

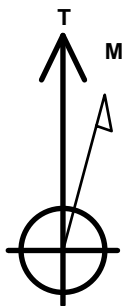
PDC Energy Inc. DJ Basin

Well Name: **Daisy 31F-332**

Surface Location: Daisy 5N64W31F Pad Sec.31-T5N-R64W
 North American Datum 1983 , US State Plane 1983 Colorado Northern Zone
 Ground Elevation: 4775.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1375019.65 3250679.95 40.359340 -104.600450
 Original Well Elev WELL @ 4798.0ft (Original Well Elev)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 1281'FNL, 445'FWL, SEC.31	1.0	0.0	0.0	Point
BHL 1648'FNL, 2550'FWL, SEC.32	6897.0	-330.4	7377.0	Point
LPL 1648'FNL, 735'FWL, SEC.31	6937.0	-367.9	291.0	Point



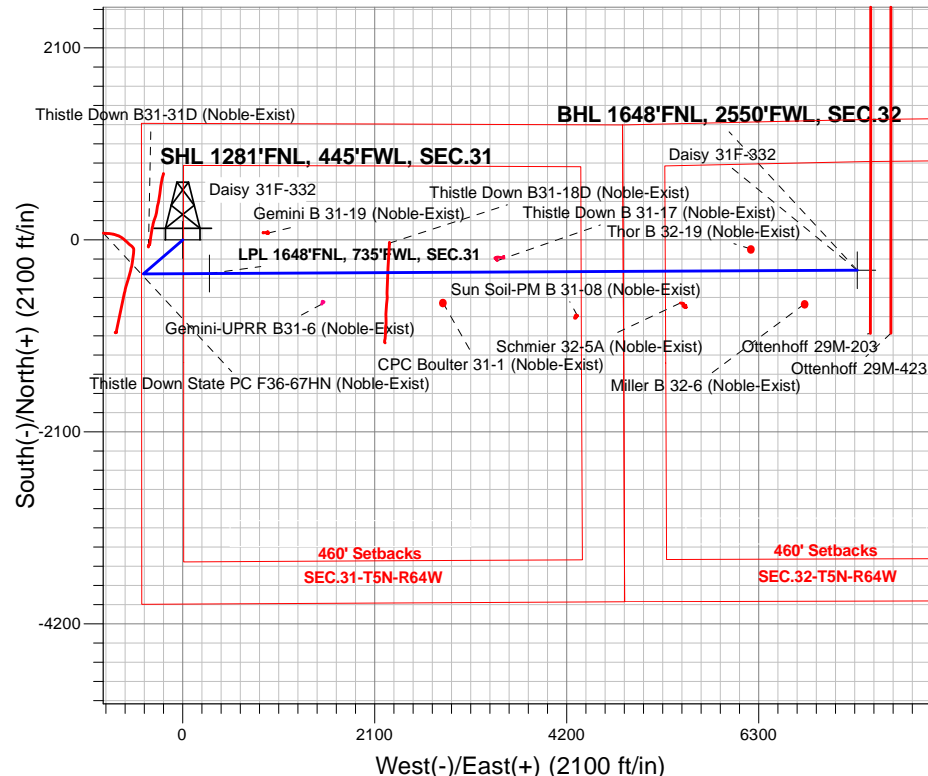
Azimuths to True North
 Magnetic North: 8.00°

Magnetic Field
 Strength: 52524.4snT
 Dip Angle: 66.84°
 Date: 3/6/2017
 Model: IGRF2010

Daisy 5N64W31F Pad Sec.31-T5N-R64W
 Daisy 31F-332
 Plan #1 (2-28-17)
 9:27, March 06 2017

