



Project: **WELD COUNTY, COLORADO (TRUE)**
Site: **NE SW SEC 16 T5N R64W 6th P.M. (SCHRUTE)**
Well: **SCHRUTE 10N**
Wellbore: **Wellbore #1**
Design: **PROPOSAL #1**

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
1200.0	0.00	0.00	1200.0	0.0	0.0	0.0	0.0	START NUDGE (3.00°/100ft)
2414.4	36.43	233.46	2334.2	-222.2	-299.9	-235.4	373.2	EOB TO 36.43° INC
6573.2	36.43	233.46	5680.3	-1692.7	-2284.1	-1793.4	2843.0	KOP (8.00°/100ft)
8058.3	90.32	89.96	6648.0	-2120.1	-1650.8	-1073.9	3841.7	HZ LANDING POINT/EP
17969.5	90.32	89.96	6593.0	-2113.1	8260.2	8526.2	13752.7	TD/BHL



Azimuths to True North
Magnetic North: 7.90°

Magnetic Field
Strength: 52201.4nT
Dip Angle: 66.84°
Date: 4/30/2019
Model: IGRF2015

SHL FOOTAGE: SEC 16

2265	FSL	1837	FWL
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BHL FOOTAGE: SEC 15

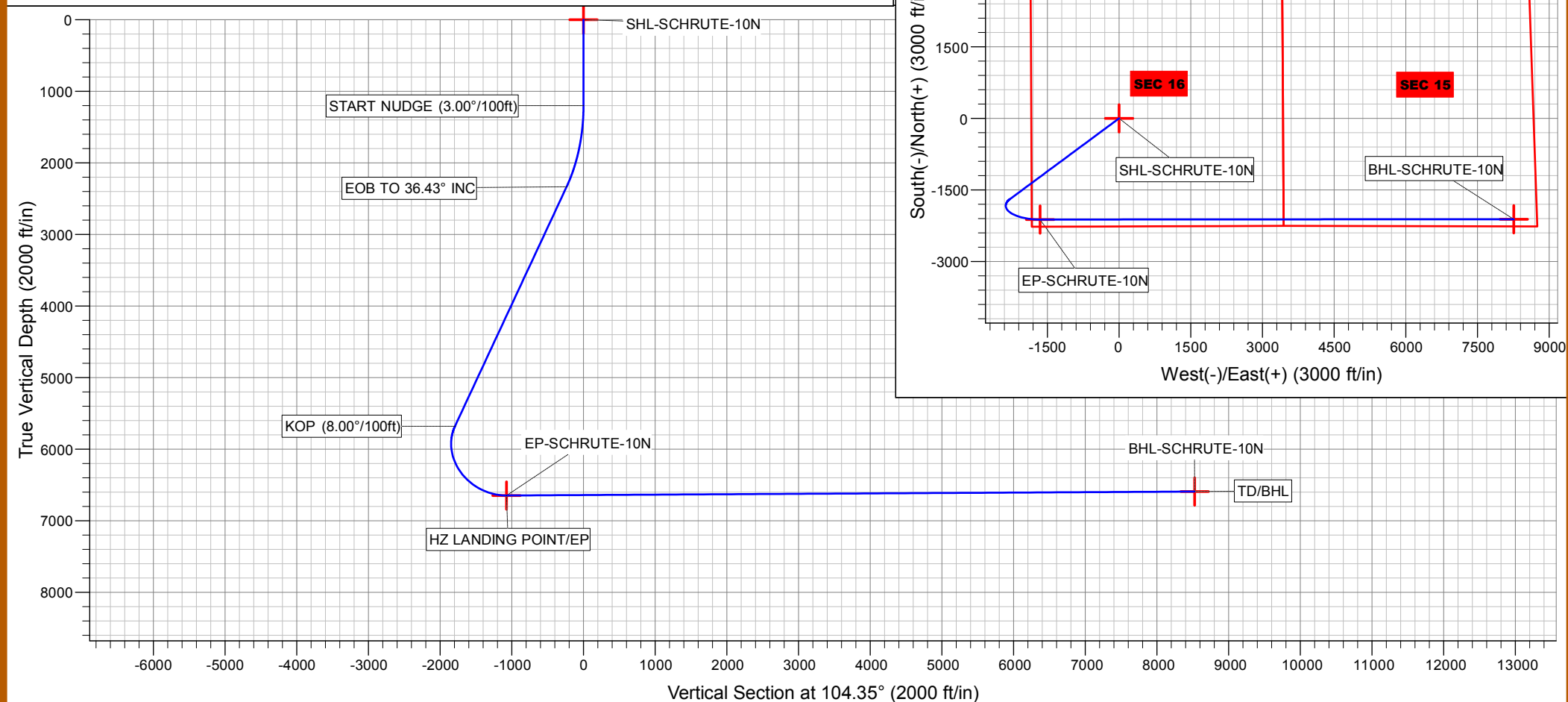
150	FSL	485	FEL
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EP FOOTAGE: SEC 16

150	FSL	175	FWL
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DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
SHL-SCHRUTE-10N	0.0	0.0	0.0	40.3982908	-104.5578339
BHL-SCHRUTE-10N	6593.0	-2113.1	8260.2	40.3924869	-104.5281798
EP-SCHRUTE-10N	6648.0	-2120.1	-1650.8	40.3924713	-104.5637604



PDC ENERGY

**WELD COUNTY, COLORADO (TRUE)
NE SW SEC 16 T5N R64W 6th P.M. (SCHRUTE)
SCHRUTE 10N**

**Wellbore #1
PROPOSAL #1**

Anticollision Report

02 May, 2019



Company:	PDC ENERGY	Local Co-ordinate Reference:	Well SCHRUTE 10N - Slot SCHRUTE 10N
Project:	WELD COUNTY, COLORADO (TRUE)	TVD Reference:	WELL @ 4633.0ft (Original Well Elev)
Reference Site:	NE SW SEC 16 T5N R64W 6th P.M. (SCHRUTE)	MD Reference:	WELL @ 4633.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	SCHRUTE 10N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM
Reference Design:	PROPOSAL #1	Offset TVD Reference:	Offset Datum

