



Survey Report

Service Company: Aim Directional Services

Location: Jal NM

Well: Nandina Fed Com 25-36-31 101H

Rig: H&P 616

API or UWI: 30-025-46145

Job Number: WT-19-148

State: New Mexico

Operating Company: Ameredev

County: Lea

Magnetic Declination: 5.99

Country: USA

Proposed Azimuth: 359.43

Comment

North Reference: GRID

Latitude: 32.0802055555556

Longitude: -103.311463888889

HOBBS OCD
JAN 06 2020
RECEIVED

Tie-In Data

MD	Inclination	Azimuth	TVD	NS	EW
0.00	0.00	0.00	0.00	0.00	0.00

Survey Data

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
445.00	0.50	152.00	444.99	-1.71	0.91	152.00	1.94	-1.72	0.11
537.00	0.60	163.00	536.99	-2.53	1.24	153.87	2.82	-2.54	0.16
693.00	0.90	136.00	692.98	-4.19	2.33	150.93	4.80	-4.21	0.29
786.00	0.90	168.00	785.97	-5.43	2.99	151.17	6.20	-5.46	0.53
875.00	1.10	180.00	874.95	-6.97	3.14	155.78	7.64	-7.00	0.32
974.00	1.10	183.00	973.93	-8.87	3.09	160.82	9.39	-8.90	0.06
1062.00	1.10	202.00	1061.92	-10.50	2.72	165.45	10.84	-10.52	0.41
1139.00	1.23	78.97	1138.91	-11.02	3.26	163.53	11.49	-11.05	2.66
1233.00	0.66	249.65	1232.91	-11.02	3.74	161.24	11.64	-11.05	2.00
1327.00	0.09	206.50	1326.90	-11.27	3.20	164.15	11.72	-11.30	0.64
1422.00	0.13	35.81	1421.90	-11.25	3.23	163.98	11.71	-11.28	0.23
1517.00	0.18	246.66	1516.90	-11.22	3.16	164.29	11.66	-11.25	0.31
1611.00	0.13	172.40	1610.90	-11.39	3.04	165.07	11.79	-11.42	0.20
1706.00	0.13	79.76	1705.90	-11.48	3.16	164.62	11.90	-11.51	0.20
1800.00	0.13	4.70	1799.90	-11.35	3.27	163.93	11.81	-11.38	0.17
1895.00	0.13	342.47	1894.90	-11.14	3.25	163.75	11.60	-11.17	0.05

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
1990.00	0.13	153.59	1989.90	-11.13	3.26	163.67	11.60	-11.17	0.27
2084.00	0.13	160.80	2083.90	-11.33	3.34	163.56	11.81	-11.36	0.02
2179.00	1.58	188.57	2178.89	-12.73	3.18	165.95	13.12	-12.76	1.54
2273.00	3.43	184.88	2272.79	-16.81	2.75	170.70	17.03	-16.84	1.97
2368.00	5.01	180.22	2367.53	-23.79	2.49	174.01	23.92	-23.81	1.70
2463.00	6.51	176.53	2462.05	-33.31	2.80	175.19	33.43	-33.34	1.63
2558.00	8.00	173.28	2556.29	-45.26	3.90	175.07	45.42	-45.29	1.63
2652.00	9.32	171.78	2649.22	-59.29	5.76	174.45	59.57	-59.34	1.42
2747.00	10.77	169.76	2742.76	-75.64	8.44	173.64	76.10	-75.72	1.57
2841.00	12.22	172.22	2834.87	-94.14	11.34	173.13	94.82	-94.24	1.63
2936.00	12.97	174.42	2927.58	-114.71	13.74	173.17	115.53	-114.84	0.94
3030.00	11.43	174.95	3019.46	-134.49	15.59	173.39	135.39	-134.64	1.64
3125.00	9.93	176.18	3112.81	-152.04	16.96	173.63	152.98	-152.20	1.60
3220.00	8.92	169.76	3206.53	-167.46	18.82	173.59	168.51	-167.64	1.53
3314.00	8.26	162.29	3299.48	-181.06	22.17	173.02	182.42	-181.27	1.38
3409.00	6.86	165.54	3393.65	-193.06	25.66	172.43	194.76	-193.30	1.54
3503.00	5.27	181.80	3487.13	-202.81	26.93	172.44	204.59	-203.07	2.47
3597.00	3.74	194.55	3580.84	-210.09	26.02	172.94	211.70	-210.34	1.94
3692.00	2.95	193.67	3675.67	-215.47	24.66	173.47	216.87	-215.70	0.83
3786.00	2.77	199.91	3769.56	-219.95	23.32	173.95	221.19	-220.17	0.38
3881.00	2.90	190.06	3864.44	-224.48	22.12	174.37	225.57	-224.69	0.53
3976.00	3.03	190.59	3959.31	-229.31	21.24	174.71	230.29	-229.51	0.14
4070.00	3.78	156.14	4053.16	-234.59	22.03	174.63	235.62	-234.80	2.28
4164.00	4.57	144.10	4146.91	-240.46	25.48	173.95	241.80	-240.70	1.25
4259.00	4.04	148.31	4241.64	-246.37	29.46	173.18	248.12	-246.65	0.65
4354.00	3.30	170.46	4336.45	-251.91	31.67	172.83	253.90	-252.22	1.67
4448.00	3.03	189.71	4430.31	-257.03	31.70	172.97	258.98	-257.33	1.16
4543.00	3.52	199.56	4525.15	-262.25	30.30	173.41	264.00	-262.54	0.78
4637.00	4.00	205.80	4618.95	-267.92	27.91	174.05	269.37	-268.19	0.67
4732.00	4.75	214.76	4713.68	-274.14	24.22	174.95	275.21	-274.37	1.07
4826.00	5.01	216.87	4807.33	-280.62	19.54	176.02	281.30	-280.80	0.34
4921.00	5.49	217.22	4901.94	-287.56	14.30	177.15	287.91	-287.69	0.51
5015.00	5.27	209.57	4995.52	-294.89	9.45	178.16	295.05	-294.97	0.80
5110.00	5.05	193.75	5090.14	-302.75	6.31	178.81	302.82	-302.80	1.51
5204.00	4.88	180.48	5183.79	-310.77	5.29	179.03	310.81	-310.80	1.23
5299.00	5.32	180.40	5278.42	-319.21	5.22	179.06	319.25	-319.25	0.46
5393.00	5.85	181.54	5371.97	-328.36	5.06	179.12	328.40	-328.39	0.58

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
5488.00	6.46	180.22	5466.42	-338.54	4.91	179.17	338.58	-338.57	0.66
5582.00	6.15	179.78	5559.85	-348.87	4.91	179.19	348.90	-348.90	0.33
5677.00	5.93	180.92	5654.33	-358.86	4.85	179.23	358.89	-358.89	0.26
5771.00	6.20	180.57	5747.80	-368.79	4.73	179.27	368.82	-368.82	0.29
5866.00	6.15	179.69	5842.25	-379.01	4.70	179.29	379.04	-379.04	0.11
5960.00	6.24	178.46	5935.70	-389.15	4.87	179.28	389.18	-389.18	0.17
6055.00	6.07	176.97	6030.15	-399.33	5.27	179.24	399.36	-399.36	0.25
6149.00	6.15	177.23	6123.62	-409.32	5.78	179.19	409.36	-409.36	0.09
6244.00	6.20	176.18	6218.07	-419.52	6.36	179.13	419.57	-419.56	0.13
6338.00	6.15	174.33	6311.52	-429.60	7.20	179.04	429.66	-429.65	0.22
6432.00	6.15	172.57	6404.98	-439.60	8.35	178.91	439.68	-439.66	0.20
6526.00	6.11	173.10	6498.44	-449.56	9.60	178.78	449.66	-449.63	0.07
6621.00	5.45	172.13	6592.96	-459.05	10.83	178.65	459.18	-459.13	0.70
6715.00	2.86	168.97	6686.70	-465.77	11.89	178.54	465.92	-465.87	2.77
6809.00	0.44	186.37	6780.66	-468.43	12.29	178.50	468.60	-468.53	2.60
6904.00	0.13	261.08	6875.66	-468.81	12.15	178.52	468.97	-468.91	0.45
6998.00	0.18	263.72	6969.66	-468.85	11.90	178.55	469.00	-468.94	0.05
7092.00	0.48	269.78	7063.66	-468.86	11.36	178.61	469.00	-468.95	0.32
7187.00	0.40	155.96	7158.65	-469.17	11.09	178.65	469.30	-469.26	0.78
7281.00	0.31	14.28	7252.65	-469.22	11.29	178.62	469.36	-469.31	0.71
7376.00	0.22	262.22	7347.65	-469.00	11.17	178.64	469.13	-469.08	0.47
7470.00	0.31	57.35	7441.65	-468.88	11.21	178.63	469.02	-468.97	0.55
7565.00	0.53	148.84	7536.65	-469.12	11.65	178.58	469.27	-469.21	0.65
7660.00	0.35	206.41	7631.65	-469.76	11.75	178.57	469.90	-469.85	0.48
7755.00	0.35	83.01	7726.65	-469.98	11.91	178.55	470.13	-470.08	0.65
7849.00	0.44	79.85	7820.65	-469.88	12.55	178.47	470.05	-469.99	0.10
7943.00	0.48	67.28	7914.64	-469.67	13.27	178.38	469.86	-469.78	0.12
8038.00	0.66	81.78	8009.64	-469.44	14.18	178.27	469.65	-469.55	0.24
8133.00	0.75	63.68	8104.63	-469.08	15.27	178.14	469.33	-469.21	0.25
8227.00	0.66	80.73	8198.62	-468.72	16.36	178.00	469.01	-468.86	0.24
8322.00	1.23	73.70	8293.61	-468.35	17.88	177.81	468.69	-468.50	0.61
8417.00	0.84	98.48	8388.60	-468.16	19.55	177.61	468.57	-468.34	0.62
8511.00	0.62	109.99	8482.59	-468.44	20.71	177.47	468.90	-468.62	0.28
8606.00	0.57	136.80	8577.58	-468.96	21.51	177.37	469.45	-469.15	0.29
8700.00	0.44	194.11	8671.58	-469.65	21.74	177.35	470.15	-469.84	0.53
8794.00	0.79	203.33	8765.57	-470.60	21.40	177.40	471.08	-470.79	0.39
8888.00	0.92	183.12	8859.56	-471.94	21.10	177.44	472.42	-472.13	0.35

