

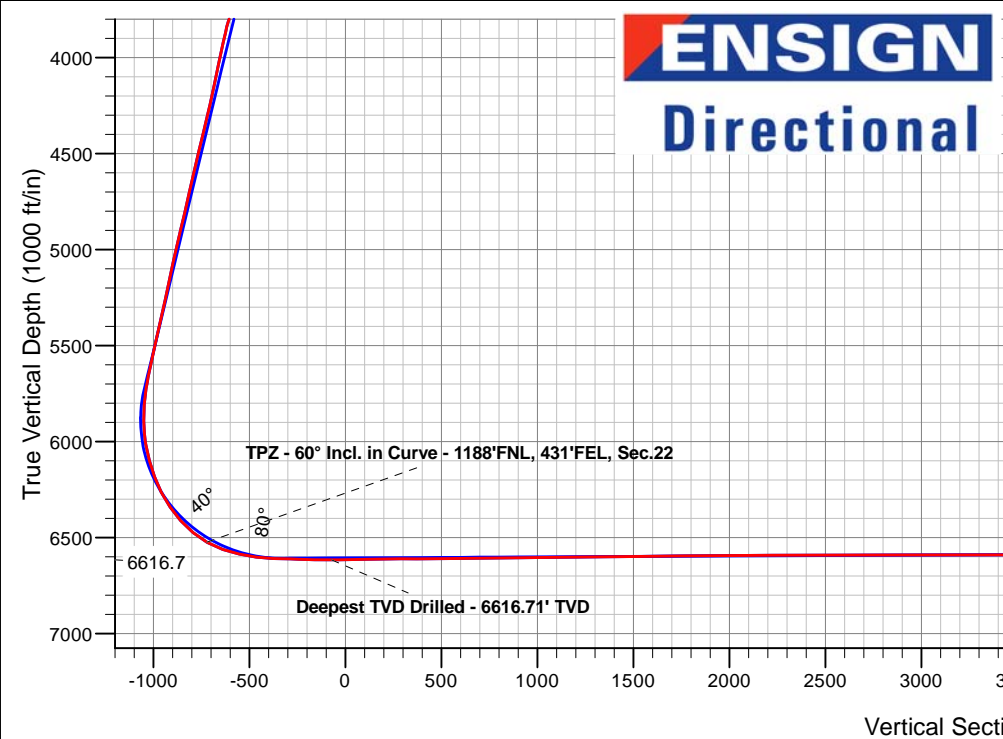
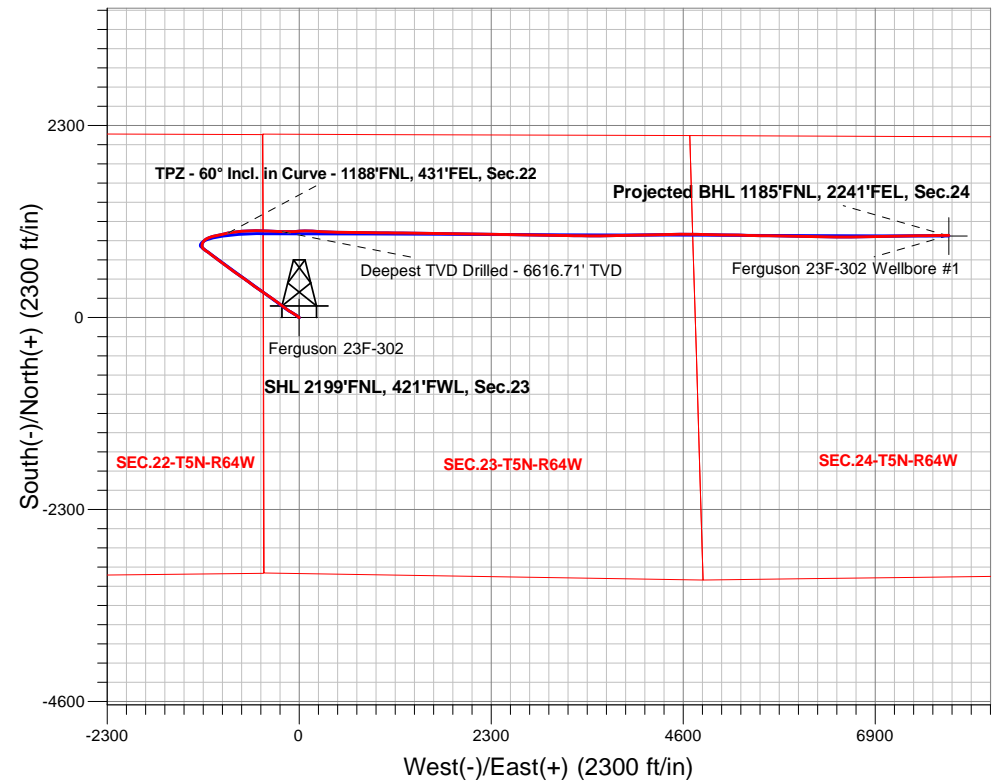
PDC Energy Inc. DJ Basin

