PDC Energy Inc. DJ Basin

OTTESEN 22C
OTTESEN LE PAD
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
Ground Elevation: 5076.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1245344.75	3202134.46	40.004600	-104.778430

T41 - RKB 25' WELL @ 5101.0ft (T41 - RKB 25')

OTTESEN LE PAD
OTTESEN 22C
OTTESEN 22C Final Surveys
16:38, January 18 2024

T M

Azimuths to True North
Magnetic North: 7.73°

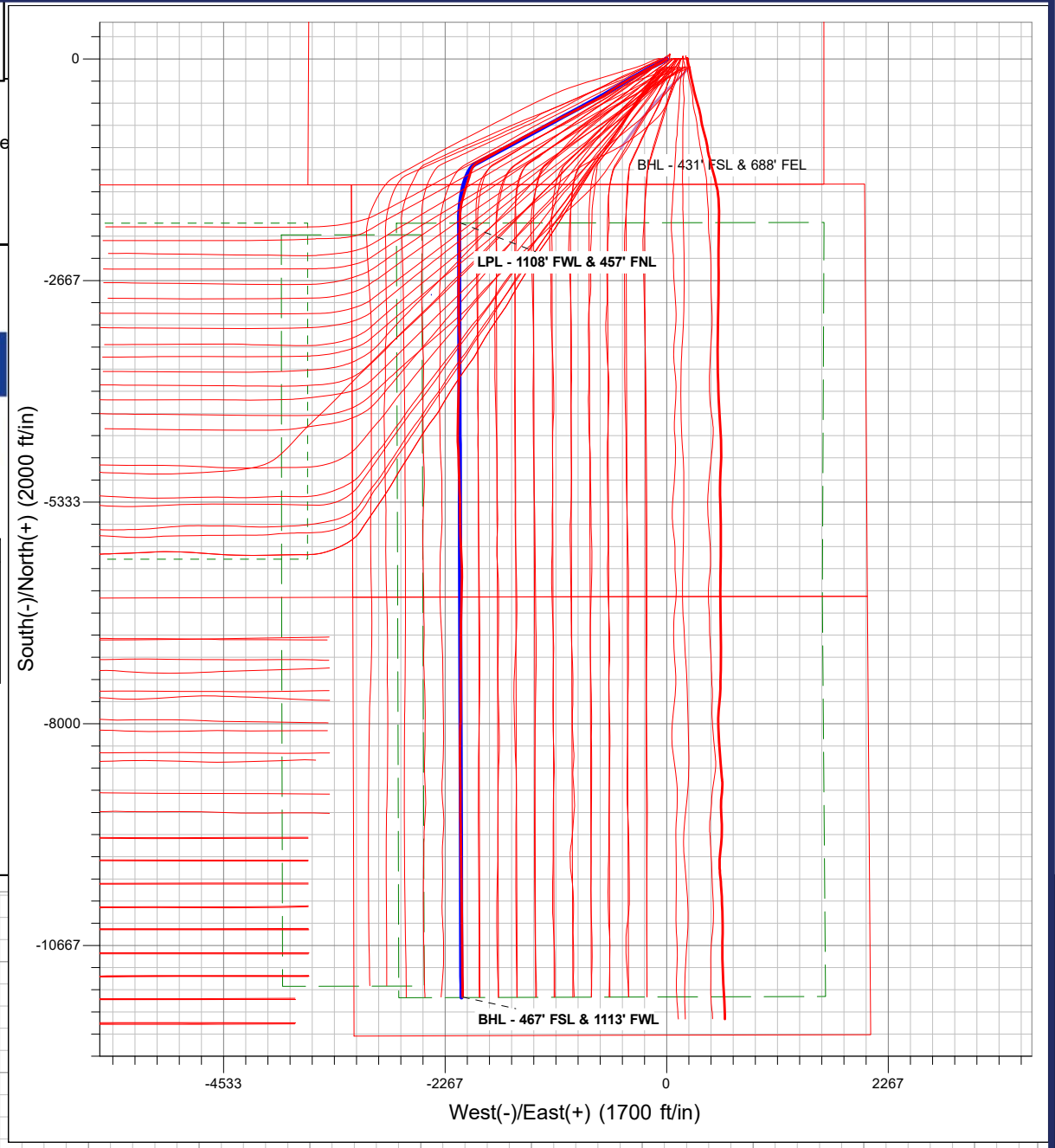
Magnetic Field
Strength: 51491.3nT
Dip Angle: 66.15°
Date: 10/26/2023
Model: HRGM

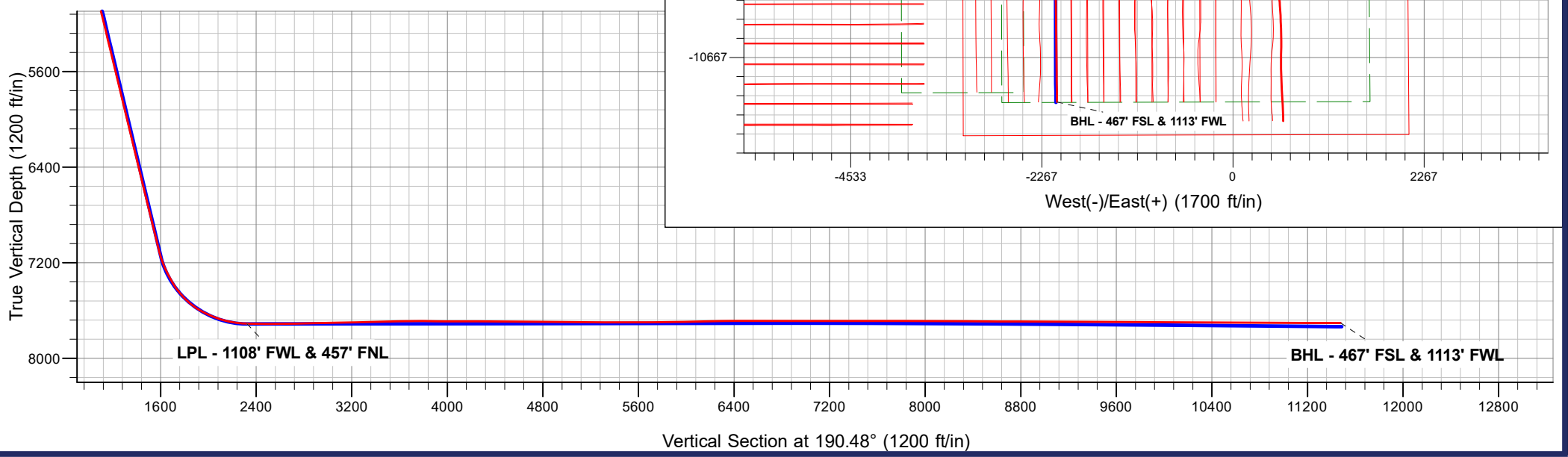
ENSIGN Directional

ANNOTATIONS

MD	TVD	Annotation
8526.0	7709.4	LPL - 1108' FWL & 457' FNL
17844.0	7704.2	BHL - 467' FSL & 1113' FWL

FINAL SURVEY
Projected Bottom Hole Location
17844' MD / 7704.2' TVD
89.79° INC / 179.06° AZM
467' FSL / 1113' FWL





PDC Energy Inc. DJ Basin

SEC.33-T1N-R66W
OTTESEN LE PAD
OTTESEN 22C

OTTESEN 22C

Design: OTTESEN 22C Final Surveys

Survey Report - Geographic

18 January, 2024

Ensign

Survey Report - Geographic

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well OTTESEN 22C
Project:	SEC.33-T1N-R66W	**TVD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Site:	OTTESEN LE PAD	**MD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Well:	OTTESEN 22C	**North Reference:**	True
Wellbore:	OTTESEN 22C	**Survey Calculation Method:**	Minimum Curvature
Design:	OTTESEN 22C Final Surveys	**Database:**	US_EDM

Project SEC.33-T1N-R66W

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site OTTESEN LE PAD

Site Position:		**Northing:**	1,246,401.00 usft	**Latitude:**	40.000000
From:	Lat/Long	**Easting:**	3,420,210.34 usft	**Longitude:**	-104.000000
Position Uncertainty:	0.0 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.97 °

Well OTTESEN 22C

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,245,344.75 usft	**Latitude:**	40.004600
	+E/-W	0.0 ft	**Easting:**	3,202,134.46 usft	**Longitude:**	-104.778431
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	5,076.0 ft

Wellbore OTTESEN 22C

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HRGM	10/26/2023	7.73	66.15	51,491.33096874

Design OTTESEN 22C Final Surveys

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	190.48

Survey Program **Date** 01/18/2024

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
153.0	17,844.0	Surface Survey (OTTESEN 22C)	MWD	MWD - Standard

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,245,344.75	3,202,134.46	40.004600	-104.778431
153.0	1.49	215.15	153.0	-1.6	-1.1	1,245,343.11	3,202,133.33	40.004595	-104.778435
244.0	2.37	225.70	243.9	-3.9	-3.2	1,245,340.81	3,202,131.32	40.004589	-104.778442
336.0	5.28	236.07	335.7	-7.6	-8.0	1,245,337.08	3,202,126.48	40.004579	-104.778459
453.0	8.35	233.26	451.9	-15.7	-19.3	1,245,328.90	3,202,115.26	40.004557	-104.778500
541.0	10.64	234.84	538.7	-24.2	-31.1	1,245,320.31	3,202,103.57	40.004533	-104.778542
630.0	14.33	238.00	625.5	-34.8	-47.2	1,245,309.60	3,202,087.59	40.004504	-104.778599
717.0	17.32	239.06	709.2	-47.1	-67.4	1,245,297.07	3,202,067.45	40.004470	-104.778671
804.0	18.03	238.71	792.1	-60.8	-90.0	1,245,283.24	3,202,044.95	40.004433	-104.778752
891.0	17.76	238.36	874.9	-74.7	-112.8	1,245,269.10	3,202,022.26	40.004395	-104.778833
978.0	19.70	239.76	957.3	-89.1	-136.8	1,245,254.56	3,201,998.41	40.004355	-104.778919
1,066.0	20.93	241.52	1,039.8	-104.0	-163.4	1,245,239.38	3,201,971.91	40.004314	-104.779014