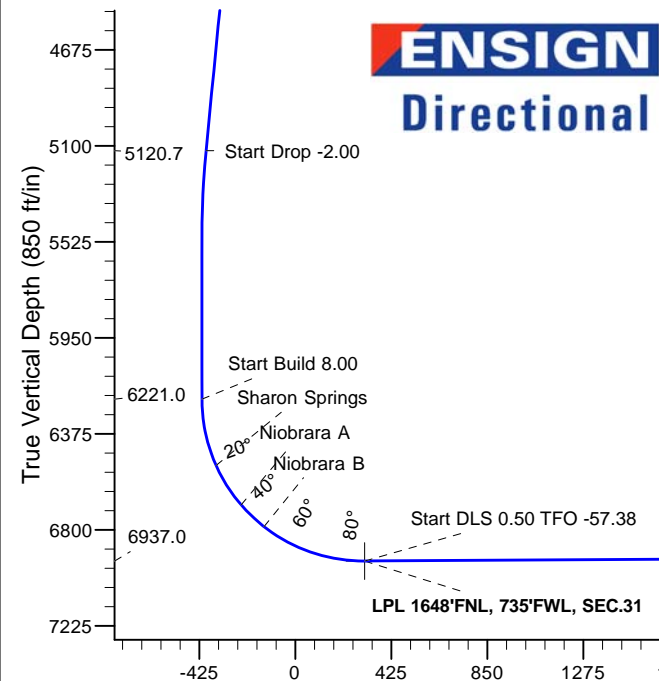
ANNOTATIONS

TVD	MD	Annotation
800.0	800.0	KOP - Start Build 1.50
5120.7	5156.1	Start Drop -2.00
6221.0	6257.5	Start Build 8.00
6937.0	7387.2	Start DLS 0.50 TFO -57.38
6937.0	7388.5	Start 7085.0 hold at 7388.5 MD
6897.0	14473.4	TD at 14473.4



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	1307.2	7.61	229.16	1305.7	-22.0	-25.4	1.50	229.16	-24.4	
4	5156.1	7.61	229.16	5120.7	-355.2	-410.9	0.00	0.00	-394.6	
5	5536.5	0.00	0.00	5500.0	-371.7	-430.0	2.00	180.00	-412.9	
6	6257.5	0.00	0.00	6221.0	-371.7	-430.0	0.00	0.00	-412.9	
7	7386.2	90.32	89.70	6937.0	-368.0	290.0	8.00	89.70	306.2	
8	7387.2	90.32	89.70	6937.0	-367.9	291.0	0.00	0.00	307.2	LPL 1648'FNL, 735'FWL, SEC.31
9	7388.5	90.32	89.70	6937.0	-367.9	292.3	0.50	-57.38	308.4	
10	14473.4	90.32	89.70	6897.0	-330.4	7377.0	0.00	0.00	7384.4	BHL 1648'FNL, 2550'FWL, SEC.32



Vertical Section at 92.56° (850 ft/in)



PDC Energy Inc. DJ Basin

SEC.31-T5N-R64W

Daisy 5N64W31F Pad Sec.31-T5N-R64W

Daisy 31F-332

Wellbore #1

Plan #1 (2-28-17)