Well Name: **Ferguson 23F-302**

Surface Location: Ferguson 5N64W23F Pad Sec.23-T5N-R64W
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
 Ground Elevation: 4575.0
 +N/-S+E/-W Northing Easting Longitude Slot
 0.0 0.01384966.01 3271629.52 40.386034 -104.524887
 Original Well Elev WELL @ 4598.0ft (Original Well Elev)

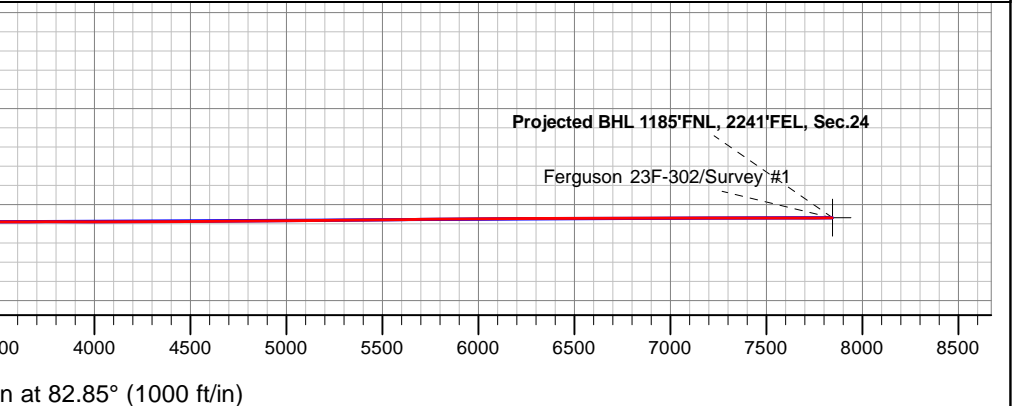
FINAL SURVEY

Projected Bottom Hole Location
15,519'MD 6570'TVD 987'N & 7782'E of SHL
90.15 degree Incl @ 88.33 degree AZM



Ferguson 5N64W23F Pad Sec.23-T5N-R64W Ferguson 23F-302 Ferguson 23F-302 Wellbore #1 11:34, March 16 2020	ANNOTATIONS		
	TVD	MD	Annotation
	6524.1	6865.0	TPZ - 60° Incl. in Curve - 1188'FNL, 431'FEL, Sec.22
	6616.7	7534.0	Deepest TVD Drilled - 6616.71' TVD

LEGEND	
	Ferguson 23F-302, Ferguson 23F-302 Wellbore #1, Plan #2 (3-09-20) V0
	Ferguson 23F-302 Wellbore #1
	Survey #1





PDC Energy Inc. DJ Basin

SEC.23-T5N-R64W

Ferguson 5N64W23F Pad Sec.23-T5N-R64W

Ferguson 23F-302

Ferguson 23F-302 Wellbore #1

Survey: Survey #1

Standard Survey Report

16 March, 2020



Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ferguson 23F-302
Project:	SEC.23-T5N-R64W	TVD Reference:	WELL @ 4598.0ft (Original Well Elev)
Site:	Ferguson 5N64W23F Pad Sec.23-T5N-R64W	MD Reference:	WELL @ 4598.0ft (Original Well Elev)
Well:	Ferguson 23F-302	North Reference:	True
Wellbore:	Ferguson 23F-302 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Ferguson 23F-302 Wellbore #1	Database:	US_EDM

