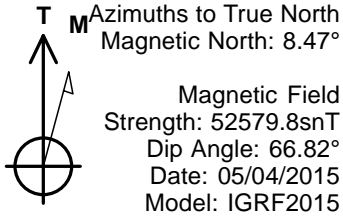


PDC ENERGY

Project: Weld County, CO (NAD83)
Site: Stroh 13GK-HZ Pad (True)
Well: 13K-303
Wellbore: Lateral
Design: Lateral



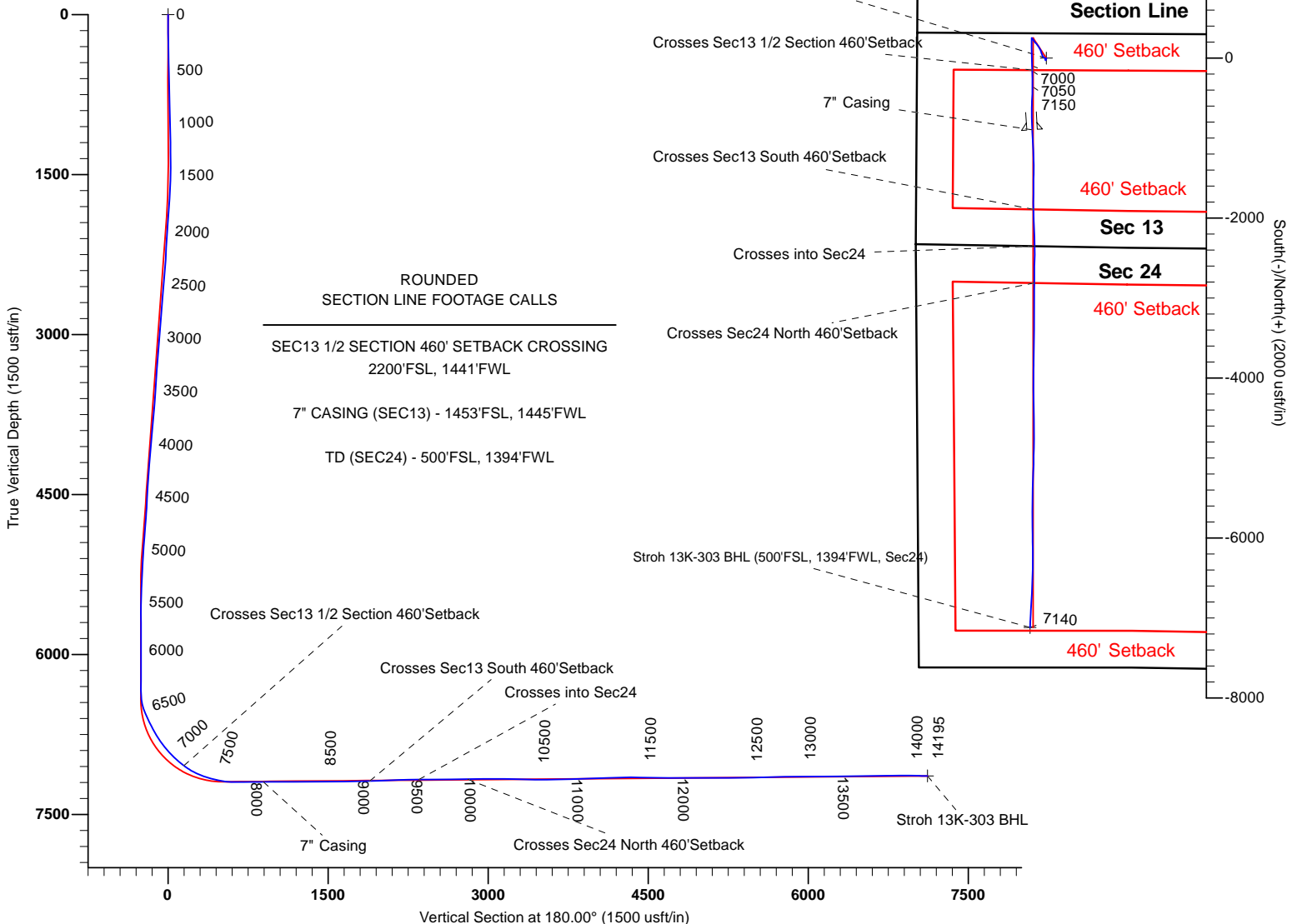
Plats by Lat40 drawn in Grid North
Section Lines provided by
Lat40 PLS and Rotated
+42° to True North
All Info is drawn in True North