Reference	PROPOSAL #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum ellipse separation of 1,000.0 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	5/2/2019		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	17,969.5	PROPOSAL #1 (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
NW NW SEC. 16 T5N R64W 6th P.M. (WATERMELON)						
ABDN VERT SOLIS #43-17 - Wellbore #1 - Wellbore #1	5,849.6	5,138.8	1,096.5	1,042.5	20.316	CC
ABDN VERT SOLIS #43-17 - Wellbore #1 - Wellbore #1	5,900.0	5,180.5	1,096.9	1,042.3	20.112	ES
ABDN VERT SOLIS #43-17 - Wellbore #1 - Wellbore #1	6,200.0	5,414.3	1,115.9	1,058.8	19.526	SF
ABDN VERT SOLIS #44-17 - Wellbore #1 - Wellbore #1	6,302.0	5,459.9	235.1	175.1	3.918	CC, ES, SF
EXIST HZ CECILS KERSEY FARM #17B-212 - Wellbore	7,077.3	11,213.4	1,265.9	1,100.1	7.636	CC
EXIST HZ CECILS KERSEY FARM #17B-212 - Wellbore	7,150.0	11,218.0	1,267.9	1,098.5	7.483	ES
EXIST HZ CECILS KERSEY FARM #17B-212 - Wellbore	7,350.0	11,218.0	1,293.7	1,116.7	7.312	SF
EXIST HZ CECILS KERSEY FARM #17B-302 - Wellbore	7,213.9	11,362.0	1,117.5	950.5	6.691	CC
EXIST HZ CECILS KERSEY FARM #17B-302 - Wellbore	7,250.0	11,362.0	1,118.1	948.9	6.611	ES
EXIST HZ CECILS KERSEY FARM #17B-302 - Wellbore	7,450.0	11,362.0	1,142.6	965.0	6.432	SF
EXIST HZ CECILS KERSEY FARM #17K-232 - Wellbore	6,776.5	11,295.0	1,964.5	1,798.6	11.840	CC
EXIST HZ CECILS KERSEY FARM #17K-232 - Wellbore	6,850.0	11,295.0	1,965.9	1,797.6	11.684	ES
EXIST HZ CECILS KERSEY FARM #17K-232 - Wellbore	7,250.0	11,295.0	2,017.7	1,839.7	11.336	SF
EXIST HZ CECILS KERSEY FARM #17K-332 - Wellbore	6,921.5	11,371.3	1,771.9	1,605.9	10.669	CC
EXIST HZ CECILS KERSEY FARM #17K-332 - Wellbore	7,000.0	11,369.3	1,773.6	1,604.7	10.500	ES
EXIST HZ CECILS KERSEY FARM #17K-332 - Wellbore	7,350.0	11,372.0	1,819.3	1,640.9	10.196	SF
EXIST HZ CECILS KERSEY FARM #17K-402 - Wellbore	6,831.1	11,124.3	2,264.2	2,103.4	14.083	CC
EXIST HZ CECILS KERSEY FARM #17K-402 - Wellbore	6,900.0	11,119.5	2,265.4	2,102.7	13.929	ES
EXIST HZ CECILS KERSEY FARM #17K-402 - Wellbore	7,400.0	11,210.0	2,333.3	2,159.3	13.404	SF
EXIST HZ GILLAM #18X-102 - Wellbore #1 - Wellbore #	7,252.4	12,169.0	898.1	705.9	4.672	CC
EXIST HZ GILLAM #18X-102 - Wellbore #1 - Wellbore #	7,300.0	12,169.0	899.4	703.2	4.583	ES
EXIST HZ GILLAM #18X-102 - Wellbore #1 - Wellbore #	7,450.0	12,169.0	920.5	715.3	4.486	SF
EXIST HZ GILLAM #18X-232 - Wellbore #1 - Wellbore #	7,377.9	12,156.0	495.0	312.3	2.710	CC
EXIST HZ GILLAM #18X-232 - Wellbore #1 - Wellbore #	7,450.0	12,156.0	501.1	309.4	2.614	ES, SF
EXIST HZ GILLAM #18X-332 - Wellbore #1 - Wellbore #	7,365.9	12,231.0	724.8	536.8	3.855	CC
EXIST HZ GILLAM #18X-332 - Wellbore #1 - Wellbore #	7,400.0	12,231.0	725.8	534.3	3.790	ES
EXIST HZ GILLAM #18X-332 - Wellbore #1 - Wellbore #	7,500.0	12,231.0	738.9	540.2	3.718	SF
EXIST HZ GILLAM #18Y-202 - Wellbore #1 - Wellbore #	7,517.1	12,242.0	267.7	193.4	3.606	CC, ES, SF
EXIST HZ GILLAM #18Y-312 - Wellbore #1 - Wellbore #	7,496.6	12,233.0	335.7	222.0	2.953	CC
EXIST HZ GILLAM #18Y-312 - Wellbore #1 - Wellbore #	7,550.0	12,233.0	341.3	219.2	2.794	ES, SF