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
8983.00	1.05	184.97	8954.55	-473.57	20.98	177.46	474.04	-473.76	0.14
9078.00	1.14	195.95	9049.53	-475.35	20.65	177.51	475.80	-475.53	0.24
9173.00	1.54	196.48	9144.51	-477.48	20.03	177.60	477.90	-477.66	0.42
9267.00	1.67	195.69	9238.47	-480.01	19.30	177.70	480.40	-480.18	0.14
9362.00	1.67	197.53	9333.43	-482.66	18.51	177.80	483.02	-482.82	0.06
9456.00	1.49	196.30	9427.39	-485.14	17.75	177.90	485.47	-485.30	0.19
9551.00	1.36	193.40	9522.36	-487.43	17.14	177.99	487.73	-487.57	0.16
9645.00	1.54	188.48	9616.33	-489.76	16.70	178.05	490.04	-489.90	0.23
9740.00	1.54	186.55	9711.30	-492.29	16.37	178.10	492.56	-492.43	0.05
9834.00	1.32	181.98	9805.27	-494.63	16.18	178.13	494.89	-494.76	0.26
9928.00	1.45	177.41	9899.24	-496.90	16.20	178.13	497.16	-497.03	0.18
10023.00	2.11	166.68	9994.20	-499.80	16.66	178.09	500.08	-499.94	0.78
10117.00	2.46	167.12	10088.12	-503.45	17.51	178.01	503.76	-503.60	0.37
10211.00	2.42	167.91	10182.04	-507.36	18.37	177.93	507.69	-507.52	0.06
10306.00	2.33	180.04	10276.96	-511.25	18.79	177.90	511.60	-511.41	0.54
10401.00	1.67	190.94	10371.90	-514.54	18.53	177.94	514.87	-514.70	0.80
10495.00	2.02	189.71	10465.85	-517.52	17.99	178.01	517.83	-517.67	0.37
10590.00	2.15	197.97	10560.79	-520.86	17.15	178.11	521.15	-521.01	0.34
10684.00	2.59	203.77	10654.71	-524.48	15.75	178.28	524.72	-524.62	0.53
10779.00	3.12	202.02	10749.59	-528.85	13.92	178.49	529.03	-528.96	0.57
10873.00	3.03	208.78	10843.45	-533.39	11.76	178.74	533.52	-533.49	0.40
10968.00	2.68	214.15	10938.33	-537.43	9.31	179.01	537.51	-537.50	0.46
11063.00	2.59	214.76	11033.23	-541.04	6.84	179.28	541.08	-541.08	0.10
11157.00	2.29	217.22	11127.15	-544.28	4.49	179.53	544.29	-544.29	0.34
11204.00	2.20	217.13	11174.11	-545.74	3.38	179.65	545.75	-545.75	0.19
11253.00	2.02	223.11	11223.08	-547.12	2.22	179.77	547.13	-547.12	0.58
11317.00	4.44	335.70	11287.01	-545.69	0.43	179.95	545.69	-545.66	8.65
11346.00	7.12	346.60	11315.86	-542.92	-0.45	180.05	542.92	-542.88	9.95
11380.00	10.95	350.29	11349.44	-537.68	-1.48	180.16	537.68	-537.64	11.39
11411.00	13.89	353.72	11379.71	-531.08	-2.39	180.26	531.08	-531.03	9.77
11442.00	14.73	354.59	11409.75	-523.46	-3.16	180.35	523.47	-523.40	2.80
11473.00	15.96	351.43	11439.64	-515.32	-4.17	180.46	515.33	-515.25	4.80
11505.00	18.37	354.24	11470.21	-505.95	-5.33	180.60	505.98	-505.87	7.96
11537.00	20.53	355.12	11500.39	-495.34	-6.32	180.73	495.38	-495.25	6.81
11568.00	22.99	359.34	11529.18	-483.87	-6.85	180.81	483.92	-483.78	9.40
11599.00	25.49	0.39	11557.44	-471.14	-6.87	180.84	471.19	-471.05	8.18
11668.00	33.17	4.60	11617.56	-437.43	-5.26	180.69	437.46	-437.35	11.52

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
11700.00	38.72	4.91	11643.45	-418.71	-3.70	180.51	418.73	-418.66	17.35
11795.00	52.90	1.20	11709.52	-350.88	-0.34	180.06	350.88	-350.85	15.18
11890.00	66.36	358.78	11757.44	-269.11	-0.48	180.10	269.11	-269.09	14.34
11985.00	74.98	358.38	11788.86	-179.58	-2.70	180.86	179.60	-179.54	9.08
12080.00	87.04	359.14	11803.67	-85.94	-4.72	183.14	86.07	-85.89	12.72
12175.00	88.67	359.41	11807.23	8.98	-5.92	326.61	10.76	9.04	1.74
12270.00	88.84	359.74	11809.29	103.96	-6.63	356.35	104.17	104.02	0.39
12365.00	89.73	0.43	11810.48	198.95	-6.48	358.13	199.05	199.00	1.19
12460.00	91.19	0.56	11809.72	293.94	-5.66	358.90	293.99	293.98	1.54
12555.00	89.44	359.73	11809.19	388.93	-5.42	359.20	388.97	388.97	2.04
12649.00	89.22	0.41	11810.29	482.93	-5.31	359.37	482.96	482.96	0.76
12744.00	87.70	0.56	11812.85	577.89	-4.50	359.55	577.90	577.90	1.61
12840.00	88.30	359.39	11816.20	673.83	-4.55	359.61	673.84	673.84	1.37
12935.00	92.53	359.29	11815.51	768.79	-5.64	359.58	768.82	768.81	4.45
13029.00	89.23	358.28	11814.07	862.75	-7.63	359.49	862.78	862.78	3.67
13124.00	88.48	358.20	11815.96	957.68	-10.55	359.37	957.74	957.74	0.79
13219.00	88.09	358.17	11818.81	1052.59	-13.56	359.26	1052.68	1052.68	0.41
13314.00	88.39	358.42	11821.73	1147.51	-16.38	359.18	1147.62	1147.61	0.41
13409.00	87.92	358.40	11824.78	1242.42	-19.02	359.12	1242.57	1242.55	0.50
13504.00	87.36	358.05	11828.70	1337.29	-21.96	359.06	1337.47	1337.45	0.69
13599.00	86.91	357.87	11833.44	1432.11	-25.34	358.99	1432.34	1432.30	0.51
13694.00	88.98	358.87	11836.85	1527.01	-28.04	358.95	1527.27	1527.21	2.42
13789.00	89.98	1.15	11837.71	1622.00	-28.02	359.01	1622.24	1622.20	2.62
13917.00	89.45	1.38	11838.35	1749.96	-25.19	359.18	1750.15	1750.13	0.45
14011.00	86.83	2.14	11841.40	1843.86	-22.31	359.31	1844.00	1843.99	2.90
14106.00	86.70	2.26	11846.76	1938.64	-18.67	359.45	1938.73	1938.73	0.19
14201.00	86.26	0.76	11852.59	2033.42	-16.17	359.54	2033.49	2033.49	1.64
14296.00	89.50	1.02	11856.11	2128.34	-14.69	359.60	2128.39	2128.38	3.42
14391.00	90.95	360.00	11855.74	2223.33	-13.85	359.64	2223.37	2223.36	1.87
14486.00	90.74	358.40	11854.33	2318.30	-15.17	359.62	2318.35	2318.34	1.70
14581.00	89.68	358.32	11853.99	2413.26	-17.89	359.58	2413.33	2413.32	1.12
14676.00	88.31	357.07	11855.65	2508.17	-21.71	359.50	2508.26	2508.26	1.95
14770.00	88.81	357.85	11858.01	2602.05	-25.88	359.43	2602.17	2602.17	0.99
14865.00	89.31	358.34	11859.57	2696.98	-29.04	359.38	2697.14	2697.13	0.74
14960.00	90.71	359.02	11859.56	2791.95	-31.22	359.36	2792.13	2792.12	1.64
15055.00	90.44	0.13	11858.60	2886.94	-31.93	359.37	2887.12	2887.12	1.20
15150.00	86.86	358.63	11860.84	2981.89	-32.95	359.37	2982.07	2982.07	4.09

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
15245.00	86.12	356.58	11866.66	3076.63	-36.92	359.31	3076.85	3076.84	2.29
15339.00	86.83	356.37	11872.44	3170.27	-42.68	359.23	3170.56	3170.54	0.79
15434.00	87.70	357.99	11876.97	3265.04	-47.35	359.17	3265.39	3265.35	1.93
15529.00	87.51	358.06	11880.94	3359.90	-50.62	359.14	3360.28	3360.24	0.21
15624.00	87.36	1.06	11885.19	3454.79	-51.35	359.15	3455.18	3455.13	3.16
15718.00	85.92	359.09	11890.70	3548.62	-51.23	359.17	3548.99	3548.96	2.59
15813.00	89.42	0.18	11894.56	3643.53	-51.83	359.18	3643.90	3643.86	3.86
15908.00	90.65	2.06	11894.51	3738.50	-49.98	359.23	3738.84	3738.82	2.36
15971.00	87.28	2.24	11895.64	3801.44	-47.61	359.28	3801.74	3801.73	5.36
16003.00	85.45	2.18	11897.67	3833.35	-46.38	359.31	3833.63	3833.62	5.72
16034.00	85.58	2.04	11900.10	3864.23	-45.24	359.33	3864.50	3864.49	0.62
16066.00	85.32	1.89	11902.64	3896.12	-44.15	359.35	3896.37	3896.36	0.94
16098.00	84.97	1.93	11905.34	3927.98	-43.09	359.37	3928.22	3928.22	1.10
16129.00	85.05	1.65	11908.04	3958.85	-42.12	359.39	3959.07	3959.07	0.94
16161.00	85.20	1.35	11910.76	3990.72	-41.29	359.41	3990.94	3990.94	1.05
16192.00	86.19	1.15	11913.09	4021.63	-40.61	359.42	4021.83	4021.83	3.26
16224.00	86.53	1.18	11915.12	4053.56	-39.96	359.44	4053.75	4053.75	1.07
16287.00	88.50	0.98	11917.85	4116.48	-38.78	359.46	4116.67	4116.67	3.14
16382.00	92.46	1.63	11917.05	4211.44	-36.61	359.50	4211.60	4211.59	4.22
16477.00	86.56	357.52	11917.87	4306.37	-37.32	359.50	4306.53	4306.53	7.57
16572.00	88.05	357.77	11922.33	4401.18	-41.22	359.46	4401.37	4401.37	1.59
16667.00	89.59	357.39	11924.29	4496.07	-45.23	359.42	4496.30	4496.30	1.67
16762.00	91.40	356.97	11923.47	4590.95	-49.90	359.38	4591.22	4591.22	1.96
16857.00	93.68	359.17	11919.26	4685.79	-53.10	359.35	4686.09	4686.09	3.33
16952.00	88.20	359.19	11917.70	4780.73	-54.46	359.35	4781.04	4781.04	5.77
17021.00	89.62	359.46	11919.01	4849.71	-55.27	359.35	4850.03	4850.02	2.09
17116.00	89.70	359.59	11919.58	4944.71	-56.06	359.35	4945.02	4945.02	0.16
17211.00	90.29	358.39	11919.59	5039.69	-57.73	359.34	5040.02	5040.01	1.41
17305.00	90.23	358.12	11919.16	5133.65	-60.59	359.32	5134.00	5133.99	0.29
17400.00	89.72	0.08	11919.20	5228.63	-62.09	359.32	5229.00	5228.99	2.13
17495.00	90.60	1.98	11918.93	5323.61	-60.38	359.35	5323.95	5323.94	2.20
17590.00	90.03	2.45	11918.41	5418.53	-56.71	359.40	5418.83	5418.83	0.78
17685.00	90.85	0.97	11917.68	5513.49	-53.87	359.44	5513.75	5513.75	1.78
17780.00	91.52	359.62	11915.72	5608.46	-53.38	359.45	5608.72	5608.72	1.59
17875.00	90.24	359.56	11914.26	5703.45	-54.06	359.46	5703.70	5703.70	1.35
17970.00	91.15	358.50	11913.11	5798.42	-55.67	359.45	5798.69	5798.69	1.47
18065.00	94.51	358.43	11908.42	5893.26	-58.21	359.43	5893.55	5893.55	3.54