Ground Elevation 4805.00 Ensign 123 KB = 13' RKB = 4818'
Grid North is 0.42° East of True North (Grid Convergence)
To convert a Magnetic Direction to a True Direction, Add 8.47° East

INTERPOLATED DEPTHS FOR SECTION LINE AND SETBACK CROSSING					
TVD	MD	+N/-S	+E/-W	Annotation	
7043.53	7190.00	-148.85	-176.56	Crosses Sec13 1/2 Section 460'Setback	
7195.78	7968.00	-894.31	-176.76	7" Casing	
7186.99	8965.00	-1890.56	-157.00	Crosses Sec13 South 460'Setback	
7173.89	9426.00	-2351.07	-144.91	Crosses into Sec24	
7170.29	9886.00	-2810.90	-149.58	Crosses Sec24 North 460'Setback	

TARGET DETAILS					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
Stroh 13K-303 SL	0.00	0.00	0.00	40.311029	-104.842867
Stroh 13K-303 BHL	7139.75	-7117.57	-202.09	40.291491	-104.843592
Shape					
Point					

CASING DETAILS			
TVD	MD	Name	Size
7195.78	7968.00	7"	7.00



Survey Report

Company:	PDC ENERGY	Local Co-ordinate Reference:	Well 13K-303 - Slot 13K-303
Project:	Weld County, CO (NAD83)	TVD Reference:	4805+13 @ 4818.00usft (ensign123)
Site:	Stroh 13GK-HZ Pad (True)	MD Reference:	4805+13 @ 4818.00usft (ensign123)
Well:	13K-303	North Reference:	True
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Lateral	Database:	EDM 5000.1 Single User Db

Project	Weld County, CO (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	Stroh 13GK-HZ Pad (True), centered on 13G-203				
Site Position:		Northing:	1,356,827.556 usft	Latitude:	40.311030
From:	Lat/Long	Easting:	3,183,166.780 usft	Longitude:	-104.843190
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	0.42 °

Well	13K-303 - Slot 13K-303					
Well Position	+N/-S	0.00 usft	Northing:	1,356,827.768 usft	Latitude:	40.311029
	+E/-W	0.00 usft	Easting:	3,183,256.753 usft	Longitude:	-104.842868
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,805.00 usft

Wellbore	Lateral				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	05/04/15	8.47	66.82	52,580

Design	Lateral				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	180.00	

Survey Program	Date	05/18/15			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
173.00	14,142.00	Survey #1 (Lateral)	MWD	MWD v3:standard declination	
14,195.00	14,195.00	Survey #2 (Lateral)	Projection	Projection	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Stroh 13K-303 SL										
173.00	1.00	167.20	172.99	-1.47	0.33	1.47	0.58	0.58	0.00	
267.00	1.20	166.80	266.97	-3.23	0.74	3.23	0.21	0.21	-0.43	
360.00	1.10	175.30	359.96	-5.07	1.04	5.07	0.21	-0.11	9.14	
453.00	1.20	198.70	452.94	-6.88	0.80	6.88	0.51	0.11	25.16	
546.00	1.30	202.50	545.91	-8.78	0.08	8.78	0.14	0.11	4.09	
640.00	1.10	207.30	639.89	-10.56	-0.74	10.56	0.24	-0.21	5.11	
733.00	1.20	215.70	732.88	-12.15	-1.72	12.15	0.21	0.11	9.03	
826.00	1.70	212.70	825.85	-14.10	-3.03	14.10	0.54	0.54	-3.23	

