

The logo for Ameredev, featuring the word "AMEREDEV" in a bold, italicized, sans-serif font. The text is white and is set against a solid black rectangular background.

AMEREDEV

Ameredev Operating, LLC.

NAN/GB

NAN/GB #2N

Nandina 112H

Final Survey

Plan: Final

Standard Planning Report

24 September, 2019

Database:	EDM5000	Local Co-ordinate Reference:	Well Nandina 112H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3050.0usft
Project:	NAN/GB	MD Reference:	KB @ 3050.0usft
Site:	NAN/GB #2N	North Reference:	Grid
Well:	Nandina 112H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Final Survey		
Design:	Final		

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 #2N				
Site Position:		Northing:	394,421.00 usft	Latitude:	32° 4' 48.742 N
From:	Lat/Long	Easting:	858,446.33 usft	Longitude:	103° 18' 34.178 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.54 °

Well	Nandina 112H					
Well Position	+N/-S	0.2 usft	Northing:	394,421.22 usft	Latitude:	32° 4' 48.742 N
	+E/-W	20.0 usft	Easting:	858,466.34 usft	Longitude:	103° 18' 33.945 W
Position Uncertainty	0.0 usft	Wellhead Elevation:		Ground Level:	3,023.0 usft	

Wellbore	Final Survey				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	9/19/2019	6.57	59.94	47,650.75115512

Design	Final			
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	356.94

Plan Survey Tool Program	Date	9/24/2019		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	22,523.6	Final (Final Survey)	MWD
				OWSG MWD - Standard

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Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
211.0	1.05	155.22	211.0	-1.8	0.8	0.50	0.50	0.00	155.22	
366.0	1.23	207.51	366.0	-4.5	0.6	0.66	0.12	33.74	107.00	
456.0	0.53	237.22	456.0	-5.6	-0.2	0.90	-0.78	33.01	161.16	
548.0	1.41	221.13	547.9	-6.7	-1.3	0.99	0.96	-17.49	-25.35	
638.0	0.53	198.11	637.9	-7.9	-2.1	1.05	-0.98	-25.58	-167.33	
703.0	0.92	248.73	702.9	-8.4	-2.7	1.10	0.60	77.88	85.68	
795.0	1.27	246.71	794.9	-9.1	-4.3	0.38	0.38	-2.20	-7.30	
882.0	1.85	222.19	881.9	-10.5	-6.2	1.00	0.67	-28.18	-61.71	
973.0	2.02	238.62	972.8	-12.4	-8.5	0.64	0.19	18.05	81.28	
1,065.0	1.45	240.38	1,064.8	-13.8	-10.9	0.62	-0.62	1.91	175.54	
1,239.0	1.31	218.25	1,238.7	-16.5	-14.0	0.31	-0.08	-12.72	-115.60	
1,334.0	1.28	217.54	1,333.7	-18.2	-15.4	0.04	-0.03	-0.75	-152.21	
1,429.0	1.22	224.90	1,428.7	-19.7	-16.7	0.18	-0.06	7.75	114.14	
1,523.0	0.80	228.78	1,522.7	-20.9	-17.9	0.45	-0.45	2.00	176.43	
1,618.0	0.16	253.63	1,617.7	-21.4	-18.5	0.70	-0.67	28.26	173.73	
1,714.0	0.72	30.06	1,713.7	-20.9	-18.4	0.88	0.58	142.11	143.94	
1,807.0	1.61	25.03	1,806.6	-19.2	-17.5	0.96	0.96	-5.41	-9.07	
1,901.0	2.69	26.26	1,900.6	-16.0	-16.0	1.15	1.15	1.31	3.06	
1,995.0	3.94	27.50	1,994.4	-11.2	-13.5	1.33	1.33	1.32	3.90	
2,089.0	4.16	45.32	2,088.2	-5.9	-9.6	1.35	0.23	18.96	89.05	
2,182.0	4.06	70.34	2,180.9	-2.4	-4.1	1.92	-0.11	26.90	105.62	
2,276.0	3.99	98.47	2,274.7	-1.8	2.3	2.08	-0.07	29.93	106.02	
2,370.0	5.36	121.31	2,368.4	-4.6	9.3	2.43	1.46	24.30	65.40	
2,465.0	7.17	131.95	2,462.9	-10.8	17.5	2.26	1.91	11.20	38.05	
2,559.0	9.45	140.99	2,555.9	-20.8	26.7	2.79	2.43	9.62	34.34	
2,653.0	9.82	145.11	2,648.5	-33.3	36.1	0.83	0.39	4.38	63.82	
2,747.0	9.66	146.72	2,741.2	-46.5	45.0	0.34	-0.17	1.71	121.22	
2,841.0	9.35	149.05	2,833.9	-59.6	53.3	0.53	-0.33	2.48	130.00	
2,935.0	8.38	156.32	2,926.8	-72.5	60.0	1.57	-1.03	7.73	134.44	
3,029.0	7.01	170.85	3,019.9	-84.4	63.6	2.52	-1.46	15.46	132.21	
3,124.0	6.77	188.86	3,114.3	-95.7	63.7	2.28	-0.25	18.96	105.23	
3,218.0	6.75	186.77	3,207.6	-106.6	62.2	0.26	-0.02	-2.22	-95.68	
3,312.0	6.57	180.11	3,301.0	-117.5	61.5	0.84	-0.19	-7.09	-106.41	
3,406.0	6.54	172.41	3,394.4	-128.2	62.2	0.93	-0.03	-8.19	-95.78	
3,501.0	6.56	165.29	3,488.7	-138.8	64.3	0.85	0.02	-7.49	-92.13	
3,595.0	6.65	165.66	3,582.1	-149.2	67.0	0.11	0.10	0.39	25.49	
3,689.0	6.47	175.85	3,675.5	-159.8	68.8	1.25	-0.19	10.84	103.83	
3,784.0	6.47	136.06	3,769.9	-169.0	72.9	4.63	0.00	-41.88	-109.78	
3,879.0	6.01	105.71	3,864.4	-174.2	81.4	3.46	-0.48	-31.95	-112.84	
3,974.0	5.78	63.67	3,958.9	-173.4	90.5	4.45	-0.24	-44.25	-113.83	
4,069.0	1.76	338.16	4,053.8	-169.9	94.2	6.22	-4.23	-90.01	-162.69	
4,164.0	5.81	272.59	4,148.6	-168.4	88.9	5.61	4.26	-69.02	-83.02	
4,258.0	6.83	250.49	4,242.0	-170.0	78.8	2.78	1.09	-23.51	-78.49	
4,353.0	7.72	224.53	4,336.3	-176.5	69.0	3.55	0.94	-27.33	-87.98	
4,448.0	9.63	208.29	4,430.2	-188.0	60.8	3.25	2.01	-17.09	-60.27	
4,543.0	11.17	200.33	4,523.6	-203.6	53.8	2.21	1.62	-8.38	-46.98	
4,637.0	11.67	194.01	4,615.8	-221.4	48.4	1.43	0.53	-6.72	-71.34	

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4,731.0	11.89	186.93	4,707.8	-240.2	44.9	1.55	0.23	-7.53	-84.82
4,826.0	11.38	177.51	4,800.9	-259.3	44.1	2.07	-0.54	-9.92	-109.61
4,919.0	12.01	165.17	4,891.9	-277.8	47.0	2.77	0.68	-13.27	-81.96
5,015.0	10.75	156.36	4,986.1	-295.7	53.1	2.23	-1.31	-9.18	-130.20
5,110.0	9.09	148.87	5,079.6	-310.2	60.6	2.21	-1.75	-7.88	-145.79
5,204.0	7.51	142.26	5,172.7	-321.5	68.2	1.96	-1.68	-7.03	-152.11
5,299.0	6.03	141.42	5,267.0	-330.3	75.1	1.56	-1.56	-0.88	-176.59
5,394.0	4.02	154.56	5,361.6	-337.2	79.6	2.42	-2.12	13.83	156.64
5,488.0	4.86	158.77	5,455.3	-343.9	82.5	0.96	0.89	4.48	23.31
5,583.0	4.89	158.31	5,550.0	-351.4	85.4	0.05	0.03	-0.48	-52.73
5,678.0	4.84	159.30	5,644.7	-358.9	88.3	0.10	-0.05	1.04	121.27
5,772.0	5.44	159.84	5,738.3	-366.8	91.3	0.64	0.64	0.57	4.88
5,867.0	5.22	167.04	5,832.9	-375.2	93.8	0.74	-0.23	7.58	111.77
5,962.0	5.33	177.99	5,927.5	-383.8	94.9	1.06	0.12	11.53	89.23
6,057.0	5.32	190.34	6,022.1	-392.6	94.3	1.20	-0.01	13.00	96.65
6,152.0	5.86	191.33	6,116.6	-401.7	92.6	0.58	0.57	1.04	10.62
6,247.0	5.73	186.43	6,211.1	-411.1	91.1	0.54	-0.14	-5.16	-107.15
6,342.0	5.79	179.51	6,305.6	-420.6	90.6	0.73	0.06	-7.28	-88.51
6,436.0	5.74	171.13	6,399.2	-430.0	91.3	0.90	-0.05	-8.91	-97.56
6,531.0	5.75	164.58	6,493.7	-439.3	93.3	0.69	0.01	-6.89	-92.39
6,625.0	5.94	157.30	6,587.2	-448.3	96.5	0.81	0.20	-7.74	-79.27
6,719.0	6.09	149.22	6,680.7	-457.1	100.9	0.91	0.16	-8.60	-83.99
6,814.0	5.80	141.69	6,775.2	-465.2	106.5	0.88	-0.31	-7.93	-114.11
6,908.0	4.32	136.79	6,868.8	-471.5	111.8	1.64	-1.57	-5.21	-166.15
7,004.0	3.02	134.26	6,964.6	-475.9	116.1	1.36	-1.35	-2.64	-174.16
7,099.0	1.91	126.46	7,059.5	-478.6	119.2	1.22	-1.17	-8.21	-167.06
7,193.0	0.42	138.46	7,153.5	-479.8	120.7	1.60	-1.59	12.77	176.67
7,288.0	0.12	304.13	7,248.5	-480.0	120.8	0.57	-0.32	174.39	176.83
7,383.0	0.19	296.28	7,343.5	-479.9	120.6	0.08	0.07	-8.26	-20.83
7,478.0	0.08	114.47	7,438.5	-479.8	120.5	0.28	-0.12	187.57	179.46
7,496.0	0.09	126.62	7,456.5	-479.8	120.5	0.11	0.06	67.50	67.15
7,559.0	0.04	49.89	7,519.5	-479.9	120.6	0.14	-0.08	-121.79	-154.28
7,654.0	0.15	353.35	7,614.5	-479.7	120.6	0.14	0.12	-59.52	-71.16
7,748.0	0.39	320.68	7,708.5	-479.3	120.4	0.29	0.26	-34.76	-49.74
7,842.0	0.57	321.13	7,802.5	-478.7	119.9	0.19	0.19	0.48	1.42
7,936.0	0.81	321.21	7,896.5	-477.8	119.2	0.26	0.26	0.09	0.27
8,029.0	1.00	321.72	7,989.5	-476.7	118.3	0.20	0.20	0.55	2.68
8,124.0	1.51	322.61	8,084.5	-475.1	117.0	0.54	0.54	0.94	2.63
8,219.0	1.83	328.58	8,179.4	-472.8	115.4	0.38	0.34	6.28	31.54
8,313.0	1.97	327.55	8,273.4	-470.1	113.8	0.15	0.15	-1.10	-14.22
8,408.0	1.83	329.95	8,368.3	-467.4	112.1	0.17	-0.15	2.53	151.58
8,502.0	1.78	326.51	8,462.3	-464.9	110.6	0.13	-0.05	-3.66	-116.48
8,597.0	2.24	320.85	8,557.2	-462.2	108.6	0.53	0.48	-5.96	-26.19
8,653.0	2.58	319.79	8,613.2	-460.4	107.1	0.61	0.61	-1.89	-8.00
8,692.0	2.78	317.95	8,652.1	-459.1	105.9	0.56	0.51	-4.72	-24.20
8,786.0	2.84	317.15	8,746.0	-455.7	102.8	0.08	0.06	-0.85	-33.57
8,880.0	2.93	310.88	8,839.9	-452.4	99.4	0.35	0.10	-6.67	-77.23
8,961.0	3.15	310.66	8,920.8	-449.6	96.1	0.27	0.27	-0.27	-3.15
9,068.0	3.56	302.88	9,027.6	-445.9	91.1	0.57	0.38	-7.27	-51.92
9,113.0	3.93	297.81	9,072.5	-444.4	88.6	1.10	0.82	-11.27	-44.38
9,176.0	4.26	293.57	9,135.3	-442.4	84.5	0.71	0.52	-6.73	-44.66
9,271.0	5.10	286.64	9,230.0	-439.8	77.2	1.06	0.88	-7.29	-37.43
9,349.0	5.55	285.24	9,307.7	-437.8	70.3	0.60	0.58	-1.79	-16.80