Ensign

Survey Report - Geographic

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well OTTESEN 22C
Project:	SEC.33-T1N-R66W	**TVD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Site:	OTTESEN LE PAD	**MD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Well:	OTTESEN 22C	**North Reference:**	True
Wellbore:	OTTESEN 22C	**Survey Calculation Method:**	Minimum Curvature
Design:	OTTESEN 22C Final Surveys	**Database:**	US_EDM

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,151.0	20.31	238.18	1,119.4	-119.1	-189.3	1,245,224.15	3,201,946.15	40.004273	-104.779106
1,236.0	19.87	238.00	1,199.2	-134.5	-214.1	1,245,208.51	3,201,921.49	40.004230	-104.779195
1,325.0	19.87	236.77	1,282.9	-150.8	-239.6	1,245,192.00	3,201,896.14	40.004186	-104.779286
1,413.0	19.87	236.07	1,365.7	-167.3	-264.5	1,245,175.26	3,201,871.36	40.004140	-104.779375
1,500.0	19.35	236.25	1,447.6	-183.6	-288.7	1,245,158.80	3,201,847.24	40.004096	-104.779461
1,587.0	18.38	236.42	1,530.0	-199.2	-312.1	1,245,143.02	3,201,823.96	40.004053	-104.779545
1,675.0	17.94	236.95	1,613.6	-214.3	-335.1	1,245,127.77	3,201,801.16	40.004011	-104.779627
1,763.0	17.59	236.77	1,697.4	-228.9	-357.5	1,245,112.90	3,201,778.80	40.003971	-104.779707
1,852.0	17.15	235.87	1,782.3	-243.7	-379.6	1,245,097.99	3,201,756.81	40.003931	-104.779786
1,939.0	18.91	234.49	1,865.1	-259.1	-401.7	1,245,082.43	3,201,734.84	40.003888	-104.779865
2,025.0	19.08	234.84	1,946.4	-275.2	-424.6	1,245,066.05	3,201,712.14	40.003844	-104.779946
2,112.0	20.84	235.37	2,028.1	-292.2	-448.9	1,245,048.87	3,201,687.92	40.003797	-104.780033
2,197.0	20.05	235.02	2,107.8	-309.2	-473.3	1,245,031.73	3,201,663.67	40.003751	-104.780120
2,283.0	20.75	233.78	2,188.4	-326.6	-497.7	1,245,014.08	3,201,639.45	40.003703	-104.780207
2,367.0	19.52	235.02	2,267.3	-343.5	-521.2	1,244,997.05	3,201,616.08	40.003657	-104.780291
2,451.0	18.64	232.91	2,346.6	-359.6	-543.4	1,244,980.73	3,201,594.01	40.003612	-104.780370
2,614.0	18.34	229.30	2,501.2	-392.0	-583.6	1,244,947.97	3,201,554.05	40.003523	-104.780514
2,708.0	17.94	228.21	2,590.6	-411.3	-605.6	1,244,928.50	3,201,532.20	40.003470	-104.780593
2,802.0	17.34	235.15	2,680.1	-429.0	-627.9	1,244,910.66	3,201,510.05	40.003422	-104.780672
2,896.0	18.57	234.71	2,769.6	-445.6	-651.6	1,244,893.82	3,201,486.48	40.003376	-104.780757
2,989.0	19.49	233.47	2,857.5	-463.4	-676.2	1,244,875.83	3,201,462.07	40.003327	-104.780844
3,083.0	18.74	236.88	2,946.3	-481.0	-701.4	1,244,858.04	3,201,436.96	40.003279	-104.780935
3,176.0	19.15	240.35	3,034.3	-496.7	-727.2	1,244,842.12	3,201,411.32	40.003236	-104.781026
3,270.0	19.66	239.39	3,122.9	-512.4	-754.2	1,244,826.22	3,201,384.44	40.003193	-104.781123
3,364.0	19.82	239.50	3,211.4	-528.5	-781.6	1,244,809.86	3,201,357.23	40.003149	-104.781220
3,457.0	19.09	238.98	3,299.1	-544.4	-808.2	1,244,793.80	3,201,330.74	40.003105	-104.781316
3,552.0	19.51	237.06	3,388.8	-561.0	-834.8	1,244,776.95	3,201,304.25	40.003060	-104.781411
3,646.0	18.53	239.62	3,477.6	-577.1	-860.9	1,244,760.65	3,201,278.33	40.003015	-104.781504
3,740.0	19.85	238.64	3,566.4	-593.0	-887.4	1,244,744.58	3,201,251.94	40.002972	-104.781598
3,834.0	18.78	238.88	3,655.1	-609.1	-914.0	1,244,728.24	3,201,225.49	40.002928	-104.781693
3,927.0	19.30	239.22	3,743.0	-624.7	-940.0	1,244,712.42	3,201,199.60	40.002885	-104.781786
4,021.0	19.02	238.77	3,831.8	-640.6	-966.4	1,244,696.32	3,201,173.29	40.002841	-104.781880
4,115.0	18.10	236.95	3,920.9	-656.5	-991.8	1,244,680.21	3,201,148.08	40.002797	-104.781971
4,209.0	18.80	238.94	4,010.1	-672.3	-1,017.0	1,244,664.22	3,201,122.99	40.002754	-104.782061
4,303.0	19.41	243.29	4,098.9	-687.1	-1,043.9	1,244,649.17	3,201,096.19	40.002713	-104.782157
4,397.0	20.19	239.30	4,187.4	-702.4	-1,071.8	1,244,633.64	3,201,068.41	40.002671	-104.782257
4,490.0	20.01	238.81	4,274.7	-718.8	-1,099.2	1,244,616.98	3,201,041.13	40.002626	-104.782354
4,584.0	20.35	238.13	4,362.9	-735.8	-1,126.9	1,244,599.80	3,201,013.63	40.002580	-104.782453
4,679.0	19.26	238.29	4,452.3	-752.8	-1,154.2	1,244,582.62	3,200,986.41	40.002533	-104.782551
4,772.0	19.47	238.01	4,540.1	-769.0	-1,180.4	1,244,566.13	3,200,960.35	40.002488	-104.782644
4,866.0	19.66	238.50	4,628.6	-785.6	-1,207.2	1,244,549.36	3,200,933.72	40.002443	-104.782740
4,960.0	19.47	239.03	4,717.2	-801.9	-1,234.1	1,244,532.81	3,200,906.94	40.002398	-104.782836
5,055.0	19.89	238.46	4,806.6	-818.5	-1,261.4	1,244,515.99	3,200,879.73	40.002353	-104.782933
5,148.0	19.48	239.48	4,894.2	-834.7	-1,288.3	1,244,499.62	3,200,853.02	40.002308	-104.783029
5,242.0	19.08	239.25	4,982.9	-850.5	-1,315.0	1,244,483.59	3,200,826.44	40.002265	-104.783125
5,335.0	19.22	237.96	5,070.8	-866.4	-1,341.0	1,244,467.49	3,200,800.53	40.002221	-104.783218
5,429.0	19.86	238.11	5,159.4	-883.0	-1,367.7	1,244,450.63	3,200,774.00	40.002176	-104.783313
5,522.0	19.25	238.50	5,247.0	-899.4	-1,394.2	1,244,434.06	3,200,747.64	40.002131	-104.783407
5,616.0	19.68	237.85	5,335.6	-915.9	-1,420.8	1,244,417.32	3,200,721.17	40.002085	-104.783502
5,710.0	19.30	236.95	5,424.3	-932.8	-1,447.2	1,244,400.21	3,200,694.88	40.002039	-104.783597
5,805.0	19.47	237.78	5,513.9	-949.8	-1,473.8	1,244,382.99	3,200,668.47	40.001992	-104.783691
5,899.0	19.58	237.83	5,602.5	-966.5	-1,500.4	1,244,366.04	3,200,642.02	40.001946	-104.783786
5,993.0	19.35	236.93	5,691.1	-983.4	-1,526.7	1,244,348.94	3,200,615.78	40.001900	-104.783880
6,086.0	19.83	237.75	5,778.7	-1,000.2	-1,553.0	1,244,331.90	3,200,589.66	40.001854	-104.783974
6,180.0	19.67	236.90	5,867.2	-1,017.4	-1,579.7	1,244,314.54	3,200,563.07	40.001807	-104.784070

Ensign

Survey Report - Geographic

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well OTTESEN 22C
Project:	SEC.33-T1N-R66W	**TVD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Site:	OTTESEN LE PAD	**MD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Well:	OTTESEN 22C	**North Reference:**	True
Wellbore:	OTTESEN 22C	**Survey Calculation Method:**	Minimum Curvature
Design:	OTTESEN 22C Final Surveys	**Database:**	US_EDM