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NE SW SEC 16 T5N R64W 6th P.M. (SCHRUTE)						
ABDN HZ CHESNUT 21T-241ST - Wellbore #1 - Wellbo	11,361.6	11,382.0	640.5	494.8	4.397	CC
ABDN HZ CHESNUT 21T-241ST - Wellbore #1 - Wellbo	11,400.0	11,382.0	641.7	491.6	4.276	ES
ABDN HZ CHESNUT 21T-241ST - Wellbore #1 - Wellbo	11,500.0	11,382.0	655.3	495.6	4.103	SF
ABDN HZ KLEIN 19N-202ST - Wellbore #1 - Wellbore #1	9,111.4	15,557.4	1,314.2	998.2	4.159	CC
ABDN HZ KLEIN 19N-202ST - Wellbore #1 - Wellbore #1	10,900.0	17,302.0	1,345.9	942.9	3.340	ES, SF
ABDN VERT KOHLER 1-21 - Wellbore #1 - Wellbore #1	12,637.3	6,579.8	737.3	588.1	4.940	CC, ES
ABDN VERT KOHLER 1-21 - Wellbore #1 - Wellbore #1	12,700.0	6,581.6	740.0	589.5	4.918	SF
ABDN VERT LOUSTALET #15-1 - Wellbore #1 - Wellbor	14,046.1	6,558.0	1,844.2	1,658.2	9.916	CC
ABDN VERT LOUSTALET #15-1 - Wellbore #1 - Wellbor	14,100.0	6,557.6	1,845.0	1,657.8	9.853	ES
ABDN VERT LOUSTALET #15-1 - Wellbore #1 - Wellbor	14,300.0	6,556.5	1,861.6	1,671.0	9.767	SF
ABDN VERT LOUSTALET #B15-14 - Wellbore #1 - Desi	15,334.5	6,558.6	512.2	162.1	1.463	Level 3, CC, ES, SF
ABDN VERT LOUSTALET #B15-15 - Wellbore #1 - Desi	16,419.8	6,551.6	484.8	105.0	1.276	Level 3, CC, ES, SF
ABDN VERT LOUSTALET #B15-16 - Wellbore #1 - Wellb	17,615.7	6,549.6	380.3	96.6	1.340	Level 3, CC, ES, SF
ABDN VERT LOUSTALET #B15-9 - Wellbore #1 - Desig	17,655.3	6,542.8	1,709.8	1,296.1	4.133	CC
ABDN VERT LOUSTALET #B15-9 - Wellbore #1 - Desig	17,700.0	6,542.5	1,710.4	1,295.7	4.125	ES
ABDN VERT LOUSTALET #B15-9 - Wellbore #1 - Desig	17,800.0	6,541.9	1,715.9	1,299.8	4.124	SF
ABDN VERT PATRIOT #B16-14 - Wellbore #1 - Wellbore	9,821.5	6,611.4	325.0	245.3	4.079	CC, ES
ABDN VERT PATRIOT #B16-14 - Wellbore #1 - Wellbore	9,900.0	6,608.4	334.4	251.9	4.054	SF
ABDN VERT PATRIOT #B16-3 - Wellbore #1 - Wellbore	100.0	55.7	2,541.3	2,541.2	10,000.000	CC
ABDN VERT PATRIOT #B16-3 - Wellbore #1 - Wellbore	1,200.0	1,152.7	2,543.8	2,540.5	783.565	ES
ABDN VERT PATRIOT #B16-3 - Wellbore #1 - Wellbore	12,300.0	6,800.0	5,214.1	5,088.8	41.632	SF
ABDN VERT PATRIOT #B16-5 - Wellbore #1 - Wellbore	2,277.3	2,217.7	1,647.0	1,638.7	198.383	CC
ABDN VERT PATRIOT #B16-5 - Wellbore #1 - Wellbore	2,300.0	2,237.0	1,647.1	1,638.5	193.149	ES
ABDN VERT PATRIOT #B16-5 - Wellbore #1 - Wellbore	10,200.0	6,806.0	3,602.5	3,517.3	42.272	SF
ABDN VERT PATRIOT #B16-9 - Wellbore #1 - Wellbore	12,471.5	6,566.2	1,919.1	1,775.0	13.317	CC
ABDN VERT PATRIOT #B16-9 - Wellbore #1 - Wellbore	12,500.0	6,566.0	1,919.3	1,774.5	13.251	ES
ABDN VERT PATRIOT #B16-9 - Wellbore #1 - Wellbore	12,800.0	6,563.0	1,947.0	1,796.4	12.925	SF
ABDN VERT PLATTE VALLEY 2-21 - Wellbore #1 - Well	11,227.9	6,582.9	889.9	777.6	7.927	CC, ES
ABDN VERT PLATTE VALLEY 2-21 - Wellbore #1 - Well	11,300.0	6,581.5	892.8	779.3	7.867	SF
EXIST DD BAUER DEBUS 22AD - Wellbore #1 - Wellbo	14,510.3	6,629.8	1,495.0	1,281.5	7.002	CC, ES
EXIST DD BAUER DEBUS 22AD - Wellbore #1 - Wellbo	14,700.0	6,629.5	1,507.0	1,290.1	6.946	SF
EXIST DD BAUER DEBUS 22JD - Wellbore #1 - Wellbor	14,493.6	6,647.3	259.9	46.8	1.219	Level 2, CC
EXIST DD BAUER DEBUS 22JD - Wellbore #1 - Wellbor	14,500.0	6,647.2	260.0	46.5	1.218	Level 2, ES, SF
EXIST DD BAUER DEBUS 22MD - Wellbore #1 - Wellbo	15,759.7	6,647.4	214.0	-35.7	0.857	Level 1, CC, ES, SF
EXIST DD BAUER DEBUS 22ND - Wellbore #1 - Wellbo	15,768.0	6,673.5	1,439.5	1,189.4	5.755	CC
EXIST DD BAUER DEBUS 22ND - Wellbore #1 - Wellbo	15,800.0	6,673.6	1,439.9	1,188.6	5.731	ES
EXIST DD BAUER DEBUS 22ND - Wellbore #1 - Wellbo	15,900.0	6,674.0	1,445.5	1,191.5	5.691	SF
EXIST DD DOUGHMAN #22RD - Wellbore #1 - Wellbore	17,151.2	6,641.6	245.9	-40.5	0.859	Level 1, CC, ES, SF
EXIST DD DOUGHMAN 22VD - Wellbore #1 - Wellbore	17,969.5	6,635.2	1,523.8	1,229.8	5.182	CC, ES, SF
EXIST DD FRENZEL B 15-6 - Wellbore #1 - Wellbore #1	15,227.6	6,876.7	3,256.2	3,005.1	12.967	CC
EXIST DD FRENZEL B 15-6 - Wellbore #1 - Wellbore #1	15,300.0	6,877.4	3,257.0	3,003.8	12.866	ES
EXIST DD FRENZEL B 15-6 - Wellbore #1 - Wellbore #1	15,800.0	6,881.9	3,306.1	3,042.2	12.528	SF
EXIST DD GLOVER USX B 15-02CD - Wellbore #1 - We	16,357.8	5,177.0	4,142.3	3,901.2	17.183	CC
EXIST DD GLOVER USX B 15-02CD - Wellbore #1 - We	16,500.0	5,177.0	4,144.7	3,900.4	16.966	ES
EXIST DD GLOVER USX B 15-02CD - Wellbore #1 - We	17,300.0	5,136.7	4,247.6	3,990.3	16.513	SF
EXIST DD KLEIN B15-13D - Wellbore #1 - Wellbore #1	13,841.7	6,905.4	476.7	266.5	2.268	CC, ES, SF
EXIST DD P&H 22CD - Wellbore #1 - Wellbore #1	17,183.3	6,716.2	1,460.6	1,171.8	5.058	CC
EXIST DD P&H 22CD - Wellbore #1 - Wellbore #1	17,200.0	6,716.7	1,460.7	1,171.5	5.051	ES
EXIST DD P&H 22CD - Wellbore #1 - Wellbore #1	17,300.0	6,719.3	1,465.2	1,174.0	5.031	SF
EXIST HZ CHESNUT 21T-321 - Wellbore #1 - Wellbore	12,153.9	11,342.0	641.3	489.2	4.217	CC
EXIST HZ CHESNUT 21T-321 - Wellbore #1 - Wellbore	12,200.0	11,342.0	642.9	486.3	4.105	ES
EXIST HZ CHESNUT 21T-321 - Wellbore #1 - Wellbore	12,300.0	11,342.0	657.7	492.1	3.971	SF