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9,443.0	5.62	288.50	9,401.2	-435.2	61.5	0.35	0.07	3.47	79.18
9,538.0	5.36	287.14	9,495.8	-432.4	52.9	0.31	-0.27	-1.43	-154.09
9,633.0	5.22	283.90	9,590.4	-430.0	44.4	0.35	-0.15	-3.41	-116.72
9,727.0	5.51	281.98	9,684.0	-428.1	35.9	0.36	0.31	-2.04	-32.72
9,821.0	5.44	278.81	9,777.5	-426.5	27.1	0.33	-0.07	-3.37	-104.61
9,916.0	5.15	277.83	9,872.1	-425.2	18.4	0.32	-0.31	-1.03	-163.17
10,011.0	5.50	266.59	9,966.7	-424.9	9.6	1.16	0.37	-11.83	-77.10
10,105.0	5.86	258.77	10,060.3	-426.1	0.4	0.91	0.38	-8.32	-68.98
10,220.0	5.53	253.28	10,174.7	-428.8	-10.6	0.55	-0.29	-4.77	-123.92
10,314.0	4.81	250.58	10,268.3	-431.4	-18.7	0.81	-0.77	-2.87	-162.67
10,409.0	4.89	244.40	10,363.0	-434.5	-26.1	0.56	0.08	-6.51	-84.38
10,503.0	4.48	242.61	10,456.7	-437.9	-33.0	0.46	-0.44	-1.90	-161.26
10,598.0	4.59	233.48	10,551.4	-441.9	-39.3	0.77	0.12	-9.61	-85.90
10,687.0	4.18	237.86	10,640.1	-445.7	-44.9	0.59	-0.46	4.92	142.93
10,782.0	5.04	254.78	10,734.8	-448.7	-51.9	1.68	0.91	17.81	66.31
10,876.0	6.19	265.71	10,828.4	-450.1	-60.9	1.67	1.22	11.63	48.45
10,970.0	4.53	268.45	10,921.9	-450.6	-69.7	1.79	-1.77	2.91	172.60
11,064.0	2.11	259.94	11,015.8	-451.0	-75.1	2.62	-2.57	-9.05	-172.72
11,158.0	1.18	244.14	11,109.7	-451.7	-77.7	1.09	-0.99	-16.81	-161.75
11,252.0	0.66	221.57	11,203.7	-452.6	-78.9	0.66	-0.55	-24.01	-156.06
11,278.0	0.75	219.62	11,229.7	-452.8	-79.1	0.36	0.35	-7.50	-15.90
11,434.0	0.46	244.79	11,385.7	-453.9	-80.3	0.25	-0.19	16.13	149.62
11,466.0	4.59	17.49	11,417.7	-452.7	-80.1	15.35	12.91	414.69	136.64
11,497.0	9.64	18.63	11,448.4	-449.1	-78.9	16.30	16.29	3.68	2.17
11,529.0	15.01	17.70	11,479.7	-442.6	-76.8	16.79	16.78	-2.91	-2.57
11,623.0	23.61	10.34	11,568.3	-412.4	-69.7	9.49	9.15	-7.83	-19.32
11,719.0	33.48	10.24	11,652.6	-367.3	-61.5	10.28	10.28	-0.10	-0.32
11,811.0	41.14	7.28	11,725.7	-312.2	-53.1	8.55	8.33	-3.22	-14.37
11,905.0	50.14	3.62	11,791.3	-245.4	-46.9	9.97	9.57	-3.89	-17.52
11,998.0	62.06	3.15	11,843.1	-168.5	-42.4	12.82	12.82	-0.51	-2.01
12,091.0	70.64	1.41	11,880.4	-83.5	-39.0	9.38	9.23	-1.87	-10.88
12,185.0	79.52	1.84	11,904.6	7.3	-36.5	9.46	9.45	0.46	2.74
12,279.0	88.82	1.06	11,914.1	100.6	-34.1	9.93	9.89	-0.83	-4.81
12,375.0	88.36	359.86	11,916.5	196.6	-33.3	1.34	-0.48	-1.25	-110.99
12,470.0	89.88	359.86	11,917.9	291.6	-33.6	1.60	1.60	0.00	0.00
12,565.0	90.42	1.63	11,917.7	386.6	-32.3	1.95	0.57	1.86	73.03
12,660.0	88.52	2.11	11,918.6	481.5	-29.2	2.06	-2.00	0.51	165.82
12,755.0	87.18	1.76	11,922.1	576.4	-26.0	1.46	-1.41	-0.37	-165.38
12,849.0	88.56	2.67	11,925.6	670.3	-22.4	1.76	1.47	0.97	33.40
12,945.0	89.52	2.38	11,927.2	766.1	-18.2	1.04	1.00	-0.30	-16.81
13,040.0	89.22	2.06	11,928.3	861.1	-14.5	0.46	-0.32	-0.34	-133.16
13,136.0	87.52	1.04	11,931.0	957.0	-11.9	2.06	-1.77	-1.06	-149.06
13,231.0	88.86	1.23	11,934.0	1,051.9	-10.0	1.42	1.41	0.20	8.07
13,326.0	89.94	1.00	11,935.0	1,146.9	-8.2	1.16	1.14	-0.24	-12.02
13,421.0	90.72	1.13	11,934.5	1,241.9	-6.4	0.83	0.82	0.14	9.46
13,517.0	88.95	359.74	11,934.7	1,337.9	-5.7	2.34	-1.84	-1.45	-141.86
13,613.0	87.87	358.53	11,937.4	1,433.8	-7.1	1.69	-1.13	-1.26	-131.78
13,708.0	87.84	357.71	11,941.0	1,528.7	-10.2	0.86	-0.03	-0.86	-92.11
13,804.0	87.81	358.69	11,944.6	1,624.6	-13.2	1.02	-0.03	1.02	91.77
13,899.0	86.65	0.48	11,949.2	1,719.5	-13.9	2.24	-1.22	1.88	123.02
13,995.0	88.92	359.95	11,952.9	1,815.4	-13.6	2.43	2.36	-0.55	-13.14
14,090.0	90.62	0.10	11,953.3	1,910.4	-13.5	1.80	1.79	0.16	5.04
14,186.0	90.35	0.07	11,952.5	2,006.4	-13.4	0.28	-0.28	-0.03	-173.66

Database:	EDM5000	Local Co-ordinate Reference:	Well Nandina 112H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3050.0usft
Project:	NAN/GB	MD Reference:	KB @ 3050.0usft
Site:	NAN/GB #2N	North Reference:	Grid
Well:	Nandina 112H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Final Survey		
Design:	Final		

14,281.0	91.41	0.54	11,951.0	2,101.4	-12.9	1.22	1.12	0.49	23.91
14,377.0	90.54	359.71	11,949.4	2,197.3	-12.7	1.25	-0.91	-0.86	-136.34
14,472.0	86.99	359.29	11,951.4	2,292.3	-13.5	3.76	-3.74	-0.44	-173.26
14,567.0	88.04	358.78	11,955.5	2,387.2	-15.1	1.23	1.11	-0.54	-25.90
14,662.0	89.39	358.01	11,957.7	2,482.1	-17.8	1.64	1.42	-0.81	-29.70
14,758.0	85.83	356.24	11,961.7	2,577.9	-22.6	4.14	-3.71	-1.84	-153.62
14,853.0	85.40	354.73	11,968.9	2,672.3	-30.0	1.65	-0.45	-1.59	-106.00
14,949.0	87.82	357.70	11,974.6	2,767.9	-36.4	3.99	2.52	3.09	50.87
15,044.0	84.22	358.09	11,981.2	2,862.6	-39.8	3.81	-3.79	0.41	173.84
15,162.0	87.85	0.97	11,989.4	2,980.3	-40.8	3.92	3.08	2.44	38.47
15,257.0	87.46	1.42	11,993.3	3,075.2	-38.8	0.63	-0.41	0.47	130.95
15,352.0	87.37	0.48	11,997.5	3,170.1	-37.2	0.99	-0.09	-0.99	-95.50
15,447.0	85.90	359.80	12,003.1	3,264.9	-37.0	1.70	-1.55	-0.72	-155.23
15,542.0	86.66	358.89	12,009.3	3,359.7	-38.1	1.25	0.80	-0.96	-50.10
15,638.0	87.11	358.13	12,014.5	3,455.6	-40.6	0.92	0.47	-0.79	-59.35
15,733.0	90.35	358.11	12,016.6	3,550.5	-43.7	3.41	3.41	-0.02	-0.35
15,829.0	91.20	359.94	12,015.3	3,646.4	-45.3	2.10	0.89	1.91	65.07
15,924.0	90.38	1.19	12,014.0	3,741.4	-44.4	1.57	-0.86	1.32	123.26
16,020.0	91.22	1.81	12,012.6	3,837.4	-41.9	1.09	0.88	0.65	36.42
16,115.0	90.44	1.77	12,011.3	3,932.3	-38.9	0.82	-0.82	-0.04	-177.06
16,210.0	92.01	2.50	12,009.2	4,027.2	-35.4	1.82	1.65	0.77	24.93
16,305.0	91.94	1.15	12,006.0	4,122.1	-32.4	1.42	-0.07	-1.42	-92.95
16,399.0	89.60	359.39	12,004.7	4,216.1	-31.9	3.11	-2.49	-1.87	-143.04
16,494.0	88.05	358.23	12,006.7	4,311.1	-33.9	2.04	-1.63	-1.22	-143.21
16,589.0	87.92	358.39	12,010.0	4,406.0	-36.7	0.22	-0.14	0.17	129.11
16,684.0	88.72	358.18	12,012.8	4,500.9	-39.5	0.87	0.84	-0.22	-14.71
16,779.0	88.29	358.06	12,015.3	4,595.8	-42.6	0.47	-0.45	-0.13	-164.41
16,874.0	89.25	358.52	12,017.3	4,690.7	-45.5	1.12	1.01	0.48	25.60
16,969.0	88.01	358.64	12,019.6	4,785.7	-47.8	1.31	-1.31	0.13	174.48
17,064.0	87.20	357.83	12,023.5	4,880.5	-50.8	1.21	-0.85	-0.85	-135.04
17,159.0	87.96	359.00	12,027.5	4,975.4	-53.4	1.47	0.80	1.23	57.00
17,254.0	89.65	0.23	12,029.5	5,070.4	-54.0	2.20	1.78	1.29	36.06
17,353.0	91.83	359.19	12,028.3	5,169.4	-54.5	2.44	2.20	-1.05	-25.50
17,446.0	92.40	0.12	12,024.8	5,262.3	-55.1	1.17	0.61	1.00	58.46
17,540.0	92.84	3.55	12,020.5	5,356.1	-52.1	3.68	0.47	3.65	82.61
17,634.0	92.46	4.09	12,016.2	5,449.8	-45.8	0.70	-0.40	0.57	125.15
17,731.0	92.49	4.54	12,012.0	5,546.5	-38.5	0.46	0.03	0.46	86.17
17,826.0	92.55	4.47	12,007.8	5,641.1	-31.1	0.10	0.06	-0.07	-49.37
17,921.0	93.00	3.82	12,003.2	5,735.7	-24.2	0.83	0.47	-0.68	-55.26
18,017.0	92.68	2.01	11,998.5	5,831.5	-19.3	1.91	-0.33	-1.89	-99.99
18,111.0	93.10	0.43	11,993.7	5,925.3	-17.3	1.74	0.45	-1.68	-75.06
18,206.0	91.78	358.87	11,989.7	6,020.2	-17.9	2.15	-1.39	-1.64	-130.23
18,301.0	90.44	358.07	11,987.8	6,115.2	-20.4	1.64	-1.41	-0.84	-149.16
18,397.0	90.25	359.09	11,987.3	6,211.1	-22.8	1.08	-0.20	1.06	100.55
18,492.0	88.03	358.51	11,988.7	6,306.1	-24.8	2.42	-2.34	-0.61	-165.36
18,586.0	87.46	358.65	11,992.4	6,400.0	-27.1	0.62	-0.61	0.15	166.21
18,682.0	87.94	358.96	11,996.2	6,495.9	-29.1	0.60	0.50	0.32	32.84
18,777.0	87.81	358.47	11,999.8	6,590.8	-31.3	0.53	-0.14	-0.52	-104.88
18,872.0	87.74	358.91	12,003.4	6,685.7	-33.4	0.47	-0.07	0.46	99.05
18,967.0	88.05	358.63	12,006.9	6,780.6	-35.5	0.44	0.33	-0.29	-42.08
19,061.0	87.58	357.37	12,010.5	6,874.5	-38.8	1.43	-0.50	-1.34	-110.49
19,156.0	87.62	357.54	12,014.5	6,969.3	-43.0	0.18	0.04	0.18	76.75
19,250.0	87.71	357.88	12,018.3	7,063.2	-46.7	0.37	0.10	0.36	75.17

Database: EDM5000
Company: Ameredev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #2N
Well: Nandina 112H
Wellbore: Final Survey
Design: Final

Local Co-ordinate Reference: Well Nandina 112H
TVD Reference: KB @ 3050.0usft
MD Reference: KB @ 3050.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