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
18160.00	90.65	357.98	11904.14	5988.10	-61.18	359.41	5988.41	5988.41	4.09
18254.00	91.92	357.85	11902.03	6082.01	-64.60	359.39	6082.35	6082.35	1.36
18349.00	93.08	357.75	11897.89	6176.85	-68.25	359.37	6177.23	6177.22	1.23
18444.00	90.55	357.54	11894.88	6271.71	-72.15	359.34	6272.13	6272.12	2.67
18539.00	91.59	0.19	11893.11	6366.67	-74.03	359.33	6367.10	6367.09	3.00
18634.00	91.22	359.89	11890.78	6461.64	-73.96	359.34	6462.06	6462.06	0.50
18729.00	89.23	357.73	11890.40	6556.61	-75.94	359.34	6557.05	6557.04	3.09
18824.00	90.55	358.01	11890.59	6651.54	-79.47	359.32	6652.01	6652.00	1.42
18918.00	89.72	358.60	11890.37	6745.50	-82.25	359.30	6746.00	6745.98	1.08
18950.00	90.61	359.45	11890.27	6777.49	-82.79	359.30	6778.00	6777.98	3.85
18982.00	89.66	0.26	11890.20	6809.49	-82.87	359.30	6810.00	6809.98	3.90
19013.00	88.65	1.16	11890.65	6840.48	-82.49	359.31	6840.98	6840.97	4.36
19045.00	88.13	1.50	11891.55	6872.46	-81.75	359.32	6872.95	6872.94	1.94
19077.00	88.69	1.23	11892.44	6904.44	-80.98	359.33	6904.92	6904.91	1.94
19108.00	88.52	1.55	11893.20	6935.42	-80.23	359.34	6935.89	6935.88	1.17
19140.00	89.48	1.10	11893.75	6967.41	-79.49	359.35	6967.86	6967.86	3.31
19203.00	89.16	0.97	11894.50	7030.39	-78.36	359.36	7030.83	7030.83	0.55
19298.00	89.37	1.02	11895.72	7125.37	-76.71	359.38	7125.79	7125.78	0.23
19393.00	90.00	0.66	11896.24	7220.36	-75.31	359.40	7220.75	7220.75	0.76
19488.00	90.13	0.42	11896.14	7315.36	-74.42	359.42	7315.73	7315.73	0.29
19583.00	91.89	0.49	11894.46	7410.33	-73.66	359.43	7410.70	7410.70	1.85
19678.00	92.21	0.27	11891.06	7505.27	-73.03	359.44	7505.63	7505.63	0.41
19772.00	92.46	359.61	11887.23	7599.19	-73.13	359.45	7599.54	7599.54	0.75
19866.00	91.92	359.02	11883.64	7693.12	-74.26	359.45	7693.47	7693.47	0.85
19961.00	92.67	358.51	11879.84	7788.02	-76.30	359.44	7788.39	7788.39	0.95
20056.00	92.03	358.33	11875.94	7882.90	-78.92	359.43	7883.30	7883.30	0.70
20150.00	90.61	359.82	11873.78	7976.86	-80.43	359.42	7977.26	7977.26	2.19
20245.00	90.79	0.77	11872.62	8071.85	-79.95	359.43	8072.24	8072.24	1.02
20340.00	91.07	1.49	11871.07	8166.82	-78.07	359.45	8167.19	8167.19	0.81
20435.00	91.82	0.12	11868.68	8261.77	-76.74	359.47	8262.13	8262.13	1.64
20529.00	89.96	359.09	11867.22	8355.76	-77.39	359.47	8356.11	8356.11	2.26
20624.00	91.45	358.48	11866.05	8450.72	-79.40	359.46	8451.10	8451.10	1.69
20718.00	90.60	357.77	11864.37	8544.66	-82.48	359.45	8545.05	8545.05	1.18
20813.00	88.57	356.84	11865.06	8639.54	-86.94	359.42	8639.98	8639.98	2.35
20907.00	90.67	357.50	11865.68	8733.42	-91.58	359.40	8733.90	8733.90	2.34
21002.00	91.55	358.29	11863.84	8828.34	-95.07	359.38	8828.85	8828.85	1.24
21096.00	93.12	359.00	11860.01	8922.23	-97.29	359.38	8922.76	8922.76	1.83

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
21191.00	90.04	357.63	11857.39	9017.14	-100.09	359.36	9017.69	9017.69	3.55
21222.00	92.08	358.00	11856.82	9048.11	-101.27	359.36	9048.68	9048.67	6.69
21254.00	91.07	357.03	11855.94	9080.07	-102.65	359.35	9080.65	9080.64	4.38
21285.00	88.25	356.72	11856.12	9111.02	-104.34	359.34	9111.61	9111.60	9.15
21317.00	89.30	357.04	11856.80	9142.96	-106.08	359.34	9143.58	9143.56	3.43
21348.00	90.63	357.39	11856.82	9173.92	-107.59	359.33	9174.55	9174.54	4.44
21380.00	92.19	358.63	11856.04	9205.89	-108.70	359.32	9206.53	9206.52	6.23
21411.00	91.51	359.92	11855.04	9236.87	-109.09	359.32	9237.52	9237.50	4.70
21443.00	91.12	1.16	11854.30	9268.86	-108.79	359.33	9269.50	9269.49	4.06
21474.00	92.11	2.29	11853.43	9299.84	-107.86	359.34	9300.46	9300.45	4.85
21505.00	92.68	3.32	11852.13	9330.77	-106.34	359.35	9331.38	9331.37	3.79
21537.00	93.61	3.77	11850.38	9362.66	-104.37	359.36	9363.24	9363.24	3.23
21568.00	93.17	3.83	11848.54	9393.54	-102.32	359.38	9394.10	9394.09	1.43
21607.00	91.79	2.98	11846.86	9432.43	-100.00	359.39	9432.96	9432.96	4.15
21663.00	92.02	3.00	11844.99	9488.33	-97.08	359.41	9488.82	9488.82	0.41
21695.00	94.58	3.61	11843.15	9520.22	-95.24	359.43	9520.69	9520.69	8.22
21758.00	89.31	2.46	11841.01	9583.07	-91.91	359.45	9583.51	9583.51	8.56
21790.00	89.53	1.88	11841.34	9615.04	-90.70	359.46	9615.47	9615.47	1.94
21852.00	89.47	2.12	11841.88	9677.00	-88.54	359.48	9677.41	9677.41	0.40
21884.00	93.15	2.38	11841.15	9708.96	-87.28	359.48	9709.36	9709.35	11.53
21915.00	92.33	1.60	11839.67	9739.91	-86.21	359.49	9740.29	9740.29	3.65
21947.00	92.66	1.64	11838.27	9771.87	-85.30	359.50	9772.24	9772.23	1.04
21979.00	94.16	0.97	11836.37	9803.80	-84.57	359.51	9804.17	9804.16	5.13
22010.00	91.07	359.47	11834.96	9834.76	-84.46	359.51	9835.13	9835.12	11.08
22041.00	91.72	359.12	11834.20	9865.75	-84.84	359.51	9866.12	9866.11	2.38
22136.00	93.91	0.14	11829.54	9960.63	-85.45	359.51	9961.00	9960.99	2.54
22230.00	93.33	1.36	11823.60	10054.43	-84.22	359.52	10054.78	10054.77	1.43
22325.00	95.43	1.79	11816.35	10149.11	-81.62	359.54	10149.44	10149.42	2.26
22370.00	94.74	1.42	11812.36	10193.92	-80.36	359.55	10194.23	10194.21	1.74

Projected Survey

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
22446.00	94.74	1.42	11806.08	10269.63	-78.49	359.56	10269.93	10269.91	0.00



Azimuths to Grid North
True North: -0.54°
Magnetic North: 6.03°

Magnetic Field
Strength: 47647.5nT
Dip Angle: 59.94°
Date: 9/30/2019
Model: IGRF2015

Project: NAN/GB
Site: NAN/GB #1N
Well: Nandina 101H
Wellbore: Final Survey
Design: Design #1
Latitude: 32° 4' 48.738 N
Longitude: 103° 18' 41.267 W
GL: 3022.0

WELL DETAILS: Nandina 101H

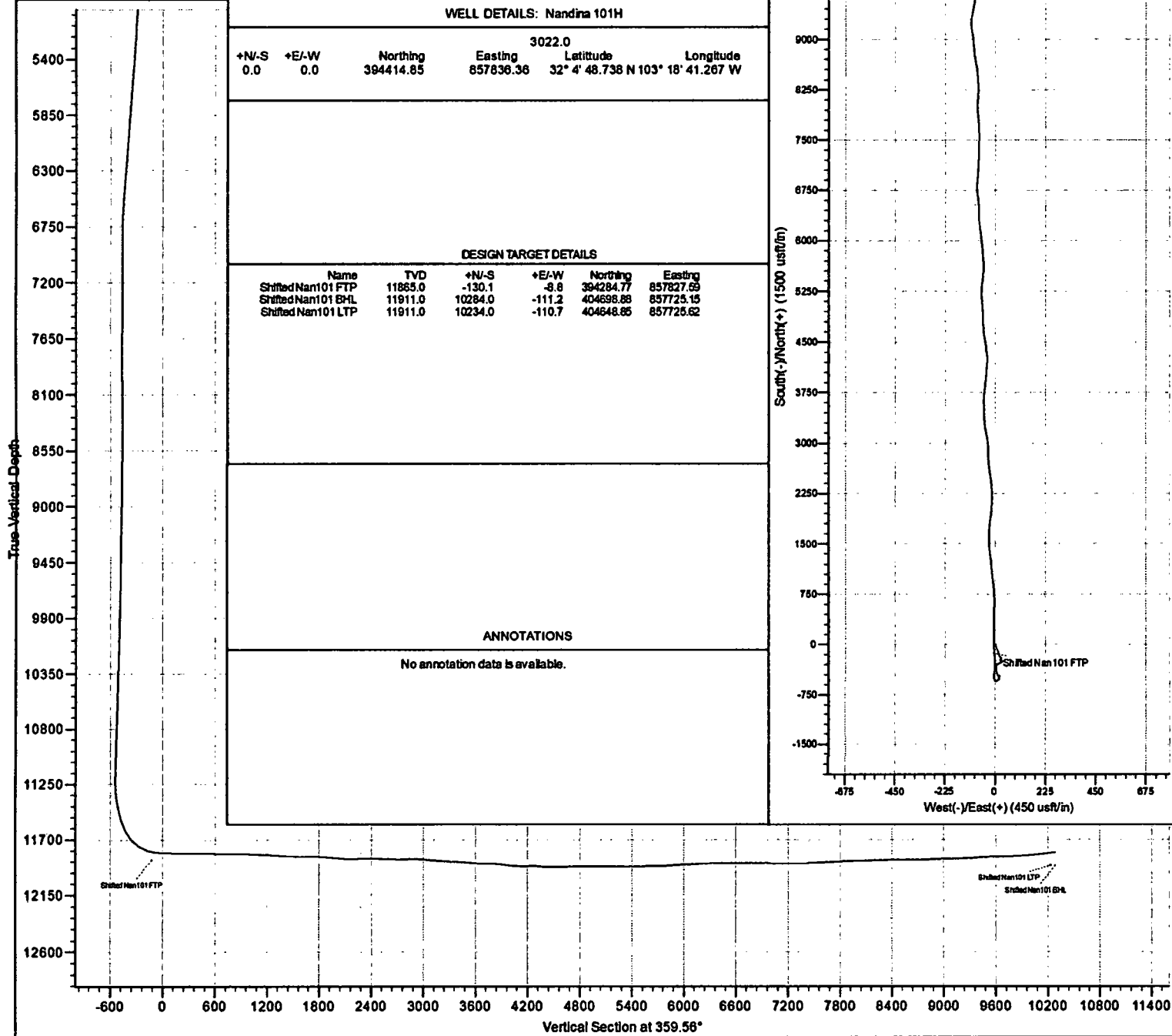
+N/-S	+E/-W	Northing	Easting	3022.0	Latitude	Longitude
0.0	0.0	394414.85	857836.36		32° 4' 48.738 N	103° 18' 41.267 W

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
Shifted Nan101 FTP	11865.0	-130.1	-8.8	394284.77	857827.59
Shifted Nan101 BHL	11911.0	10284.0	-111.2	404696.88	857725.15
Shifted Nan101 LTP	11911.0	10234.0	-110.7	404648.85	857725.62

ANNOTATIONS

No annotation data is available.





AMEREDEV

Ameredev Operating, LLC.

NAN/GB

NAN/GB #1N

Nandina 101H

Final Survey

Plan: Design #1

Standard Survey Report

30 September, 2019

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Nandina 101H
Project:	NAN/GB	TVD Reference:	KB @ 3049.0usft
Site:	NAN/GB #1N	MD Reference:	KB @ 3049.0usft
Well:	Nandina 101H	North Reference:	Grid
Wellbore:	Final Survey	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM5000

Project	NAN/GB		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	NAN/GB #1N		
Site Position:		Northing:	394,414.24 usft
From:	Lat/Long	Easting:	857,776.36 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 4' 48.738 N
		Longitude:	103° 18' 41.965 W
		Grid Convergence:	0.54 °

Well	Nandina 101H		
Well Position	+N/-S	0.0 usft	Northing: 394,414.84 usft
	+E/-W	0.0 usft	Easting: 857,836.36 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 4' 48.738 N
		Longitude:	103° 18' 41.267 W
		Ground Level:	3,022.0 usft

Wellbore	Final Survey				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	9/30/2019	6.57	59.94	47,647.45267255

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	359.56

Survey Tool Program	Date 9/30/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	22,460.7	Design #1 (Final Survey)	MWD	OWSG MWD - Standard

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	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
100.0	0.11	152.00	100.0	-0.1	0.0	-0.1	0.11	0.11	0.00
200.0	0.22	152.00	200.0	-0.3	0.2	-0.3	0.11	0.11	0.00
300.0	0.34	152.00	300.0	-0.8	0.4	-0.8	0.11	0.11	0.00
400.0	0.45	152.00	400.0	-1.4	0.7	-1.4	0.11	0.11	0.00
445.0	0.50	152.00	445.0	-1.7	0.9	-1.7	0.11	0.11	0.00
500.0	0.56	159.05	500.0	-2.2	1.1	-2.2	0.16	0.10	12.82
537.0	0.60	163.00	537.0	-2.5	1.2	-2.5	0.16	0.12	10.67
600.0	0.70	149.39	600.0	-3.2	1.5	-3.2	0.29	0.16	-21.60
693.0	0.90	136.00	693.0	-4.2	2.3	-4.2	0.29	0.21	-14.40

