7	90.57	17.006	
10,200.0	7,195.4	9,948.1	7,190.2	52.9	46.9	89.77	-2,019.0	153.5	1,540.2	1,447.5	92.73	16.610	
10,236.2	7,194.9	9,984.3	7,189.8	53.5	47.5	89.77	-2,055.2	153.5	1,540.2	1,446.2	93.99	16.387	
10,300.0	7,194.1	10,048.1	7,189.1	54.4	48.6	89.78	-2,119.0	153.5	1,540.2	1,444.0	96.22	16.007	
10,334.6	7,193.6	10,082.7	7,188.7	55.0	49.3	89.78	-2,153.6	153.5	1,540.2	1,442.8	97.44	15.807	
10,400.0	7,192.7	10,148.1	7,188.0	56.0	50.4	89.79	-2,219.0	153.5	1,540.2	1,440.5	99.74	15.442	
10,433.0	7,192.2	10,181.2	7,187.6	56.5	51.0	89.79	-2,252.0	153.5	1,540.2	1,439.3	100.91	15.263	
10,500.0	7,191.3	10,248.1	7,186.9	57.5	52.2	89.80	-2,319.0	153.5	1,540.2	1,436.9	103.29	14.912	
10,531.5	7,190.9	10,279.6	7,186.5	58.0	52.8	89.80	-2,350.5	153.5	1,540.2	1,435.8	104.41	14.752	
10,600.0	7,189.9	10,348.1	7,185.8	59.1	54.0	89.81	-2,419.0	153.5	1,540.2	1,433.4	106.85	14.414	
10,629.9	7,189.5	10,378.0	7,185.4	59.6	54.6	89.81	-2,448.9	153.5	1,540.2	1,432.3	107.92	14.271	
10,700.0	7,188.5	10,448.1	7,184.6	60.7	55.8	89.82	-2,519.0	153.5	1,540.2	1,429.8	110.44	13.947	
10,728.3	7,188.1	10,476.4	7,184.3	61.1	56.3	89.82	-2,547.3	153.5	1,540.2	1,428.8	111.46	13.819	
10,800.0	7,187.2	10,548.1	7,183.5	62.3	57.6	89.83	-2,619.0	153.5	1,540.2	1,426.2	114.04	13.506	
10,826.7	7,186.8	10,574.9	7,183.2	62.7	58.1	89.83	-2,645.7	153.5	1,540.2	1,425.2	115.00	13.393	
10,900.0	7,185.8	10,648.1	7,182.4	63.9	59.5	89.84	-2,719.0	153.5	1,540.2	1,422.6	117.65	13.091	
10,925.2	7,185.4	10,673.3	7,182.1	64.3	59.9	89.84	-2,744.1	153.5	1,540.2	1,421.6	118.57	12.990	
11,000.0	7,184.4	10,748.1	7,181.3	65.6	61.3	89.85	-2,818.9	153.5	1,540.2	1,418.9	121.28	12.699	
11,023.6	7,184.1	10,771.7	7,181.0	66.0	61.7	89.85	-2,842.5	153.5	1,540.2	1,418.1	122.14	12.610	
11,100.0	7,183.0	10,848.1	7,180.1	67.2	63.1	89.86	-2,918.9	153.5	1,540.2	1,415.3	124.92	12.329	
11,122.0	7,182.7	10,870.1	7,179.9	67.6	63.5	89.86	-2,941.0	153.5	1,540.2	1,414.5	125.73	12.250	
11,200.0	7,181.6	10,948.1	7,179.0	68.9	65.0	89.87	-3,018.9	153.5	1,540.2	1,411.6	128.58	11.979	
11,220.4	7,181.3	10,968.6	7,178.8	69.3	65.3	89.87	-3,039.4	153.5	1,540.2	1,410.9	129.33	11.909	
11,300.0	7,180.2	11,048.1	7,177.9	70.6	66.8	89.87	-3,118.9	153.5	1,540.2	1,408.0	132.24	11.647	
11,318.9	7,180.0	11,067.0	7,177.7	70.9	67.1	89.88	-3,137.8	153.5	1,540.2	1,407.3	132.94	11.586	
11,400.0	7,178.9	11,148.1	7,176.8	72.3	68.6	89.88	-3,218.9	153.5	1,540.2	1,404.3	135.92	11.332	
11,417.3	7,178.6	11,165.4	7,176.6	72.6	69.0	89.89	-3,236.2	153.5	1,540.2	1,403.7	136.55	11.279	
11,500.0	7,177.5	11,248.1	7,175.6	74.0	70.5	89.89	-3,318.9	153.5	1,540.2	1,400.6	139.60	11.033	
11,515.7	7,177.3	11,263.8	7,175.4	74.3	70.8	89.90	-3,334.6	153.5	1,540.2	1,400.0	140.18	10.987	
11,600.0	7,176.1	11,348.1	7,174.5	75.7	72.4	89.90	-3,418.9	153.5	1,540.2	1,396.9	143.29	10.749	
11,614.1	7,175.9	11,362.3	7,174.3	76.0	72.6	89.90	-3,433.1	153.5	1,540.2	1,396.4	143.82	10.710	
11,700.0	7,174.7	11,448.1	7,173.4	77.5	74.2	89.91	-3,518.9	153.5	1,540.2	1,393.2	146.99	10.478	
11,712.6	7,174.5	11,460.7	7,173.2	77.7	74.4	89.91	-3,531.5	153.5	1,540.2	1,392.7	147.46	10.445	
11,800.0	7,173.3	11,548.1	7,172.2	79.2	76.1	89.92	-3,618.9	153.5	1,540.2	1,389.5	150.70	10.220	
11,811.0	7,173.2	11,559.1	7,172.1	79.4	76.3	89.92	-3,629.9	153.5	1,540.2	1,389.1	151.11	10.193	
11,900.0	7,172.0	11,648.1	7,171.1	81.0	77.9	89.93	-3,718.9	153.5	1,540.2	1,385.8	154.41	9.975	
11,909.4	7,171.8	11,657.5	7,171.0	81.1	78.1	89.93	-3,728.3	153.5	1,540.2	1,385.4	154.76	9.952	
11,975.2	7,170.9	11,723.3	7,170.3	82.3	79.3	89.94	-3,794.1	153.5	1,540.2	1,383.0	157.21	9.797	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30M-323 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,000.0	7,170.6	11,747.1	7,170.0	82.7	79.8	89.94	-3,817.9	153.5	1,540.2	1,382.1	158.11	9.741	
12,007.8	7,170.5	11,747.1	7,170.0	82.9	79.8	89.94	-3,817.9	153.5	1,540.2	1,382.0	158.26	9.732	
12,041.2	7,170.0	11,747.1	7,170.0	83.5	79.8	89.94	-3,817.9	153.5	1,540.8	1,381.9	158.87	9.698	SF

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30M-403 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-88.44	3.3	-120.0	120.0				
98.4	98.4	99.4	99.4	0.1	0.1	-88.44	3.3	-120.0	120.0	119.8	0.17	702.597	
100.0	100.0	101.0	101.0	0.1	0.1	-88.44	3.3	-120.0	120.0	119.8	0.18	684.501	
196.8	196.8	197.8	197.8	0.3	0.3	-88.44	3.3	-120.0	120.0	119.4	0.61	196.508	
200.0	200.0	201.0	201.0	0.3	0.3	-88.44	3.3	-120.0	120.0	119.4	0.62	192.055	
295.3	295.3	296.3	296.3	0.5	0.5	-88.44	3.3	-120.0	120.0	119.0	1.05	113.950	
300.0	300.0	301.0	301.0	0.5	0.5	-88.44	3.3	-120.0	120.0	118.9	1.07	111.697	
393.7	393.7	394.7	394.7	0.7	0.7	-88.44	3.3	-120.0	120.0	118.5	1.50	80.239	
400.0	400.0	401.0	401.0	0.8	0.8	-88.44	3.3	-120.0	120.0	118.5	1.52	78.748	
492.1	492.1	493.1	493.1	1.0	1.0	-88.44	3.3	-120.0	120.0	118.1	1.94	61.921	
500.0	500.0	501.0	501.0	1.0	1.0	-88.44	3.3	-120.0	120.0	118.0	1.97	60.810	
590.5	590.5	591.5	591.5	1.2	1.2	-88.44	3.3	-120.0	120.0	117.6	2.38	50.412	
600.0	600.0	601.0	601.0	1.2	1.2	-88.44	3.3	-120.0	120.0	117.6	2.42	49.528	
689.0	689.0	690.0	690.0	1.4	1.4	-88.44	3.3	-120.0	120.0	117.2	2.82	42.511	
700.0	700.0	701.0	701.0	1.4	1.4	-88.44	3.3	-120.0	120.0	117.1	2.87	41.777	
787.4	787.4	788.4	788.4	1.6	1.6	-88.44	3.3	-120.0	120.0	116.7	3.27	36.751	
800.0	800.0	801.0	801.0	1.7	1.7	-88.44	3.3	-120.0	120.0	116.7	3.32	36.124	
885.8	885.8	886.8	886.8	1.9	1.9	-88.44	3.3	-120.0	120.0	116.3	3.71	32.365	
900.0	900.0	901.0	901.0	1.9	1.9	-88.44	3.3	-120.0	120.0	116.2	3.77	31.818	
984.2	984.2	985.2	985.2	2.1	2.1	-88.44	3.3	-120.0	120.0	115.9	4.15	28.915	
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	-88.44	3.3	-120.0	120.0	115.8	4.22	28.430	
1,082.7	1,082.7	1,083.7	1,083.7	2.3	2.3	-88.44	3.3	-120.0	120.0	115.4	4.59	26.129	
1,100.0	1,100.0	1,101.0	1,101.0	2.3	2.3	-88.44	3.3	-120.0	120.0	115.3	4.67	25.694	
1,181.1	1,181.1	1,182.1	1,182.1	2.5	2.5	-88.44	3.3	-120.0	120.0	115.0	5.04	23.833	
1,200.0	1,200.0	1,201.0	1,201.0	2.6	2.6	-88.44	3.3	-120.0	120.0	114.9	5.12	23.438	
1,279.5	1,279.5	1,280.5	1,280.5	2.7	2.7	-88.44	3.3	-120.0	120.0	114.5	5.48	21.908	
1,300.0	1,300.0	1,301.0	1,301.0	2.8	2.8	-88.44	3.3	-120.0	120.0	114.4	5.57	21.546	
1,377.9	1,377.9	1,378.9	1,378.9	3.0	3.0	-88.44	3.3	-120.0	120.0	114.1	5.92	20.271	
1,400.0	1,400.0	1,401.0	1,401.0	3.0	3.0	-88.44	3.3	-120.0	120.0	114.0	6.02	19.937	
1,433.0	1,433.0	1,434.0	1,434.0	3.1	3.1	-88.44	3.3	-120.0	120.0	113.8	6.17	19.458	CC
1,450.0	1,450.0	1,451.0	1,451.0	3.1	3.1	-88.44	3.3	-120.0	120.0	113.8	6.24	19.219	ES
1,476.4	1,476.4	1,477.1	1,477.1	3.2	3.2	-151.71	3.4	-120.0	120.1	113.8	6.36	18.893	
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.2	-151.64	3.7	-120.1	120.5	114.1	6.46	18.651	
1,574.8	1,574.8	1,574.3	1,574.2	3.4	3.4	-151.10	5.9	-120.6	123.2	116.4	6.78	18.160	
1,600.0	1,599.9	1,599.1	1,599.1	3.4	3.5	-150.83	7.0	-120.9	124.6	117.7	6.89	18.082	
1,673.2	1,673.0	1,671.2	1,670.9	3.6	3.6	-149.82	11.5	-122.1	130.1	122.9	7.20	18.070	
1,700.0	1,699.7	1,697.4	1,697.1	3.7	3.7	-149.37	13.6	-122.6	132.7	125.4	7.31	18.144	
1,771.6	1,771.0	1,767.5	1,766.8	3.8	3.8	-148.06	20.3	-124.3	141.0	133.4	7.62	18.510	
1,800.0	1,799.1	1,795.0	1,794.2	3.9	3.9	-147.50	23.4	-125.1	144.9	137.2	7.74	18.726	
1,870.1	1,868.6	1,862.9	1,861.5	4.1	4.1	-146.06	32.1	-127.3	156.0	148.0	8.05	19.386	
1,900.0	1,898.2	1,891.7	1,890.0	4.1	4.1	-145.43	36.2	-128.4	161.4	153.2	8.18	19.732	
1,968.5	1,965.7	1,957.2	1,954.6	4.3	4.3	-144.00	46.7	-131.0	175.1	166.6	8.50	20.611	
2,000.0	1,996.6	1,987.2	1,984.0	4.4	4.4	-143.35	51.9	-132.4	182.1	173.5	8.64	21.071	
2,066.9	2,062.2	2,050.3	2,045.9	4.6	4.6	-142.01	64.0	-135.4	198.3	189.3	8.97	22.107	
2,100.0	2,094.4	2,082.2	2,077.1	4.7	4.7	-141.40	70.4	-137.1	206.9	197.8	9.14	22.645	
2,165.3	2,157.9	2,145.0	2,138.5	5.0	4.9	-140.48	83.1	-140.3	224.8	215.3	9.48	23.708	
2,200.0	2,191.5	2,178.2	2,171.0	5.1	5.0	-140.13	89.7	-142.0	234.7	225.1	9.66	24.289	
2,263.8	2,252.9	2,239.0	2,230.5	5.3	5.2	-139.67	102.0	-145.1	253.8	243.8	10.02	25.335	
2,300.0	2,287.6	2,273.4	2,264.2	5.5	5.3	-139.51	108.9	-146.9	265.2	254.9	10.22	25.942	
2,362.2	2,346.9	2,332.2	2,321.7	5.8	5.5	-139.37	120.8	-149.9	285.4	274.8	10.58	26.964	
2,400.0	2,382.7	2,367.8	2,356.5	6.0	5.6	-139.36	127.9	-151.7	298.1	287.3	10.81	27.587	
2,460.6	2,439.8	2,424.6	2,412.0	6.3	5.8	-139.42	139.4	-154.6	319.3	308.1	11.18	28.566	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30M-403 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,500.0	2,476.6	2,461.3	2,447.9	6.5	6.0	-139.52	146.8	-156.5	333.6	322.1	11.42	29.209	
2,559.0	2,531.6	2,515.9	2,501.4	6.9	6.2	-139.72	157.8	-159.3	355.7	343.9	11.80	30.146	
2,600.0	2,569.4	2,553.6	2,538.2	7.1	6.3	-139.89	165.4	-161.3	371.5	359.5	12.06	30.805	
2,657.5	2,622.0	2,606.2	2,589.7	7.5	6.5	-140.16	175.9	-164.0	394.5	382.1	12.44	31.700	
2,700.0	2,660.7	2,644.8	2,627.4	7.8	6.7	-140.38	183.7	-165.9	412.1	399.3	12.73	32.374	
2,755.9	2,711.1	2,695.2	2,676.7	8.2	6.9	-140.70	193.9	-168.5	435.8	422.7	13.12	33.228	
2,800.0	2,750.6	2,734.7	2,715.3	8.6	7.0	-140.95	201.8	-170.5	455.2	441.7	13.42	33.916	
2,832.3	2,779.2	2,763.4	2,743.4	8.8	7.1	-141.15	207.6	-172.0	469.6	456.0	13.65	34.408	
2,854.3	2,798.8	2,782.9	2,762.5	9.0	7.2	-141.41	211.5	-173.0	479.6	465.8	13.82	34.700	
2,900.0	2,839.3	2,823.5	2,802.2	9.4	7.4	-141.93	219.7	-175.1	500.3	486.1	14.18	35.280	
2,952.7	2,886.0	2,870.3	2,848.0	9.9	7.6	-142.48	229.1	-177.5	524.2	509.6	14.60	35.901	
3,000.0	2,927.8	2,912.2	2,889.0	10.3	7.7	-142.93	237.6	-179.7	545.7	530.7	14.98	36.429	
3,051.2	2,973.2	2,957.6	2,933.4	10.7	7.9	-143.38	246.7	-182.0	569.0	553.6	15.40	36.957	
3,100.0	3,016.4	3,000.9	2,975.8	11.2	8.1	-143.78	255.4	-184.2	591.2	575.4	15.79	37.436	
3,149.6	3,060.4	3,044.9	3,018.8	11.6	8.3	-144.16	264.3	-186.5	613.8	597.6	16.20	37.887	
3,200.0	3,105.0	3,089.6	3,062.5	12.1	8.5	-144.51	273.3	-188.8	636.8	620.2	16.62	38.325	
3,248.0	3,147.5	3,132.2	3,104.2	12.5	8.6	-144.82	281.9	-190.9	658.8	641.8	17.02	38.712	
3,300.0	3,193.6	3,178.3	3,149.3	13.0	8.8	-145.14	291.2	-193.3	682.5	665.1	17.45	39.113	
3,346.4	3,234.7	3,219.5	3,189.6	13.4	9.0	-145.40	299.5	-195.4	703.8	685.9	17.84	39.448	
3,400.0	3,282.2	3,267.1	3,236.1	13.9	9.2	-145.69	309.0	-197.9	728.3	710.0	18.29	39.816	
3,444.9	3,321.9	3,306.9	3,275.0	14.3	9.3	-145.92	317.1	-199.9	748.8	730.1	18.67	40.107	
3,500.0	3,370.8	3,355.8	3,322.9	14.8	9.6	-146.18	326.9	-202.4	774.1	754.9	19.14	40.447	
3,543.3	3,409.1	3,394.2	3,360.5	15.2	9.7	-146.37	334.6	-204.4	793.9	774.4	19.51	40.699	
3,600.0	3,459.3	3,444.5	3,409.7	15.8	9.9	-146.61	344.8	-207.0	819.9	799.9	19.99	41.014	
3,641.7	3,496.3	3,481.5	3,445.9	16.1	10.1	-146.78	352.2	-208.9	839.0	818.7	20.35	41.234	
3,700.0	3,547.9	3,533.2	3,496.5	16.7	10.3	-147.00	362.6	-211.5	865.7	844.9	20.85	41.528	
3,740.1	3,583.5	3,568.8	3,531.3	17.1	10.4	-147.14	369.8	-213.3	884.2	863.0	21.19	41.719	
3,800.0	3,636.5	3,621.9	3,583.2	17.6	10.7	-147.34	380.5	-216.1	911.6	889.9	21.71	41.994	
3,838.6	3,670.7	3,656.2	3,616.7	18.0	10.8	-147.47	387.4	-217.8	929.3	907.3	22.04	42.161	
3,900.0	3,725.1	3,710.7	3,670.0	18.6	11.1	-147.66	398.4	-220.6	957.5	935.0	22.57	42.418	
3,937.0	3,757.9	3,743.5	3,702.1	18.9	11.2	-147.77	405.0	-222.3	974.5	951.6	22.90	42.565	
4,000.0	3,813.7	3,799.4	3,756.8	19.5	11.4	-147.95	416.2	-225.2	1,003.5	980.0	23.44	42.806	
4,035.4	3,845.1	3,830.8	3,787.5	19.9	11.6	-148.04	422.6	-226.8	1,019.7	996.0	23.75	42.935	
4,100.0	3,902.3	3,888.1	3,843.6	20.5	11.8	-148.21	434.1	-229.7	1,049.4	1,025.1	24.31	43.162	
4,133.8	3,932.2	3,918.1	3,873.0	20.8	11.9	-148.29	440.2	-231.3	1,065.0	1,040.4	24.61	43.276	
4,200.0	3,990.8	3,976.8	3,930.4	21.5	12.2	-148.45	452.0	-234.3	1,095.4	1,070.2	25.19	43.490	
4,232.3	4,019.4	4,005.4	3,958.4	21.8	12.3	-148.52	457.8	-235.7	1,110.2	1,084.8	25.47	43.590	
4,300.0	4,079.4	4,065.5	4,017.1	22.4	12.6	-148.67	469.9	-238.8	1,141.4	1,115.3	26.06	43.792	
4,330.7	4,106.6	4,092.8	4,043.8	22.7	12.7	-148.73	475.3	-240.2	1,155.5	1,129.2	26.33	43.880	
4,400.0	4,168.0	4,154.3	4,103.9	23.4	13.0	-148.87	487.7	-243.4	1,187.4	1,160.4	26.94	44.071	
4,429.1	4,193.8	4,180.1	4,129.2	23.7	13.1	-148.92	492.9	-244.7	1,200.8	1,173.6	27.20	44.149	
4,500.0	4,256.6	4,243.0	4,190.7	24.4	13.3	-149.06	505.6	-247.9	1,233.4	1,205.5	27.82	44.330	
4,527.5	4,281.0	4,267.4	4,214.6	24.6	13.4	-149.11	510.5	-249.2	1,246.0	1,218.0	28.07	44.398	
4,600.0	4,345.2	4,331.7	4,277.5	25.3	13.7	-149.23	523.5	-252.5	1,279.4	1,250.7	28.70	44.571	
4,626.0	4,368.2	4,354.7	4,300.0	25.6	13.8	-149.27	528.1	-253.7	1,291.3	1,262.4	28.93	44.631	
4,700.0	4,433.8	4,420.4	4,364.3	26.3	14.1	-149.39	541.3	-257.0	1,325.4	1,295.8	29.59	44.796	
4,724.4	4,455.4	4,442.1	4,385.5	26.5	14.2	-149.43	545.7	-258.1	1,336.6	1,306.8	29.80	44.848	
4,800.0	4,522.3	4,509.1	4,451.1	27.3	14.5	-149.54	559.2	-261.6	1,371.4	1,341.0	30.47	45.005	
4,822.8	4,542.6	4,529.4	4,470.9	27.5	14.6	-149.58	563.3	-262.6	1,381.9	1,351.3	30.67	45.051	
4,900.0	4,610.9	4,597.9	4,537.8	28.2	14.9	-149.69	577.1	-266.1	1,417.5	1,386.1	31.36	45.201	
4,921.2	4,629.8	4,616.7	4,556.3	28.4	15.0	-149.71	580.9	-267.1	1,427.3	1,395.7	31.55	45.241	
5,000.0	4,699.5	4,686.6	4,624.6	29.2	15.3	-149.82	594.9	-270.7	1,463.5	1,431.3	32.25	45.385	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30M-403 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,019.7	4,716.9	4,704.0	4,641.7	29.4	15.3	-149.84	598.4	-271.6	1,472.6	1,440.2	32.42	45.420	
5,100.0	4,788.1	4,775.3	4,711.4	30.2	15.7	-149.94	612.8	-275.2	1,509.6	1,476.4	33.14	45.557	
5,118.1	4,804.1	4,791.4	4,727.1	30.4	15.7	-149.96	616.0	-276.1	1,517.9	1,484.6	33.30	45.587	
5,200.0	4,876.7	4,864.0	4,798.2	31.1	16.0	-150.06	630.7	-279.8	1,555.6	1,521.6	34.03	45.720	
5,216.5	4,891.3	4,878.7	4,812.5	31.3	16.1	-150.08	633.6	-280.6	1,563.2	1,529.1	34.17	45.745	
5,300.0	4,965.3	4,952.7	4,885.0	32.1	16.4	-150.17	648.5	-284.4	1,601.7	1,566.8	34.92	45.872	
5,314.9	4,978.5	4,966.0	4,897.9	32.3	16.5	-150.19	651.2	-285.0	1,608.6	1,573.5	35.05	45.894	
5,400.0	5,053.8	5,041.5	4,971.8	33.1	16.8	-150.28	666.4	-288.9	1,647.7	1,611.9	35.81	46.016	
5,413.4	5,065.7	5,053.3	4,983.4	33.2	16.9	-150.29	668.8	-289.5	1,653.9	1,618.0	35.93	46.035	
5,508.2	5,149.7	5,137.4	5,065.6	34.2	17.2	-150.38	685.7	-293.8	1,697.6	1,660.8	36.77	46.163	
5,511.8	5,152.9	5,140.6	5,068.8	34.2	17.2	-150.40	686.4	-294.0	1,699.2	1,662.4	36.81	46.165	
5,600.0	5,231.7	5,219.5	5,145.9	34.9	17.6	-150.89	702.3	-298.0	1,738.7	1,701.1	37.65	46.185	
5,610.2	5,240.9	5,228.7	5,154.9	35.0	17.6	-150.94	704.1	-298.5	1,743.2	1,705.4	37.74	46.190	
5,700.0	5,322.5	5,310.1	5,234.6	35.7	18.0	-151.34	720.5	-302.7	1,780.9	1,742.4	38.56	46.192	
5,708.6	5,330.4	5,318.0	5,242.3	35.7	18.0	-151.38	722.1	-303.1	1,784.4	1,745.8	38.63	46.191	
5,800.0	5,414.6	5,402.0	5,324.5	36.3	18.4	-151.70	739.0	-307.4	1,820.3	1,780.9	39.45	46.142	
5,807.1	5,421.2	5,408.6	5,330.9	36.4	18.4	-151.72	740.3	-307.7	1,823.0	1,783.5	39.51	46.137	
5,900.0	5,508.1	5,495.1	5,415.5	36.9	18.8	-151.96	757.7	-312.2	1,856.9	1,816.6	40.33	46.043	
5,905.5	5,513.3	5,500.2	5,420.5	37.0	18.8	-151.97	758.8	-312.4	1,858.8	1,818.4	40.38	46.037	
6,000.0	5,602.8	5,589.1	5,507.4	37.5	19.2	-152.14	776.7	-317.0	1,890.6	1,849.4	41.19	45.901	
6,003.9	5,606.5	5,592.8	5,511.1	37.5	19.2	-152.15	777.4	-317.2	1,891.8	1,850.6	41.22	45.895	
6,100.0	5,698.5	5,684.0	5,600.3	38.0	19.6	-152.24	795.8	-321.9	1,921.3	1,879.3	42.02	45.721	
6,102.3	5,700.7	5,686.2	5,602.5	38.0	19.6	-152.24	796.3	-322.0	1,922.0	1,880.0	42.04	45.716	
6,200.0	5,795.2	5,779.7	5,693.9	38.4	20.1	-152.26	815.1	-326.8	1,949.2	1,906.4	42.83	45.507	
6,200.8	5,795.9	5,780.5	5,694.6	38.4	20.1	-152.26	815.2	-326.8	1,949.4	1,906.6	42.84	45.505	
6,299.2	5,891.9	5,875.3	5,787.4	38.8	20.5	-152.22	834.3	-331.7	1,973.9	1,930.3	43.61	45.265	
6,300.0	5,892.7	5,876.1	5,788.2	38.8	20.5	-152.22	834.5	-331.7	1,974.1	1,930.5	43.61	45.263	
6,397.6	5,988.5	5,970.7	5,880.7	39.1	20.9	-152.10	853.5	-336.6	1,995.6	1,951.2	44.35	44.998	
6,400.0	5,990.9	5,973.0	5,883.0	39.1	20.9	-152.10	854.0	-336.7	1,996.1	1,951.7	44.37	44.991	
6,496.0	6,085.8	6,069.6	5,977.4	39.4	21.3	-151.91	873.4	-341.6	2,014.4	1,969.3	45.07	44.699	
6,500.0	6,089.7	6,074.3	5,982.1	39.4	21.3	-151.90	874.3	-341.9	2,015.1	1,970.0	45.10	44.684	
6,594.5	6,183.5	6,189.0	6,094.8	39.6	21.7	-151.65	894.4	-347.0	2,029.6	1,983.9	45.72	44.391	
6,600.0	6,189.0	6,195.7	6,101.5	39.7	21.7	-151.64	895.5	-347.3	2,030.4	1,984.6	45.76	44.374	
6,692.9	6,281.5	6,310.1	6,214.7	39.8	22.1	-151.43	910.9	-351.2	2,040.9	1,994.6	46.25	44.125	
6,700.0	6,288.6	6,318.9	6,223.5	39.8	22.1	-151.42	911.9	-351.5	2,041.6	1,995.3	46.29	44.108	
6,791.3	6,379.8	6,432.4	6,336.5	40.0	22.3	-151.26	922.6	-354.2	2,048.1	2,001.4	46.66	43.893	
6,800.0	6,388.5	6,443.3	6,347.3	40.0	22.3	-151.25	923.3	-354.4	2,048.5	2,001.8	46.69	43.873	
6,889.7	6,478.2	6,555.6	6,459.5	40.1	22.5	-151.14	929.2	-355.8	2,051.1	2,004.2	46.95	43.689	
6,890.4	6,478.9	6,556.4	6,460.3	40.1	22.5	-87.83	929.2	-355.9	2,051.1	2,004.2	46.95	43.687	
6,900.0	6,488.5	6,568.5	6,472.3	40.1	22.6	-87.82	929.6	-355.9	2,051.2	2,004.2	46.98	43.659	
6,920.4	6,508.9	6,594.1	6,497.9	40.1	22.6	-87.80	930.2	-356.1	2,051.4	2,004.3	47.05	43.599	
6,950.0	6,538.5	6,631.2	6,535.1	40.1	22.7	92.22	930.7	-356.2	2,051.5	2,004.4	47.14	43.521	
6,988.2	6,576.6	6,673.7	6,577.6	40.1	22.7	92.29	930.8	-356.3	2,051.6	2,004.4	47.23	43.441	
7,000.0	6,588.3	6,685.5	6,589.3	40.1	22.7	92.32	930.8	-356.3	2,051.7	2,004.4	47.26	43.417	
7,050.0	6,637.8	6,739.1	6,643.0	40.1	22.8	92.50	930.0	-356.3	2,051.9	2,004.6	47.34	43.342	
7,086.6	6,673.6	6,780.8	6,684.5	40.1	22.8	92.63	926.9	-356.3	2,052.2	2,004.8	47.35	43.340	
7,100.0	6,686.6	6,796.2	6,699.8	40.1	22.8	92.68	925.1	-356.3	2,052.2	2,004.9	47.35	43.344	
7,150.0	6,734.6	6,853.8	6,756.6	40.0	22.8	92.85	915.6	-356.3	2,052.5	2,005.3	47.25	43.435	
7,185.0	6,767.5	6,894.6	6,796.3	39.9	22.7	92.96	906.1	-356.3	2,052.7	2,005.6	47.13	43.555	
7,200.0	6,781.4	6,912.1	6,813.1	39.9	22.7	93.00	901.3	-356.3	2,052.8	2,005.7	47.07	43.616	
7,250.0	6,827.0	6,971.0	6,868.8	39.8	22.5	93.14	882.3	-356.3	2,053.1	2,006.3	46.79	43.881	
7,283.4	6,856.6	7,010.7	6,905.4	39.8	22.4	93.22	866.9	-356.3	2,053.2	2,006.7	46.55	44.107	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30M-403 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,300.0	6,871.0	7,030.4	6,923.2	39.7	22.4	93.26	858.6	-356.3	2,053.3	2,006.9	46.42	44.229	
7,350.0	6,913.2	7,090.2	6,975.8	39.6	22.1	93.36	830.2	-356.3	2,053.5	2,007.5	45.99	44.654	
7,381.9	6,939.1	7,128.5	7,008.2	39.5	22.0	93.41	809.7	-356.3	2,053.6	2,007.9	45.67	44.967	
7,400.0	6,953.4	7,150.3	7,026.2	39.4	21.9	93.44	797.3	-356.3	2,053.7	2,008.2	45.48	45.151	
7,450.0	6,991.5	7,210.8	7,073.9	39.3	21.6	93.50	760.1	-356.3	2,053.8	2,008.9	44.93	45.713	
7,480.3	7,013.5	7,247.6	7,101.2	39.2	21.4	93.53	735.6	-356.3	2,053.9	2,009.3	44.57	46.080	
7,500.0	7,027.3	7,271.5	7,118.4	39.1	21.3	93.54	718.9	-356.3	2,053.9	2,009.5	44.34	46.326	
7,550.0	7,060.5	7,332.3	7,159.3	39.0	21.0	93.56	673.9	-356.3	2,053.9	2,010.2	43.72	46.976	
7,578.7	7,078.4	7,367.2	7,181.0	38.8	20.8	93.56	646.6	-356.3	2,053.9	2,010.5	43.37	47.359	
7,600.0	7,091.0	7,393.1	7,196.3	38.8	20.7	93.55	625.6	-356.3	2,053.9	2,010.8	43.11	47.646	
7,650.0	7,118.7	7,453.9	7,229.0	38.6	20.4	93.53	574.5	-356.3	2,053.9	2,011.3	42.51	48.315	
7,677.1	7,132.5	7,486.8	7,244.9	38.5	20.2	93.51	545.6	-356.3	2,053.8	2,011.6	42.20	48.667	
7,700.0	7,143.4	7,514.5	7,257.2	38.4	20.1	93.48	520.8	-356.3	2,053.8	2,011.8	41.95	48.959	
7,750.0	7,165.0	7,574.8	7,280.7	38.2	19.9	93.41	465.3	-356.3	2,053.6	2,012.2	41.44	49.557	
7,775.6	7,174.9	7,605.6	7,290.8	38.1	19.8	93.37	436.2	-356.3	2,053.5	2,012.3	41.20	49.837	
7,800.0	7,183.5	7,634.9	7,299.3	38.1	19.7	93.32	408.2	-356.3	2,053.4	2,012.4	41.00	50.086	
7,850.0	7,198.6	7,694.5	7,313.0	37.9	19.5	93.21	350.2	-356.3	2,053.2	2,012.6	40.64	50.527	
7,874.0	7,204.7	7,723.0	7,317.9	37.8	19.4	93.16	322.1	-356.3	2,053.1	2,012.6	40.50	50.690	
7,900.0	7,210.4	7,753.7	7,321.8	37.7	19.4	93.09	291.7	-356.3	2,053.0	2,012.6	40.37	50.856	
7,950.0	7,218.8	7,812.3	7,325.8	37.6	19.3	92.94	233.2	-356.3	2,052.7	2,012.5	40.20	51.062	
7,972.4	7,221.4	7,837.5	7,326.0	37.5	19.3	92.88	208.0	-356.3	2,052.6	2,012.4	40.16	51.107	
8,000.0	7,223.7	7,865.0	7,326.0	37.4	19.3	92.82	180.5	-356.3	2,052.5	2,012.3	40.14	51.133	
8,046.3	7,225.1	7,911.3	7,325.9	37.3	19.3	92.79	134.3	-356.3	2,052.4	2,012.2	40.17	51.098	
8,050.0	7,225.1	7,914.9	7,325.9	37.3	19.3	92.79	130.6	-356.3	2,052.4	2,012.2	40.17	51.089	
8,055.3	7,225.0	7,920.2	7,325.9	37.3	19.3	92.79	125.3	-356.3	2,052.4	2,012.2	40.19	51.073	
8,070.8	7,224.8	7,935.8	7,325.9	37.3	19.4	92.79	109.7	-356.3	2,052.4	2,012.2	40.24	51.009	
8,100.0	7,224.4	7,964.9	7,325.8	37.2	19.4	92.80	80.6	-356.3	2,052.4	2,012.1	40.33	50.889	
8,169.3	7,223.5	8,034.2	7,325.7	37.1	19.6	92.83	11.3	-356.3	2,052.5	2,011.8	40.71	50.422	
8,200.0	7,223.0	8,064.9	7,325.7	37.1	19.8	92.84	-19.4	-356.3	2,052.5	2,011.6	40.90	50.182	
8,267.7	7,222.1	8,132.6	7,325.6	37.0	20.1	92.86	-87.1	-356.3	2,052.5	2,011.0	41.50	49.458	
8,300.0	7,221.7	8,164.9	7,325.5	37.0	20.3	92.87	-119.4	-356.3	2,052.5	2,010.7	41.82	49.086	
8,366.1	7,220.7	8,231.0	7,325.4	37.0	20.8	92.90	-185.5	-356.3	2,052.6	2,010.0	42.61	48.166	
8,400.0	7,220.3	8,264.9	7,325.4	37.0	21.0	92.91	-219.4	-356.3	2,052.6	2,009.6	43.05	47.677	
8,464.5	7,219.4	8,329.5	7,325.3	37.1	21.6	92.93	-283.9	-356.3	2,052.6	2,008.6	44.03	46.624	
8,500.0	7,218.9	8,364.9	7,325.2	37.1	21.9	92.94	-319.4	-356.3	2,052.7	2,008.1	44.59	46.038	
8,563.0	7,218.0	8,427.9	7,325.2	37.2	22.5	92.96	-382.4	-356.3	2,052.7	2,007.0	45.70	44.914	
8,600.0	7,217.5	8,464.9	7,325.1	37.3	22.9	92.98	-419.4	-356.3	2,052.7	2,006.3	46.39	44.253	
8,661.4	7,216.7	8,526.3	7,325.0	37.5	23.6	93.00	-480.8	-356.3	2,052.8	2,005.1	47.62	43.106	
8,700.0	7,216.1	8,564.9	7,325.0	37.6	24.1	93.01	-519.4	-356.3	2,052.8	2,004.4	48.42	42.393	
8,759.8	7,215.3	8,624.7	7,324.9	37.8	24.8	93.03	-579.2	-356.3	2,052.8	2,003.1	49.75	41.261	
8,800.0	7,214.8	8,664.9	7,324.8	38.0	25.3	93.05	-619.4	-356.3	2,052.9	2,002.2	50.67	40.516	
8,858.2	7,214.0	8,723.1	7,324.7	38.3	26.0	93.07	-677.6	-356.3	2,052.9	2,000.8	52.07	39.426	
8,900.0	7,213.4	8,764.9	7,324.7	38.5	26.6	93.08	-719.3	-356.3	2,052.9	1,999.8	53.10	38.665	
8,956.7	7,212.6	8,821.6	7,324.6	38.8	27.4	93.10	-776.0	-356.3	2,053.0	1,998.4	54.55	37.634	
9,000.0	7,212.0	8,864.9	7,324.5	39.1	28.0	93.11	-819.3	-356.3	2,053.0	1,997.3	55.68	36.871	
9,055.1	7,211.2	8,920.0	7,324.4	39.5	28.7	93.13	-874.4	-356.3	2,053.0	1,995.9	57.17	35.910	
9,100.0	7,210.6	8,964.9	7,324.4	39.8	29.4	93.15	-919.3	-356.3	2,053.1	1,994.7	58.40	35.152	
9,153.5	7,209.9	9,018.4	7,324.3	40.3	30.2	93.17	-972.9	-356.3	2,053.1	1,993.2	59.92	34.265	
9,200.0	7,209.2	9,064.9	7,324.2	40.7	30.9	93.18	-1,019.3	-356.3	2,053.1	1,991.9	61.25	33.522	
9,251.9	7,208.5	9,116.8	7,324.2	41.1	31.7	93.20	-1,071.3	-356.3	2,053.2	1,990.4	62.77	32.709	
9,300.0	7,207.9	9,164.8	7,324.1	41.6	32.4	93.22	-1,119.3	-356.3	2,053.2	1,989.0	64.19	31.985	
9,350.4	7,207.2	9,215.2	7,324.0	42.1	33.2	93.23	-1,169.7	-356.3	2,053.2	1,987.5	65.72	31.244	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30M-403 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,400.0	7,206.5	9,264.8	7,323.9	42.6	34.0	93.25	-1,219.3	-356.3	2,053.3	1,986.0	67.23	30.542	
9,448.8	7,205.8	9,313.6	7,323.9	43.1	34.8	93.27	-1,268.1	-356.3	2,053.3	1,984.6	68.74	29.870	
9,500.0	7,205.1	9,364.8	7,323.8	43.7	35.6	93.29	-1,319.3	-356.3	2,053.3	1,983.0	70.34	29.191	
9,547.2	7,204.4	9,412.1	7,323.7	44.2	36.4	93.30	-1,366.5	-356.3	2,053.4	1,981.5	71.84	28.583	
9,600.0	7,203.7	9,464.8	7,323.7	44.8	37.2	93.32	-1,419.3	-356.3	2,053.4	1,979.9	73.52	27.929	
9,645.6	7,203.1	9,510.5	7,323.6	45.4	38.0	93.34	-1,464.9	-356.3	2,053.4	1,978.4	75.00	27.380	
9,700.0	7,202.3	9,564.8	7,323.5	46.1	38.9	93.35	-1,519.3	-356.3	2,053.5	1,976.7	76.77	26.750	
9,744.1	7,201.7	9,608.9	7,323.4	46.6	39.6	93.37	-1,563.4	-356.3	2,053.5	1,975.3	78.21	26.256	
9,800.0	7,201.0	9,664.8	7,323.4	47.3	40.6	93.39	-1,619.3	-356.3	2,053.6	1,973.5	80.06	25.651	
9,842.5	7,200.4	9,707.3	7,323.3	47.9	41.3	93.40	-1,661.8	-356.3	2,053.6	1,972.1	81.47	25.205	
9,900.0	7,199.6	9,764.8	7,323.2	48.7	42.3	93.42	-1,719.3	-356.3	2,053.6	1,970.2	83.40	24.624	
9,940.9	7,199.0	9,805.7	7,323.1	49.2	43.0	93.44	-1,760.2	-356.3	2,053.7	1,968.9	84.78	24.224	
10,000.0	7,198.2	9,864.8	7,323.1	50.1	44.0	93.46	-1,819.3	-356.3	2,053.7	1,966.9	86.78	23.666	
10,039.3	7,197.7	9,904.1	7,323.0	50.6	44.7	93.47	-1,858.6	-356.3	2,053.7	1,965.6	88.12	23.306	
10,100.0	7,196.8	9,964.8	7,322.9	51.5	45.7	93.49	-1,919.3	-356.3	2,053.8	1,963.6	90.20	22.770	
10,137.8	7,196.3	10,002.6	7,322.9	52.0	46.4	93.50	-1,957.0	-356.3	2,053.8	1,962.3	91.50	22.447	
10,200.0	7,195.4	10,064.8	7,322.8	52.9	47.5	93.53	-2,019.2	-356.3	2,053.9	1,960.2	93.65	21.932	
10,236.2	7,194.9	10,101.0	7,322.7	53.5	48.1	93.54	-2,055.4	-356.3	2,053.9	1,959.0	94.90	21.642	
10,300.0	7,194.1	10,164.8	7,322.6	54.4	49.2	93.56	-2,119.2	-356.3	2,053.9	1,956.8	97.12	21.148	
10,334.6	7,193.6	10,199.4	7,322.6	55.0	49.8	93.57	-2,153.9	-356.3	2,054.0	1,955.6	98.33	20.887	
10,400.0	7,192.7	10,264.8	7,322.5	56.0	51.0	93.59	-2,219.2	-356.3	2,054.0	1,953.4	100.63	20.412	
10,433.0	7,192.2	10,297.8	7,322.4	56.5	51.6	93.61	-2,252.3	-356.3	2,054.0	1,952.2	101.79	20.179	
10,500.0	7,191.3	10,364.8	7,322.3	57.5	52.8	93.63	-2,319.2	-356.3	2,054.1	1,949.9	104.15	19.722	
10,531.5	7,190.9	10,396.2	7,322.3	58.0	53.4	93.64	-2,350.7	-356.3	2,054.1	1,948.8	105.27	19.513	
10,600.0	7,189.9	10,464.7	7,322.2	59.1	54.6	93.66	-2,419.2	-356.3	2,054.2	1,946.5	107.70	19.073	
10,629.9	7,189.5	10,494.6	7,322.1	59.6	55.1	93.67	-2,449.1	-356.3	2,054.2	1,945.4	108.77	18.886	
10,700.0	7,188.5	10,564.7	7,322.0	60.7	56.4	93.70	-2,519.2	-356.3	2,054.2	1,943.0	111.27	18.462	
10,728.3	7,188.1	10,593.1	7,322.0	61.1	56.9	93.71	-2,547.5	-356.3	2,054.3	1,942.0	112.28	18.296	
10,800.0	7,187.2	10,664.7	7,321.8	62.3	58.2	93.73	-2,619.2	-356.3	2,054.3	1,939.5	114.85	17.887	
10,826.7	7,186.8	10,691.5	7,321.8	62.7	58.7	93.74	-2,645.9	-356.3	2,054.3	1,938.5	115.81	17.739	
10,900.0	7,185.8	10,764.7	7,321.7	63.9	60.0	93.77	-2,719.2	-356.3	2,054.4	1,936.0	118.45	17.344	
10,925.2	7,185.4	10,789.9	7,321.7	64.3	60.5	93.77	-2,744.4	-356.3	2,054.4	1,935.1	119.36	17.212	
11,000.0	7,184.4	10,864.7	7,321.5	65.6	61.8	93.80	-2,819.2	-356.3	2,054.5	1,932.4	122.06	16.831	
11,023.6	7,184.1	10,888.3	7,321.5	66.0	62.3	93.81	-2,842.8	-356.3	2,054.5	1,931.6	122.92	16.715	
11,100.0	7,183.0	10,964.7	7,321.4	67.2	63.7	93.83	-2,919.2	-356.3	2,054.6	1,928.9	125.69	16.347	
11,122.0	7,182.7	10,986.7	7,321.4	67.6	64.1	93.84	-2,941.2	-356.3	2,054.6	1,928.1	126.49	16.243	
11,200.0	7,181.6	11,064.7	7,321.2	68.9	65.5	93.87	-3,019.2	-356.3	2,054.7	1,925.3	129.33	15.887	
11,220.4	7,181.3	11,085.2	7,321.2	69.3	65.9	93.87	-3,039.6	-356.3	2,054.7	1,924.6	130.07	15.797	
11,300.0	7,180.2	11,164.7	7,321.1	70.6	67.3	93.90	-3,119.2	-356.3	2,054.7	1,921.8	132.97	15.452	
11,318.9	7,180.0	11,183.6	7,321.0	70.9	67.7	93.91	-3,138.0	-356.3	2,054.8	1,921.1	133.66	15.373	
11,400.0	7,178.9	11,264.7	7,320.9	72.3	69.2	93.94	-3,219.2	-356.3	2,054.8	1,918.2	136.63	15.039	
11,417.3	7,178.6	11,282.0	7,320.9	72.6	69.5	93.94	-3,236.5	-356.3	2,054.8	1,917.6	137.26	14.970	
11,500.0	7,177.5	11,364.7	7,320.8	74.0	71.0	93.97	-3,319.1	-356.3	2,054.9	1,914.6	140.30	14.647	
11,515.7	7,177.3	11,380.4	7,320.7	74.3	71.3	93.98	-3,334.9	-356.3	2,054.9	1,914.0	140.87	14.587	
11,600.0	7,176.1	11,464.7	7,320.6	75.7	72.9	94.00	-3,419.1	-356.3	2,055.0	1,911.0	143.97	14.274	
11,614.1	7,175.9	11,478.8	7,320.6	76.0	73.1	94.01	-3,433.3	-356.3	2,055.0	1,910.5	144.49	14.222	
11,700.0	7,174.7	11,564.7	7,320.5	77.5	74.7	94.04	-3,519.1	-356.3	2,055.1	1,907.4	147.65	13.918	
11,712.6	7,174.5	11,577.2	7,320.4	77.7	75.0	94.04	-3,531.7	-356.3	2,055.1	1,907.0	148.12	13.875	
11,800.0	7,173.3	11,664.7	7,320.3	79.2	76.6	94.07	-3,619.1	-356.3	2,055.2	1,903.8	151.34	13.579	
11,811.0	7,173.2	11,675.7	7,320.3	79.4	76.8	94.08	-3,630.1	-356.3	2,055.2	1,903.4	151.75	13.543	
11,900.0	7,172.0	11,764.6	7,320.1	81.0	78.4	94.11	-3,719.1	-356.3	2,055.3	1,900.2	155.04	13.256	
11,909.4	7,171.8	11,774.1	7,320.1	81.1	78.6	94.11	-3,728.5	-356.3	2,055.3	1,899.9	155.39	13.227	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30M-403 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,949.6	7,171.3	11,814.2	7,320.1	81.8	79.3	94.12	-3,768.7	-356.3	2,055.3	1,898.5	156.82	13.106	
12,000.0	7,170.6	11,849.6	7,320.0	82.7	79.8	94.14	-3,804.1	-356.3	2,055.4	1,897.1	158.27	12.987	
12,007.8	7,170.5	11,849.6	7,320.0	82.9	79.8	94.14	-3,804.1	-356.3	2,055.5	1,897.1	158.42	12.975	
12,041.2	7,170.0	11,849.6	7,320.0	83.5	79.8	94.14	-3,804.1	-356.3	2,056.1	1,897.1	159.03	12.929	SF