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

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Summary						
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NE SW SEC 16 T5N R64W 6th P.M. (SCHRUTE)						
EXIST HZ CHESNUT 21Q-321 - Wellbore #1 - Wellbore	11,091.9	11,710.0	646.0	501.2	4.463	CC
EXIST HZ CHESNUT 21Q-321 - Wellbore #1 - Wellbore	11,200.0	11,710.0	654.9	499.5	4.213	ES
EXIST HZ CHESNUT 21Q-321 - Wellbore #1 - Wellbore	11,300.0	11,710.0	678.6	516.1	4.176	SF
EXIST HZ CHESNUT 21T-201 - Wellbore #1 - Wellbore	11,928.3	11,172.0	642.0	491.7	4.272	CC
EXIST HZ CHESNUT 21T-201 - Wellbore #1 - Wellbore	12,000.0	11,172.0	645.9	488.0	4.090	ES
EXIST HZ CHESNUT 21T-201 - Wellbore #1 - Wellbore	12,100.0	11,172.0	664.5	497.8	3.987	SF
EXIST HZ CHESNUT 21T-221 - Wellbore #1 - Survey #1	12,399.3	11,155.0	641.7	485.1	4.098	CC
EXIST HZ CHESNUT 21T-221 - Wellbore #1 - Survey #1	12,500.0	11,155.0	649.6	484.3	3.931	ES
EXIST HZ CHESNUT 21T-221 - Wellbore #1 - Survey #1	12,600.0	11,155.0	672.4	499.8	3.897	SF
EXIST HZ CHESNUT 21T-301 - Wellbore #1 - Wellbore	11,627.0	11,103.0	896.6	749.6	6.099	CC
EXIST HZ CHESNUT 21T-301 - Wellbore #1 - Wellbore	11,700.0	11,103.0	899.5	746.6	5.883	ES
EXIST HZ CHESNUT 21T-301 - Wellbore #1 - Wellbore	11,900.0	11,103.0	937.2	771.7	5.662	SF
EXIST HZ CHESNUT 21Y-341 - Wellbore #1 - Wellbore	12,685.4	11,272.0	640.2	479.0	3.970	CC
EXIST HZ CHESNUT 21Y-341 - Wellbore #1 - Wellbore	12,700.0	11,272.0	640.4	478.5	3.956	ES
EXIST HZ CHESNUT 21Y-341 - Wellbore #1 - Wellbore	12,900.0	11,272.0	675.3	499.9	3.852	SF
EXIST HZ CHESNUT 21Y-401 - Wellbore #1 - Wellbore	12,932.3	11,376.0	661.1	496.6	4.019	CC, ES
EXIST HZ CHESNUT 21Y-401 - Wellbore #1 - Wellbore	13,100.0	11,376.0	682.1	510.4	3.974	SF
EXIST HZ CHESNUT 27G-221 - Wellbore #1 - Wellbore	13,636.4	13,336.0	638.4	444.7	3.295	CC
EXIST HZ CHESNUT 27G-221 - Wellbore #1 - Wellbore	13,700.0	13,336.0	641.6	436.9	3.135	ES
EXIST HZ CHESNUT 27G-221 - Wellbore #1 - Wellbore	13,900.0	13,336.0	690.7	458.7	2.977	SF
EXIST HZ CHESNUT 27G-301 - Wellbore #1 - Wellbore	13,280.7	13,480.0	696.9	507.5	3.679	CC
EXIST HZ CHESNUT 27G-301 - Wellbore #1 - Wellbore	13,400.0	13,480.0	707.1	498.5	3.389	ES
EXIST HZ CHESNUT 27G-301 - Wellbore #1 - Wellbore	13,500.0	13,480.0	730.6	509.1	3.298	SF
EXIST HZ CHESNUT 27K-201 - Wellbore #1 - Wellbore	14,593.8	13,284.0	641.1	425.4	2.972	CC, ES
EXIST HZ CHESNUT 27K-201 - Wellbore #1 - Wellbore	14,800.0	13,284.0	673.4	437.8	2.858	SF
EXIST HZ CHESNUT 27K-341 - Wellbore #1 - Wellbore	13,953.3	13,382.0	642.4	442.5	3.214	CC
EXIST HZ CHESNUT 27K-341 - Wellbore #1 - Wellbore	14,000.0	13,382.0	644.1	438.4	3.131	ES
EXIST HZ CHESNUT 27K-341 - Wellbore #1 - Wellbore	14,200.0	13,382.0	688.2	456.4	2.969	SF
EXIST HZ CHESNUT 27K-401 - Wellbore #1 - Wellbore	14,250.9	13,407.0	642.8	435.9	3.107	CC
EXIST HZ CHESNUT 27K-401 - Wellbore #1 - Wellbore	14,300.0	13,407.0	644.7	433.7	3.056	ES
EXIST HZ CHESNUT 27K-401 - Wellbore #1 - Wellbore	14,500.0	13,407.0	689.4	454.1	2.930	SF
EXIST HZ CHESNUT 27K-421 - Wellbore #1 - Wellbore	14,800.0	13,455.0	664.3	433.0	2.873	SF
EXIST HZ CHESNUT 27K-421 - Wellbore #1 - Wellbore	14,891.1	13,455.0	658.0	432.4	2.917	CC, ES
EXIST HZ CHESNUT 27O-201 - Wellbore #1 - Wellbore	15,500.0	13,300.0	707.1	444.4	2.692	ES, SF
EXIST HZ CHESNUT 27O-201 - Wellbore #1 - Wellbore	15,600.4	13,300.0	699.9	446.0	2.756	CC
EXIST HZ CHESNUT 27O-341 - Wellbore #1 - Wellbore	15,100.0	13,340.0	719.0	466.0	2.842	SF
EXIST HZ CHESNUT 27O-341 - Wellbore #1 - Wellbore	15,200.0	13,340.0	702.6	456.6	2.856	ES
EXIST HZ CHESNUT 27O-341 - Wellbore #1 - Wellbore	15,266.1	13,340.0	699.5	459.1	2.909	CC
EXIST HZ HOLMAN B15-65HNM - Wellbore #1 - Wellbo	16,672.0	10,407.0	2,508.0	2,140.8	6.829	CC
EXIST HZ HOLMAN B15-65HNM - Wellbore #1 - Wellbo	16,700.0	10,386.1	2,508.1	2,140.6	6.826	ES
EXIST HZ HOLMAN B15-65HNM - Wellbore #1 - Wellbo	16,900.0	10,231.1	2,510.7	2,142.1	6.812	SF
EXIST HZ HOLMAN B15-66HN - Wellbore #1 - Wellbore	14,374.4	12,684.0	2,974.3	2,605.8	8.070	CC
EXIST HZ HOLMAN B15-66HN - Wellbore #1 - Wellbore	14,400.0	12,684.0	2,974.4	2,605.2	8.056	ES
EXIST HZ HOLMAN B15-66HN - Wellbore #1 - Wellbore	14,600.0	12,656.6	2,982.7	2,609.6	7.994	SF
EXIST HZ KLEIN #19M-402 - Wellbore #1 - Wellbore #1	8,844.8	15,436.1	278.2	26.5	1.105	Level 2, CC
EXIST HZ KLEIN #19M-402 - Wellbore #1 - Wellbore #1	10,848.3	17,440.0	279.0	-47.8	0.854	Level 1, ES, SF
EXIST HZ KLEIN #B16-98HZ - Wellbore #1 - Wellbore #	12,254.0	6,475.9	355.6	226.7	2.760	CC, ES, SF
EXIST HZ KLEIN #B16-99HZ - Wellbore #1 - Wellbore #	12,623.6	6,351.8	1,013.4	865.1	6.833	CC, ES
EXIST HZ KLEIN #B16-99HZ - Wellbore #1 - Wellbore #	12,700.0	6,341.1	1,016.1	866.5	6.791	SF
EXIST HZ KLEIN 19M-232 - Wellbore #1 - Wellbore #1	7,025.8	16,918.0	6,536.6	6,392.4	45.308	CC, ES
EXIST HZ KLEIN 19M-232 - Wellbore #1 - Wellbore #1	7,300.0	16,918.0	6,584.2	6,437.3	44.797	SF
EXIST HZ KLEIN 19N-312 - Wellbore #1 - Wellbore #1	10,852.8	17,429.0	976.5	576.7	2.443	CC, ES, SF