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Nandina 101H
Project:	NAN/GB	TVD Reference:	KB @ 3049.0usft
Site:	NAN/GB #1N	MD Reference:	KB @ 3049.0usft
Well:	Nandina 101H	North Reference:	Grid
Wellbore:	Final Survey	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM5000

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
700.0	0.89	138.31	700.0	-4.3	2.4	-4.3	0.53	-0.14	33.01
786.0	0.90	168.00	786.0	-5.4	3.0	-5.5	0.53	0.01	34.52
800.0	0.93	170.22	800.0	-5.7	3.0	-5.7	0.32	0.20	15.86
875.0	1.10	180.00	875.0	-7.0	3.1	-7.0	0.32	0.23	13.04
900.0	1.10	180.76	899.9	-7.4	3.1	-7.5	0.06	0.00	3.03
974.0	1.10	183.00	973.9	-8.9	3.1	-8.9	0.06	0.00	3.03
1,000.0	1.09	188.58	999.9	-9.4	3.0	-9.4	0.41	-0.05	21.48
1,062.0	1.10	202.00	1,061.9	-10.5	2.7	-10.5	0.41	0.02	21.64
1,100.0	0.56	135.97	1,099.9	-11.0	2.7	-11.0	2.66	-1.43	-173.76
1,139.0	1.23	78.97	1,138.9	-11.0	3.3	-11.0	2.66	1.73	-146.16
1,200.0	0.07	161.44	1,199.9	-10.9	3.9	-11.0	2.00	-1.90	135.20
1,233.0	0.66	249.65	1,232.9	-11.0	3.7	-11.0	2.00	1.79	267.29
1,300.0	0.24	239.14	1,299.9	-11.2	3.3	-11.2	0.64	-0.63	-15.69
1,327.0	0.09	206.50	1,326.9	-11.3	3.2	-11.3	0.64	-0.56	-120.87
1,400.0	0.08	38.24	1,399.9	-11.3	3.2	-11.3	0.23	-0.01	-230.49
1,422.0	0.13	35.81	1,421.9	-11.3	3.2	-11.3	0.23	0.23	-11.06
1,500.0	0.13	251.99	1,499.9	-11.2	3.2	-11.2	0.31	0.00	-184.38
1,517.0	0.18	246.66	1,516.9	-11.2	3.2	-11.2	0.31	0.30	-31.36
1,600.0	0.12	181.95	1,599.9	-11.4	3.0	-11.4	0.20	-0.07	-77.96
1,611.0	0.13	172.40	1,610.9	-11.4	3.0	-11.4	0.20	0.07	-86.82
1,700.0	0.12	83.62	1,699.9	-11.5	3.1	-11.5	0.20	-0.01	-99.75
1,706.0	0.13	79.76	1,705.9	-11.5	3.2	-11.5	0.20	0.14	-64.41
1,800.0	0.13	4.70	1,799.9	-11.4	3.3	-11.4	0.17	0.00	-79.85
1,895.0	0.13	342.47	1,894.9	-11.1	3.2	-11.2	0.05	0.00	-23.40
1,900.0	0.12	342.99	1,899.9	-11.1	3.2	-11.2	0.27	-0.27	10.40
1,990.0	0.13	153.59	1,989.9	-11.1	3.3	-11.2	0.27	0.02	189.56
2,000.0	0.13	154.36	1,999.9	-11.2	3.3	-11.2	0.02	0.00	7.66
2,084.0	0.13	160.80	2,083.9	-11.3	3.3	-11.4	0.02	0.00	7.67
2,100.0	0.37	180.64	2,099.9	-11.4	3.3	-11.4	1.54	1.47	124.02
2,179.0	1.58	188.57	2,178.9	-12.7	3.2	-12.8	1.54	1.54	10.03
2,200.0	1.99	187.15	2,199.9	-13.4	3.1	-13.4	1.97	1.96	-6.75
2,273.0	3.43	184.88	2,272.8	-16.8	2.8	-16.8	1.97	1.97	-3.11
2,300.0	3.88	183.17	2,299.7	-18.5	2.6	-18.5	1.70	1.65	-6.33
2,368.0	5.01	180.22	2,367.5	-23.8	2.5	-23.8	1.70	1.67	-4.34
2,400.0	5.51	178.75	2,399.4	-26.7	2.5	-26.7	1.63	1.57	-4.58
2,463.0	6.51	176.53	2,462.1	-33.3	2.8	-33.3	1.63	1.58	-3.53
2,500.0	7.09	175.10	2,498.8	-37.7	3.1	-37.7	1.63	1.56	-3.86
2,558.0	8.00	173.28	2,556.3	-45.3	3.9	-45.3	1.63	1.57	-3.14
2,600.0	8.59	172.55	2,597.9	-51.3	4.7	-51.3	1.42	1.40	-1.73
2,652.0	9.32	171.78	2,649.2	-59.3	5.8	-59.3	1.42	1.41	-1.49
2,700.0	10.05	170.69	2,696.5	-67.3	7.0	-67.3	1.57	1.52	-2.28
2,747.0	10.77	169.76	2,742.8	-75.6	8.4	-75.7	1.57	1.53	-1.97
2,800.0	11.59	171.22	2,794.8	-85.8	10.1	-85.8	1.63	1.54	2.76
2,841.0	12.22	172.22	2,834.9	-94.1	11.3	-94.2	1.63	1.55	2.43

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Nandina 101H
Project:	NAN/GB	TVD Reference:	KB @ 3049.0usft
Site:	NAN/GB #1N	MD Reference:	KB @ 3049.0usft
Well:	Nandina 101H	North Reference:	Grid
Wellbore:	Final Survey	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM5000

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,900.0	12.68	173.62	2,892.5	-106.8	12.9	-106.9	0.94	0.79	2.37
2,936.0	12.97	174.42	2,927.6	-114.7	13.7	-114.8	0.94	0.80	2.23
3,000.0	11.92	174.77	2,990.1	-128.4	15.0	-128.6	1.64	-1.64	0.54
3,030.0	11.43	174.95	3,019.5	-134.5	15.6	-134.6	1.64	-1.64	0.61
3,100.0	10.32	175.82	3,088.2	-147.7	16.7	-147.8	1.60	-1.58	1.25
3,125.0	9.93	176.18	3,112.8	-152.0	17.0	-152.2	1.60	-1.58	1.43
3,200.0	9.12	171.23	3,186.8	-164.4	18.3	-164.5	1.53	-1.08	-6.60
3,220.0	8.92	169.76	3,206.5	-167.5	18.8	-167.6	1.53	-1.01	-7.34
3,300.0	8.35	163.47	3,285.6	-179.1	21.6	-179.3	1.38	-0.71	-7.86
3,314.0	8.26	162.29	3,299.5	-181.1	22.2	-181.2	1.38	-0.64	-8.46
3,400.0	6.99	165.18	3,384.7	-192.0	25.4	-192.2	1.54	-1.47	3.36
3,409.0	6.86	165.54	3,393.6	-193.1	25.7	-193.2	1.54	-1.46	4.04
3,500.0	5.31	181.14	3,484.1	-202.5	26.9	-202.7	2.47	-1.70	17.14
3,503.0	5.27	181.80	3,487.1	-202.8	26.9	-203.0	2.47	-1.41	22.02
3,597.0	3.74	194.55	3,580.8	-210.1	26.0	-210.3	1.94	-1.63	13.56
3,600.0	3.72	194.53	3,583.8	-210.3	26.0	-210.5	0.83	-0.83	-0.74
3,692.0	2.95	193.67	3,675.7	-215.5	24.7	-215.6	0.83	-0.83	-0.93
3,700.0	2.93	194.17	3,683.7	-215.9	24.6	-216.0	0.38	-0.21	6.26
3,786.0	2.77	199.91	3,769.6	-220.0	23.3	-220.1	0.38	-0.19	6.67
3,800.0	2.78	198.41	3,783.5	-220.6	23.1	-220.8	0.53	0.10	-10.75
3,881.0	2.90	190.06	3,864.4	-224.5	22.1	-224.6	0.53	0.14	-10.30
3,900.0	2.93	190.17	3,883.4	-225.4	21.9	-225.6	0.14	0.14	0.58
3,976.0	3.03	190.59	3,959.3	-229.3	21.2	-229.5	0.14	0.14	0.55
4,000.0	3.10	180.45	3,983.3	-230.6	21.1	-230.7	2.28	0.30	-42.25
4,070.0	3.78	156.14	4,053.2	-234.6	22.0	-234.7	2.28	0.97	-34.73
4,100.0	4.01	151.79	4,083.1	-236.4	22.9	-236.6	1.25	0.77	-14.50
4,164.0	4.57	144.10	4,146.9	-240.5	25.5	-240.6	1.25	0.87	-12.02
4,200.0	4.37	145.58	4,182.8	-242.7	27.1	-242.9	0.65	-0.57	4.10
4,259.0	4.04	148.31	4,241.6	-246.4	29.5	-246.6	0.65	-0.55	4.64
4,300.0	3.66	156.76	4,282.5	-248.8	30.7	-249.0	1.67	-0.94	20.61
4,354.0	3.30	170.46	4,336.4	-251.9	31.7	-252.1	1.67	-0.66	25.37
4,400.0	3.12	179.46	4,382.4	-254.5	31.9	-254.7	1.16	-0.38	19.58
4,448.0	3.03	189.71	4,430.3	-257.0	31.7	-257.3	1.16	-0.19	21.34
4,500.0	3.29	195.47	4,482.2	-259.8	31.1	-260.1	0.78	0.49	11.07
4,543.0	3.52	199.56	4,525.2	-262.3	30.3	-262.5	0.78	0.54	9.52
4,600.0	3.81	203.53	4,582.0	-265.6	29.0	-265.8	0.67	0.50	6.97
4,637.0	4.00	205.80	4,619.0	-267.9	27.9	-268.1	0.67	0.52	6.13
4,700.0	4.49	212.08	4,681.8	-272.0	25.6	-272.2	1.07	0.77	9.97
4,732.0	4.75	214.76	4,713.7	-274.1	24.2	-274.3	1.07	0.83	8.38
4,800.0	4.94	216.31	4,781.4	-278.8	20.9	-279.0	0.34	0.28	2.28
4,826.0	5.01	216.87	4,807.3	-280.6	19.5	-280.8	0.34	0.28	2.16
4,900.0	5.38	217.15	4,881.0	-286.0	15.5	-286.1	0.51	0.51	0.38
4,921.0	5.49	217.22	4,901.9	-287.6	14.3	-287.7	0.51	0.51	0.34

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Nandina 101H
Project:	NAN/GB	TVD Reference:	KB @ 3049.0usft
Site:	NAN/GB #1N	MD Reference:	KB @ 3049.0usft
Well:	Nandina 101H	North Reference:	Grid
Wellbore:	Final Survey	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM5000