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-203 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-88.63	1.1	-45.2	45.2				
98.4	98.4	98.4	98.4	0.1	0.1	-88.63	1.1	-45.2	45.2	45.0	0.17	266.025	
100.0	100.0	100.0	100.0	0.1	0.1	-88.63	1.1	-45.2	45.2	45.0	0.17	261.209	
196.8	196.8	196.8	196.8	0.3	0.3	-88.63	1.1	-45.2	45.2	44.6	0.61	74.300	
200.0	200.0	200.0	200.0	0.3	0.3	-88.63	1.1	-45.2	45.2	44.6	0.62	72.611	
295.3	295.3	295.3	295.3	0.5	0.5	-88.63	1.1	-45.2	45.2	44.2	1.05	43.018	
300.0	300.0	300.0	300.0	0.5	0.5	-88.63	1.1	-45.2	45.2	44.1	1.07	42.166	
393.7	393.7	393.7	393.7	0.7	0.7	-88.63	1.1	-45.2	45.2	43.7	1.49	30.273	
400.0	400.0	400.0	400.0	0.8	0.8	-88.63	1.1	-45.2	45.2	43.7	1.52	29.709	
492.1	492.1	492.1	492.1	1.0	1.0	-88.63	1.1	-45.2	45.2	43.3	1.94	23.353	
500.0	500.0	500.0	500.0	1.0	1.0	-88.63	1.1	-45.2	45.2	43.2	1.97	22.934	
590.5	590.5	590.5	590.5	1.2	1.2	-88.63	1.1	-45.2	45.2	42.8	2.38	19.009	
600.0	600.0	600.0	600.0	1.2	1.2	-88.63	1.1	-45.2	45.2	42.8	2.42	18.675	
689.0	689.0	689.0	689.0	1.4	1.4	-88.63	1.1	-45.2	45.2	42.4	2.82	16.027	
700.0	700.0	700.0	700.0	1.4	1.4	-88.63	1.1	-45.2	45.2	42.3	2.87	15.750	
787.4	787.4	787.4	787.4	1.6	1.6	-88.63	1.1	-45.2	45.2	41.9	3.26	13.854	
800.0	800.0	800.0	800.0	1.7	1.7	-88.63	1.1	-45.2	45.2	41.9	3.32	13.618	
885.8	885.8	885.8	885.8	1.9	1.9	-88.63	1.1	-45.2	45.2	41.5	3.71	12.200	
900.0	900.0	900.0	900.0	1.9	1.9	-88.63	1.1	-45.2	45.2	41.4	3.77	11.994	
984.2	984.2	984.2	984.2	2.1	2.1	-88.63	1.1	-45.2	45.2	41.1	4.15	10.898	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-88.63	1.1	-45.2	45.2	41.0	4.22	10.716	
1,082.7	1,082.7	1,082.7	1,082.7	2.3	2.3	-88.63	1.1	-45.2	45.2	40.6	4.59	9.848	
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	-88.63	1.1	-45.2	45.2	40.5	4.67	9.684	
1,181.1	1,181.1	1,181.1	1,181.1	2.5	2.5	-88.63	1.1	-45.2	45.2	40.2	5.03	8.982	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-88.63	1.1	-45.2	45.2	40.1	5.12	8.833	
1,279.5	1,279.5	1,279.5	1,279.5	2.7	2.7	-88.63	1.1	-45.2	45.2	39.7	5.48	8.256	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-88.63	1.1	-45.2	45.2	39.6	5.57	8.120	
1,377.9	1,377.9	1,377.9	1,377.9	3.0	3.0	-88.63	1.1	-45.2	45.2	39.3	5.92	7.639	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-88.63	1.1	-45.2	45.2	39.2	6.02	7.513	
1,450.0	1,450.0	1,450.0	1,450.0	3.1	3.1	-88.63	1.1	-45.2	45.2	39.0	6.24	7.243	CC
1,476.4	1,476.4	1,476.4	1,476.4	3.2	3.2	-152.01	1.1	-45.2	45.3	39.0	6.36	7.127	ES
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.2	-152.19	1.1	-45.2	45.6	39.1	6.46	7.056	
1,574.8	1,574.8	1,574.8	1,574.8	3.4	3.4	-153.45	1.1	-45.2	47.6	40.8	6.78	7.020	
1,600.0	1,599.9	1,599.9	1,599.9	3.4	3.5	-154.08	1.1	-45.2	48.7	41.8	6.89	7.067	
1,673.2	1,673.0	1,673.0	1,673.0	3.6	3.6	-156.29	1.1	-45.2	53.0	45.8	7.20	7.362	
1,700.0	1,699.7	1,699.7	1,699.7	3.7	3.7	-157.20	1.1	-45.2	55.1	47.7	7.32	7.526	
1,771.6	1,771.0	1,771.3	1,771.3	3.8	3.8	-159.68	1.1	-45.1	61.7	54.0	7.62	8.093	
1,800.0	1,799.1	1,800.0	1,800.0	3.9	3.9	-160.49	1.4	-44.9	64.5	56.8	7.73	8.341	
1,870.1	1,868.6	1,871.0	1,870.9	4.1	4.1	-161.89	3.0	-43.5	71.8	63.8	8.02	8.954	
1,900.0	1,898.2	1,901.3	1,901.2	4.1	4.1	-162.26	4.1	-42.5	75.0	66.9	8.14	9.217	
1,968.5	1,965.7	1,970.9	1,970.7	4.3	4.3	-162.73	7.4	-39.5	82.6	74.2	8.42	9.811	
2,000.0	1,996.6	2,002.9	2,002.6	4.4	4.4	-162.79	9.4	-37.7	86.2	77.6	8.54	10.084	
2,066.9	2,062.2	2,071.1	2,070.4	4.6	4.5	-162.66	14.4	-33.2	93.9	85.1	8.82	10.650	
2,100.0	2,094.4	2,104.8	2,103.9	4.7	4.6	-162.48	17.4	-30.5	97.8	88.9	8.95	10.930	
2,165.3	2,157.9	2,171.5	2,170.0	5.0	4.7	-161.95	24.1	-24.5	105.8	96.5	9.22	11.465	
2,200.0	2,191.5	2,206.9	2,205.0	5.1	4.8	-161.59	28.1	-20.9	110.1	100.7	9.37	11.748	
2,263.8	2,252.9	2,272.2	2,269.3	5.3	5.0	-160.81	36.3	-13.4	118.2	108.5	9.65	12.246	
2,300.0	2,287.6	2,309.2	2,305.7	5.5	5.1	-160.31	41.5	-8.8	122.9	113.1	9.81	12.527	
2,362.2	2,346.9	2,373.0	2,368.1	5.8	5.3	-159.37	51.2	0.0	131.1	121.0	10.10	12.986	
2,400.0	2,382.7	2,411.8	2,405.9	6.0	5.4	-158.75	57.6	5.7	136.3	126.0	10.28	13.253	
2,460.6	2,439.8	2,474.0	2,466.3	6.3	5.6	-157.72	68.7	15.7	144.8	134.2	10.60	13.655	
2,500.0	2,476.6	2,514.5	2,505.4	6.5	5.8	-157.01	76.4	22.7	150.4	139.6	10.82	13.903	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-203 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,559.0	2,531.6	2,575.2	2,563.8	6.9	6.0	-155.93	88.8	33.8	159.1	147.9	11.17	14.242	
2,600.0	2,569.4	2,617.3	2,604.1	7.1	6.2	-155.16	97.9	42.0	165.2	153.8	11.42	14.465	
2,657.5	2,622.0	2,676.5	2,660.4	7.5	6.4	-154.05	111.5	54.2	174.1	162.3	11.82	14.731	
2,700.0	2,660.7	2,720.3	2,701.8	7.8	6.6	-153.23	122.0	63.7	180.8	168.7	12.13	14.911	
2,755.9	2,711.1	2,776.6	2,754.8	8.2	6.9	-152.18	136.2	76.5	190.0	177.4	12.57	15.118	
2,800.0	2,750.6	2,820.0	2,795.6	8.6	7.1	-151.51	147.3	86.4	197.9	184.9	12.92	15.314	
2,832.3	2,779.2	2,851.6	2,825.3	8.8	7.3	-151.10	155.3	93.7	204.0	190.8	13.19	15.468	
2,854.3	2,798.8	2,873.3	2,845.6	9.0	7.4	-150.89	160.8	98.6	208.3	194.9	13.39	15.552	
2,900.0	2,839.3	2,918.0	2,887.7	9.4	7.6	-150.49	172.2	108.9	217.2	203.4	13.82	15.711	
2,952.7	2,886.0	2,969.8	2,936.3	9.9	7.9	-150.06	185.3	120.7	227.5	213.1	14.34	15.867	
3,000.0	2,927.8	3,016.1	2,979.8	10.3	8.2	-149.70	197.1	131.3	236.7	221.9	14.80	15.991	
3,051.2	2,973.2	3,066.2	3,027.0	10.7	8.5	-149.35	209.9	142.8	246.7	231.4	15.32	16.103	
3,100.0	3,016.4	3,114.1	3,072.0	11.2	8.8	-149.04	222.0	153.7	256.3	240.5	15.82	16.198	
3,149.6	3,060.4	3,162.7	3,117.6	11.6	9.0	-148.74	234.4	164.9	266.0	249.7	16.34	16.277	
3,200.0	3,105.0	3,212.1	3,164.1	12.1	9.3	-148.47	246.9	176.2	275.9	259.0	16.87	16.350	
3,248.0	3,147.5	3,259.2	3,208.3	12.5	9.6	-148.22	258.9	186.9	285.3	267.9	17.39	16.406	
3,300.0	3,193.6	3,310.1	3,256.2	13.0	9.9	-147.97	271.8	198.6	295.5	277.6	17.95	16.460	
3,346.4	3,234.7	3,355.7	3,299.0	13.4	10.2	-147.76	283.4	209.0	304.6	286.2	18.46	16.499	
3,400.0	3,282.2	3,408.2	3,348.3	13.9	10.5	-147.54	296.8	221.0	315.2	296.1	19.06	16.538	
3,444.9	3,321.9	3,452.2	3,389.6	14.3	10.8	-147.36	307.9	231.1	324.0	304.4	19.56	16.565	
3,500.0	3,370.8	3,506.2	3,440.4	14.8	11.1	-147.16	321.7	243.5	334.8	314.6	20.18	16.593	
3,543.3	3,409.1	3,548.6	3,480.3	15.2	11.4	-147.00	332.5	253.2	343.3	322.7	20.67	16.610	
3,600.0	3,459.3	3,604.2	3,532.5	15.8	11.8	-146.82	346.6	265.9	354.5	333.2	21.32	16.630	
3,641.7	3,496.3	3,645.1	3,571.0	16.1	12.0	-146.69	357.0	275.3	362.7	340.9	21.80	16.640	
3,700.0	3,547.9	3,702.3	3,624.6	16.7	12.4	-146.51	371.5	288.3	374.2	351.7	22.47	16.653	
3,740.1	3,583.5	3,741.6	3,661.6	17.1	12.6	-146.40	381.5	297.3	382.1	359.1	22.93	16.659	
3,800.0	3,636.5	3,806.3	3,722.4	17.6	13.0	-146.28	397.5	312.5	393.5	369.8	23.64	16.647	
3,838.6	3,670.7	3,848.7	3,762.3	18.0	13.3	-146.28	407.5	323.1	400.3	376.2	24.06	16.635	
3,900.0	3,725.1	3,913.2	3,822.9	18.6	13.7	-146.37	421.8	339.8	410.3	385.6	24.71	16.604	
3,937.0	3,757.9	3,949.7	3,857.2	18.9	13.9	-146.43	429.9	349.4	416.3	391.2	25.10	16.583	
4,000.0	3,813.7	4,011.9	3,915.6	19.5	14.3	-146.54	443.6	365.6	426.5	400.7	25.77	16.548	
4,035.4	3,845.1	4,046.9	3,948.5	19.9	14.5	-146.60	451.2	374.8	432.2	406.0	26.15	16.528	
4,100.0	3,902.3	4,110.6	4,008.4	20.5	15.0	-146.70	465.3	391.5	442.6	415.8	26.83	16.494	
4,133.8	3,932.2	4,144.0	4,039.8	20.8	15.2	-146.75	472.6	400.2	448.1	420.9	27.19	16.476	
4,200.0	3,990.8	4,209.3	4,101.1	21.5	15.6	-146.84	487.0	417.3	458.7	430.8	27.90	16.443	
4,232.3	4,019.4	4,241.1	4,131.0	21.8	15.8	-146.89	494.0	425.7	464.0	435.7	28.24	16.426	
4,300.0	4,079.4	4,307.9	4,193.8	22.4	16.3	-146.98	508.7	443.2	474.9	445.9	28.97	16.394	
4,330.7	4,106.6	4,338.2	4,222.3	22.7	16.5	-147.02	515.3	451.1	479.8	450.5	29.30	16.379	
4,400.0	4,168.0	4,406.6	4,286.6	23.4	16.9	-147.10	530.4	469.0	491.0	461.0	30.04	16.347	
4,429.1	4,193.8	4,435.4	4,313.6	23.7	17.1	-147.14	536.7	476.5	495.7	465.4	30.35	16.334	
4,500.0	4,256.6	4,505.3	4,379.3	24.4	17.6	-147.22	552.1	494.8	507.2	476.1	31.11	16.303	
4,527.5	4,281.0	4,532.5	4,404.8	24.6	17.8	-147.25	558.1	502.0	511.6	480.2	31.41	16.291	
4,600.0	4,345.2	4,604.0	4,472.0	25.3	18.2	-147.33	573.8	520.7	523.3	491.1	32.18	16.260	
4,626.0	4,368.2	4,629.6	4,496.1	25.6	18.4	-147.36	579.4	527.4	527.5	495.1	32.46	16.250	
4,700.0	4,433.8	4,702.7	4,564.8	26.3	18.9	-147.44	595.5	546.5	539.5	506.2	33.26	16.220	
4,724.4	4,455.4	4,726.8	4,587.4	26.5	19.1	-147.46	600.8	552.8	543.4	509.9	33.52	16.211	
4,800.0	4,522.3	4,801.4	4,657.5	27.3	19.6	-147.53	617.2	572.4	555.6	521.3	34.34	16.182	
4,822.8	4,542.6	4,823.9	4,678.7	27.5	19.7	-147.56	622.2	578.3	559.3	524.7	34.58	16.173	
4,900.0	4,610.9	4,900.0	4,750.2	28.2	20.3	-147.63	638.9	598.2	571.8	536.4	35.42	16.145	
4,921.2	4,629.8	4,921.0	4,769.9	28.4	20.4	-147.65	643.5	603.7	575.2	539.6	35.64	16.138	
5,000.0	4,699.5	4,998.7	4,843.0	29.2	20.9	-147.71	660.6	624.0	587.9	551.4	36.49	16.110	
5,019.7	4,716.9	5,018.1	4,861.2	29.4	21.1	-147.73	664.9	629.1	591.1	554.4	36.71	16.104	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-203 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	4,788.1	5,097.4	4,935.7	30.2	21.6	-147.80	682.3	649.9	604.1	566.5	37.58	16.077	
5,118.1	4,804.1	5,115.3	4,952.5	30.4	21.7	-147.81	686.2	654.6	607.0	569.3	37.77	16.071	
5,200.0	4,876.7	5,196.1	5,028.4	31.1	22.3	-147.88	704.0	675.7	620.3	581.6	38.66	16.045	
5,216.5	4,891.3	5,212.4	5,043.8	31.3	22.4	-147.89	707.6	680.0	622.9	584.1	38.84	16.040	
5,300.0	4,965.3	5,294.8	5,121.2	32.1	22.9	-147.95	725.7	701.6	636.4	596.7	39.74	16.015	
5,314.9	4,978.5	5,309.5	5,135.0	32.3	23.0	-147.96	729.0	705.4	638.8	598.9	39.90	16.010	
5,400.0	5,053.8	5,393.4	5,213.9	33.1	23.6	-148.02	747.4	727.4	652.6	611.8	40.82	15.986	
5,413.4	5,065.7	5,406.6	5,226.3	33.2	23.7	-148.03	750.3	730.9	654.7	613.8	40.97	15.982	
5,508.2	5,149.7	5,500.2	5,314.2	34.2	24.3	-148.09	770.9	755.4	670.1	628.1	41.99	15.956	
5,511.8	5,152.9	5,503.8	5,317.6	34.2	24.4	-148.10	771.7	756.3	670.6	628.6	42.03	15.955	
5,600.0	5,231.7	5,578.3	5,387.9	34.9	24.8	-148.30	787.5	775.1	684.5	641.6	42.89	15.960	
5,610.2	5,240.9	5,586.9	5,396.1	35.0	24.9	-148.32	789.3	777.2	686.0	643.1	42.98	15.962	
5,700.0	5,322.5	5,662.5	5,468.2	35.7	25.2	-148.52	804.0	794.7	699.4	655.6	43.72	15.996	
5,708.6	5,330.4	5,669.8	5,475.1	35.7	25.3	-148.54	805.3	796.3	700.6	656.8	43.79	16.000	
5,800.0	5,414.6	5,746.6	5,549.0	36.3	25.6	-148.75	818.9	812.4	713.4	668.9	44.47	16.043	
5,807.1	5,421.2	5,752.6	5,554.7	36.4	25.7	-148.76	819.8	813.6	714.3	669.8	44.52	16.047	
5,900.0	5,508.1	5,830.5	5,630.3	36.9	26.0	-148.97	832.2	828.3	726.6	681.4	45.14	16.096	
5,905.5	5,513.3	5,835.1	5,634.8	37.0	26.0	-148.98	832.9	829.1	727.3	682.1	45.17	16.099	
6,000.0	5,602.8	5,914.3	5,712.0	37.5	26.3	-149.20	844.0	842.3	738.9	693.1	45.73	16.155	
6,003.9	5,606.5	5,917.6	5,715.2	37.5	26.3	-149.21	844.4	842.8	739.3	693.6	45.75	16.158	
6,100.0	5,698.5	6,000.0	5,796.2	38.0	26.6	-149.43	854.4	854.8	750.3	704.0	46.25	16.221	
6,102.3	5,700.7	6,000.0	5,796.2	38.0	26.6	-149.43	854.4	854.8	750.5	704.3	46.26	16.224	
6,200.0	5,795.2	6,081.3	5,876.4	38.4	26.8	-149.65	862.9	864.8	760.8	714.1	46.68	16.298	
6,200.8	5,795.9	6,082.0	5,877.1	38.4	26.8	-149.65	862.9	864.9	760.9	714.2	46.68	16.299	
6,299.2	5,891.9	6,164.0	5,958.3	38.8	27.1	-149.88	869.9	873.2	770.4	723.4	47.03	16.380	
6,300.0	5,892.7	6,164.6	5,959.0	38.8	27.1	-149.88	870.0	873.3	770.5	723.4	47.03	16.381	
6,397.6	5,988.5	6,245.8	6,039.8	39.1	27.2	-150.10	875.4	879.8	779.0	731.7	47.30	16.469	
6,400.0	5,990.9	6,247.8	6,041.7	39.1	27.3	-150.11	875.5	879.9	779.2	731.9	47.31	16.471	
6,496.0	6,085.8	6,327.6	6,121.3	39.4	27.4	-150.33	879.4	884.5	786.8	739.3	47.50	16.565	
6,500.0	6,089.7	6,330.8	6,124.5	39.4	27.4	-150.34	879.5	884.7	787.1	739.6	47.51	16.569	
6,594.5	6,183.5	6,409.2	6,202.8	39.6	27.5	-150.56	881.9	887.5	793.7	746.1	47.62	16.667	
6,600.0	6,189.0	6,413.8	6,207.4	39.7	27.5	-150.57	882.0	887.6	794.1	746.4	47.63	16.673	
6,692.9	6,281.5	6,490.7	6,284.3	39.8	27.6	-150.79	882.9	888.6	799.7	752.1	47.66	16.778	
6,700.0	6,288.6	6,504.1	6,297.7	39.8	27.6	-150.82	882.9	888.7	800.2	752.5	47.67	16.787	
6,791.3	6,379.8	6,586.2	6,379.8	40.0	27.7	-151.00	882.9	888.7	804.2	756.5	47.68	16.866	
6,800.0	6,388.5	6,594.9	6,388.5	40.0	27.7	-151.02	882.9	888.7	804.4	756.7	47.68	16.870	
6,889.7	6,478.2	6,687.5	6,481.0	40.1	27.8	-151.31	879.5	888.7	805.5	758.0	47.55	16.941	
6,890.4	6,478.9	6,688.2	6,481.6	40.1	27.8	-88.01	879.5	888.7	805.5	758.0	47.55	16.942	
6,900.0	6,488.5	6,698.1	6,491.5	40.1	27.8	-88.08	878.4	888.7	805.5	758.0	47.52	16.951	
6,920.4	6,508.9	6,719.1	6,512.3	40.1	27.8	-88.27	875.8	888.7	805.4	758.0	47.42	16.983	
6,950.0	6,538.5	6,749.3	6,542.2	40.1	27.8	91.43	870.9	888.7	805.3	758.0	47.27	17.035	
6,988.2	6,576.6	6,788.1	6,580.1	40.1	27.7	91.05	862.8	888.7	805.2	758.2	47.02	17.125	
7,000.0	6,588.3	6,800.0	6,591.7	40.1	27.7	90.94	859.9	888.7	805.2	758.2	46.94	17.153	
7,050.0	6,637.8	6,850.2	6,639.7	40.1	27.6	90.43	845.6	888.7	805.1	758.5	46.53	17.302	
7,086.6	6,673.6	6,886.6	6,673.9	40.1	27.6	90.07	833.2	888.7	805.0	758.9	46.18	17.432	
7,093.2	6,680.0	6,893.1	6,680.0	40.1	27.5	90.00	830.8	888.7	805.0	758.9	46.12	17.455	
7,100.0	6,686.6	6,899.9	6,686.2	40.1	27.5	89.93	828.2	888.7	805.0	759.0	46.06	17.480	
7,150.0	6,734.6	6,949.0	6,731.0	40.0	27.4	89.43	807.8	888.7	805.1	759.6	45.53	17.684	
7,185.0	6,767.5	6,983.2	6,761.2	39.9	27.3	89.09	791.9	888.7	805.1	760.0	45.12	17.843	
7,200.0	6,781.4	6,997.8	6,773.8	39.9	27.2	88.94	784.6	888.7	805.2	760.2	44.95	17.911	
7,250.0	6,827.0	7,046.0	6,814.6	39.8	27.1	88.45	758.9	888.7	805.3	761.0	44.35	18.159	
7,283.4	6,856.6	7,078.1	6,840.7	39.8	26.9	88.13	740.2	888.7	805.5	761.5	43.93	18.336	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-203 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,300.0	6,871.0	7,093.9	6,853.3	39.7	26.9	87.98	730.6	888.7	805.6	761.8	43.72	18.424	
7,350.0	6,913.2	7,141.3	6,889.6	39.6	26.7	87.51	700.2	888.7	805.8	762.7	43.09	18.702	
7,381.9	6,939.1	7,171.4	6,911.6	39.5	26.5	87.22	679.7	888.7	806.0	763.3	42.68	18.885	
7,400.0	6,953.4	7,188.4	6,923.6	39.4	26.5	87.06	667.7	888.7	806.1	763.7	42.45	18.989	
7,450.0	6,991.5	7,235.1	6,955.2	39.3	26.2	86.62	633.2	888.7	806.5	764.6	41.83	19.281	
7,480.3	7,013.5	7,263.2	6,973.1	39.2	26.1	86.36	611.6	888.7	806.7	765.2	41.46	19.458	
7,500.0	7,027.3	7,281.4	6,984.2	39.1	26.0	86.20	597.1	888.7	806.8	765.6	41.22	19.573	
7,550.0	7,060.5	7,327.5	7,010.7	39.0	25.8	85.80	559.5	888.7	807.2	766.6	40.65	19.860	
7,578.7	7,078.4	7,353.8	7,024.7	38.8	25.6	85.57	537.2	888.7	807.5	767.1	40.33	20.020	
7,600.0	7,091.0	7,373.2	7,034.5	38.8	25.5	85.41	520.5	888.7	807.7	767.5	40.11	20.136	
7,650.0	7,118.7	7,418.6	7,055.7	38.6	25.3	85.05	480.3	888.7	808.1	768.5	39.62	20.397	
7,677.1	7,132.5	7,443.2	7,066.1	38.5	25.2	84.86	458.0	888.7	808.3	768.9	39.37	20.531	
7,700.0	7,143.4	7,463.8	7,074.2	38.4	25.1	84.71	439.0	888.7	808.5	769.3	39.17	20.639	
7,750.0	7,165.0	7,508.8	7,090.0	38.2	24.8	84.40	396.9	888.7	808.9	770.1	38.79	20.855	
7,775.6	7,174.9	7,531.7	7,097.0	38.1	24.7	84.25	375.1	888.7	809.1	770.5	38.62	20.952	
7,800.0	7,183.5	7,553.6	7,103.0	38.1	24.6	84.11	354.1	888.7	809.3	770.9	38.46	21.042	
7,850.0	7,198.6	7,600.0	7,113.7	37.9	24.4	83.84	308.9	888.7	809.7	771.5	38.19	21.200	
7,874.0	7,204.7	7,619.4	7,117.3	37.8	24.3	83.73	289.8	888.7	809.9	771.8	38.11	21.252	
7,900.0	7,210.4	7,642.5	7,120.9	37.7	24.2	83.61	267.1	888.7	810.1	772.1	38.01	21.312	
7,950.0	7,218.8	7,686.8	7,125.8	37.6	24.0	83.40	223.1	888.7	810.4	772.5	37.89	21.390	
7,972.4	7,221.4	7,706.6	7,127.1	37.5	24.0	83.32	203.3	888.7	810.6	772.7	37.86	21.411	
8,000.0	7,223.7	7,730.9	7,127.9	37.4	23.9	83.22	179.0	888.7	810.7	772.9	37.83	21.430	
8,050.0	7,225.1	7,778.7	7,127.8	37.3	23.7	83.11	131.2	888.7	810.9	773.1	37.76	21.477	
8,055.3	7,225.0	7,784.0	7,127.8	37.3	23.7	83.12	125.9	888.7	810.9	773.1	37.75	21.481	
8,070.8	7,224.8	7,799.6	7,127.7	37.3	23.6	83.13	110.3	888.7	810.9	773.2	37.71	21.506	
8,100.0	7,224.4	7,828.7	7,127.6	37.2	23.5	83.14	81.2	888.7	810.8	773.3	37.58	21.579	
8,169.3	7,223.5	7,898.0	7,127.3	37.1	23.4	83.19	11.9	888.7	810.8	773.4	37.36	21.703	
8,200.0	7,223.0	7,928.7	7,127.2	37.1	23.3	83.21	-18.8	888.7	810.7	773.4	37.32	21.724	
8,267.7	7,222.1	7,996.4	7,126.9	37.0	23.3	83.25	-86.5	888.7	810.7	773.3	37.37	21.695	
8,300.0	7,221.7	8,028.7	7,126.7	37.0	23.3	83.27	-118.8	888.7	810.6	773.2	37.45	21.646	
8,366.1	7,220.7	8,094.9	7,126.4	37.0	23.4	83.32	-185.0	888.7	810.6	772.8	37.75	21.472	
8,400.0	7,220.3	8,128.7	7,126.3	37.0	23.5	83.34	-218.8	888.7	810.5	772.6	37.96	21.351	
8,464.5	7,219.4	8,193.3	7,126.0	37.1	23.7	83.38	-283.4	888.7	810.4	772.0	38.49	21.054	
8,500.0	7,218.9	8,228.7	7,125.8	37.1	23.9	83.40	-318.8	888.7	810.4	771.6	38.84	20.863	
8,563.0	7,218.0	8,291.7	7,125.5	37.2	24.2	83.44	-381.8	888.7	810.3	770.8	39.59	20.470	
8,600.0	7,217.5	8,328.7	7,125.4	37.3	24.4	83.47	-418.8	888.7	810.3	770.2	40.08	20.218	
8,661.4	7,216.7	8,390.1	7,125.1	37.5	24.8	83.51	-480.2	888.7	810.2	769.2	41.00	19.762	
8,700.0	7,216.1	8,428.7	7,124.9	37.6	25.0	83.53	-518.8	888.7	810.2	768.6	41.63	19.462	
8,759.8	7,215.3	8,488.5	7,124.6	37.8	25.5	83.57	-578.6	888.7	810.1	767.4	42.70	18.972	
8,800.0	7,214.8	8,528.7	7,124.4	38.0	25.8	83.60	-618.8	888.7	810.1	766.6	43.47	18.637	
8,858.2	7,214.0	8,587.0	7,124.2	38.3	26.3	83.64	-677.1	888.7	810.0	765.4	44.66	18.137	
8,900.0	7,213.4	8,628.7	7,124.0	38.5	26.6	83.66	-718.8	888.7	810.0	764.4	45.56	17.779	
8,956.7	7,212.6	8,685.4	7,123.7	38.8	27.1	83.70	-775.5	888.7	809.9	763.1	46.85	17.288	
9,000.0	7,212.0	8,728.7	7,123.5	39.1	27.6	83.73	-818.8	888.7	809.9	762.0	47.87	16.919	
9,055.1	7,211.2	8,783.8	7,123.3	39.5	28.1	83.77	-873.9	888.7	809.8	760.6	49.23	16.450	
9,100.0	7,210.6	8,828.7	7,123.1	39.8	28.6	83.80	-918.8	888.7	809.8	759.4	50.37	16.078	
9,153.5	7,209.9	8,882.2	7,122.8	40.3	29.2	83.83	-972.3	888.7	809.7	758.0	51.78	15.638	
9,200.0	7,209.2	8,928.7	7,122.6	40.7	29.7	83.86	-1,018.8	888.7	809.7	756.7	53.03	15.269	
9,251.9	7,208.5	8,980.6	7,122.4	41.1	30.3	83.89	-1,070.7	888.7	809.6	755.2	54.47	14.863	
9,300.0	7,207.9	9,028.7	7,122.2	41.6	30.9	83.93	-1,118.8	888.7	809.6	753.8	55.83	14.501	
9,350.4	7,207.2	9,079.1	7,122.0	42.1	31.5	83.96	-1,169.2	888.7	809.5	752.2	57.29	14.130	
9,400.0	7,206.5	9,128.7	7,121.7	42.6	32.1	83.99	-1,218.8	888.7	809.5	750.7	58.75	13.779	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-203 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,448.8	7,205.8	9,177.5	7,121.5	43.1	32.7	84.02	-1,267.6	888.7	809.4	749.2	60.22	13.442	
9,500.0	7,205.1	9,228.7	7,121.3	43.7	33.4	84.06	-1,318.8	888.7	809.4	747.6	61.77	13.103	
9,547.2	7,204.4	9,275.9	7,121.1	44.2	34.0	84.09	-1,366.0	888.7	809.3	746.1	63.23	12.800	
9,600.0	7,203.7	9,328.7	7,120.8	44.8	34.7	84.12	-1,418.8	888.7	809.3	744.4	64.88	12.474	
9,645.6	7,203.1	9,374.3	7,120.6	45.4	35.4	84.15	-1,464.4	888.7	809.2	742.9	66.33	12.201	
9,700.0	7,202.3	9,428.7	7,120.4	46.1	36.1	84.19	-1,518.8	888.7	809.2	741.1	68.06	11.889	
9,744.1	7,201.7	9,472.8	7,120.2	46.6	36.8	84.22	-1,562.8	888.7	809.2	739.7	69.49	11.644	
9,800.0	7,201.0	9,528.7	7,119.9	47.3	37.6	84.25	-1,618.8	888.7	809.1	737.8	71.31	11.346	
9,842.5	7,200.4	9,571.2	7,119.7	47.9	38.2	84.28	-1,661.3	888.7	809.1	736.3	72.71	11.127	
9,900.0	7,199.6	9,628.7	7,119.5	48.7	39.1	84.32	-1,718.8	888.7	809.0	734.4	74.62	10.842	
9,940.9	7,199.0	9,669.6	7,119.3	49.2	39.7	84.35	-1,759.7	888.7	809.0	733.0	75.99	10.646	
10,000.0	7,198.2	9,728.7	7,119.0	50.1	40.6	84.38	-1,818.8	888.7	808.9	730.9	77.97	10.374	
10,039.3	7,197.7	9,768.0	7,118.9	50.6	41.2	84.41	-1,858.1	888.7	808.9	729.6	79.31	10.199	
10,100.0	7,196.8	9,828.7	7,118.6	51.5	42.1	84.45	-1,918.7	888.7	808.8	727.4	81.37	9.940	
10,137.8	7,196.3	9,866.4	7,118.4	52.0	42.7	84.47	-1,956.5	888.7	808.8	726.1	82.67	9.783	
10,200.0	7,195.4	9,928.7	7,118.1	52.9	43.7	84.52	-2,018.7	888.7	808.7	723.9	84.81	9.536	
10,236.2	7,194.9	9,964.9	7,118.0	53.5	44.3	84.54	-2,054.9	888.7	808.7	722.6	86.07	9.396	
10,300.0	7,194.1	10,028.7	7,117.7	54.4	45.3	84.58	-2,118.7	888.7	808.6	720.4	88.28	9.160	
10,334.6	7,193.6	10,063.3	7,117.5	55.0	45.8	84.60	-2,153.4	888.7	808.6	719.1	89.49	9.035	
10,400.0	7,192.7	10,128.7	7,117.2	56.0	46.9	84.65	-2,218.7	888.7	808.5	716.8	91.78	8.809	
10,433.0	7,192.2	10,161.7	7,117.1	56.5	47.4	84.67	-2,251.8	888.7	808.5	715.6	92.95	8.699	
10,500.0	7,191.3	10,228.6	7,116.8	57.5	48.6	84.71	-2,318.7	888.7	808.5	713.1	95.31	8.482	
10,531.5	7,190.9	10,260.1	7,116.6	58.0	49.1	84.73	-2,350.2	888.7	808.4	712.0	96.43	8.384	
10,600.0	7,189.9	10,328.6	7,116.3	59.1	50.2	84.78	-2,418.7	888.7	808.4	709.5	98.86	8.177	
10,629.9	7,189.5	10,358.5	7,116.2	59.6	50.7	84.80	-2,448.6	888.7	808.3	708.4	99.93	8.089	
10,700.0	7,188.5	10,428.6	7,115.9	60.7	51.9	84.84	-2,518.7	888.7	808.3	705.8	102.44	7.891	
10,728.3	7,188.1	10,457.0	7,115.8	61.1	52.4	84.86	-2,547.0	888.7	808.3	704.8	103.45	7.813	
10,800.0	7,187.2	10,528.6	7,115.4	62.3	53.6	84.91	-2,618.7	888.7	808.2	702.2	106.03	7.622	
10,826.7	7,186.8	10,555.4	7,115.3	62.7	54.0	84.93	-2,645.5	888.7	808.2	701.2	106.99	7.553	
10,900.0	7,185.8	10,628.6	7,115.0	63.9	55.3	84.98	-2,718.7	888.7	808.1	698.5	109.64	7.371	
10,925.2	7,185.4	10,653.8	7,114.9	64.3	55.7	84.99	-2,743.9	888.7	808.1	697.5	110.55	7.310	
11,000.0	7,184.4	10,728.6	7,114.6	65.6	57.0	85.04	-2,818.7	888.7	808.0	694.8	113.27	7.134	
11,023.6	7,184.1	10,752.2	7,114.4	66.0	57.4	85.06	-2,842.3	888.7	808.0	693.9	114.13	7.080	
11,100.0	7,183.0	10,828.6	7,114.1	67.2	58.8	85.11	-2,918.7	888.7	808.0	691.0	116.91	6.911	
11,122.0	7,182.7	10,850.7	7,114.0	67.6	59.1	85.12	-2,940.7	888.7	807.9	690.2	117.71	6.864	
11,200.0	7,181.6	10,928.6	7,113.7	68.9	60.5	85.17	-3,018.7	888.7	807.9	687.3	120.56	6.701	
11,220.4	7,181.3	10,949.1	7,113.6	69.3	60.9	85.19	-3,039.1	888.7	807.9	686.5	121.31	6.659	
11,300.0	7,180.2	11,028.6	7,113.2	70.6	62.3	85.24	-3,118.7	888.7	807.8	683.6	124.23	6.502	
11,318.9	7,180.0	11,047.5	7,113.1	70.9	62.6	85.25	-3,137.6	888.7	807.8	682.9	124.92	6.466	
11,400.0	7,178.9	11,128.6	7,112.8	72.3	64.0	85.31	-3,218.7	888.7	807.7	679.8	127.91	6.315	
11,417.3	7,178.6	11,145.9	7,112.7	72.6	64.3	85.32	-3,236.0	888.7	807.7	679.2	128.54	6.283	
11,500.0	7,177.5	11,228.6	7,112.3	74.0	65.8	85.37	-3,318.7	888.7	807.6	676.0	131.59	6.137	
11,515.7	7,177.3	11,244.3	7,112.2	74.3	66.1	85.38	-3,334.4	888.7	807.6	675.4	132.17	6.110	
11,600.0	7,176.1	11,328.6	7,111.9	75.7	67.6	85.44	-3,418.7	888.7	807.6	672.3	135.29	5.969	
11,614.1	7,175.9	11,342.8	7,111.8	76.0	67.8	85.45	-3,432.8	888.7	807.5	671.7	135.81	5.946	
11,700.0	7,174.7	11,428.6	7,111.4	77.5	69.4	85.50	-3,518.7	888.7	807.5	668.5	138.99	5.809	
11,712.6	7,174.5	11,441.2	7,111.4	77.7	69.6	85.51	-3,531.2	888.7	807.5	668.0	139.46	5.790	
11,800.0	7,173.3	11,528.6	7,111.0	79.2	71.2	85.57	-3,618.7	888.7	807.4	664.7	142.71	5.658	
11,811.0	7,173.2	11,539.6	7,110.9	79.4	71.4	85.58	-3,629.7	888.7	807.4	664.3	143.12	5.641	
11,900.0	7,172.0	11,628.6	7,110.5	81.0	73.0	85.64	-3,718.7	888.7	807.3	660.9	146.43	5.513	
11,909.4	7,171.8	11,638.0	7,110.5	81.1	73.2	85.64	-3,728.1	888.7	807.3	660.5	146.78	5.500	
12,000.0	7,170.6	11,728.6	7,110.1	82.7	74.8	85.70	-3,818.7	888.7	807.2	657.1	150.16	5.376	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-203 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,007.8	7,170.5	11,736.4	7,110.1	82.9	74.9	85.71	-3,826.5	888.7	807.2	656.8	150.45	5.366	
12,018.7	7,170.3	11,747.3	7,110.0	83.1	75.1	85.72	-3,837.4	888.7	807.2	656.4	150.85	5.351	
12,041.2	7,170.0	11,747.9	7,110.0	83.5	75.1	85.72	-3,837.9	888.7	807.5	656.2	151.28	5.338	SF