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

Company:	PDC ENERGY	Local Co-ordinate Reference:	Well SCHRUTE 10N - Slot SCHRUTE 10N
Project:	WELD COUNTY, COLORADO (TRUE)	TVD Reference:	WELL @ 4633.0ft (Original Well Elev)
Reference Site:	NE SW SEC 16 T5N R64W 6th P.M. (SCHRUTE)	MD Reference:	WELL @ 4633.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	SCHRUTE 10N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM
Reference Design:	PROPOSAL #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
NE SW SEC 16 T5N R64W 6th P.M. (SCHRUTE)						
EXIST HZ LEDFORD #22T-221 - Wellbore #1 - Wellbore	17,525.3	11,032.0	647.7	349.6	2.173	CC
EXIST HZ LEDFORD #22T-221 - Wellbore #1 - Wellbore	17,600.0	11,032.0	652.0	346.1	2.131	ES, SF
EXIST HZ LEDFORD #22T-321 - Wellbore #1 - Wellbore	17,283.6	11,138.0	649.7	356.1	2.213	CC
EXIST HZ LEDFORD #22T-321 - Wellbore #1 - Wellbore	17,300.0	11,138.0	649.9	354.3	2.199	ES
EXIST HZ LEDFORD #22T-321 - Wellbore #1 - Wellbore	17,400.0	11,138.0	660.0	354.9	2.163	SF
EXIST HZ LEDFORD #22Y-341 - Wellbore #1 - Wellbore	17,969.5	11,072.0	653.7	348.4	2.141	CC, ES, SF
EXIST HZ LEDFORD #22Y-401 - Wellbore #1 - Wellbore	17,969.5	11,110.0	747.6	455.5	2.559	CC, ES, SF
EXIST HZ PETERSON 14W-234 - Wellbore #1 - Wellbor	17,969.5	10,840.0	2,114.4	1,732.9	5.543	CC, ES, SF
EXIST HZ PETERSON 14W-434 - Wellbore #1 - Wellbor	17,969.5	10,990.0	2,421.1	2,028.3	6.165	CC, ES, SF
EXIST HZ PETERSON 14X-234 - Wellbore #1 - Wellbore	17,969.5	10,848.0	1,098.2	895.5	5.417	CC, ES, SF
EXIST HZ PETERSON 14X-304 - Wellbore #1 - Wellbore	17,969.5	10,906.0	1,558.1	1,220.7	4.618	CC, ES, SF
EXIST HZ PETERSON 14X-414 - Wellbore #1 - Wellbore	17,969.5	10,970.0	1,862.0	1,496.6	5.096	CC, ES, SF
EXIST HZ PETERSON 14X-434 - Wellbore #1 - Wellbore	17,969.5	10,917.0	1,371.8	1,067.1	4.503	CC, ES, SF
EXIST HZ PETERSON 14Y-304 - Wellbore #1 - Wellbore	17,969.5	10,979.0	996.5	915.2	12.255	CC, ES, SF
EXIST HZ PETERSON 14Y-414 - Wellbore #1 - Wellbore	17,969.5	10,969.0	1,016.5	896.2	8.451	CC, ES, SF
EXIST HZ SAPPINGTON #22Q-221 - Wellbore #1 - Well	16,398.7	11,096.0	647.0	382.5	2.446	CC
EXIST HZ SAPPINGTON #22Q-221 - Wellbore #1 - Well	16,400.0	11,096.0	647.0	382.4	2.445	ES
EXIST HZ SAPPINGTON #22Q-221 - Wellbore #1 - Well	16,500.0	11,096.0	654.9	383.2	2.410	SF
EXIST HZ SAPPINGTON #22Q-301 - Wellbore #1 - Well	16,003.4	11,190.0	648.5	392.7	2.536	CC
EXIST HZ SAPPINGTON #22Q-301 - Wellbore #1 - Well	16,100.0	11,190.0	655.6	391.1	2.478	ES, SF
EXIST HZ SAPPINGTON #22T-341 - Wellbore #1 - Well	16,708.5	11,116.0	650.3	379.9	2.404	CC, ES
EXIST HZ SAPPINGTON #22T-341 - Wellbore #1 - Well	16,800.0	11,116.0	656.7	381.8	2.388	SF
EXIST HZ SAPPINGTON 22T-201 - Wellbore #1 - Wellb	17,059.8	11,066.0	647.1	364.9	2.293	CC, ES, SF