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,000.0	5.30	210.83	4,980.6	-293.7	10.1	-293.8	0.80	-0.24	-8.09
5,015.0	5.27	209.57	4,995.5	-294.9	9.5	-295.0	0.80	-0.19	-8.41
5,100.0	5.05	195.46	5,080.2	-301.9	6.5	-301.9	1.51	-0.25	-16.59
5,110.0	5.05	193.75	5,090.1	-302.7	6.3	-302.8	1.51	-0.05	-17.15
5,200.0	4.88	181.06	5,179.8	-310.4	5.3	-310.5	1.23	-0.19	-14.10
5,204.0	4.88	180.48	5,183.8	-310.8	5.3	-310.8	1.23	-0.04	-14.47
5,299.0	5.32	180.40	5,278.4	-319.2	5.2	-319.2	0.46	0.46	-0.08
5,300.0	5.33	180.41	5,279.4	-319.3	5.2	-319.3	0.58	0.56	1.33
5,393.0	5.85	181.54	5,372.0	-328.4	5.1	-328.4	0.58	0.56	1.21
5,400.0	5.89	181.43	5,378.9	-329.1	5.0	-329.1	0.66	0.64	-1.52
5,488.0	6.46	180.22	5,466.4	-338.5	4.9	-338.6	0.66	0.64	-1.38
5,500.0	6.42	180.17	5,478.3	-339.9	4.9	-339.9	0.33	-0.33	-0.45
5,582.0	6.15	179.78	5,559.9	-348.9	4.9	-348.9	0.33	-0.33	-0.47
5,600.0	6.11	179.99	5,577.8	-350.8	4.9	-350.8	0.26	-0.23	1.17
5,677.0	5.93	180.92	5,654.3	-358.9	4.9	-358.9	0.26	-0.23	1.21
5,700.0	6.00	180.83	5,677.2	-361.2	4.8	-361.3	0.29	0.29	-0.38
5,771.0	6.20	180.57	5,747.8	-368.8	4.7	-368.8	0.29	0.29	-0.37
5,800.0	6.18	180.30	5,776.6	-371.9	4.7	-371.9	0.11	-0.05	-0.92
5,866.0	6.15	179.69	5,842.2	-379.0	4.7	-379.0	0.11	-0.05	-0.93
5,900.0	6.18	179.24	5,876.1	-382.7	4.7	-382.7	0.17	0.09	-1.32
5,960.0	6.24	178.46	5,935.7	-389.2	4.9	-389.2	0.17	0.10	-1.30
6,000.0	6.17	177.84	5,975.5	-393.5	5.0	-393.5	0.25	-0.18	-1.54
6,055.0	6.07	176.97	6,030.2	-399.3	5.3	-399.4	0.25	-0.18	-1.59
6,100.0	6.11	177.10	6,074.9	-404.1	5.5	-404.1	0.09	0.09	0.28
6,149.0	6.15	177.23	6,123.6	-409.3	5.8	-409.4	0.09	0.09	0.27
6,200.0	6.18	176.66	6,174.3	-414.8	6.1	-414.8	0.13	0.05	-1.11
6,244.0	6.20	176.18	6,218.1	-419.5	6.4	-419.6	0.13	0.05	-1.10
6,300.0	6.17	175.08	6,273.7	-425.5	6.8	-425.6	0.22	-0.05	-1.96
6,338.0	6.15	174.33	6,311.5	-429.6	7.2	-429.6	0.22	-0.05	-1.98
6,400.0	6.15	173.17	6,373.2	-436.2	7.9	-436.2	0.20	0.00	-1.87
6,432.0	6.15	172.57	6,405.0	-439.6	8.3	-439.7	0.20	0.00	-1.87
6,500.0	6.12	172.95	6,472.6	-446.8	9.3	-446.9	0.07	-0.04	0.56
6,526.0	6.11	173.10	6,498.4	-449.6	9.6	-449.6	0.07	-0.04	0.57
6,600.0	5.60	172.36	6,572.1	-457.0	10.6	-457.1	0.70	-0.69	-0.99
6,621.0	5.45	172.13	6,593.0	-459.0	10.8	-459.1	0.70	-0.69	-1.11
6,700.0	3.27	169.81	6,671.7	-465.0	11.7	-465.1	2.77	-2.76	-2.94
6,715.0	2.86	168.97	6,686.7	-465.8	11.9	-465.9	2.77	-2.75	-5.59
6,800.0	0.66	179.29	6,771.7	-468.3	12.3	-468.4	2.60	-2.58	12.14
6,809.0	0.44	186.37	6,780.7	-468.4	12.3	-468.5	2.60	-2.49	78.67
6,900.0	0.13	253.22	6,871.7	-468.8	12.2	-468.9	0.45	-0.34	73.46
6,904.0	0.13	261.08	6,875.7	-468.8	12.1	-468.9	0.45	-0.02	196.56
6,998.0	0.18	263.72	6,969.7	-468.8	11.9	-468.9	0.05	0.05	2.81
7,000.0	0.19	264.05	6,971.7	-468.8	11.9	-468.9	0.32	0.32	16.58

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Nandina 101H
Project:	NAN/GB	TVD Reference:	KB @ 3049.0usft
Site:	NAN/GB #1N	MD Reference:	KB @ 3049.0usft
Well:	Nandina 101H	North Reference:	Grid
Wellbore:	Final Survey	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM5000

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Bulld Rate (°/100usft)	Turn Rate (°/100usft)
7,092.0	0.48	269.78	7,063.7	-468.9	11.4	-468.9	0.32	0.32	6.23
7,100.0	0.43	265.64	7,071.7	-468.9	11.3	-468.9	0.78	-0.66	-51.72
7,187.0	0.40	155.96	7,158.7	-469.2	11.1	-469.2	0.78	-0.03	-126.07
7,200.0	0.31	151.08	7,171.7	-469.2	11.1	-469.3	0.71	-0.68	-37.58
7,281.0	0.31	14.28	7,252.7	-469.2	11.3	-469.3	0.71	0.00	-168.88
7,300.0	0.24	4.29	7,271.7	-469.1	11.3	-469.2	0.47	-0.39	-52.59
7,376.0	0.22	262.22	7,347.7	-469.0	11.2	-469.1	0.47	-0.02	-134.30
7,400.0	0.10	282.11	7,371.7	-469.0	11.1	-469.1	0.55	-0.51	82.86
7,470.0	0.31	57.35	7,441.7	-468.9	11.2	-469.0	0.55	0.30	193.20
7,500.0	0.27	96.20	7,471.7	-468.8	11.3	-468.9	0.65	-0.14	129.49
7,565.0	0.53	148.84	7,536.7	-469.1	11.7	-469.2	0.65	0.40	80.99
7,600.0	0.42	163.92	7,571.6	-469.4	11.8	-469.5	0.48	-0.32	43.09
7,660.0	0.35	206.41	7,631.6	-469.8	11.7	-469.8	0.48	-0.11	70.81
7,700.0	0.17	161.05	7,671.6	-469.9	11.7	-470.0	0.65	-0.44	-113.39
7,755.0	0.35	83.01	7,726.6	-470.0	11.9	-470.1	0.65	0.32	-141.90
7,800.0	0.39	81.32	7,771.6	-469.9	12.2	-470.0	0.10	0.10	-3.76
7,849.0	0.44	79.85	7,820.6	-469.9	12.5	-470.0	0.10	0.10	-2.99
7,900.0	0.46	72.76	7,871.6	-469.8	12.9	-469.9	0.12	0.04	-13.91
7,943.0	0.48	67.28	7,914.6	-469.7	13.3	-469.8	0.12	0.05	-12.74
8,000.0	0.58	77.06	7,971.6	-469.5	13.8	-469.6	0.24	0.18	17.15
8,038.0	0.66	81.78	8,009.6	-469.4	14.2	-469.5	0.24	0.20	12.43
8,100.0	0.71	69.43	8,071.6	-469.2	14.9	-469.3	0.25	0.08	-19.92
8,133.0	0.75	63.68	8,104.6	-469.1	15.3	-469.2	0.25	0.12	-17.42
8,200.0	0.68	75.39	8,171.6	-468.8	16.1	-468.9	0.24	-0.11	17.48
8,227.0	0.66	80.73	8,198.6	-468.7	16.4	-468.8	0.24	-0.07	19.76
8,300.0	1.10	74.68	8,271.6	-468.5	17.4	-468.6	0.61	0.60	-8.29
8,322.0	1.23	73.70	8,293.6	-468.3	17.9	-468.5	0.61	0.60	-4.44
8,400.0	0.89	92.56	8,371.6	-468.1	19.3	-468.3	0.62	-0.43	24.18
8,417.0	0.84	98.48	8,388.6	-468.2	19.5	-468.3	0.62	-0.32	34.83
8,500.0	0.64	108.24	8,471.6	-468.4	20.6	-468.5	0.28	-0.24	11.76
8,511.0	0.62	109.99	8,482.6	-468.4	20.7	-468.6	0.28	-0.22	15.86
8,600.0	0.57	135.02	8,571.6	-468.9	21.5	-469.1	0.29	-0.06	28.13
8,606.0	0.57	136.80	8,577.6	-469.0	21.5	-469.1	0.29	0.01	29.63
8,700.0	0.44	194.11	8,671.6	-469.7	21.7	-469.8	0.53	-0.14	60.97
8,794.0	0.79	203.33	8,765.6	-470.6	21.4	-470.7	0.39	0.37	9.81
8,800.0	0.79	201.87	8,771.6	-470.7	21.4	-470.8	0.35	0.08	-24.37
8,888.0	0.92	183.12	8,859.6	-471.9	21.1	-472.1	0.35	0.14	-21.30
8,900.0	0.94	183.38	8,871.6	-472.1	21.1	-472.3	0.14	0.14	2.18
8,983.0	1.05	184.97	8,954.5	-473.6	21.0	-473.7	0.14	0.14	1.91
9,000.0	1.06	187.06	8,971.5	-473.9	21.0	-474.0	0.24	0.08	12.32
9,078.0	1.14	195.95	9,049.5	-475.3	20.6	-475.5	0.24	0.10	11.39
9,100.0	1.23	196.10	9,071.5	-475.8	20.5	-475.9	0.42	0.42	0.70
9,173.0	1.54	196.48	9,144.5	-477.5	20.0	-477.6	0.42	0.42	0.52
9,200.0	1.58	196.24	9,171.5	-478.2	19.8	-478.3	0.14	0.14	-0.89

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Nandina 101H
Project:	NAN/GB	TVD Reference:	KB @ 3049.0usft
Site:	NAN/GB #1N	MD Reference:	KB @ 3049.0usft
Well:	Nandina 101H	North Reference:	Grid
Wellbore:	Final Survey	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM5000

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,267.0	1.67	195.69	9,238.5	-480.0	19.3	-480.1	0.14	0.14	-0.82
9,300.0	1.67	196.33	9,271.5	-480.9	19.0	-481.1	0.06	0.00	1.94
9,362.0	1.67	197.53	9,333.4	-482.7	18.5	-482.8	0.06	0.00	1.94
9,400.0	1.60	197.07	9,371.4	-483.7	18.2	-483.8	0.19	-0.19	-1.22
9,456.0	1.49	196.30	9,427.4	-485.1	17.8	-485.3	0.19	-0.19	-1.37
9,500.0	1.43	195.02	9,471.4	-486.2	17.4	-486.3	0.16	-0.14	-2.90
9,551.0	1.36	193.40	9,522.4	-487.4	17.1	-487.5	0.16	-0.14	-3.18
9,600.0	1.45	190.68	9,571.3	-488.6	16.9	-488.7	0.23	0.19	-5.54
9,645.0	1.54	188.48	9,616.3	-489.8	16.7	-489.9	0.23	0.19	-4.90
9,700.0	1.54	187.36	9,671.3	-491.2	16.5	-491.3	0.05	0.00	-2.03
9,740.0	1.54	186.55	9,711.3	-492.3	16.4	-492.4	0.05	0.00	-2.03
9,800.0	1.40	183.80	9,771.3	-493.8	16.2	-493.9	0.26	-0.24	-4.59
9,834.0	1.32	181.98	9,805.3	-494.6	16.2	-494.7	0.26	-0.23	-5.35
9,900.0	1.41	178.68	9,871.3	-496.2	16.2	-496.3	0.18	0.14	-5.00
9,928.0	1.45	177.41	9,899.2	-496.9	16.2	-497.0	0.18	0.14	-4.55
10,000.0	1.95	168.61	9,971.2	-499.0	16.5	-499.1	0.78	0.69	-12.23
10,023.0	2.11	166.68	9,994.2	-499.8	16.7	-499.9	0.78	0.72	-8.37
10,100.0	2.40	167.05	10,071.1	-502.7	17.3	-502.9	0.37	0.37	0.48
10,117.0	2.46	167.12	10,088.1	-503.5	17.5	-503.6	0.37	0.37	0.41
10,200.0	2.42	167.82	10,171.0	-506.9	18.3	-507.0	0.06	-0.04	0.84
10,211.0	2.42	167.91	10,182.0	-507.4	18.4	-507.5	0.06	-0.04	0.85
10,300.0	2.33	179.25	10,271.0	-511.0	18.8	-511.1	0.54	-0.10	12.74
10,306.0	2.33	180.04	10,277.0	-511.3	18.8	-511.4	0.54	-0.04	13.15
10,400.0	1.68	190.78	10,370.9	-514.5	18.5	-514.6	0.80	-0.70	11.43
10,401.0	1.67	190.94	10,371.9	-514.5	18.5	-514.7	0.80	-0.65	15.85
10,495.0	2.02	189.71	10,465.8	-517.5	18.0	-517.6	0.37	0.37	-1.31
10,500.0	2.03	190.17	10,470.8	-517.7	18.0	-517.8	0.34	0.11	9.20
10,590.0	2.15	197.97	10,560.8	-520.9	17.2	-521.0	0.34	0.14	8.67
10,600.0	2.20	198.70	10,570.8	-521.2	17.0	-521.3	0.53	0.46	7.27
10,684.0	2.59	203.77	10,654.7	-524.5	15.8	-524.6	0.53	0.47	6.04
10,700.0	2.68	203.43	10,670.7	-525.2	15.5	-525.3	0.57	0.56	-2.14
10,779.0	3.12	202.02	10,749.6	-528.8	13.9	-528.9	0.57	0.56	-1.78
10,800.0	3.10	203.49	10,770.6	-529.9	13.5	-530.0	0.40	-0.11	7.02
10,873.0	3.03	208.78	10,843.5	-533.4	11.8	-533.5	0.40	-0.09	7.24
10,900.0	2.93	210.18	10,870.4	-534.6	11.1	-534.7	0.46	-0.38	5.17
10,968.0	2.68	214.15	10,938.3	-537.4	9.3	-537.5	0.46	-0.36	5.85
11,000.0	2.65	214.35	10,970.3	-538.7	8.5	-538.7	0.10	-0.09	0.63
11,063.0	2.59	214.76	11,033.2	-541.0	6.8	-541.1	0.10	-0.09	0.65
11,100.0	2.47	215.66	11,070.2	-542.4	5.9	-542.4	0.34	-0.32	2.42
11,157.0	2.29	217.22	11,127.1	-544.3	4.5	-544.3	0.34	-0.32	2.74
11,200.0	2.21	217.14	11,170.1	-545.6	3.5	-545.6	0.19	-0.19	-0.19
11,204.0	2.20	217.13	11,174.1	-545.7	3.4	-545.8	0.19	-0.19	-0.20
11,253.0	2.02	223.11	11,223.1	-547.1	2.2	-547.1	0.58	-0.37	12.20