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-223 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-88.65	0.4	-15.1	15.1				
98.4	98.4	98.4	98.4	0.1	0.1	-88.65	0.4	-15.1	15.1	14.9	0.17	88.674	
100.0	100.0	100.0	100.0	0.1	0.1	-88.65	0.4	-15.1	15.1	14.9	0.17	87.069	
196.8	196.8	196.8	196.8	0.3	0.3	-88.65	0.4	-15.1	15.1	14.5	0.61	24.767	
200.0	200.0	200.0	200.0	0.3	0.3	-88.65	0.4	-15.1	15.1	14.4	0.62	24.203	
295.3	295.3	295.3	295.3	0.5	0.5	-88.65	0.4	-15.1	15.1	14.0	1.05	14.339	
300.0	300.0	300.0	300.0	0.5	0.5	-88.65	0.4	-15.1	15.1	14.0	1.07	14.055	
393.7	393.7	393.7	393.7	0.7	0.7	-88.65	0.4	-15.1	15.1	13.6	1.49	10.091	
400.0	400.0	400.0	400.0	0.8	0.8	-88.65	0.4	-15.1	15.1	13.5	1.52	9.903	
492.1	492.1	492.1	492.1	1.0	1.0	-88.65	0.4	-15.1	15.1	13.1	1.94	7.784	
500.0	500.0	500.0	500.0	1.0	1.0	-88.65	0.4	-15.1	15.1	13.1	1.97	7.645	
590.5	590.5	590.5	590.5	1.2	1.2	-88.65	0.4	-15.1	15.1	12.7	2.38	6.336	
600.0	600.0	600.0	600.0	1.2	1.2	-88.65	0.4	-15.1	15.1	12.6	2.42	6.225	
689.0	689.0	689.0	689.0	1.4	1.4	-88.65	0.4	-15.1	15.1	12.2	2.82	5.342	
700.0	700.0	700.0	700.0	1.4	1.4	-88.65	0.4	-15.1	15.1	12.2	2.87	5.250	
787.4	787.4	787.4	787.4	1.6	1.6	-88.65	0.4	-15.1	15.1	11.8	3.26	4.618	
800.0	800.0	800.0	800.0	1.7	1.7	-88.65	0.4	-15.1	15.1	11.7	3.32	4.539	
885.8	885.8	885.8	885.8	1.9	1.9	-88.65	0.4	-15.1	15.1	11.4	3.71	4.067	
900.0	900.0	900.0	900.0	1.9	1.9	-88.65	0.4	-15.1	15.1	11.3	3.77	3.998	
984.2	984.2	984.2	984.2	2.1	2.1	-88.65	0.4	-15.1	15.1	10.9	4.15	3.633	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-88.65	0.4	-15.1	15.1	10.9	4.22	3.572	
1,082.7	1,082.7	1,082.7	1,082.7	2.3	2.3	-88.65	0.4	-15.1	15.1	10.5	4.59	3.283	
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	-88.65	0.4	-15.1	15.1	10.4	4.67	3.228	
1,181.1	1,181.1	1,181.1	1,181.1	2.5	2.5	-88.65	0.4	-15.1	15.1	10.0	5.03	2.994	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-88.65	0.4	-15.1	15.1	10.0	5.12	2.944	
1,279.5	1,279.5	1,279.5	1,279.5	2.7	2.7	-88.65	0.4	-15.1	15.1	9.6	5.48	2.752	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-88.65	0.4	-15.1	15.1	9.5	5.57	2.707	
1,377.9	1,377.9	1,377.9	1,377.9	3.0	3.0	-88.65	0.4	-15.1	15.1	9.2	5.92	2.546	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-88.65	0.4	-15.1	15.1	9.1	6.02	2.504	
1,450.0	1,450.0	1,450.0	1,450.0	3.1	3.1	-88.65	0.4	-15.1	15.1	8.8	6.24	2.414	CC
1,476.4	1,476.4	1,476.4	1,476.4	3.2	3.2	-152.17	0.4	-15.1	15.2	8.8	6.36	2.387	ES
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.2	-152.71	0.4	-15.1	15.5	9.0	6.46	2.392	
1,574.8	1,574.8	1,574.9	1,574.9	3.4	3.4	-155.95	0.4	-15.0	17.4	10.6	6.78	2.568	
1,600.0	1,599.9	1,600.2	1,600.2	3.4	3.5	-157.00	0.6	-14.7	18.2	11.4	6.89	2.648	
1,673.2	1,673.0	1,673.8	1,673.8	3.6	3.6	-159.25	1.8	-12.8	20.7	13.5	7.19	2.876	
1,700.0	1,699.7	1,700.8	1,700.7	3.7	3.7	-159.85	2.4	-11.7	21.6	14.3	7.30	2.959	
1,771.6	1,771.0	1,772.9	1,772.7	3.8	3.8	-160.96	4.9	-7.7	24.1	16.5	7.59	3.172	
1,800.0	1,799.1	1,801.5	1,801.1	3.9	3.9	-161.24	6.2	-5.7	25.1	17.4	7.71	3.255	
1,870.1	1,868.6	1,872.1	1,871.4	4.1	4.1	-161.63	9.9	0.3	27.6	19.6	7.99	3.451	
1,900.0	1,898.2	1,902.3	1,901.4	4.1	4.1	-161.68	11.7	3.3	28.7	20.6	8.11	3.534	
1,968.5	1,965.7	1,971.4	1,969.9	4.3	4.3	-161.60	16.6	11.2	31.2	22.8	8.39	3.713	
2,000.0	1,996.6	2,003.2	2,001.3	4.4	4.4	-161.49	19.2	15.3	32.3	23.8	8.52	3.794	
2,066.9	2,062.2	2,070.8	2,067.9	4.6	4.6	-161.10	25.2	25.1	34.8	26.0	8.80	3.958	
2,100.0	2,094.4	2,104.2	2,100.8	4.7	4.6	-160.85	28.5	30.4	36.1	27.1	8.94	4.037	
2,165.3	2,157.9	2,170.3	2,165.5	5.0	4.9	-160.26	35.6	41.8	38.6	29.3	9.22	4.182	
2,200.0	2,191.5	2,205.4	2,199.7	5.1	5.0	-159.90	39.7	48.4	39.9	30.5	9.37	4.258	
2,263.8	2,252.9	2,269.9	2,262.4	5.3	5.2	-159.16	47.7	61.4	42.4	32.7	9.67	4.386	
2,300.0	2,287.6	2,306.6	2,297.9	5.5	5.3	-158.71	52.7	69.4	43.8	34.0	9.83	4.457	
2,362.2	2,346.9	2,369.6	2,358.5	5.8	5.6	-157.89	61.7	83.9	46.3	36.2	10.14	4.566	
2,400.0	2,382.7	2,408.0	2,395.2	6.0	5.7	-157.37	67.5	93.3	47.9	37.5	10.34	4.628	
2,460.6	2,439.8	2,469.5	2,453.8	6.3	6.0	-156.49	77.4	109.3	50.3	39.7	10.67	4.717	
2,500.0	2,476.6	2,509.4	2,491.6	6.5	6.2	-155.90	84.2	120.2	52.0	41.1	10.90	4.769	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-223 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,559.0	2,531.6	2,569.4	2,548.0	6.9	6.5	-154.99	94.9	137.5	54.5	43.2	11.27	4.833	
2,600.0	2,569.4	2,611.0	2,586.9	7.1	6.7	-154.35	102.7	150.1	56.2	44.7	11.54	4.872	
2,657.5	2,622.0	2,669.4	2,641.2	7.5	7.1	-153.43	114.1	168.5	58.7	46.8	11.96	4.912	
2,700.0	2,660.7	2,712.7	2,681.0	7.8	7.4	-152.74	122.9	182.8	60.6	48.3	12.28	4.936	
2,755.9	2,711.1	2,769.5	2,733.0	8.2	7.7	-151.82	135.0	202.3	63.1	50.4	12.74	4.952	
2,800.0	2,750.6	2,813.7	2,773.2	8.6	8.0	-151.22	144.7	217.9	65.3	52.2	13.12	4.979	
2,832.3	2,779.2	2,845.9	2,802.5	8.8	8.3	-150.97	151.7	229.2	67.3	53.9	13.39	5.026	
2,854.3	2,798.8	2,867.9	2,822.6	9.0	8.4	-150.88	156.5	237.0	68.8	55.2	13.60	5.057	
2,900.0	2,839.3	2,913.5	2,864.0	9.4	8.8	-150.69	166.5	253.1	71.8	57.8	14.03	5.118	
2,952.7	2,886.0	2,966.1	2,911.9	9.9	9.2	-150.50	178.0	271.7	75.3	60.8	14.55	5.178	
3,000.0	2,927.8	3,013.3	2,954.8	10.3	9.5	-150.34	188.3	288.3	78.5	63.5	15.01	5.228	
3,051.2	2,973.2	3,064.3	3,001.2	10.7	9.9	-150.18	199.5	306.3	81.9	66.4	15.53	5.274	
3,100.0	3,016.4	3,113.1	3,045.5	11.2	10.3	-150.04	210.1	323.5	85.1	69.1	16.03	5.313	
3,149.6	3,060.4	3,162.5	3,090.6	11.6	10.6	-149.91	221.0	341.0	88.5	71.9	16.54	5.348	
3,200.0	3,105.0	3,212.8	3,136.3	12.1	11.0	-149.79	232.0	358.7	91.8	74.8	17.07	5.380	
3,248.0	3,147.5	3,260.8	3,179.9	12.5	11.4	-149.68	242.4	375.7	95.0	77.4	17.57	5.407	
3,300.0	3,193.6	3,312.6	3,227.1	13.0	11.8	-149.57	253.8	394.0	98.5	80.4	18.13	5.433	
3,346.4	3,234.7	3,359.0	3,269.2	13.4	12.2	-149.47	263.9	410.3	101.6	83.0	18.63	5.453	
3,400.0	3,282.2	3,412.4	3,317.9	13.9	12.6	-149.37	275.6	429.2	105.2	86.0	19.21	5.474	
3,444.9	3,321.9	3,457.2	3,358.6	14.3	13.0	-149.29	285.4	445.0	108.2	88.5	19.70	5.489	
3,500.0	3,370.8	3,512.2	3,408.6	14.8	13.4	-149.20	297.4	464.4	111.8	91.5	20.31	5.507	
3,543.3	3,409.1	3,555.4	3,447.9	15.2	13.8	-149.14	306.9	479.6	114.7	93.9	20.79	5.518	
3,600.0	3,459.3	3,611.9	3,499.4	15.8	14.2	-149.05	319.2	499.6	118.5	97.1	21.42	5.532	
3,641.7	3,496.3	3,653.6	3,537.3	16.1	14.6	-149.00	328.3	514.3	121.3	99.4	21.89	5.541	
3,700.0	3,547.9	3,711.7	3,590.2	16.7	15.1	-148.92	341.1	534.8	125.2	102.6	22.55	5.552	
3,740.1	3,583.5	3,751.8	3,626.6	17.1	15.4	-148.87	349.8	549.0	127.9	104.9	23.00	5.559	
3,800.0	3,636.5	3,811.5	3,680.9	17.6	15.9	-148.80	362.9	570.1	131.9	108.2	23.68	5.568	
3,838.6	3,670.7	3,850.0	3,715.9	18.0	16.2	-148.75	371.3	583.6	134.4	110.3	24.12	5.573	
3,900.0	3,725.1	3,911.3	3,771.7	18.6	16.7	-148.69	384.7	605.3	138.5	113.7	24.82	5.581	
3,937.0	3,757.9	3,948.2	3,805.3	18.9	17.0	-148.65	392.8	618.3	141.0	115.8	25.25	5.585	
4,000.0	3,813.7	4,011.0	3,862.5	19.5	17.5	-148.59	406.5	640.5	145.2	119.2	25.97	5.591	
4,035.4	3,845.1	4,046.4	3,894.6	19.9	17.8	-148.56	414.2	653.0	147.6	121.2	26.38	5.593	
4,100.0	3,902.3	4,110.8	3,953.2	20.5	18.4	-148.50	428.3	675.7	151.9	124.8	27.13	5.598	
4,133.8	3,932.2	4,144.6	3,984.0	20.8	18.6	-148.47	435.7	687.6	154.1	126.6	27.53	5.600	
4,200.0	3,990.8	4,210.6	4,044.0	21.5	19.2	-148.42	450.2	710.9	158.6	130.3	28.30	5.604	
4,232.3	4,019.4	4,242.8	4,073.3	21.8	19.5	-148.39	457.2	722.3	160.7	132.0	28.67	5.605	
4,300.0	4,079.4	4,310.4	4,134.8	22.4	20.0	-148.34	472.0	746.1	165.2	135.8	29.46	5.608	
4,330.7	4,106.6	4,341.0	4,162.6	22.7	20.3	-148.32	478.7	757.0	167.3	137.5	29.82	5.609	
4,400.0	4,168.0	4,410.2	4,225.5	23.4	20.9	-148.27	493.8	781.4	171.9	141.3	30.64	5.611	
4,429.1	4,193.8	4,439.2	4,252.0	23.7	21.1	-148.25	500.2	791.6	173.9	142.9	30.98	5.612	
4,500.0	4,256.6	4,509.9	4,316.3	24.4	21.7	-148.20	515.6	816.6	178.6	146.8	31.82	5.614	
4,527.5	4,281.0	4,537.4	4,341.3	24.6	21.9	-148.19	521.6	826.3	180.4	148.3	32.14	5.614	
4,600.0	4,345.2	4,609.7	4,407.1	25.3	22.6	-148.14	537.4	851.8	185.3	152.3	33.00	5.615	
4,626.0	4,368.2	4,635.6	4,430.7	25.6	22.8	-148.13	543.1	860.9	187.0	153.7	33.30	5.615	
4,700.0	4,433.8	4,709.5	4,497.8	26.3	23.4	-148.09	559.3	887.0	192.0	157.8	34.18	5.616	
4,724.4	4,455.4	4,733.8	4,520.0	26.5	23.6	-148.08	564.6	895.6	193.6	159.1	34.47	5.616	
4,800.0	4,522.3	4,809.3	4,588.6	27.3	24.3	-148.04	581.1	922.2	198.6	163.3	35.37	5.616	
4,822.8	4,542.6	4,832.0	4,609.3	27.5	24.4	-148.02	586.1	930.3	200.2	164.5	35.64	5.616	
4,900.0	4,610.9	4,909.0	4,679.4	28.2	25.1	-147.99	602.9	957.5	205.3	168.8	36.56	5.616	
4,921.2	4,629.8	4,930.2	4,698.7	28.4	25.3	-147.98	607.5	964.9	206.7	169.9	36.81	5.616	
5,000.0	4,699.5	5,008.8	4,770.1	29.2	25.9	-147.94	624.7	992.7	212.0	174.2	37.75	5.615	
5,019.7	4,716.9	5,028.4	4,788.0	29.4	26.1	-147.93	629.0	999.6	213.3	175.3	37.99	5.615	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-223 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	4,788.1	5,108.6	4,860.9	30.2	26.8	-147.90	646.5	1,027.9	218.7	179.7	38.95	5.614	
5,118.1	4,804.1	5,126.6	4,877.3	30.4	26.9	-147.89	650.5	1,034.3	219.9	180.7	39.16	5.614	
5,200.0	4,876.7	5,208.4	4,951.7	31.1	27.6	-147.86	668.4	1,063.1	225.3	185.2	40.14	5.613	
5,216.5	4,891.3	5,224.9	4,966.7	31.3	27.8	-147.85	672.0	1,068.9	226.5	186.1	40.34	5.613	
5,300.0	4,965.3	5,308.1	5,042.5	32.1	28.5	-147.82	690.2	1,098.3	232.0	190.7	41.34	5.612	
5,314.9	4,978.5	5,323.1	5,056.0	32.3	28.6	-147.81	693.4	1,103.6	233.0	191.5	41.52	5.612	
5,400.0	5,053.8	5,407.9	5,133.2	33.1	29.3	-147.78	712.0	1,133.5	238.7	196.2	42.54	5.611	
5,413.4	5,065.7	5,421.3	5,145.4	33.2	29.5	-147.78	714.9	1,138.3	239.6	196.9	42.71	5.611	
5,508.2	5,149.7	5,513.5	5,229.3	34.2	30.2	-147.78	735.0	1,170.6	246.1	202.3	43.79	5.620	
5,511.8	5,152.9	5,516.9	5,232.5	34.2	30.2	-147.78	735.7	1,171.8	246.4	202.6	43.83	5.622	
5,600.0	5,231.7	5,600.0	5,309.0	34.9	30.8	-147.97	752.8	1,199.4	253.0	208.3	44.67	5.663	
5,610.2	5,240.9	5,608.6	5,317.0	35.0	30.8	-147.99	754.5	1,202.1	253.7	209.0	44.75	5.669	
5,700.0	5,322.5	5,692.2	5,394.9	35.7	31.3	-148.18	770.3	1,227.7	260.1	214.6	45.50	5.717	
5,708.6	5,330.4	5,700.0	5,402.3	35.7	31.4	-148.20	771.8	1,230.0	260.7	215.1	45.57	5.721	
5,800.0	5,414.6	5,785.0	5,482.5	36.3	31.8	-148.40	786.5	1,253.9	266.9	220.6	46.25	5.771	
5,807.1	5,421.2	5,791.6	5,488.8	36.4	31.9	-148.42	787.6	1,255.6	267.3	221.1	46.30	5.775	
5,900.0	5,508.1	5,877.8	5,571.0	36.9	32.3	-148.63	801.2	1,277.6	273.3	226.4	46.91	5.826	
5,905.5	5,513.3	5,882.9	5,575.9	37.0	32.3	-148.64	802.0	1,278.8	273.6	226.7	46.94	5.829	
6,000.0	5,602.8	5,970.4	5,660.2	37.5	32.7	-148.86	814.4	1,298.8	279.4	231.9	47.49	5.883	
6,003.9	5,606.5	5,974.0	5,663.7	37.5	32.7	-148.87	814.9	1,299.6	279.6	232.1	47.51	5.885	
6,100.0	5,698.5	6,062.8	5,749.9	38.0	33.1	-149.09	826.0	1,317.5	285.0	237.1	47.98	5.941	
6,102.3	5,700.7	6,065.0	5,752.1	38.0	33.1	-149.10	826.2	1,317.9	285.2	237.2	47.99	5.943	
6,200.0	5,795.2	6,155.2	5,840.3	38.4	33.4	-149.34	836.0	1,333.7	290.3	242.0	48.38	6.001	
6,200.8	5,795.9	6,155.9	5,841.0	38.4	33.4	-149.34	836.1	1,333.9	290.4	242.0	48.38	6.002	
6,299.2	5,891.9	6,246.6	5,930.3	38.8	33.7	-149.58	844.5	1,347.4	295.2	246.5	48.69	6.063	
6,300.0	5,892.7	6,247.4	5,931.0	38.8	33.7	-149.59	844.6	1,347.5	295.3	246.6	48.70	6.063	
6,397.6	5,988.5	6,337.3	6,020.0	39.1	34.0	-149.83	851.4	1,358.5	299.7	250.8	48.92	6.126	
6,400.0	5,990.9	6,339.5	6,022.2	39.1	34.0	-149.84	851.5	1,358.7	299.8	250.9	48.93	6.128	
6,496.0	6,085.8	6,427.8	6,109.9	39.4	34.2	-150.09	856.7	1,367.2	303.8	254.7	49.07	6.191	
6,500.0	6,089.7	6,431.4	6,113.6	39.4	34.2	-150.10	856.9	1,367.5	304.0	254.9	49.07	6.194	
6,594.5	6,183.5	6,518.2	6,200.1	39.6	34.4	-150.35	860.6	1,373.4	307.5	258.4	49.13	6.259	
6,600.0	6,189.0	6,523.3	6,205.1	39.7	34.4	-150.37	860.8	1,373.7	307.7	258.6	49.13	6.263	
6,692.9	6,281.5	6,608.5	6,290.3	39.8	34.5	-150.62	863.0	1,377.2	310.9	261.7	49.12	6.329	
6,700.0	6,288.6	6,615.1	6,296.8	39.8	34.5	-150.64	863.1	1,377.4	311.1	262.0	49.11	6.334	
6,791.3	6,379.8	6,698.8	6,380.5	40.0	34.6	-150.90	863.9	1,378.6	313.8	264.8	49.02	6.402	
6,800.0	6,388.5	6,706.8	6,388.5	40.0	34.6	-150.93	863.9	1,378.6	314.1	265.0	49.01	6.408	
6,889.7	6,478.2	6,797.4	6,479.1	40.1	34.6	-151.54	861.2	1,378.6	315.2	266.6	48.60	6.485	
6,890.4	6,478.9	6,798.1	6,479.7	40.1	34.6	-88.24	861.2	1,378.6	315.2	266.6	48.60	6.486	
6,900.0	6,488.5	6,807.8	6,489.4	40.1	34.6	-88.41	860.3	1,378.6	315.2	266.7	48.50	6.499	
6,920.4	6,508.9	6,828.3	6,509.7	40.1	34.6	-88.83	857.9	1,378.6	315.1	266.9	48.23	6.534	
6,950.0	6,538.5	6,857.8	6,538.9	40.1	34.6	90.48	853.5	1,378.6	315.1	267.3	47.79	6.593	
6,971.0	6,559.4	6,878.6	6,559.4	40.1	34.6	90.00	849.7	1,378.6	315.1	267.6	47.45	6.640	
6,988.2	6,576.6	6,895.7	6,576.1	40.1	34.6	89.60	846.1	1,378.6	315.1	267.9	47.18	6.679	
7,000.0	6,588.3	6,907.4	6,587.4	40.1	34.6	89.33	843.5	1,378.6	315.1	268.1	46.98	6.706	
7,050.0	6,637.8	6,956.5	6,634.7	40.1	34.5	88.18	830.2	1,378.6	315.2	269.1	46.12	6.835	
7,086.6	6,673.6	6,992.2	6,668.5	40.1	34.5	87.35	818.6	1,378.6	315.4	269.9	45.46	6.937	
7,100.0	6,686.6	7,005.2	6,680.6	40.1	34.5	87.05	813.9	1,378.6	315.5	270.3	45.23	6.976	
7,150.0	6,734.6	7,053.5	6,724.9	40.0	34.4	85.94	794.7	1,378.6	315.9	271.6	44.31	7.128	
7,185.0	6,767.5	7,087.1	6,754.9	39.9	34.3	85.18	779.5	1,378.6	316.2	272.5	43.67	7.241	
7,200.0	6,781.4	7,101.4	6,767.5	39.9	34.2	84.86	772.7	1,378.6	316.4	273.0	43.40	7.289	
7,250.0	6,827.0	7,150.0	6,809.0	39.8	34.1	83.78	747.5	1,378.6	316.9	274.5	42.48	7.460	
7,283.4	6,856.6	7,180.6	6,834.3	39.8	34.0	83.11	730.3	1,378.6	317.4	275.5	41.91	7.573	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-223 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,300.0	6,871.0	7,196.2	6,846.9	39.7	34.0	82.78	721.1	1,378.6	317.6	276.0	41.63	7.630	
7,350.0	6,913.2	7,243.1	6,883.5	39.6	33.8	81.80	691.8	1,378.6	318.4	277.6	40.79	7.805	
7,381.9	6,939.1	7,272.8	6,905.7	39.5	33.7	81.20	672.0	1,378.6	318.9	278.6	40.27	7.917	
7,400.0	6,953.4	7,289.7	6,917.9	39.4	33.6	80.86	660.4	1,378.6	319.2	279.2	39.99	7.980	
7,450.0	6,991.5	7,335.9	6,949.9	39.3	33.4	79.97	627.0	1,378.6	320.0	280.7	39.25	8.152	
7,480.3	7,013.5	7,363.9	6,968.2	39.2	33.3	79.46	605.9	1,378.6	320.5	281.7	38.83	8.254	
7,500.0	7,027.3	7,382.0	6,979.6	39.1	33.3	79.13	591.8	1,378.6	320.9	282.3	38.57	8.319	
7,550.0	7,060.5	7,427.7	7,006.8	39.0	33.1	78.35	555.0	1,378.6	321.7	283.8	37.95	8.479	
7,578.7	7,078.4	7,453.9	7,021.3	38.8	33.0	77.92	533.2	1,378.6	322.2	284.6	37.62	8.566	
7,600.0	7,091.0	7,473.3	7,031.5	38.8	32.9	77.62	516.8	1,378.6	322.6	285.2	37.39	8.629	
7,650.0	7,118.7	7,518.6	7,053.7	38.6	32.7	76.95	477.2	1,378.6	323.5	286.6	36.90	8.766	
7,677.1	7,132.5	7,543.2	7,064.6	38.5	32.6	76.61	455.3	1,378.6	323.9	287.2	36.67	8.834	
7,700.0	7,143.4	7,563.8	7,073.2	38.4	32.5	76.34	436.5	1,378.6	324.3	287.8	36.49	8.888	
7,750.0	7,165.0	7,608.7	7,090.0	38.2	32.3	75.79	394.8	1,378.6	325.0	288.9	36.15	8.993	
7,775.6	7,174.9	7,631.7	7,097.6	38.1	32.2	75.53	373.2	1,378.6	325.4	289.4	36.01	9.037	
7,800.0	7,183.5	7,653.6	7,104.1	38.1	32.1	75.30	352.3	1,378.6	325.8	289.9	35.88	9.078	
7,850.0	7,198.6	7,700.0	7,116.0	37.9	32.0	74.86	307.4	1,378.6	326.4	290.7	35.69	9.145	
7,874.0	7,204.7	7,719.7	7,120.1	37.8	31.9	74.70	288.2	1,378.6	326.7	291.0	35.65	9.163	
7,900.0	7,210.4	7,742.8	7,124.3	37.7	31.8	74.52	265.4	1,378.6	326.9	291.3	35.60	9.183	
7,950.0	7,218.8	7,787.3	7,130.2	37.6	31.7	74.23	221.3	1,378.6	327.4	291.8	35.58	9.201	
7,972.4	7,221.4	7,807.3	7,132.0	37.5	31.6	74.12	201.4	1,378.6	327.6	292.0	35.61	9.200	
8,000.0	7,223.7	7,831.8	7,133.4	37.4	31.5	74.00	177.0	1,378.6	327.8	292.1	35.65	9.195	
8,050.0	7,225.1	7,877.4	7,133.9	37.3	31.4	73.86	131.4	1,378.6	328.0	292.2	35.78	9.167	
8,055.3	7,225.0	7,882.6	7,133.9	37.3	31.4	73.86	126.1	1,378.6	328.0	292.2	35.81	9.160	
8,070.8	7,224.8	7,898.2	7,133.7	37.3	31.4	73.88	110.5	1,378.6	328.0	292.2	35.79	9.164	
8,100.0	7,224.4	7,927.4	7,133.5	37.2	31.3	73.91	81.4	1,378.6	327.9	292.1	35.79	9.161	
8,169.3	7,223.5	7,996.6	7,133.0	37.1	31.2	73.98	12.1	1,378.6	327.8	291.9	35.91	9.129	
8,200.0	7,223.0	8,027.4	7,132.8	37.1	31.1	74.01	-18.6	1,378.6	327.7	291.7	36.01	9.101	
8,267.7	7,222.1	8,095.1	7,132.3	37.0	31.1	74.08	-86.3	1,378.6	327.6	291.2	36.38	9.005	
8,300.0	7,221.7	8,127.3	7,132.0	37.0	31.1	74.12	-118.6	1,378.6	327.6	291.0	36.61	8.948	
8,366.1	7,220.7	8,193.5	7,131.5	37.0	31.1	74.19	-184.7	1,378.6	327.5	290.2	37.21	8.799	
8,400.0	7,220.3	8,227.3	7,131.3	37.0	31.1	74.22	-218.6	1,378.6	327.4	289.8	37.57	8.714	
8,464.5	7,219.4	8,291.9	7,130.8	37.1	31.2	74.29	-283.1	1,378.6	327.3	288.9	38.38	8.528	
8,500.0	7,218.9	8,327.3	7,130.5	37.1	31.3	74.33	-318.6	1,378.6	327.2	288.4	38.86	8.420	
8,563.0	7,218.0	8,390.3	7,130.0	37.2	31.5	74.40	-381.6	1,378.6	327.1	287.3	39.85	8.209	
8,600.0	7,217.5	8,427.3	7,129.8	37.3	31.6	74.44	-418.6	1,378.6	327.1	286.6	40.47	8.082	
8,661.4	7,216.7	8,488.7	7,129.3	37.5	31.8	74.50	-480.0	1,378.6	327.0	285.4	41.60	7.860	
8,700.0	7,216.1	8,527.3	7,129.0	37.6	32.0	74.54	-518.6	1,378.6	326.9	284.5	42.34	7.721	
8,759.8	7,215.3	8,587.2	7,128.6	37.8	32.3	74.61	-578.4	1,378.6	326.8	283.2	43.58	7.498	
8,800.0	7,214.8	8,627.3	7,128.3	38.0	32.6	74.65	-618.6	1,378.6	326.7	282.3	44.45	7.350	
8,858.2	7,214.0	8,685.6	7,127.8	38.3	33.0	74.71	-676.8	1,378.6	326.6	280.8	45.78	7.134	
8,900.0	7,213.4	8,727.3	7,127.5	38.5	33.3	74.76	-718.6	1,378.6	326.6	279.8	46.77	6.983	
8,956.7	7,212.6	8,784.0	7,127.1	38.8	33.7	74.82	-775.2	1,378.6	326.5	278.3	48.17	6.777	
9,000.0	7,212.0	8,827.3	7,126.8	39.1	34.1	74.86	-818.6	1,378.6	326.4	277.1	49.26	6.626	
9,055.1	7,211.2	8,882.4	7,126.4	39.5	34.6	74.92	-873.7	1,378.6	326.3	275.6	50.71	6.434	
9,100.0	7,210.6	8,927.3	7,126.0	39.8	35.1	74.97	-918.6	1,378.6	326.2	274.3	51.91	6.284	
9,153.5	7,209.9	8,980.9	7,125.6	40.3	35.6	75.03	-972.1	1,378.6	326.1	272.7	53.39	6.109	
9,200.0	7,209.2	9,027.3	7,125.3	40.7	36.1	75.08	-1,018.5	1,378.6	326.1	271.4	54.69	5.962	
9,251.9	7,208.5	9,079.3	7,124.9	41.1	36.7	75.13	-1,070.5	1,378.6	326.0	269.8	56.19	5.802	
9,300.0	7,207.9	9,127.3	7,124.5	41.6	37.3	75.18	-1,118.5	1,378.6	325.9	268.3	57.58	5.660	
9,350.4	7,207.2	9,177.7	7,124.1	42.1	37.9	75.24	-1,168.9	1,378.6	325.8	266.7	59.08	5.514	
9,400.0	7,206.5	9,227.3	7,123.8	42.6	38.5	75.29	-1,218.5	1,378.6	325.7	265.2	60.57	5.378	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-223 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,448.8	7,205.8	9,276.1	7,123.4	43.1	39.2	75.34	-1,267.3	1,378.6	325.7	263.6	62.07	5.247	
9,500.0	7,205.1	9,327.3	7,123.0	43.7	39.8	75.40	-1,318.5	1,378.6	325.6	261.9	63.65	5.115	
9,547.2	7,204.4	9,374.6	7,122.7	44.2	40.5	75.45	-1,365.8	1,378.6	325.5	260.4	65.13	4.998	
9,600.0	7,203.7	9,427.3	7,122.3	44.8	41.2	75.50	-1,418.5	1,378.6	325.4	258.6	66.80	4.872	
9,645.6	7,203.1	9,473.0	7,121.9	45.4	41.8	75.55	-1,464.2	1,378.6	325.3	257.1	68.26	4.766	
9,700.0	7,202.3	9,527.3	7,121.5	46.1	42.6	75.61	-1,518.5	1,378.6	325.3	255.3	70.01	4.646	
9,744.1	7,201.7	9,571.4	7,121.2	46.6	43.2	75.66	-1,562.6	1,378.6	325.2	253.7	71.45	4.552	
9,800.0	7,201.0	9,627.3	7,120.8	47.3	44.1	75.72	-1,618.5	1,378.6	325.1	251.8	73.28	4.437	
9,842.5	7,200.4	9,669.8	7,120.4	47.9	44.7	75.76	-1,661.0	1,378.6	325.0	250.4	74.68	4.352	
9,900.0	7,199.6	9,727.3	7,120.0	48.7	45.5	75.83	-1,718.5	1,378.6	325.0	248.4	76.59	4.243	
9,940.9	7,199.0	9,768.2	7,119.7	49.2	46.2	75.87	-1,759.4	1,378.6	324.9	246.9	77.97	4.167	
10,000.0	7,198.2	9,827.3	7,119.3	50.1	47.1	75.93	-1,818.5	1,378.6	324.8	244.8	79.95	4.062	
10,039.3	7,197.7	9,866.7	7,119.0	50.6	47.7	75.98	-1,857.9	1,378.6	324.7	243.4	81.29	3.995	
10,100.0	7,196.8	9,927.3	7,118.5	51.5	48.6	76.04	-1,918.5	1,378.6	324.6	241.3	83.35	3.895	
10,137.8	7,196.3	9,965.1	7,118.2	52.0	49.2	76.08	-1,956.3	1,378.6	324.6	239.9	84.65	3.835	
10,200.0	7,195.4	10,027.3	7,117.8	52.9	50.2	76.15	-2,018.5	1,378.6	324.5	237.7	86.78	3.739	
10,236.2	7,194.9	10,063.5	7,117.5	53.5	50.8	76.19	-2,054.7	1,378.6	324.4	236.4	88.04	3.685	
10,300.0	7,194.1	10,127.3	7,117.0	54.4	51.8	76.26	-2,118.5	1,378.6	324.3	234.1	90.25	3.594	
10,334.6	7,193.6	10,161.9	7,116.7	55.0	52.4	76.30	-2,153.1	1,378.6	324.3	232.8	91.45	3.546	
10,400.0	7,192.7	10,227.3	7,116.3	56.0	53.4	76.37	-2,218.5	1,378.6	324.2	230.5	93.74	3.458	
10,433.0	7,192.2	10,260.4	7,116.0	56.5	54.0	76.40	-2,251.5	1,378.6	324.1	229.2	94.90	3.416	
10,500.0	7,191.3	10,327.3	7,115.5	57.5	55.1	76.47	-2,318.5	1,378.6	324.0	226.8	97.25	3.332	
10,531.5	7,190.9	10,358.8	7,115.3	58.0	55.6	76.51	-2,350.0	1,378.6	324.0	225.6	98.37	3.294	
10,600.0	7,189.9	10,427.3	7,114.8	59.1	56.7	76.58	-2,418.5	1,378.6	323.9	223.1	100.79	3.213	
10,629.9	7,189.5	10,457.2	7,114.5	59.6	57.2	76.62	-2,448.4	1,378.6	323.8	222.0	101.86	3.179	
10,700.0	7,188.5	10,527.3	7,114.0	60.7	58.4	76.69	-2,518.5	1,378.6	323.7	219.4	104.35	3.102	
10,728.3	7,188.1	10,555.6	7,113.8	61.1	58.9	76.72	-2,546.8	1,378.6	323.7	218.3	105.36	3.072	
10,800.0	7,187.2	10,627.3	7,113.3	62.3	60.1	76.80	-2,618.5	1,378.6	323.6	215.7	107.93	2.998	
10,826.7	7,186.8	10,654.0	7,113.1	62.7	60.6	76.83	-2,645.2	1,378.6	323.6	214.7	108.89	2.971	
10,900.0	7,185.8	10,727.3	7,112.5	63.9	61.8	76.91	-2,718.5	1,378.6	323.5	211.9	111.52	2.900	
10,925.2	7,185.4	10,752.5	7,112.3	64.3	62.3	76.94	-2,743.6	1,378.6	323.4	211.0	112.43	2.877	
11,000.0	7,184.4	10,827.3	7,111.8	65.6	63.5	77.02	-2,818.5	1,378.6	323.3	208.2	115.14	2.808	
11,023.6	7,184.1	10,850.9	7,111.6	66.0	63.9	77.04	-2,842.1	1,378.6	323.3	207.3	115.99	2.787	
11,100.0	7,183.0	10,927.3	7,111.0	67.2	65.3	77.13	-2,918.5	1,378.6	323.2	204.4	118.76	2.721	
11,122.0	7,182.7	10,949.3	7,110.8	67.6	65.7	77.15	-2,940.5	1,378.6	323.1	203.6	119.56	2.703	
11,200.0	7,181.6	11,027.3	7,110.3	68.9	67.0	77.24	-3,018.5	1,378.6	323.0	200.6	122.40	2.639	
11,220.4	7,181.3	11,047.7	7,110.1	69.3	67.4	77.26	-3,038.9	1,378.6	323.0	199.9	123.15	2.623	
11,300.0	7,180.2	11,127.3	7,109.5	70.6	68.8	77.34	-3,118.4	1,378.6	322.9	196.8	126.05	2.562	
11,318.9	7,180.0	11,146.2	7,109.4	70.9	69.1	77.37	-3,137.3	1,378.6	322.9	196.1	126.74	2.547	
11,400.0	7,178.9	11,227.3	7,108.8	72.3	70.5	77.45	-3,218.4	1,378.6	322.7	193.0	129.72	2.488	
11,417.3	7,178.6	11,244.6	7,108.6	72.6	70.8	77.47	-3,235.7	1,378.6	322.7	192.4	130.35	2.476	
11,500.0	7,177.5	11,327.3	7,108.0	74.0	72.3	77.56	-3,318.4	1,378.6	322.6	189.2	133.39	2.419	
11,515.7	7,177.3	11,343.0	7,107.9	74.3	72.6	77.58	-3,334.2	1,378.6	322.6	188.6	133.97	2.408	
11,600.0	7,176.1	11,427.3	7,107.3	75.7	74.1	77.67	-3,418.4	1,378.6	322.5	185.4	137.07	2.353	
11,614.1	7,175.9	11,441.4	7,107.1	76.0	74.3	77.69	-3,432.6	1,378.6	322.5	184.9	137.60	2.343	
11,700.0	7,174.7	11,527.3	7,106.5	77.5	75.8	77.78	-3,518.4	1,378.6	322.3	181.6	140.77	2.290	
11,712.6	7,174.5	11,539.9	7,106.4	77.7	76.1	77.80	-3,531.0	1,378.6	322.3	181.1	141.23	2.282	
11,800.0	7,173.3	11,627.3	7,105.8	79.2	77.6	77.89	-3,618.4	1,378.6	322.2	177.7	144.47	2.230	
11,811.0	7,173.2	11,638.3	7,105.7	79.4	77.8	77.90	-3,629.4	1,378.6	322.2	177.3	144.88	2.224	
11,900.0	7,172.0	11,727.3	7,105.0	81.0	79.4	78.00	-3,718.4	1,378.6	322.1	173.9	148.18	2.173	
11,909.4	7,171.8	11,736.7	7,104.9	81.1	79.6	78.01	-3,727.8	1,378.6	322.1	173.5	148.53	2.168	
12,000.0	7,170.6	11,827.3	7,104.2	82.7	81.2	78.11	-3,818.5	1,378.6	321.9	170.0	151.90	2.119	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-223 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,007.8	7,170.5	11,835.2	7,104.2	82.9	81.4	78.12	-3,826.3	1,378.6	321.9	169.7	152.20	2.115	
12,032.9	7,170.1	11,860.2	7,104.0	83.3	81.8	78.15	-3,851.3	1,378.6	321.9	168.8	153.13	2.102	
12,041.2	7,170.0	11,860.2	7,104.0	83.5	81.8	78.15	-3,851.4	1,378.6	322.0	168.7	153.28	2.101	SF