Anticollision Report

06 March, 2017

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Daisy 31F-332
Project:	SEC.31-T5N-R64W	TVD Reference:	WELL @ 4798.0ft (Original Well Elev)
Reference Site:	Daisy 5N64W31F Pad Sec.31-T5N-R64W	MD Reference:	WELL @ 4798.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Daisy 31F-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (2-28-17)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (2-28-17)		
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 center-center distance of 800.0 ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.45 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	3/6/2017		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	14,473.3	Plan #1 (2-28-17) (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
Daisy 5N64W31F Pad Sec.31-T5N-R64W						
Daisy 31E-232 - Wellbore #1 - Plan #1 (2-28-17)	400.0	399.0	72.9	70.9	37.858	CC, ES
Daisy 31E-232 - Wellbore #1 - Plan #1 (2-28-17)	900.0	887.9	103.2	98.6	22.129	SF
Daisy 31E-302 - Wellbore #1 - Plan #1 (2-28-17)	200.0	198.0	87.4	86.6	106.561	CC, ES
Daisy 31E-302 - Wellbore #1 - Plan #1 (2-28-17)	800.0	781.0	131.0	126.8	31.289	SF
Daisy 31E-332 - Wellbore #1 - Plan #1 (2-28-17)	600.0	599.0	58.3	55.3	19.263	CC, ES
Daisy 31E-332 - Wellbore #1 - Plan #1 (2-28-17)	900.0	894.7	68.9	64.3	14.840	SF
Daisy 31F-202 - Wellbore #1 - Plan #1 (2-28-17)	800.0	800.0	14.6	10.4	3.528	CC
Daisy 31F-202 - Wellbore #1 - Plan #1 (2-28-17)	14,473.4	14,388.3	288.2	-215.3	0.572	Level 1, ES, SF
Daisy 31F-212 - Wellbore #1 - Plan #1 (2-28-17)	800.0	799.0	43.7	39.6	10.591	CC, ES
Daisy 31F-212 - Wellbore #1 - Plan #1 (2-28-17)	14,473.4	14,411.9	768.0	247.1	1.474	Level 3, SF
Daisy 31F-232 - Wellbore #1 - Plan #1 (2-28-17)	600.0	600.0	18.2	15.2	6.014	CC
Daisy 31F-232 - Wellbore #1 - Plan #1 (2-28-17)	14,473.4	14,413.4	284.2	-213.8	0.571	Level 1, ES, SF
Daisy 31F-302 - Wellbore #1 - Plan #1 (2-28-17)	800.0	799.0	29.1	25.0	7.061	CC
Daisy 31F-302 - Wellbore #1 - Plan #1 (2-28-17)	14,473.4	14,471.0	524.5	1.7	1.003	Level 2, ES, SF
Daisy 31G-202 - Wellbore #1 - Plan #1 (2-28-17)	200.0	200.0	47.4	46.5	57.336	CC, ES
Daisy 31G-202 - Wellbore #1 - Plan #1 (2-28-17)	5,536.5	5,468.2	775.6	728.9	16.630	SF
Daisy 31G-312 - Wellbore #1 - Plan #1 (2-28-17)	400.0	400.0	32.8	30.9	17.012	CC, ES
Daisy 31G-312 - Wellbore #1 - Plan #1 (2-28-17)	14,473.4	14,547.9	594.2	71.8	1.138	Level 2, SF
Existing Wells Sec.31-T5N-R64W (GRID)						
CPC Boulder 31-1 (Noble-Exist) - Wellbore #1 - Wellbore	9,940.0	6,896.6	330.3	54.9	1.199	Level 2, CC, ES, SF
Gemini B 31-19 (Noble-Exist) - Wellbore #1 - Wellbore #	8,029.0	6,900.8	439.7	380.9	7.483	CC, ES
Gemini B 31-19 (Noble-Exist) - Wellbore #1 - Wellbore #	8,100.0	6,900.7	445.4	384.4	7.309	SF
Gemini-UPRR B31-6 (Noble-Exist) - Wellbore #1 - Wellb	8,616.0	6,909.4	339.2	261.3	4.355	CC, ES
Gemini-UPRR B31-6 (Noble-Exist) - Wellbore #1 - Wellb	8,700.0	6,908.6	349.4	268.8	4.334	SF
Sun Soil-PM B 31-08 (Noble-Exist) - Wellbore #1 - Wellb	11,410.4	6,894.3	481.7	309.4	2.796	CC, ES
Sun Soil-PM B 31-08 (Noble-Exist) - Wellbore #1 - Wellb	11,500.0	6,894.4	490.0	314.6	2.794	SF
Thistle Down B 31-17 (Noble-Exist) - Wellbore #1 - Wellb	10,535.1	6,896.4	128.7	-14.3	0.900	Level 1, CC, ES, SF
Existing Wells Sec.32-T5N-R64W						
Miller B 32-6 (Noble-Exist) - Wellbore #1 - Wellbore #1	13,897.5	6,847.3	365.1	-44.2	0.892	Level 1, CC
Miller B 32-6 (Noble-Exist) - Wellbore #1 - Wellbore #1	13,900.0	6,847.2	365.1	-44.3	0.892	Level 1, ES, SF
Thor B 32-19 (Noble-Exist) - Wellbore #1 - Wellbore #1	13,312.4	6,838.6	239.0	-150.1	0.614	Level 1, CC, ES, SF
Existing Wells Sec.32-T5N-R64W (GRID)						
Schmier 32-5A (Noble-Exist) - Wellbore #1 - Wellbore #1	12,551.3	6,868.6	351.7	140.7	1.666	CC, ES, SF

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Daisy 31F-332
Project:	SEC.31-T5N-R64W	TVD Reference:	WELL @ 4798.0ft (Original Well Elev)
Reference Site:	Daisy 5N64W31F Pad Sec.31-T5N-R64W	MD Reference:	WELL @ 4798.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Daisy 31F-332	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (2-28-17)	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						
Ottenhoff 5N64W29CR Pad Sec.29-T5N-R64W						
Ottenhoff 29M-203 - Wellbore #1 - Plan #2 (1-25-17)	14,473.4	13,510.8	178.8	44.6	1.332	Level 3, CC, ES, SF
Ottenhoff 29M-423 - Wellbore #1 - Plan #2 (1-25-17)	14,473.4	13,606.1	377.6	244.2	2.830	CC, ES, SF
Thistle Down B31-22D Pad Sec.31-T5N-R64W						
Thistle Down B31-18D (Noble-Exist) - Wellbore #1 - Well	9,357.5	7,071.4	322.2	216.2	3.039	CC, ES
Thistle Down B31-18D (Noble-Exist) - Wellbore #1 - Well	9,400.0	7,071.2	325.0	217.5	3.024	SF
Thistle Down PC F36-63HN Pad Sec.36-T5N-R65W						
Thistle Down State PC F36-67HN (Noble-Exist) - Wellbo	5,337.9	5,379.4	149.7	111.5	3.913	CC, ES
Thistle Down State PC F36-67HN (Noble-Exist) - Wellbo	5,400.0	5,439.5	151.1	112.2	3.881	SF
Thistle Down Wells (Noble) Sec.31-T5N-R64W						
Thistle Down B31-31D (Noble-Exist) - Wellbore #1 - Well	4,580.4	4,646.4	257.8	229.3	9.069	CC
Thistle Down B31-31D (Noble-Exist) - Wellbore #1 - Well	4,600.0	4,664.1	257.8	229.3	9.043	ES
Thistle Down B31-31D (Noble-Exist) - Wellbore #1 - Well	6,257.5	6,299.8	305.7	263.0	7.154	SF