Project	SEC.23-T5N-R64W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Ferguson 5N64W23F Pad Sec.23-T5N-R64W				
Site Position:		Northing:	1,385,011.05 usft	Latitude:	40.386157
From:	Lat/Long	Easting:	3,271,629.53 usft	Longitude:	-104.524886
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.63 °

Well	Ferguson 23F-302					
Well Position	+N/-S	0.0 ft	Northing:	1,384,966.01 usft	Latitude:	40.386034
	+E/-W	0.0 ft	Easting:	3,271,629.52 usft	Longitude:	-104.524887
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	4,575.0 ft

Wellbore	Ferguson 23F-302 Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	3/9/2020	7.97	66.85	52,051

Design	Ferguson 23F-302 Wellbore #1				
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	82.85	

Survey Program	Date	3/16/2020		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
155.0	15,519.0	Survey #1 (Ferguson 23F-302 Wellbore #1)	MWD	MWD - Standard

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
155.0	0.20	72.00	155.0	0.1	0.3	0.3	0.13	0.13	0.00	
250.0	0.10	193.80	250.0	0.1	0.4	0.4	0.28	-0.11	128.21	
345.0	0.40	125.60	345.0	-0.2	0.6	0.6	0.39	0.32	-71.79	
441.0	0.30	176.40	441.0	-0.7	0.9	0.8	0.33	-0.10	52.92	
536.0	0.10	207.00	536.0	-1.0	0.9	0.8	0.23	-0.21	32.21	
631.0	0.40	163.90	631.0	-1.4	1.0	0.8	0.35	0.32	-45.37	
726.0	0.10	140.40	726.0	-1.8	1.1	0.9	0.33	-0.32	-24.74	
821.0	2.40	303.70	821.0	-0.7	-0.5	-0.6	2.63	2.42	171.90	
916.0	3.20	304.70	915.9	1.9	-4.3	-4.1	0.84	0.84	1.05	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ferguson 23F-302
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Site:	Ferguson 5N64W23F Pad Sec.23-T5N-R64W	MD Reference:	WELL @ 4598.0ft (Original Well Elev)
Well:	Ferguson 23F-302	North Reference:	True
Wellbore:	Ferguson 23F-302 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Ferguson 23F-302 Wellbore #1	Database:	US_EDM