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,274.0	19.21	236.30	5,955.8	-1,034.6	-1,605.8	1,244,297.11	3,200,537.09	40.001759	-104.784163
6,367.0	19.93	238.17	6,043.4	-1,051.5	-1,632.0	1,244,280.05	3,200,511.03	40.001713	-104.784256
6,461.0	19.58	238.24	6,131.9	-1,068.2	-1,659.0	1,244,263.09	3,200,484.16	40.001667	-104.784353
6,554.0	18.64	238.18	6,219.8	-1,084.2	-1,684.9	1,244,246.84	3,200,458.41	40.001623	-104.784445
6,649.0	19.13	237.57	6,309.7	-1,100.6	-1,711.0	1,244,230.27	3,200,432.51	40.001578	-104.784538
6,741.0	19.14	236.42	6,396.6	-1,117.0	-1,736.3	1,244,213.64	3,200,407.35	40.001533	-104.784628
6,835.0	18.50	233.70	6,485.6	-1,134.4	-1,761.1	1,244,196.09	3,200,382.64	40.001485	-104.784717
6,929.0	20.28	237.32	6,574.2	-1,152.0	-1,786.8	1,244,178.25	3,200,357.05	40.001437	-104.784809
7,023.0	20.14	236.83	6,662.5	-1,169.6	-1,814.1	1,244,160.38	3,200,329.94	40.001389	-104.784906
7,117.0	19.15	234.40	6,751.0	-1,187.5	-1,840.2	1,244,142.34	3,200,304.00	40.001340	-104.784999
7,211.0	19.51	235.81	6,839.7	-1,205.3	-1,865.7	1,244,124.34	3,200,278.62	40.001291	-104.785090
7,305.0	19.59	237.39	6,928.3	-1,222.6	-1,892.0	1,244,106.81	3,200,252.51	40.001243	-104.785184
7,399.0	18.57	237.08	7,017.1	-1,239.2	-1,917.8	1,244,089.97	3,200,226.80	40.001198	-104.785276
7,493.0	19.38	237.44	7,106.0	-1,255.7	-1,943.5	1,244,073.24	3,200,201.23	40.001152	-104.785368
7,587.0	23.78	219.84	7,193.5	-1,278.7	-1,968.8	1,244,050.05	3,200,176.09	40.001089	-104.785458
7,680.0	26.63	203.20	7,277.7	-1,312.3	-1,989.1	1,244,016.28	3,200,156.11	40.000997	-104.785531
7,775.0	30.09	195.98	7,361.3	-1,354.8	-2,004.0	1,243,973.67	3,200,141.51	40.000880	-104.785584
7,868.0	38.59	192.69	7,438.1	-1,405.6	-2,016.9	1,243,922.77	3,200,129.11	40.000741	-104.785630
7,962.0	45.09	195.48	7,508.1	-1,466.4	-2,032.2	1,243,861.89	3,200,114.26	40.000574	-104.785685
8,056.0	54.87	194.80	7,568.4	-1,535.8	-2,051.0	1,243,792.33	3,200,096.08	40.000383	-104.785751
8,150.0	63.28	194.06	7,616.7	-1,613.8	-2,071.0	1,243,714.14	3,200,076.66	40.000169	-104.785823
8,243.0	68.56	193.34	7,654.6	-1,696.3	-2,091.1	1,243,631.52	3,200,057.24	39.999943	-104.785895
8,338.0	75.43	187.54	7,684.0	-1,785.0	-2,107.4	1,243,542.62	3,200,041.70	39.999699	-104.785953
8,431.0	82.31	182.07	7,701.9	-1,875.9	-2,114.9	1,243,451.72	3,200,034.85	39.999450	-104.785980
8,526.0	88.74	179.97	7,709.4	-1,970.5	-2,116.6	1,243,357.07	3,200,033.94	39.999190	-104.785986
LPL - 1108' FWL & 457' FNL									
8,621.0	88.80	181.54	7,711.4	-2,065.5	-2,117.9	1,243,262.09	3,200,033.46	39.998929	-104.785990
8,714.0	89.52	181.22	7,712.8	-2,158.5	-2,120.1	1,243,169.12	3,200,031.98	39.998674	-104.785998
8,808.0	91.06	180.15	7,712.3	-2,252.4	-2,121.2	1,243,075.12	3,200,031.62	39.998416	-104.786002
8,902.0	91.42	180.58	7,710.2	-2,346.4	-2,121.8	1,242,981.15	3,200,031.79	39.998158	-104.786004
8,996.0	91.23	180.63	7,708.1	-2,440.4	-2,122.8	1,242,887.17	3,200,031.56	39.997900	-104.786008
9,089.0	91.29	180.45	7,706.0	-2,533.4	-2,123.7	1,242,794.19	3,200,031.44	39.997645	-104.786011
9,183.0	91.21	181.16	7,704.0	-2,627.3	-2,125.0	1,242,700.22	3,200,030.89	39.997387	-104.786016
9,277.0	91.32	180.83	7,701.9	-2,721.3	-2,126.7	1,242,606.25	3,200,030.02	39.997129	-104.786021
9,371.0	91.03	181.30	7,700.0	-2,815.3	-2,128.4	1,242,512.27	3,200,029.04	39.996871	-104.786028
9,465.0	91.21	179.63	7,698.1	-2,909.2	-2,129.2	1,242,418.29	3,200,029.04	39.996613	-104.786030
9,559.0	91.33	179.09	7,696.1	-3,003.2	-2,128.1	1,242,324.33	3,200,030.85	39.996355	-104.786026
9,654.0	91.40	178.21	7,693.8	-3,098.1	-2,125.9	1,242,229.41	3,200,033.86	39.996094	-104.786018
9,748.0	91.37	178.23	7,691.5	-3,192.1	-2,123.0	1,242,135.51	3,200,037.55	39.995837	-104.786008
9,842.0	91.35	178.47	7,689.3	-3,286.0	-2,120.3	1,242,041.60	3,200,041.02	39.995579	-104.785998
9,936.0	90.29	177.42	7,687.9	-3,379.9	-2,116.9	1,241,947.70	3,200,045.15	39.995321	-104.785986
10,030.0	89.23	181.03	7,688.3	-3,473.9	-2,115.6	1,241,853.74	3,200,047.19	39.995063	-104.785982
10,124.0	88.97	182.41	7,689.8	-3,567.9	-2,118.4	1,241,759.78	3,200,045.13	39.994805	-104.785992
10,218.0	89.54	181.31	7,691.0	-3,661.8	-2,121.5	1,241,665.82	3,200,042.84	39.994547	-104.786003
10,313.0	90.03	180.84	7,691.4	-3,756.8	-2,123.3	1,241,570.83	3,200,041.83	39.994286	-104.786009
10,407.0	90.03	180.92	7,691.3	-3,850.8	-2,124.7	1,241,476.83	3,200,041.16	39.994028	-104.786014
10,501.0	90.02	181.76	7,691.3	-3,944.7	-2,126.9	1,241,382.84	3,200,039.72	39.993770	-104.786022
10,596.0	90.09	181.25	7,691.2	-4,039.7	-2,129.4	1,241,287.86	3,200,038.00	39.993510	-104.786031
10,690.0	89.93	181.18	7,691.2	-4,133.7	-2,131.4	1,241,193.86	3,200,036.77	39.993252	-104.786038
10,784.0	90.01	180.83	7,691.2	-4,227.7	-2,133.0	1,241,099.87	3,200,035.89	39.992994	-104.786044
10,879.0	89.39	181.81	7,691.7	-4,322.6	-2,135.2	1,241,004.88	3,200,034.47	39.992733	-104.786051
10,973.0	89.39	180.81	7,692.7	-4,416.6	-2,137.4	1,240,910.90	3,200,033.09	39.992475	-104.786059
11,067.0	89.14	179.99	7,693.9	-4,510.6	-2,138.0	1,240,816.91	3,200,033.20	39.992217	-104.786061
11,162.0	89.29	178.16	7,695.2	-4,605.6	-2,136.5	1,240,721.95	3,200,035.50	39.991956	-104.786056
11,256.0	88.95	177.51	7,696.7	-4,699.5	-2,133.0	1,240,628.06	3,200,039.82	39.991698	-104.786043

Ensign

Survey Report - Geographic

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well OTTESEN 22C
Project:	SEC.33-T1N-R66W	**TVD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Site:	OTTESEN LE PAD	**MD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Well:	OTTESEN 22C	**North Reference:**	True
Wellbore:	OTTESEN 22C	**Survey Calculation Method:**	Minimum Curvature
Design:	OTTESEN 22C Final Surveys	**Database:**	US_EDM