Survey Report

Company:	PDC ENERGY	Local Co-ordinate Reference:	Well 13K-303 - Slot 13K-303
Project:	Weld County, CO (NAD83)	TVD Reference:	4805+13 @ 4818.00usft (ensign123)
Site:	Stroh 13GK-HZ Pad (True)	MD Reference:	4805+13 @ 4818.00usft (ensign123)
Well:	13K-303	North Reference:	True
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Lateral	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
880.00	1.80	214.70	879.82	-15.47	-3.95	15.47	0.22	0.19	3.70
1,011.00	2.90	211.00	1,010.71	-20.00	-6.83	20.00	0.85	0.84	-2.82
1,104.00	0.50	168.10	1,103.66	-22.42	-7.95	22.42	2.75	-2.58	-46.13
1,197.00	0.50	170.00	1,196.66	-23.21	-7.80	23.21	0.02	0.00	2.04
1,291.00	0.40	187.20	1,290.66	-23.94	-7.77	23.94	0.18	-0.11	18.30
1,384.00	0.30	146.10	1,383.65	-24.47	-7.67	24.47	0.28	-0.11	-44.19
1,477.00	0.10	163.70	1,476.65	-24.75	-7.52	24.75	0.22	-0.22	18.92
1,570.00	1.80	343.50	1,569.64	-23.42	-7.91	23.42	2.04	1.83	193.33
1,663.00	3.40	346.50	1,662.54	-19.34	-8.97	19.34	1.73	1.72	3.23
1,756.00	5.10	341.60	1,755.28	-12.74	-10.91	12.74	1.87	1.83	-5.27
1,850.00	4.90	330.10	1,848.93	-5.29	-14.24	5.29	1.09	-0.21	-12.23
1,943.00	4.90	320.80	1,941.59	1.23	-18.73	-1.23	0.85	0.00	-10.00
2,033.00	5.20	312.40	2,031.24	6.96	-24.17	-6.96	0.89	0.33	-9.33
2,123.00	5.20	306.60	2,120.87	12.14	-30.45	-12.14	0.58	0.00	-6.44
2,213.00	4.60	306.80	2,210.54	16.73	-36.62	-16.73	0.67	-0.67	0.22
2,302.00	5.50	319.40	2,299.20	22.11	-42.25	-22.11	1.60	1.01	14.16
2,392.00	5.10	338.20	2,388.82	29.10	-46.54	-29.10	1.97	-0.44	20.89
2,482.00	5.00	338.90	2,478.47	36.47	-49.44	-36.47	0.13	-0.11	0.78
2,571.00	5.00	338.20	2,567.13	43.69	-52.28	-43.69	0.07	0.00	-0.79
2,661.00	5.20	335.80	2,656.77	51.05	-55.41	-51.05	0.32	0.22	-2.67
2,751.00	5.40	330.50	2,746.39	58.46	-59.16	-58.46	0.59	0.22	-5.89
2,841.00	4.80	351.40	2,836.04	65.87	-61.81	-65.87	2.16	-0.67	23.22
2,931.00	4.70	345.60	2,925.73	73.16	-63.29	-73.16	0.54	-0.11	-6.44
3,021.00	4.60	343.00	3,015.44	80.19	-65.26	-80.19	0.26	-0.11	-2.89
3,111.00	4.50	342.60	3,105.15	87.01	-67.37	-87.01	0.12	-0.11	-0.44
3,201.00	4.50	339.80	3,194.88	93.69	-69.65	-93.69	0.24	0.00	-3.11
3,290.00	4.20	341.40	3,283.62	100.05	-71.89	-100.05	0.36	-0.34	1.80
3,380.00	5.00	331.70	3,373.33	106.63	-74.81	-106.63	1.24	0.89	-10.78
3,470.00	4.70	330.30	3,463.01	113.29	-78.49	-113.29	0.36	-0.33	-1.56
3,560.00	4.60	330.30	3,552.71	119.62	-82.11	-119.62	0.11	-0.11	0.00
3,650.00	4.30	331.40	3,642.44	125.72	-85.51	-125.72	0.35	-0.33	1.22
3,740.00	6.00	329.60	3,732.07	132.74	-89.51	-132.74	1.90	1.89	-2.00
3,830.00	6.20	327.00	3,821.56	140.87	-94.53	-140.87	0.38	0.22	-2.89
3,919.00	6.20	329.60	3,910.04	149.05	-99.58	-149.05	0.32	0.00	2.92
4,009.00	6.30	324.20	3,999.51	157.25	-104.93	-157.25	0.66	0.11	-6.00
4,099.00	6.20	321.90	4,088.97	165.08	-110.82	-165.08	0.30	-0.11	-2.56
4,189.00	5.50	323.50	4,178.51	172.37	-116.38	-172.37	0.80	-0.78	1.78
4,279.00	5.40	316.80	4,268.10	178.92	-121.85	-178.92	0.72	-0.11	-7.44
4,369.00	5.00	317.80	4,357.73	184.92	-127.38	-184.92	0.46	-0.44	1.11
4,459.00	4.90	315.60	4,447.39	190.57	-132.70	-190.57	0.24	-0.11	-2.44
4,549.00	4.70	310.80	4,537.08	195.72	-138.18	-195.72	0.50	-0.22	-5.33
4,639.00	4.20	315.60	4,626.81	200.49	-143.28	-200.49	0.69	-0.56	5.33
4,729.00	5.40	328.90	4,716.49	206.47	-147.78	-206.47	1.81	1.33	14.78