19,344.0	87.80	358.43	12,022.0	7,157.1	-49.8	0.59	0.10	0.59	80.71
19,438.0	88.08	358.47	12,025.4	7,251.0	-52.3	0.30	0.30	0.04	8.13
19,531.0	87.39	357.99	12,029.1	7,343.8	-55.2	0.90	-0.74	-0.52	-145.21
19,625.0	88.38	358.46	12,032.5	7,437.7	-58.1	1.17	1.05	0.50	25.39
19,719.0	88.78	358.66	12,034.9	7,531.7	-60.4	0.48	0.43	0.21	26.56
19,812.0	89.41	358.54	12,036.3	7,624.6	-62.7	0.69	0.68	-0.13	-10.78
19,837.0	87.04	0.01	12,037.1	7,649.6	-63.0	11.14	-9.48	5.86	148.31
19,868.0	85.75	1.45	12,039.0	7,680.6	-62.6	6.24	-4.16	4.66	131.86
19,932.0	85.16	1.99	12,044.1	7,744.3	-60.7	1.25	-0.92	0.84	137.64
20,026.0	87.23	2.58	12,050.4	7,838.0	-57.0	2.29	2.20	0.63	15.90
20,119.0	90.29	2.53	12,052.4	7,930.9	-52.8	3.29	3.29	-0.05	-0.94
20,214.0	93.52	0.69	12,049.2	8,025.8	-50.2	3.91	3.40	-1.94	-29.63
20,309.0	97.95	359.01	12,039.7	8,120.3	-50.4	4.98	4.66	-1.77	-20.60
20,404.0	100.18	358.45	12,024.8	8,214.1	-52.5	2.42	2.35	-0.59	-13.88
20,500.0	99.32	357.57	12,008.5	8,308.6	-55.8	1.27	-0.90	-0.92	-134.68
20,596.0	96.68	357.77	11,995.1	8,403.6	-59.6	2.76	-2.75	0.21	175.70
20,690.0	93.29	356.75	11,987.0	8,497.1	-64.1	3.76	-3.61	-1.09	-163.27
20,740.0	88.43	355.11	11,986.2	8,547.0	-67.7	10.26	-9.72	-3.28	-161.34
20,783.0	87.79	355.96	11,987.6	8,589.8	-71.0	2.47	-1.49	1.98	127.01
20,878.0	88.53	351.87	11,990.7	8,684.2	-81.1	4.37	0.78	-4.31	-79.81
20,972.0	88.61	347.59	11,993.0	8,776.7	-97.8	4.55	0.09	-4.55	-88.98
21,067.0	89.63	341.62	11,994.5	8,868.2	-123.0	6.37	1.07	-6.28	-80.36
21,108.0	87.43	338.08	11,995.5	8,906.7	-137.1	10.16	-5.37	-8.63	-121.90
21,140.0	87.80	337.46	11,996.9	8,936.3	-149.2	2.25	1.16	-1.94	-59.16
21,171.0	88.49	337.96	11,997.9	8,964.9	-161.0	2.75	2.23	1.61	35.92
21,203.0	89.53	339.22	11,998.4	8,994.7	-172.7	5.11	3.25	3.94	50.47
21,235.0	89.45	340.43	11,998.7	9,024.8	-183.7	3.79	-0.25	3.78	93.79
21,304.0	92.12	342.85	11,997.8	9,090.2	-205.4	5.22	3.87	3.51	42.18
21,335.0	90.11	343.23	11,997.2	9,119.9	-214.5	6.60	-6.48	1.23	169.29
21,367.0	86.76	342.67	11,998.0	9,150.5	-223.8	10.61	-10.47	-1.75	-170.52
21,399.0	86.61	342.65	11,999.9	9,181.0	-233.4	0.47	-0.47	-0.06	-172.42
21,430.0	87.37	343.31	12,001.5	9,210.6	-242.4	3.25	2.45	2.13	40.95
21,462.0	86.77	343.28	12,003.2	9,241.2	-251.6	1.88	-1.88	-0.09	-177.14
21,525.0	86.63	343.17	12,006.8	9,301.4	-269.8	0.28	-0.22	-0.17	-141.89
21,620.0	87.73	343.05	12,011.5	9,392.2	-297.3	1.16	1.16	-0.13	-6.22
21,715.0	89.44	343.50	12,013.8	9,483.1	-324.7	1.86	1.80	0.47	14.75
21,810.0	89.16	344.19	12,015.0	9,574.4	-351.1	0.78	-0.29	0.73	112.09
21,906.0	89.73	343.29	12,015.9	9,666.5	-378.0	1.11	0.59	-0.94	-57.66
22,001.0	90.18	343.87	12,016.0	9,757.6	-404.8	0.77	0.47	0.61	52.19
22,097.0	90.17	344.12	12,015.7	9,849.9	-431.3	0.26	-0.01	0.26	92.29
22,192.0	90.73	344.58	12,014.9	9,941.4	-456.9	0.76	0.59	0.48	39.40
22,287.0	90.78	344.23	12,013.7	10,032.9	-482.5	0.37	0.05	-0.37	-81.87
22,382.0	90.40	344.04	12,012.7	10,124.3	-508.4	0.45	-0.40	-0.20	-153.44
22,433.0	89.34	343.29	12,012.8	10,173.2	-522.8	2.55	-2.08	-1.47	-144.72
22,523.6	89.34	343.29	12,013.9	10,260.0	-548.8	0.00	0.00	0.00	0.00

Database: EDM5000
Company: Ameredev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #2N
Well: Nandina 112H
Wellbore: Final Survey
Design: Final

Local Co-ordinate Reference: Well Nandina 112H
TVD Reference: KB @ 3050.0usft
MD Reference: KB @ 3050.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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	0.50	155.22	100.0	-0.4	0.2	-0.4	0.50	0.50	0.00
200.0	1.00	155.22	200.0	-1.6	0.7	-1.6	0.50	0.50	0.00
211.0	1.05	155.22	211.0	-1.8	0.8	-1.8	0.50	0.50	0.00
300.0	1.04	187.66	300.0	-3.3	1.0	-3.3	0.66	-0.01	36.45
366.0	1.23	207.51	366.0	-4.5	0.6	-4.5	0.66	0.29	30.08
400.0	0.94	213.54	400.0	-5.1	0.3	-5.1	0.90	-0.84	17.74
456.0	0.53	237.22	456.0	-5.6	-0.2	-5.6	0.90	-0.74	42.28
500.0	0.94	225.79	499.9	-6.0	-0.6	-5.9	0.99	0.94	-25.97
548.0	1.41	221.13	547.9	-6.7	-1.3	-6.6	0.99	0.97	-9.71
600.0	0.89	213.36	599.9	-7.5	-1.9	-7.4	1.05	-1.01	-14.85
638.0	0.53	198.11	637.9	-7.9	-2.1	-7.8	1.05	-0.94	-40.12
700.0	0.89	247.52	699.9	-8.4	-2.7	-8.2	1.10	0.59	79.69
703.0	0.92	248.73	702.9	-8.4	-2.7	-8.2	1.10	0.89	40.43
795.0	1.27	246.71	794.9	-9.1	-4.3	-8.8	0.38	0.38	-2.20
800.0	1.29	244.76	799.9	-9.1	-4.4	-8.9	1.00	0.49	-39.07
882.0	1.85	222.19	881.9	-10.5	-6.2	-10.1	1.00	0.68	-27.52
900.0	1.87	225.65	899.9	-10.9	-6.6	-10.5	0.64	0.12	19.24
973.0	2.02	238.62	972.8	-12.4	-8.5	-11.9	0.64	0.20	17.76
1,000.0	1.85	239.02	999.8	-12.9	-9.3	-12.4	0.62	-0.62	1.50
1,065.0	1.45	240.38	1,064.8	-13.8	-10.9	-13.2	0.62	-0.62	2.09
1,100.0	1.41	236.33	1,099.8	-14.3	-11.6	-13.6	0.31	-0.13	-11.57
1,200.0	1.32	223.56	1,199.7	-15.8	-13.5	-15.1	0.31	-0.08	-12.77
1,239.0	1.31	218.25	1,238.7	-16.5	-14.0	-15.7	0.31	-0.03	-13.61
1,300.0	1.29	217.80	1,299.7	-17.6	-14.9	-16.7	0.04	-0.03	-0.74
1,334.0	1.28	217.54	1,333.7	-18.2	-15.4	-17.3	0.04	-0.03	-0.76
1,400.0	1.24	222.58	1,399.7	-19.3	-16.3	-18.4	0.18	-0.07	7.64
1,429.0	1.22	224.90	1,428.7	-19.7	-16.7	-18.8	0.18	-0.06	8.00
1,500.0	0.90	226.16	1,499.7	-20.7	-17.7	-19.7	0.45	-0.45	1.77
1,523.0	0.80	226.78	1,522.7	-20.9	-17.9	-19.9	0.45	-0.45	2.70
1,600.0	0.27	239.14	1,599.7	-21.3	-18.5	-20.3	0.70	-0.68	16.05
1,618.0	0.16	253.63	1,617.7	-21.4	-18.5	-20.4	0.70	-0.63	80.50
1,700.0	0.60	28.52	1,699.7	-21.0	-18.4	-20.0	0.88	0.53	164.50
1,714.0	0.72	30.06	1,713.7	-20.9	-18.4	-19.9	0.88	0.87	11.00
1,800.0	1.54	25.21	1,799.6	-19.4	-17.6	-18.4	0.96	0.96	-5.64
1,807.0	1.61	25.03	1,806.6	-19.2	-17.5	-18.2	0.96	0.96	-2.52
1,900.0	2.68	26.25	1,899.6	-16.1	-16.0	-15.2	1.15	1.15	1.31
1,901.0	2.69	26.26	1,900.6	-16.0	-16.0	-15.2	1.15	1.15	0.79
1,995.0	3.94	27.50	1,994.4	-11.2	-13.5	-10.4	1.33	1.33	1.32
2,000.0	3.94	28.48	1,999.4	-10.9	-13.3	-10.2	1.35	0.03	19.69
2,089.0	4.16	45.32	2,088.2	-5.9	-9.6	-5.4	1.35	0.25	18.92
2,100.0	4.11	48.15	2,099.2	-5.4	-9.0	-4.9	1.92	-0.47	25.77
2,182.0	4.06	70.34	2,180.9	-2.4	-4.1	-2.2	1.92	-0.06	27.06
2,200.0	3.97	75.54	2,198.9	-2.1	-2.9	-1.9	2.08	-0.48	28.91
2,276.0	3.99	98.47	2,274.7	-1.8	2.3	-1.9	2.08	0.02	30.17
2,300.0	4.27	105.62	2,298.7	-2.2	4.0	-2.4	2.43	1.15	29.80
2,370.0	5.36	121.31	2,368.4	-4.6	9.3	-5.1	2.43	1.56	22.41
2,400.0	5.91	125.37	2,398.3	-6.2	11.7	-6.8	2.26	1.83	13.52
2,465.0	7.17	131.95	2,462.9	-10.8	17.5	-11.8	2.26	1.94	10.13
2,500.0	7.99	135.91	2,497.5	-14.0	20.8	-15.1	2.79	2.36	11.32
2,559.0	9.45	140.99	2,555.9	-20.8	26.7	-22.2	2.79	2.47	8.61
2,600.0	9.61	142.83	2,596.3	-26.1	30.9	-27.7	0.83	0.38	4.48
2,653.0	9.82	145.11	2,648.5	-33.3	36.1	-35.2	0.83	0.40	4.31
2,700.0	9.74	145.91	2,694.9	-39.9	40.7	-42.0	0.34	-0.17	1.70

Database:	EDM5000	Local Co-ordinate Reference:	Well Nandina 112H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3050.0usft
Project:	NAN/GB	MD Reference:	KB @ 3050.0usft
Site:	NAN/GB #2N	North Reference:	Grid
Well:	Nandina 112H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Final Survey		
Design:	Final		