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
11,350.0	89.45	178.22	7,698.0	-4,793.4	-2,129.5	1,240,534.17	3,200,044.08	39.991441	-104.786031
11,444.0	89.20	178.64	7,699.1	-4,887.4	-2,126.9	1,240,440.23	3,200,047.42	39.991183	-104.786021
11,539.0	89.72	178.62	7,700.0	-4,982.3	-2,124.6	1,240,345.29	3,200,050.47	39.990922	-104.786013
11,633.0	89.86	178.85	7,700.4	-5,076.3	-2,122.5	1,240,251.33	3,200,053.31	39.990664	-104.786006
11,727.0	90.69	178.12	7,699.9	-5,170.3	-2,120.1	1,240,157.39	3,200,056.56	39.990406	-104.785997
11,821.0	90.52	178.99	7,698.9	-5,264.3	-2,117.7	1,240,063.45	3,200,059.69	39.990148	-104.785989
11,914.0	90.73	178.69	7,697.9	-5,357.2	-2,115.8	1,239,970.49	3,200,062.33	39.989893	-104.785982
12,008.0	90.68	179.00	7,696.7	-5,451.2	-2,113.9	1,239,876.54	3,200,064.99	39.989635	-104.785975
12,102.0	90.41	180.22	7,695.8	-5,545.2	-2,113.3	1,239,782.55	3,200,066.39	39.989377	-104.785973
12,196.0	90.61	178.24	7,695.0	-5,639.2	-2,112.0	1,239,688.58	3,200,068.42	39.989119	-104.785968
12,289.0	90.80	178.92	7,693.9	-5,732.1	-2,109.7	1,239,595.64	3,200,071.48	39.988864	-104.785960
12,384.0	91.39	178.33	7,692.0	-5,827.1	-2,107.4	1,239,500.71	3,200,074.53	39.988603	-104.785952
12,479.0	91.37	177.18	7,689.8	-5,922.0	-2,103.7	1,239,405.85	3,200,079.03	39.988342	-104.785938
12,573.0	91.21	177.74	7,687.6	-6,015.9	-2,099.5	1,239,312.00	3,200,083.96	39.988085	-104.785924
12,666.0	89.90	178.24	7,686.7	-6,108.8	-2,096.3	1,239,219.09	3,200,087.97	39.987830	-104.785912
12,760.0	89.93	180.62	7,686.9	-6,202.8	-2,095.3	1,239,125.12	3,200,089.67	39.987572	-104.785908
12,854.0	89.88	180.95	7,687.0	-6,296.8	-2,096.6	1,239,031.12	3,200,089.15	39.987314	-104.785913
12,948.0	90.02	181.59	7,687.1	-6,390.8	-2,098.7	1,238,937.13	3,200,087.83	39.987056	-104.785920
13,042.0	89.89	180.18	7,687.2	-6,484.8	-2,100.2	1,238,843.13	3,200,087.14	39.986798	-104.785926
13,136.0	89.58	181.28	7,687.6	-6,578.7	-2,101.4	1,238,749.14	3,200,086.71	39.986540	-104.785930
13,229.0	89.62	181.64	7,688.3	-6,671.7	-2,103.7	1,238,656.15	3,200,085.10	39.986284	-104.785938
13,323.0	90.10	179.64	7,688.5	-6,765.7	-2,104.8	1,238,562.16	3,200,084.81	39.986026	-104.785942
13,418.0	90.04	179.75	7,688.4	-6,860.7	-2,104.3	1,238,467.17	3,200,086.09	39.985766	-104.785940
13,512.0	89.66	180.70	7,688.6	-6,954.7	-2,104.6	1,238,373.17	3,200,086.49	39.985508	-104.785941
13,606.0	90.35	180.66	7,688.6	-7,048.7	-2,105.8	1,238,279.17	3,200,086.14	39.985249	-104.785945
13,699.0	90.33	180.94	7,688.1	-7,141.7	-2,107.1	1,238,186.18	3,200,085.60	39.984994	-104.785950
13,794.0	90.28	180.55	7,687.6	-7,236.7	-2,108.3	1,238,091.18	3,200,085.13	39.984733	-104.785954
13,888.0	90.45	180.02	7,687.0	-7,330.7	-2,108.8	1,237,997.18	3,200,085.43	39.984475	-104.785956
13,982.0	90.36	179.80	7,686.3	-7,424.7	-2,108.6	1,237,903.19	3,200,086.34	39.984217	-104.785955
14,076.0	89.68	179.70	7,686.3	-7,518.7	-2,108.2	1,237,809.20	3,200,087.52	39.983959	-104.785954
14,169.0	89.49	179.90	7,686.9	-7,611.7	-2,107.9	1,237,716.21	3,200,088.60	39.983704	-104.785953
14,263.0	89.73	180.02	7,687.6	-7,705.7	-2,107.8	1,237,622.21	3,200,089.43	39.983446	-104.785953
14,355.0	89.53	180.05	7,688.2	-7,797.7	-2,107.9	1,237,530.22	3,200,090.12	39.983193	-104.785953
14,448.0	89.58	180.34	7,688.9	-7,890.6	-2,108.2	1,237,437.22	3,200,090.56	39.982938	-104.785954
14,541.0	89.39	181.68	7,689.7	-7,983.6	-2,109.8	1,237,344.23	3,200,089.68	39.982683	-104.785960
14,635.0	89.63	181.21	7,690.5	-8,077.6	-2,112.2	1,237,250.25	3,200,088.07	39.982425	-104.785968
14,729.0	89.69	181.49	7,691.1	-8,171.6	-2,114.4	1,237,156.26	3,200,086.63	39.982167	-104.785976
14,822.0	89.69	179.73	7,691.6	-8,264.6	-2,115.4	1,237,063.27	3,200,086.39	39.981912	-104.785979
14,916.0	90.09	178.72	7,691.8	-8,358.5	-2,114.1	1,236,969.29	3,200,088.43	39.981654	-104.785975
15,010.0	89.80	179.22	7,691.9	-8,452.5	-2,112.4	1,236,875.32	3,200,090.88	39.981396	-104.785969
15,103.0	89.65	180.77	7,692.3	-8,545.5	-2,112.4	1,236,782.33	3,200,091.65	39.981140	-104.785969
15,197.0	89.91	179.37	7,692.7	-8,639.5	-2,112.5	1,236,688.34	3,200,092.30	39.980882	-104.785969
15,292.0	89.83	179.36	7,692.9	-8,734.5	-2,111.5	1,236,593.35	3,200,094.12	39.980622	-104.785965
15,386.0	89.83	179.34	7,693.2	-8,828.5	-2,110.4	1,236,499.37	3,200,095.95	39.980364	-104.785962
15,480.0	89.64	180.07	7,693.6	-8,922.5	-2,109.9	1,236,405.38	3,200,097.20	39.980105	-104.785960
15,574.0	89.72	180.04	7,694.1	-9,016.5	-2,110.0	1,236,311.39	3,200,097.88	39.979847	-104.785960
15,668.0	89.82	179.09	7,694.5	-9,110.5	-2,109.3	1,236,217.40	3,200,099.36	39.979589	-104.785957
15,762.0	89.65	179.86	7,695.0	-9,204.5	-2,108.5	1,236,123.42	3,200,100.98	39.979331	-104.785954
15,856.0	89.65	179.39	7,695.5	-9,298.5	-2,107.8	1,236,029.43	3,200,102.36	39.979073	-104.785952
15,950.0	89.82	179.25	7,696.0	-9,392.5	-2,106.7	1,235,935.45	3,200,104.24	39.978815	-104.785948
16,043.0	90.19	179.54	7,696.0	-9,485.5	-2,105.7	1,235,842.47	3,200,105.98	39.978560	-104.785945
16,232.0	89.25	179.06	7,696.9	-9,674.5	-2,103.4	1,235,653.51	3,200,109.83	39.978041	-104.785936
16,325.0	88.92	180.28	7,698.4	-9,767.4	-2,102.9	1,235,560.53	3,200,111.12	39.977786	-104.785934
16,419.0	89.86	178.32	7,699.4	-9,861.4	-2,101.7	1,235,466.56	3,200,113.03	39.977528	-104.785930
16,606.0	89.97	178.86	7,699.6	-10,048.4	-2,097.1	1,235,279.67	3,200,119.16	39.977015	-104.785914

Ensign

Survey Report - Geographic

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well OTTESEN 22C
Project:	SEC.33-T1N-R66W	**TVD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Site:	OTTESEN LE PAD	**MD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Well:	OTTESEN 22C	**North Reference:**	True
Wellbore:	OTTESEN 22C	**Survey Calculation Method:**	Minimum Curvature
Design:	OTTESEN 22C Final Surveys	**Database:**	US_EDM

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
16,701.0	89.82	179.92	7,699.8	-10,143.4	-2,096.1	1,235,184.68	3,200,120.94	39.976754	-104.785910
16,794.0	89.62	179.99	7,700.3	-10,236.4	-2,096.1	1,235,091.69	3,200,121.77	39.976499	-104.785910
16,888.0	89.88	179.70	7,700.7	-10,330.4	-2,095.8	1,234,997.70	3,200,122.79	39.976241	-104.785909
16,982.0	89.66	179.82	7,701.1	-10,424.4	-2,095.4	1,234,903.70	3,200,123.95	39.975983	-104.785907
17,076.0	89.66	179.36	7,701.6	-10,518.4	-2,094.7	1,234,809.72	3,200,125.38	39.975725	-104.785905
17,170.0	89.76	179.30	7,702.1	-10,612.3	-2,093.6	1,234,715.74	3,200,127.25	39.975467	-104.785901
17,359.0	89.71	179.84	7,703.0	-10,801.3	-2,092.2	1,234,526.76	3,200,130.21	39.974948	-104.785896
17,452.0	89.67	179.60	7,703.5	-10,894.3	-2,091.8	1,234,433.77	3,200,131.42	39.974692	-104.785894
17,547.0	89.84	179.87	7,703.9	-10,989.3	-2,091.3	1,234,338.78	3,200,132.63	39.974432	-104.785893
17,641.0	90.16	179.10	7,703.9	-11,083.3	-2,090.5	1,234,244.80	3,200,134.24	39.974174	-104.785890
17,735.0	89.88	178.89	7,703.8	-11,177.3	-2,088.8	1,234,150.83	3,200,136.65	39.973916	-104.785884
17,814.0	89.79	179.06	7,704.1	-11,256.3	-2,087.4	1,234,071.85	3,200,138.71	39.973699	-104.785879
17,844.0	89.79	179.06	7,704.2	-11,286.3	-2,086.9	1,234,041.86	3,200,139.44	39.973616	-104.785877
BHL - 467' FSL & 1113' FWL									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
8,526.0	7,709.4	-1,970.5	-2,116.6	LPL - 1108' FWL & 457' FNL
17,844.0	7,704.2	-11,286.3	-2,086.9	BHL - 467' FSL & 1113' FWL

Checked By: _____ Approved By: _____ Date: _____

PDC Energy Inc. DJ Basin

SEC.33-T1N-R66W
OTTESEN LE PAD
OTTESEN 22C

OTTESEN 22C
OTTESEN 22C Final Surveys

Anticollision Summary Report

18 January, 2024

Ensign

Anticollision Summary Report

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well OTTESEN 22C
Project:	SEC.33-T1N-R66W	**TVD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Reference Site:	OTTESEN LE PAD	**MD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	OTTESEN 22C	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OTTESEN 22C	**Database:**	US_EDM
Reference Design:	OTTESEN 22C Final Surveys	**Offset TVD Reference:**	Offset Datum

Reference	OTTESEN 22C Final Surveys		
Filter type:	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of refere		
Interpolation Method:	MD Interval 100.0ft	**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:	2.45 **Sigma**	**Casing Method:**	Not applied

Survey Program **Date** 01/18/2024

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
153.0	17,844.0	Surface Survey (OTTESEN 22C)	MWD	MWD - Standard