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
1,011.0	4.50	311.30	1,010.6	5.9	-9.3	-8.5	1.44	1.37	6.95	
1,106.0	6.20	310.90	1,105.2	11.7	-16.0	-14.4	1.79	1.79	-0.42	
1,201.0	6.60	309.70	1,199.6	18.5	-24.1	-21.6	0.44	0.42	-1.26	
1,297.0	7.70	309.10	1,294.9	26.1	-33.3	-29.8	1.15	1.15	-0.63	
1,392.0	9.00	303.20	1,388.9	34.2	-44.5	-39.9	1.64	1.37	-6.21	
1,487.0	10.90	300.20	1,482.4	42.8	-58.4	-52.7	2.07	2.00	-3.16	
1,581.0	12.80	300.70	1,574.4	52.6	-75.1	-67.9	2.02	2.02	0.53	
1,634.0	12.80	300.20	1,626.1	58.5	-85.2	-77.2	0.21	0.00	-0.94	
1,754.0	12.33	302.21	1,743.2	72.0	-107.5	-97.7	0.53	-0.39	1.68	
1,843.0	13.31	303.38	1,830.0	82.7	-124.1	-112.9	1.14	1.10	1.31	
1,932.0	14.93	305.75	1,916.3	95.1	-142.0	-129.0	1.93	1.82	2.66	
2,022.0	17.07	306.35	2,002.8	109.7	-162.0	-147.1	2.38	2.38	0.67	
2,111.0	18.92	307.69	2,087.5	126.2	-184.0	-166.8	2.13	2.08	1.51	
2,201.0	19.31	307.12	2,172.5	144.1	-207.4	-187.8	0.48	0.43	-0.63	
2,291.0	17.70	306.51	2,257.9	161.3	-230.2	-208.4	1.80	-1.79	-0.68	
2,381.0	18.58	306.47	2,343.4	177.9	-252.8	-228.7	0.98	0.98	-0.04	
2,471.0	19.80	305.84	2,428.4	195.4	-276.7	-250.2	1.37	1.36	-0.70	
2,561.0	18.05	304.10	2,513.5	212.1	-300.6	-271.8	2.04	-1.94	-1.93	
2,651.0	19.90	306.29	2,598.6	229.0	-324.5	-293.4	2.20	2.06	2.43	
2,741.0	19.93	305.13	2,683.2	246.9	-349.4	-315.9	0.44	0.03	-1.29	
2,831.0	18.93	303.28	2,768.1	263.7	-374.1	-338.4	1.30	-1.11	-2.06	
2,920.0	20.22	305.18	2,852.0	280.5	-398.7	-360.7	1.62	1.45	2.13	
3,010.0	19.23	304.43	2,936.7	297.9	-423.7	-383.3	1.14	-1.10	-0.83	
3,099.0	17.65	301.65	3,021.1	313.2	-447.3	-404.8	2.03	-1.78	-3.12	
3,189.0	17.79	304.61	3,106.9	328.2	-470.2	-425.7	1.01	0.16	3.29	
3,279.0	18.12	306.27	3,192.5	344.3	-492.8	-446.1	0.68	0.37	1.84	
3,369.0	19.41	305.25	3,277.7	361.2	-516.3	-467.3	1.48	1.43	-1.13	
3,459.0	19.16	306.94	3,362.6	378.7	-540.3	-489.0	0.68	-0.28	1.88	
3,549.0	18.00	305.71	3,447.9	395.7	-563.4	-509.8	1.36	-1.29	-1.37	
3,639.0	20.90	306.77	3,532.8	413.4	-587.6	-531.5	3.25	3.22	1.18	
3,728.0	21.18	306.27	3,615.9	432.4	-613.2	-554.6	0.37	0.31	-0.56	
3,818.0	21.16	305.18	3,699.8	451.4	-639.6	-578.4	0.44	-0.02	-1.21	
3,908.0	20.10	304.02	3,784.0	469.4	-665.7	-602.1	1.26	-1.18	-1.29	
3,998.0	17.73	304.38	3,869.2	485.8	-689.8	-624.0	2.64	-2.63	0.40	
4,088.0	15.97	303.71	3,955.3	500.4	-711.5	-643.6	1.97	-1.96	-0.74	
4,177.0	15.54	308.38	4,040.9	514.6	-731.0	-661.2	1.50	-0.48	5.25	
4,267.0	16.76	305.89	4,127.4	529.7	-751.0	-679.2	1.56	1.36	-2.77	
4,357.0	16.74	305.13	4,213.6	544.8	-772.1	-698.2	0.24	-0.02	-0.84	
4,447.0	17.46	305.79	4,299.6	560.1	-793.6	-717.7	0.83	0.80	0.73	
4,537.0	18.57	307.31	4,385.2	576.7	-816.0	-737.8	1.34	1.23	1.69	
4,626.0	18.46	305.79	4,469.6	593.6	-838.7	-758.3	0.56	-0.12	-1.71	
4,716.0	17.72	305.06	4,555.1	609.8	-861.4	-778.8	0.86	-0.82	-0.81	
4,806.0	17.75	307.61	4,640.9	626.0	-883.5	-798.7	0.86	0.03	2.83	
4,896.0	16.70	306.76	4,726.8	642.1	-904.8	-817.8	1.20	-1.17	-0.94	

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Well:	Ferguson 23F-302	North Reference:	True
Wellbore:	Ferguson 23F-302 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Ferguson 23F-302 Wellbore #1	Database:	US_EDM