Offset Design Daisy 5N64W31F Pad Sec.31-T5N-R64W - Daisy 31E-232 - Wellbore #1 - Plan #1 (2-28-17)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	0.01	72.9	0.0	72.9					
100.0	100.0	99.0	99.0	0.1	0.1	0.01	72.9	0.0	72.9	72.6	0.27	265.954		
200.0	200.0	199.0	199.0	0.4	0.4	0.01	72.9	0.0	72.9	72.0	0.82	88.504		
300.0	300.0	299.0	299.0	0.7	0.7	0.01	72.9	0.0	72.9	71.5	1.37	53.031		
400.0	400.0	399.0	399.0	1.0	1.0	0.01	72.9	0.0	72.9	70.9	1.92	37.858	CC, ES	
500.0	500.0	497.3	497.3	1.2	1.2	-0.42	74.0	-0.5	74.0	71.5	2.47	29.964		
600.0	600.0	595.5	595.4	1.5	1.5	-1.62	77.4	-2.2	77.5	74.5	3.02	25.683		
700.0	700.0	693.4	693.1	1.8	1.8	-3.39	83.0	-4.9	83.3	79.8	3.57	23.368		
800.0	800.0	790.9	790.2	2.1	2.1	-5.49	90.8	-8.7	91.7	87.6	4.12	22.244		
900.0	900.0	887.9	886.5	2.3	2.4	123.61	100.8	-13.6	103.2	98.6	4.67	22.129	SF	
1,000.0	999.9	984.0	981.7	2.5	2.7	122.84	112.9	-19.5	118.6	113.5	5.19	22.866		
1,100.0	1,099.7	1,079.1	1,075.6	2.8	3.1	122.75	127.0	-26.3	137.8	132.1	5.73	24.042		
1,200.0	1,199.3	1,173.9	1,168.6	3.1	3.5	123.10	143.1	-34.1	160.6	154.3	6.30	25.487		
1,307.2	1,305.7	1,277.6	1,270.3	3.4	4.0	123.96	161.3	-43.0	187.3	180.4	6.94	27.007		
1,400.0	1,397.7	1,367.2	1,358.2	3.7	4.4	125.06	177.0	-50.6	211.2	203.7	7.51	28.134		
1,500.0	1,496.8	1,463.8	1,452.9	4.0	4.9	125.99	194.0	-58.9	237.0	228.9	8.14	29.102		
1,600.0	1,595.9	1,560.3	1,547.6	4.4	5.4	126.75	211.0	-67.1	262.9	254.1	8.79	29.898		
1,700.0	1,695.1	1,656.8	1,642.3	4.8	5.9	127.36	227.9	-75.3	288.8	279.3	9.45	30.551		
1,800.0	1,794.2	1,753.4	1,737.0	5.1	6.4	127.88	244.9	-83.6	314.7	304.6	10.12	31.093		
1,900.0	1,893.3	1,849.9	1,831.6	5.5	6.9	128.31	261.8	-91.8	340.7	329.9	10.80	31.549		
2,000.0	1,992.4	1,946.5	1,926.3	5.9	7.3	128.69	278.8	-100.1	366.6	355.2	11.48	31.936		
2,100.0	2,091.5	2,043.0	2,021.0	6.3	7.8	129.01	295.8	-108.3	392.6	380.5	12.17	32.267		
2,200.0	2,190.7	2,139.6	2,115.7	6.7	8.3	129.30	312.7	-116.5	418.6	405.7	12.86	32.554		
2,300.0	2,289.8	2,236.1	2,210.4	7.1	8.8	129.55	329.7	-124.8	444.6	431.0	13.55	32.804		
2,400.0	2,388.9	2,332.7	2,305.1	7.5	9.3	129.78	346.7	-133.0	470.6	456.4	14.25	33.023		
2,500.0	2,488.0	2,429.2	2,399.8	7.9	9.8	129.98	363.6	-141.3	496.6	481.7	14.95	33.216		
2,600.0	2,587.1	2,525.7	2,494.4	8.3	10.3	130.16	380.6	-149.5	522.6	507.0	15.65	33.388		
2,700.0	2,686.3	2,622.3	2,589.1	8.7	10.8	130.32	397.5	-157.7	548.7	532.3	16.36	33.541		
2,800.0	2,785.4	2,718.8	2,683.8	9.1	11.3	130.47	414.5	-166.0	574.7	557.6	17.06	33.679		

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