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Brant Federal Pad						
Brant Federal 13NA - Brant Federal 13NA - Brant Federa	15,915.0	22,941.0	1,574.5	1,332.9	6.517	CC
Brant Federal 13NA - Brant Federal 13NA - Brant Federa	16,400.0	22,941.0	1,647.0	1,283.3	4.528	ES
Brant Federal 13NA - Brant Federal 13NA - Brant Federa	17,100.0	22,941.0	1,969.9	1,448.0	3.775	SF
Brant Federal 14N - Brant Federal 14N - Brant Federal 1	16,187.1	23,137.0	1,569.0	1,318.8	6.269	CC
Brant Federal 14N - Brant Federal 14N - Brant Federal 1	16,700.0	23,137.0	1,651.2	1,277.5	4.419	ES
Brant Federal 14N - Brant Federal 14N - Brant Federal 1	17,400.0	23,137.0	1,978.6	1,449.8	3.742	SF
Brant Federal 15NA - Brant Federal 15NA - Brant Federa	16,100.0	22,976.0	1,619.7	1,276.4	4.718	ES
Brant Federal 15NA - Brant Federal 15NA - Brant Federa	16,446.7	22,976.0	1,578.3	1,315.1	5.996	CC
Brant Federal 15NA - Brant Federal 15NA - Brant Federa	17,600.0	22,976.0	1,940.9	1,424.2	3.757	SF
Brant Federal 16C - Brant Federal 16C - Brant Federal 1	16,400.0	23,292.0	1,606.2	1,259.0	4.626	ES
Brant Federal 16C - Brant Federal 16C - Brant Federal 1	16,758.1	23,292.0	1,571.7	1,305.4	5.903	CC
Brant Federal 16C - Brant Federal 16C - Brant Federal 1	17,844.0	23,292.0	1,917.0	1,401.3	3.717	SF
Brant Federal 17N - Brant Federal 17N - Brant Federal 1	16,700.0	23,165.0	1,619.4	1,267.3	4.600	ES
Brant Federal 17N - Brant Federal 17N - Brant Federal 1	17,022.1	23,165.0	1,585.9	1,306.0	5.666	CC
Brant Federal 17N - Brant Federal 17N - Brant Federal 1	17,844.0	23,165.0	1,788.8	1,328.6	3.887	SF
Brant Federal 18C - Brant Federal 18C - Brant Federal 1	16,400.0	23,409.0	1,817.4	1,348.5	3.876	SF
Brant Federal 18C - Brant Federal 18C - Brant Federal 1	17,000.0	23,409.0	1,604.2	1,242.9	4.441	ES
Brant Federal 18C - Brant Federal 18C - Brant Federal 1	17,317.3	23,409.0	1,573.7	1,284.5	5.443	CC
Brant Federal 19N - Brant Federal 19N - Brant Federal 1	16,700.0	23,354.0	1,814.3	1,340.3	3.827	SF
Brant Federal 19N - Brant Federal 19N - Brant Federal 1	17,200.0	23,354.0	1,628.9	1,240.8	4.197	ES
Brant Federal 19N - Brant Federal 19N - Brant Federal 1	17,600.0	23,354.0	1,582.0	1,283.0	5.292	CC
Brant Federal 20NA - Brant Federal 20NA - Brant Federa	16,900.0	23,194.0	1,975.6	1,495.5	4.115	SF
Brant Federal 20NA - Brant Federal 20NA - Brant Federa	17,500.0	23,194.0	1,763.6	1,377.0	4.562	ES
Brant Federal 20NA - Brant Federal 20NA - Brant Federa	17,844.0	23,194.0	1,728.4	1,412.7	5.476	CC
Brant Federal 21C - Brant Federal 21C - Brant Federal 2	17,300.0	23,580.0	1,919.5	1,439.9	4.003	SF
Brant Federal 21C - Brant Federal 21C - Brant Federal 2	17,800.0	23,580.0	1,755.5	1,356.9	4.404	ES
Brant Federal 21C - Brant Federal 21C - Brant Federal 2	17,844.0	23,580.0	1,747.5	1,357.8	4.484	CC

Ensign

Anticollision Summary Report

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well OTTESEN 22C
Project:	SEC.33-T1N-R66W	**TVD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Reference Site:	OTTESEN LE PAD	**MD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	OTTESEN 22C	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OTTESEN 22C	**Database:**	US_EDM
Reference Design:	OTTESEN 22C Final Surveys	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Brant Offsets						
Brant LE 08-039HC - Brant LE 08-039HC (ST 01) - Brant	13,564.2	23,612.0	1,368.4	1,161.0	6.598	CC
Brant LE 08-039HC - Brant LE 08-039HC (ST 01) - Brant	14,000.0	23,612.0	1,437.5	1,082.2	4.045	ES
Brant LE 08-039HC - Brant LE 08-039HC (ST 01) - Brant	14,600.0	23,612.0	1,720.4	1,219.7	3.436	SF
Brant LE 08-039HN - Brant LE 08-039HN - Brant LE 08-(	13,526.7	23,451.0	1,356.2	1,147.7	6.506	CC
Brant LE 08-039HN - Brant LE 08-039HN - Brant LE 08-(	14,000.0	23,451.0	1,437.1	1,068.6	3.900	ES
Brant LE 08-039HN - Brant LE 08-039HN - Brant LE 08-(	14,500.0	23,451.0	1,674.1	1,183.2	3.411	SF
Brant LE 08-042HN - Brant LE 08-042HN - Brant LE 08-(	13,887.3	23,439.0	1,347.8	1,137.1	6.396	CC
Brant LE 08-042HN - Brant LE 08-042HN - Brant LE 08-(	14,300.0	23,439.0	1,411.2	1,060.9	4.029	ES
Brant LE 08-042HN - Brant LE 08-042HN - Brant LE 08-(	14,900.0	23,439.0	1,682.9	1,181.4	3.356	SF
Brant LE 08-042HNX - Brant LE 08-042HNX - Brant LE (	13,806.4	23,174.0	1,392.3	1,175.5	6.421	CC
Brant LE 08-042HNX - Brant LE 08-042HNX - Brant LE (	14,200.0	23,174.0	1,450.9	1,109.5	4.250	ES
Brant LE 08-042HNX - Brant LE 08-042HNX - Brant LE (	14,800.0	23,174.0	1,713.4	1,222.2	3.488	SF
Brant LE 08-082HC - Brant LE 08-082HC - Brant LE 08-(	14,275.2	23,434.0	1,343.1	1,136.5	6.501	CC
Brant LE 08-082HC - Brant LE 08-082HC - Brant LE 08-(	14,800.0	23,434.0	1,434.9	1,036.8	3.604	ES
Brant LE 08-082HC - Brant LE 08-082HC - Brant LE 08-(	15,300.0	23,434.0	1,686.7	1,166.3	3.241	SF
Brant LE 08-082HN - Brant LE 08-082HN - Brant LE 08-(	14,153.4	23,259.0	1,356.4	1,151.2	6.611	CC
Brant LE 08-082HN - Brant LE 08-082HN - Brant LE 08-(	14,700.0	23,259.0	1,455.8	1,054.8	3.630	ES
Brant LE 08-082HN - Brant LE 08-082HN - Brant LE 08-(	15,200.0	23,259.0	1,707.3	1,186.2	3.276	SF
Brant LE 08-119HN - Brant LE 08-119HN - Brant LE 08-1	14,673.4	23,233.0	1,360.0	1,141.7	6.230	CC
Brant LE 08-119HN - Brant LE 08-119HN - Brant LE 08-1	15,100.0	23,233.0	1,435.8	1,058.3	3.803	ES
Brant LE 08-119HN - Brant LE 08-119HN - Brant LE 08-1	15,600.0	23,233.0	1,666.6	1,157.4	3.273	SF
Brant LE 08-119HNX - Brant LE 08-119HNX - Brant LE 0	14,600.0	23,017.0	1,403.7	1,172.7	6.078	CC
Brant LE 08-119HNX - Brant LE 08-119HNX - Brant LE 0	15,000.0	23,017.0	1,473.7	1,104.6	3.993	ES
Brant LE 08-119HNX - Brant LE 08-119HNX - Brant LE 0	15,600.0	23,017.0	1,756.6	1,239.1	3.395	SF
Brant LE 08-159HC - Brant LE 08-159HC - Brant LE 08-'	14,971.2	23,212.0	1,478.3	1,264.5	6.914	CC
Brant LE 08-159HC - Brant LE 08-159HC - Brant LE 08-'	15,500.0	23,212.0	1,565.1	1,184.7	4.114	ES
Brant LE 08-159HC - Brant LE 08-159HC - Brant LE 08-'	16,100.0	23,212.0	1,851.9	1,331.4	3.558	SF
Brant LE 08-159HN - Brant LE 08-159HN - Brant LE 08-'	14,885.8	23,102.0	1,343.3	1,129.9	6.294	CC
Brant LE 08-159HN - Brant LE 08-159HN - Brant LE 08-'	15,400.0	23,102.0	1,434.9	1,043.4	3.665	ES
Brant LE 08-159HN - Brant LE 08-159HN - Brant LE 08-'	15,900.0	23,102.0	1,676.3	1,157.9	3.233	SF
Brant LE 08-162HNX - Brant LE 08-162HNX - Brant LE (	15,389.0	23,174.0	1,343.7	1,119.2	5.984	CC
Brant LE 08-162HNX - Brant LE 08-162HNX - Brant LE (	15,900.0	23,174.0	1,435.9	1,041.9	3.644	ES
Brant LE 08-162HNX - Brant LE 08-162HNX - Brant LE (	16,400.0	23,174.0	1,680.4	1,160.1	3.229	SF
Brant LE 08-199HC - Brant LE 08-199HC - Brant LE 08-'	15,626.5	23,369.0	1,342.0	1,111.2	5.815	CC
Brant LE 08-199HC - Brant LE 08-199HC - Brant LE 08-'	16,100.0	23,369.0	1,425.0	1,040.7	3.708	ES
Brant LE 08-199HC - Brant LE 08-199HC - Brant LE 08-'	16,600.0	23,369.0	1,663.7	1,147.9	3.225	SF
Ottesen LE 06-370HC - Ottesen LE 06-370HC - Ottesen	828.6	809.5	42.9	37.4	7.887	CC, ES
Ottesen LE 06-370HC - Ottesen LE 06-370HC - Ottesen	12,500.0	10,092.5	1,090.5	816.6	3.982	SF
Ottesen LE 06-370HN - Ottesen LE 06-370HN - Ottesen	858.9	828.7	70.4	65.1	13.301	CC, ES
Ottesen LE 06-370HN - Ottesen LE 06-370HN - Ottesen	12,600.0	9,961.0	1,172.6	904.1	4.367	SF
Brighton Lakes Pad Sec.20-T1S-R66W						
Brighton Lakes 20-17-2CDH (Existing) - Brighton Lakes 2	17,844.0	18,430.0	1,844.7	1,476.5	5.011	CC, ES, SF