Survey Report

Company:	PDC ENERGY	Local Co-ordinate Reference:	Well 13K-303 - Slot 13K-303
Project:	Weld County, CO (NAD83)	TVD Reference:	4805+13 @ 4818.00usft (ensign123)
Site:	Stroh 13GK-HZ Pad (True)	MD Reference:	4805+13 @ 4818.00usft (ensign123)
Well:	13K-303	North Reference:	True
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Lateral	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
4,819.00	5.10	331.70	4,806.11	213.62	-151.86	-213.62	0.44	-0.33	3.11	
4,909.00	5.00	326.80	4,895.77	220.42	-155.90	-220.42	0.49	-0.11	-5.44	
4,999.00	4.70	326.10	4,985.44	226.76	-160.11	-226.76	0.34	-0.33	-0.78	
5,089.00	4.40	323.30	5,075.16	232.59	-164.23	-232.59	0.41	-0.33	-3.11	
5,179.00	4.00	318.90	5,164.92	237.72	-168.35	-237.72	0.57	-0.44	-4.89	
5,269.00	4.00	317.70	5,254.70	242.41	-172.53	-242.41	0.09	0.00	-1.33	
5,358.00	3.40	329.60	5,343.51	246.98	-175.95	-246.98	1.09	-0.67	13.37	
5,448.00	1.40	338.20	5,433.43	250.31	-177.71	-250.31	2.25	-2.22	9.56	
5,538.00	1.70	341.20	5,523.40	252.59	-178.55	-252.59	0.35	0.33	3.33	
5,628.00	0.30	213.40	5,613.39	253.66	-179.11	-253.66	2.11	-1.56	-142.00	
5,718.00	0.40	218.00	5,703.38	253.21	-179.44	-253.21	0.12	0.11	5.11	
5,808.00	0.50	221.50	5,793.38	252.67	-179.89	-252.67	0.12	0.11	3.89	
5,898.00	0.30	238.90	5,883.38	252.26	-180.35	-252.26	0.26	-0.22	19.33	
5,988.00	0.40	282.50	5,973.38	252.20	-180.86	-252.20	0.31	0.11	48.44	
6,078.00	0.90	283.90	6,063.37	252.44	-181.85	-252.44	0.56	0.56	1.56	
6,168.00	0.20	45.60	6,153.37	252.72	-182.43	-252.72	1.13	-0.78	135.22	
6,258.00	0.50	349.10	6,243.37	253.22	-182.39	-253.22	0.47	0.33	-62.78	
6,348.00	0.40	315.90	6,333.36	253.83	-182.68	-253.83	0.30	-0.11	-36.89	
6,438.00	7.00	180.90	6,423.15	248.56	-182.99	-248.56	8.10	7.33	-150.00	