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-243 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-88.62	1.8	-75.0	75.1				
98.4	98.4	99.4	99.4	0.1	0.1	-88.62	1.8	-75.0	75.1	74.9	0.17	439.496	
100.0	100.0	101.0	101.0	0.1	0.1	-88.62	1.8	-75.0	75.1	74.9	0.18	428.177	
196.8	196.8	197.8	197.8	0.3	0.3	-88.62	1.8	-75.0	75.1	74.5	0.61	122.922	
200.0	200.0	201.0	201.0	0.3	0.3	-88.62	1.8	-75.0	75.1	74.4	0.62	120.136	
295.3	295.3	296.3	296.3	0.5	0.5	-88.62	1.8	-75.0	75.1	74.0	1.05	71.279	
300.0	300.0	301.0	301.0	0.5	0.5	-88.62	1.8	-75.0	75.1	74.0	1.07	69.870	
393.7	393.7	394.7	394.7	0.7	0.7	-88.62	1.8	-75.0	75.1	73.6	1.50	50.192	
400.0	400.0	401.0	401.0	0.8	0.8	-88.62	1.8	-75.0	75.1	73.5	1.52	49.259	
492.1	492.1	493.1	493.1	1.0	1.0	-88.62	1.8	-75.0	75.1	73.1	1.94	38.733	
500.0	500.0	501.0	501.0	1.0	1.0	-88.62	1.8	-75.0	75.1	73.1	1.97	38.039	
590.5	590.5	591.5	591.5	1.2	1.2	-88.62	1.8	-75.0	75.1	72.7	2.38	31.534	
600.0	600.0	601.0	601.0	1.2	1.2	-88.62	1.8	-75.0	75.1	72.6	2.42	30.981	
689.0	689.0	690.0	690.0	1.4	1.4	-88.62	1.8	-75.0	75.1	72.2	2.82	26.592	
700.0	700.0	701.0	701.0	1.4	1.4	-88.62	1.8	-75.0	75.1	72.2	2.87	26.133	
787.4	787.4	788.4	788.4	1.6	1.6	-88.62	1.8	-75.0	75.1	71.8	3.27	22.989	
800.0	800.0	801.0	801.0	1.7	1.7	-88.62	1.8	-75.0	75.1	71.7	3.32	22.597	
885.8	885.8	886.8	886.8	1.9	1.9	-88.62	1.8	-75.0	75.1	71.4	3.71	20.245	
900.0	900.0	901.0	901.0	1.9	1.9	-88.62	1.8	-75.0	75.1	71.3	3.77	19.903	
984.2	984.2	985.2	985.2	2.1	2.1	-88.62	1.8	-75.0	75.1	70.9	4.15	18.087	
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	-88.62	1.8	-75.0	75.1	70.8	4.22	17.784	
1,082.7	1,082.7	1,083.7	1,083.7	2.3	2.3	-88.62	1.8	-75.0	75.1	70.5	4.59	16.345	
1,100.0	1,100.0	1,101.0	1,101.0	2.3	2.3	-88.62	1.8	-75.0	75.1	70.4	4.67	16.072	
1,181.1	1,181.1	1,182.1	1,182.1	2.5	2.5	-88.62	1.8	-75.0	75.1	70.0	5.04	14.908	
1,200.0	1,200.0	1,201.0	1,201.0	2.6	2.6	-88.62	1.8	-75.0	75.1	69.9	5.12	14.661	
1,279.5	1,279.5	1,280.5	1,280.5	2.7	2.7	-88.62	1.8	-75.0	75.1	69.6	5.48	13.704	
1,300.0	1,300.0	1,301.0	1,301.0	2.8	2.8	-88.62	1.8	-75.0	75.1	69.5	5.57	13.478	
1,377.9	1,377.9	1,378.9	1,378.9	3.0	3.0	-88.62	1.8	-75.0	75.1	69.1	5.92	12.680	
1,400.0	1,400.0	1,401.0	1,401.0	3.0	3.0	-88.62	1.8	-75.0	75.1	69.0	6.02	12.471	
1,450.0	1,450.0	1,451.0	1,451.0	3.1	3.1	-88.62	1.8	-75.0	75.1	68.8	6.24	12.022	CC
1,476.4	1,476.4	1,477.4	1,477.4	3.2	3.2	-151.97	1.8	-75.0	75.2	68.8	6.36	11.819	ES
1,500.0	1,500.0	1,501.0	1,501.0	3.2	3.2	-152.08	1.8	-75.0	75.5	69.0	6.46	11.672	
1,574.8	1,574.8	1,575.8	1,575.8	3.4	3.4	-152.85	1.8	-75.0	77.5	70.7	6.79	11.416	
1,600.0	1,599.9	1,600.9	1,600.9	3.4	3.5	-153.24	1.8	-75.0	78.6	71.7	6.89	11.394	
1,673.2	1,673.0	1,674.0	1,674.0	3.6	3.6	-154.69	1.8	-75.0	82.8	75.6	7.21	11.495	
1,700.0	1,699.7	1,700.7	1,700.7	3.7	3.7	-155.31	1.8	-75.0	84.8	77.5	7.32	11.591	
1,771.6	1,771.0	1,772.0	1,772.0	3.8	3.8	-157.13	1.8	-75.0	91.4	83.8	7.62	11.990	
1,800.0	1,799.1	1,800.1	1,800.1	3.9	3.9	-157.89	1.8	-75.0	94.4	86.7	7.74	12.204	
1,870.1	1,868.6	1,869.6	1,869.6	4.1	4.1	-159.79	1.8	-75.0	103.2	95.2	8.03	12.854	
1,900.0	1,898.2	1,899.2	1,899.2	4.1	4.1	-160.59	1.8	-75.0	107.5	99.3	8.15	13.185	
1,968.5	1,965.7	1,967.1	1,967.1	4.3	4.3	-162.37	1.9	-75.0	118.4	110.0	8.43	14.042	
2,000.0	1,996.6	1,998.9	1,998.9	4.4	4.4	-163.04	2.2	-74.9	123.8	115.2	8.56	14.462	
2,066.9	2,062.2	2,066.7	2,066.6	4.6	4.5	-164.02	3.9	-73.9	135.6	126.8	8.83	15.361	
2,100.0	2,094.4	2,100.2	2,100.1	4.7	4.6	-164.32	5.3	-73.2	141.6	132.7	8.96	15.812	
2,165.3	2,157.9	2,166.5	2,166.3	5.0	4.7	-164.61	9.0	-71.2	153.9	144.7	9.22	16.697	
2,200.0	2,191.5	2,201.7	2,201.4	5.1	4.8	-164.63	11.6	-69.9	160.6	151.3	9.35	17.172	
2,263.8	2,252.9	2,266.6	2,266.0	5.3	5.0	-164.46	17.3	-66.9	173.3	163.7	9.62	18.027	
2,300.0	2,287.6	2,303.5	2,302.7	5.5	5.0	-164.25	21.1	-64.9	180.7	171.0	9.76	18.519	
2,362.2	2,346.9	2,367.0	2,365.5	5.8	5.2	-163.77	28.6	-60.9	193.8	183.8	10.02	19.341	
2,400.0	2,382.7	2,405.5	2,403.6	6.0	5.3	-163.39	33.8	-58.2	201.9	191.8	10.18	19.834	
2,460.6	2,439.8	2,467.4	2,464.6	6.3	5.4	-162.70	43.0	-53.3	215.4	204.9	10.45	20.600	
2,500.0	2,476.6	2,507.6	2,504.1	6.5	5.5	-162.19	49.7	-49.8	224.3	213.7	10.63	21.094	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-243 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,559.0	2,531.6	2,567.9	2,563.1	6.9	5.7	-161.36	60.5	-44.1	238.1	227.1	10.92	21.791	
2,600.0	2,569.4	2,609.7	2,603.9	7.1	5.8	-160.75	68.7	-39.8	247.9	236.7	11.13	22.267	
2,657.5	2,622.0	2,668.4	2,660.9	7.5	6.0	-159.85	81.1	-33.3	262.0	250.5	11.45	22.880	
2,700.0	2,660.7	2,711.8	2,702.9	7.8	6.2	-159.15	90.9	-28.1	272.7	261.0	11.69	23.326	
2,755.9	2,711.1	2,766.7	2,755.7	8.2	6.4	-158.27	103.9	-21.3	287.3	275.3	12.03	23.875	
2,800.0	2,750.6	2,809.0	2,796.5	8.6	6.5	-157.69	114.0	-16.0	299.5	287.2	12.31	24.337	
2,832.3	2,779.2	2,839.9	2,826.2	8.8	6.6	-157.31	121.4	-12.1	308.8	296.3	12.51	24.677	
2,854.3	2,798.8	2,860.9	2,846.5	9.0	6.7	-157.12	126.4	-9.5	315.3	302.6	12.68	24.859	
2,900.0	2,839.3	2,904.5	2,888.5	9.4	6.9	-156.76	136.8	-4.0	328.7	315.7	13.04	25.216	
2,952.7	2,886.0	2,954.9	2,937.0	9.9	7.1	-156.37	148.8	2.3	344.3	330.8	13.46	25.578	
3,000.0	2,927.8	3,000.0	2,980.4	10.3	7.3	-156.05	159.5	8.0	358.2	344.4	13.84	25.879	
3,051.2	2,973.2	3,048.9	3,027.5	10.7	7.5	-155.74	171.2	14.1	373.3	359.0	14.27	26.161	
3,100.0	3,016.4	3,095.5	3,072.4	11.2	7.7	-155.46	182.3	20.0	387.7	373.0	14.68	26.411	
3,149.6	3,060.4	3,142.8	3,118.0	11.6	7.9	-155.19	193.5	25.9	402.3	387.2	15.11	26.631	
3,200.0	3,105.0	3,191.0	3,164.3	12.1	8.1	-154.94	205.0	31.9	417.2	401.7	15.55	26.839	
3,248.0	3,147.5	3,236.8	3,208.5	12.5	8.3	-154.72	215.9	37.7	431.4	415.4	15.97	27.012	
3,300.0	3,193.6	3,286.4	3,256.3	13.0	8.5	-154.50	227.7	43.9	446.8	430.4	16.44	27.184	
3,346.4	3,234.7	3,330.8	3,299.0	13.4	8.7	-154.31	238.3	49.5	460.5	443.7	16.86	27.319	
3,400.0	3,282.2	3,381.9	3,348.2	13.9	9.0	-154.11	250.5	55.9	476.4	459.0	17.35	27.462	
3,444.9	3,321.9	3,424.8	3,389.5	14.3	9.2	-153.95	260.7	61.3	489.6	471.9	17.76	27.568	
3,500.0	3,370.8	3,477.4	3,440.2	14.8	9.4	-153.76	273.2	67.9	506.0	487.7	18.27	27.687	
3,543.3	3,409.1	3,518.7	3,480.0	15.2	9.6	-153.63	283.1	73.0	518.8	500.1	18.68	27.769	
3,600.0	3,459.3	3,572.9	3,532.2	15.8	9.9	-153.46	296.0	79.8	535.6	516.4	19.22	27.868	
3,641.7	3,496.3	3,612.7	3,570.5	16.1	10.1	-153.34	305.5	84.8	547.9	528.3	19.62	27.933	
3,700.0	3,547.9	3,668.4	3,624.1	16.7	10.3	-153.18	318.7	91.8	565.2	545.0	20.18	28.015	
3,740.1	3,583.5	3,706.7	3,661.0	17.1	10.5	-153.08	327.9	96.6	577.1	556.5	20.56	28.065	
3,800.0	3,636.5	3,763.8	3,716.1	17.6	10.8	-152.94	341.5	103.8	594.8	573.7	21.14	28.133	
3,838.6	3,670.7	3,800.7	3,751.5	18.0	11.0	-152.85	350.2	108.4	606.3	584.8	21.52	28.172	
3,900.0	3,725.1	3,859.3	3,808.0	18.6	11.3	-152.71	364.2	115.8	624.5	602.4	22.12	28.228	
3,937.0	3,757.9	3,894.6	3,842.0	18.9	11.5	-152.64	372.6	120.2	635.5	613.0	22.49	28.259	
4,000.0	3,813.7	3,954.8	3,900.0	19.5	11.8	-152.51	387.0	127.7	654.1	631.0	23.11	28.305	
4,035.4	3,845.1	3,988.6	3,932.5	19.9	11.9	-152.44	395.0	132.0	664.6	641.2	23.46	28.329	
4,100.0	3,902.3	4,050.3	3,991.9	20.5	12.3	-152.33	409.7	139.7	683.8	659.7	24.11	28.367	
4,133.8	3,932.2	4,082.6	4,023.0	20.8	12.4	-152.27	417.4	143.8	693.8	669.4	24.44	28.385	
4,200.0	3,990.8	4,145.7	4,083.9	21.5	12.7	-152.16	432.5	151.7	713.5	688.4	25.11	28.416	
4,232.3	4,019.4	4,176.6	4,113.5	21.8	12.9	-152.10	439.8	155.6	723.0	697.6	25.43	28.429	
4,300.0	4,079.4	4,241.2	4,175.8	22.4	13.2	-152.00	455.2	163.7	743.1	717.0	26.12	28.455	
4,330.7	4,106.6	4,270.5	4,204.0	22.7	13.4	-151.95	462.2	167.3	752.3	725.8	26.43	28.465	
4,400.0	4,168.0	4,336.7	4,267.8	23.4	13.7	-151.85	477.9	175.6	772.8	745.7	27.13	28.485	
4,429.1	4,193.8	4,364.5	4,294.6	23.7	13.9	-151.81	484.6	179.1	781.5	754.0	27.43	28.492	
4,500.0	4,256.6	4,432.2	4,359.7	24.4	14.2	-151.72	500.7	187.6	802.5	774.3	28.15	28.508	
4,527.5	4,281.0	4,458.5	4,385.1	24.6	14.4	-151.69	507.0	190.9	810.7	782.2	28.43	28.513	
4,600.0	4,345.2	4,527.7	4,451.7	25.3	14.7	-151.60	523.4	199.6	832.2	803.0	29.17	28.525	
4,626.0	4,368.2	4,552.5	4,475.6	25.6	14.8	-151.57	529.3	202.7	839.9	810.5	29.44	28.529	
4,700.0	4,433.8	4,623.1	4,543.6	26.3	15.2	-151.48	546.2	211.6	861.9	831.7	30.20	28.538	
4,724.4	4,455.4	4,646.4	4,566.1	26.5	15.3	-151.45	551.7	214.5	869.1	838.7	30.45	28.540	
4,800.0	4,522.3	4,718.6	4,635.6	27.3	15.7	-151.37	568.9	223.5	891.6	860.3	31.23	28.546	
4,822.8	4,542.6	4,740.4	4,656.6	27.5	15.8	-151.35	574.1	226.3	898.3	866.9	31.47	28.547	
4,900.0	4,610.9	4,814.1	4,727.5	28.2	16.2	-151.27	591.7	235.5	921.3	889.0	32.27	28.551	
4,921.2	4,629.8	4,834.4	4,747.1	28.4	16.3	-151.25	596.5	238.1	927.6	895.1	32.49	28.552	
5,000.0	4,699.5	4,909.6	4,819.5	29.2	16.7	-151.18	614.4	247.5	950.9	917.6	33.30	28.553	
5,019.7	4,716.9	4,928.3	4,837.6	29.4	16.8	-151.16	618.9	249.9	956.8	923.3	33.51	28.553	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-243 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	4,788.1	5,005.0	4,911.4	30.2	17.2	-151.09	637.2	259.5	980.6	946.3	34.34	28.553	
5,118.1	4,804.1	5,022.3	4,928.1	30.4	17.3	-151.07	641.3	261.6	986.0	951.5	34.53	28.553	
5,200.0	4,876.7	5,100.5	5,003.4	31.1	17.7	-151.00	659.9	271.4	1,010.3	975.0	35.39	28.551	
5,216.5	4,891.3	5,116.3	5,018.6	31.3	17.8	-150.99	663.7	273.4	1,015.3	979.7	35.56	28.550	
5,300.0	4,965.3	5,196.0	5,095.3	32.1	18.2	-150.92	682.7	283.4	1,040.0	1,003.6	36.43	28.547	
5,314.9	4,978.5	5,210.3	5,109.1	32.3	18.3	-150.91	686.1	285.2	1,044.5	1,007.9	36.59	28.546	
5,400.0	5,053.8	5,291.5	5,187.3	33.1	18.7	-150.85	705.4	295.4	1,069.8	1,032.3	37.48	28.542	
5,413.4	5,065.7	5,304.2	5,199.6	33.2	18.8	-150.84	708.4	297.0	1,073.7	1,036.1	37.62	28.541	
5,508.2	5,149.7	5,394.7	5,286.7	34.2	19.3	-150.77	730.0	308.4	1,101.9	1,063.3	38.61	28.535	
5,511.8	5,152.9	5,398.2	5,290.1	34.2	19.3	-150.78	730.8	308.8	1,103.0	1,064.3	38.65	28.534	
5,600.0	5,231.7	5,482.8	5,371.5	34.9	19.8	-150.94	751.0	319.4	1,127.9	1,088.3	39.62	28.472	
5,610.2	5,240.9	5,492.6	5,381.0	35.0	19.8	-150.95	753.3	320.6	1,130.7	1,091.0	39.72	28.464	
5,700.0	5,322.5	5,579.4	5,464.6	35.7	20.3	-151.01	774.0	331.5	1,153.5	1,112.8	40.68	28.358	
5,708.6	5,330.4	5,587.8	5,472.7	35.7	20.3	-151.01	776.0	332.6	1,155.6	1,114.8	40.77	28.345	
5,800.0	5,414.6	5,676.7	5,558.3	36.3	20.8	-150.97	797.2	343.7	1,176.1	1,134.4	41.74	28.177	
5,807.1	5,421.2	5,683.6	5,564.9	36.4	20.8	-150.96	798.8	344.6	1,177.6	1,135.8	41.81	28.162	
5,900.0	5,508.1	5,766.3	5,644.7	36.9	21.2	-150.87	818.2	354.8	1,195.9	1,153.2	42.72	27.995	
5,905.5	5,513.3	5,770.9	5,649.1	37.0	21.3	-150.87	819.3	355.3	1,197.0	1,154.2	42.77	27.988	
6,000.0	5,602.8	5,849.1	5,725.0	37.5	21.6	-150.81	835.9	364.1	1,213.9	1,170.4	43.54	27.881	
6,003.9	5,606.5	5,852.3	5,728.2	37.5	21.6	-150.81	836.5	364.4	1,214.6	1,171.0	43.57	27.878	
6,100.0	5,698.5	5,932.1	5,806.1	38.0	21.9	-150.77	851.4	372.3	1,230.2	1,185.9	44.26	27.794	
6,102.3	5,700.7	5,934.0	5,808.0	38.0	21.9	-150.77	851.8	372.5	1,230.6	1,186.3	44.28	27.792	
6,200.0	5,795.2	6,015.3	5,887.9	38.4	22.2	-150.76	865.0	379.4	1,244.7	1,199.8	44.90	27.722	
6,200.8	5,795.9	6,015.9	5,888.5	38.4	22.2	-150.76	865.1	379.5	1,244.8	1,199.9	44.90	27.722	
6,299.2	5,891.9	6,100.0	5,971.6	38.8	22.4	-150.76	876.6	385.5	1,257.4	1,212.0	45.46	27.663	
6,300.0	5,892.7	6,100.0	5,971.6	38.8	22.4	-150.76	876.6	385.5	1,257.5	1,212.0	45.46	27.663	
6,397.6	5,988.5	6,180.1	6,051.1	39.1	22.6	-150.78	885.6	390.3	1,268.3	1,222.4	45.90	27.630	
6,400.0	5,990.9	6,182.1	6,053.0	39.1	22.6	-150.78	885.8	390.4	1,268.5	1,222.6	45.91	27.629	
6,496.0	6,085.8	6,262.4	6,132.9	39.4	22.8	-150.82	892.7	394.0	1,277.4	1,231.1	46.27	27.607	
6,500.0	6,089.7	6,265.7	6,136.2	39.4	22.8	-150.82	893.0	394.2	1,277.7	1,231.5	46.29	27.606	
6,594.5	6,183.5	6,344.7	6,215.1	39.6	23.0	-150.88	897.8	396.7	1,284.8	1,238.3	46.56	27.597	
6,600.0	6,189.0	6,349.3	6,219.7	39.7	23.0	-150.88	898.0	396.8	1,285.2	1,238.6	46.57	27.597	
6,692.9	6,281.5	6,427.1	6,297.3	39.8	23.1	-150.95	900.8	398.3	1,290.5	1,243.7	46.76	27.601	
6,700.0	6,288.6	6,433.0	6,303.3	39.8	23.1	-150.95	900.9	398.4	1,290.8	1,244.1	46.77	27.601	
6,791.3	6,379.8	6,510.6	6,380.8	40.0	23.2	-151.04	901.7	398.8	1,294.4	1,247.5	46.87	27.614	
6,800.0	6,388.5	6,519.2	6,389.5	40.0	23.2	-151.05	901.7	398.8	1,294.7	1,247.8	46.88	27.614	
6,889.7	6,478.2	6,614.3	6,484.4	40.1	23.3	-151.29	897.2	398.8	1,295.8	1,248.9	46.82	27.673	
6,890.4	6,478.9	6,615.0	6,485.1	40.1	23.3	-87.98	897.1	398.8	1,295.8	1,248.9	46.82	27.674	
6,900.0	6,488.5	6,625.2	6,495.2	40.1	23.3	-88.04	895.9	398.8	1,295.7	1,248.9	46.80	27.684	
6,920.4	6,508.9	6,646.7	6,516.5	40.1	23.3	-88.17	892.8	398.8	1,295.6	1,248.9	46.76	27.709	
6,950.0	6,538.5	6,677.6	6,546.9	40.1	23.2	91.62	887.3	398.8	1,295.5	1,248.8	46.66	27.763	
6,988.2	6,576.6	6,717.2	6,585.4	40.1	23.2	91.35	878.3	398.8	1,295.3	1,248.8	46.49	27.859	
7,000.0	6,588.3	6,729.4	6,597.2	40.1	23.2	91.27	875.1	398.8	1,295.3	1,248.8	46.44	27.893	
7,050.0	6,637.8	6,780.5	6,645.9	40.1	23.1	90.92	859.6	398.8	1,295.1	1,249.0	46.13	28.073	
7,086.6	6,673.6	6,817.5	6,680.4	40.1	23.0	90.65	846.1	398.8	1,295.0	1,249.2	45.86	28.236	
7,100.0	6,686.6	6,831.0	6,692.8	40.1	22.9	90.56	840.8	398.8	1,295.0	1,249.2	45.76	28.299	
7,150.0	6,734.6	6,880.9	6,737.7	40.0	22.8	90.20	819.1	398.8	1,295.0	1,249.6	45.33	28.568	
7,178.1	6,761.1	6,908.8	6,762.1	40.0	22.7	90.00	805.6	398.8	1,294.9	1,249.9	45.06	28.738	
7,185.0	6,767.5	6,915.6	6,768.0	39.9	22.6	89.95	802.2	398.8	1,294.9	1,250.0	44.99	28.782	
7,200.0	6,781.4	6,930.3	6,780.6	39.9	22.6	89.84	794.6	398.8	1,294.9	1,250.1	44.85	28.876	
7,250.0	6,827.0	6,979.1	6,821.2	39.8	22.4	89.49	767.5	398.8	1,295.0	1,250.7	44.32	29.218	
7,283.4	6,856.6	7,011.5	6,847.1	39.8	22.2	89.26	748.1	398.8	1,295.1	1,251.1	43.95	29.466	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-243 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,300.0	6,871.0	7,027.4	6,859.5	39.7	22.1	89.14	738.1	398.8	1,295.1	1,251.3	43.77	29.591	
7,350.0	6,913.2	7,075.2	6,895.3	39.6	21.9	88.80	706.4	398.8	1,295.2	1,252.0	43.19	29.987	
7,381.9	6,939.1	7,105.4	6,916.8	39.5	21.7	88.58	685.2	398.8	1,295.4	1,252.5	42.82	30.251	
7,400.0	6,953.4	7,122.5	6,928.6	39.4	21.7	88.46	672.9	398.8	1,295.4	1,252.8	42.61	30.402	
7,450.0	6,991.5	7,169.4	6,959.4	39.3	21.4	88.13	637.5	398.8	1,295.6	1,253.6	42.03	30.829	
7,480.3	7,013.5	7,197.6	6,976.7	39.2	21.3	87.94	615.3	398.8	1,295.8	1,254.1	41.68	31.091	
7,500.0	7,027.3	7,215.9	6,987.5	39.1	21.2	87.81	600.5	398.8	1,295.9	1,254.5	41.46	31.259	
7,550.0	7,060.5	7,261.9	7,013.0	39.0	20.9	87.50	562.1	398.8	1,296.2	1,255.3	40.91	31.686	
7,578.7	7,078.4	7,288.2	7,026.4	38.8	20.8	87.33	539.5	398.8	1,296.4	1,255.8	40.61	31.926	
7,600.0	7,091.0	7,307.6	7,035.7	38.8	20.7	87.21	522.5	398.8	1,296.5	1,256.1	40.39	32.102	
7,650.0	7,118.7	7,353.0	7,055.8	38.6	20.4	86.92	481.9	398.8	1,296.8	1,256.9	39.91	32.497	
7,677.1	7,132.5	7,377.5	7,065.5	38.5	20.3	86.77	459.4	398.8	1,297.0	1,257.4	39.67	32.696	
7,700.0	7,143.4	7,400.0	7,073.8	38.4	20.2	86.64	438.5	398.8	1,297.2	1,257.7	39.46	32.873	
7,750.0	7,165.0	7,442.7	7,087.7	38.2	20.0	86.40	398.1	398.8	1,297.5	1,258.4	39.09	33.191	
7,775.6	7,174.9	7,465.5	7,094.1	38.1	19.9	86.28	376.2	398.8	1,297.7	1,258.8	38.93	33.338	
7,800.0	7,183.5	7,487.2	7,099.6	38.1	19.8	86.16	355.2	398.8	1,297.9	1,259.1	38.77	33.474	
7,850.0	7,198.6	7,531.4	7,108.7	37.9	19.6	85.94	312.0	398.8	1,298.2	1,259.7	38.52	33.706	
7,874.0	7,204.7	7,550.0	7,111.8	37.8	19.5	85.85	293.6	398.8	1,298.4	1,260.0	38.42	33.793	
7,900.0	7,210.4	7,575.4	7,115.2	37.7	19.4	85.74	268.5	398.8	1,298.6	1,260.2	38.33	33.881	
7,950.0	7,218.8	7,619.1	7,118.9	37.6	19.2	85.55	224.9	398.8	1,298.9	1,260.7	38.21	33.997	
7,972.4	7,221.4	7,638.7	7,119.7	37.5	19.1	85.48	205.3	398.8	1,299.0	1,260.8	38.18	34.025	
8,000.0	7,223.7	7,663.1	7,120.0	37.4	19.1	85.39	180.9	398.8	1,299.2	1,261.0	38.15	34.054	
8,050.0	7,225.1	7,713.1	7,119.9	37.3	18.9	85.31	131.0	398.8	1,299.3	1,261.1	38.20	34.010	
8,055.3	7,225.0	7,718.4	7,119.9	37.3	18.9	85.31	125.7	398.8	1,299.3	1,261.1	38.22	33.996	
8,070.8	7,224.8	7,733.9	7,119.8	37.3	18.9	85.32	110.1	398.8	1,299.3	1,261.0	38.25	33.966	
8,100.0	7,224.4	7,763.1	7,119.7	37.2	18.8	85.34	81.0	398.8	1,299.2	1,260.9	38.32	33.909	
8,169.3	7,223.5	7,832.3	7,119.6	37.1	18.8	85.37	11.7	398.8	1,299.2	1,260.6	38.62	33.640	
8,200.0	7,223.0	7,863.1	7,119.5	37.1	18.9	85.39	-19.0	398.8	1,299.2	1,260.4	38.79	33.494	
8,267.7	7,222.1	7,930.8	7,119.3	37.0	19.1	85.42	-86.7	398.8	1,299.1	1,259.8	39.33	33.028	
8,300.0	7,221.7	7,963.1	7,119.3	37.0	19.3	85.43	-119.0	398.8	1,299.1	1,259.4	39.63	32.783	
8,366.1	7,220.7	8,029.2	7,119.1	37.0	19.8	85.47	-185.1	398.8	1,299.0	1,258.6	40.39	32.164	
8,400.0	7,220.3	8,063.0	7,119.0	37.0	20.1	85.48	-219.0	398.8	1,299.0	1,258.2	40.81	31.832	
8,464.5	7,219.4	8,127.6	7,118.9	37.1	20.6	85.52	-283.5	398.8	1,298.9	1,257.2	41.75	31.109	
8,500.0	7,218.9	8,163.0	7,118.8	37.1	21.0	85.53	-319.0	398.8	1,298.9	1,256.6	42.30	30.704	
8,563.0	7,218.0	8,226.0	7,118.6	37.2	21.7	85.57	-382.0	398.8	1,298.8	1,255.4	43.41	29.923	
8,600.0	7,217.5	8,263.0	7,118.5	37.3	22.1	85.58	-419.0	398.8	1,298.8	1,254.7	44.08	29.463	
8,661.4	7,216.7	8,324.4	7,118.4	37.5	22.8	85.62	-480.4	398.8	1,298.7	1,253.4	45.31	28.662	
8,700.0	7,216.1	8,363.0	7,118.3	37.6	23.2	85.63	-519.0	398.8	1,298.7	1,252.6	46.11	28.164	
8,759.8	7,215.3	8,422.8	7,118.1	37.8	24.0	85.66	-578.8	398.8	1,298.7	1,251.2	47.44	27.373	
8,800.0	7,214.8	8,463.0	7,118.0	38.0	24.5	85.68	-619.0	398.8	1,298.6	1,250.3	48.36	26.852	
8,858.2	7,214.0	8,521.3	7,117.9	38.3	25.3	85.71	-677.2	398.8	1,298.6	1,248.8	49.77	26.092	
8,900.0	7,213.4	8,563.0	7,117.8	38.5	25.8	85.73	-719.0	398.8	1,298.5	1,247.7	50.80	25.562	
8,956.7	7,212.6	8,619.7	7,117.6	38.8	26.6	85.76	-775.6	398.8	1,298.5	1,246.2	52.27	24.844	
9,000.0	7,212.0	8,663.0	7,117.5	39.1	27.2	85.78	-819.0	398.8	1,298.5	1,245.1	53.40	24.314	
9,055.1	7,211.2	8,718.1	7,117.4	39.5	28.0	85.81	-874.1	398.8	1,298.4	1,243.5	54.91	23.647	
9,100.0	7,210.6	8,763.0	7,117.3	39.8	28.7	85.83	-918.9	398.8	1,298.4	1,242.2	56.15	23.123	
9,153.5	7,209.9	8,816.5	7,117.2	40.3	29.5	85.86	-972.5	398.8	1,298.3	1,240.7	57.68	22.511	
9,200.0	7,209.2	8,863.0	7,117.0	40.7	30.2	85.88	-1,018.9	398.7	1,298.3	1,239.3	59.02	21.999	
9,251.9	7,208.5	8,914.9	7,116.9	41.1	31.0	85.91	-1,070.9	398.7	1,298.3	1,237.7	60.55	21.440	
9,300.0	7,207.9	8,963.0	7,116.8	41.6	31.7	85.93	-1,118.9	398.7	1,298.2	1,236.2	61.99	20.942	
9,350.4	7,207.2	9,013.4	7,116.7	42.1	32.5	85.96	-1,169.3	398.7	1,298.2	1,234.6	63.53	20.435	
9,400.0	7,206.5	9,063.0	7,116.5	42.6	33.3	85.98	-1,218.9	398.7	1,298.1	1,233.1	65.05	19.955	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-243 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,448.8	7,205.8	9,111.8	7,116.4	43.1	34.1	86.01	-1,267.7	398.7	1,298.1	1,231.5	66.58	19.496	
9,500.0	7,205.1	9,163.0	7,116.3	43.7	34.9	86.03	-1,318.9	398.7	1,298.1	1,229.9	68.20	19.034	
9,547.2	7,204.4	9,210.2	7,116.2	44.2	35.7	86.06	-1,366.1	398.7	1,298.0	1,228.3	69.71	18.621	
9,600.0	7,203.7	9,263.0	7,116.0	44.8	36.5	86.08	-1,418.9	398.7	1,298.0	1,226.6	71.41	18.177	
9,645.6	7,203.1	9,308.6	7,115.9	45.4	37.3	86.11	-1,464.6	398.7	1,297.9	1,225.0	72.90	17.805	
9,700.0	7,202.3	9,363.0	7,115.8	46.1	38.2	86.13	-1,518.9	398.7	1,297.9	1,223.2	74.68	17.380	
9,744.1	7,201.7	9,407.0	7,115.7	46.6	38.9	86.15	-1,563.0	398.7	1,297.9	1,221.7	76.14	17.046	
9,800.0	7,201.0	9,462.9	7,115.5	47.3	39.9	86.18	-1,618.9	398.7	1,297.8	1,219.8	78.00	16.638	
9,842.5	7,200.4	9,505.4	7,115.4	47.9	40.6	86.20	-1,661.4	398.7	1,297.8	1,218.4	79.43	16.339	
9,900.0	7,199.6	9,562.9	7,115.3	48.7	41.6	86.23	-1,718.9	398.7	1,297.8	1,216.4	81.37	15.948	
9,940.9	7,199.0	9,603.9	7,115.2	49.2	42.3	86.25	-1,759.8	398.7	1,297.7	1,215.0	82.76	15.680	
10,000.0	7,198.2	9,662.9	7,115.1	50.1	43.3	86.28	-1,818.9	398.7	1,297.7	1,212.9	84.78	15.306	
10,039.3	7,197.7	9,702.3	7,115.0	50.6	44.0	86.30	-1,858.2	398.7	1,297.6	1,211.5	86.13	15.065	
10,100.0	7,196.8	9,762.9	7,114.8	51.5	45.1	86.33	-1,918.9	398.7	1,297.6	1,209.4	88.23	14.708	
10,137.8	7,196.3	9,800.7	7,114.7	52.0	45.7	86.35	-1,956.6	398.7	1,297.6	1,208.0	89.54	14.492	
10,200.0	7,195.4	9,862.9	7,114.6	52.9	46.8	86.38	-2,018.9	398.7	1,297.5	1,205.8	91.70	14.149	
10,236.2	7,194.9	9,899.1	7,114.5	53.5	47.4	86.40	-2,055.1	398.7	1,297.5	1,204.5	92.97	13.956	
10,300.0	7,194.1	9,962.9	7,114.3	54.4	48.6	86.43	-2,118.9	398.7	1,297.5	1,202.3	95.21	13.627	
10,334.6	7,193.6	9,997.5	7,114.2	55.0	49.2	86.45	-2,153.5	398.7	1,297.4	1,201.0	96.43	13.455	
10,400.0	7,192.7	10,062.9	7,114.1	56.0	50.4	86.48	-2,218.9	398.7	1,297.4	1,198.7	98.74	13.139	
10,433.0	7,192.2	10,096.0	7,114.0	56.5	50.9	86.50	-2,251.9	398.7	1,297.4	1,197.5	99.91	12.985	
10,500.0	7,191.3	10,162.9	7,113.8	57.5	52.1	86.53	-2,318.8	398.7	1,297.3	1,195.0	102.30	12.682	
10,531.5	7,190.9	10,194.4	7,113.7	58.0	52.7	86.55	-2,350.3	398.7	1,297.3	1,193.9	103.42	12.544	
10,600.0	7,189.9	10,262.9	7,113.6	59.1	53.9	86.58	-2,418.8	398.7	1,297.3	1,191.4	105.87	12.253	
10,629.9	7,189.5	10,292.8	7,113.5	59.6	54.5	86.60	-2,448.7	398.7	1,297.2	1,190.3	106.94	12.130	
10,700.0	7,188.5	10,362.9	7,113.3	60.7	55.7	86.63	-2,518.8	398.7	1,297.2	1,187.7	109.46	11.851	
10,728.3	7,188.1	10,391.2	7,113.2	61.1	56.2	86.65	-2,547.2	398.7	1,297.2	1,186.7	110.48	11.741	
10,800.0	7,187.2	10,462.9	7,113.0	62.3	57.5	86.68	-2,618.8	398.7	1,297.1	1,184.0	113.07	11.472	
10,826.7	7,186.8	10,489.6	7,113.0	62.7	58.0	86.69	-2,645.6	398.7	1,297.1	1,183.1	114.04	11.374	
10,900.0	7,185.8	10,562.9	7,112.8	63.9	59.4	86.73	-2,718.8	398.7	1,297.1	1,180.4	116.70	11.115	
10,925.2	7,185.4	10,588.0	7,112.7	64.3	59.8	86.74	-2,744.0	398.7	1,297.0	1,179.4	117.61	11.028	
11,000.0	7,184.4	10,662.9	7,112.5	65.6	61.2	86.78	-2,818.8	398.7	1,297.0	1,176.7	120.34	10.778	
11,023.6	7,184.1	10,686.5	7,112.5	66.0	61.6	86.79	-2,842.4	398.7	1,297.0	1,175.8	121.20	10.701	
11,100.0	7,183.0	10,762.9	7,112.3	67.2	63.0	86.83	-2,918.8	398.7	1,296.9	1,172.9	123.99	10.460	
11,122.0	7,182.7	10,784.9	7,112.2	67.6	63.4	86.84	-2,940.8	398.7	1,296.9	1,172.1	124.79	10.392	
11,200.0	7,181.6	10,862.9	7,112.0	68.9	64.8	86.88	-3,018.8	398.7	1,296.9	1,169.2	127.65	10.160	
11,220.4	7,181.3	10,883.3	7,112.0	69.3	65.2	86.89	-3,039.2	398.7	1,296.9	1,168.5	128.40	10.100	
11,300.0	7,180.2	10,962.8	7,111.8	70.6	66.7	86.93	-3,118.8	398.7	1,296.8	1,165.5	131.32	9.875	
11,318.9	7,180.0	10,981.7	7,111.7	70.9	67.0	86.94	-3,137.7	398.7	1,296.8	1,164.8	132.02	9.823	
11,400.0	7,178.9	11,062.8	7,111.5	72.3	68.5	86.98	-3,218.8	398.7	1,296.7	1,161.7	135.01	9.605	
11,417.3	7,178.6	11,080.1	7,111.5	72.6	68.8	86.99	-3,236.1	398.7	1,296.7	1,161.1	135.65	9.560	
11,500.0	7,177.5	11,162.8	7,111.3	74.0	70.4	87.03	-3,318.8	398.7	1,296.7	1,158.0	138.70	9.349	
11,515.7	7,177.3	11,178.6	7,111.2	74.3	70.7	87.04	-3,334.5	398.7	1,296.7	1,157.4	139.28	9.310	
11,600.0	7,176.1	11,262.8	7,111.0	75.7	72.2	87.08	-3,418.8	398.7	1,296.6	1,154.2	142.40	9.105	
11,614.1	7,175.9	11,277.0	7,111.0	76.0	72.5	87.09	-3,432.9	398.7	1,296.6	1,153.7	142.93	9.072	
11,700.0	7,174.7	11,362.8	7,110.8	77.5	74.1	87.13	-3,518.8	398.7	1,296.6	1,150.5	146.11	8.874	
11,712.6	7,174.5	11,375.4	7,110.7	77.7	74.3	87.14	-3,531.3	398.7	1,296.6	1,150.0	146.58	8.846	
11,800.0	7,173.3	11,462.8	7,110.5	79.2	75.9	87.18	-3,618.8	398.7	1,296.5	1,146.7	149.83	8.653	
11,811.0	7,173.2	11,473.8	7,110.5	79.4	76.1	87.18	-3,629.8	398.7	1,296.5	1,146.3	150.24	8.630	
11,900.0	7,172.0	11,562.8	7,110.3	81.0	77.8	87.23	-3,718.7	398.7	1,296.5	1,142.9	153.55	8.443	
11,909.4	7,171.8	11,572.2	7,110.2	81.1	78.0	87.23	-3,728.2	398.7	1,296.5	1,142.6	153.90	8.424	
12,000.0	7,170.6	11,662.8	7,110.0	82.7	79.7	87.28	-3,818.7	398.7	1,296.4	1,139.1	157.28	8.243	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-243 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,006.4	7,170.5	11,668.5	7,110.0	82.8	79.8	87.28	-3,824.5	398.7	1,296.4	1,138.9	157.50	8.231	
12,007.8	7,170.5	11,668.5	7,110.0	82.9	79.8	87.28	-3,824.5	398.7	1,296.4	1,138.9	157.53	8.230	
12,041.2	7,170.0	11,668.5	7,110.0	83.5	79.8	87.28	-3,824.5	398.7	1,296.9	1,138.7	158.15	8.200	SF