Ensign

Anticollision Summary Report

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well OTTESEN 22C
Project:	SEC.33-T1N-R66W	**TVD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Reference Site:	OTTESEN LE PAD	**MD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	OTTESEN 22C	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OTTESEN 22C	**Database:**	US_EDM
Reference Design:	OTTESEN 22C Final Surveys	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
OTTESEN LE PAD						
OTTESEN 14NA - OTTESEN 14NA - Ottesen 14NA STK	0.0	1.0	246.0			
OTTESEN 14NA - OTTESEN 14NA - Ottesen 14NA STK	11,100.0	9,096.0	1,160.2	945.5	5.405	SF
OTTESEN 14NA - OWB - Ottesen 14NA OWB	0.0	1.0	246.0			
OTTESEN 14NA - OWB - Ottesen 14NA OWB	2,300.0	2,281.0	460.4	429.1	14.712	SF
OTTESEN 15C - Ottsen 15C - Ottesen 15C Final Survey	0.0	0.0	260.0			
OTTESEN 15C - Ottsen 15C - Ottesen 15C Final Survey	3,000.0	3,141.9	269.0	234.1	7.723	ES
OTTESEN 15C - Ottsen 15C - Ottesen 15C Final Survey	11,000.0	9,379.0	972.4	807.8	5.908	SF
OTTESEN 16N - OTTESEN 16N - OTTESEN 16N Final	0.0	0.0	273.9			
OTTESEN 16N - OTTESEN 16N - OTTESEN 16N Final	200.0	200.9	274.2	273.5	355.294	ES
OTTESEN 16N - OTTESEN 16N - OTTESEN 16N Final	11,200.0	9,473.0	1,065.2	852.2	5.000	SF
OTTESEN 17N - OTTESEN 17N - OTTESEN 17N Final	652.1	646.9	43.9	40.1	11.556	CC, ES
OTTESEN 17N - OTTESEN 17N - OTTESEN 17N Final	17,844.0	17,954.0	989.4	499.7	2.020	SF
OTTESEN 18C - OTTESEN 18C - OTTESEN 18C Final	177.5	176.3	59.0	58.5	115.126	CC, ES
OTTESEN 18C - OTTESEN 18C - OTTESEN 18C Final	17,800.0	17,824.0	782.6	286.3	1.577	SF
OTTESEN 19NA - OTTESEN 19NA - OTTESEN 19NA Fi	485.1	483.7	29.6	27.2	12.645	CC, ES
OTTESEN 19NA - OTTESEN 19NA - OTTESEN 19NA Fi	17,844.0	17,791.6	684.9	248.9	1.571	SF
OTTESEN 20N - OTTESEN 20N - OTTESEN 20N Final	568.9	566.1	20.5	17.4	6.617	CC
OTTESEN 20N - OTTESEN 20N - OTTESEN 20N Final	17,844.0	17,808.0	408.8	-65.5	0.862	Level 1, ES, SF
OTTESEN 21N - OTTESEN 21N - OTTESEN 21N Final	342.2	341.9	10.8	9.2	6.845	CC
OTTESEN 21N - OTTESEN 21N - OTTESEN 21N Final	6,448.9	6,609.2	44.7	-51.7	0.464	Level 1, SF
OTTESEN 21N - OTTESEN 21N - OTTESEN 21N Final	17,844.0	17,820.6	322.0	-54.9	0.854	Level 1, ES
OTTESEN 22C - OTTESEN 22C - OTTESEN 22C Plan #	8,830.2	8,837.9	2.5	-89.0	0.027	Level 1, CC, SF
OTTESEN 22C - OTTESEN 22C - OTTESEN 22C Plan #	17,844.0	17,849.4	33.5	-217.0	0.134	Level 1, ES
OTTESEN 23NA - OTTESEN 23NA - OTTESEN 23NA Fi	0.0	0.0	15.0			
OTTESEN 23NA - OTTESEN 23NA - OTTESEN 23NA Fi	3,700.0	3,711.0	61.9	14.7	1.312	Level 3, ES
OTTESEN 23NA - OTTESEN 23NA - OTTESEN 23NA Fi	7,300.0	7,306.0	121.0	15.6	1.149	Level 2, SF
OTTESEN 23NA - OTTESEN 23NA - OTTESEN 23NA P	0.0	0.0	15.0			
OTTESEN 23NA - OTTESEN 23NA - OTTESEN 23NA P	7,200.0	7,209.9	109.5	5.3	1.051	Level 2, ES, SF
OTTESEN 24N - OTTESEN 24N - OTTESEN 24N Final	0.0	0.0	30.1			
OTTESEN 24N - OTTESEN 24N - OTTESEN 24N Final	17,844.0	17,688.0	397.3	-54.9	0.879	Level 1, ES, SF
OTTESEN 24N - OTTESEN 24N - OTTESEN 24N Plan #	0.0	0.0	30.1			
OTTESEN 24N - OTTESEN 24N - OTTESEN 24N Plan #	17,844.0	17,728.4	390.9	-86.6	0.819	Level 1, ES, SF
OTTESEN 25N - OTTESEN 25N - OTTESEN 25N Final	0.0	0.0	45.2			
OTTESEN 25N - OTTESEN 25N - OTTESEN 25N Final	200.0	200.6	45.5	44.9	73.561	ES
OTTESEN 25N - OTTESEN 25N - OTTESEN 25N Final	17,843.9	17,485.5	595.3	136.0	1.296	Level 3, SF
OTTESEN 25N - OTTESEN 25N - OTTESEN 25N Plan #	0.0	0.0	45.2			
OTTESEN 25N - OTTESEN 25N - OTTESEN 25N Plan #	200.0	200.6	45.5	44.9	73.561	ES
OTTESEN 25N - OTTESEN 25N - OTTESEN 25N Plan #	17,844.0	17,472.7	598.3	124.8	1.264	Level 3, SF
OTTESEN 26C - OTTESEN 26C - OTTESEN 26C Final	0.0	0.0	59.8			
OTTESEN 26C - OTTESEN 26C - OTTESEN 26C Final	17,844.0	17,702.1	754.1	262.5	1.534	SF
OTTESEN 26C - OTTESEN 26C - OTTESEN 26C Plan #	0.0	0.0	59.8			
OTTESEN 26C - OTTESEN 26C - OTTESEN 26C Plan #	17,844.0	17,682.6	746.4	237.9	1.468	Level 3, SF
OTTESEN 27NA - OTTESEN 27NA - OTTESEN 27NA F	0.0	0.0	75.2			
OTTESEN 27NA - OTTESEN 27NA - OTTESEN 27NA F	17,844.0	17,418.5	1,007.9	546.8	2.186	SF
OTTESEN 27NA - OTTESEN 27NA - OTTESEN 27NA P	0.0	0.0	75.2			
OTTESEN 27NA - OTTESEN 27NA - OTTESEN 27NA P	17,843.9	17,417.9	1,001.6	527.8	2.114	SF
OTTESEN 28N - OTTESEN 28N - OTTESEN 28N Final	103.9	104.8	90.3	90.0	294.425	CC
OTTESEN 28N - OTTESEN 28N - OTTESEN 28N Final	200.0	201.4	90.5	89.7	112.055	ES
OTTESEN 28N - OTTESEN 28N - OTTESEN 28N Final	17,844.0	17,446.2	1,151.1	794.6	3.229	SF
OTTESEN 28N - OTTESEN 28N - OTTESEN 28N Plan #	103.9	104.8	90.3	90.0	294.425	CC
OTTESEN 28N - OTTESEN 28N - OTTESEN 28N Plan #	200.0	201.4	90.5	89.7	112.055	ES
OTTESEN 28N - OTTESEN 28N - OTTESEN 28N Plan #	17,844.0	17,484.8	1,138.9	640.6	2.286	SF
OTTESEN 29C - OTTESEN 29C - OTTESEN 29C Final	0.0	0.0	104.9			