6,483.00	13.30	177.00	6,467.42	240.64	-182.76	-240.64	14.08	14.00	-8.67	
6,528.00	18.30	176.70	6,510.71	228.41	-182.08	-228.41	11.11	11.11	-0.67	
6,573.00	22.90	180.40	6,552.82	212.60	-181.73	-212.60	10.62	10.22	8.22	
6,618.00	24.80	179.70	6,593.98	194.40	-181.75	-194.40	4.27	4.22	-1.56	
6,663.00	26.60	180.40	6,634.52	174.89	-181.77	-174.89	4.06	4.00	1.56	
6,708.00	27.50	179.70	6,674.60	154.43	-181.78	-154.43	2.12	2.00	-1.56	
6,753.00	28.80	178.60	6,714.28	133.20	-181.46	-133.20	3.11	2.89	-2.44	
6,798.00	30.40	179.20	6,753.40	110.98	-181.04	-110.98	3.62	3.56	1.33	
6,843.00	33.90	180.20	6,791.50	87.03	-180.92	-87.03	7.87	7.78	2.22	
6,888.00	34.30	179.70	6,828.76	61.81	-180.90	-61.81	1.09	0.89	-1.11	
6,933.00	39.00	179.00	6,864.85	34.95	-180.59	-34.95	10.49	10.44	-1.56	
6,978.00	41.60	181.10	6,899.17	5.85	-180.63	-5.85	6.52	5.78	4.67	
7,023.00	43.40	179.50	6,932.35	-24.54	-180.78	24.54	4.67	4.00	-3.56	
7,068.00	46.70	179.00	6,964.14	-56.38	-180.36	56.38	7.38	7.33	-1.11	
7,113.00	48.40	178.50	6,994.51	-89.58	-179.63	89.58	3.87	3.78	-1.11	
7,158.00	50.50	176.30	7,023.76	-123.73	-178.07	123.73	5.96	4.67	-4.89	
7,190.00	53.20	176.81	7,043.53	-148.85	-176.56	148.85	8.53	8.44	1.58	
Crosses Sec13 1/2 Section 460'Setback										
7,203.00	54.30	177.00	7,051.22	-159.31	-175.99	159.31	8.53	8.45	1.50	
7,248.00	58.00	179.70	7,076.28	-196.66	-174.94	196.66	9.61	8.22	6.00	
7,293.00	61.10	179.30	7,099.08	-235.45	-174.60	235.45	6.93	6.89	-0.89	
7,337.00	65.30	179.70	7,118.92	-274.71	-174.26	274.71	9.58	9.55	0.91	
7,382.00	69.40	178.30	7,136.24	-316.22	-173.52	316.22	9.55	9.11	-3.11	
7,427.00	72.60	179.30	7,150.89	-358.76	-172.64	358.76	7.41	7.11	2.22	
7,472.00	74.80	180.40	7,163.52	-401.94	-172.53	401.94	5.42	4.89	2.44	