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)
2,747.0	9.66	146.72	2,741.2	-46.5	45.0	-48.8	0.34	-0.17	1.73
2,800.0	9.48	148.02	2,793.4	-53.9	49.8	-56.5	0.53	-0.33	2.44
2,841.0	9.35	149.05	2,833.9	-59.6	53.3	-62.4	0.53	-0.33	2.52
2,900.0	8.72	153.43	2,892.2	-67.8	57.8	-70.7	1.57	-1.06	7.42
2,935.0	8.38	156.32	2,926.8	-72.5	60.0	-75.6	1.57	-0.98	8.27
3,000.0	7.38	165.81	2,991.2	-80.8	62.9	-84.1	2.52	-1.54	14.60
3,029.0	7.01	170.85	3,019.9	-84.4	63.6	-87.7	2.52	-1.27	17.38
3,100.0	6.77	184.22	3,090.4	-92.9	64.0	-96.1	2.28	-0.34	18.83
3,124.0	6.77	188.86	3,114.3	-95.7	63.7	-98.9	2.28	0.01	19.34
3,200.0	6.75	187.17	3,189.7	-104.5	62.5	-107.7	0.26	-0.02	-2.22
3,218.0	6.75	186.77	3,207.6	-106.6	62.2	-109.8	0.26	-0.02	-2.23
3,300.0	6.59	180.98	3,289.0	-116.1	61.5	-119.2	0.84	-0.20	-7.06
3,312.0	6.57	180.11	3,301.0	-117.5	61.5	-120.6	0.84	-0.15	-7.24
3,400.0	6.54	172.90	3,388.4	-127.5	62.1	-130.6	0.93	-0.04	-8.19
3,406.0	6.54	172.41	3,394.4	-128.2	62.2	-131.3	0.93	0.03	-8.21
3,500.0	6.56	165.36	3,487.7	-138.7	64.3	-141.9	0.85	0.02	-7.50
3,501.0	6.56	165.29	3,488.7	-138.8	64.3	-142.0	0.85	0.07	-7.45
3,595.0	6.65	165.66	3,582.1	-149.2	67.0	-152.6	0.11	0.10	0.39
3,600.0	6.64	166.19	3,587.1	-149.8	67.2	-153.2	1.25	-0.29	10.52
3,689.0	6.47	175.85	3,675.5	-159.8	68.8	-163.2	1.25	-0.19	10.86
3,700.0	6.32	171.49	3,686.4	-161.0	68.9	-164.5	4.63	-1.40	-39.61
3,784.0	6.47	136.06	3,769.9	-169.0	72.9	-172.6	4.63	0.18	-42.18
3,800.0	6.28	131.38	3,785.8	-170.2	74.2	-173.9	3.46	-1.22	-29.24
3,879.0	6.01	105.71	3,864.4	-174.2	81.4	-178.3	3.46	-0.34	-32.50
3,900.0	5.70	97.06	3,885.3	-174.6	83.5	-178.8	4.45	-1.49	-41.17
3,974.0	5.78	63.67	3,958.9	-173.4	90.5	-178.0	4.45	0.11	-45.13
4,000.0	4.26	57.19	3,984.8	-172.3	92.4	-177.0	6.22	-5.83	-24.93
4,069.0	1.76	338.16	4,053.8	-169.9	94.2	-174.7	6.22	-3.63	-114.53
4,100.0	2.62	296.95	4,084.7	-169.2	93.4	-173.9	5.61	2.77	-132.94
4,164.0	5.81	272.59	4,148.6	-168.4	88.9	-172.9	5.61	4.98	-38.06
4,200.0	6.09	263.29	4,184.4	-168.5	85.1	-172.8	2.78	0.78	-25.83
4,258.0	6.83	250.49	4,242.0	-170.0	78.8	-174.0	2.78	1.28	-22.07
4,300.0	7.04	238.24	4,283.7	-172.2	74.3	-175.9	3.55	0.50	-29.17
4,353.0	7.72	224.53	4,336.3	-176.5	69.0	-179.9	3.55	1.28	-25.87
4,400.0	8.58	215.60	4,382.8	-181.6	64.8	-184.8	3.25	1.83	-19.00
4,448.0	9.63	208.29	4,430.2	-188.0	60.8	-191.0	3.25	2.19	-15.23
4,500.0	10.45	203.65	4,481.4	-196.2	56.8	-198.9	2.21	1.57	-8.93
4,543.0	11.17	200.33	4,523.6	-203.6	53.8	-206.2	2.21	1.68	-7.71
4,600.0	11.46	196.43	4,579.5	-214.2	50.3	-216.6	1.43	0.50	-6.84
4,637.0	11.67	194.01	4,615.8	-221.4	48.4	-223.7	1.43	0.58	-6.55
4,700.0	11.80	189.23	4,677.5	-233.9	45.8	-236.1	1.55	0.20	-7.58
4,731.0	11.89	186.93	4,707.8	-240.2	44.9	-242.3	1.55	0.30	-7.43
4,800.0	11.49	180.17	4,775.4	-254.2	44.0	-256.2	2.07	-0.58	-9.80
4,826.0	11.38	177.51	4,800.9	-259.3	44.1	-261.3	2.07	-0.42	-10.22
4,900.0	11.84	167.58	4,873.4	-274.0	46.1	-276.1	2.77	0.62	-13.42
4,919.0	12.01	165.17	4,891.9	-277.8	47.0	-280.0	2.77	0.90	-12.67
5,000.0	10.93	157.87	4,971.3	-293.1	52.0	-295.5	2.23	-1.33	-9.02
5,015.0	10.75	156.36	4,986.1	-295.7	53.1	-298.1	2.23	-1.19	-10.04
5,100.0	9.26	149.78	5,069.8	-308.9	59.8	-311.6	2.21	-1.76	-7.74
5,110.0	9.09	148.87	5,079.6	-310.2	60.6	-313.0	2.21	-1.66	-9.12
5,200.0	7.57	142.60	5,168.7	-321.0	67.8	-324.2	1.96	-1.68	-6.97
5,204.0	7.51	142.26	5,172.7	-321.5	68.2	-324.6	1.96	-1.62	-8.41
5,299.0	6.03	141.42	5,267.0	-330.3	75.1	-333.8	1.56	-1.56	-0.88
5,300.0	6.01	141.51	5,268.0	-330.3	75.1	-333.9	2.42	-2.23	9.19

Database:	EDM5000	Local Co-ordinate Reference:	Well Nandina 112H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3050.0usft
Project:	NAN/GB	MD Reference:	KB @ 3050.0usft
Site:	NAN/GB #2N	North Reference:	Grid
Well:	Nandina 112H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Final Survey		
Design:	Final		

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)
5,394.0	4.02	154.56	5,361.6	-337.2	79.6	-340.9	2.42	-2.11	13.88
5,400.0	4.07	154.88	5,367.6	-337.6	79.8	-341.3	0.96	0.88	5.34
5,488.0	4.86	158.77	5,455.3	-343.9	82.5	-347.8	0.96	0.89	4.42
5,500.0	4.86	158.71	5,467.3	-344.8	82.8	-348.7	0.05	0.03	-0.49
5,583.0	4.89	158.31	5,550.0	-351.4	85.4	-355.4	0.05	0.03	-0.48
5,600.0	4.88	158.49	5,566.9	-352.7	86.0	-356.8	0.10	-0.05	1.03
5,678.0	4.84	159.30	5,644.7	-358.9	88.3	-363.1	0.10	-0.05	1.04
5,700.0	4.98	159.44	5,666.6	-360.7	89.0	-364.9	0.64	0.64	0.63
5,772.0	5.44	159.84	5,738.3	-366.8	91.3	-371.1	0.64	0.64	0.56
5,800.0	5.37	161.90	5,766.2	-369.3	92.1	-373.7	0.74	-0.26	7.35
5,867.0	5.22	167.04	5,832.9	-375.2	93.8	-379.7	0.74	-0.22	7.67
5,900.0	5.24	170.89	5,865.7	-378.2	94.4	-382.7	1.06	0.05	11.67
5,962.0	5.33	177.99	5,927.5	-383.8	94.9	-388.4	1.06	0.15	11.45
6,000.0	5.30	182.92	5,965.3	-387.4	94.9	-391.9	1.20	-0.09	12.97
6,057.0	5.32	190.34	6,022.1	-392.6	94.3	-397.1	1.20	0.04	13.02
6,100.0	5.56	190.81	6,064.9	-396.6	93.5	-401.0	0.58	0.57	1.10
6,152.0	5.86	191.33	6,116.6	-401.7	92.6	-406.0	0.58	0.57	1.00
6,200.0	5.79	188.88	6,164.4	-406.5	91.7	-410.8	0.54	-0.15	-5.10
6,247.0	5.73	186.43	6,211.1	-411.1	91.1	-415.4	0.54	-0.13	-5.22
6,300.0	5.75	182.55	6,263.9	-416.4	90.7	-420.7	0.73	0.04	-7.32
6,342.0	5.79	179.51	6,305.6	-420.6	90.6	-424.9	0.73	0.09	-7.24
6,400.0	5.74	174.35	6,363.3	-426.5	90.9	-430.7	0.90	-0.08	-8.89
6,436.0	5.74	171.13	6,399.2	-430.0	91.3	-434.3	0.90	-0.01	-8.96
6,500.0	5.74	166.71	6,462.8	-436.3	92.6	-440.6	0.69	0.00	-6.90
6,531.0	5.75	164.58	6,493.7	-439.3	93.3	-443.7	0.69	0.04	-6.88
6,600.0	5.88	159.19	6,562.3	-445.9	95.5	-450.4	0.81	0.19	-7.81
6,625.0	5.94	157.30	6,587.2	-448.3	96.5	-452.9	0.81	0.24	-7.55
6,700.0	6.05	150.82	6,661.8	-455.4	99.9	-460.1	0.91	0.15	-8.64
6,719.0	6.09	149.22	6,680.7	-457.1	100.9	-461.8	0.91	0.21	-8.41
6,800.0	5.84	142.84	6,761.3	-464.1	105.6	-469.1	0.88	-0.31	-7.87
6,814.0	5.80	141.69	6,775.2	-465.2	106.5	-470.2	0.88	-0.26	-8.25
6,900.0	4.44	137.33	6,860.8	-471.1	111.4	-476.3	1.64	-1.58	-5.07
6,908.0	4.32	136.79	6,868.8	-471.5	111.8	-476.8	1.64	-1.55	-6.79
7,000.0	3.07	134.41	6,960.6	-475.8	116.0	-481.3	1.36	-1.35	-2.59
7,004.0	3.02	134.26	6,964.6	-475.9	116.1	-481.4	1.36	-1.35	-3.70
7,099.0	1.91	126.46	7,059.5	-478.6	119.2	-484.3	1.22	-1.17	-8.21
7,100.0	1.89	126.49	7,060.5	-478.6	119.2	-484.3	1.60	-1.59	2.81
7,193.0	0.42	138.46	7,153.5	-479.8	120.7	-485.6	1.60	-1.59	12.87
7,200.0	0.38	138.79	7,160.5	-479.8	120.7	-485.6	0.57	-0.56	4.71
7,288.0	0.12	304.13	7,248.5	-480.0	120.8	-485.8	0.57	-0.30	187.89
7,300.0	0.13	302.67	7,260.5	-480.0	120.8	-485.7	0.08	0.07	-12.17
7,383.0	0.19	296.28	7,343.5	-479.9	120.6	-485.6	0.08	0.07	-7.70
7,400.0	0.14	296.46	7,360.5	-479.8	120.5	-485.6	0.28	-0.28	1.08
7,478.0	0.08	114.47	7,438.5	-479.8	120.5	-485.6	0.28	-0.08	228.21
7,496.0	0.09	126.62	7,456.5	-479.8	120.5	-485.6	0.11	0.06	67.50
7,500.0	0.08	124.95	7,460.5	-479.8	120.5	-485.6	0.14	-0.13	-41.71
7,559.0	0.04	49.89	7,519.5	-479.9	120.6	-485.6	0.14	-0.08	-127.22
7,600.0	0.08	7.14	7,560.5	-479.8	120.6	-485.6	0.14	0.10	-104.26
7,654.0	0.15	353.35	7,614.5	-479.7	120.6	-485.5	0.14	0.13	-25.54
7,700.0	0.26	329.88	7,660.5	-479.6	120.5	-485.3	0.29	0.24	-51.03
7,748.0	0.39	320.68	7,708.5	-479.3	120.4	-485.1	0.29	0.27	-19.16
7,800.0	0.49	320.97	7,760.5	-479.0	120.1	-484.8	0.19	0.19	0.56
7,842.0	0.57	321.13	7,802.5	-478.7	119.9	-484.5	0.19	0.19	0.38
7,900.0	0.72	321.19	7,860.5	-478.2	119.5	-483.9	0.26	0.26	0.10

Database: EDM5000
Company: Ameredev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #2N
Well: Nandina 112H
Wellbore: Final Survey
Design: Final

Local Co-ordinate Reference: Well Nandina 112H
TVD Reference: KB @ 3050.0usft
MD Reference: KB @ 3050.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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)
7,936.0	0.81	321.21	7,896.5	-477.8	119.2	-483.5	0.26	0.26	0.07
8,000.0	0.94	321.58	7,960.5	-477.1	118.6	-482.7	0.20	0.20	0.58
8,029.0	1.00	321.72	7,989.5	-476.7	118.3	-482.3	0.20	0.20	0.47
8,100.0	1.38	322.45	8,060.5	-475.5	117.4	-481.1	0.54	0.54	1.02
8,124.0	1.51	322.61	8,084.5	-475.1	117.0	-480.6	0.54	0.54	0.68
8,200.0	1.76	327.56	8,160.4	-473.3	115.7	-478.8	0.38	0.34	6.51
8,219.0	1.83	328.58	8,179.4	-472.8	115.4	-478.3	0.38	0.34	5.37
8,300.0	1.95	327.68	8,260.4	-470.5	114.0	-475.9	0.15	0.15	-1.11
8,313.0	1.97	327.55	8,273.4	-470.1	113.8	-475.5	0.15	0.15	-1.03
8,400.0	1.84	329.73	8,360.3	-467.7	112.3	-473.0	0.17	-0.15	2.51
8,408.0	1.83	329.95	8,368.3	-467.4	112.1	-472.8	0.17	-0.15	2.70
8,500.0	1.78	326.59	8,460.3	-465.0	110.6	-470.2	0.13	-0.05	-3.66
8,502.0	1.78	326.51	8,462.3	-464.9	110.6	-470.2	0.13	-0.05	-3.76
8,597.0	2.24	320.85	8,557.2	-462.2	108.6	-467.4	0.53	0.48	-5.96
8,600.0	2.26	320.79	8,560.2	-462.2	108.5	-467.3	0.61	0.61	-2.16
8,653.0	2.58	319.79	8,613.2	-460.4	107.1	-465.5	0.61	0.61	-1.88
8,692.0	2.78	317.95	8,652.1	-459.1	105.9	-464.1	0.56	0.51	-4.72
8,700.0	2.79	317.88	8,660.1	-458.8	105.6	-463.8	0.08	0.06	-0.87
8,786.0	2.84	317.15	8,746.0	-455.7	102.8	-460.5	0.08	0.06	-0.85
8,800.0	2.85	316.19	8,760.0	-455.2	102.3	-460.0	0.35	0.08	-6.84
8,880.0	2.93	310.88	8,839.9	-452.4	99.4	-457.0	0.35	0.10	-6.64
8,900.0	2.98	310.82	8,859.9	-451.7	98.6	-456.3	0.27	0.27	-0.29
8,961.0	3.15	310.66	8,920.8	-449.6	96.1	-454.1	0.27	0.27	-0.27
9,000.0	3.29	307.60	8,959.7	-448.2	94.4	-452.6	0.57	0.36	-7.84
9,068.0	3.56	302.88	9,027.6	-445.9	91.1	-450.1	0.57	0.39	-6.94
9,100.0	3.82	299.17	9,059.5	-444.8	89.4	-448.9	1.10	0.81	-11.58
9,113.0	3.93	297.81	9,072.5	-444.4	88.6	-448.5	1.10	0.84	-10.49
9,176.0	4.26	293.57	9,135.3	-442.4	84.5	-446.3	0.71	0.52	-6.73
9,200.0	4.47	291.58	9,159.3	-441.7	82.8	-445.5	1.06	0.86	-8.31
9,271.0	5.10	286.64	9,230.0	-439.8	77.2	-443.3	1.06	0.89	-6.95
9,300.0	5.27	286.09	9,258.9	-439.1	74.7	-442.4	0.60	0.58	-1.89
9,349.0	5.55	285.24	9,307.7	-437.8	70.3	-441.0	0.60	0.58	-1.74
9,400.0	5.59	287.02	9,358.4	-436.5	65.5	-439.3	0.35	0.07	3.49
9,443.0	5.62	288.50	9,401.2	-435.2	61.5	-437.8	0.35	0.08	3.44
9,500.0	5.46	287.70	9,458.0	-433.5	56.3	-435.9	0.31	-0.27	-1.40
9,538.0	5.36	287.14	9,495.8	-432.4	52.9	-434.6	0.31	-0.27	-1.47
9,600.0	5.27	285.04	9,557.5	-430.8	47.4	-432.7	0.35	-0.15	-3.38
9,633.0	5.22	283.90	9,590.4	-430.0	44.4	-431.8	0.35	-0.14	-3.47
9,700.0	5.43	282.51	9,657.1	-428.6	38.4	-430.1	0.36	0.31	-2.07
9,727.0	5.51	281.98	9,684.0	-428.1	35.9	-429.4	0.36	0.31	-1.96
9,800.0	5.45	279.53	9,756.6	-426.8	29.0	-427.7	0.33	-0.08	-3.36
9,821.0	5.44	278.81	9,777.5	-426.5	27.1	-427.3	0.33	-0.07	-3.41
9,900.0	5.20	278.00	9,856.2	-425.4	19.8	-425.8	0.32	-0.31	-1.02
9,916.0	5.15	277.83	9,872.1	-425.2	18.4	-425.6	0.32	-0.30	-1.08
10,000.0	5.45	267.81	9,955.8	-424.8	10.7	-424.8	1.16	0.36	-11.93
10,011.0	5.50	266.59	9,966.7	-424.9	9.6	-424.8	1.16	0.46	-11.11
10,100.0	5.84	259.16	10,055.3	-426.0	0.9	-425.4	0.91	0.38	-8.35
10,105.0	5.86	258.77	10,060.3	-426.1	0.4	-425.5	0.91	0.43	-7.81
10,200.0	5.58	254.28	10,154.8	-428.3	-8.8	-427.2	0.55	-0.29	-4.73
10,220.0	5.53	253.28	10,174.7	-428.8	-10.6	-427.6	0.55	-0.27	-5.00
10,300.0	4.92	251.03	10,254.4	-431.0	-17.6	-429.5	0.81	-0.77	-2.81
10,314.0	4.81	250.58	10,268.3	-431.4	-18.7	-429.8	0.81	-0.76	-3.23
10,400.0	4.88	244.98	10,354.0	-434.2	-25.4	-432.2	0.56	0.08	-6.52
10,409.0	4.89	244.40	10,363.0	-434.5	-26.1	-432.5	0.56	0.11	-6.40