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-303 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-88.63	0.7	-30.1	30.1				
98.4	98.4	98.4	98.4	0.1	0.1	-88.63	0.7	-30.1	30.1	30.0	0.17	177.350	
100.0	100.0	100.0	100.0	0.1	0.1	-88.63	0.7	-30.1	30.1	30.0	0.17	174.139	
196.8	196.8	196.8	196.8	0.3	0.3	-88.63	0.7	-30.1	30.1	29.5	0.61	49.534	
200.0	200.0	200.0	200.0	0.3	0.3	-88.63	0.7	-30.1	30.1	29.5	0.62	48.407	
295.3	295.3	295.3	295.3	0.5	0.5	-88.63	0.7	-30.1	30.1	29.1	1.05	28.679	
300.0	300.0	300.0	300.0	0.5	0.5	-88.63	0.7	-30.1	30.1	29.1	1.07	28.111	
393.7	393.7	393.7	393.7	0.7	0.7	-88.63	0.7	-30.1	30.1	28.6	1.49	20.182	
400.0	400.0	400.0	400.0	0.8	0.8	-88.63	0.7	-30.1	30.1	28.6	1.52	19.806	
492.1	492.1	492.1	492.1	1.0	1.0	-88.63	0.7	-30.1	30.1	28.2	1.94	15.569	
500.0	500.0	500.0	500.0	1.0	1.0	-88.63	0.7	-30.1	30.1	28.2	1.97	15.289	
590.5	590.5	590.5	590.5	1.2	1.2	-88.63	0.7	-30.1	30.1	27.8	2.38	12.672	
600.0	600.0	600.0	600.0	1.2	1.2	-88.63	0.7	-30.1	30.1	27.7	2.42	12.450	
689.0	689.0	689.0	689.0	1.4	1.4	-88.63	0.7	-30.1	30.1	27.3	2.82	10.685	
700.0	700.0	700.0	700.0	1.4	1.4	-88.63	0.7	-30.1	30.1	27.3	2.87	10.500	
787.4	787.4	787.4	787.4	1.6	1.6	-88.63	0.7	-30.1	30.1	26.9	3.26	9.236	
800.0	800.0	800.0	800.0	1.7	1.7	-88.63	0.7	-30.1	30.1	26.8	3.32	9.078	
885.8	885.8	885.8	885.8	1.9	1.9	-88.63	0.7	-30.1	30.1	26.4	3.71	8.133	
900.0	900.0	900.0	900.0	1.9	1.9	-88.63	0.7	-30.1	30.1	26.4	3.77	7.996	
984.2	984.2	984.2	984.2	2.1	2.1	-88.63	0.7	-30.1	30.1	26.0	4.15	7.266	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-88.63	0.7	-30.1	30.1	25.9	4.22	7.144	
1,082.7	1,082.7	1,082.7	1,082.7	2.3	2.3	-88.63	0.7	-30.1	30.1	25.5	4.59	6.565	
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	-88.63	0.7	-30.1	30.1	25.5	4.67	6.456	
1,181.1	1,181.1	1,181.1	1,181.1	2.5	2.5	-88.63	0.7	-30.1	30.1	25.1	5.03	5.988	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-88.63	0.7	-30.1	30.1	25.0	5.12	5.889	
1,279.5	1,279.5	1,279.5	1,279.5	2.7	2.7	-88.63	0.7	-30.1	30.1	24.7	5.48	5.504	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-88.63	0.7	-30.1	30.1	24.6	5.57	5.413	
1,377.9	1,377.9	1,377.9	1,377.9	3.0	3.0	-88.63	0.7	-30.1	30.1	24.2	5.92	5.093	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-88.63	0.7	-30.1	30.1	24.1	6.02	5.009	
1,450.0	1,450.0	1,450.0	1,450.0	3.1	3.1	-88.63	0.7	-30.1	30.1	23.9	6.24	4.828	CC
1,476.4	1,476.4	1,476.4	1,476.4	3.2	3.2	-152.05	0.7	-30.1	30.2	23.9	6.36	4.757	ES
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.2	-152.32	0.7	-30.1	30.5	24.1	6.46	4.724	
1,574.8	1,574.8	1,574.8	1,574.8	3.4	3.4	-154.17	0.7	-30.1	32.6	25.8	6.78	4.800	
1,600.0	1,599.9	1,599.9	1,599.9	3.4	3.5	-155.06	0.7	-30.1	33.7	26.8	6.89	4.883	
1,673.2	1,673.0	1,673.3	1,673.3	3.6	3.6	-157.99	0.8	-30.1	38.0	30.7	7.20	5.269	
1,700.0	1,699.7	1,700.3	1,700.3	3.7	3.7	-158.92	1.0	-29.8	39.7	32.4	7.31	5.430	
1,771.6	1,771.0	1,772.7	1,772.6	3.8	3.8	-160.77	2.3	-28.0	44.6	36.9	7.61	5.857	
1,800.0	1,799.1	1,801.4	1,801.3	3.9	3.9	-161.29	3.1	-26.9	46.5	38.8	7.72	6.023	
1,870.1	1,868.6	1,872.3	1,872.1	4.1	4.1	-162.18	5.9	-23.2	51.4	43.4	8.01	6.424	
1,900.0	1,898.2	1,902.7	1,902.3	4.1	4.1	-162.41	7.4	-21.2	53.6	45.4	8.13	6.592	
1,968.5	1,965.7	1,972.2	1,971.5	4.3	4.3	-162.68	11.6	-15.6	58.5	50.1	8.40	6.963	
2,000.0	1,996.6	2,004.2	2,003.3	4.4	4.4	-162.70	13.8	-12.6	60.8	52.3	8.53	7.131	
2,066.9	2,062.2	2,072.3	2,070.7	4.6	4.5	-162.56	19.4	-5.3	65.8	57.0	8.80	7.472	
2,100.0	2,094.4	2,105.9	2,104.0	4.7	4.6	-162.41	22.4	-1.2	68.3	59.3	8.94	7.637	
2,165.3	2,157.9	2,172.6	2,169.7	5.0	4.8	-161.99	29.2	7.9	73.2	64.0	9.21	7.946	
2,200.0	2,191.5	2,207.9	2,204.4	5.1	4.9	-161.71	33.2	13.2	75.9	66.5	9.36	8.108	
2,263.8	2,252.9	2,273.1	2,268.2	5.3	5.1	-161.11	41.2	23.9	80.8	71.2	9.64	8.384	
2,300.0	2,287.6	2,310.1	2,304.3	5.5	5.2	-160.72	46.1	30.4	83.7	73.9	9.80	8.538	
2,362.2	2,346.9	2,373.8	2,366.1	5.8	5.4	-159.99	55.3	42.6	88.7	78.6	10.09	8.782	
2,400.0	2,382.7	2,412.5	2,403.5	6.0	5.6	-159.51	61.2	50.6	91.7	81.4	10.28	8.921	
2,460.6	2,439.8	2,474.7	2,463.3	6.3	5.8	-158.70	71.4	64.2	96.7	86.1	10.60	9.124	
2,500.0	2,476.6	2,515.1	2,502.0	6.5	6.0	-158.15	78.5	73.6	99.9	89.1	10.80	9.250	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-303 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,559.0	2,531.6	2,575.7	2,559.7	6.9	6.2	-157.29	89.7	88.5	104.9	93.8	11.15	9.412	
2,600.0	2,569.4	2,617.8	2,599.5	7.1	6.4	-156.67	97.9	99.4	108.4	97.0	11.40	9.510	
2,657.5	2,622.0	2,677.0	2,655.1	7.5	6.7	-155.78	110.0	115.6	113.4	101.6	11.78	9.623	
2,700.0	2,660.7	2,720.4	2,695.6	7.8	7.0	-155.12	119.3	128.0	117.2	105.1	12.08	9.701	
2,755.9	2,711.1	2,776.0	2,747.5	8.2	7.3	-154.47	131.3	144.0	122.8	110.3	12.48	9.840	
2,800.0	2,750.6	2,819.7	2,788.3	8.6	7.5	-154.13	140.8	156.7	128.0	115.2	12.80	9.999	
2,832.3	2,779.2	2,851.7	2,818.2	8.8	7.7	-153.98	147.7	165.9	132.1	119.1	13.04	10.136	
2,854.3	2,798.8	2,873.6	2,838.6	9.0	7.9	-153.93	152.4	172.2	135.1	121.9	13.22	10.217	
2,900.0	2,839.3	2,918.9	2,880.8	9.4	8.1	-153.83	162.2	185.3	141.2	127.6	13.61	10.376	
2,952.7	2,886.0	2,971.1	2,929.5	9.9	8.5	-153.73	173.6	200.4	148.3	134.2	14.07	10.541	
3,000.0	2,927.8	3,018.0	2,973.2	10.3	8.8	-153.64	183.7	213.9	154.6	140.2	14.48	10.676	
3,051.2	2,973.2	3,068.7	3,020.5	10.7	9.1	-153.56	194.7	228.6	161.5	146.6	14.94	10.807	
3,100.0	3,016.4	3,117.1	3,065.6	11.2	9.4	-153.48	205.1	242.5	168.0	152.7	15.39	10.923	
3,149.6	3,060.4	3,166.2	3,111.4	11.6	9.7	-153.41	215.8	256.7	174.7	158.9	15.84	11.028	
3,200.0	3,105.0	3,216.1	3,158.0	12.1	10.0	-153.34	226.6	271.1	181.5	165.1	16.31	11.126	
3,248.0	3,147.5	3,263.7	3,202.4	12.5	10.3	-153.29	236.9	284.9	187.9	171.1	16.76	11.211	
3,300.0	3,193.6	3,315.2	3,250.4	13.0	10.7	-153.23	248.1	299.7	194.9	177.6	17.25	11.296	
3,346.4	3,234.7	3,361.3	3,293.4	13.4	11.0	-153.18	258.0	313.0	201.1	183.4	17.70	11.364	
3,400.0	3,282.2	3,414.3	3,342.9	13.9	11.4	-153.13	269.5	328.4	208.3	190.1	18.21	11.437	
3,444.9	3,321.9	3,458.8	3,384.3	14.3	11.7	-153.08	279.1	341.2	214.3	195.7	18.65	11.492	
3,500.0	3,370.8	3,513.4	3,435.3	14.8	12.0	-153.04	291.0	357.0	221.7	202.5	19.18	11.556	
3,543.3	3,409.1	3,556.3	3,475.3	15.2	12.3	-153.00	300.3	369.4	227.5	207.9	19.61	11.601	
3,600.0	3,459.3	3,612.5	3,527.7	15.8	12.7	-152.96	312.4	385.6	235.1	214.9	20.17	11.657	
3,641.7	3,496.3	3,653.9	3,566.2	16.1	13.0	-152.93	321.4	397.5	240.7	220.1	20.58	11.693	
3,700.0	3,547.9	3,711.6	3,620.1	16.7	13.4	-152.88	333.9	414.2	248.5	227.4	21.16	11.742	
3,740.1	3,583.5	3,751.4	3,657.2	17.1	13.7	-152.86	342.5	425.7	253.9	232.3	21.57	11.772	
3,800.0	3,636.5	3,810.7	3,712.5	17.6	14.1	-152.82	355.3	442.8	261.9	239.8	22.17	11.815	
3,838.6	3,670.7	3,849.0	3,748.2	18.0	14.4	-152.80	363.6	453.8	267.1	244.5	22.56	11.840	
3,900.0	3,725.1	3,909.8	3,804.9	18.6	14.8	-152.76	376.8	471.4	275.3	252.2	23.18	11.878	
3,937.0	3,757.9	3,946.5	3,839.1	18.9	15.1	-152.74	384.7	482.0	280.3	256.7	23.56	11.898	
4,000.0	3,813.7	4,008.9	3,897.4	19.5	15.5	-152.71	398.2	500.0	288.8	264.6	24.20	11.932	
4,035.4	3,845.1	4,044.0	3,930.1	19.9	15.7	-152.69	405.8	510.2	293.5	268.9	24.56	11.949	
4,100.0	3,902.3	4,108.0	3,989.8	20.5	16.2	-152.66	419.7	528.7	302.2	276.9	25.23	11.979	
4,133.8	3,932.2	4,141.6	4,021.1	20.8	16.4	-152.65	426.9	538.3	306.7	281.1	25.57	11.993	
4,200.0	3,990.8	4,207.1	4,082.2	21.5	16.9	-152.62	441.1	557.3	315.6	289.3	26.26	12.019	
4,232.3	4,019.4	4,239.1	4,112.0	21.8	17.1	-152.61	448.1	566.5	319.9	293.3	26.59	12.031	
4,300.0	4,079.4	4,306.2	4,174.6	22.4	17.6	-152.58	462.6	585.9	329.0	301.7	27.29	12.055	
4,330.7	4,106.6	4,336.6	4,203.0	22.7	17.8	-152.57	469.2	594.7	333.1	305.5	27.61	12.065	
4,400.0	4,168.0	4,405.3	4,267.0	23.4	18.3	-152.54	484.0	614.5	342.4	314.1	28.33	12.086	
4,429.1	4,193.8	4,434.2	4,293.9	23.7	18.5	-152.53	490.3	622.8	346.3	317.7	28.63	12.095	
4,500.0	4,256.6	4,504.4	4,359.4	24.4	19.0	-152.51	505.5	643.1	355.8	326.5	29.37	12.114	
4,527.5	4,281.0	4,531.7	4,384.9	24.6	19.2	-152.50	511.4	651.0	359.5	329.9	29.66	12.121	
4,600.0	4,345.2	4,603.5	4,451.9	25.3	19.8	-152.48	527.0	671.7	369.2	338.8	30.42	12.138	
4,626.0	4,368.2	4,629.2	4,475.9	25.6	19.9	-152.47	532.5	679.1	372.7	342.0	30.69	12.144	
4,700.0	4,433.8	4,702.6	4,544.3	26.3	20.5	-152.45	548.4	700.3	382.7	351.2	31.47	12.159	
4,724.4	4,455.4	4,726.8	4,566.8	26.5	20.6	-152.44	553.6	707.3	385.9	354.2	31.73	12.164	
4,800.0	4,522.3	4,801.7	4,636.7	27.3	21.2	-152.42	569.9	728.9	396.1	363.6	32.52	12.178	
4,822.8	4,542.6	4,824.3	4,657.8	27.5	21.3	-152.41	574.8	735.5	399.1	366.4	32.76	12.182	
4,900.0	4,610.9	4,900.8	4,729.1	28.2	21.9	-152.40	591.3	757.6	409.5	375.9	33.58	12.195	
4,921.2	4,629.8	4,921.8	4,748.8	28.4	22.1	-152.39	595.9	763.6	412.3	378.5	33.80	12.199	
5,000.0	4,699.5	4,999.9	4,821.5	29.2	22.6	-152.37	612.8	786.2	422.9	388.3	34.63	12.210	
5,019.7	4,716.9	5,019.4	4,839.7	29.4	22.8	-152.37	617.0	791.8	425.5	390.7	34.84	12.213	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-303 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	4,788.1	5,099.0	4,914.0	30.2	23.3	-152.35	634.2	814.8	436.3	400.6	35.69	12.224	
5,118.1	4,804.1	5,116.9	4,930.7	30.4	23.5	-152.34	638.1	820.0	438.7	402.9	35.89	12.226	
5,200.0	4,876.7	5,198.1	5,006.4	31.1	24.1	-152.33	655.7	843.4	449.7	413.0	36.76	12.236	
5,216.5	4,891.3	5,214.4	5,021.6	31.3	24.2	-152.32	659.2	848.1	452.0	415.0	36.93	12.238	
5,300.0	4,965.3	5,297.2	5,098.8	32.1	24.8	-152.31	677.1	872.0	463.2	425.3	37.82	12.247	
5,314.9	4,978.5	5,312.0	5,112.6	32.3	24.9	-152.30	680.3	876.3	465.2	427.2	37.98	12.248	
5,400.0	5,053.8	5,396.3	5,191.2	33.1	25.5	-152.29	698.6	900.6	476.6	437.7	38.88	12.257	
5,413.4	5,065.7	5,409.5	5,203.6	33.2	25.6	-152.29	701.5	904.4	478.4	439.3	39.03	12.258	
5,508.2	5,149.7	5,503.4	5,291.2	34.2	26.3	-152.27	721.8	931.6	491.1	451.0	40.04	12.266	
5,511.8	5,152.9	5,507.0	5,294.5	34.2	26.3	-152.27	722.6	932.6	491.6	451.5	40.08	12.266	
5,600.0	5,231.7	5,594.6	5,376.2	34.9	27.0	-152.28	741.5	957.9	502.1	461.0	41.07	12.225	
5,610.2	5,240.9	5,604.8	5,385.7	35.0	27.0	-152.27	743.7	960.8	503.2	462.0	41.19	12.217	
5,700.0	5,322.5	5,691.0	5,466.1	35.7	27.6	-152.11	762.3	985.6	511.3	469.1	42.20	12.115	
5,708.6	5,330.4	5,700.0	5,474.5	35.7	27.7	-152.09	764.2	988.2	512.0	469.7	42.30	12.104	
5,800.0	5,414.6	5,778.2	5,548.1	36.3	28.1	-151.93	780.1	1,009.3	519.1	475.9	43.17	12.025	
5,807.1	5,421.2	5,784.4	5,554.0	36.4	28.2	-151.91	781.3	1,010.9	519.6	476.4	43.23	12.019	
5,900.0	5,508.1	5,865.3	5,631.0	36.9	28.6	-151.77	796.3	1,031.0	526.3	482.2	44.05	11.947	
5,905.5	5,513.3	5,870.1	5,635.5	37.0	28.6	-151.76	797.2	1,032.1	526.6	482.5	44.10	11.943	
6,000.0	5,602.8	5,952.4	5,714.5	37.5	29.0	-151.63	811.0	1,050.6	532.8	487.9	44.85	11.878	
6,003.9	5,606.5	5,955.8	5,717.8	37.5	29.0	-151.62	811.6	1,051.3	533.0	488.1	44.88	11.875	
6,100.0	5,698.5	6,039.5	5,798.7	38.0	29.3	-151.50	824.2	1,068.1	538.6	493.0	45.58	11.818	
6,102.3	5,700.7	6,041.5	5,800.7	38.0	29.4	-151.50	824.5	1,068.5	538.7	493.1	45.59	11.817	
6,200.0	5,795.2	6,126.4	5,883.5	38.4	29.7	-151.40	835.8	1,083.6	543.8	497.6	46.21	11.767	
6,200.8	5,795.9	6,127.1	5,884.2	38.4	29.7	-151.40	835.9	1,083.7	543.8	497.6	46.22	11.766	
6,299.2	5,891.9	6,212.7	5,968.2	38.8	30.0	-151.31	845.8	1,097.0	548.2	501.4	46.76	11.723	
6,300.0	5,892.7	6,213.4	5,968.8	38.8	30.0	-151.31	845.9	1,097.1	548.2	501.5	46.77	11.723	
6,397.6	5,988.5	6,300.0	6,054.3	39.1	30.2	-151.24	854.3	1,108.4	551.9	504.7	47.23	11.686	
6,400.0	5,990.9	6,300.0	6,054.3	39.1	30.2	-151.24	854.3	1,108.4	552.0	504.8	47.23	11.687	
6,496.0	6,085.8	6,383.7	6,137.3	39.4	30.5	-151.18	861.1	1,117.3	555.0	507.4	47.60	11.659	
6,500.0	6,089.7	6,387.2	6,140.7	39.4	30.5	-151.18	861.3	1,117.6	555.1	507.5	47.62	11.658	
6,594.5	6,183.5	6,469.2	6,222.3	39.6	30.7	-151.14	866.4	1,124.5	557.4	509.5	47.90	11.636	
6,600.0	6,189.0	6,474.0	6,227.1	39.7	30.7	-151.13	866.7	1,124.8	557.5	509.6	47.92	11.635	
6,692.9	6,281.5	6,554.7	6,307.5	39.8	30.8	-151.10	870.2	1,129.6	559.1	511.0	48.12	11.619	
6,700.0	6,288.6	6,560.8	6,313.7	39.8	30.8	-151.10	870.5	1,129.9	559.2	511.0	48.13	11.618	
6,791.3	6,379.8	6,640.1	6,392.9	40.0	30.9	-151.08	872.5	1,132.6	560.1	511.8	48.26	11.606	
6,800.0	6,388.5	6,647.7	6,400.4	40.0	30.9	-151.08	872.7	1,132.8	560.2	511.9	48.27	11.605	
6,889.7	6,478.2	6,726.2	6,478.9	40.1	31.0	-151.08	873.3	1,133.7	560.5	512.1	48.33	11.597	
6,890.4	6,478.9	6,726.2	6,478.9	40.1	31.0	-87.77	873.3	1,133.7	560.5	512.1	48.33	11.597	
6,900.0	6,488.5	6,735.8	6,488.5	40.1	31.0	-87.77	873.3	1,133.7	560.5	512.1	48.35	11.592	
6,920.4	6,508.9	6,756.2	6,508.9	40.1	31.1	-87.77	873.3	1,133.7	560.5	512.1	48.39	11.581	
6,950.0	6,538.5	6,786.7	6,539.4	40.1	31.1	92.23	872.7	1,133.7	560.5	512.0	48.45	11.567	
6,988.2	6,576.6	6,826.1	6,578.7	40.1	31.1	92.22	869.9	1,133.7	560.4	512.0	48.47	11.562	
7,000.0	6,588.3	6,838.2	6,590.8	40.1	31.1	92.22	868.6	1,133.7	560.4	512.0	48.48	11.561	
7,050.0	6,637.8	6,889.8	6,641.8	40.1	31.1	92.19	860.9	1,133.7	560.4	512.0	48.41	11.577	
7,086.6	6,673.6	6,927.5	6,678.6	40.1	31.0	92.17	852.9	1,133.7	560.4	512.1	48.30	11.604	
7,100.0	6,686.6	6,941.3	6,692.0	40.1	31.0	92.16	849.5	1,133.7	560.4	512.2	48.25	11.615	
7,150.0	6,734.6	6,992.8	6,741.3	40.0	31.0	92.11	834.6	1,133.7	560.4	512.4	48.01	11.673	
7,185.0	6,767.5	7,028.9	6,775.1	39.9	30.9	92.08	822.0	1,133.7	560.4	512.6	47.78	11.728	
7,200.0	6,781.4	7,044.3	6,789.3	39.9	30.8	92.06	816.1	1,133.7	560.4	512.7	47.68	11.752	
7,250.0	6,827.0	7,095.7	6,835.9	39.8	30.7	91.99	794.3	1,133.7	560.4	513.1	47.29	11.850	
7,283.4	6,856.6	7,130.1	6,866.1	39.8	30.6	91.94	777.9	1,133.7	560.4	513.4	46.98	11.928	
7,300.0	6,871.0	7,147.1	6,880.7	39.7	30.6	91.92	769.3	1,133.7	560.3	513.5	46.83	11.967	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-303 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,350.0	6,913.2	7,198.4	6,923.6	39.6	30.4	91.83	741.1	1,133.7	560.3	514.0	46.31	12.100	
7,381.9	6,939.1	7,231.1	6,949.8	39.5	30.3	91.77	721.6	1,133.7	560.3	514.3	45.95	12.193	
7,400.0	6,953.4	7,249.6	6,964.2	39.4	30.2	91.74	709.9	1,133.7	560.3	514.5	45.75	12.248	
7,450.0	6,991.5	7,300.8	7,002.5	39.3	30.0	91.63	676.0	1,133.7	560.3	515.1	45.15	12.408	
7,480.3	7,013.5	7,331.8	7,024.5	39.2	29.9	91.57	654.2	1,133.7	560.2	515.5	44.78	12.511	
7,500.0	7,027.3	7,351.9	7,038.3	39.1	29.8	91.52	639.5	1,133.7	560.2	515.7	44.54	12.579	
7,550.0	7,060.5	7,402.9	7,071.2	39.0	29.6	91.40	600.6	1,133.7	560.2	516.3	43.92	12.756	
7,578.7	7,078.4	7,432.1	7,088.9	38.8	29.4	91.33	577.3	1,133.7	560.2	516.6	43.56	12.860	
7,600.0	7,091.0	7,453.8	7,101.3	38.8	29.3	91.28	559.6	1,133.7	560.2	516.9	43.30	12.937	
7,650.0	7,118.7	7,504.6	7,128.4	38.6	29.1	91.15	516.5	1,133.7	560.1	517.4	42.71	13.116	
7,677.1	7,132.5	7,532.2	7,141.7	38.5	29.0	91.07	492.5	1,133.7	560.1	517.7	42.40	13.211	
7,700.0	7,143.4	7,555.4	7,152.3	38.4	28.9	91.01	471.8	1,133.7	560.1	518.0	42.14	13.291	
7,750.0	7,165.0	7,606.0	7,172.9	38.2	28.6	90.87	425.6	1,133.7	560.1	518.5	41.63	13.455	
7,775.6	7,174.9	7,631.8	7,182.1	38.1	28.5	90.79	401.4	1,133.7	560.1	518.7	41.39	13.533	
7,800.0	7,183.5	7,656.5	7,190.2	38.1	28.4	90.72	378.1	1,133.7	560.1	518.9	41.17	13.605	
7,850.0	7,198.6	7,706.9	7,204.0	37.9	28.2	90.57	329.6	1,133.7	560.1	519.3	40.77	13.736	
7,874.0	7,204.7	7,731.1	7,209.4	37.8	28.1	90.50	306.1	1,133.7	560.1	519.4	40.62	13.789	
7,900.0	7,210.4	7,757.2	7,214.4	37.7	28.0	90.42	280.4	1,133.7	560.0	519.6	40.45	13.844	
7,950.0	7,218.8	7,807.5	7,221.3	37.6	27.8	90.26	230.7	1,133.7	560.0	519.8	40.21	13.926	
7,972.4	7,221.4	7,829.9	7,223.3	37.5	27.7	90.19	208.3	1,133.7	560.0	519.9	40.14	13.951	
8,000.0	7,223.7	7,857.6	7,224.7	37.4	27.6	90.11	180.7	1,133.7	560.0	520.0	40.06	13.980	
8,033.8	7,225.0	7,891.3	7,225.0	37.4	27.5	90.00	147.0	1,133.7	560.0	520.0	40.01	13.998	
8,050.0	7,225.1	7,907.6	7,224.8	37.3	27.5	89.97	130.7	1,133.7	560.0	520.0	40.00	14.000	
8,055.3	7,225.0	7,912.9	7,224.7	37.3	27.5	89.97	125.4	1,133.7	560.0	520.0	40.01	13.998	
8,070.8	7,224.8	7,928.4	7,224.5	37.3	27.4	89.97	109.9	1,133.7	560.0	520.0	40.03	13.990	
8,100.0	7,224.4	7,957.6	7,224.1	37.2	27.4	89.97	80.7	1,133.7	560.0	520.0	40.07	13.975	
8,169.3	7,223.5	8,026.8	7,223.2	37.1	27.2	89.97	11.5	1,133.7	560.0	519.7	40.32	13.891	
8,197.4	7,223.1	8,055.0	7,222.8	37.1	27.2	89.97	-16.7	1,133.7	560.0	519.6	40.45	13.846	
8,200.0	7,223.0	8,057.6	7,222.7	37.1	27.2	89.97	-19.3	1,133.7	560.0	519.6	40.46	13.842	
8,267.7	7,222.1	8,125.3	7,221.8	37.0	27.1	89.97	-87.0	1,133.7	560.0	519.1	40.94	13.680	
8,299.2	7,221.7	8,156.8	7,221.4	37.0	27.1	89.97	-118.5	1,133.7	560.0	518.8	41.19	13.595	
8,300.0	7,221.7	8,157.6	7,221.4	37.0	27.1	89.97	-119.3	1,133.7	560.0	518.8	41.20	13.593	
8,366.1	7,220.7	8,223.7	7,220.4	37.0	27.2	89.97	-185.4	1,133.7	560.0	518.1	41.89	13.369	
8,400.0	7,220.3	8,257.6	7,220.0	37.0	27.2	89.97	-219.3	1,133.7	560.0	517.8	42.28	13.246	
8,464.5	7,219.4	8,322.1	7,219.1	37.1	27.3	89.97	-283.8	1,133.7	560.0	516.9	43.15	12.977	
8,500.0	7,218.9	8,357.6	7,218.6	37.1	27.4	89.97	-319.2	1,133.7	560.0	516.4	43.67	12.824	
8,563.0	7,218.0	8,420.5	7,217.7	37.2	27.7	89.97	-382.2	1,133.7	560.0	515.3	44.70	12.528	
8,600.0	7,217.5	8,457.6	7,217.2	37.3	27.9	89.97	-419.2	1,133.7	560.0	514.7	45.34	12.351	
8,661.4	7,216.7	8,519.0	7,216.4	37.5	28.2	89.97	-480.6	1,133.7	560.0	513.5	46.51	12.042	
8,700.0	7,216.1	8,557.6	7,215.8	37.6	28.5	89.97	-519.2	1,133.7	560.0	512.8	47.27	11.847	
8,759.8	7,215.3	8,617.4	7,215.0	37.8	28.9	89.97	-579.0	1,133.7	560.0	511.5	48.54	11.538	
8,800.0	7,214.8	8,657.6	7,214.5	38.0	29.3	89.97	-619.2	1,133.7	560.0	510.6	49.42	11.332	
8,858.2	7,214.0	8,715.8	7,213.7	38.3	29.8	89.97	-677.5	1,133.7	560.0	509.3	50.77	11.030	
8,900.0	7,213.4	8,757.6	7,213.1	38.5	30.2	89.97	-719.2	1,133.7	560.0	508.3	51.77	10.818	
8,956.7	7,212.6	8,814.2	7,212.3	38.8	30.8	89.97	-775.9	1,133.7	560.0	506.8	53.18	10.531	
9,000.0	7,212.0	8,857.6	7,211.7	39.1	31.2	89.97	-819.2	1,133.7	560.0	505.7	54.28	10.316	
9,055.1	7,211.2	8,912.7	7,210.9	39.5	31.9	89.97	-874.3	1,133.7	560.0	504.3	55.74	10.047	
9,100.0	7,210.6	8,957.6	7,210.3	39.8	32.4	89.97	-919.2	1,133.7	560.0	503.1	56.95	9.834	
9,153.5	7,209.9	9,011.1	7,209.6	40.3	33.1	89.97	-972.7	1,133.7	560.0	501.6	58.43	9.584	
9,200.0	7,209.2	9,057.6	7,208.9	40.7	33.7	89.97	-1,019.2	1,133.7	560.0	500.3	59.74	9.374	
9,251.9	7,208.5	9,109.5	7,208.2	41.1	34.3	89.97	-1,071.1	1,133.7	560.0	498.8	61.24	9.145	
9,300.0	7,207.9	9,157.6	7,207.6	41.6	35.0	89.97	-1,119.2	1,133.7	560.0	497.4	62.65	8.939	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-303 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,350.4	7,207.2	9,207.9	7,206.9	42.1	35.7	89.97	-1,169.5	1,133.7	560.0	495.9	64.15	8.730	
9,400.0	7,206.5	9,257.6	7,206.2	42.6	36.4	89.97	-1,219.2	1,133.7	560.0	494.4	65.65	8.531	
9,448.8	7,205.8	9,306.4	7,205.5	43.1	37.1	89.97	-1,268.0	1,133.7	560.0	492.9	67.14	8.341	
9,500.0	7,205.1	9,357.6	7,204.8	43.7	37.8	89.97	-1,319.1	1,133.7	560.0	491.3	68.73	8.148	
9,547.2	7,204.4	9,404.8	7,204.2	44.2	38.5	89.97	-1,366.4	1,133.7	560.0	489.8	70.21	7.976	
9,600.0	7,203.7	9,457.6	7,203.4	44.8	39.3	89.97	-1,419.1	1,133.7	560.0	488.1	71.89	7.790	
9,645.6	7,203.1	9,503.2	7,202.8	45.4	40.0	89.97	-1,464.8	1,133.7	560.0	486.7	73.35	7.635	
9,700.0	7,202.3	9,557.6	7,202.1	46.1	40.8	89.97	-1,519.1	1,133.7	560.0	484.9	75.11	7.456	
9,744.1	7,201.7	9,601.6	7,201.4	46.6	41.5	89.97	-1,563.2	1,133.7	560.0	483.5	76.55	7.316	
9,800.0	7,201.0	9,657.6	7,200.7	47.3	42.4	89.97	-1,619.1	1,133.7	560.0	481.6	78.38	7.145	
9,842.5	7,200.4	9,700.1	7,200.1	47.9	43.0	89.97	-1,661.6	1,133.7	560.0	480.2	79.79	7.019	
9,900.0	7,199.6	9,757.6	7,199.3	48.7	43.9	89.97	-1,719.1	1,133.7	560.0	478.3	81.71	6.854	
9,940.9	7,199.0	9,798.5	7,198.7	49.2	44.6	89.97	-1,760.0	1,133.7	560.0	476.9	83.08	6.740	
10,000.0	7,198.2	9,857.6	7,197.9	50.1	45.5	89.97	-1,819.1	1,133.7	560.0	474.9	85.08	6.582	
10,039.3	7,197.7	9,896.9	7,197.4	50.6	46.2	89.97	-1,858.4	1,133.7	560.0	473.6	86.42	6.481	
10,100.0	7,196.8	9,957.6	7,196.5	51.5	47.2	89.97	-1,919.1	1,133.7	560.0	471.5	88.49	6.329	
10,137.8	7,196.3	9,995.3	7,196.0	52.0	47.8	89.97	-1,956.9	1,133.7	560.0	470.2	89.78	6.237	
10,200.0	7,195.4	10,057.6	7,195.2	52.9	48.8	89.97	-2,019.1	1,133.7	560.0	468.1	91.93	6.092	
10,236.2	7,194.9	10,093.8	7,194.7	53.5	49.4	89.97	-2,055.3	1,133.7	560.0	466.8	93.18	6.010	
10,300.0	7,194.1	10,157.6	7,193.8	54.4	50.5	89.97	-2,119.1	1,133.7	560.0	464.6	95.40	5.870	
10,334.6	7,193.6	10,192.2	7,193.3	55.0	51.1	89.97	-2,153.7	1,133.7	560.0	463.4	96.61	5.797	
10,400.0	7,192.7	10,257.6	7,192.4	56.0	52.2	89.97	-2,219.1	1,133.7	560.0	461.1	98.90	5.663	
10,433.0	7,192.2	10,290.6	7,191.9	56.5	52.7	89.97	-2,252.1	1,133.7	560.0	460.0	100.06	5.597	
10,500.0	7,191.3	10,357.6	7,191.0	57.5	53.9	89.97	-2,319.1	1,133.7	560.0	457.6	102.42	5.468	
10,531.5	7,190.9	10,389.0	7,190.6	58.0	54.4	89.97	-2,350.5	1,133.7	560.0	456.5	103.54	5.409	
10,600.0	7,189.9	10,457.6	7,189.6	59.1	55.6	89.97	-2,419.0	1,133.7	560.0	454.0	105.97	5.285	
10,629.9	7,189.5	10,487.5	7,189.2	59.6	56.1	89.97	-2,448.9	1,133.7	560.0	453.0	107.03	5.232	
10,700.0	7,188.5	10,557.6	7,188.3	60.7	57.3	89.97	-2,519.0	1,133.7	560.0	450.5	109.53	5.113	
10,728.3	7,188.1	10,585.9	7,187.9	61.1	57.8	89.97	-2,547.4	1,133.7	560.0	449.5	110.55	5.066	
10,800.0	7,187.2	10,657.6	7,186.9	62.3	59.0	89.97	-2,619.0	1,133.7	560.0	446.9	113.12	4.951	
10,826.7	7,186.8	10,684.3	7,186.5	62.7	59.5	89.97	-2,645.8	1,133.7	560.0	445.9	114.08	4.909	
10,900.0	7,185.8	10,757.6	7,185.5	63.9	60.8	89.97	-2,719.0	1,133.7	560.0	443.3	116.72	4.798	
10,925.2	7,185.4	10,782.7	7,185.2	64.3	61.2	89.97	-2,744.2	1,133.7	560.0	442.4	117.63	4.761	
11,000.0	7,184.4	10,857.6	7,184.1	65.6	62.6	89.97	-2,819.0	1,133.7	560.0	439.7	120.33	4.654	
11,023.6	7,184.1	10,881.2	7,183.8	66.0	63.0	89.97	-2,842.6	1,133.7	560.0	438.8	121.19	4.621	
11,100.0	7,183.0	10,957.6	7,182.7	67.2	64.3	89.97	-2,919.0	1,133.7	560.0	436.0	123.96	4.518	
11,122.0	7,182.7	10,979.6	7,182.4	67.6	64.7	89.97	-2,941.0	1,133.7	560.0	435.2	124.76	4.489	
11,200.0	7,181.6	11,057.6	7,181.4	68.9	66.1	89.97	-3,019.0	1,133.7	560.0	432.4	127.60	4.389	
11,220.4	7,181.3	11,078.0	7,181.1	69.3	66.5	89.97	-3,039.4	1,133.7	560.0	431.7	128.35	4.363	
11,300.0	7,180.2	11,157.6	7,180.0	70.6	67.9	89.97	-3,119.0	1,133.7	560.0	428.8	131.26	4.267	
11,318.9	7,180.0	11,176.4	7,179.7	70.9	68.2	89.97	-3,137.8	1,133.7	560.0	428.1	131.95	4.244	
11,400.0	7,178.9	11,257.6	7,178.6	72.3	69.7	89.97	-3,219.0	1,133.7	560.0	425.1	134.92	4.151	
11,417.3	7,178.6	11,274.9	7,178.4	72.6	70.0	89.97	-3,236.3	1,133.7	560.0	424.5	135.55	4.131	
11,500.0	7,177.5	11,357.6	7,177.2	74.0	71.5	89.97	-3,319.0	1,133.7	560.0	421.4	138.59	4.041	
11,515.7	7,177.3	11,373.3	7,177.0	74.3	71.7	89.97	-3,334.7	1,133.7	560.0	420.8	139.17	4.024	
11,600.0	7,176.1	11,457.6	7,175.9	75.7	73.3	89.98	-3,418.9	1,133.7	560.0	417.7	142.27	3.936	
11,614.1	7,175.9	11,471.7	7,175.7	76.0	73.5	89.98	-3,433.1	1,133.7	560.0	417.2	142.79	3.922	
11,700.0	7,174.7	11,557.6	7,174.5	77.5	75.1	89.98	-3,518.9	1,133.7	560.0	414.0	145.96	3.837	
11,712.6	7,174.5	11,570.1	7,174.3	77.7	75.3	89.98	-3,531.5	1,133.7	560.0	413.6	146.43	3.824	
11,800.0	7,173.3	11,657.6	7,173.1	79.2	76.9	89.98	-3,618.9	1,133.7	560.0	410.3	149.66	3.742	
11,811.0	7,173.2	11,668.6	7,172.9	79.4	77.1	89.98	-3,629.9	1,133.7	560.0	409.9	150.07	3.732	
11,900.0	7,172.0	11,757.6	7,171.7	81.0	78.7	89.98	-3,718.9	1,133.7	560.0	406.6	153.36	3.651	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-303 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
11,909.4	7,171.8	11,767.0	7,171.6	81.1	78.9	89.98	-3,728.3	1,133.7	560.0	406.3	153.71	3.643	
12,000.0	7,170.6	11,857.6	7,170.4	82.7	80.5	89.98	-3,818.9	1,133.7	560.0	402.9	157.07	3.565	
12,007.8	7,170.5	11,865.4	7,170.2	82.9	80.7	89.98	-3,826.8	1,133.7	560.0	402.6	157.36	3.559	
12,025.7	7,170.2	11,883.3	7,170.0	83.2	81.0	89.98	-3,844.6	1,133.7	560.0	402.0	158.03	3.544	
12,041.2	7,170.0	11,883.5	7,170.0	83.5	81.0	89.98	-3,844.8	1,133.7	560.2	401.9	158.32	3.538	SF