Survey Report

Company:	PDC ENERGY	Local Co-ordinate Reference:	Well 13K-303 - Slot 13K-303
Project:	Weld County, CO (NAD83)	TVD Reference:	4805+13 @ 4818.00usft (ensign123)
Site:	Stroh 13GK-HZ Pad (True)	MD Reference:	4805+13 @ 4818.00usft (ensign123)
Well:	13K-303	North Reference:	True
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Lateral	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,517.00	76.20	181.80	7,174.79	-445.50	-173.36	445.50	4.33	3.11	3.11
7,562.00	78.50	183.50	7,184.65	-489.36	-175.40	489.36	6.30	5.11	3.78
7,607.00	83.00	183.40	7,191.88	-533.68	-178.07	533.68	10.00	10.00	-0.22
7,652.00	87.70	181.10	7,195.52	-578.48	-179.83	578.48	11.62	10.44	-5.11
7,755.00	90.30	180.60	7,197.32	-681.44	-181.35	681.44	2.57	2.52	-0.49
7,844.00	90.70	180.00	7,196.55	-770.44	-181.82	770.44	0.81	0.45	-0.67
7,934.00	90.10	176.30	7,195.92	-860.37	-178.91	860.37	4.16	-0.67	-4.11
7,968.00	90.35	176.44	7,195.78	-894.31	-176.76	894.31	0.86	0.74	0.43
7" Casing - 7"									
8,028.00	90.80	176.70	7,195.18	-954.19	-173.18	954.19	0.86	0.74	0.43
8,121.00	90.80	175.30	7,193.88	-1,046.96	-166.69	1,046.96	1.51	0.00	-1.51
8,214.00	89.70	176.90	7,193.47	-1,139.74	-160.36	1,139.74	2.09	-1.18	1.72
8,307.00	89.20	179.70	7,194.37	-1,232.68	-157.61	1,232.68	3.06	-0.54	3.01
8,400.00	90.70	180.20	7,194.45	-1,325.68	-157.53	1,325.68	1.70	1.61	0.54
8,493.00	89.30	180.40	7,194.45	-1,418.67	-158.01	1,418.67	1.52	-1.51	0.22
8,587.00	90.80	181.30	7,194.37	-1,512.66	-159.41	1,512.66	1.86	1.60	0.96
8,680.00	91.70	178.80	7,192.34	-1,605.63	-159.49	1,605.63	2.86	0.97	-2.69
8,773.00	91.10	180.00	7,190.06	-1,698.60	-158.51	1,698.60	1.44	-0.65	1.29
8,866.00	91.00	179.90	7,188.36	-1,791.58	-158.43	1,791.58	0.15	-0.11	-0.11
8,960.00	90.60	178.50	7,187.05	-1,885.56	-157.12	1,885.56	1.55	-0.43	-1.49
8,965.00	90.68	178.63	7,186.99	-1,890.56	-157.00	1,890.56	2.99	1.51	2.58
Crosses Sec13 South 460'Setback									
9,053.00	92.00	180.90	7,184.94	-1,978.52	-156.63	1,978.52	2.99	1.51	2.58
9,146.00	92.50	179.00	7,181.29	-2,071.45	-156.55	2,071.45	2.11	0.54	-2.04
9,239.00	92.20	177.40	7,177.47	-2,164.32	-153.63	2,164.32	1.75	-0.32	-1.72
9,332.00	91.10	176.90	7,174.79	-2,257.17	-149.01	2,257.17	1.30	-1.18	-0.54
9,426.00	90.00	178.10	7,173.89	-2,351.07	-144.91	2,351.07	1.73	-1.17	1.28
Crosses into Sec24									
9,519.00	90.70	179.90	7,173.32	-2,444.05	-143.29	2,444.05	2.08	0.75	1.94
9,612.00	91.00	183.50	7,171.94	-2,536.98	-146.05	2,536.98	3.88	0.32	3.87
9,705.00	90.10	180.70	7,171.05	-2,629.91	-149.45	2,629.91	3.16	-0.97	-3.01
9,799.00	90.10	179.30	7,170.89	-2,723.90	-149.45	2,723.90	1.49	0.00	-1.49
9,886.00	90.69	180.86	7,170.29	-2,810.90	-149.58	2,810.90	1.92	0.67	1.80
Crosses Sec24 North 460'Setback									
9,888.00	90.70	180.90	7,170.27	-2,812.90	-149.61	2,812.90	1.92	0.67	1.80
9,978.00	91.70	180.60	7,168.38	-2,902.87	-150.79	2,902.87	1.16	1.11	-0.33
10,068.00	89.60	180.70	7,167.36	-2,992.85	-151.81	2,992.85	2.34	-2.33	0.11
10,158.00	90.50	180.00	7,167.28	-3,082.85	-152.36	3,082.85	1.27	1.00	-0.78
10,247.00	88.90	178.80	7,167.75	-3,171.84	-151.43	3,171.84	2.25	-1.80	-1.35
10,337.00	88.80	180.90	7,169.55	-3,261.81	-151.19	3,261.81	2.34	-0.11	2.33
10,427.00	87.90	180.60	7,172.15	-3,351.77	-152.37	3,351.77	1.05	-1.00	-0.33
10,517.00	88.40	181.10	7,175.05	-3,441.71	-153.70	3,441.71	0.79	0.56	0.56
10,607.00	91.30	181.10	7,175.29	-3,531.68	-155.43	3,531.68	3.22	3.22	0.00
10,697.00	91.20	180.40	7,173.32	-3,621.65	-156.61	3,621.65	0.79	-0.11	-0.78