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,985.0	18.05	306.35	4,811.8	657.9	-926.1	-837.0	1.52	1.52	-0.46	
5,075.0	17.84	305.60	4,897.4	674.2	-948.5	-857.2	0.35	-0.23	-0.83	
5,165.0	17.69	304.74	4,983.1	690.0	-971.0	-877.5	0.34	-0.17	-0.96	
5,254.0	17.17	307.97	5,068.0	705.8	-992.5	-896.9	1.23	-0.58	3.63	
5,344.0	17.26	309.64	5,154.0	722.5	-1,013.2	-915.4	0.56	0.10	1.86	
5,433.0	16.59	309.96	5,239.1	739.1	-1,033.1	-933.1	0.76	-0.75	0.36	
5,523.0	17.71	308.34	5,325.1	755.8	-1,053.7	-951.4	1.35	1.24	-1.80	
5,613.0	17.74	305.48	5,410.8	772.3	-1,075.6	-971.1	0.97	0.03	-3.18	
5,702.0	17.16	304.95	5,495.7	787.7	-1,097.4	-990.8	0.68	-0.65	-0.60	
5,792.0	15.66	304.67	5,582.1	802.2	-1,118.3	-1,009.7	1.67	-1.67	-0.31	
5,881.0	15.22	305.17	5,667.9	815.8	-1,137.7	-1,027.3	0.52	-0.49	0.56	
5,970.0	13.98	321.48	5,754.0	830.9	-1,154.0	-1,041.5	4.81	-1.39	18.33	
6,060.0	13.14	342.94	5,841.6	849.2	-1,163.7	-1,049.0	5.64	-0.93	23.84	
6,149.0	13.63	4.72	5,928.2	869.3	-1,165.9	-1,048.5	5.66	0.55	24.47	
6,239.0	17.44	25.38	6,015.0	892.1	-1,159.2	-1,039.1	7.40	4.23	22.96	
6,329.0	20.15	38.11	6,100.2	916.5	-1,143.8	-1,020.8	5.45	3.01	14.14	
6,419.0	23.15	56.44	6,183.9	938.5	-1,119.5	-993.9	8.18	3.33	20.37	
6,508.0	27.91	67.76	6,264.3	956.1	-1,085.6	-958.1	7.64	5.35	12.72	
6,598.0	34.27	74.93	6,341.3	970.7	-1,041.6	-912.6	8.17	7.07	7.97	
6,688.0	41.95	76.95	6,412.1	984.1	-987.7	-857.5	8.64	8.53	2.24	
6,778.0	50.29	78.35	6,474.4	997.9	-924.4	-793.0	9.33	9.27	1.56	
6,865.0	60.00	79.10	6,524.1	1,011.8	-854.5	-721.8	11.18	11.16	0.86	
TPZ - 60° Incl. in Curve - 1188'FNL, 431'FEL, Sec.22										
6,868.0	60.33	79.12	6,525.6	1,012.3	-851.9	-719.2	11.18	11.16	0.76	
6,957.0	70.72	81.67	6,562.4	1,025.7	-772.1	-638.4	11.96	11.67	2.87	
7,047.0	78.04	87.55	6,586.6	1,033.8	-685.9	-551.9	10.28	8.13	6.53	
7,137.0	82.16	87.79	6,602.1	1,037.4	-597.4	-463.6	4.59	4.58	0.27	
7,227.0	88.13	89.03	6,609.7	1,039.9	-507.8	-374.4	6.77	6.63	1.38	
7,317.0	89.17	92.00	6,611.8	1,039.1	-417.8	-285.2	3.50	1.16	3.30	
7,407.0	88.37	92.44	6,613.8	1,035.6	-327.9	-196.4	1.01	-0.89	0.49	
7,534.0	88.99	92.77	6,616.7	1,029.8	-201.1	-71.3	0.55	0.49	0.26	
Deepest TVD Drilled - 6616.71' TVD										
7,623.0	91.07	89.27	6,616.7	1,028.2	-112.1	16.8	4.57	2.34	-3.93	
7,713.0	92.88	85.00	6,613.6	1,032.7	-22.3	106.5	5.15	2.01	-4.74	
7,802.0	89.41	87.46	6,611.8	1,038.6	66.5	195.3	4.78	-3.90	2.76	
7,893.0	90.41	94.31	6,611.9	1,037.2	157.4	285.3	7.61	1.10	7.53	
7,982.0	90.68	94.72	6,611.1	1,030.1	246.1	372.5	0.55	0.30	0.46	
8,073.0	90.63	92.32	6,610.0	1,024.6	336.9	461.9	2.64	-0.05	-2.64	
8,162.0	90.63	90.63	6,609.1	1,022.3	425.9	549.9	1.90	0.00	-1.90	
8,253.0	90.61	90.64	6,608.1	1,021.3	516.9	640.0	0.02	-0.02	0.01	
8,342.0	90.56	90.63	6,607.2	1,020.3	605.9	728.2	0.06	-0.06	-0.01	
8,432.0	90.55	90.75	6,606.3	1,019.2	695.9	817.4	0.13	-0.01	0.13	
8,522.0	90.63	90.71	6,605.4	1,018.0	785.9	906.5	0.10	0.09	-0.04	