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Nandina 101H
Project:	NAN/GB	TVD Reference:	KB @ 3049.0usft
Site:	NAN/GB #1N	MD Reference:	KB @ 3049.0usft
Well:	Nandina 101H	North Reference:	Grid
Wellbore:	Final Survey	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM5000

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,300.0	3.09	326.47	11,270.0	-546.7	1.0	-546.7	8.65	2.29	219.92
11,317.0	4.44	335.70	11,287.0	-545.7	0.4	-545.7	8.65	7.91	54.28
11,346.0	7.12	346.60	11,315.9	-542.9	-0.4	-542.9	9.95	9.24	37.59
11,380.0	10.95	350.29	11,349.4	-537.7	-1.5	-537.7	11.39	11.26	10.85
11,400.0	12.84	352.68	11,369.0	-533.6	-2.1	-533.6	9.77	9.46	11.95
11,411.0	13.89	353.72	11,379.7	-531.1	-2.4	-531.0	9.77	9.53	9.45
11,442.0	14.73	354.59	11,409.7	-523.5	-3.2	-523.4	2.80	2.71	2.81
11,473.0	15.96	351.43	11,439.6	-515.3	-4.2	-515.3	4.80	3.97	-10.19
11,500.0	17.99	353.85	11,465.5	-507.5	-5.2	-507.4	7.96	7.52	8.96
11,505.0	18.37	354.24	11,470.2	-505.9	-5.3	-505.9	7.96	7.58	7.82
11,537.0	20.53	355.12	11,500.4	-495.3	-6.3	-495.3	6.81	6.75	2.75
11,568.0	22.99	359.34	11,529.2	-483.9	-6.8	-483.8	9.40	7.94	13.61
11,599.0	25.49	0.39	11,557.4	-471.1	-6.9	-471.1	8.18	8.06	3.39
11,600.0	25.60	0.47	11,558.3	-470.7	-6.9	-470.6	11.52	11.02	7.74
11,668.0	33.17	4.60	11,617.6	-437.4	-5.3	-437.4	11.52	11.13	6.08
11,700.0	38.72	4.91	11,643.5	-418.7	-3.7	-418.7	17.35	17.34	0.97
11,795.0	52.90	1.20	11,709.5	-350.9	-0.3	-350.9	15.18	14.93	-3.91
11,800.0	53.61	1.05	11,712.5	-346.9	-0.3	-346.9	14.34	14.14	-2.93
11,890.0	66.36	358.78	11,757.4	-269.1	-0.5	-269.1	14.34	14.17	-2.53
11,900.0	67.27	358.74	11,761.4	-259.9	-0.7	-259.9	9.08	9.07	-0.44
11,985.0	74.98	358.38	11,788.9	-179.6	-2.7	-179.6	9.08	9.07	-0.42
12,000.0	76.88	358.50	11,792.5	-165.0	-3.1	-165.0	12.72	12.69	0.83
12,044.9	82.59	358.86	11,800.5	-120.9	-4.1	-120.8	12.72	12.69	0.80
Shifted Nan101 FTP									
12,080.0	87.04	359.14	11,803.7	-85.9	-4.7	-85.9	12.72	12.70	0.78
12,100.0	87.38	359.20	11,804.6	-66.0	-5.0	-65.9	1.74	1.72	0.28
12,175.0	88.67	359.41	11,807.2	9.0	-5.9	9.0	1.74	1.72	0.28
12,200.0	88.71	359.50	11,807.8	34.0	-6.2	34.0	0.39	0.18	0.35
12,270.0	88.84	359.74	11,809.3	104.0	-6.6	104.0	0.39	0.18	0.35
12,300.0	89.12	359.96	11,809.8	134.0	-6.7	134.0	1.19	0.94	0.73
12,365.0	89.73	0.43	11,810.5	198.9	-6.5	199.0	1.19	0.94	0.73
12,400.0	90.27	0.48	11,810.5	233.9	-6.2	234.0	1.54	1.54	0.14
12,460.0	91.19	0.56	11,809.7	293.9	-5.7	294.0	1.54	1.54	0.14
12,500.0	90.45	0.21	11,809.1	333.9	-5.4	334.0	2.04	-1.84	-0.87
12,555.0	89.44	359.73	11,809.2	388.9	-5.4	389.0	2.04	-1.84	-0.87
12,600.0	89.33	0.06	11,809.7	433.9	-5.5	434.0	0.76	-0.23	0.72
12,649.0	89.22	0.41	11,810.3	482.9	-5.3	483.0	0.76	-0.23	0.72
12,700.0	88.40	0.49	11,811.4	533.9	-4.9	533.9	1.61	-1.60	0.16
12,744.0	87.70	0.56	11,812.8	577.9	-4.5	577.9	1.61	-1.60	0.16
12,800.0	88.05	359.88	11,814.9	633.8	-4.3	633.9	1.37	0.62	-1.22
12,840.0	88.30	359.39	11,816.2	673.8	-4.5	673.8	1.37	0.63	-1.22
12,900.0	90.97	359.33	11,816.6	733.8	-5.2	733.8	4.45	4.45	-0.11
12,935.0	92.53	359.29	11,815.5	768.8	-5.6	768.8	4.45	4.45	-0.11
13,000.0	90.25	358.59	11,813.9	833.8	-6.8	833.8	3.67	-3.51	-1.07

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Nandina 101H
Project:	NAN/GB	TVD Reference:	KB @ 3049.0usft
Site:	NAN/GB #1N	MD Reference:	KB @ 3049.0usft
Well:	Nandina 101H	North Reference:	Grid
Wellbore:	Final Survey	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM5000

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,029.0	89.23	358.28	11,814.1	862.7	-7.6	862.8	3.67	-3.51	-1.07
13,100.0	88.67	358.22	11,815.4	933.7	-9.8	933.8	0.79	-0.79	-0.08
13,124.0	88.48	358.20	11,816.0	957.7	-10.6	957.7	0.79	-0.79	-0.08
13,200.0	88.17	358.18	11,818.2	1,033.6	-13.0	1,033.7	0.41	-0.41	-0.03
13,219.0	88.09	358.17	11,818.8	1,052.6	-13.6	1,052.7	0.41	-0.41	-0.03
13,300.0	88.35	358.38	11,821.3	1,133.5	-16.0	1,133.6	0.41	0.32	0.26
13,314.0	88.39	358.42	11,821.7	1,147.5	-16.4	1,147.6	0.41	0.32	0.26
13,400.0	87.96	358.40	11,824.5	1,233.4	-18.8	1,233.5	0.50	-0.49	-0.02
13,409.0	87.92	358.40	11,824.8	1,242.4	-19.0	1,242.5	0.50	-0.49	-0.02
13,500.0	87.38	358.06	11,828.5	1,333.3	-21.8	1,333.4	0.69	-0.59	-0.37
13,504.0	87.36	358.05	11,828.7	1,337.3	-22.0	1,337.4	0.69	-0.59	-0.37
13,599.0	86.91	357.87	11,833.4	1,432.1	-25.3	1,432.3	0.51	-0.47	-0.19
13,600.0	86.93	357.88	11,833.5	1,433.1	-25.4	1,433.3	2.42	2.18	1.05
13,694.0	88.98	358.87	11,836.9	1,527.0	-28.0	1,527.2	2.42	2.18	1.05
13,700.0	89.04	359.01	11,837.0	1,533.0	-28.1	1,533.2	2.62	1.05	2.40
13,789.0	89.98	1.15	11,837.7	1,622.0	-28.0	1,622.2	2.62	1.05	2.40
13,800.0	89.93	1.17	11,837.7	1,633.0	-27.8	1,633.2	0.45	-0.41	0.18
13,900.0	89.52	1.35	11,838.2	1,733.0	-25.6	1,733.1	0.45	-0.41	0.18
13,917.0	89.45	1.38	11,838.3	1,750.0	-25.2	1,750.1	0.45	-0.41	0.18
14,000.0	87.14	2.05	11,840.8	1,832.9	-22.7	1,833.0	2.90	-2.79	0.81
14,011.0	86.83	2.14	11,841.4	1,843.9	-22.3	1,844.0	2.90	-2.79	0.81
14,100.0	86.71	2.25	11,846.4	1,932.7	-18.9	1,932.7	0.19	-0.14	0.13
14,106.0	86.70	2.26	11,846.8	1,938.6	-18.7	1,938.7	0.19	-0.14	0.13
14,200.0	86.26	0.78	11,852.5	2,032.4	-16.2	2,032.5	1.64	-0.46	-1.58
14,201.0	86.26	0.76	11,852.6	2,033.4	-16.2	2,033.5	1.64	-0.46	-1.58
14,296.0	89.50	1.02	11,856.1	2,128.3	-14.7	2,128.4	3.42	3.41	0.27
14,300.0	89.56	0.98	11,856.1	2,132.3	-14.6	2,132.4	1.87	1.53	-1.07
14,391.0	90.95	0.00	11,855.7	2,223.3	-13.8	2,223.4	1.87	1.53	-1.07
14,400.0	90.93	359.85	11,855.6	2,232.3	-13.9	2,232.4	1.70	-0.22	-1.68
14,486.0	90.74	358.40	11,854.3	2,318.3	-15.2	2,318.4	1.70	-0.22	-1.68
14,500.0	90.58	358.39	11,854.2	2,332.3	-15.6	2,332.3	1.12	-1.12	-0.08
14,581.0	89.68	358.32	11,854.0	2,413.3	-17.9	2,413.3	1.12	-1.12	-0.08
14,600.0	89.41	358.07	11,854.1	2,432.3	-18.5	2,432.3	1.95	-1.44	-1.32
14,676.0	88.31	357.07	11,855.7	2,508.2	-21.7	2,508.3	1.95	-1.44	-1.32
14,700.0	88.44	357.27	11,856.3	2,532.1	-22.9	2,532.2	0.99	0.53	0.83
14,770.0	88.81	357.85	11,858.0	2,602.0	-25.9	2,602.2	0.99	0.53	0.83
14,800.0	88.97	358.00	11,858.6	2,632.0	-27.0	2,632.1	0.74	0.53	0.52
14,865.0	89.31	358.34	11,859.6	2,697.0	-29.0	2,697.1	0.74	0.53	0.52
14,900.0	89.83	358.59	11,859.8	2,732.0	-30.0	2,732.1	1.64	1.47	0.72
14,960.0	90.71	359.02	11,859.6	2,792.0	-31.2	2,792.1	1.64	1.47	0.72
15,000.0	90.60	359.49	11,859.1	2,831.9	-31.7	2,832.1	1.20	-0.28	1.17
15,055.0	90.44	0.13	11,858.6	2,886.9	-31.9	2,887.1	1.20	-0.28	1.17
15,100.0	88.74	359.42	11,858.9	2,931.9	-32.1	2,932.1	4.09	-3.77	-1.58