Survey Report

Company:	PDC ENERGY	Local Co-ordinate Reference:	Well 13K-303 - Slot 13K-303
Project:	Weld County, CO (NAD83)	TVD Reference:	4805+13 @ 4818.00usft (ensign123)
Site:	Stroh 13GK-HZ Pad (True)	MD Reference:	4805+13 @ 4818.00usft (ensign123)
Well:	13K-303	North Reference:	True
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Lateral	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,786.00	91.20	178.80	7,171.46	-3,710.63	-155.99	3,710.63	1.80	0.00	-1.80
10,876.00	91.50	182.10	7,169.34	-3,800.59	-156.69	3,800.59	3.68	0.33	3.67
10,966.00	92.10	180.20	7,166.51	-3,890.52	-158.50	3,890.52	2.21	0.67	-2.11
11,056.00	91.90	180.40	7,163.37	-3,980.47	-158.97	3,980.47	0.31	-0.22	0.22
11,146.00	91.80	180.00	7,160.46	-4,070.42	-159.28	4,070.42	0.46	-0.11	-0.44
11,236.00	91.70	178.80	7,157.72	-4,160.37	-158.34	4,160.37	1.34	-0.11	-1.33
11,325.00	92.10	179.90	7,154.77	-4,249.31	-157.33	4,249.31	1.31	0.45	1.24
11,415.00	90.00	179.90	7,153.12	-4,339.29	-157.18	4,339.29	2.33	-2.33	0.00
11,505.00	89.30	179.50	7,153.67	-4,429.29	-156.70	4,429.29	0.90	-0.78	-0.44
11,595.00	88.90	179.00	7,155.08	-4,519.27	-155.53	4,519.27	0.71	-0.44	-0.56
11,685.00	88.70	178.10	7,156.96	-4,609.22	-153.25	4,609.22	1.02	-0.22	-1.00
11,775.00	89.30	180.70	7,158.54	-4,699.19	-152.31	4,699.19	2.96	0.67	2.89
11,865.00	89.40	179.90	7,159.56	-4,789.19	-152.78	4,789.19	0.90	0.11	-0.89
11,955.00	90.70	182.10	7,159.48	-4,879.17	-154.35	4,879.17	2.84	1.44	2.44
12,045.00	90.80	181.30	7,158.30	-4,969.12	-157.02	4,969.12	0.90	0.11	-0.89
12,135.00	90.50	179.70	7,157.28	-5,059.11	-157.80	5,059.11	1.81	-0.33	-1.78
12,225.00	90.10	183.40	7,156.81	-5,149.06	-160.24	5,149.06	4.13	-0.44	4.11
12,315.00	90.10	182.80	7,156.65	-5,238.92	-165.11	5,238.92	0.67	0.00	-0.67
12,405.00	89.80	182.00	7,156.73	-5,328.84	-168.87	5,328.84	0.95	-0.33	-0.89
12,495.00	89.60	181.80	7,157.20	-5,418.79	-171.86	5,418.79	0.31	-0.22	-0.22
12,585.00	91.60	180.20	7,156.26	-5,508.77	-173.43	5,508.77	2.85	2.22	-1.78
12,675.00	92.20	180.00	7,153.27	-5,598.72	-173.59	5,598.72	0.70	0.67	-0.22
12,765.00	91.70	179.50	7,150.21	-5,688.66	-173.19	5,688.66	0.79	-0.56	-0.56
12,854.00	92.00	179.70	7,147.34	-5,777.61	-172.57	5,777.61	0.41	0.34	0.22