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Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,611.0	90.55	90.64	6,604.4	1,017.0	874.9	994.7	0.12	-0.09	-0.08
8,701.0	90.75	90.90	6,603.4	1,015.8	964.8	1,083.8	0.36	0.22	0.29
8,790.0	90.59	90.74	6,602.4	1,014.5	1,053.8	1,171.9	0.25	-0.18	-0.18
8,880.0	90.59	90.63	6,601.5	1,013.4	1,143.8	1,261.1	0.12	0.00	-0.12
8,968.0	90.59	90.55	6,600.6	1,012.5	1,231.8	1,348.3	0.09	0.00	-0.09
9,057.0	90.58	90.62	6,599.6	1,011.6	1,320.8	1,436.5	0.08	-0.01	0.08
9,147.0	90.56	90.95	6,598.7	1,010.4	1,410.8	1,525.6	0.37	-0.02	0.37
9,237.0	90.53	90.69	6,597.9	1,009.1	1,500.8	1,614.7	0.29	-0.03	-0.29
9,327.0	90.66	90.70	6,597.0	1,008.0	1,590.8	1,703.9	0.14	0.14	0.01
9,416.0	90.64	90.83	6,595.9	1,006.8	1,679.7	1,792.0	0.15	-0.02	0.15
9,506.0	90.54	90.80	6,595.0	1,005.5	1,769.7	1,881.2	0.12	-0.11	-0.03
9,596.0	90.61	90.64	6,594.1	1,004.4	1,859.7	1,970.3	0.19	0.08	-0.18
9,685.0	90.48	90.56	6,593.3	1,003.5	1,948.7	2,058.5	0.17	-0.15	-0.09
9,773.0	90.30	91.06	6,592.7	1,002.2	2,036.7	2,145.6	0.60	-0.20	0.57
9,863.0	90.17	90.98	6,592.3	1,000.6	2,126.7	2,234.7	0.17	-0.14	-0.09
9,953.0	90.04	90.73	6,592.1	999.3	2,216.7	2,323.8	0.31	-0.14	-0.28
10,043.0	90.11	90.99	6,592.0	997.9	2,306.7	2,413.0	0.30	0.08	0.29
10,133.0	90.09	90.92	6,591.9	996.4	2,396.7	2,502.1	0.08	-0.02	-0.08
10,223.0	90.18	90.92	6,591.7	995.0	2,486.6	2,591.2	0.10	0.10	0.00
10,313.0	90.08	90.86	6,591.4	993.6	2,576.6	2,680.3	0.13	-0.11	-0.07
10,403.0	90.09	91.13	6,591.3	992.0	2,666.6	2,769.4	0.30	0.01	0.30
10,493.0	90.07	91.04	6,591.2	990.3	2,756.6	2,858.4	0.10	-0.02	-0.10
10,582.0	90.01	91.02	6,591.1	988.7	2,845.6	2,946.5	0.07	-0.07	-0.02
10,672.0	90.08	90.79	6,591.1	987.3	2,935.6	3,035.7	0.27	0.08	-0.26
10,761.0	90.08	90.96	6,590.9	985.9	3,024.6	3,123.8	0.19	0.00	0.19
10,851.0	90.09	90.59	6,590.8	984.7	3,114.6	3,212.9	0.41	0.01	-0.41
10,940.0	90.06	91.00	6,590.7	983.5	3,203.5	3,301.1	0.46	-0.03	0.46
11,030.0	90.16	91.21	6,590.5	981.8	3,293.5	3,390.1	0.26	0.11	0.23
11,120.0	90.09	91.08	6,590.3	980.0	3,383.5	3,479.2	0.16	-0.08	-0.14
11,209.0	90.07	90.69	6,590.2	978.6	3,472.5	3,567.3	0.44	-0.02	-0.44
11,299.0	90.11	90.27	6,590.0	977.8	3,562.5	3,656.5	0.47	0.04	-0.47
11,389.0	90.12	88.88	6,589.9	978.5	3,652.5	3,745.9	1.54	0.01	-1.54
11,479.0	90.08	88.52	6,589.7	980.5	3,742.5	3,835.4	0.40	-0.04	-0.40
11,568.0	90.06	88.91	6,589.6	982.5	3,831.4	3,924.0	0.44	-0.02	0.44
11,658.0	90.15	88.37	6,589.4	984.7	3,921.4	4,013.5	0.61	0.10	-0.60
11,747.0	90.10	88.79	6,589.2	986.9	4,010.4	4,102.1	0.48	-0.06	0.47
11,837.0	90.01	88.83	6,589.2	988.8	4,100.4	4,191.6	0.11	-0.10	0.04
11,927.0	90.14	88.61	6,589.0	990.8	4,190.3	4,281.1	0.28	0.14	-0.24
12,017.0	90.05	88.36	6,588.9	993.1	4,280.3	4,370.7	0.30	-0.10	-0.28
12,107.0	90.08	88.88	6,588.8	995.3	4,370.3	4,460.2	0.58	0.03	0.58
12,197.0	90.23	88.72	6,588.5	997.2	4,460.3	4,549.7	0.24	0.17	-0.18
12,287.0	90.26	89.53	6,588.2	998.6	4,550.3	4,639.2	0.90	0.03	0.90
12,376.0	90.29	90.80	6,587.7	998.3	4,639.3	4,727.4	1.43	0.03	1.43
12,466.0	90.62	90.80	6,587.0	997.1	4,729.2	4,816.6	0.37	0.37	0.00