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-343 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-88.62	1.4	-60.0	60.0				
98.4	98.4	99.4	99.4	0.1	0.1	-88.62	1.4	-60.0	60.0	59.8	0.17	351.270	
100.0	100.0	101.0	101.0	0.1	0.1	-88.62	1.4	-60.0	60.0	59.8	0.18	342.223	
196.8	196.8	197.8	197.8	0.3	0.3	-88.62	1.4	-60.0	60.0	59.4	0.61	98.246	
200.0	200.0	201.0	201.0	0.3	0.3	-88.62	1.4	-60.0	60.0	59.4	0.62	96.020	
295.3	295.3	296.3	296.3	0.5	0.5	-88.62	1.4	-60.0	60.0	58.9	1.05	56.970	
300.0	300.0	301.0	301.0	0.5	0.5	-88.62	1.4	-60.0	60.0	58.9	1.07	55.844	
393.7	393.7	394.7	394.7	0.7	0.7	-88.62	1.4	-60.0	60.0	58.5	1.50	40.116	
400.0	400.0	401.0	401.0	0.8	0.8	-88.62	1.4	-60.0	60.0	58.5	1.52	39.371	
492.1	492.1	493.1	493.1	1.0	1.0	-88.62	1.4	-60.0	60.0	58.1	1.94	30.958	
500.0	500.0	501.0	501.0	1.0	1.0	-88.62	1.4	-60.0	60.0	58.0	1.97	30.403	
590.5	590.5	591.5	591.5	1.2	1.2	-88.62	1.4	-60.0	60.0	57.6	2.38	25.204	
600.0	600.0	601.0	601.0	1.2	1.2	-88.62	1.4	-60.0	60.0	57.6	2.42	24.762	
689.0	689.0	690.0	690.0	1.4	1.4	-88.62	1.4	-60.0	60.0	57.2	2.82	21.254	
700.0	700.0	701.0	701.0	1.4	1.4	-88.62	1.4	-60.0	60.0	57.1	2.87	20.887	
787.4	787.4	788.4	788.4	1.6	1.6	-88.62	1.4	-60.0	60.0	56.7	3.27	18.374	
800.0	800.0	801.0	801.0	1.7	1.7	-88.62	1.4	-60.0	60.0	56.7	3.32	18.061	
885.8	885.8	886.8	886.8	1.9	1.9	-88.62	1.4	-60.0	60.0	56.3	3.71	16.181	
900.0	900.0	901.0	901.0	1.9	1.9	-88.62	1.4	-60.0	60.0	56.2	3.77	15.908	
984.2	984.2	985.2	985.2	2.1	2.1	-88.62	1.4	-60.0	60.0	55.8	4.15	14.456	
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	-88.62	1.4	-60.0	60.0	55.8	4.22	14.214	
1,082.7	1,082.7	1,083.7	1,083.7	2.3	2.3	-88.62	1.4	-60.0	60.0	55.4	4.59	13.064	
1,100.0	1,100.0	1,101.0	1,101.0	2.3	2.3	-88.62	1.4	-60.0	60.0	55.3	4.67	12.846	
1,181.1	1,181.1	1,182.1	1,182.1	2.5	2.5	-88.62	1.4	-60.0	60.0	55.0	5.04	11.916	
1,200.0	1,200.0	1,201.0	1,201.0	2.6	2.6	-88.62	1.4	-60.0	60.0	54.9	5.12	11.718	
1,279.5	1,279.5	1,280.5	1,280.5	2.7	2.7	-88.62	1.4	-60.0	60.0	54.5	5.48	10.953	
1,300.0	1,300.0	1,301.0	1,301.0	2.8	2.8	-88.62	1.4	-60.0	60.0	54.4	5.57	10.772	
1,377.9	1,377.9	1,378.9	1,378.9	3.0	3.0	-88.62	1.4	-60.0	60.0	54.1	5.92	10.135	
1,400.0	1,400.0	1,401.0	1,401.0	3.0	3.0	-88.62	1.4	-60.0	60.0	54.0	6.02	9.968	
1,450.0	1,450.0	1,451.0	1,451.0	3.1	3.1	-88.62	1.4	-60.0	60.0	53.8	6.24	9.609	CC
1,476.4	1,476.4	1,477.4	1,477.4	3.2	3.2	-151.98	1.4	-60.0	60.1	53.7	6.36	9.450	ES
1,500.0	1,500.0	1,501.0	1,501.0	3.2	3.2	-152.12	1.4	-60.0	60.4	53.9	6.46	9.341	
1,574.8	1,574.8	1,575.8	1,575.8	3.4	3.4	-153.08	1.4	-60.0	62.4	55.6	6.79	9.196	
1,600.0	1,599.9	1,600.9	1,600.9	3.4	3.5	-153.56	1.4	-60.0	63.5	56.6	6.89	9.209	
1,673.2	1,673.0	1,674.0	1,674.0	3.6	3.6	-155.32	1.4	-60.0	67.8	60.6	7.21	9.407	
1,700.0	1,699.7	1,700.7	1,700.7	3.7	3.7	-156.06	1.4	-60.0	69.8	62.5	7.32	9.537	
1,771.6	1,771.0	1,772.0	1,772.0	3.8	3.8	-158.18	1.4	-60.0	76.4	68.8	7.62	10.023	
1,800.0	1,799.1	1,800.1	1,800.1	3.9	3.9	-159.05	1.4	-60.0	79.5	71.7	7.74	10.271	
1,870.1	1,868.6	1,870.0	1,870.0	4.1	4.1	-161.15	1.5	-59.9	88.3	80.2	8.03	10.994	
1,900.0	1,898.2	1,900.3	1,900.3	4.1	4.1	-161.89	1.8	-59.7	92.3	84.2	8.15	11.325	
1,968.5	1,965.7	1,969.9	1,969.9	4.3	4.3	-163.10	3.4	-58.4	101.8	93.4	8.43	12.082	
2,000.0	1,996.6	2,001.9	2,001.9	4.4	4.4	-163.47	4.6	-57.5	106.3	97.8	8.55	12.431	
2,066.9	2,062.2	2,070.1	2,069.9	4.6	4.5	-163.92	8.1	-54.7	116.1	107.3	8.82	13.161	
2,100.0	2,094.4	2,103.9	2,103.6	4.7	4.6	-164.00	10.3	-53.0	121.0	112.1	8.95	13.521	
2,165.3	2,157.9	2,170.7	2,170.0	5.0	4.7	-163.94	15.5	-48.9	131.0	121.8	9.22	14.214	
2,200.0	2,191.5	2,206.2	2,205.3	5.1	4.8	-163.80	18.8	-46.3	136.4	127.1	9.36	14.581	
2,263.8	2,252.9	2,271.6	2,270.1	5.3	5.0	-163.40	25.7	-40.8	146.6	136.9	9.62	15.231	
2,300.0	2,287.6	2,308.8	2,306.8	5.5	5.1	-163.10	30.2	-37.3	152.4	142.7	9.77	15.599	
2,362.2	2,346.9	2,372.7	2,369.8	5.8	5.2	-162.47	38.8	-30.5	162.7	152.7	10.04	16.205	
2,400.0	2,382.7	2,411.6	2,408.0	6.0	5.3	-162.03	44.5	-26.0	169.1	158.9	10.21	16.561	
2,460.6	2,439.8	2,474.1	2,469.2	6.3	5.5	-161.25	54.6	-18.0	179.6	169.1	10.50	17.105	
2,500.0	2,476.6	2,514.7	2,508.8	6.5	5.6	-160.70	61.7	-12.4	186.6	175.9	10.69	17.448	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-343 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,559.0	2,531.6	2,575.7	2,568.0	6.9	5.8	-159.82	73.2	-3.3	197.2	186.2	11.00	17.922	
2,600.0	2,569.4	2,618.0	2,608.8	7.1	6.0	-159.18	81.7	3.5	204.7	193.5	11.23	18.235	
2,657.5	2,622.0	2,677.5	2,666.0	7.5	6.2	-158.25	94.6	13.6	215.5	204.0	11.57	18.634	
2,700.0	2,660.7	2,719.5	2,706.3	7.8	6.4	-157.61	104.1	21.1	223.8	212.0	11.82	18.936	
2,755.9	2,711.1	2,774.1	2,758.6	8.2	6.6	-156.92	116.4	30.8	235.7	223.5	12.18	19.352	
2,800.0	2,750.6	2,817.0	2,799.7	8.6	6.8	-156.47	126.0	38.4	245.7	233.2	12.46	19.714	
2,832.3	2,779.2	2,848.3	2,829.7	8.8	6.9	-156.20	133.1	44.0	253.4	240.7	12.68	19.990	
2,854.3	2,798.8	2,869.7	2,850.2	9.0	7.0	-156.08	137.9	47.8	258.8	246.0	12.85	20.141	
2,900.0	2,839.3	2,914.0	2,892.6	9.4	7.2	-155.85	147.9	55.7	270.0	256.8	13.21	20.437	
2,952.7	2,886.0	2,965.1	2,941.5	9.9	7.4	-155.60	159.4	64.8	282.9	269.3	13.64	20.741	
3,000.0	2,927.8	3,010.9	2,985.4	10.3	7.6	-155.39	169.8	73.0	294.5	280.5	14.03	20.992	
3,051.2	2,973.2	3,060.5	3,032.9	10.7	7.9	-155.18	181.0	81.8	307.0	292.6	14.46	21.232	
3,100.0	3,016.4	3,107.9	3,078.2	11.2	8.1	-155.00	191.6	90.3	319.0	304.1	14.87	21.444	
3,149.6	3,060.4	3,155.9	3,124.3	11.6	8.3	-154.83	202.5	98.8	331.1	315.8	15.31	21.634	
3,200.0	3,105.0	3,204.8	3,171.1	12.1	8.6	-154.67	213.5	107.5	343.5	327.7	15.75	21.814	
3,248.0	3,147.5	3,251.3	3,215.7	12.5	8.8	-154.53	224.0	115.8	355.3	339.1	16.17	21.965	
3,300.0	3,193.6	3,301.7	3,263.9	13.0	9.1	-154.39	235.4	124.8	368.0	351.4	16.64	22.117	
3,346.4	3,234.7	3,346.8	3,307.1	13.4	9.3	-154.27	245.5	132.8	379.4	362.3	17.06	22.237	
3,400.0	3,282.2	3,398.7	3,356.8	13.9	9.6	-154.14	257.2	142.1	392.5	375.0	17.55	22.367	
3,444.9	3,321.9	3,442.2	3,398.4	14.3	9.8	-154.03	267.0	149.8	403.5	385.6	17.96	22.462	
3,500.0	3,370.8	3,495.6	3,449.6	14.8	10.1	-153.91	279.1	159.4	417.1	398.6	18.48	22.573	
3,543.3	3,409.1	3,537.6	3,489.8	15.2	10.3	-153.83	288.6	166.8	427.7	408.8	18.88	22.649	
3,600.0	3,459.3	3,592.5	3,542.5	15.8	10.6	-153.72	301.0	176.6	441.6	422.2	19.42	22.743	
3,641.7	3,496.3	3,633.0	3,581.2	16.1	10.8	-153.64	310.1	183.8	451.8	432.0	19.81	22.805	
3,700.0	3,547.9	3,689.5	3,635.3	16.7	11.1	-153.54	322.8	193.9	466.1	445.8	20.37	22.885	
3,740.1	3,583.5	3,728.4	3,672.6	17.1	11.3	-153.48	331.6	200.8	476.0	455.2	20.75	22.935	
3,800.0	3,636.5	3,786.4	3,728.1	17.6	11.6	-153.38	344.7	211.2	490.7	469.3	21.33	23.004	
3,838.6	3,670.7	3,823.8	3,763.9	18.0	11.8	-153.33	353.1	217.8	500.1	478.4	21.70	23.044	
3,900.0	3,725.1	3,883.3	3,821.0	18.6	12.1	-153.24	366.6	228.4	515.2	492.9	22.30	23.103	
3,937.0	3,757.9	3,919.2	3,855.3	18.9	12.3	-153.19	374.6	234.8	524.3	501.6	22.66	23.136	
4,000.0	3,813.7	3,980.3	3,913.8	19.5	12.7	-153.11	388.4	245.7	539.8	516.5	23.28	23.187	
4,035.4	3,845.1	4,014.6	3,946.7	19.9	12.8	-153.07	396.2	251.8	548.5	524.8	23.63	23.213	
4,100.0	3,902.3	4,077.2	4,006.7	20.5	13.2	-152.99	410.3	263.0	564.3	540.1	24.26	23.257	
4,133.8	3,932.2	4,110.0	4,038.1	20.8	13.4	-152.95	417.7	268.8	572.6	548.0	24.60	23.278	
4,200.0	3,990.8	4,174.1	4,099.5	21.5	13.7	-152.88	432.1	280.3	588.9	563.6	25.26	23.316	
4,232.3	4,019.4	4,205.4	4,129.5	21.8	13.9	-152.85	439.2	285.8	596.8	571.2	25.58	23.333	
4,300.0	4,079.4	4,271.1	4,192.3	22.4	14.3	-152.78	454.0	297.5	613.4	587.2	26.25	23.366	
4,330.7	4,106.6	4,300.8	4,220.8	22.7	14.4	-152.75	460.7	302.8	621.0	594.4	26.56	23.379	
4,400.0	4,168.0	4,368.0	4,285.2	23.4	14.8	-152.69	475.9	314.8	638.0	610.7	27.26	23.408	
4,429.1	4,193.8	4,396.2	4,312.2	23.7	15.0	-152.66	482.2	319.8	645.1	617.6	27.55	23.419	
4,500.0	4,256.6	4,464.9	4,378.0	24.4	15.3	-152.60	497.7	332.1	662.5	634.3	28.26	23.443	
4,527.5	4,281.0	4,491.6	4,403.6	24.6	15.5	-152.58	503.8	336.8	669.3	640.8	28.54	23.452	
4,600.0	4,345.2	4,561.9	4,470.9	25.3	15.9	-152.52	519.6	349.3	687.1	657.8	29.27	23.473	
4,626.0	4,368.2	4,587.0	4,495.0	25.6	16.0	-152.50	525.3	353.8	693.5	663.9	29.54	23.480	
4,700.0	4,433.8	4,658.8	4,563.7	26.3	16.4	-152.45	541.5	366.6	711.7	681.4	30.29	23.498	
4,724.4	4,455.4	4,682.4	4,586.4	26.5	16.6	-152.43	546.8	370.8	717.7	687.1	30.53	23.504	
4,800.0	4,522.3	4,755.7	4,656.6	27.3	17.0	-152.38	563.3	383.9	736.2	704.9	31.30	23.519	
4,822.8	4,542.6	4,777.8	4,677.7	27.5	17.1	-152.36	568.3	387.8	741.8	710.3	31.54	23.524	
4,900.0	4,610.9	4,852.7	4,749.4	28.2	17.5	-152.31	585.2	401.2	760.8	728.5	32.32	23.537	
4,921.2	4,629.8	4,873.2	4,769.1	28.4	17.6	-152.30	589.8	404.8	766.0	733.5	32.54	23.540	
5,000.0	4,699.5	4,949.6	4,842.2	29.2	18.1	-152.25	607.1	418.4	785.4	752.0	33.35	23.552	
5,019.7	4,716.9	4,968.7	4,860.5	29.4	18.2	-152.24	611.4	421.8	790.2	756.6	33.55	23.554	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-343 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	4,788.1	5,046.5	4,935.1	30.2	18.6	-152.20	628.9	435.7	809.9	775.6	34.37	23.564	
5,118.1	4,804.1	5,064.1	4,951.9	30.4	18.7	-152.19	632.9	438.8	814.4	779.8	34.56	23.566	
5,200.0	4,876.7	5,143.4	5,027.9	31.1	19.2	-152.14	650.8	453.0	834.5	799.1	35.40	23.574	
5,216.5	4,891.3	5,159.5	5,043.3	31.3	19.3	-152.13	654.4	455.8	838.5	803.0	35.57	23.576	
5,300.0	4,965.3	5,240.4	5,120.8	32.1	19.7	-152.09	672.6	470.2	859.1	822.6	36.43	23.582	
5,314.9	4,978.5	5,254.9	5,134.6	32.3	19.8	-152.09	675.9	472.8	862.7	826.1	36.58	23.584	
5,400.0	5,053.8	5,337.3	5,213.6	33.1	20.3	-152.05	694.5	487.5	883.6	846.2	37.46	23.589	
5,413.4	5,065.7	5,350.3	5,226.0	33.2	20.4	-152.04	697.4	489.8	886.9	849.3	37.60	23.590	
5,508.2	5,149.7	5,442.1	5,314.0	34.2	20.9	-152.00	718.2	506.2	910.2	871.6	38.58	23.595	
5,511.8	5,152.9	5,445.7	5,317.4	34.2	20.9	-152.00	719.0	506.8	911.1	872.5	38.61	23.594	
5,600.0	5,231.7	5,531.5	5,399.6	34.9	21.4	-152.12	738.3	522.1	931.5	891.9	39.57	23.542	
5,610.2	5,240.9	5,541.5	5,409.1	35.0	21.5	-152.13	740.6	523.9	933.7	894.0	39.67	23.535	
5,700.0	5,322.5	5,629.3	5,493.3	35.7	22.0	-152.13	760.4	539.5	951.8	911.2	40.63	23.428	
5,708.6	5,330.4	5,637.8	5,501.4	35.7	22.0	-152.13	762.3	541.1	953.4	912.7	40.72	23.415	
5,800.0	5,414.6	5,727.7	5,587.5	36.3	22.5	-152.02	782.6	557.1	969.1	927.4	41.70	23.241	
5,807.1	5,421.2	5,734.7	5,594.2	36.4	22.6	-152.01	784.1	558.3	970.2	928.4	41.77	23.225	
5,900.0	5,508.1	5,820.8	5,676.7	36.9	23.0	-151.83	803.5	573.6	983.5	940.8	42.72	23.024	
5,905.5	5,513.3	5,825.3	5,681.0	37.0	23.1	-151.82	804.4	574.3	984.2	941.4	42.76	23.016	
6,000.0	5,602.8	5,900.0	5,753.1	37.5	23.4	-151.67	819.9	586.6	996.2	952.6	43.54	22.881	
6,003.9	5,606.5	5,900.0	5,753.1	37.5	23.4	-151.68	819.9	586.6	996.7	953.1	43.55	22.884	
6,100.0	5,698.5	5,984.4	5,835.1	38.0	23.7	-151.53	835.6	599.0	1,007.6	963.3	44.30	22.743	
6,102.3	5,700.7	5,986.3	5,837.0	38.0	23.7	-151.53	836.0	599.3	1,007.8	963.5	44.32	22.741	
6,200.0	5,795.2	6,066.4	5,915.2	38.4	24.0	-151.41	849.1	609.6	1,017.7	972.7	44.97	22.630	
6,200.8	5,795.9	6,067.0	5,915.8	38.4	24.0	-151.41	849.2	609.7	1,017.8	972.8	44.98	22.629	
6,299.2	5,891.9	6,147.7	5,995.2	38.8	24.3	-151.32	860.6	618.8	1,026.4	980.8	45.55	22.532	
6,300.0	5,892.7	6,148.4	5,995.9	38.8	24.3	-151.32	860.7	618.8	1,026.5	980.9	45.56	22.531	
6,397.6	5,988.5	6,228.5	6,075.1	39.1	24.5	-151.24	870.4	626.4	1,033.7	987.7	46.05	22.448	
6,400.0	5,990.9	6,230.5	6,077.0	39.1	24.5	-151.24	870.6	626.6	1,033.9	987.8	46.06	22.446	
6,496.0	6,085.8	6,309.4	6,155.3	39.4	24.7	-151.18	878.3	632.7	1,039.8	993.3	46.47	22.377	
6,500.0	6,089.7	6,312.6	6,158.5	39.4	24.7	-151.18	878.6	632.9	1,040.0	993.5	46.48	22.375	
6,594.5	6,183.5	6,390.2	6,235.8	39.6	24.9	-151.13	884.5	637.6	1,044.5	997.7	46.80	22.320	
6,600.0	6,189.0	6,400.0	6,245.5	39.7	24.9	-151.13	885.1	638.1	1,044.7	997.9	46.83	22.310	
6,692.9	6,281.5	6,471.2	6,316.5	39.8	25.0	-151.10	888.9	641.0	1,047.9	1,000.9	47.04	22.275	
6,700.0	6,288.6	6,477.0	6,322.3	39.8	25.1	-151.10	889.1	641.2	1,048.1	1,001.0	47.06	22.271	
6,791.3	6,379.8	6,552.1	6,397.4	40.0	25.2	-151.09	891.4	643.1	1,050.0	1,002.8	47.21	22.240	
6,800.0	6,388.5	6,559.2	6,404.5	40.0	25.2	-151.09	891.6	643.2	1,050.1	1,002.9	47.22	22.237	
6,889.7	6,478.2	6,634.0	6,479.2	40.1	25.3	-151.09	892.2	643.7	1,050.8	1,003.5	47.31	22.211	
6,890.4	6,478.9	6,634.6	6,479.9	40.1	25.3	-87.78	892.2	643.7	1,050.8	1,003.5	47.31	22.211	
6,900.0	6,488.5	6,644.2	6,489.5	40.1	25.3	-87.78	892.2	643.7	1,050.8	1,003.4	47.33	22.200	
6,920.4	6,508.9	6,665.0	6,510.3	40.1	25.3	-87.78	892.2	643.7	1,050.8	1,003.4	47.38	22.179	
6,950.0	6,538.5	6,696.4	6,541.6	40.1	25.3	92.20	891.3	643.7	1,050.8	1,003.3	47.43	22.154	
6,988.2	6,576.6	6,736.8	6,581.9	40.1	25.3	92.18	888.0	643.7	1,050.7	1,003.3	47.44	22.150	
7,000.0	6,588.3	6,749.3	6,594.3	40.1	25.3	92.17	886.5	643.7	1,050.7	1,003.3	47.44	22.150	
7,050.0	6,637.8	6,802.2	6,646.5	40.1	25.3	92.12	877.9	643.7	1,050.7	1,003.3	47.35	22.190	
7,086.6	6,673.6	6,840.9	6,684.2	40.1	25.3	92.08	869.2	643.7	1,050.7	1,003.4	47.22	22.249	
7,100.0	6,686.6	6,855.0	6,697.8	40.1	25.2	92.06	865.5	643.7	1,050.7	1,003.5	47.17	22.272	
7,150.0	6,734.6	6,907.8	6,748.0	40.0	25.1	91.99	849.4	643.7	1,050.6	1,003.7	46.91	22.395	
7,185.0	6,767.5	6,944.6	6,782.3	39.9	25.0	91.94	835.9	643.7	1,050.6	1,003.9	46.68	22.506	
7,200.0	6,781.4	6,960.4	6,796.8	39.9	25.0	91.91	829.6	643.7	1,050.6	1,004.0	46.57	22.557	
7,250.0	6,827.0	7,012.9	6,843.9	39.8	24.8	91.82	806.4	643.7	1,050.5	1,004.3	46.16	22.756	
7,283.4	6,856.6	7,047.9	6,874.3	39.8	24.7	91.76	789.0	643.7	1,050.5	1,004.6	45.85	22.909	
7,300.0	6,871.0	7,065.2	6,889.0	39.7	24.6	91.72	779.9	643.7	1,050.5	1,004.8	45.69	22.989	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-343 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,350.0	6,913.2	7,117.4	6,931.9	39.6	24.4	91.62	750.3	643.7	1,050.4	1,005.2	45.17	23.254	
7,381.9	6,939.1	7,150.6	6,958.1	39.5	24.3	91.55	729.8	643.7	1,050.4	1,005.5	44.82	23.437	
7,400.0	6,953.4	7,169.4	6,972.5	39.4	24.2	91.50	717.7	643.7	1,050.3	1,005.7	44.61	23.545	
7,450.0	6,991.5	7,221.3	7,010.4	39.3	24.0	91.38	682.4	643.7	1,050.3	1,006.3	44.02	23.859	
7,480.3	7,013.5	7,252.6	7,032.1	39.2	23.8	91.30	659.7	643.7	1,050.3	1,006.6	43.65	24.059	
7,500.0	7,027.3	7,273.0	7,045.6	39.1	23.7	91.25	644.5	643.7	1,050.2	1,006.8	43.41	24.191	
7,550.0	7,060.5	7,324.5	7,077.9	39.0	23.4	91.12	604.4	643.7	1,050.2	1,007.4	42.81	24.533	
7,578.7	7,078.4	7,354.0	7,095.0	38.8	23.3	91.04	580.4	643.7	1,050.2	1,007.7	42.46	24.731	
7,600.0	7,091.0	7,375.8	7,107.1	38.8	23.2	90.98	562.2	643.7	1,050.1	1,007.9	42.21	24.878	
7,650.0	7,118.7	7,426.9	7,133.1	38.6	22.9	90.83	518.2	643.7	1,050.1	1,008.4	41.64	25.218	
7,677.1	7,132.5	7,454.6	7,145.8	38.5	22.7	90.75	493.7	643.7	1,050.1	1,008.7	41.35	25.397	
7,700.0	7,143.4	7,477.8	7,155.8	38.4	22.6	90.68	472.7	643.7	1,050.1	1,008.9	41.11	25.545	
7,750.0	7,165.0	7,528.5	7,175.1	38.2	22.3	90.53	425.8	643.7	1,050.0	1,009.4	40.62	25.849	
7,775.6	7,174.9	7,554.4	7,183.7	38.1	22.2	90.45	401.4	643.7	1,050.0	1,009.6	40.40	25.992	
7,800.0	7,183.5	7,579.0	7,191.1	38.1	22.1	90.38	377.9	643.7	1,050.0	1,009.8	40.20	26.121	
7,850.0	7,198.6	7,629.3	7,203.5	37.9	21.8	90.22	329.2	643.7	1,050.0	1,010.1	39.84	26.354	
7,874.0	7,204.7	7,653.4	7,208.3	37.8	21.7	90.14	305.6	643.7	1,050.0	1,010.3	39.70	26.449	
7,900.0	7,210.4	7,679.4	7,212.5	37.7	21.6	90.06	279.9	643.7	1,050.0	1,010.4	39.56	26.540	
7,919.3	7,214.0	7,698.8	7,215.1	37.7	21.5	90.00	260.7	643.7	1,050.0	1,010.5	39.48	26.599	
7,950.0	7,218.8	7,729.3	7,218.0	37.6	21.4	89.91	230.3	643.7	1,050.0	1,010.6	39.36	26.674	
7,972.4	7,221.4	7,751.6	7,219.4	37.5	21.3	89.84	208.0	643.7	1,050.0	1,010.7	39.30	26.716	
8,000.0	7,223.7	7,779.0	7,220.1	37.4	21.2	89.75	180.7	643.7	1,050.0	1,010.7	39.25	26.752	
8,050.0	7,225.1	7,828.9	7,219.6	37.3	21.0	89.65	130.8	643.7	1,050.0	1,010.8	39.25	26.752	
8,055.3	7,225.0	7,834.2	7,219.5	37.3	20.9	89.65	125.5	643.7	1,050.0	1,010.7	39.26	26.747	
8,070.8	7,224.8	7,849.7	7,219.3	37.3	20.9	89.65	109.9	643.7	1,050.0	1,010.7	39.28	26.728	
8,100.0	7,224.4	7,878.9	7,219.0	37.2	20.8	89.65	80.8	643.7	1,050.0	1,010.7	39.34	26.693	
8,169.3	7,223.5	7,948.2	7,218.1	37.1	20.6	89.65	11.5	643.7	1,050.0	1,010.4	39.64	26.487	
8,200.0	7,223.0	7,978.9	7,217.7	37.1	20.5	89.66	-19.2	643.7	1,050.0	1,010.2	39.80	26.384	
8,267.7	7,222.1	8,046.6	7,216.9	37.0	20.4	89.66	-86.9	643.7	1,050.0	1,009.7	40.34	26.030	
8,300.0	7,221.7	8,078.9	7,216.5	37.0	20.4	89.66	-119.2	643.7	1,050.0	1,009.4	40.62	25.852	
8,366.1	7,220.7	8,145.0	7,215.7	37.0	20.6	89.67	-185.3	643.7	1,050.0	1,008.6	41.37	25.382	
8,400.0	7,220.3	8,178.9	7,215.2	37.0	20.8	89.67	-219.2	643.7	1,050.0	1,008.2	41.77	25.136	
8,464.5	7,219.4	8,243.4	7,214.4	37.1	21.4	89.68	-283.7	643.7	1,050.0	1,007.3	42.71	24.585	
8,500.0	7,218.9	8,278.9	7,214.0	37.1	21.7	89.68	-319.2	643.7	1,050.0	1,006.8	43.24	24.283	
8,563.0	7,218.0	8,341.9	7,213.2	37.2	22.4	89.68	-382.1	643.7	1,050.0	1,005.7	44.33	23.686	
8,600.0	7,217.5	8,378.9	7,212.8	37.3	22.8	89.69	-419.2	643.7	1,050.0	1,005.0	44.99	23.339	
8,661.4	7,216.7	8,440.3	7,212.0	37.5	23.5	89.69	-480.6	643.7	1,050.0	1,003.8	46.21	22.725	
8,700.0	7,216.1	8,478.9	7,211.5	37.6	23.9	89.69	-519.2	643.7	1,050.0	1,003.0	46.99	22.347	
8,759.8	7,215.3	8,538.7	7,210.8	37.8	24.7	89.70	-579.0	643.7	1,050.0	1,001.7	48.30	21.738	
8,800.0	7,214.8	8,578.9	7,210.3	38.0	25.2	89.70	-619.1	643.7	1,050.0	1,000.8	49.20	21.341	
8,858.2	7,214.0	8,637.1	7,209.6	38.3	25.9	89.71	-677.4	643.7	1,050.0	999.4	50.60	20.753	
8,900.0	7,213.4	8,678.9	7,209.0	38.5	26.5	89.71	-719.1	643.7	1,050.0	998.4	51.61	20.346	
8,956.7	7,212.6	8,735.6	7,208.3	38.8	27.3	89.71	-775.8	643.7	1,050.0	996.9	53.06	19.789	
9,000.0	7,212.0	8,778.9	7,207.8	39.1	27.9	89.72	-819.1	643.7	1,050.0	995.8	54.18	19.380	
9,055.1	7,211.2	8,834.0	7,207.1	39.5	28.6	89.72	-874.2	643.7	1,050.0	994.3	55.67	18.861	
9,100.0	7,210.6	8,878.9	7,206.5	39.8	29.3	89.72	-919.1	643.7	1,050.0	993.1	56.89	18.455	
9,153.5	7,209.9	8,932.4	7,205.9	40.3	30.1	89.73	-972.6	643.7	1,050.0	991.6	58.41	17.977	
9,200.0	7,209.2	8,978.9	7,205.3	40.7	30.8	89.73	-1,019.1	643.7	1,050.0	990.3	59.73	17.578	
9,251.9	7,208.5	9,030.8	7,204.7	41.1	31.5	89.73	-1,071.1	643.7	1,050.0	988.7	61.26	17.141	
9,300.0	7,207.9	9,078.9	7,204.1	41.6	32.3	89.74	-1,119.1	643.7	1,050.0	987.3	62.68	16.752	
9,350.4	7,207.2	9,129.3	7,203.4	42.1	33.1	89.74	-1,169.5	643.7	1,050.0	985.8	64.20	16.354	
9,400.0	7,206.5	9,178.9	7,202.8	42.6	33.8	89.74	-1,219.1	643.7	1,050.0	984.3	65.72	15.978	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-343 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,448.8	7,205.8	9,227.7	7,202.2	43.1	34.6	89.75	-1,267.9	643.7	1,050.0	982.8	67.23	15.617	
9,500.0	7,205.1	9,278.9	7,201.6	43.7	35.4	89.75	-1,319.1	643.7	1,050.0	981.2	68.83	15.254	
9,547.2	7,204.4	9,326.1	7,201.0	44.2	36.2	89.76	-1,366.3	643.7	1,050.0	979.7	70.34	14.928	
9,600.0	7,203.7	9,378.9	7,200.3	44.8	37.0	89.76	-1,419.1	643.7	1,050.0	978.0	72.02	14.579	
9,645.6	7,203.1	9,424.5	7,199.7	45.4	37.8	89.76	-1,464.7	643.7	1,050.0	976.5	73.50	14.285	
9,700.0	7,202.3	9,478.9	7,199.1	46.1	38.7	89.77	-1,519.1	643.7	1,050.0	974.7	75.27	13.950	
9,744.1	7,201.7	9,523.0	7,198.5	46.6	39.4	89.77	-1,563.1	643.7	1,050.0	973.3	76.72	13.686	
9,800.0	7,201.0	9,578.9	7,197.8	47.3	40.3	89.77	-1,619.1	643.7	1,050.0	971.4	78.57	13.363	
9,842.5	7,200.4	9,621.4	7,197.3	47.9	41.0	89.78	-1,661.6	643.7	1,050.0	970.0	79.99	13.126	
9,900.0	7,199.6	9,678.9	7,196.6	48.7	42.0	89.78	-1,719.1	643.7	1,050.0	968.1	81.92	12.817	
9,940.9	7,199.0	9,719.8	7,196.0	49.2	42.7	89.78	-1,760.0	643.7	1,050.0	966.7	83.31	12.604	
10,000.0	7,198.2	9,778.9	7,195.3	50.1	43.7	89.79	-1,819.0	643.7	1,050.0	964.7	85.31	12.308	
10,039.3	7,197.7	9,818.2	7,194.8	50.6	44.4	89.79	-1,858.4	643.7	1,050.0	963.3	86.66	12.116	
10,100.0	7,196.8	9,878.9	7,194.1	51.5	45.4	89.79	-1,919.0	643.7	1,050.0	961.2	88.74	11.832	
10,137.8	7,196.3	9,916.7	7,193.6	52.0	46.1	89.80	-1,956.8	643.7	1,050.0	959.9	90.04	11.661	
10,200.0	7,195.4	9,978.9	7,192.8	52.9	47.2	89.80	-2,019.0	643.7	1,050.0	957.8	92.20	11.388	
10,236.2	7,194.9	10,015.1	7,192.3	53.5	47.8	89.80	-2,055.2	643.7	1,050.0	956.5	93.46	11.234	
10,300.0	7,194.1	10,078.9	7,191.6	54.4	48.9	89.81	-2,119.0	643.7	1,050.0	954.3	95.69	10.973	
10,334.6	7,193.6	10,113.5	7,191.1	55.0	49.5	89.81	-2,153.6	643.7	1,050.0	953.1	96.90	10.835	
10,400.0	7,192.7	10,178.9	7,190.3	56.0	50.7	89.82	-2,219.0	643.7	1,050.0	950.8	99.20	10.584	
10,433.0	7,192.2	10,211.9	7,189.9	56.5	51.2	89.82	-2,252.1	643.7	1,050.0	949.6	100.37	10.461	
10,500.0	7,191.3	10,278.9	7,189.0	57.5	52.4	89.82	-2,319.0	643.7	1,050.0	947.2	102.74	10.220	
10,531.5	7,190.9	10,310.4	7,188.6	58.0	53.0	89.82	-2,350.5	643.7	1,050.0	946.1	103.86	10.109	
10,600.0	7,189.9	10,378.9	7,187.8	59.1	54.2	89.83	-2,419.0	643.7	1,050.0	943.7	106.30	9.877	
10,629.9	7,189.5	10,408.8	7,187.4	59.6	54.7	89.83	-2,448.9	643.7	1,050.0	942.6	107.37	9.779	
10,700.0	7,188.5	10,478.9	7,186.5	60.7	56.0	89.84	-2,519.0	643.7	1,050.0	940.1	109.88	9.556	
10,728.3	7,188.1	10,507.2	7,186.2	61.1	56.5	89.84	-2,547.3	643.7	1,050.0	939.1	110.90	9.468	
10,800.0	7,187.2	10,578.9	7,185.3	62.3	57.8	89.84	-2,619.0	643.7	1,050.0	936.5	113.48	9.253	
10,826.7	7,186.8	10,605.6	7,184.9	62.7	58.3	89.84	-2,645.7	643.7	1,050.0	935.5	114.44	9.175	
10,900.0	7,185.8	10,678.9	7,184.0	63.9	59.6	89.85	-2,719.0	643.7	1,050.0	932.9	117.09	8.967	
10,925.2	7,185.4	10,704.1	7,183.7	64.3	60.0	89.85	-2,744.2	643.7	1,050.0	932.0	118.00	8.898	
11,000.0	7,184.4	10,778.9	7,182.8	65.6	61.4	89.86	-2,819.0	643.7	1,050.0	929.3	120.71	8.698	
11,023.6	7,184.1	10,802.5	7,182.5	66.0	61.8	89.86	-2,842.6	643.7	1,050.0	928.4	121.57	8.637	
11,100.0	7,183.0	10,878.9	7,181.5	67.2	63.2	89.86	-2,919.0	643.7	1,050.0	925.6	124.35	8.444	
11,122.0	7,182.7	10,900.9	7,181.2	67.6	63.6	89.86	-2,941.0	643.7	1,050.0	924.8	125.15	8.389	
11,200.0	7,181.6	10,978.9	7,180.2	68.9	65.0	89.87	-3,019.0	643.7	1,050.0	922.0	128.00	8.203	
11,220.4	7,181.3	10,999.3	7,180.0	69.3	65.4	89.87	-3,039.4	643.7	1,050.0	921.2	128.75	8.155	
11,300.0	7,180.2	11,078.9	7,179.0	70.6	66.8	89.88	-3,118.9	643.7	1,050.0	918.3	131.66	7.975	
11,318.9	7,180.0	11,097.8	7,178.8	70.9	67.2	89.88	-3,137.8	643.7	1,050.0	917.6	132.36	7.933	
11,400.0	7,178.9	11,178.9	7,177.7	72.3	68.7	89.88	-3,218.9	643.7	1,050.0	914.6	135.33	7.758	
11,417.3	7,178.6	11,196.2	7,177.5	72.6	69.0	89.88	-3,236.2	643.7	1,050.0	914.0	135.97	7.722	
11,500.0	7,177.5	11,278.9	7,176.5	74.0	70.5	89.89	-3,318.9	643.7	1,050.0	911.0	139.02	7.553	
11,515.7	7,177.3	11,294.6	7,176.3	74.3	70.8	89.89	-3,334.7	643.7	1,050.0	910.4	139.59	7.522	
11,600.0	7,176.1	11,378.9	7,175.2	75.7	72.3	89.90	-3,418.9	643.7	1,050.0	907.3	142.70	7.358	
11,614.1	7,175.9	11,393.0	7,175.0	76.0	72.6	89.90	-3,433.1	643.7	1,050.0	906.7	143.23	7.331	
11,700.0	7,174.7	11,478.9	7,173.9	77.5	74.2	89.90	-3,518.9	643.7	1,050.0	903.6	146.40	7.172	
11,712.6	7,174.5	11,491.5	7,173.8	77.7	74.4	89.90	-3,531.5	643.7	1,050.0	903.1	146.87	7.149	
11,800.0	7,173.3	11,578.9	7,172.7	79.2	76.0	89.91	-3,618.9	643.7	1,050.0	899.9	150.10	6.995	
11,811.0	7,173.2	11,589.9	7,172.5	79.4	76.2	89.91	-3,629.9	643.7	1,050.0	899.5	150.51	6.976	
11,900.0	7,172.0	11,678.9	7,171.4	81.0	77.9	89.92	-3,718.9	643.7	1,050.0	896.1	153.82	6.826	
11,909.4	7,171.8	11,688.3	7,171.3	81.1	78.1	89.92	-3,728.3	643.7	1,050.0	895.8	154.17	6.811	
12,000.0	7,170.6	11,778.9	7,170.2	82.7	79.7	89.92	-3,818.9	643.7	1,050.0	892.4	157.53	6.665	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - OLSON 30R-343 - ORIGINAL WELLBORE - PROPOSAL #2 — **Offset Site Error:** 0.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,007.8	7,170.5	11,786.7	7,170.1	82.9	79.9	89.92	-3,826.7	643.7	1,050.0	892.1	157.82	6.653	
12,012.3	7,170.4	11,791.2	7,170.0	82.9	80.0	89.92	-3,831.2	643.7	1,050.0	892.0	157.99	6.646	
12,041.2	7,170.0	11,791.4	7,170.0	83.5	80.0	89.92	-3,831.4	643.7	1,050.4	891.8	158.53	6.626	SF