Database:	EDM5000	Local Co-ordinate Reference:	Well Nandina 112H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3050.0usft
Project:	NAN/GB	MD Reference:	KB @ 3050.0usft
Site:	NAN/GB #2N	North Reference:	Grid
Well:	Nandina 112H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Final Survey		
Design:	Final		

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)
10,500.0	4.49	242.67	10,453.7	-437.8	-32.8	-435.4	0.46	-0.44	-1.90
10,503.0	4.48	242.61	10,456.7	-437.9	-33.0	-435.5	0.46	-0.43	-2.07
10,598.0	4.59	233.48	10,551.4	-441.9	-39.3	-439.2	0.77	0.12	-9.61
10,600.0	4.58	233.57	10,553.4	-442.0	-39.5	-439.3	0.59	-0.47	4.49
10,687.0	4.18	237.86	10,640.1	-445.7	-44.9	-442.7	0.59	-0.46	4.93
10,700.0	4.27	240.55	10,653.1	-446.2	-45.8	-443.1	1.68	0.71	20.71
10,782.0	5.04	254.78	10,734.8	-448.7	-51.9	-445.3	1.68	0.94	17.35
10,800.0	5.24	257.24	10,752.7	-449.1	-53.5	-445.6	1.67	1.13	13.64
10,876.0	6.19	265.71	10,828.4	-450.1	-60.9	-446.2	1.67	1.25	11.15
10,900.0	5.77	266.26	10,852.2	-450.3	-63.4	-446.3	1.79	-1.77	2.29
10,970.0	4.53	268.45	10,921.9	-450.6	-69.7	-446.3	1.79	-1.76	3.13
11,000.0	3.75	266.93	10,951.9	-450.7	-71.9	-446.2	2.62	-2.59	-5.08
11,064.0	2.11	259.94	11,015.8	-451.0	-75.1	-446.4	2.62	-2.56	-10.92
11,100.0	1.74	255.89	11,051.8	-451.3	-76.3	-446.6	1.09	-1.02	-11.26
11,158.0	1.18	244.14	11,109.7	-451.7	-77.7	-447.0	1.09	-0.97	-20.25
11,200.0	0.93	237.16	11,151.7	-452.1	-78.4	-447.3	0.66	-0.59	-16.61
11,252.0	0.66	221.57	11,203.7	-452.6	-78.9	-447.7	0.66	-0.52	-29.99
11,278.0	0.75	219.62	11,229.7	-452.8	-79.1	-447.9	0.36	0.35	-7.50
11,300.0	0.70	221.87	11,251.7	-453.0	-79.3	-448.1	0.25	-0.21	10.22
11,400.0	0.51	236.99	11,351.7	-453.7	-80.1	-448.8	0.25	-0.19	15.12
11,434.0	0.46	244.79	11,385.7	-453.9	-80.3	-448.9	0.25	-0.15	22.93
11,466.0	4.59	17.49	11,417.7	-452.7	-80.1	-447.8	15.35	12.91	414.69
11,497.0	9.64	18.63	11,448.4	-449.1	-78.9	-444.2	16.30	16.29	3.68
11,500.0	10.14	18.50	11,451.4	-448.6	-78.7	-443.7	16.79	16.78	-4.28
11,529.0	15.01	17.70	11,479.7	-442.6	-76.8	-437.8	16.79	16.78	-2.76
11,600.0	21.48	11.62	11,547.1	-421.1	-71.3	-416.6	9.49	9.12	-8.57
11,623.0	23.61	10.34	11,568.3	-412.4	-69.7	-408.1	9.49	9.25	-5.54
11,700.0	31.53	10.26	11,636.5	-377.4	-63.3	-373.4	10.28	10.28	-0.11
11,719.0	33.48	10.24	11,652.6	-367.3	-61.5	-363.5	10.28	10.28	-0.08
11,800.0	40.22	7.58	11,717.3	-319.3	-54.1	-316.0	8.55	8.32	-3.28
11,811.0	41.14	7.28	11,725.7	-312.2	-53.1	-309.0	8.55	8.36	-2.76
11,900.0	49.66	3.79	11,788.1	-249.2	-47.2	-246.3	9.97	9.57	-3.92
11,905.0	50.14	3.62	11,791.3	-245.4	-46.9	-242.6	9.97	9.63	-3.37
11,998.0	62.06	3.15	11,843.1	-168.5	-42.4	-166.0	12.82	12.82	-0.51
12,000.0	62.24	3.11	11,844.1	-166.7	-42.3	-164.2	9.38	9.21	-2.00
12,084.1	70.00	1.53	11,878.1	-90.0	-39.2	-87.7	9.38	9.23	-1.88
Nan112 Final FTP									
12,091.0	70.64	1.41	11,880.4	-83.5	-39.0	-81.2	9.38	9.23	-1.77
12,100.0	71.49	1.45	11,883.3	-74.9	-38.8	-72.8	9.46	9.45	0.48
12,185.0	79.52	1.84	11,904.6	7.3	-36.5	9.2	9.46	9.45	0.46
12,200.0	81.00	1.71	11,907.1	22.0	-36.0	23.9	9.93	9.89	-0.84
12,279.0	88.82	1.06	11,914.1	100.6	-34.1	102.3	9.93	9.89	-0.83
12,300.0	88.72	0.80	11,914.6	121.6	-33.8	123.3	1.34	-0.48	-1.25
12,375.0	88.36	359.86	11,916.5	196.6	-33.3	198.1	1.34	-0.48	-1.25
12,400.0	88.76	359.86	11,917.1	221.6	-33.4	223.1	1.60	1.60	0.00
12,470.0	89.88	359.86	11,917.9	291.6	-33.6	293.0	1.60	1.60	0.00
12,500.0	90.05	0.42	11,918.0	321.6	-33.5	322.9	1.95	0.57	1.86
12,565.0	90.42	1.63	11,917.7	386.6	-32.3	387.7	1.95	0.57	1.86
12,600.0	89.72	1.81	11,917.6	421.6	-31.3	422.6	2.06	-2.00	0.51
12,660.0	88.52	2.11	11,918.6	481.5	-29.2	482.4	2.06	-2.00	0.51
12,700.0	87.96	1.96	11,919.8	521.5	-27.8	522.2	1.46	-1.41	-0.37
12,755.0	87.18	1.76	11,922.1	576.4	-26.0	577.0	1.46	-1.41	-0.37
12,800.0	87.84	2.20	11,924.1	621.3	-24.5	621.7	1.76	1.47	0.97
12,849.0	88.56	2.67	11,925.6	670.3	-22.4	670.5	1.76	1.47	0.97

Database: EDM5000
Company: Ameredev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #2N
Well: Nandina 112H
Wellbore: Final Survey
Design: Final

Local Co-ordinate Reference: Well Nandina 112H
TVD Reference: KB @ 3050.0usft
MD Reference: KB @ 3050.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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)
12,900.0	89.07	2.52	11,926.7	721.2	-20.1	721.2	1.04	1.00	-0.30
12,945.0	89.52	2.38	11,927.2	766.1	-18.2	766.0	1.04	1.00	-0.30
13,000.0	89.35	2.19	11,927.8	821.1	-16.0	820.8	0.46	-0.32	-0.34
13,040.0	89.22	2.06	11,928.3	861.1	-14.5	860.6	0.46	-0.32	-0.34
13,100.0	88.16	1.42	11,929.6	921.0	-12.7	920.4	2.06	-1.77	-1.06
13,136.0	87.52	1.04	11,931.0	957.0	-11.9	956.3	2.06	-1.77	-1.06
13,200.0	88.42	1.17	11,933.3	1,020.9	-10.7	1,020.0	1.42	1.41	0.20
13,231.0	88.86	1.23	11,934.0	1,051.9	-10.0	1,051.0	1.42	1.41	0.20
13,300.0	89.64	1.06	11,934.9	1,120.9	-8.6	1,119.8	1.16	1.14	-0.24
13,326.0	89.94	1.00	11,935.0	1,146.9	-8.2	1,145.7	1.16	1.14	-0.24
13,400.0	90.55	1.10	11,934.7	1,220.9	-6.8	1,219.5	0.83	0.82	0.14
13,421.0	90.72	1.13	11,934.5	1,241.9	-6.4	1,240.4	0.83	0.82	0.14
13,500.0	89.26	359.99	11,934.5	1,320.9	-5.6	1,319.3	2.34	-1.84	-1.45
13,517.0	88.95	359.74	11,934.7	1,337.9	-5.7	1,336.3	2.34	-1.84	-1.45
13,600.0	88.02	358.69	11,936.9	1,420.8	-6.8	1,419.2	1.69	-1.13	-1.26
13,613.0	87.87	358.53	11,937.4	1,433.8	-7.1	1,432.1	1.69	-1.12	-1.26
13,700.0	87.84	357.78	11,940.6	1,520.7	-9.9	1,519.1	0.86	-0.03	-0.86
13,708.0	87.84	357.71	11,941.0	1,528.7	-10.2	1,527.1	0.86	-0.03	-0.86
13,800.0	87.81	358.65	11,944.4	1,620.6	-13.2	1,619.0	1.02	-0.03	1.02
13,804.0	87.81	358.69	11,944.6	1,624.6	-13.2	1,623.0	1.02	-0.03	1.02
13,899.0	86.65	0.48	11,949.2	1,719.5	-13.9	1,717.7	2.24	-1.22	1.88
13,900.0	86.67	0.47	11,949.2	1,720.5	-13.9	1,718.7	2.43	2.36	-0.55
13,995.0	88.92	359.95	11,952.9	1,815.4	-13.6	1,813.5	2.43	2.36	-0.55
14,000.0	89.01	359.96	11,953.0	1,820.4	-13.6	1,818.5	1.80	1.79	0.16
14,090.0	90.62	0.10	11,953.3	1,910.4	-13.5	1,908.4	1.80	1.79	0.16
14,100.0	90.59	0.10	11,953.2	1,920.4	-13.5	1,918.4	0.28	-0.28	-0.03
14,186.0	90.35	0.07	11,952.5	2,006.4	-13.4	2,004.2	0.28	-0.28	-0.03
14,200.0	90.51	0.14	11,952.4	2,020.4	-13.4	2,018.2	1.22	1.12	0.49
14,281.0	91.41	0.54	11,951.0	2,101.4	-12.9	2,099.0	1.22	1.12	0.49
14,300.0	91.24	0.38	11,950.6	2,120.4	-12.7	2,118.0	1.25	-0.91	-0.86
14,377.0	90.54	359.71	11,949.4	2,197.3	-12.7	2,194.9	1.25	-0.91	-0.86
14,400.0	89.68	359.61	11,949.3	2,220.3	-12.8	2,217.9	3.76	-3.74	-0.44
14,472.0	86.99	359.29	11,951.4	2,292.3	-13.5	2,289.7	3.76	-3.74	-0.44
14,500.0	87.30	359.14	11,952.8	2,320.3	-13.9	2,317.7	1.23	1.11	-0.54
14,567.0	88.04	358.78	11,955.5	2,387.2	-15.1	2,384.6	1.23	1.11	-0.54
14,600.0	88.51	358.51	11,956.5	2,420.2	-15.9	2,417.6	1.64	1.42	-0.81
14,662.0	89.39	358.01	11,957.7	2,482.1	-17.8	2,479.5	1.64	1.42	-0.81
14,700.0	87.98	357.31	11,958.5	2,520.1	-19.3	2,517.5	4.14	-3.71	-1.84
14,758.0	85.83	356.24	11,961.7	2,577.9	-22.6	2,575.4	4.14	-3.71	-1.85
14,800.0	85.64	355.57	11,964.8	2,619.7	-25.6	2,617.3	1.65	-0.45	-1.59
14,853.0	85.40	354.73	11,968.9	2,672.3	-30.0	2,670.1	1.65	-0.45	-1.59
14,900.0	86.58	356.19	11,972.2	2,719.1	-33.7	2,717.0	3.99	2.52	3.10
14,949.0	87.82	357.70	11,974.6	2,767.9	-36.4	2,765.9	3.99	2.52	3.09
15,000.0	85.89	357.91	11,977.4	2,818.8	-38.3	2,816.8	3.81	-3.79	0.41
15,044.0	84.22	358.09	11,981.2	2,862.6	-39.8	2,860.7	3.81	-3.79	0.41
15,100.0	85.94	359.46	11,986.0	2,918.4	-41.0	2,916.4	3.92	3.07	2.45
15,162.0	87.85	0.97	11,989.4	2,980.3	-40.8	2,978.2	3.92	3.08	2.44
15,200.0	87.69	1.15	11,990.8	3,018.3	-40.1	3,016.1	0.63	-0.41	0.47
15,257.0	87.46	1.42	11,993.3	3,075.2	-38.8	3,072.9	0.63	-0.41	0.47
15,300.0	87.42	0.99	11,995.2	3,118.2	-37.9	3,115.7	0.99	-0.09	-0.99
15,352.0	87.37	0.48	11,997.5	3,170.1	-37.2	3,167.6	0.99	-0.09	-0.99
15,400.0	86.63	0.14	12,000.1	3,218.0	-37.0	3,215.4	1.70	-1.55	-0.72
15,447.0	85.90	359.80	12,003.1	3,264.9	-37.0	3,262.2	1.70	-1.55	-0.72
15,500.0	86.32	359.29	12,006.7	3,317.8	-37.4	3,315.1	1.25	0.80	-0.96