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Nandina 101H
Project:	NAN/GB	TVD Reference:	KB @ 3049.0usft
Site:	NAN/GB #1N	MD Reference:	KB @ 3049.0usft
Well:	Nandina 101H	North Reference:	Grid
Wellbore:	Final Survey	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM5000

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,150.0	86.86	358.63	11,860.8	2,981.9	-33.0	2,982.1	4.09	-3.77	-1.58
15,200.0	86.47	357.55	11,863.7	3,031.8	-34.6	3,032.0	2.29	-0.78	-2.16
15,245.0	86.12	356.58	11,866.7	3,076.6	-36.9	3,076.8	2.29	-0.78	-2.16
15,300.0	86.54	356.46	11,870.2	3,131.4	-40.2	3,131.6	0.79	0.76	-0.22
15,339.0	86.83	356.37	11,872.4	3,170.3	-42.7	3,170.5	0.79	0.76	-0.22
15,400.0	87.39	357.41	11,875.5	3,231.1	-46.0	3,231.4	1.93	0.92	1.71
15,434.0	87.70	357.99	11,877.0	3,265.0	-47.4	3,265.3	1.93	0.92	1.70
15,500.0	87.57	358.04	11,879.7	3,330.9	-49.6	3,331.2	0.21	-0.20	0.07
15,529.0	87.51	358.06	11,880.9	3,359.9	-50.6	3,360.2	0.21	-0.20	0.07
15,600.0	87.40	0.30	11,884.1	3,430.8	-51.6	3,431.1	3.16	-0.16	3.16
15,624.0	87.36	1.06	11,885.2	3,454.8	-51.4	3,455.1	3.16	-0.16	3.16
15,700.0	86.20	359.47	11,889.5	3,530.7	-51.0	3,531.0	2.59	-1.53	-2.10
15,718.0	85.92	359.09	11,890.7	3,548.6	-51.2	3,548.9	2.59	-1.53	-2.10
15,800.0	88.94	0.03	11,894.4	3,630.5	-51.9	3,630.8	3.86	3.68	1.15
15,813.0	89.42	0.18	11,894.6	3,643.5	-51.8	3,643.8	3.86	3.68	1.15
15,900.0	90.55	1.90	11,894.6	3,730.5	-50.3	3,730.8	2.36	1.29	1.98
15,908.0	90.65	2.06	11,894.5	3,738.5	-50.0	3,738.8	2.36	1.29	1.98
15,971.0	87.28	2.24	11,895.6	3,801.4	-47.6	3,801.7	5.36	-5.35	0.29
16,000.0	85.62	2.19	11,897.4	3,830.4	-46.5	3,830.6	5.72	-5.72	-0.19
16,003.0	85.45	2.18	11,897.7	3,833.4	-46.4	3,833.6	5.72	-5.72	-0.19
16,034.0	85.58	2.04	11,900.1	3,864.2	-45.2	3,864.5	0.62	0.42	-0.45
16,066.0	85.32	1.89	11,902.6	3,896.1	-44.1	3,896.3	0.94	-0.81	-0.47
16,098.0	84.97	1.93	11,905.3	3,928.0	-43.1	3,928.2	1.10	-1.09	0.13
16,100.0	84.98	1.91	11,905.5	3,930.0	-43.0	3,930.2	0.94	0.26	-0.90
16,129.0	85.05	1.65	11,908.0	3,958.9	-42.1	3,959.1	0.94	0.26	-0.90
16,161.0	85.20	1.35	11,910.8	3,990.7	-41.3	3,990.9	1.05	0.47	-0.94
16,192.0	86.19	1.15	11,913.1	4,021.6	-40.6	4,021.8	3.26	3.19	-0.65
16,200.0	86.28	1.16	11,913.6	4,029.6	-40.5	4,029.8	1.07	1.06	0.09
16,224.0	86.53	1.18	11,915.1	4,053.6	-40.0	4,053.7	1.07	1.06	0.09
16,287.0	88.50	0.98	11,917.8	4,116.5	-38.8	4,116.7	3.14	3.13	-0.32
16,300.0	89.04	1.07	11,918.1	4,129.5	-38.5	4,129.7	4.22	4.17	0.68
16,382.0	92.46	1.63	11,917.1	4,211.4	-36.6	4,211.6	4.22	4.17	0.68
16,400.0	91.34	0.85	11,916.5	4,229.4	-36.2	4,229.6	7.57	-6.21	-4.33
16,477.0	86.56	357.52	11,917.9	4,306.4	-37.3	4,306.5	7.57	-6.21	-4.33
16,500.0	86.92	357.58	11,919.2	4,329.3	-38.3	4,329.5	1.59	1.57	0.26
16,572.0	88.05	357.77	11,922.3	4,401.2	-41.2	4,401.4	1.59	1.57	0.26
16,600.0	88.50	357.66	11,923.2	4,429.1	-42.3	4,429.3	1.67	1.62	-0.40
16,667.0	89.59	357.39	11,924.3	4,496.1	-45.2	4,496.3	1.67	1.62	-0.40
16,700.0	90.22	357.24	11,924.3	4,529.0	-46.8	4,529.3	1.96	1.91	-0.44
16,762.0	91.40	356.97	11,923.5	4,590.9	-49.9	4,591.2	1.96	1.91	-0.44
16,800.0	92.31	357.85	11,922.2	4,628.9	-51.6	4,629.1	3.33	2.40	2.31
16,857.0	93.68	359.17	11,919.3	4,685.8	-53.1	4,686.1	3.33	2.40	2.32
16,900.0	91.20	359.18	11,917.4	4,728.7	-53.7	4,729.0	5.77	-5.77	0.02

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Nandina 101H
Project:	NAN/GB	TVD Reference:	KB @ 3049.0usft
Site:	NAN/GB #1N	MD Reference:	KB @ 3049.0usft
Well:	Nandina 101H	North Reference:	Grid
Wellbore:	Final Survey	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM5000

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
16,952.0	88.20	359.19	11,917.7	4,780.7	-54.5	4,781.0	5.77	-5.77	0.02
17,000.0	89.19	359.38	11,918.8	4,828.7	-55.1	4,829.0	2.09	2.06	0.39
17,021.0	89.62	359.46	11,919.0	4,849.7	-55.3	4,850.0	2.09	2.06	0.39
17,100.0	89.69	359.57	11,919.5	4,928.7	-55.9	4,929.0	0.16	0.08	0.14
17,116.0	89.70	359.59	11,919.6	4,944.7	-56.1	4,945.0	0.16	0.08	0.14
17,200.0	90.22	358.53	11,919.6	5,028.7	-57.4	5,029.0	1.41	0.62	-1.26
17,211.0	90.29	358.39	11,919.6	5,039.7	-57.7	5,040.0	1.41	0.62	-1.26
17,300.0	90.23	358.13	11,919.2	5,128.6	-60.4	5,129.0	0.29	-0.06	-0.29
17,305.0	90.23	358.12	11,919.2	5,133.6	-60.6	5,134.0	0.29	-0.06	-0.29
17,400.0	89.72	0.08	11,919.2	5,228.6	-62.1	5,228.9	2.13	-0.54	2.06
17,495.0	90.60	1.98	11,918.9	5,323.6	-60.4	5,323.9	2.20	0.93	2.00
17,500.0	90.57	2.00	11,918.9	5,328.6	-60.2	5,328.9	0.78	-0.60	0.49
17,590.0	90.03	2.45	11,918.4	5,418.5	-56.7	5,418.8	0.78	-0.60	0.49
17,600.0	90.12	2.29	11,918.4	5,428.5	-56.3	5,428.8	1.78	0.86	-1.56
17,685.0	90.85	0.97	11,917.7	5,513.5	-53.9	5,513.7	1.78	0.86	-1.56
17,700.0	90.96	0.76	11,917.4	5,528.5	-53.6	5,528.7	1.59	0.71	-1.42
17,780.0	91.52	359.62	11,915.7	5,608.5	-53.4	5,608.7	1.59	0.71	-1.42
17,800.0	91.25	359.61	11,915.2	5,628.5	-53.5	5,628.7	1.35	-1.35	-0.06
17,875.0	90.24	359.56	11,914.3	5,703.4	-54.1	5,703.7	1.35	-1.35	-0.06
17,900.0	90.48	359.28	11,914.1	5,728.4	-54.3	5,728.7	1.47	0.96	-1.12
17,970.0	91.15	358.50	11,913.1	5,798.4	-55.7	5,798.7	1.47	0.96	-1.12
18,000.0	92.21	358.48	11,912.2	5,828.4	-56.5	5,828.7	3.54	3.54	-0.07
18,065.0	94.51	358.43	11,908.4	5,893.3	-58.2	5,893.5	3.54	3.54	-0.07
18,100.0	93.09	358.26	11,906.1	5,928.2	-59.2	5,928.4	4.09	-4.06	-0.47
18,160.0	90.65	357.98	11,904.1	5,988.1	-61.2	5,988.4	4.09	-4.06	-0.47
18,200.0	91.19	357.92	11,903.5	6,028.1	-62.6	6,028.4	1.36	1.35	-0.14
18,254.0	91.92	357.85	11,902.0	6,082.0	-64.6	6,082.3	1.36	1.35	-0.14
18,300.0	92.48	357.80	11,900.3	6,127.9	-66.3	6,128.3	1.23	1.22	-0.11
18,349.0	93.08	357.75	11,897.9	6,176.8	-68.2	6,177.2	1.23	1.22	-0.11
18,400.0	91.72	357.64	11,895.8	6,227.8	-70.3	6,228.1	2.67	-2.66	-0.22
18,444.0	90.55	357.54	11,894.9	6,271.7	-72.1	6,272.1	2.67	-2.66	-0.22
18,500.0	91.16	359.10	11,894.0	6,327.7	-73.8	6,328.1	3.00	1.10	2.79
18,539.0	91.59	0.19	11,893.1	6,366.7	-74.0	6,367.0	3.00	1.09	2.79
18,600.0	91.35	360.00	11,891.5	6,427.6	-73.9	6,428.0	0.50	-0.39	-0.32
18,634.0	91.22	359.89	11,890.8	6,461.6	-74.0	6,462.0	0.50	-0.39	-0.32
18,700.0	89.84	358.39	11,890.2	6,527.6	-75.0	6,528.0	3.09	-2.09	-2.27
18,729.0	89.23	357.73	11,890.4	6,556.6	-75.9	6,557.0	3.09	-2.09	-2.27
18,800.0	90.22	357.94	11,890.7	6,627.6	-78.6	6,628.0	1.42	1.39	0.29
18,824.0	90.55	358.01	11,890.6	6,651.5	-79.5	6,652.0	1.42	1.39	0.29
18,900.0	89.88	358.49	11,890.3	6,727.5	-81.8	6,727.9	1.08	-0.88	0.63
18,918.0	89.72	358.60	11,890.4	6,745.5	-82.2	6,745.9	1.08	-0.88	0.63
18,950.0	90.61	359.45	11,890.3	6,777.5	-82.8	6,777.9	3.85	2.78	2.66
18,982.0	89.66	0.26	11,890.2	6,809.5	-82.9	6,809.9	3.90	-2.97	2.53
19,000.0	89.07	0.78	11,890.4	6,827.5	-82.7	6,827.9	4.36	-3.26	2.90

Company: Ameredev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #1N
Well: Nandina 101H
Wellbore: Final Survey
Design: Design #1

Local Co-ordinate Reference: Well Nandina 101H
TVD Reference: KB @ 3049.0usft
MD Reference: KB @ 3049.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5000