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - PROP HZ CHANDLER FARMS HD 20-389HN - Wellbore #1 - W

Offset Site Error: 0.0 usft

Survey Program: 16-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-8.43	1,372.7	-203.4	1,388.2				
98.4	98.4	59.6	59.6	0.1	0.1	-8.43	1,372.7	-203.4	1,387.7	1,387.5	0.19	7,337.815	
100.0	100.0	61.2	61.2	0.1	0.1	-8.43	1,372.7	-203.4	1,387.7	1,387.5	0.19	7,137.404	
196.8	196.8	158.0	158.0	0.3	0.3	-8.43	1,372.7	-203.4	1,387.7	1,387.0	0.63	2,203.376	
200.0	200.0	161.2	161.2	0.3	0.3	-8.43	1,372.7	-203.4	1,387.7	1,387.0	0.64	2,154.925	
295.3	295.3	256.5	256.5	0.5	0.5	-8.43	1,372.7	-203.4	1,387.7	1,386.6	1.07	1,294.175	
300.0	300.0	261.2	261.2	0.5	0.6	-8.43	1,372.7	-203.4	1,387.7	1,386.6	1.09	1,269.036	
393.7	393.7	354.9	354.9	0.7	0.8	-8.43	1,372.7	-203.4	1,387.7	1,386.2	1.51	916.139	
400.0	400.0	361.2	361.2	0.8	0.8	-8.43	1,372.7	-203.4	1,387.7	1,386.1	1.54	899.324	
492.1	492.1	453.3	453.3	1.0	1.0	-8.43	1,372.7	-203.4	1,387.7	1,385.7	1.96	709.028	
500.0	500.0	461.2	461.2	1.0	1.0	-8.43	1,372.7	-203.4	1,387.7	1,385.7	1.99	696.431	
590.5	590.5	551.7	551.7	1.2	1.2	-8.43	1,372.7	-203.4	1,387.7	1,385.3	2.40	578.293	
600.0	600.0	561.2	561.2	1.2	1.2	-8.43	1,372.7	-203.4	1,387.7	1,385.2	2.44	568.234	
689.0	689.0	650.2	650.2	1.4	1.4	-8.43	1,372.7	-203.4	1,387.7	1,384.8	2.84	488.265	
700.0	700.0	661.2	661.2	1.4	1.5	-8.43	1,372.7	-203.4	1,387.7	1,384.8	2.89	479.896	
787.4	787.4	748.6	748.6	1.6	1.7	-8.43	1,372.7	-203.4	1,387.7	1,384.4	3.28	422.491	
800.0	800.0	761.2	761.2	1.7	1.7	-8.43	1,372.7	-203.4	1,387.7	1,384.3	3.34	415.329	
885.8	885.8	847.0	847.0	1.9	1.9	-8.43	1,372.7	-203.4	1,387.7	1,383.9	3.73	372.334	
900.0	900.0	861.2	861.2	1.9	1.9	-8.43	1,372.7	-203.4	1,387.7	1,383.9	3.79	366.075	
984.2	984.2	945.4	945.4	2.1	2.1	-8.43	1,372.7	-203.4	1,387.7	1,383.5	4.17	332.823	
1,000.0	1,000.0	961.2	961.2	2.1	2.1	-8.43	1,372.7	-203.4	1,387.7	1,383.4	4.24	327.265	
1,082.7	1,082.7	1,043.9	1,043.9	2.3	2.3	-8.43	1,372.7	-203.4	1,387.7	1,383.1	4.61	300.892	
1,100.0	1,100.0	1,061.2	1,061.2	2.3	2.4	-8.43	1,372.7	-203.4	1,387.7	1,383.0	4.69	295.896	
1,181.1	1,181.1	1,142.3	1,142.3	2.5	2.5	-8.43	1,372.7	-203.4	1,387.7	1,382.6	5.05	274.552	
1,200.0	1,200.0	1,161.2	1,161.2	2.6	2.6	-8.43	1,372.7	-203.4	1,387.7	1,382.5	5.14	270.014	
1,279.5	1,279.5	1,240.7	1,240.7	2.7	2.8	-8.43	1,372.7	-203.4	1,387.7	1,382.2	5.50	252.453	
1,300.0	1,300.0	1,261.2	1,261.2	2.8	2.8	-8.43	1,372.7	-203.4	1,387.7	1,382.1	5.59	248.295	
1,377.9	1,377.9	1,339.1	1,339.1	3.0	3.0	-8.43	1,372.7	-203.4	1,387.7	1,381.7	5.94	233.646	
1,400.0	1,400.0	1,361.2	1,361.2	3.0	3.0	-8.43	1,372.7	-203.4	1,387.7	1,381.6	6.04	229.811	
1,450.0	1,450.0	1,411.2	1,411.2	3.1	3.1	-8.43	1,372.7	-203.4	1,387.7	1,381.4	6.26	221.563	
1,476.4	1,476.4	1,437.6	1,437.6	3.2	3.2	-71.74	1,372.7	-203.4	1,387.6	1,381.3	6.38	217.510	
1,500.0	1,500.0	1,461.2	1,461.2	3.2	3.3	-71.76	1,372.7	-203.4	1,387.5	1,381.1	6.48	213.994	
1,574.8	1,574.8	1,536.0	1,536.0	3.4	3.4	-71.86	1,372.7	-203.4	1,386.8	1,380.0	6.81	203.635	
1,600.0	1,599.9	1,561.1	1,561.1	3.4	3.5	-71.91	1,372.7	-203.4	1,386.4	1,379.5	6.92	200.349	
1,673.2	1,673.0	1,634.2	1,634.2	3.6	3.6	-72.13	1,372.7	-203.4	1,385.0	1,377.7	7.24	191.200	
1,700.0	1,699.7	1,660.9	1,660.9	3.7	3.7	-72.23	1,372.7	-203.4	1,384.3	1,376.9	7.36	188.041	
1,771.6	1,771.0	1,732.2	1,732.2	3.8	3.9	-72.55	1,372.7	-203.4	1,382.1	1,374.4	7.69	179.845	
1,800.0	1,799.1	1,760.3	1,760.3	3.9	3.9	-72.70	1,372.7	-203.4	1,381.1	1,373.3	7.81	176.770	
1,870.1	1,868.6	1,829.8	1,829.8	4.1	4.1	-73.12	1,372.7	-203.4	1,378.3	1,370.2	8.14	169.309	
1,900.0	1,898.2	1,859.4	1,859.4	4.1	4.1	-73.33	1,372.7	-203.4	1,377.0	1,368.7	8.28	166.285	
1,968.5	1,965.7	1,926.9	1,926.9	4.3	4.3	-73.84	1,372.7	-203.4	1,373.7	1,365.1	8.62	159.393	
2,000.0	1,996.6	1,957.8	1,957.8	4.4	4.4	-74.11	1,372.7	-203.4	1,372.1	1,363.3	8.77	156.384	
2,066.9	2,062.2	2,023.4	2,023.4	4.6	4.5	-74.71	1,372.7	-203.4	1,368.4	1,359.3	9.13	149.944	
2,100.0	2,094.4	2,055.6	2,055.6	4.7	4.6	-75.04	1,372.7	-203.4	1,366.4	1,357.1	9.30	146.923	
2,165.3	2,157.9	2,119.1	2,119.1	5.0	4.7	-75.72	1,372.7	-203.4	1,362.4	1,352.8	9.67	140.860	
2,200.0	2,191.5	2,152.7	2,152.7	5.1	4.8	-76.11	1,372.7	-203.4	1,360.2	1,350.4	9.87	137.813	
2,263.8	2,252.9	2,214.1	2,214.1	5.3	4.9	-76.88	1,372.7	-203.4	1,356.1	1,345.8	10.27	132.094	
2,300.0	2,287.6	2,248.8	2,248.8	5.5	5.0	-77.33	1,372.7	-203.4	1,353.7	1,343.2	10.49	129.013	
2,362.2	2,346.9	2,308.1	2,308.1	5.8	5.2	-78.16	1,372.7	-203.4	1,349.5	1,338.6	10.92	123.617	
2,400.0	2,382.7	2,343.9	2,343.9	6.0	5.2	-78.69	1,372.7	-203.4	1,346.9	1,335.8	11.18	120.524	
2,460.6	2,439.8	2,401.0	2,401.0	6.3	5.4	-79.57	1,372.7	-203.4	1,342.9	1,331.2	11.63	115.467	
2,500.0	2,476.6	2,437.8	2,437.8	6.5	5.4	-80.17	1,372.7	-203.4	1,340.3	1,328.4	11.93	112.379	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - PROP HZ CHANDLER FARMS HD 20-389HN - Wellbore #1 - W

Offset Site Error: 0.0 usft

Survey Program: 16-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,559.0	2,531.6	2,492.8	2,492.8	6.9	5.6	-81.10	1,372.7	-203.4	1,336.5	1,324.1	12.41	107.678	
2,600.0	2,569.4	2,530.6	2,530.6	7.1	5.7	-81.77	1,372.7	-203.4	1,334.0	1,321.2	12.75	104.625	
2,657.5	2,622.0	2,583.2	2,583.2	7.5	5.8	-82.73	1,372.7	-203.4	1,330.6	1,317.3	13.27	100.299	
2,700.0	2,660.7	2,621.9	2,621.9	7.8	5.9	-83.47	1,372.7	-203.4	1,328.2	1,314.6	13.65	97.314	
2,755.9	2,711.1	2,672.3	2,672.3	8.2	6.0	-84.46	1,372.7	-203.4	1,325.4	1,311.2	14.19	93.377	
2,800.0	2,750.6	2,711.8	2,711.8	8.6	6.1	-85.26	1,372.7	-203.4	1,323.5	1,308.8	14.63	90.492	
2,832.3	2,779.2	2,740.4	2,740.4	8.8	6.1	-85.85	1,372.7	-203.4	1,322.2	1,307.2	14.96	88.402	
2,854.3	2,798.8	2,760.0	2,760.0	9.0	6.2	-86.25	1,372.7	-203.4	1,321.4	1,306.2	15.19	87.004	
2,900.0	2,839.3	2,800.5	2,800.5	9.4	6.3	-87.06	1,372.7	-203.4	1,320.0	1,304.3	15.67	84.256	
2,952.7	2,886.0	2,847.2	2,847.2	9.9	6.4	-88.00	1,372.7	-203.4	1,318.8	1,302.6	16.23	81.263	
3,000.0	2,927.8	2,889.0	2,889.0	10.3	6.5	-88.84	1,372.7	-203.4	1,318.1	1,301.4	16.73	78.778	
3,051.2	2,973.2	2,934.4	2,934.4	10.7	6.6	-89.76	1,372.7	-203.4	1,317.8	1,300.5	17.28	76.240	
3,064.7	2,985.1	2,946.3	2,946.3	10.8	6.6	-90.00	1,372.7	-203.4	1,317.8	1,300.3	17.43	75.603	
3,100.0	3,016.4	2,977.6	2,977.6	11.2	6.7	-90.63	1,372.7	-203.4	1,317.9	1,300.1	17.81	73.992	
3,149.6	3,060.4	3,021.6	3,021.6	11.6	6.8	-91.52	1,372.7	-203.4	1,318.4	1,300.0	18.35	71.844	
3,200.0	3,105.0	3,066.2	3,066.2	12.1	6.9	-92.42	1,372.7	-203.4	1,319.3	1,300.4	18.90	69.816	
3,248.0	3,147.5	3,108.7	3,108.7	12.5	7.0	-93.27	1,372.7	-203.4	1,320.5	1,301.1	19.42	67.999	
3,300.0	3,193.6	3,154.8	3,154.8	13.0	7.1	-94.20	1,372.7	-203.4	1,322.3	1,302.3	19.98	66.171	
3,346.4	3,234.7	3,195.9	3,195.9	13.4	7.2	-95.02	1,372.7	-203.4	1,324.2	1,303.8	20.49	64.637	
3,400.0	3,282.2	3,243.4	3,243.4	13.9	7.3	-95.97	1,372.7	-203.4	1,326.9	1,305.9	21.07	62.990	
3,444.9	3,321.9	3,283.1	3,283.1	14.3	7.3	-96.76	1,372.7	-203.4	1,329.5	1,308.0	21.55	61.695	
3,500.0	3,370.8	3,332.0	3,332.0	14.8	7.5	-97.73	1,372.7	-203.4	1,333.2	1,311.0	22.14	60.214	
3,543.3	3,409.1	3,370.3	3,370.3	15.2	7.5	-98.49	1,372.7	-203.4	1,336.4	1,313.7	22.60	59.122	
3,600.0	3,459.3	3,420.5	3,420.5	15.8	7.7	-99.48	1,372.7	-203.4	1,341.0	1,317.8	23.20	57.790	
3,641.7	3,496.3	3,457.5	3,457.5	16.1	7.7	-100.20	1,372.7	-203.4	1,344.7	1,321.1	23.64	56.871	
3,700.0	3,547.9	3,509.1	3,509.1	16.7	7.9	-101.21	1,372.7	-203.4	1,350.3	1,326.1	24.25	55.675	
3,740.1	3,583.5	3,544.7	3,544.7	17.1	7.9	-101.90	1,372.7	-203.4	1,354.5	1,329.9	24.67	54.902	
3,800.0	3,636.5	3,597.7	3,597.7	17.6	8.1	-102.92	1,372.7	-203.4	1,361.2	1,335.9	25.29	53.830	
3,838.6	3,670.7	3,631.9	3,631.9	18.0	8.1	-103.57	1,372.7	-203.4	1,365.8	1,340.1	25.68	53.182	
3,900.0	3,725.1	3,686.3	3,686.3	18.6	8.3	-104.60	1,372.7	-203.4	1,373.6	1,347.3	26.30	52.222	
3,937.0	3,757.9	3,719.1	3,719.1	18.9	8.3	-105.22	1,372.7	-203.4	1,378.5	1,351.9	26.67	51.681	
4,000.0	3,813.7	3,774.9	3,774.9	19.5	8.5	-106.26	1,372.7	-203.4	1,387.4	1,360.1	27.30	50.823	
4,035.4	3,845.1	3,806.3	3,806.3	19.9	8.5	-106.85	1,372.7	-203.4	1,392.6	1,365.0	27.65	50.373	
4,100.0	3,902.3	3,863.5	3,863.5	20.5	8.7	-107.90	1,372.7	-203.4	1,402.6	1,374.3	28.27	49.610	
4,133.8	3,932.2	3,893.4	3,893.4	20.8	8.7	-108.44	1,372.7	-203.4	1,408.1	1,379.5	28.60	49.236	
4,200.0	3,990.8	3,952.0	3,952.0	21.5	8.9	-109.50	1,372.7	-203.4	1,419.2	1,389.9	29.23	48.560	
4,232.3	4,019.4	3,980.6	3,980.6	21.8	8.9	-110.01	1,372.7	-203.4	1,424.8	1,395.3	29.53	48.252	
4,300.0	4,079.4	4,040.6	4,040.6	22.4	9.1	-111.07	1,372.7	-203.4	1,437.0	1,406.9	30.15	47.655	
4,330.7	4,106.6	4,067.8	4,067.8	22.7	9.1	-111.55	1,372.7	-203.4	1,442.8	1,412.3	30.44	47.404	
4,400.0	4,168.0	4,129.2	4,129.2	23.4	9.3	-112.61	1,372.7	-203.4	1,456.2	1,425.1	31.06	46.879	
4,429.1	4,193.8	4,155.0	4,155.0	23.7	9.3	-113.05	1,372.7	-203.4	1,462.0	1,430.6	31.32	46.676	
4,500.0	4,256.6	4,217.8	4,217.8	24.4	9.5	-114.12	1,372.7	-203.4	1,476.5	1,444.6	31.95	46.219	
4,527.5	4,281.0	4,242.2	4,242.2	24.6	9.5	-114.53	1,372.7	-203.4	1,482.3	1,450.1	32.19	46.056	
4,600.0	4,345.2	4,306.4	4,306.4	25.3	9.6	-115.59	1,372.7	-203.4	1,498.0	1,465.2	32.81	45.662	
4,626.0	4,368.2	4,329.4	4,329.4	25.6	9.7	-115.97	1,372.7	-203.4	1,503.8	1,470.7	33.03	45.532	
4,700.0	4,433.8	4,395.0	4,395.0	26.3	9.8	-117.03	1,372.7	-203.4	1,520.6	1,487.0	33.64	45.196	
4,724.4	4,455.4	4,416.6	4,416.6	26.5	9.9	-117.37	1,372.7	-203.4	1,526.3	1,492.5	33.85	45.096	
4,800.0	4,522.3	4,483.5	4,483.5	27.3	10.0	-118.43	1,372.7	-203.4	1,544.3	1,509.8	34.46	44.813	
4,822.8	4,542.6	4,503.8	4,503.8	27.5	10.1	-118.74	1,372.7	-203.4	1,549.8	1,515.2	34.64	44.737	
4,900.0	4,610.9	4,572.1	4,572.1	28.2	10.2	-119.79	1,372.7	-203.4	1,569.0	1,533.7	35.25	44.504	
4,921.2	4,629.8	4,591.0	4,591.0	28.4	10.3	-120.07	1,372.7	-203.4	1,574.4	1,538.9	35.42	44.447	
5,000.0	4,699.5	4,660.7	4,660.7	29.2	10.4	-121.12	1,372.7	-203.4	1,594.6	1,558.6	36.03	44.261	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - PROP HZ CHANDLER FARMS HD 20-389HN - Wellbore #1 - W