12,944.00	89.70	180.40	7,146.00	-5,867.60	-172.65	5,867.60	2.67	-2.56	0.78
13,034.00	89.80	178.30	7,146.40	-5,957.59	-171.63	5,957.59	2.34	0.11	-2.33
13,124.00	90.80	179.90	7,145.92	-6,047.57	-170.22	6,047.57	2.10	1.11	1.78
13,214.00	90.80	179.50	7,144.67	-6,137.56	-169.75	6,137.56	0.44	0.00	-0.44
13,304.00	90.80	178.50	7,143.41	-6,227.54	-168.17	6,227.54	1.11	0.00	-1.11
13,394.00	90.00	180.40	7,142.78	-6,317.52	-167.31	6,317.52	2.29	-0.89	2.11
13,485.00	90.50	181.10	7,142.39	-6,408.52	-168.50	6,408.52	0.95	0.55	0.77
13,575.00	90.70	181.80	7,141.44	-6,498.48	-170.78	6,498.48	0.81	0.22	0.78
13,665.00	90.10	182.50	7,140.81	-6,588.41	-174.16	6,588.41	1.02	-0.67	0.78
13,755.00	91.10	184.10	7,139.87	-6,678.26	-179.34	6,678.26	2.10	1.11	1.78
13,845.00	91.50	184.10	7,137.83	-6,768.00	-185.77	6,768.00	0.44	0.44	0.00
13,935.00	90.10	182.10	7,136.57	-6,857.86	-190.63	6,857.86	2.71	-1.56	-2.22
14,025.00	89.40	183.20	7,136.97	-6,947.76	-194.80	6,947.76	1.45	-0.78	1.22
14,115.00	89.10	182.30	7,138.14	-7,037.64	-199.11	7,037.64	1.05	-0.33	-1.00
14,142.00	88.80	182.10	7,138.64	-7,064.62	-200.15	7,064.62	1.34	-1.11	-0.74
14,194.41	88.80	182.10	7,139.74	-7,116.99	-202.07	7,116.99	0.00	0.00	0.00
Stroh 13K-303 PBHL p1									
14,195.00	88.80	182.10	7,139.75	-7,117.57	-202.09	7,117.57	0.00	0.00	0.00

Survey Report

Company:	PDC ENERGY	Local Co-ordinate Reference:	Well 13K-303 - Slot 13K-303
Project:	Weld County, CO (NAD83)	TVD Reference:	4805+13 @ 4818.00usft (ensign123)
Site:	Stroh 13GK-HZ Pad (True)	MD Reference:	4805+13 @ 4818.00usft (ensign123)
Well:	13K-303	North Reference:	True
Wellbore:	Lateral	Survey Calculation Method:	Minimum Curvature
Design:	Lateral	Database:	EDM 5000.1 Single User Db

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Stroh 13K-303 SL - actual wellpath hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,356,827.768	3,183,256.753	40.311029	-104.842868
Stroh 13K-303 BHL - actual wellpath hits target center - Point	0.00	0.00	7,139.75	-7,117.57	-202.09	1,349,708.896	3,183,107.414	40.291491	-104.843592

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (in)	Hole Diameter (in)
7,968.00	7,195.78	7"		7.00	8.75