EXIST HZ SEYLER STATE B15-79HNM - Wellbore #1 -	13,060.1	8,462.8	9.5	-61.7	0.134	Level 1, CC, ES, SF
EXIST VERT FRENZEL #B15-5 - Wellbore #1 - Wellbore	13,592.3	6,567.6	2,721.3	2,547.5	15.653	CC
EXIST VERT FRENZEL #B15-5 - Wellbore #1 - Wellbore	13,700.0	6,567.6	2,723.5	2,547.0	15.431	ES
EXIST VERT FRENZEL #B15-5 - Wellbore #1 - Wellbore	14,100.0	6,567.7	2,768.3	2,584.4	15.054	SF
EXIST VERT JOSHUA 1 - Wellbore #1 - Wellbore #1	15,087.2	6,568.2	679.2	465.1	3.171	CC
EXIST VERT JOSHUA 1 - Wellbore #1 - Wellbore #1	15,100.0	6,568.3	679.4	464.8	3.166	ES, SF
EXIST VERT KALEB 1 - Wellbore #1 - Wellbore #1	13,892.4	6,539.9	646.7	464.9	3.557	CC
EXIST VERT KALEB 1 - Wellbore #1 - Wellbore #1	13,900.0	6,540.2	646.7	464.7	3.553	ES, SF
EXIST VERT LOUSTALET #42-15 - Wellbore #1 - Wellbo	17,444.5	6,700.0	2,922.8	2,643.8	10.475	CC
EXIST VERT LOUSTALET #42-15 - Wellbore #1 - Wellbo	17,500.0	6,700.0	2,923.4	2,643.0	10.426	ES
EXIST VERT LOUSTALET #42-15 - Wellbore #1 - Wellbo	17,800.0	6,700.0	2,944.4	2,658.5	10.298	SF
EXIST VERT LOUSTALET #B15-10 - Wellbore #1 - Desi	16,452.1	6,541.4	1,910.7	1,530.1	5.020	CC
EXIST VERT LOUSTALET #B15-10 - Wellbore #1 - Desi	16,500.0	6,541.2	1,911.3	1,529.6	5.008	ES
EXIST VERT LOUSTALET #B15-10 - Wellbore #1 - Desi	16,600.0	6,540.6	1,916.4	1,533.0	4.998	SF
EXIST VERT LOUSTALET #B15-11 - Wellbore #1 - Desi	15,209.8	6,561.3	1,842.0	1,495.3	5.312	CC, ES
EXIST VERT LOUSTALET #B15-11 - Wellbore #1 - Desi	15,400.0	6,560.3	1,851.8	1,501.5	5.286	SF
EXIST VERT LOUSTALET #B15-15X - Wellbore #1 - De	16,637.2	6,549.4	339.7	-46.1	0.881	Level 1, CC, ES, SF
EXIST VERT LOUSTALET #B15-23 - Wellbore #1 - Well	17,099.1	6,485.0	1,165.8	896.6	4.330	CC
EXIST VERT LOUSTALET #B15-23 - Wellbore #1 - Well	17,100.0	6,485.0	1,165.8	896.6	4.330	ES
EXIST VERT LOUSTALET #B15-23 - Wellbore #1 - Well	17,200.0	6,488.9	1,170.1	899.7	4.326	SF
EXIST VERT LUCAS 1 - Wellbore #1 - Wellbore #1	17,822.7	6,567.7	889.2	599.7	3.072	CC, ES
EXIST VERT LUCAS 1 - Wellbore #1 - Wellbore #1	17,900.0	6,566.7	892.6	601.4	3.065	SF
EXIST VERT PATRIOT #B16-10 - Wellbore #1 - Wellbore	100.0	71.8	1,647.0	1,646.9	10,000.000	CC
EXIST VERT PATRIOT #B16-10 - Wellbore #1 - Wellbore	1,206.5	1,184.3	1,647.2	1,644.0	510.165	ES
EXIST VERT PATRIOT #B16-10 - Wellbore #1 - Wellbore	11,700.0	6,608.9	1,805.5	1,682.6	14.691	SF
EXIST VERT PATRIOT #B16-11 - Wellbore #1 - Wellbore	100.0	74.6	433.5	433.4	4,953.859	CC, ES
EXIST VERT PATRIOT #B16-11 - Wellbore #1 - Wellbore	10,500.0	6,600.5	1,865.0	1,771.2	19.878	SF
EXIST VERT PATRIOT #B16-12 - Wellbore #1 - Design #	3,836.1	3,458.1	516.5	422.6	5.499	CC
EXIST VERT PATRIOT #B16-12 - Wellbore #1 - Design #	3,900.0	3,509.5	517.9	422.2	5.411	ES