Offset Site Error: 0.0 usft

Survey Program: 16-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,019.7	4,716.9	4,678.1	4,678.1	29.4	10.5	-121.37	1,372.7	-203.4	1,599.8	1,563.6	36.18	44.221	
5,100.0	4,788.1	4,749.3	4,749.3	30.2	10.6	-122.41	1,372.7	-203.4	1,621.2	1,584.4	36.78	44.078	
5,118.1	4,804.1	4,765.3	4,765.3	30.4	10.7	-122.64	1,372.7	-203.4	1,626.1	1,589.2	36.92	44.051	
5,200.0	4,876.7	4,837.9	4,837.9	31.1	10.8	-123.66	1,372.7	-203.4	1,648.7	1,611.2	37.51	43.948	
5,216.5	4,891.3	4,852.5	4,852.5	31.3	10.9	-123.87	1,372.7	-203.4	1,653.3	1,615.7	37.63	43.931	
5,300.0	4,965.3	4,926.5	4,926.5	32.1	11.0	-124.89	1,372.7	-203.4	1,677.0	1,638.8	38.23	43.866	
5,314.9	4,978.5	4,939.7	4,939.7	32.3	11.1	-125.06	1,372.7	-203.4	1,681.3	1,642.9	38.33	43.858	
5,400.0	5,053.8	5,015.0	5,015.0	33.1	11.2	-126.07	1,372.7	-203.4	1,706.1	1,667.1	38.93	43.828	
5,413.4	5,065.7	5,026.9	5,026.9	33.2	11.3	-126.23	1,372.7	-203.4	1,710.0	1,671.0	39.02	43.826	
5,508.2	5,149.7	5,110.9	5,110.9	34.2	11.5	-127.31	1,372.7	-203.4	1,738.4	1,698.7	39.66	43.830	
5,511.8	5,152.9	5,114.1	5,114.1	34.2	11.5	-127.37	1,372.7	-203.4	1,739.5	1,699.8	39.68	43.838	
5,600.0	5,231.7	5,192.9	5,192.9	34.9	11.6	-128.76	1,372.7	-203.4	1,765.6	1,725.5	40.13	44.000	
5,610.2	5,240.9	5,202.1	5,202.1	35.0	11.7	-128.91	1,372.7	-203.4	1,768.5	1,728.4	40.17	44.027	
5,700.0	5,322.5	5,283.7	5,283.7	35.7	11.8	-130.20	1,372.7	-203.4	1,793.8	1,753.2	40.55	44.240	
5,708.6	5,330.4	5,291.6	5,291.6	35.7	11.9	-130.31	1,372.7	-203.4	1,796.1	1,755.6	40.58	44.262	
5,800.0	5,414.6	9,049.4	7,183.1	36.3	56.1	-165.31	936.1	1,515.9	1,815.9	1,775.2	40.68	44.633	
5,807.1	5,421.2	9,051.7	7,183.1	36.4	56.1	-165.27	936.1	1,518.2	1,809.2	1,768.5	40.72	44.430	
5,900.0	5,508.1	9,080.6	7,183.1	36.9	56.9	-164.56	935.2	1,547.1	1,721.2	1,680.1	41.13	41.848	
5,905.5	5,513.3	9,082.3	7,183.1	37.0	56.9	-164.51	935.1	1,548.7	1,716.0	1,674.9	41.15	41.702	
6,000.0	5,602.8	9,109.0	7,183.1	37.5	57.7	-163.52	934.3	1,575.4	1,625.6	1,584.2	41.40	39.263	
6,003.9	5,606.5	9,110.0	7,183.1	37.5	57.7	-163.47	934.3	1,576.5	1,621.8	1,580.4	41.41	39.166	
6,100.0	5,698.5	9,134.4	7,183.1	38.0	58.3	-162.05	933.6	1,600.8	1,529.0	1,487.5	41.47	36.868	
6,102.3	5,700.7	9,135.0	7,183.1	38.0	58.4	-162.01	933.5	1,601.4	1,526.7	1,485.3	41.47	36.814	
6,200.0	5,795.2	9,156.9	7,183.1	38.4	58.9	-159.94	932.9	1,623.3	1,431.7	1,390.3	41.34	34.635	
6,200.8	5,795.9	9,157.1	7,183.1	38.4	58.9	-159.92	932.9	1,623.5	1,430.9	1,389.6	41.33	34.618	
6,299.2	5,891.9	9,176.2	7,183.1	38.8	59.5	-156.82	932.3	1,642.7	1,334.4	1,293.3	41.08	32.483	
6,300.0	5,892.7	9,176.4	7,183.1	38.8	59.5	-156.79	932.3	1,642.8	1,333.6	1,292.5	41.08	32.465	
6,397.6	5,988.5	9,192.5	7,183.1	39.1	59.9	-152.03	931.8	1,658.9	1,237.4	1,196.1	41.22	30.021	
6,400.0	5,990.9	9,192.9	7,183.1	39.1	59.9	-151.88	931.8	1,659.3	1,235.0	1,193.8	41.24	29.950	
6,496.0	6,085.8	9,205.9	7,183.1	39.4	60.3	-144.23	931.4	1,672.3	1,139.8	1,095.9	43.97	25.923	
6,500.0	6,089.7	9,206.3	7,183.1	39.4	60.3	-143.83	931.4	1,672.7	1,135.9	1,091.7	44.21	25.693	
6,594.5	6,183.5	9,216.3	7,183.1	39.6	60.5	-131.00	931.1	1,682.7	1,042.0	986.7	55.31	18.841	
6,600.0	6,189.0	9,216.8	7,183.1	39.7	60.6	-130.03	931.1	1,683.2	1,036.5	980.2	56.31	18.406	
6,692.9	6,281.5	9,223.7	7,183.1	39.8	60.7	-109.46	930.9	1,690.1	944.0	866.6	77.40	12.196	
6,700.0	6,288.6	9,224.1	7,183.1	39.8	60.8	-107.59	930.9	1,690.5	936.9	857.8	79.10	11.845	
6,791.3	6,379.8	9,228.2	7,183.1	40.0	60.9	-82.75	930.7	1,694.6	845.9	750.7	95.12	8.892	
6,800.0	6,388.5	9,228.4	7,183.1	40.0	60.9	-80.54	930.7	1,694.8	837.2	741.3	95.87	8.733	
6,889.7	6,478.2	9,229.7	7,183.1	40.1	60.9	-61.69	930.7	1,696.1	747.9	650.7	97.17	7.696	
6,890.4	6,478.9	9,229.7	7,183.1	40.1	60.9	1.73	930.7	1,696.1	747.2	650.1	97.15	7.691	
6,900.0	6,488.5	9,229.7	7,183.1	40.1	60.9	1.73	930.7	1,696.1	737.7	640.5	97.16	7.592	
6,920.4	6,508.9	9,229.7	7,183.1	40.1	60.9	1.73	930.7	1,696.1	717.4	620.2	97.18	7.382	
6,950.0	6,538.5	9,229.7	7,183.1	40.1	60.9	-178.72	930.7	1,696.1	688.1	590.9	97.16	7.082	
6,988.2	6,576.6	9,229.8	7,183.1	40.1	60.9	-179.00	930.7	1,696.2	650.6	553.7	96.86	6.717	
7,000.0	6,588.3	9,229.8	7,183.1	40.1	60.9	-179.06	930.7	1,696.2	639.1	542.4	96.71	6.608	
7,050.0	6,637.8	9,230.1	7,183.1	40.1	60.9	-179.19	930.7	1,696.4	591.1	495.4	95.79	6.171	
7,086.6	6,673.6	9,230.3	7,183.1	40.1	60.9	-179.23	930.7	1,696.7	557.1	462.2	94.84	5.874	
7,100.0	6,686.6	9,230.4	7,183.1	40.1	60.9	-179.24	930.7	1,696.8	544.8	450.4	94.44	5.769	
7,150.0	6,734.6	9,230.8	7,183.1	40.0	60.9	-179.24	930.7	1,697.2	500.9	408.2	92.66	5.406	
7,185.0	6,767.5	9,231.2	7,183.1	39.9	60.9	-179.22	930.6	1,697.6	471.9	380.8	91.16	5.177	
7,200.0	6,781.4	9,231.3	7,183.1	39.9	60.9	-179.21	930.6	1,697.7	460.1	369.7	90.47	5.086	
7,250.0	6,827.0	9,232.0	7,183.1	39.8	61.0	-179.15	930.6	1,698.3	423.8	335.9	87.89	4.822	
7,283.4	6,856.6	9,232.4	7,183.1	39.8	61.0	-179.10	930.6	1,698.8	402.6	316.7	85.95	4.684	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - PROP HZ CHANDLER FARMS HD 20-389HN - Wellbore #1 - W

Offset Site Error: 0.0 usft

Survey Program: 16-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,300.0	6,871.0	9,232.7	7,183.1	39.7	61.0	-179.07	930.6	1,699.1	393.2	308.3	84.93	4.630	
7,350.0	6,913.2	9,233.5	7,183.1	39.6	61.0	-178.97	930.6	1,699.9	370.1	288.5	81.63	4.534	SF
7,381.9	6,939.1	9,234.0	7,183.1	39.5	61.0	-178.89	930.6	1,700.4	360.0	280.7	79.35	4.537	
7,400.0	6,953.4	9,234.4	7,183.1	39.4	61.0	-178.84	930.5	1,700.8	356.0	278.0	77.99	4.565	
7,443.9	6,987.0	9,235.2	7,183.1	39.3	61.0	-178.71	930.5	1,701.6	351.9	277.4	74.56	4.720	CC, ES
7,450.0	6,991.5	9,235.4	7,183.1	39.3	61.1	-178.69	930.5	1,701.7	352.0	278.0	74.07	4.753	
7,480.3	7,013.5	9,236.0	7,183.1	39.2	61.1	-178.58	930.5	1,702.4	354.7	283.2	71.56	4.957	
7,500.0	7,027.3	9,236.4	7,183.1	39.1	61.1	-178.51	930.5	1,702.8	358.5	288.7	69.88	5.131	
7,550.0	7,060.5	9,237.5	7,183.1	39.0	61.1	-178.28	930.5	1,703.9	375.0	309.5	65.47	5.728	
7,578.7	7,078.4	9,238.2	7,183.1	38.8	61.1	-178.12	930.4	1,704.6	388.4	325.6	62.86	6.180	
7,600.0	7,091.0	9,238.7	7,183.1	38.8	61.1	-178.00	930.4	1,705.1	400.1	339.2	60.89	6.570	
7,650.0	7,118.7	9,240.0	7,183.1	38.6	61.2	-177.64	930.4	1,706.4	432.1	375.9	56.20	7.689	
7,677.1	7,132.5	9,240.7	7,183.1	38.5	61.2	-177.41	930.4	1,707.1	451.9	398.3	53.63	8.427	
7,700.0	7,143.4	9,241.3	7,183.1	38.4	61.2	-177.18	930.3	1,707.7	469.7	418.2	51.47	9.125	
7,750.0	7,165.0	9,242.7	7,183.1	38.2	61.3	-176.57	930.3	1,709.0	511.3	464.5	46.79	10.927	
7,775.6	7,174.9	9,243.4	7,183.1	38.1	61.3	-176.16	930.3	1,709.8	533.8	489.3	44.45	12.008	
7,800.0	7,183.5	9,244.1	7,183.1	38.1	61.3	-175.69	930.3	1,710.4	555.9	513.6	42.28	13.149	
7,850.0	7,198.6	9,245.5	7,183.1	37.9	61.3	-174.37	930.2	1,711.9	602.6	564.6	38.07	15.829	
7,874.0	7,204.7	9,246.2	7,183.1	37.8	61.3	-173.47	930.2	1,712.6	625.6	589.4	36.21	17.278	
7,900.0	7,210.4	9,247.0	7,183.1	37.7	61.4	-172.14	930.2	1,713.4	650.9	616.5	34.33	18.958	
7,950.0	7,218.8	9,248.5	7,183.1	37.6	61.4	-167.59	930.1	1,714.8	700.0	668.8	31.18	22.452	
7,972.4	7,221.4	9,249.1	7,183.1	37.5	61.4	-163.57	930.1	1,715.5	722.3	692.3	29.99	24.083	
8,000.0	7,223.7	9,250.0	7,183.1	37.4	61.4	-153.66	930.1	1,716.3	749.7	720.6	29.10	25.768	
8,050.0	7,225.1	9,251.5	7,183.1	37.3	61.5	-71.02	930.0	1,717.8	799.7	760.0	39.67	20.161	
8,055.3	7,225.0	9,251.6	7,183.1	37.3	61.5	-59.67	930.0	1,718.0	805.0	765.2	39.76	20.246	
8,070.8	7,224.8	9,252.1	7,183.1	37.3	61.5	-60.14	930.0	1,718.5	820.5	780.7	39.81	20.609	
8,100.0	7,224.4	9,253.0	7,183.1	37.2	61.5	-61.00	930.0	1,719.4	849.7	809.8	39.91	21.290	
8,169.3	7,223.5	9,255.1	7,183.1	37.1	61.6	-62.86	929.9	1,721.4	918.9	878.7	40.17	22.876	
8,200.0	7,223.0	9,256.0	7,183.1	37.1	61.6	-63.62	929.9	1,722.4	949.6	909.3	40.27	23.579	
8,267.7	7,222.1	9,258.0	7,183.1	37.0	61.7	-65.16	929.8	1,724.4	1,017.3	976.7	40.57	25.072	
8,300.0	7,221.7	9,259.0	7,183.1	37.0	61.7	-65.83	929.8	1,725.4	1,049.5	1,008.8	40.71	25.781	
8,366.1	7,220.7	9,261.0	7,183.1	37.0	61.7	-67.11	929.7	1,727.4	1,115.6	1,074.6	41.06	27.170	
8,400.0	7,220.3	9,262.0	7,183.1	37.0	61.8	-67.72	929.7	1,728.4	1,149.5	1,108.3	41.24	27.872	
8,464.5	7,219.4	9,264.0	7,183.1	37.1	61.8	-68.80	929.7	1,730.4	1,214.0	1,172.4	41.65	29.146	
8,500.0	7,218.9	9,265.1	7,183.1	37.1	61.9	-69.35	929.6	1,731.4	1,249.4	1,207.6	41.88	29.836	
8,563.0	7,218.0	9,267.0	7,183.1	37.2	61.9	-70.26	929.6	1,733.3	1,312.4	1,270.0	42.35	30.992	
8,600.0	7,217.5	9,268.1	7,183.1	37.3	61.9	-70.76	929.5	1,734.4	1,349.4	1,306.8	42.62	31.660	
8,661.4	7,216.7	9,269.9	7,183.1	37.5	62.0	-71.54	929.5	1,736.3	1,410.8	1,367.6	43.14	32.700	
8,700.0	7,216.1	9,271.1	7,183.1	37.6	62.0	-72.00	929.4	1,737.5	1,449.3	1,405.9	43.47	33.340	
8,759.8	7,215.3	9,272.9	7,183.1	37.8	62.1	-72.67	929.4	1,739.3	1,509.1	1,465.1	44.04	34.268	
8,800.0	7,214.8	9,274.1	7,183.1	38.0	62.1	-73.09	929.3	1,740.5	1,549.3	1,504.9	44.42	34.876	
8,858.2	7,214.0	9,275.9	7,183.1	38.3	62.1	-73.67	929.3	1,742.2	1,607.5	1,562.5	45.03	35.699	
8,900.0	7,213.4	9,277.1	7,183.1	38.5	62.2	-74.06	929.3	1,743.5	1,649.2	1,603.8	45.47	36.273	
8,956.7	7,212.6	9,278.8	7,183.1	38.8	62.2	-74.57	929.2	1,745.2	1,705.9	1,659.8	46.11	36.999	
9,000.0	7,212.0	9,280.2	7,183.1	39.1	62.3	-74.93	929.2	1,746.5	1,749.2	1,702.6	46.60	37.538	
9,055.1	7,211.2	9,281.8	7,183.1	39.5	62.3	-75.37	929.1	1,748.2	1,804.3	1,757.0	47.26	38.176	
9,100.0	7,210.6	9,283.2	7,183.1	39.8	62.3	-75.71	929.1	1,749.5	1,849.1	1,801.3	47.81	38.681	
9,153.5	7,209.9	9,284.8	7,183.1	40.3	62.4	-76.09	929.0	1,751.2	1,902.6	1,854.2	48.49	39.240	
9,200.0	7,209.2	9,286.2	7,183.1	40.7	62.4	-76.41	929.0	1,752.6	1,949.1	1,900.0	49.08	39.710	
9,251.9	7,208.5	9,287.8	7,183.1	41.1	62.5	-76.75	928.9	1,754.1	2,001.0	1,951.2	49.78	40.199	
9,300.0	7,207.9	9,289.2	7,183.1	41.6	62.5	-77.05	928.9	1,755.6	2,049.0	1,998.6	50.42	40.637	
9,350.4	7,207.2	9,290.7	7,183.1	42.1	62.5	-77.35	928.8	1,757.1	2,099.4	2,048.3	51.12	41.065	

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

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - PROP HZ CHANDLER FARMS HD 20-389HN - Wellbore #1 - W

Offset Site Error: 0.0 usft

Survey Program: 16-MWD

Offset Well Error: 0.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,400.0	7,206.5	9,292.2	7,183.1	42.6	62.6	-77.63	928.8	1,758.6	2,149.0	2,097.2	51.82	41.472	
9,448.8	7,205.8	9,293.7	7,183.1	43.1	62.6	-77.90	928.8	1,760.1	2,197.8	2,145.3	52.52	41.845	
9,500.0	7,205.1	9,295.2	7,183.1	43.7	62.7	-78.17	928.7	1,761.6	2,248.9	2,195.7	53.26	42.224	
9,547.2	7,204.4	9,296.7	7,183.1	44.2	62.7	-78.40	928.7	1,763.0	2,296.1	2,242.2	53.96	42.550	
9,600.0	7,203.7	9,298.3	7,183.1	44.8	62.8	-78.66	928.6	1,764.6	2,348.9	2,294.2	54.75	42.903	
9,645.6	7,203.1	9,299.6	7,183.1	45.4	62.8	-78.87	928.6	1,766.0	2,394.5	2,339.1	55.45	43.187	
9,700.0	7,202.3	9,301.3	7,183.1	46.1	62.8	-79.11	928.5	1,767.6	2,448.9	2,392.6	56.28	43.515	
9,744.1	7,201.7	9,302.6	7,183.1	46.6	62.9	-79.30	928.5	1,769.0	2,492.9	2,435.9	56.96	43.764	
9,800.0	7,201.0	9,304.3	7,183.1	47.3	62.9	-79.52	928.4	1,770.7	2,548.8	2,491.0	57.84	44.069	
9,842.5	7,200.4	9,305.6	7,183.1	47.9	62.9	-79.69	928.4	1,771.9	2,591.3	2,532.8	58.51	44.286	
9,900.0	7,199.6	9,307.3	7,183.1	48.7	63.0	-79.91	928.3	1,773.7	2,648.8	2,589.3	59.43	44.571	
9,940.9	7,199.0	9,308.6	7,183.1	49.2	63.0	-80.06	928.3	1,774.9	2,689.7	2,629.6	60.09	44.761	
10,000.0	7,198.2	9,310.3	7,183.1	50.1	63.1	-80.27	928.3	1,776.7	2,748.7	2,687.7	61.05	45.026	
10,039.3	7,197.7	9,311.5	7,183.1	50.6	63.1	-80.40	928.2	1,777.9	2,788.0	2,726.3	61.69	45.192	
10,100.0	7,196.8	9,313.4	7,183.1	51.5	63.2	-80.60	928.2	1,779.7	2,848.7	2,786.0	62.69	45.440	
10,137.8	7,196.3	9,314.5	7,183.1	52.0	63.2	-80.72	928.1	1,780.8	2,886.4	2,823.1	63.32	45.586	
10,200.0	7,195.4	9,316.4	7,183.1	52.9	63.2	-80.92	928.1	1,782.7	2,948.6	2,884.3	64.35	45.818	
10,236.2	7,194.9	9,317.5	7,183.1	53.5	63.3	-81.02	928.0	1,783.8	2,984.8	2,919.8	64.96	45.945	
10,300.0	7,194.1	9,319.4	7,183.1	54.4	63.3	-81.21	928.0	1,785.7	3,048.6	2,982.5	66.04	46.163	
10,334.6	7,193.6	9,320.4	7,183.1	55.0	63.4	-81.30	927.9	1,786.8	3,083.2	3,016.6	66.63	46.275	
10,400.0	7,192.7	9,322.4	7,183.1	56.0	63.4	-81.48	927.9	1,788.8	3,148.5	3,080.8	67.74	46.479	
10,433.0	7,192.2	9,323.4	7,183.1	56.5	63.4	-81.57	927.9	1,789.8	3,181.6	3,113.3	68.31	46.576	
10,500.0	7,191.3	9,325.4	7,183.1	57.5	63.5	-81.74	927.8	1,791.8	3,248.5	3,179.0	69.46	46.768	
10,531.5	7,190.9	9,326.4	7,183.1	58.0	63.5	-81.82	927.8	1,792.7	3,279.9	3,209.9	70.00	46.854	
10,600.0	7,189.9	9,328.5	7,183.1	59.1	63.6	-81.98	927.7	1,794.8	3,348.4	3,277.2	71.19	47.035	
10,629.9	7,189.5	9,329.4	7,183.1	59.6	63.6	-82.05	927.7	1,795.7	3,378.3	3,306.6	71.71	47.109	
10,700.0	7,188.5	9,331.5	7,183.1	60.7	63.7	-82.21	927.6	1,797.8	3,448.4	3,375.4	72.94	47.280	
10,728.3	7,188.1	9,332.3	7,183.1	61.1	63.7	-82.27	927.6	1,798.7	3,476.7	3,403.3	73.43	47.345	
10,800.0	7,187.2	9,334.5	7,183.1	62.3	63.7	-82.42	927.5	1,800.8	3,548.3	3,473.6	74.69	47.506	
10,826.7	7,186.8	9,335.3	7,183.1	62.7	63.8	-82.48	927.5	1,801.6	3,575.1	3,499.9	75.16	47.563	
10,900.0	7,185.8	9,337.5	7,183.1	63.9	63.8	-82.63	927.4	1,803.8	3,648.3	3,571.8	76.46	47.715	
10,925.2	7,185.4	9,338.3	7,183.1	64.3	63.8	-82.68	927.4	1,804.6	3,673.5	3,596.5	76.91	47.765	
11,000.0	7,184.4	9,340.5	7,183.1	65.6	63.9	-82.82	927.3	1,806.9	3,748.2	3,670.0	78.24	47.909	
11,023.6	7,184.1	9,341.2	7,183.1	66.0	63.9	-82.87	927.3	1,807.6	3,771.8	3,693.2	78.66	47.953	
11,100.0	7,183.0	9,343.5	7,183.1	67.2	64.0	-83.01	927.2	1,809.9	3,848.2	3,768.2	80.02	48.089	
11,122.0	7,182.7	9,344.2	7,183.1	67.6	64.0	-83.05	927.2	1,810.5	3,870.2	3,789.8	80.42	48.127	
11,200.0	7,181.6	9,346.6	7,183.1	68.9	64.1	-83.18	927.2	1,812.9	3,948.2	3,866.3	81.82	48.256	
11,220.4	7,181.3	9,347.2	7,183.1	69.3	64.1	-83.21	927.1	1,813.5	3,968.6	3,886.4	82.18	48.289	
11,300.0	7,180.2	9,349.6	7,183.1	70.6	64.1	-83.35	927.1	1,815.9	4,048.1	3,964.5	83.62	48.412	
11,318.9	7,180.0	9,350.1	7,183.1	70.9	64.2	-83.38	927.1	1,816.5	4,067.0	3,983.0	83.96	48.440	
11,400.0	7,178.9	9,352.6	7,183.1	72.3	64.2	-83.50	927.0	1,818.9	4,148.1	4,062.6	85.43	48.557	
11,417.3	7,178.6	9,353.1	7,183.1	72.6	64.2	-83.53	927.0	1,819.5	4,165.4	4,079.6	85.74	48.581	
11,500.0	7,177.5	9,355.6	7,183.1	74.0	64.3	-83.65	926.9	1,821.9	4,248.0	4,160.8	87.24	48.693	
11,515.7	7,177.3	9,356.1	7,183.1	74.3	64.3	-83.68	926.9	1,822.4	4,263.7	4,176.2	87.53	48.714	
11,600.0	7,176.1	9,358.6	7,183.1	75.7	64.4	-83.80	926.8	1,825.0	4,348.0	4,258.9	89.06	48.820	
11,614.1	7,175.9	9,359.1	7,183.1	76.0	64.4	-83.82	926.8	1,825.4	4,362.1	4,272.8	89.32	48.837	
11,700.0	7,174.7	9,361.6	7,183.1	77.5	64.5	-83.93	926.7	1,828.0	4,447.9	4,357.0	90.89	48.939	
11,712.6	7,174.5	9,362.0	7,183.1	77.7	64.5	-83.95	926.7	1,828.4	4,460.5	4,369.4	91.12	48.954	
11,800.0	7,173.3	9,364.7	7,183.1	79.2	64.5	-84.07	926.6	1,831.0	4,547.9	4,455.2	92.72	49.051	
11,811.0	7,173.2	9,365.0	7,183.1	79.4	64.6	-84.08	926.6	1,831.3	4,558.9	4,466.0	92.92	49.063	
11,900.0	7,172.0	9,367.7	7,183.1	81.0	64.6	-84.19	926.5	1,834.0	4,647.8	4,553.3	94.55	49.156	
11,909.4	7,171.8	9,368.0	7,183.1	81.1	64.6	-84.20	926.5	1,834.3	4,657.3	4,562.5	94.73	49.166	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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

Offset Design NW NE SEC 30 T4N R67W 6th P.M. - PROP HZ CHANDLER FARMS HD 20-389HN - Wellbore #1 - W

Offset Site Error: 0.0 usft

Survey Program: 16-MWD

Offset Well Error: 0.0 usft

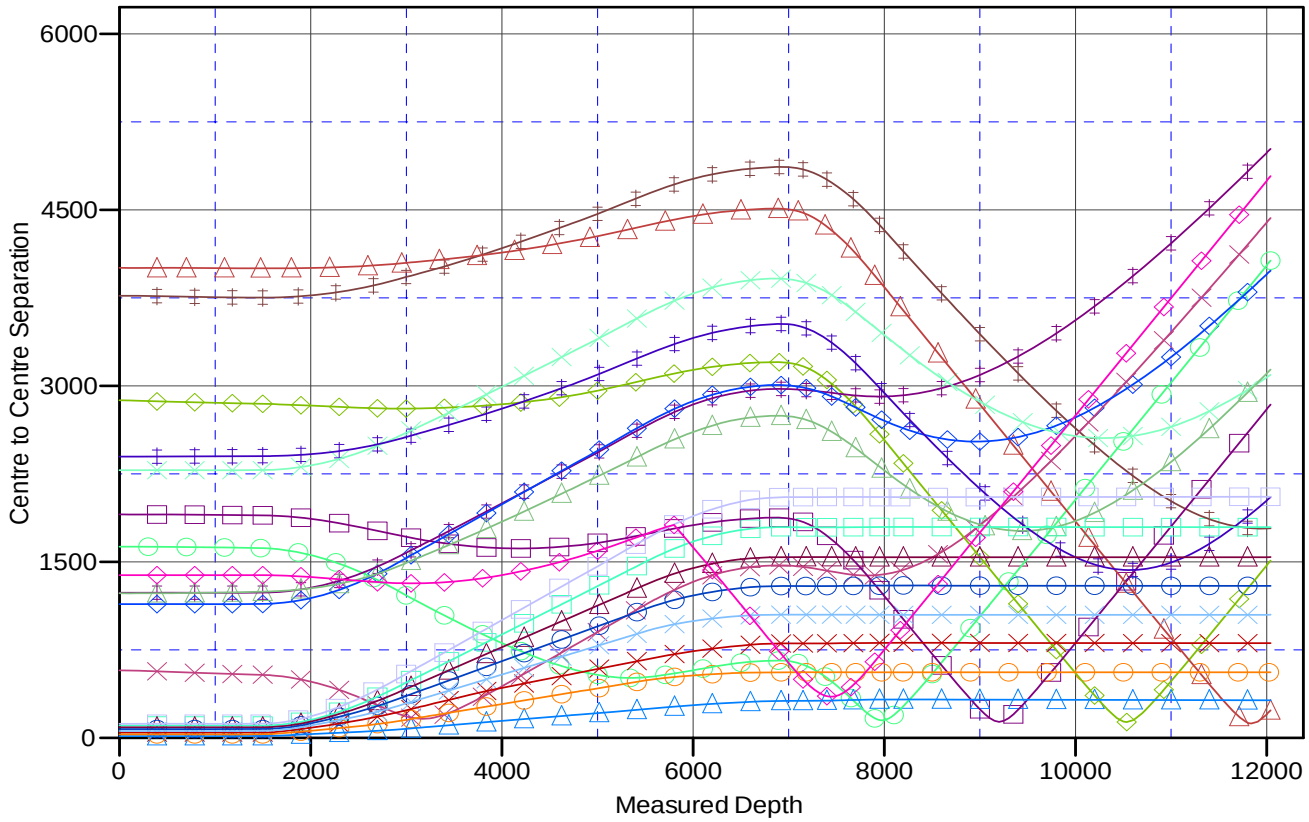
Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,000.0	7,170.6	9,370.7	7,183.1	82.7	64.7	-84.31	926.4	1,837.0	4,747.8	4,651.4	96.39	49.255	
12,007.8	7,170.5	9,370.9	7,183.1	82.9	64.7	-84.32	926.4	1,837.3	4,755.6	4,659.1	96.54	49.263	
12,041.2	7,170.0	9,371.9	7,183.1	83.5	64.7	-84.36	926.4	1,838.3	4,789.0	4,691.8	97.15	49.294	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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 Depths are relative to KB-EST @ 4989.0usft (Original Well E
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: OLSON 30U-343 - Slot OLSON 30U-343
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.37°

Ladder Plot



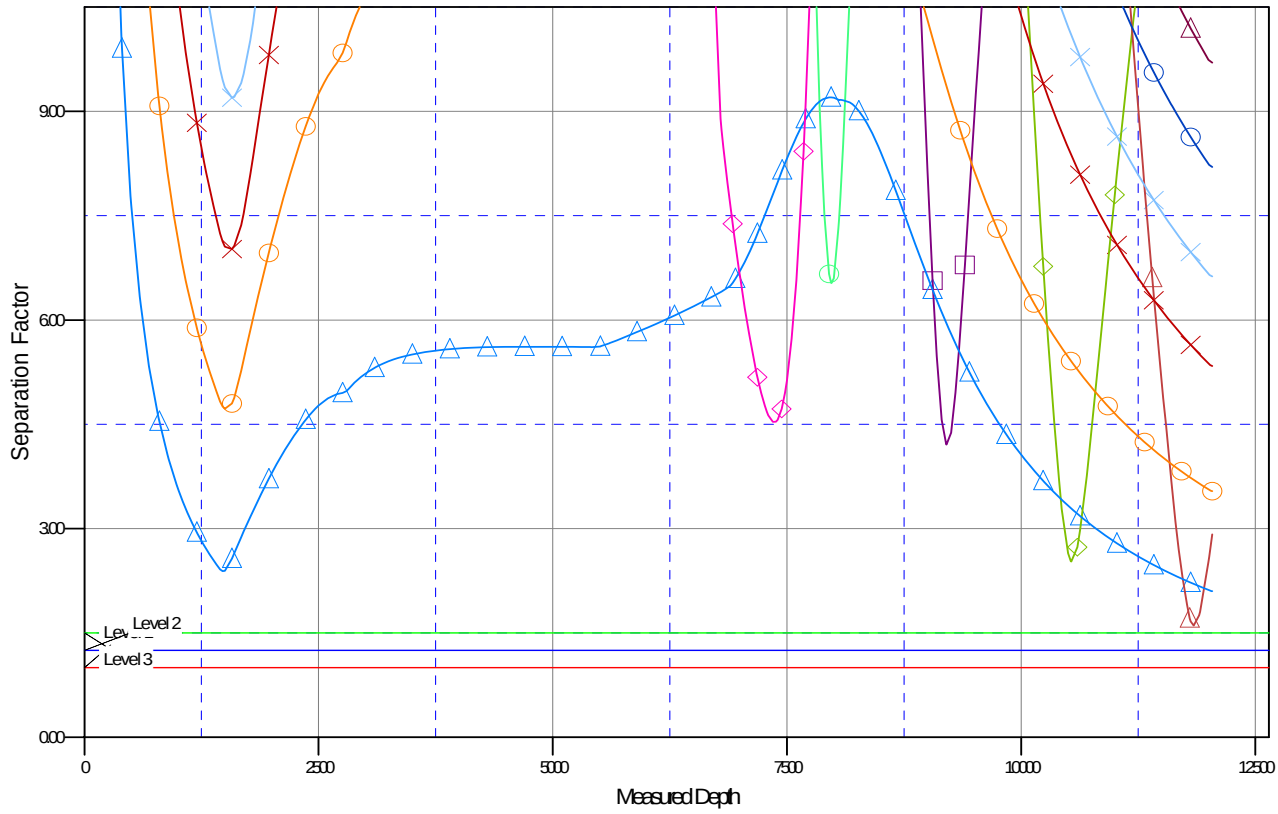
L E G E N D

#1, Wellbore #1 V0	EXIST VERT SHULTZ 22-30, Wellbore #1, Design #1 V0	OLSON 30R-203, ORIGINAL W
1, Wellbore #1 V0	EXIST VERT SHULTZ 23-30, Wellbore #1, Design #1 V0	OLSON 30R-223, ORIGINAL W
#1, Wellbore #1 V0	EXIST VERT SHULTZ FARM 30-32, Wellbore #1, Wellbore #1 V0	OLSON 30R-243, ORIGINAL W
3, Wellbore #1, Wellbore #1 V0	EXIST VERT SHULTZ FARM 30-33, Wellbore #1, Wellbore #1 V0	OLSON 30R-303, ORIGINAL W
, Wellbore #1, Wellbore #1 V0	OLSON 30M-223, ORIGINAL WELLBORE, PROPOSAL #2 V0	OLSON 30R-343, ORIGINAL W
#1, Wellbore #1 V0	OLSON 30M-323, ORIGINAL WELLBORE, PROPOSAL #2 V0	PROP HZ CHANDLER FARM
#1, Design #1 V0	OLSON 30M-403, ORIGINAL WELLBORE, PROPOSAL #2 V0	

Company:	PDC ENERGY	**Local Co-ordinate Reference:**	Well OLSON 30U-343 - Slot OLSON 30U-343
Project:	WELD COUNTY, COLORADO	**TVD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Reference Site:	NW NE SEC 30 T4N R67W 6th P.M.	**MD Reference:**	KB-EST @ 4989.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	OLSON 30U-343	**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 Depths are relative to KB-EST @ 4989.0usft (Original Well E
Coordinates are relative to: OLSON 30U-343 - Slot OLSON 30U-343
Offset Depths are relative to Offset Datum
Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000
Grid Convergence at Surface is: 0.37°

Separation Factor Plot



LEGEND

- #1, Wellbore #1 V0
- 1, Wellbore #1 V0
- #1, Wellbore #1 V0
- 3, Wellbore #1, Wellbore #1 V0
- , Wellbore #1, Wellbore #1 V0
- #1, Wellbore #1 V0
- #1, Design #1 V0
- EXIST VERT SHULTZ 22-30, Wellbore #1, Design #1 V0
- EXIST VERT SHULTZ 23-30, Wellbore #1, Design #1 V0
- EXIST VERT SHULTZ FARM 30-32, Wellbore #1, Wellbore #1 V0
- EXIST VERT SHULTZ FARM 30-33, Wellbore #1, Wellbore #1 V0
- OLSON 30M-223, ORIGINAL WELLBORE, PROPOSAL #2 V0
- OLSON 30M-323, ORIGINAL WELLBORE, PROPOSAL #2 V0
- OLSON 30M-403, ORIGINAL WELLBORE, PROPOSAL #2 V0
- OLSON 30R-203, ORIGINAL W
- OLSON 30R-223, ORIGINAL W
- OLSON 30R-243, ORIGINAL W
- OLSON 30R-303, ORIGINAL W
- OLSON 30R-343, ORIGINAL W
- PROP HZ CHANDLER FARM