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

Ensign

Anticollision Summary Report

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well OTTESEN 22C
Project:	SEC.33-T1N-R66W	**TVD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Reference Site:	OTTESEN LE PAD	**MD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	OTTESEN 22C	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OTTESEN 22C	**Database:**	US_EDM
Reference Design:	OTTESEN 22C Final Surveys	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
OTTESEN LE PAD						
OTTESEN 29C - OTTESEN 29C - OTTESEN 29C Final	17,844.0	17,600.0	1,316.5	824.5	2.676	SF
OTTESEN 29C - OTTESEN 29C - OTTESEN 29C Plan #	0.0	0.0	104.9			
OTTESEN 29C - OTTESEN 29C - OTTESEN 29C Plan #	17,844.0	17,590.4	1,316.4	808.1	2.590	SF
OTTESEN 30N - OTTESEN 30N - OTTESEN 30N Final	0.0	0.0	120.0			
OTTESEN 30N - OTTESEN 30N - OTTESEN 30N Final	100.0	101.0	120.2	119.9	386.378	ES
OTTESEN 30N - OTTESEN 30N - OTTESEN 30N Final	17,834.6	17,395.0	1,519.5	1,034.5	3.133	SF
OTTESEN 30N - OTTESEN 30N - OTTESEN 30N Plan #	0.0	0.0	120.0			
OTTESEN 30N - OTTESEN 30N - OTTESEN 30N Plan #	100.0	101.0	120.2	119.9	386.378	ES
OTTESEN 30N - OTTESEN 30N - OTTESEN 30N Plan #	17,844.0	17,404.0	1,526.4	1,023.5	3.036	SF
OTTESEN 31N - OTTESEN 31N - OTTESEN 31N Final	0.0	0.0	135.4			
OTTESEN 31N - OTTESEN 31N - OTTESEN 31N Final	17,844.0	17,338.1	1,706.4	1,222.0	3.523	SF
OTTESEN 31N - OTTESEN 31N - OTTESEN 31N Plan #	0.0	0.0	135.4			
OTTESEN 31N - OTTESEN 31N - OTTESEN 31N Plan #	17,844.0	17,393.4	1,702.0	1,195.3	3.359	SF
OTTESEN 32NA - OTTESEN 32NA - OTTESEN 32NA Fi	122.7	124.6	149.7	149.1	254.538	CC, ES
OTTESEN 32NA - OTTESEN 32NA - OTTESEN 32NA Fi	17,835.8	17,236.0	1,917.2	1,559.7	5.363	SF
OTTESEN 32NA - OTTESEN 32NA - OTTESEN 32NA P	122.7	124.6	149.7	149.1	254.538	CC, ES
OTTESEN 32NA - OTTESEN 32NA - OTTESEN 32NA P	17,844.0	17,221.9	1,922.0	1,426.7	3.881	SF
OTTESEN FEDERAL 01N - OTTESEN FEDERAL 01N -	1,465.6	1,473.1	70.6	56.4	4.962	CC, ES
OTTESEN FEDERAL 01N - OTTESEN FEDERAL 01N -	1,500.0	1,506.0	71.1	56.8	4.961	SF
OTTESEN FEDERAL 02NA - OTTESEN FEDERAL 02NA	643.0	645.3	105.1	100.5	22.882	CC, ES
OTTESEN FEDERAL 02NA - OTTESEN FEDERAL 02NA	1,800.0	1,801.8	125.7	107.0	6.733	SF
OTTESEN FEDERAL 03C - OTTESEN FEDERAL 03C -	517.8	519.1	113.3	109.9	33.770	CC
OTTESEN FEDERAL 03C - OTTESEN FEDERAL 03C -	600.0	600.6	114.0	109.9	27.558	ES
OTTESEN FEDERAL 03C - OTTESEN FEDERAL 03C -	1,800.0	1,800.7	143.6	124.6	7.539	SF
OTTESEN FEDERAL 04N - OTTESEN FEDERAL 04N -	0.0	0.0	125.4			
OTTESEN FEDERAL 04N - OTTESEN FEDERAL 04N -	500.0	500.6	127.3	124.1	40.119	ES
OTTESEN FEDERAL 04N - OTTESEN FEDERAL 04N -	9,500.0	8,282.1	1,195.5	1,069.9	9.521	SF
OTTESEN FEDERAL 05N - OTTESEN FEDERAL 05N -	460.5	466.4	129.6	126.8	45.999	CC
OTTESEN FEDERAL 05N - OTTESEN FEDERAL 05N -	500.0	505.2	129.8	126.6	41.306	ES
OTTESEN FEDERAL 05N - OTTESEN FEDERAL 05N -	2,300.0	2,333.4	192.3	166.5	7.438	SF
OTTESEN FEDERAL 06NA - OTTESEN FEDERAL 06NA	409.3	415.0	139.3	136.9	57.874	CC, ES
OTTESEN FEDERAL 06NA - OTTESEN FEDERAL 06NA	9,800.0	8,374.6	1,259.9	1,130.7	9.750	SF
OTTESEN FEDERAL 07C - OTTESEN FEDERAL 07C -	300.0	302.6	155.1	153.5	100.228	CC, ES
OTTESEN FEDERAL 07C - OTTESEN FEDERAL 07C -	9,800.0	8,582.3	1,033.1	897.8	7.639	SF
OTTESEN FEDERAL 08N - OTTESEN FEDERAL 08N -	0.0	0.0	168.4			
OTTESEN FEDERAL 08N - OTTESEN FEDERAL 08N -	10,100.0	8,534.0	1,163.3	1,023.4	8.317	SF
OTTESEN FEDERAL 09N - OTTESEN FEDERAL 09N -	0.0	1.0	180.5			
OTTESEN FEDERAL 09N - OTTESEN FEDERAL 09N -	200.0	200.3	180.9	180.1	227.491	ES
OTTESEN FEDERAL 09N - OTTESEN FEDERAL 09N -	10,200.0	8,716.0	1,079.6	934.1	7.422	SF
OTTESEN FEDERAL 10NA - OTTESEN FEDERAL 10NA	0.0	1.0	192.8			
OTTESEN FEDERAL 10NA - OTTESEN FEDERAL 10NA	200.0	200.8	193.1	192.3	242.640	ES
OTTESEN FEDERAL 10NA - OTTESEN FEDERAL 10NA	10,400.0	8,666.0	1,218.6	1,077.2	8.618	SF
OTTESEN FEDERAL 11C - OTTESEN FEDERAL 11C -	3,112.1	3,227.9	162.0	124.6	4.330	CC, ES, SF
OTTESEN FEDERAL 12N - OTTESEN FEDERAL 12N -	0.0	0.0	219.1			
OTTESEN FEDERAL 12N - OTTESEN FEDERAL 12N -	10,700.0	9,161.4	1,142.4	939.3	5.624	SF
OTTESEN FEDERAL 13N - OTTESEN FEDERAL 13N -	202.7	206.1	231.9	231.0	279.728	CC, ES
OTTESEN FEDERAL 13N - OTTESEN FEDERAL 13N -	10,800.0	9,019.0	1,079.2	922.9	6.907	SF

Ensign

Anticollision Summary Report

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well OTTESEN 22C
Project:	SEC.33-T1N-R66W	**TVD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Reference Site:	OTTESEN LE PAD	**MD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	OTTESEN 22C	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OTTESEN 22C	**Database:**	US_EDM
Reference Design:	OTTESEN 22C Final Surveys	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Ottesen Offsets						
Bailey 1 - Bailey 1 - Bailey 1 (Vert)	9,400.0	7,673.5	279.2	-165.8	0.627	Level 1, CC, ES, SF
OTTESEN LE 06-290HN - Ottesen LE 06-290HN - Ottes	556.2	549.0	86.5	83.4	28.588	CC, ES
OTTESEN LE 06-290HN - Ottesen LE 06-290HN - Ottes	11,500.0	9,647.0	1,133.4	902.3	4.904	SF
OTTESEN LE 06-290HNX - Ottesen LE 06-290HNX - Ot	609.5	601.1	79.5	76.1	23.246	CC, ES
OTTESEN LE 06-290HNX - Ottesen LE 06-290HNX - Ot	2,700.0	2,731.0	262.0	227.8	7.669	SF
OTTESEN LE 06-311HC - Ottesen LE 06-311HC - Ottes	645.5	635.5	74.0	69.3	15.473	CC, ES
OTTESEN LE 06-311HC - Ottesen LE 06-311HC - Ottes	11,800.0	9,787.3	1,076.1	889.4	5.765	SF
OTTESEN LE 06-311HN - Ottesen LE 06-311HN - Ottes	701.8	690.0	64.6	60.4	15.271	CC, ES
OTTESEN LE 06-311HN - Ottesen LE 06-311HN - Ottes	12,000.0	9,783.0	1,166.4	919.3	4.720	SF
OTTESEN LE 06-351HN - Ottesen LE 06-351HN - Ottes	738.4	724.5	56.9	52.3	12.420	CC, ES
OTTESEN LE 06-351HN - Ottesen LE 06-351HN - Ottes	12,300.0	9,908.4	1,170.3	909.3	4.484	SF
OTTESEN LE 06-351HNX - Ottesen LE 06-351HNX - Ot	771.0	751.6	57.3	52.5	11.911	CC
OTTESEN LE 06-351HNX - Ottesen LE 06-351HNX - Ot	800.0	780.0	57.5	52.4	11.164	ES
OTTESEN LE 06-351HNX - Ottesen LE 06-351HNX - Ot	12,400.0	9,782.0	1,280.1	1,030.3	5.125	SF
OTTESEN LE 06-370HC - Ottesen LE 06-370HC - Ottes	828.6	810.0	42.9	37.4	7.888	CC, ES
OTTESEN LE 06-370HC - Ottesen LE 06-370HC - Ottes	12,500.0	10,092.8	1,090.6	818.2	4.004	SF
OTTESEN LE 06-370HN - Ottesen LE 06-370HN - Ottes	858.6	828.9	70.6	65.3	13.342	CC, ES
OTTESEN LE 06-370HN - Ottesen LE 06-370HN - Ottes	12,600.0	9,961.0	1,172.7	905.6	4.390	SF
OTTESEN LE 09-366HN - Ottesen LE 09-366HN - Ottes	0.0	0.0	195.7			
OTTESEN LE 09-366HN - Ottesen LE 09-366HN - Ottes	6,400.0	6,304.6	1,969.7	1,916.7	37.180	SF
OTTESEN LE 09-366HNX - Ottesen LE 09-366HNX - Ot	0.0	0.0	210.1			
OTTESEN LE 09-366HNX - Ottesen LE 09-366HNX - Ot	6,100.0	5,956.8	1,927.9	1,877.8	38.517	SF
OTTESEN LE 09-368HC - Ottesen LE 09-368HC - Ottes	0.0	0.0	165.0			
OTTESEN LE 09-368HC - Ottesen LE 09-368HC - Ottes	100.0	94.9	165.5	164.4	143.868	ES
OTTESEN LE 09-368HC - Ottesen LE 09-368HC - Ottes	7,300.0	7,297.0	1,977.4	1,910.4	29.540	SF
OTTESEN LE 09-368HN - Ottesen LE 09-368HN - Ottes	0.0	0.0	180.0			
OTTESEN LE 09-368HN - Ottesen LE 09-368HN - Ottes	100.0	95.5	180.5	179.3	156.373	ES
OTTESEN LE 09-368HN - Ottesen LE 09-368HN - Ottes	7,000.0	6,873.8	1,972.8	1,909.9	31.374	SF

Ensign

Anticollision Summary Report

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well OTTESEN 22C
Project:	SEC.33-T1N-R66W	**TVD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Reference Site:	OTTESEN LE PAD	**MD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	OTTESEN 22C	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OTTESEN 22C	**Database:**	US_EDM
Reference Design:	OTTESEN 22C Final Surveys	**Offset TVD Reference:**	Offset Datum