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

Company:	PDC ENERGY	Local Co-ordinate Reference:	Well SCHRUTE 10N - Slot SCHRUTE 10N
Project:	WELD COUNTY, COLORADO (TRUE)	TVD Reference:	WELL @ 4633.0ft (Original Well Elev)
Reference Site:	NE SW SEC 16 T5N R64W 6th P.M. (SCHRUTE)	MD Reference:	WELL @ 4633.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	SCHRUTE 10N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM
Reference Design:	PROPOSAL #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
NE SW SEC 16 T5N R64W 6th P.M. (SCHRUTE)						
EXIST VERT PATRIOT #B16-12 - Wellbore #1 - Design #	4,000.0	3,590.0	525.6	427.4	5.351	SF
EXIST VERT PATRIOT #B16-15 - Wellbore #1 - Wellbore	11,203.7	6,613.8	247.8	136.0	2.215	CC, ES, SF
EXIST VERT PATRIOT #B16-16 - Wellbore #1 - Wellbore	12,522.2	6,616.1	238.2	92.8	1.638	CC, ES, SF
EXIST VERT PATRIOT #B16-17 - Wellbore #1 - Wellbore	100.0	37.7	2,797.1	2,797.0	10,000.000	CC, ES
EXIST VERT PATRIOT #B16-17 - Wellbore #1 - Wellbore	13,200.0	6,614.5	4,076.2	3,921.4	26.332	SF
EXIST VERT PATRIOT #B16-18 - Wellbore #1 - Wellbore	1,226.2	1,219.0	1,913.0	1,909.6	573.324	CC, ES
EXIST VERT PATRIOT #B16-18 - Wellbore #1 - Wellbore	12,200.0	6,666.8	4,124.7	3,996.5	32.194	SF
EXIST VERT PATRIOT #B16-19 - Wellbore #1 - Wellbore	100.0	70.1	1,540.0	1,539.9	10,000.000	CC
EXIST VERT PATRIOT #B16-19 - Wellbore #1 - Wellbore	300.0	269.0	1,540.1	1,539.4	2,146.173	ES
EXIST VERT PATRIOT #B16-19 - Wellbore #1 - Wellbore	11,100.0	6,700.0	3,943.9	3,842.2	38.753	SF
EXIST VERT PATRIOT #B16-20 - Wellbore #1 - Wellbore	2,115.5	2,074.2	693.0	686.0	98.455	CC, ES
EXIST VERT PATRIOT #B16-20 - Wellbore #1 - Wellbore	10,200.0	6,618.0	2,697.6	2,611.1	31.196	SF
EXIST VERT PATRIOT #B16-21 - Wellbore #1 - Wellbore	1,242.6	1,236.7	825.7	822.4	244.584	CC, ES
EXIST VERT PATRIOT #B16-21 - Wellbore #1 - Wellbore	11,200.0	6,621.4	2,500.2	2,391.2	22.943	SF
EXIST VERT PATRIOT #B16-22 - Wellbore #1 - Wellbore	100.0	66.9	2,170.2	2,170.2	10,000.000	CC
EXIST VERT PATRIOT #B16-22 - Wellbore #1 - Wellbore	600.0	561.9	2,171.3	2,169.7	1,364.934	ES
EXIST VERT PATRIOT #B16-22 - Wellbore #1 - Wellbore	12,500.0	6,601.9	2,575.2	2,434.6	18.312	SF
EXIST VERT PATRIOT #B16-23 - Wellbore #1 - Wellbore	11,835.9	6,600.6	1,156.7	1,029.7	9.106	CC, ES
EXIST VERT PATRIOT #B16-23 - Wellbore #1 - Wellbore	12,000.0	6,599.2	1,168.3	1,038.1	8.969	SF
EXIST VERT PATRIOT #B16-24 - Wellbore #1 - Wellbore	10,450.4	6,630.4	968.0	874.4	10.339	CC
EXIST VERT PATRIOT #B16-24 - Wellbore #1 - Wellbore	10,500.0	6,628.4	969.3	874.3	10.198	ES
EXIST VERT PATRIOT #B16-24 - Wellbore #1 - Wellbore	10,600.0	6,624.5	979.5	882.3	10.072	SF
EXIST VERT PATRIOT #B16-25 - Wellbore #1 - Design #	3,095.3	2,873.0	415.8	343.2	5.724	CC
EXIST VERT PATRIOT #B16-25 - Wellbore #1 - Design #	3,100.0	2,876.8	415.8	343.0	5.713	ES
EXIST VERT PATRIOT #B16-25 - Wellbore #1 - Design #	3,300.0	3,037.7	433.2	355.3	5.562	SF
EXIST VERT PATRIOT #B16-6 - Wellbore #1 - Wellbore	1,202.0	1,177.8	956.0	952.8	297.978	CC, ES