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
19,013.0	88.65	1.16	11,890.7	6,840.5	-82.5	6,840.9	4.36	-3.26	2.90
19,045.0	88.13	1.50	11,891.6	6,872.5	-81.7	6,872.9	1.94	-1.63	1.06
19,077.0	88.69	1.23	11,892.4	6,904.4	-81.0	6,904.9	1.94	1.75	-0.84
19,100.0	88.56	1.47	11,893.0	6,927.4	-80.4	6,927.8	1.17	-0.55	1.03
19,108.0	88.52	1.55	11,893.2	6,935.4	-80.2	6,935.8	1.17	-0.55	1.03
19,140.0	89.48	1.10	11,893.8	6,967.4	-79.5	6,967.8	3.31	3.00	-1.41
19,200.0	89.18	0.98	11,894.5	7,027.4	-78.4	7,027.8	0.55	-0.51	-0.21
19,203.0	89.16	0.97	11,894.5	7,030.4	-78.4	7,030.8	0.55	-0.51	-0.21
19,298.0	89.37	1.02	11,895.7	7,125.4	-76.7	7,125.7	0.23	0.22	0.05
19,300.0	89.38	1.01	11,895.7	7,127.4	-76.7	7,127.7	0.76	0.66	-0.38
19,393.0	90.00	0.66	11,896.2	7,220.4	-75.3	7,220.7	0.76	0.66	-0.38
19,400.0	90.01	0.64	11,896.2	7,227.4	-75.2	7,227.7	0.29	0.14	-0.25
19,488.0	90.13	0.42	11,896.1	7,315.4	-74.4	7,315.7	0.29	0.14	-0.25
19,500.0	90.35	0.43	11,896.1	7,327.4	-74.3	7,327.7	1.85	1.85	0.07
19,583.0	91.89	0.49	11,894.5	7,410.3	-73.7	7,410.7	1.85	1.85	0.07
19,600.0	91.95	0.45	11,893.9	7,427.3	-73.5	7,427.7	0.41	0.34	-0.23
19,678.0	92.21	0.27	11,891.1	7,505.3	-73.0	7,505.6	0.41	0.34	-0.23
19,700.0	92.27	0.12	11,890.2	7,527.3	-73.0	7,527.6	0.75	0.27	-0.70
19,772.0	92.46	359.61	11,887.2	7,599.2	-73.1	7,599.5	0.75	0.27	-0.70
19,800.0	92.30	359.43	11,886.1	7,627.2	-73.4	7,627.5	0.85	-0.57	-0.63
19,866.0	91.92	359.02	11,883.6	7,693.1	-74.3	7,693.5	0.85	-0.57	-0.63
19,900.0	92.19	358.84	11,882.4	7,727.1	-74.9	7,727.4	0.95	0.79	-0.54
19,961.0	92.67	358.51	11,879.8	7,788.0	-76.3	7,788.4	0.95	0.79	-0.54
20,000.0	92.41	358.44	11,878.1	7,827.0	-77.3	7,827.3	0.70	-0.67	-0.19
20,056.0	92.03	358.33	11,875.9	7,882.9	-78.9	7,883.3	0.70	-0.67	-0.19
20,100.0	91.37	359.03	11,874.6	7,926.9	-79.9	7,927.2	2.19	-1.51	1.59
20,150.0	90.61	359.82	11,873.8	7,976.9	-80.4	7,977.2	2.19	-1.51	1.58
20,200.0	90.70	0.32	11,873.2	8,026.9	-80.4	8,027.2	1.02	0.19	1.00
20,245.0	90.79	0.77	11,872.6	8,071.8	-79.9	8,072.2	1.02	0.19	1.00
20,300.0	90.95	1.19	11,871.8	8,126.8	-79.0	8,127.2	0.81	0.29	0.76
20,340.0	91.07	1.49	11,871.1	8,166.8	-78.1	8,167.2	0.81	0.29	0.76
20,400.0	91.54	0.62	11,869.7	8,226.8	-77.0	8,227.1	1.64	0.79	-1.44
20,435.0	91.82	0.12	11,868.7	8,261.8	-76.7	8,262.1	1.64	0.79	-1.44
20,500.0	90.53	359.41	11,867.3	8,326.8	-77.0	8,327.1	2.26	-1.98	-1.10
20,529.0	89.96	359.09	11,867.2	8,355.8	-77.4	8,356.1	2.26	-1.98	-1.10
20,600.0	91.07	358.63	11,866.6	8,426.7	-78.8	8,427.1	1.69	1.57	-0.64
20,624.0	91.45	358.48	11,866.0	8,450.7	-79.4	8,451.1	1.69	1.57	-0.64
20,700.0	90.76	357.91	11,864.6	8,526.7	-81.8	8,527.0	1.18	-0.90	-0.76
20,718.0	90.60	357.77	11,864.4	8,544.7	-82.5	8,545.0	1.18	-0.90	-0.76
20,800.0	88.85	356.97	11,864.8	8,626.6	-86.2	8,627.0	2.35	-2.14	-0.98
20,813.0	88.57	356.84	11,865.1	8,639.5	-86.9	8,640.0	2.35	-2.14	-0.98
20,900.0	90.51	357.45	11,865.8	8,726.4	-91.3	8,726.9	2.34	2.23	0.70
20,907.0	90.67	357.50	11,865.7	8,733.4	-91.6	8,733.9	2.34	2.23	0.70

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Nandina 101H
Project:	NAN/GB	TVD Reference:	KB @ 3049.0usft
Site:	NAN/GB #1N	MD Reference:	KB @ 3049.0usft
Well:	Nandina 101H	North Reference:	Grid
Wellbore:	Final Survey	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM5000

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
21,000.0	91.53	358.27	11,863.9	8,826.3	-95.0	8,826.8	1.24	0.93	0.83
21,002.0	91.55	358.29	11,863.8	8,828.3	-95.1	8,828.8	1.24	0.93	0.83
21,096.0	93.12	359.00	11,860.0	8,922.2	-97.3	8,922.7	1.83	1.67	0.76
21,100.0	92.99	358.94	11,859.8	8,926.2	-97.4	8,926.7	3.55	-3.24	-1.44
21,191.0	90.04	357.63	11,857.4	9,017.1	-100.1	9,017.6	3.55	-3.24	-1.44
21,200.0	90.63	357.74	11,857.3	9,026.1	-100.4	9,026.6	6.69	6.58	1.19
21,222.0	92.08	358.00	11,856.8	9,048.1	-101.3	9,048.6	6.69	6.58	1.19
21,254.0	91.07	357.03	11,855.9	9,080.1	-102.7	9,080.6	4.38	-3.16	-3.03
21,285.0	88.25	356.72	11,856.1	9,111.0	-104.3	9,111.5	9.15	-9.10	-1.00
21,300.0	88.74	356.87	11,856.5	9,126.0	-105.2	9,126.5	3.43	3.28	1.00
21,317.0	89.30	357.04	11,856.8	9,143.0	-106.1	9,143.5	3.43	3.28	1.00
21,348.0	90.63	357.39	11,856.8	9,173.9	-107.6	9,174.5	4.44	4.29	1.13
21,380.0	92.19	358.63	11,856.0	9,205.9	-108.7	9,206.5	6.23	4.88	3.88
21,400.0	91.75	359.46	11,855.3	9,225.9	-109.0	9,226.4	4.70	-2.19	4.16
21,411.0	91.51	359.92	11,855.0	9,236.9	-109.1	9,237.4	4.70	-2.19	4.16
21,443.0	91.12	1.16	11,854.3	9,268.9	-108.8	9,269.4	4.06	-1.22	3.88
21,474.0	92.11	2.29	11,853.4	9,299.8	-107.9	9,300.4	4.85	3.19	3.65
21,500.0	92.59	3.15	11,852.4	9,325.8	-106.6	9,326.3	3.79	1.84	3.32
21,505.0	92.68	3.32	11,852.1	9,330.8	-106.3	9,331.3	3.79	1.84	3.32
21,537.0	93.61	3.77	11,850.4	9,362.7	-104.4	9,363.2	3.23	2.91	1.41
21,568.0	93.17	3.83	11,848.5	9,393.5	-102.3	9,394.0	1.43	-1.42	0.19
21,600.0	92.04	3.13	11,847.1	9,425.4	-100.4	9,425.9	4.15	-3.54	-2.18
21,607.0	91.79	2.98	11,846.9	9,432.4	-100.0	9,432.9	4.15	-3.54	-2.18
21,663.0	92.02	3.00	11,845.0	9,488.3	-97.1	9,488.8	0.41	0.41	0.04
21,695.0	94.58	3.61	11,843.2	9,520.2	-95.2	9,520.7	8.22	8.00	1.91
21,700.0	94.16	3.52	11,842.8	9,525.2	-94.9	9,525.6	8.56	-8.36	-1.83
21,758.0	89.31	2.46	11,841.0	9,583.1	-91.9	9,583.5	8.56	-8.37	-1.82
21,790.0	89.53	1.88	11,841.3	9,615.0	-90.7	9,615.5	1.94	0.69	-1.81
21,800.0	89.52	1.92	11,841.4	9,625.0	-90.4	9,625.4	0.40	-0.10	0.39
21,852.0	89.47	2.12	11,841.9	9,677.0	-88.5	9,677.4	0.40	-0.10	0.39
21,884.0	93.15	2.38	11,841.1	9,709.0	-87.3	9,709.3	11.53	11.50	0.81
21,900.0	92.73	1.98	11,840.3	9,724.9	-86.7	9,725.3	3.65	-2.64	-2.52
21,915.0	92.33	1.60	11,839.7	9,739.9	-86.2	9,740.3	3.65	-2.65	-2.52
21,947.0	92.66	1.64	11,838.3	9,771.9	-85.3	9,772.2	1.04	1.03	0.13
21,979.0	94.16	0.97	11,836.4	9,803.8	-84.6	9,804.2	5.13	4.69	-2.09
22,000.0	92.07	359.95	11,835.2	9,824.8	-84.4	9,825.1	11.08	-9.97	-4.84
22,010.0	91.07	359.47	11,835.0	9,834.8	-84.5	9,835.1	11.08	-9.97	-4.83
22,041.0	91.72	359.12	11,834.2	9,865.8	-84.8	9,866.1	2.38	2.10	-1.13
22,100.0	93.08	359.75	11,831.7	9,924.7	-85.4	9,925.1	2.54	2.31	1.07
22,136.0	93.91	0.14	11,829.5	9,960.6	-85.5	9,961.0	2.54	2.30	1.07
22,200.0	93.52	0.97	11,825.4	10,024.5	-84.8	10,024.8	1.43	-0.62	1.30
22,230.0	93.33	1.36	11,823.6	10,054.4	-84.2	10,054.8	1.43	-0.62	1.30
22,300.0	94.88	1.68	11,818.6	10,124.2	-82.4	10,124.6	2.26	2.21	0.45

Company: Ameredev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #1N
Well: Nandina 101H
Wellbore: Final Survey
Design: Design #1

Local Co-ordinate Reference: Well Nandina 101H
TVD Reference: KB @ 3049.0usft
MD Reference: KB @ 3049.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5000

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
22,325.0	95.43	1.79	11,816.3	10,149.1	-81.6	10,149.4	2.26	2.21	0.45
22,370.0	94.74	1.42	11,812.4	10,193.9	-80.4	10,194.2	1.74	-1.53	-0.82
22,400.0	94.74	1.42	11,809.9	10,223.8	-79.6	10,224.1	0.00	0.00	0.00
Shifted Nan101 LTP									
22,450.9	94.74	1.42	11,805.7	10,274.5	-78.4	10,274.8	0.00	0.00	0.00
Shifted Nan101 BHL									
22,460.7	94.74	1.42	11,804.9	10,284.3	-78.1	10,284.6	0.00	0.00	0.00

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
Shifted Nan101 FTP	0.00	0.00	11,865.0	-130.1	-8.8	394,284.77	857,827.59	32° 4' 47.452 N	103° 18' 41.384 W
- plan misses target center by 65.3usft at 12044.9usft MD (11800.5 TVD, -120.9 N, -4.1 E)									
- Point									
Shifted Nan101 LTP	0.00	0.00	11,911.0	10,234.0	-110.7	404,648.85	857,725.62	32° 6' 30.011 N	103° 18' 41.427 W
- plan misses target center by 106.3usft at 22401.0usft MD (11809.8 TVD, 10224.8 N, -79.6 E)									
- Point									
Shifted Nan101 BHL	0.00	0.00	11,911.0	10,284.0	-111.2	404,698.88	857,725.15	32° 6' 30.506 N	103° 18' 41.427 W
- plan misses target center by 110.7usft at 22450.9usft MD (11805.7 TVD, 10274.5 N, -78.4 E)									
- Point									

Checked By: _____ Approved By: _____ Date: _____