Summary

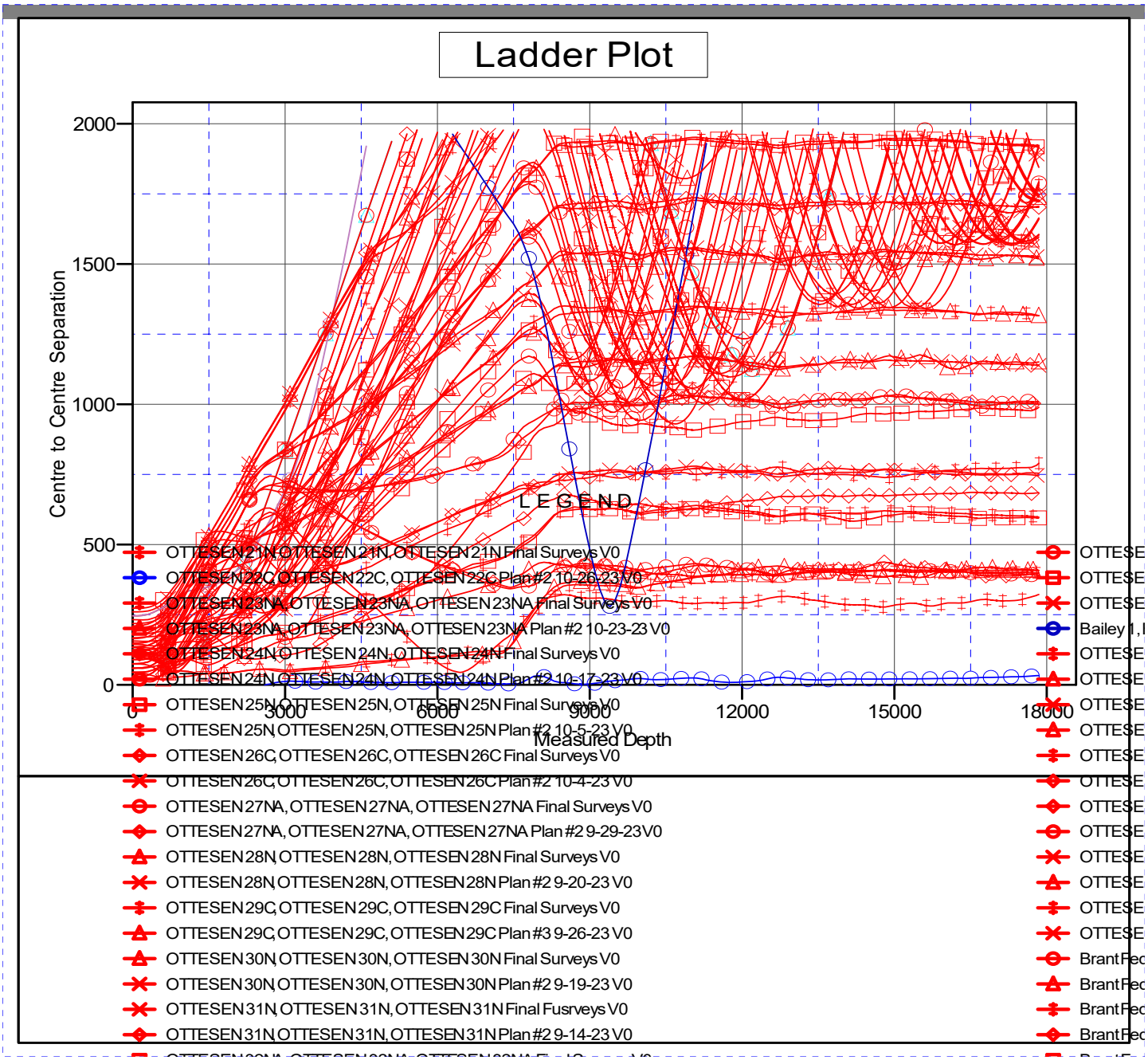
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Praire Offsets						
Brant Federal 13NA - Brant Federal 13NA - Brant Federa	15,896.8	22,941.0	1,573.8	1,331.8	6.505	CC
Brant Federal 13NA - Brant Federal 13NA - Brant Federa	16,400.0	22,941.0	1,650.1	1,282.8	4.493	ES
Brant Federal 13NA - Brant Federal 13NA - Brant Federa	17,100.0	22,941.0	1,976.8	1,453.1	3.775	SF
Brant Federal 14N - Brant Federal 14N - Brant Federal 1	16,175.7	23,137.0	1,568.1	1,318.2	6.275	CC
Brant Federal 14N - Brant Federal 14N - Brant Federal 1	16,700.0	23,137.0	1,654.2	1,277.0	4.386	ES
Brant Federal 14N - Brant Federal 14N - Brant Federal 1	17,300.0	23,137.0	1,926.2	1,411.4	3.742	SF
Brant Federal 15NA - Brant Federal 15NA - Brant Federa	16,100.0	22,976.0	1,615.9	1,275.7	4.749	ES
Brant Federal 15NA - Brant Federal 15NA - Brant Federa	16,434.9	22,976.0	1,577.1	1,314.2	6.000	CC
Brant Federal 15NA - Brant Federal 15NA - Brant Federa	17,600.0	22,976.0	1,947.2	1,428.7	3.755	SF
Brant Federal 16C - Brant Federal 16C - Brant Federal 1	16,400.0	23,292.0	1,602.4	1,258.2	4.656	ES
Brant Federal 16C - Brant Federal 16C - Brant Federal 1	16,745.5	23,292.0	1,570.5	1,304.5	5.904	CC
Brant Federal 16C - Brant Federal 16C - Brant Federal 1	17,844.0	23,292.0	1,923.0	1,405.4	3.715	SF
Brant Federal 17N - Brant Federal 17N - Brant Federal 1	16,600.0	23,165.0	1,637.2	1,265.7	4.407	ES
Brant Federal 17N - Brant Federal 17N - Brant Federal 1	17,010.9	23,165.0	1,584.5	1,305.0	5.670	CC
Brant Federal 17N - Brant Federal 17N - Brant Federal 1	17,844.0	23,165.0	1,793.3	1,330.4	3.874	SF
Brant Federal 17N - Brant Federal 17N - Brant Federal 1	16,700.0	23,166.2	1,611.9	1,258.6	4.561	ES
Brant Federal 17N - Brant Federal 17N - Brant Federal 1	17,022.9	23,166.2	1,578.2	1,296.2	5.597	CC
Brant Federal 17N - Brant Federal 17N - Brant Federal 1	17,844.0	23,166.2	1,781.6	1,319.9	3.859	SF
Brant Federal 18C - Brant Federal 18C - Brant Federal 1	16,400.0	23,409.0	1,809.7	1,342.5	3.874	SF
Brant Federal 18C - Brant Federal 18C - Brant Federal 1	16,900.0	23,409.0	1,622.3	1,241.6	4.261	ES
Brant Federal 18C - Brant Federal 18C - Brant Federal 1	17,304.7	23,409.0	1,572.0	1,283.1	5.441	CC
Brant Federal 18C - Brant Federal 18C - Brant Federal 1	16,400.0	23,400.7	1,805.2	1,337.6	3.860	SF
Brant Federal 18C - Brant Federal 18C - Brant Federal 1	16,900.0	23,400.7	1,617.2	1,236.0	4.242	ES
Brant Federal 18C - Brant Federal 18C - Brant Federal 1	17,304.8	23,400.7	1,566.8	1,275.9	5.387	CC
Brant Federal 19N - Brant Federal 19N - Brant Federal 1	16,700.0	23,354.0	1,806.6	1,334.3	3.825	SF
Brant Federal 19N - Brant Federal 19N - Brant Federal 1	17,200.0	23,354.0	1,624.2	1,238.9	4.216	ES
Brant Federal 19N - Brant Federal 19N - Brant Federal 1	17,572.3	23,354.0	1,580.2	1,278.9	5.245	CC
Brant Federal 19N - Brant Federal 19N - Brant Federal 1	16,700.0	23,377.0	1,804.3	1,329.8	3.802	SF
Brant Federal 19N - Brant Federal 19N - Brant Federal 1	17,200.0	23,377.0	1,619.1	1,230.8	4.169	ES
Brant Federal 19N - Brant Federal 19N - Brant Federal 1	17,600.0	23,377.0	1,573.0	1,272.0	5.226	CC
Brant Federal 20NA - Brant Federal 20NA - Brant Federa	16,900.0	23,194.0	1,967.8	1,489.2	4.112	SF
Brant Federal 20NA - Brant Federal 20NA - Brant Federa	17,500.0	23,194.0	1,759.1	1,375.1	4.581	ES
Brant Federal 20NA - Brant Federal 20NA - Brant Federa	17,832.4	23,194.0	1,726.2	1,410.9	5.475	CC
Brant Federal 20NA - Brant Federal 20NA - Brant Federa	16,900.0	23,188.8	1,969.9	1,488.5	4.092	SF
Brant Federal 20NA - Brant Federal 20NA - Brant Federa	17,500.0	23,188.8	1,757.1	1,368.6	4.522	ES
Brant Federal 20NA - Brant Federal 20NA - Brant Federa	17,844.0	23,188.8	1,721.6	1,402.7	5.397	CC
Brant Federal 21C - Brant Federal 21C - Brant Federal 2	17,200.0	23,580.0	1,958.1	1,468.5	3.999	SF
Brant Federal 21C - Brant Federal 21C - Brant Federal 2	17,800.0	23,580.0	1,750.7	1,354.8	4.422	ES
Brant Federal 21C - Brant Federal 21C - Brant Federal 2	17,844.0	23,580.0	1,743.0	1,356.0	4.504	CC
Brant Federal 21C - Brant Federal 21C - Brant Federal 2	17,200.0	23,590.2	1,952.2	1,462.4	3.986	SF
Brant Federal 21C - Brant Federal 21C - Brant Federal 2	17,800.0	23,590.2	1,745.1	1,348.6	4.401	ES
Brant Federal 21C - Brant Federal 21C - Brant Federal 2	17,844.0	23,590.2	1,737.4	1,349.8	4.482	CC

Ensign

Anticollision Summary Report

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well OTTESEN 22C
Project:	SEC.33-T1N-R66W	**TVD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Reference Site:	OTTESEN LE PAD	**MD Reference:**	WELL @ 5101.0ft (T41 - RKB 25')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	OTTESEN 22C	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OTTESEN 22C	**Database:**	US_EDM
Reference Design:	OTTESEN 22C Final Surveys	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 5101.0ft (T41 - RKB 25')	Coordinates are relative to: OTTESEN 22C
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: 0.47°



Ensign

Anticollision Summary Report

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well OTTESEN 22C
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Reference Well:	OTTESEN 22C	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	OTTESEN 22C	**Database:**	US_EDM
Reference Design:	OTTESEN 22C Final Surveys	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 5101.0ft (T41 - RKB 25')	Coordinates are relative to: OTTESEN 22C
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: 0.47°