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ferguson 23F-302
Project:	SEC.23-T5N-R64W	TVD Reference:	WELL @ 4598.0ft (Original Well Elev)
Site:	Ferguson 5N64W23F Pad Sec.23-T5N-R64W	MD Reference:	WELL @ 4598.0ft (Original Well Elev)
Well:	Ferguson 23F-302	North Reference:	True
Wellbore:	Ferguson 23F-302 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Ferguson 23F-302 Wellbore #1	Database:	US_EDM

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
12,555.0	90.62	90.85	6,586.1	995.8	4,818.2	4,904.7	0.06	0.00	0.06	
12,645.0	90.75	90.99	6,585.0	994.3	4,908.2	4,993.8	0.21	0.14	0.16	
12,735.0	90.65	91.31	6,583.9	992.5	4,998.2	5,082.9	0.37	-0.11	0.36	
12,825.0	90.49	90.75	6,583.0	990.9	5,088.2	5,171.9	0.65	-0.18	-0.62	
12,915.0	90.69	91.19	6,582.1	989.4	5,178.1	5,261.0	0.54	0.22	0.49	
13,004.0	90.70	91.02	6,581.0	987.7	5,267.1	5,349.1	0.19	0.01	-0.19	
13,094.0	90.62	91.37	6,579.9	985.8	5,357.1	5,438.1	0.40	-0.09	0.39	
13,184.0	90.59	91.05	6,579.0	983.9	5,447.1	5,527.2	0.36	-0.03	-0.36	
13,274.0	90.59	91.47	6,578.1	981.9	5,537.0	5,616.2	0.47	0.00	0.47	
13,364.0	90.67	91.05	6,577.1	979.9	5,627.0	5,705.2	0.48	0.09	-0.47	
13,454.0	90.56	90.65	6,576.1	978.6	5,717.0	5,794.4	0.46	-0.12	-0.44	
13,544.0	90.64	91.05	6,575.2	977.3	5,807.0	5,883.5	0.45	0.09	0.44	
13,634.0	90.53	91.06	6,574.2	975.6	5,897.0	5,972.6	0.12	-0.12	0.01	
13,724.0	90.44	90.74	6,573.5	974.2	5,987.0	6,061.7	0.37	-0.10	-0.36	
13,814.0	90.03	91.37	6,573.1	972.5	6,076.9	6,150.7	0.84	-0.46	0.70	
13,903.0	90.07	91.24	6,573.0	970.5	6,165.9	6,238.8	0.15	0.04	-0.15	
13,993.0	90.21	91.23	6,572.8	968.6	6,255.9	6,327.8	0.16	0.16	-0.01	
14,083.0	90.08	91.24	6,572.6	966.6	6,345.9	6,416.8	0.14	-0.14	0.01	
14,173.0	90.16	91.18	6,572.4	964.7	6,435.9	6,505.9	0.11	0.09	-0.07	
14,262.0	90.10	89.13	6,572.2	964.5	6,524.8	6,594.2	2.30	-0.07	-2.30	
14,352.0	90.29	89.66	6,571.9	965.4	6,614.8	6,683.6	0.63	0.21	0.59	
14,441.0	90.13	88.68	6,571.6	966.7	6,703.8	6,772.0	1.12	-0.18	-1.10	