Database: EDM5000
Company: Ameredev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #2N
Well: Nandina 112H
Wellbore: Final Survey
Design: Final

Local Co-ordinate Reference: Well Nandina 112H
TVD Reference: KB @ 3050.0usft
MD Reference: KB @ 3050.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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)
15,542.0	86.66	358.89	12,009.3	3,359.7	-38.1	3,357.0	1.25	0.80	-0.96
15,600.0	86.93	358.43	12,012.5	3,417.6	-39.4	3,414.8	0.92	0.47	-0.79
15,638.0	87.11	358.13	12,014.5	3,455.6	-40.6	3,452.8	0.92	0.47	-0.79
15,700.0	89.22	358.12	12,016.5	3,517.5	-42.6	3,514.7	3.41	3.41	-0.02
15,733.0	90.35	358.11	12,016.6	3,550.5	-43.7	3,547.7	3.41	3.41	-0.02
15,800.0	90.94	359.39	12,015.8	3,617.4	-45.2	3,614.7	2.10	0.89	1.91
15,829.0	91.20	359.94	12,015.3	3,646.4	-45.3	3,643.7	2.10	0.89	1.91
15,900.0	90.59	0.87	12,014.2	3,717.4	-44.8	3,714.5	1.57	-0.86	1.32
15,924.0	90.38	1.19	12,014.0	3,741.4	-44.4	3,738.4	1.57	-0.86	1.32
16,000.0	91.05	1.68	12,013.0	3,817.4	-42.5	3,814.2	1.09	0.88	0.65
16,020.0	91.22	1.81	12,012.6	3,837.4	-41.9	3,834.1	1.09	0.87	0.65
16,100.0	90.56	1.78	12,011.4	3,917.3	-39.4	3,913.8	0.82	-0.82	-0.04
16,115.0	90.44	1.77	12,011.3	3,932.3	-38.9	3,928.8	0.82	-0.82	-0.04
16,200.0	91.84	2.42	12,009.6	4,017.2	-35.8	4,013.4	1.82	1.65	0.77
16,210.0	92.01	2.50	12,009.2	4,027.2	-35.4	4,023.4	1.82	1.65	0.77
16,300.0	91.84	1.22	12,006.1	4,117.1	-32.5	4,113.0	1.42	-0.07	-1.42
16,305.0	91.94	1.15	12,006.0	4,122.1	-32.4	4,118.0	1.42	-0.07	-1.42
16,399.0	89.60	359.39	12,004.7	4,216.1	-31.9	4,211.8	3.11	-2.49	-1.87
16,400.0	89.58	359.38	12,004.7	4,217.1	-31.9	4,212.8	2.04	-1.63	-1.22
16,494.0	88.05	358.23	12,006.7	4,311.1	-33.9	4,306.7	2.04	-1.63	-1.22
16,500.0	88.04	358.24	12,006.9	4,317.1	-34.1	4,312.7	0.22	-0.14	0.17
16,589.0	87.92	358.39	12,010.0	4,406.0	-36.7	4,401.6	0.22	-0.14	0.17
16,600.0	88.01	358.37	12,010.4	4,416.9	-37.0	4,412.6	0.87	0.84	-0.22
16,684.0	88.72	358.18	12,012.8	4,500.9	-39.5	4,496.6	0.87	0.84	-0.22
16,700.0	88.65	358.16	12,013.1	4,516.9	-40.0	4,512.5	0.47	-0.45	-0.13
16,779.0	88.29	358.06	12,015.3	4,595.8	-42.6	4,591.5	0.47	-0.45	-0.13
16,800.0	88.50	358.16	12,015.8	4,616.8	-43.3	4,612.5	1.12	1.01	0.48
16,874.0	89.25	358.52	12,017.3	4,690.7	-45.5	4,686.5	1.12	1.01	0.48
16,900.0	88.91	358.55	12,017.7	4,716.7	-46.1	4,712.4	1.31	-1.31	0.13
16,969.0	88.01	358.64	12,019.6	4,785.7	-47.8	4,781.4	1.31	-1.31	0.13
17,000.0	87.75	358.38	12,020.7	4,816.6	-48.6	4,812.4	1.21	-0.85	-0.85
17,064.0	87.20	357.83	12,023.5	4,880.5	-50.8	4,876.3	1.21	-0.85	-0.85
17,100.0	87.49	358.27	12,025.2	4,916.5	-52.0	4,912.2	1.47	0.80	1.23
17,159.0	87.96	359.00	12,027.5	4,975.4	-53.4	4,971.2	1.47	0.80	1.23
17,200.0	88.69	359.53	12,028.7	5,016.4	-53.9	5,012.1	2.20	1.78	1.30
17,254.0	89.65	0.23	12,029.5	5,070.4	-54.0	5,066.0	2.20	1.78	1.29
17,300.0	90.66	359.75	12,029.4	5,116.4	-54.0	5,112.0	2.44	2.20	-1.05
17,353.0	91.83	359.19	12,028.3	5,169.4	-54.5	5,164.9	2.44	2.20	-1.05
17,400.0	92.12	359.66	12,026.6	5,216.3	-55.0	5,211.8	1.17	0.61	1.00
17,446.0	92.40	0.12	12,024.8	5,262.3	-55.1	5,257.7	1.17	0.61	1.00
17,500.0	92.65	2.09	12,022.4	5,316.2	-54.0	5,311.5	3.68	0.47	3.65
17,540.0	92.84	3.55	12,020.5	5,356.1	-52.1	5,351.3	3.68	0.47	3.65
17,600.0	92.60	3.89	12,017.7	5,415.9	-48.2	5,410.8	0.70	-0.40	0.57
17,634.0	92.46	4.09	12,016.2	5,449.8	-45.8	5,444.5	0.70	-0.40	0.57
17,700.0	92.48	4.40	12,013.3	5,515.6	-40.9	5,509.9	0.46	0.03	0.46
17,731.0	92.49	4.54	12,012.0	5,546.5	-38.5	5,540.6	0.46	0.03	0.46
17,800.0	92.53	4.49	12,009.0	5,615.2	-33.1	5,608.9	0.10	0.06	-0.07
17,826.0	92.55	4.47	12,007.8	5,641.1	-31.1	5,634.7	0.10	0.06	-0.07
17,900.0	92.90	3.96	12,004.3	5,714.8	-25.6	5,708.0	0.83	0.47	-0.68
17,921.0	93.00	3.82	12,003.2	5,735.7	-24.2	5,728.8	0.83	0.47	-0.68
18,000.0	92.74	2.33	11,999.3	5,814.5	-20.0	5,807.3	1.91	-0.33	-1.89
18,017.0	92.68	2.01	11,998.5	5,831.5	-19.3	5,824.2	1.91	-0.33	-1.88
18,100.0	93.05	0.61	11,994.3	5,914.3	-17.4	5,906.8	1.74	0.45	-1.68
18,111.0	93.10	0.43	11,993.7	5,925.3	-17.3	5,917.8	1.74	0.45	-1.68

Database: EDM5000
Company: Ameredev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #2N
Well: Nandina 112H
Wellbore: Final Survey
Design: Final

Local Co-ordinate Reference: Well Nandina 112H
TVD Reference: KB @ 3050.0usft
MD Reference: KB @ 3050.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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)
18,200.0	91.86	358.97	11,989.9	6,014.2	-17.8	6,006.6	2.15	-1.39	-1.64
18,206.0	91.78	358.87	11,989.7	6,020.2	-17.9	6,012.6	2.15	-1.39	-1.64
18,300.0	90.45	358.08	11,987.8	6,114.2	-20.4	6,106.5	1.64	-1.41	-0.84
18,301.0	90.44	358.07	11,987.8	6,115.2	-20.4	6,107.5	1.64	-1.41	-0.84
18,397.0	90.25	359.09	11,987.3	6,211.1	-22.8	6,203.5	1.08	-0.20	1.06
18,400.0	90.18	359.07	11,987.2	6,214.1	-22.9	6,206.5	2.42	-2.34	-0.61
18,492.0	88.03	358.51	11,988.7	6,306.1	-24.8	6,298.4	2.42	-2.34	-0.61
18,500.0	87.98	358.52	11,989.0	6,314.1	-25.0	6,306.4	0.62	-0.61	0.15
18,586.0	87.46	358.65	11,992.4	6,400.0	-27.1	6,392.3	0.62	-0.61	0.15
18,600.0	87.53	358.70	11,993.0	6,414.0	-27.5	6,406.3	0.60	0.50	0.32
18,682.0	87.94	358.96	11,996.2	6,495.9	-29.1	6,488.2	0.60	0.50	0.32
18,700.0	87.92	358.87	11,996.9	6,513.9	-29.5	6,506.2	0.53	-0.14	-0.52
18,777.0	87.81	358.47	11,999.8	6,590.8	-31.3	6,583.1	0.53	-0.14	-0.52
18,800.0	87.79	358.58	12,000.6	6,613.8	-31.9	6,606.1	0.47	-0.07	0.46
18,872.0	87.74	358.91	12,003.4	6,685.7	-33.4	6,678.0	0.47	-0.07	0.46
18,900.0	87.83	358.83	12,004.5	6,713.7	-34.0	6,705.9	0.44	0.33	-0.29
18,967.0	88.05	358.63	12,006.9	6,780.6	-35.5	6,772.8	0.44	0.33	-0.29
19,000.0	87.88	358.19	12,008.1	6,813.6	-36.4	6,805.8	1.43	-0.50	-1.34
19,061.0	87.58	357.37	12,010.5	6,874.5	-38.8	6,866.8	1.43	-0.50	-1.34
19,100.0	87.60	357.44	12,012.2	6,913.4	-40.5	6,905.7	0.18	0.04	0.18
19,156.0	87.62	357.54	12,014.5	6,969.3	-43.0	6,961.7	0.18	0.04	0.18
19,200.0	87.66	357.70	12,016.3	7,013.3	-44.8	7,005.6	0.37	0.10	0.36
19,250.0	87.71	357.88	12,018.3	7,063.2	-46.7	7,055.6	0.37	0.10	0.36
19,300.0	87.76	358.17	12,020.3	7,113.1	-48.4	7,105.5	0.59	0.10	0.59
19,344.0	87.80	358.43	12,022.0	7,157.1	-49.8	7,149.5	0.59	0.10	0.59
19,400.0	87.97	358.45	12,024.1	7,213.0	-51.3	7,205.4	0.30	0.30	0.04
19,438.0	88.08	358.47	12,025.4	7,251.0	-52.3	7,243.4	0.30	0.30	0.04
19,500.0	87.62	358.15	12,027.7	7,312.9	-54.1	7,305.3	0.90	-0.74	-0.52
19,531.0	87.39	357.99	12,029.1	7,343.8	-55.2	7,336.3	0.90	-0.74	-0.52
19,600.0	88.12	358.34	12,031.8	7,412.8	-57.4	7,405.2	1.17	1.05	0.50
19,625.0	88.38	358.46	12,032.5	7,437.7	-58.1	7,430.2	1.17	1.05	0.50
19,700.0	88.70	358.62	12,034.4	7,512.7	-60.0	7,505.2	0.48	0.43	0.21
19,719.0	88.78	358.66	12,034.9	7,531.7	-60.4	7,524.1	0.48	0.43	0.21
19,800.0	89.33	358.56	12,036.2	7,612.6	-62.4	7,605.1	0.69	0.68	-0.13
19,812.0	89.41	358.54	12,036.3	7,624.6	-62.7	7,617.1	0.69	0.68	-0.13
19,837.0	87.04	0.01	12,037.1	7,649.6	-63.0	7,642.1	11.14	-9.48	5.86
19,868.0	85.75	1.45	12,039.0	7,680.6	-62.6	7,672.9	6.24	-4.16	4.66
19,900.0	85.45	1.72	12,041.5	7,712.4	-61.7	7,704.7	1.25	-0.92	0.84
19,932.0	85.16	1.99	12,044.1	7,744.3	-60.7	7,736.5	1.25	-0.92	0.84
20,000.0	86.66	2.42	12,049.0	7,812.1	-58.1	7,804.0	2.29	2.20	0.63
20,026.0	87.23	2.58	12,050.4	7,838.0	-57.0	7,829.9	2.29	2.20	0.63
20,100.0	89.66	2.54	12,052.4	7,911.9	-53.7	7,903.5	3.29	3.29	-0.05
20,119.0	90.29	2.53	12,052.4	7,930.9	-52.8	7,922.4	3.29	3.29	-0.05
20,200.0	93.04	0.96	12,050.0	8,011.8	-50.4	8,003.1	3.91	3.40	-1.94
20,214.0	93.52	0.69	12,049.2	8,025.8	-50.2	8,017.0	3.91	3.40	-1.94
20,300.0	97.53	359.17	12,040.9	8,111.4	-50.3	8,102.5	4.98	4.66	-1.77
20,309.0	97.95	359.01	12,039.7	8,120.3	-50.4	8,111.4	4.98	4.66	-1.78
20,400.0	100.09	358.47	12,025.5	8,210.2	-52.4	8,201.2	2.42	2.35	-0.59
20,404.0	100.18	358.45	12,024.8	8,214.1	-52.5	8,205.2	2.42	2.35	-0.59
20,500.0	99.32	357.57	12,008.5	8,308.6	-55.8	8,299.8	1.27	-0.90	-0.92
20,596.0	96.68	357.77	11,995.1	8,403.6	-59.6	8,394.8	2.76	-2.75	0.21
20,600.0	96.54	357.73	11,994.7	8,407.6	-59.8	8,398.8	3.76	-3.61	-1.09
20,690.0	93.29	356.75	11,987.0	8,497.1	-64.1	8,488.4	3.76	-3.61	-1.08
20,700.0	92.32	356.42	11,986.5	8,507.1	-64.7	8,498.4	10.26	-9.72	-3.29