EXIST VERT PATRIOT #B16-6 - Wellbore #1 - Wellbore	11,200.0	6,618.8	3,223.1	3,116.2	30.135	SF
EXIST VERT PATRIOT #B16-7 - Wellbore #1 - Wellbore	266.7	237.7	1,878.2	1,877.6	3,266.821	CC
EXIST VERT PATRIOT #B16-7 - Wellbore #1 - Wellbore	1,205.0	1,180.9	1,878.4	1,875.3	604.278	ES
EXIST VERT PATRIOT #B16-7 - Wellbore #1 - Wellbore	12,300.0	6,617.3	3,451.8	3,319.0	25.985	SF
EXIST VERT PATRIOT #B16-8 - Wellbore #1 - Wellbore	1,209.8	1,180.9	3,036.7	3,033.4	933.037	CC, ES
EXIST VERT PATRIOT #B16-8 - Wellbore #1 - Wellbore	13,400.0	6,600.0	3,392.7	3,229.8	20.830	SF
EXIST VERT TREBOR B14-5 - Wellbore #1 - Wellbore #	17,969.5	6,571.8	3,635.3	3,350.9	12.784	CC, ES, SF
EXIST VERT TROY 1 - Wellbore #1 - Wellbore #1	16,558.6	6,561.9	913.2	658.6	3.587	CC
EXIST VERT TROY 1 - Wellbore #1 - Wellbore #1	16,600.0	6,561.1	914.1	658.4	3.574	ES, SF
SCHRUTE 1N - Wellbore #1 - PROPOSAL #1	203.3	203.3	134.9	134.3	211.619	CC
SCHRUTE 1N - Wellbore #1 - PROPOSAL #1	300.0	297.8	135.3	134.3	127.276	ES
SCHRUTE 1N - Wellbore #1 - PROPOSAL #1	17,969.5	17,505.9	2,382.6	1,799.6	4.086	SF
SCHRUTE 2N - Wellbore #1 - PROPOSAL #1	400.0	400.0	120.0	118.5	78.852	CC, ES
SCHRUTE 2N - Wellbore #1 - PROPOSAL #1	17,969.5	17,421.1	2,126.1	1,542.7	3.645	SF
SCHRUTE 3N - Wellbore #1 - PROPOSAL #1	500.0	500.0	104.9	103.0	53.234	CC, ES
SCHRUTE 3N - Wellbore #1 - PROPOSAL #1	17,969.5	17,529.0	1,869.9	1,286.5	3.205	SF
SCHRUTE 4N - Wellbore #1 - PROPOSAL #1	600.0	600.0	90.0	87.6	37.167	CC, ES
SCHRUTE 4N - Wellbore #1 - PROPOSAL #1	17,969.5	17,477.0	1,612.2	1,028.3	2.761	SF
SCHRUTE 5N - Wellbore #1 - PROPOSAL #1	700.0	700.0	75.0	72.1	26.119	CC, ES
SCHRUTE 5N - Wellbore #1 - PROPOSAL #1	17,969.5	17,601.7	1,357.3	773.8	2.326	SF
SCHRUTE 6N - Wellbore #1 - PROPOSAL #1	800.0	800.0	60.1	56.8	18.097	CC, ES
SCHRUTE 6N - Wellbore #1 - PROPOSAL #1	17,969.5	17,575.8	1,099.3	515.3	1.882	SF
SCHRUTE 7N - Wellbore #1 - PROPOSAL #1	900.0	900.0	44.9	41.2	11.921	CC, ES
SCHRUTE 7N - Wellbore #1 - PROPOSAL #1	17,969.5	17,714.3	844.1	261.1	1.448	Level 3, SF
SCHRUTE 8N - Wellbore #1 - PROPOSAL #1	1,000.0	1,000.0	30.0	25.8	7.114	CC
SCHRUTE 8N - Wellbore #1 - PROPOSAL #1	17,969.5	17,745.7	586.3	2.2	1.004	Level 2, ES, SF

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

Company:	PDC ENERGY	Local Co-ordinate Reference:	Well SCHRUTE 10N - Slot SCHRUTE 10N
Project:	WELD COUNTY, COLORADO (TRUE)	TVD Reference:	WELL @ 4633.0ft (Original Well Elev)
Reference Site:	NE SW SEC 16 T5N R64W 6th P.M. (SCHRUTE)	MD Reference:	WELL @ 4633.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	SCHRUTE 10N	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM
Reference Design:	PROPOSAL #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
NE SW SEC 16 T5N R64W 6th P.M. (SCHRUTE)						
SCHRUTE 9N - Wellbore #1 - PROPOSAL #1	1,100.0	1,100.0	15.0	10.4	3.218	CC
SCHRUTE 9N - Wellbore #1 - PROPOSAL #1	17,969.5	17,884.3	334.1	-243.1	0.579	Level 1, ES, SF