14,531.0	90.12	88.93	6,571.4	968.6	6,793.8	6,861.5	0.28	-0.01	0.28	
14,621.0	90.15	88.64	6,571.2	970.5	6,883.8	6,951.1	0.32	0.03	-0.32	
14,711.0	90.13	88.69	6,570.9	972.6	6,973.8	7,040.6	0.06	-0.02	0.06	
14,800.0	90.01	89.40	6,570.8	974.1	7,062.8	7,129.1	0.81	-0.13	0.80	
14,890.0	90.13	88.84	6,570.7	975.5	7,152.7	7,218.5	0.64	0.13	-0.62	
14,979.0	90.13	88.78	6,570.5	977.3	7,241.7	7,307.1	0.07	0.00	-0.07	
15,069.0	89.81	89.58	6,570.6	978.6	7,331.7	7,396.5	0.96	-0.36	0.89	
15,158.0	90.13	88.87	6,570.6	979.8	7,420.7	7,485.0	0.88	0.36	-0.80	
15,247.0	90.15	88.99	6,570.4	981.5	7,509.7	7,573.5	0.14	0.02	0.13	
15,337.0	90.01	89.04	6,570.3	983.0	7,599.7	7,662.9	0.17	-0.16	0.06	
15,427.0	90.23	89.16	6,570.1	984.4	7,689.7	7,752.4	0.28	0.24	0.13	
15,497.0	90.15	88.33	6,569.8	986.0	7,759.6	7,822.0	1.19	-0.11	-1.19	
15,519.0	90.15	88.33	6,569.8	986.6	7,781.6	7,843.9	0.00	0.00	0.00	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ferguson 23F-302
Project:	SEC.23-T5N-R64W	TVD Reference:	WELL @ 4598.0ft (Original Well Elev)
Site:	Ferguson 5N64W23F Pad Sec.23-T5N-R64W	MD Reference:	WELL @ 4598.0ft (Original Well Elev)
Well:	Ferguson 23F-302	North Reference:	True
Wellbore:	Ferguson 23F-302 Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Ferguson 23F-302 Wellbore #1	Database:	US_EDM

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
SHL 2199'FNL, 421'FWL - survey hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,384,966.02	3,271,629.52	40.386034	-104.524887
Projected BHL 1185'FNL - survey misses target center by 10.3ft at 15519.0ft MD (6569.8 TVD, 986.6 N, 7781.6 E) - Point	0.00	0.00	6,568.0	976.6	7,783.1	1,386,028.10	3,279,401.13	40.388711	-104.496948

Survey Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)		
6,865.0	6,524.1	1,011.8	-854.5	TPZ - 60° Incl. in Curve - 1188'FNL, 431'FEL, Sec.22	
7,534.0	6,616.7	1,029.8	-201.1	Deepest TVD Drilled - 6616.71' TVD	

Checked By: _____ Approved By: _____ Date: _____