Database:	EDM5000	Local Co-ordinate Reference:	Well Nandina 112H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3050.0usft
Project:	NAN/GB	MD Reference:	KB @ 3050.0usft
Site:	NAN/GB #2N	North Reference:	Grid
Well:	Nandina 112H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Final Survey		
Design:	Final		

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)
20,740.0	88.43	355.11	11,986.2	8,547.0	-67.7	8,538.4	10.26	-9.72	-3.28
20,783.0	87.79	355.96	11,987.6	8,589.8	-71.0	8,581.4	2.47	-1.49	1.98
20,800.0	87.92	355.23	11,988.3	8,606.8	-72.3	8,598.3	4.37	0.77	-4.31
20,878.0	88.53	351.87	11,990.7	8,684.2	-81.1	8,676.2	4.37	0.78	-4.30
20,900.0	88.55	350.87	11,991.2	8,706.0	-84.4	8,698.1	4.55	0.08	-4.55
20,972.0	88.61	347.59	11,993.0	8,776.7	-97.8	8,769.4	4.55	0.09	-4.55
21,000.0	88.91	345.83	11,993.6	8,803.9	-104.3	8,796.9	6.37	1.07	-6.29
21,067.0	89.63	341.62	11,994.5	8,868.2	-123.0	8,862.1	6.37	1.08	-6.28
21,100.0	87.86	338.77	11,995.2	8,899.3	-134.2	8,893.7	10.16	-5.37	-8.63
21,108.0	87.43	338.08	11,995.5	8,906.7	-137.1	8,901.3	10.16	-5.36	-8.64
21,140.0	87.80	337.46	11,996.9	8,936.3	-149.2	8,931.5	2.25	1.16	-1.94
21,171.0	88.49	337.96	11,997.9	8,964.9	-161.0	8,960.7	2.75	2.23	1.61
21,200.0	89.43	339.10	11,998.4	8,991.9	-171.6	8,988.3	5.11	3.25	3.94
21,203.0	89.53	339.22	11,998.4	8,994.7	-172.7	8,991.1	5.11	3.25	3.94
21,235.0	89.45	340.43	11,998.7	9,024.8	-183.7	9,021.7	3.79	-0.25	3.78
21,300.0	91.97	342.71	11,997.9	9,086.4	-204.2	9,084.4	5.22	3.87	3.51
21,304.0	92.12	342.85	11,997.8	9,090.2	-205.4	9,088.2	5.22	3.87	3.51
21,335.0	90.11	343.23	11,997.2	9,119.9	-214.5	9,118.3	6.60	-6.48	1.23
21,367.0	86.76	342.67	11,998.0	9,150.5	-223.8	9,149.4	10.61	-10.47	-1.75
21,399.0	86.61	342.65	11,999.9	9,181.0	-233.4	9,180.3	0.47	-0.47	-0.06
21,400.0	86.63	342.67	12,000.0	9,181.9	-233.7	9,181.3	3.25	2.45	2.13
21,430.0	87.37	343.31	12,001.5	9,210.6	-242.4	9,210.4	3.25	2.45	2.13
21,462.0	86.77	343.28	12,003.2	9,241.2	-251.6	9,241.4	1.88	-1.88	-0.09
21,500.0	86.69	343.21	12,005.3	9,277.5	-262.6	9,278.3	0.28	-0.22	-0.17
21,525.0	86.63	343.17	12,006.8	9,301.4	-269.8	9,302.5	0.28	-0.22	-0.17
21,600.0	87.50	343.08	12,010.6	9,373.1	-291.5	9,375.2	1.16	1.16	-0.13
21,620.0	87.73	343.05	12,011.5	9,392.2	-297.3	9,394.6	1.16	1.16	-0.13
21,700.0	89.17	343.43	12,013.6	9,468.7	-320.4	9,472.3	1.86	1.80	0.47
21,715.0	89.44	343.50	12,013.8	9,483.1	-324.7	9,486.9	1.86	1.80	0.47
21,800.0	89.19	344.12	12,014.8	9,564.8	-348.4	9,569.7	0.78	-0.29	0.73
21,810.0	89.16	344.19	12,015.0	9,574.4	-351.1	9,579.5	0.78	-0.29	0.73
21,900.0	89.69	343.35	12,015.9	9,660.8	-376.3	9,667.1	1.11	0.59	-0.94
21,906.0	89.73	343.29	12,015.9	9,666.5	-378.0	9,672.9	1.11	0.59	-0.94
22,000.0	90.18	343.86	12,016.0	9,756.7	-404.6	9,764.4	0.77	0.47	0.61
22,001.0	90.18	343.87	12,016.0	9,757.6	-404.8	9,765.3	0.77	0.47	0.61
22,097.0	90.17	344.12	12,015.7	9,849.9	-431.3	9,858.9	0.26	-0.01	0.26
22,100.0	90.19	344.13	12,015.7	9,852.8	-432.1	9,861.8	0.76	0.59	0.48
22,192.0	90.73	344.58	12,014.9	9,941.4	-456.9	9,951.6	0.76	0.59	0.48
22,200.0	90.73	344.55	12,014.8	9,949.1	-459.1	9,959.4	0.37	0.05	-0.37
22,287.0	90.78	344.23	12,013.7	10,032.9	-482.5	10,044.3	0.37	0.05	-0.37
22,300.0	90.73	344.20	12,013.5	10,045.4	-486.0	10,057.0	0.45	-0.40	-0.20
22,382.0	90.40	344.04	12,012.7	10,124.3	-508.4	10,137.0	0.45	-0.40	-0.20
22,400.0	90.03	343.78	12,012.6	10,141.6	-513.4	10,154.5	2.55	-2.08	-1.47
22,433.0	89.34	343.29	12,012.8	10,173.2	-522.8	10,186.6	2.55	-2.08	-1.47
22,497.0	89.34	343.29	12,013.6	10,234.5	-541.2	10,248.8	0.00	0.00	0.00
Nan112 Final LTP									
22,500.0	89.34	343.29	12,013.6	10,237.4	-542.0	10,251.7	0.00	0.00	0.00
22,523.6	89.34	343.29	12,013.9	10,260.0	-548.8	10,274.6	0.00	0.00	0.00
Nan112 Final BHL									

Database:	EDM5000	Local Co-ordinate Reference:	Well Nandina 112H
Company:	Ameredev Operating, LLC.	TVD Reference:	KB @ 3050.0usft
Project:	NAN/GB	MD Reference:	KB @ 3050.0usft
Site:	NAN/GB #2N	North Reference:	Grid
Well:	Nandina 112H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Final Survey		
Design:	Final		

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
Nan112 Final FTP - plan hits target center - Point	0.00	0.00	11,878.1	-90.0	-39.2	394,331.24	858,427.12	32° 4' 47.856 N	103° 18' 34.411 W
Nan112 Final BHL - plan misses target center by 3.6usft at 22523.6usft MD (12013.9 TVD, 10260.0 N, -548.8 E) - Point	0.00	0.00	12,011.1	10,260.7	-546.7	404,681.89	857,919.64	32° 6' 30.320 N	103° 18' 39.168 W
Nan112 Final LTP - plan misses target center by 2.7usft at 22497.0usft MD (12013.6 TVD, 10234.5 N, -541.2 E) - Point	0.00	0.00	12,011.4	10,235.0	-539.6	404,656.22	857,926.72	32° 6' 30.065 N	103° 18' 39.089 W

AMEREDEV

Ameredev Operating, LLC.

NAN/GB

NAN/GB #2N

Nandina 112H

Final Survey

Plan: Final

Lease Penetration Section Line Foot

14 October, 2019

Company:	Ameredev Operating, LLC.	Local Co-ordinate Reference:	Well Nandina 112H
Project:	NAN/GB	TVD Reference:	KB @ 3050.0usft
Site:	NAN/GB #2N	MD Reference:	KB @ 3050.0usft
Well:	Nandina 112H	North Reference:	Grid
Wellbore:	Final Survey	Survey Calculation Method:	Minimum Curvature
Design:	Final	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 #2N		
Site Position:		Northing:	394,421.00 usft
From:	Lat/Long	Easting:	858,446.33 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"
		Latitude:	32° 4' 48.742 N
		Longitude:	103° 18' 34.178 W
		Grid Convergence:	0.54 °

Well	Nandina 112H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 4' 48.742 N
		Longitude:	103° 18' 33.945 W
		Ground Level:	3,023.0 usft

Wellbore	Final Survey				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	9/19/2019	6.57	59.94	47,650.75115512

Design	Final			
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	356.96

Survey Tool Program	Date 10/10/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	22,510.0	Final (Final Survey)	MWD	OWSG MWD - Standard

Planned Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	230.2	1,020.0	32° 4' 48.742 N	103° 18' 33.945 W
0.1	0.00	155.22	0.1	230.2	1,020.0	32° 4' 48.742 N	103° 18' 33.945 W
25-36-31 - 25-36-30							
100.0	0.50	155.22	100.0	229.8	1,020.2	32° 4' 48.738 N	103° 18' 33.943 W
200.0	1.00	155.22	200.0	228.6	1,020.7	32° 4' 48.727 N	103° 18' 33.937 W
211.0	1.05	155.22	211.0	228.5	1,020.8	32° 4' 48.725 N	103° 18' 33.936 W
300.0	1.04	187.66	300.0	226.9	1,021.1	32° 4' 48.710 N	103° 18' 33.934 W
366.0	1.23	207.51	366.0	225.7	1,020.6	32° 4' 48.698 N	103° 18' 33.939 W
400.0	0.94	213.54	400.0	225.1	1,020.3	32° 4' 48.692 N	103° 18' 33.942 W
456.0	0.53	237.22	456.0	224.6	1,019.8	32° 4' 48.687 N	103° 18' 33.948 W
500.0	0.94	225.79	499.9	224.3	1,019.4	32° 4' 48.683 N	103° 18' 33.953 W
548.0	1.41	221.13	547.9	223.5	1,018.7	32° 4' 48.676 N	103° 18' 33.961 W

Company: Ameredev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #2N
Well: Nandina 112H
Wellbore: Final Survey
Design: Final

Local Co-ordinate Reference: Well Nandina 112H
TVD Reference: KB @ 3050.0usft
MD Reference: KB @ 3050.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL-FNL (usft)	+FWL-FEL (usft)	Latitude	Longitude
600.0	0.89	213.36	599.9	222.7	1,018.1	32° 4' 48.668 N	103° 18' 33.968 W
638.0	0.53	198.11	637.9	222.3	1,017.9	32° 4' 48.664 N	103° 18' 33.971 W
700.0	0.89	247.52	699.9	221.9	1,017.4	32° 4' 48.660 N	103° 18' 33.977 W
703.0	0.92	248.73	702.9	221.8	1,017.3	32° 4' 48.660 N	103° 18' 33.978 W
795.0	1.27	246.71	794.9	221.2	1,015.7	32° 4' 48.653 N	103° 18' 33.997 W
800.0	1.29	244.76	799.9	221.1	1,015.6	32° 4' 48.653 N	103° 18' 33.998 W
882.0	1.85	222.19	881.9	219.7	1,013.9	32° 4' 48.639 N	103° 18' 34.018 W
900.0	1.87	225.65	899.9	219.3	1,013.5	32° 4' 48.635 N	103° 18' 34.023 W
973.0	2.02	238.62	972.8	217.8	1,011.5	32° 4' 48.620 N	103° 18' 34.046 W
1,000.0	1.85	239.02	999.8	217.3	1,010.7	32° 4' 48.616 N	103° 18' 34.055 W
1,065.0	1.45	240.38	1,064.8	216.4	1,009.1	32° 4' 48.607 N	103° 18' 34.074 W
1,100.0	1.41	236.33	1,099.8	215.9	1,008.4	32° 4' 48.602 N	103° 18' 34.082 W
1,200.0	1.32	223.56	1,199.7	214.4	1,006.5	32° 4' 48.587 N	103° 18' 34.104 W
1,239.0	1.31	218.25	1,238.7	213.8	1,006.0	32° 4' 48.581 N	103° 18' 34.111 W
1,300.0	1.29	217.80	1,299.7	212.7	1,005.1	32° 4' 48.570 N	103° 18' 34.121 W
1,334.0	1.28	217.54	1,333.7	212.1	1,004.6	32° 4' 48.564 N	103° 18' 34.126 W
1,400.0	1.24	222.58	1,399.7	210.9	1,003.7	32° 4' 48.553 N	103° 18' 34.137 W
1,429.0	1.22	224.90	1,428.7	210.5	1,003.3	32° 4' 48.549 N	103° 18' 34.142 W
1,500.0	0.90	226.16	1,499.7	209.6	1,002.3	32° 4' 48.540 N	103° 18' 34.153 W
1,523.0	0.80	226.78	1,522.7	209.3	1,002.1	32° 4' 48.537 N	103° 18' 34.156 W
1,600.0	0.27	239.14	1,599.7	208.9	1,001.5	32° 4' 48.533 N	103° 18' 34.162 W
1,618.0	0.16	253.63	1,617.7	208.8	1,001.5	32° 4' 48.533 N	103° 18' 34.163 W
1,700.0	0.60	28.52	1,699.7	209.2	1,001.6	32° 4' 48.536 N	103° 18' 34.162 W
1,714.0	0.72	30.06	1,713.7	209.3	1,001.7	32° 4' 48.537 N	103° 18' 34.161 W
1,800.0	1.54	25.21	1,799.6	210.8	1,002.4	32° 4' 48.552 N	103° 18' 34.152 W
1,807.0	1.61	25.03	1,806.6	211.0	1,002.5	32° 4' 48.554 N	103° 18' 34.151 W
1,900.0	2.68	26.25	1,899.6	214.2	1,004.0	32° 4' 48.585 N	103° 18' 34.133 W
1,901.0	2.69	26.26	1,900.6	214.2	1,004.0	32° 4' 48.585 N	103° 18' 34.133 W
1,995.0	3.94	27.50	1,994.4	219.0	1,006.5	32° 4' 48.633 N	103° 18' 34.104 W
2,000.0	3.94	28.48	1,999.4	219.3	1,006.7	32° 4' 48.636 N	103° 18' 34.102 W
2,089.0	4.16	45.32	2,088.2	224.3	1,010.4	32° 4' 48.685 N	103° 18' 34.058 W
2,100.0	4.11	48.15	2,099.2	224.8	1,011.0	32° 4' 48.690 N	103° 18' 34.051 W
2,182.0	4.06	70.34	2,180.9	227.8	1,015.9	32° 4' 48.719 N	103° 18' 33.993 W
2,200.0	3.97	75.54	2,198.9	228.2	1,017.1	32° 4' 48.722 N	103° 18' 33.979 W
2,276.0	3.99	98.47	2,274.7	228.4	1,022.3	32° 4' 48.724 N	103° 18' 33.919 W
2,300.0	4.27	105.62	2,298.7	228.1	1,024.0	32° 4' 48.720 N	103° 18' 33.900 W
2,370.0	5.36	121.31	2,368.4	225.7	1,029.3	32° 4' 48.696 N	103° 18' 33.838 W
2,400.0	5.91	125.37	2,398.3	224.0	1,031.7	32° 4' 48.680 N	103° 18' 33.810 W
2,465.0	7.17	131.95	2,462.9	219.4	1,037.5	32° 4' 48.633 N	103° 18' 33.744 W
2,500.0	7.99	135.91	2,497.5	216.2	1,040.8	32° 4' 48.601 N	103° 18' 33.705 W
2,559.0	9.45	140.99	2,555.9	209.5	1,046.7	32° 4' 48.534 N	103° 18' 33.638 W
2,600.0	9.61	142.83	2,596.3	204.1	1,050.9	32° 4' 48.481 N	103° 18' 33.590 W
2,653.0	9.82	145.11	2,648.5	196.9	1,056.1	32° 4' 48.409 N	103° 18' 33.529 W
2,700.0	9.74	145.91	2,694.9	190.3	1,060.7	32° 4' 48.344 N	103° 18' 33.477 W

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 Design: Final

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 Survey Calculation Method: Minimum Curvature
 Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
2,747.0	9.66	146.72	2,741.2	183.7	1,065.1	32° 4' 48.278 N	103° 18' 33.427 W
2,800.0	9.48	148.02	2,793.4	176.3	1,069.8	32° 4' 48.204 N	103° 18' 33.373 W
2,841.0	9.35	149.05	2,833.9	170.6	1,073.3	32° 4' 48.147 N	103° 18' 33.333 W
2,900.0	8.72	153.43	2,892.2	162.5	1,077.8	32° 4' 48.066 N	103° 18' 33.282 W
2,935.0	8.38	156.32	2,926.8	157.8	1,080.0	32° 4' 48.020 N	103° 18' 33.256 W
3,000.0	7.38	165.81	2,991.2	149.4	1,082.9	32° 4' 47.936 N	103° 18' 33.223 W
3,029.0	7.01	170.85	3,019.9	145.8	1,083.7	32° 4' 47.901 N	103° 18' 33.215 W
3,100.0	6.77	184.22	3,090.4	137.4	1,084.0	32° 4' 47.818 N	103° 18' 33.212 W
3,124.0	6.77	188.86	3,114.3	134.6	1,083.7	32° 4' 47.790 N	103° 18' 33.216 W
3,200.0	6.75	187.17	3,189.7	125.7	1,082.5	32° 4' 47.702 N	103° 18' 33.231 W
3,218.0	6.75	186.77	3,207.6	123.6	1,082.2	32° 4' 47.682 N	103° 18' 33.234 W
3,300.0	6.59	180.98	3,289.0	114.1	1,081.6	32° 4' 47.588 N	103° 18' 33.243 W
3,312.0	6.57	180.11	3,301.0	112.7	1,081.5	32° 4' 47.574 N	103° 18' 33.243 W
3,400.0	6.54	172.90	3,388.4	102.7	1,082.2	32° 4' 47.475 N	103° 18' 33.237 W
3,406.0	6.54	172.41	3,394.4	102.1	1,082.2	32° 4' 47.468 N	103° 18' 33.236 W
3,500.0	6.56	165.36	3,487.7	91.6	1,084.3	32° 4' 47.364 N	103° 18' 33.214 W
3,501.0	6.56	165.29	3,488.7	91.4	1,084.3	32° 4' 47.363 N	103° 18' 33.213 W
3,595.0	6.65	165.66	3,582.1	81.0	1,087.0	32° 4' 47.259 N	103° 18' 33.183 W
3,600.0	6.64	166.19	3,587.1	80.4	1,087.2	32° 4' 47.254 N	103° 18' 33.181 W
3,689.0	6.47	175.85	3,675.5	70.4	1,088.8	32° 4' 47.155 N	103° 18' 33.164 W
3,700.0	6.32	171.49	3,686.4	69.2	1,088.9	32° 4' 47.143 N	103° 18' 33.162 W
3,784.0	6.47	136.06	3,769.9	61.2	1,092.9	32° 4' 47.063 N	103° 18' 33.117 W
3,800.0	6.28	131.38	3,785.8	60.0	1,094.2	32° 4' 47.051 N	103° 18' 33.102 W
3,879.0	6.01	105.71	3,864.4	56.0	1,101.4	32° 4' 47.011 N	103° 18' 33.019 W
3,900.0	5.70	97.06	3,885.3	55.6	1,103.5	32° 4' 47.007 N	103° 18' 32.995 W
3,974.0	5.78	63.67	3,958.9	56.8	1,110.5	32° 4' 47.018 N	103° 18' 32.913 W
4,000.0	4.26	57.19	3,984.8	57.9	1,112.4	32° 4' 47.029 N	103° 18' 32.890 W
4,069.0	1.76	338.16	4,053.8	60.3	1,114.2	32° 4' 47.052 N	103° 18' 32.869 W
4,100.0	2.62	296.95	4,084.7	61.0	1,113.4	32° 4' 47.060 N	103° 18' 32.879 W
4,164.0	5.81	272.59	4,148.6	61.9	1,108.9	32° 4' 47.068 N	103° 18' 32.931 W
4,200.0	6.09	263.29	4,184.4	61.7	1,105.1	32° 4' 47.067 N	103° 18' 32.975 W
4,258.0	6.83	250.49	4,242.0	60.2	1,098.8	32° 4' 47.053 N	103° 18' 33.048 W
4,300.0	7.04	238.24	4,283.7	58.0	1,094.3	32° 4' 47.031 N	103° 18' 33.101 W
4,353.0	7.72	224.53	4,336.3	53.8	1,089.0	32° 4' 46.990 N	103° 18' 33.163 W
4,400.0	8.58	215.60	4,382.8	48.7	1,084.8	32° 4' 46.940 N	103° 18' 33.213 W
4,448.0	9.63	208.29	4,430.2	42.2	1,080.8	32° 4' 46.876 N	103° 18' 33.260 W
4,500.0	10.45	203.65	4,481.4	34.1	1,076.8	32° 4' 46.796 N	103° 18' 33.307 W
4,543.0	11.17	200.33	4,523.6	26.6	1,073.8	32° 4' 46.722 N	103° 18' 33.342 W
4,600.0	11.46	196.43	4,579.5	16.0	1,070.3	32° 4' 46.618 N	103° 18' 33.385 W
4,637.0	11.67	194.01	4,615.8	8.8	1,068.4	32° 4' 46.547 N	103° 18' 33.408 W
4,700.0	11.80	189.23	4,677.5	-3.7	1,065.8	32° 4' 46.423 N	103° 18' 33.439 W
4,731.0	11.89	186.93	4,707.8	-10.0	1,064.9	32° 4' 46.361 N	103° 18' 33.450 W
4,800.0	11.49	180.17	4,775.4	-23.9	1,064.0	32° 4' 46.223 N	103° 18' 33.462 W
4,826.0	11.38	177.51	4,800.9	-29.1	1,064.1	32° 4' 46.172 N	103° 18' 33.461 W
4,900.0	11.84	167.58	4,873.4	-43.8	1,066.1	32° 4' 46.027 N	103° 18' 33.440 W

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 Survey Calculation Method: Minimum Curvature
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Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
4,919.0	12.01	165.17	4,891.9	-47.6	1,067.0	32° 4' 45.989 N	103° 18' 33.430 W
5,000.0	10.93	157.87	4,971.3	-62.9	1,072.0	32° 4' 45.837 N	103° 18' 33.373 W
5,015.0	10.75	156.36	4,986.1	-65.5	1,073.1	32° 4' 45.811 N	103° 18' 33.361 W
5,100.0	9.26	149.78	5,069.8	-78.6	1,079.8	32° 4' 45.681 N	103° 18' 33.285 W
5,110.0	9.09	148.87	5,079.6	-80.0	1,080.6	32° 4' 45.667 N	103° 18' 33.276 W
5,200.0	7.57	142.60	5,168.7	-90.8	1,087.9	32° 4' 45.559 N	103° 18' 33.192 W
5,204.0	7.51	142.26	5,172.7	-91.2	1,088.2	32° 4' 45.555 N	103° 18' 33.189 W
5,299.0	6.03	141.42	5,267.0	-100.0	1,095.1	32° 4' 45.467 N	103° 18' 33.109 W
5,300.0	6.01	141.51	5,268.0	-100.1	1,095.2	32° 4' 45.467 N	103° 18' 33.109 W
5,394.0	4.02	154.56	5,361.6	-107.0	1,099.6	32° 4' 45.399 N	103° 18' 33.057 W
5,400.0	4.07	154.88	5,367.6	-107.3	1,099.8	32° 4' 45.395 N	103° 18' 33.055 W
5,488.0	4.86	158.77	5,455.3	-113.6	1,102.5	32° 4' 45.332 N	103° 18' 33.025 W
5,500.0	4.86	158.71	5,467.3	-114.6	1,102.9	32° 4' 45.323 N	103° 18' 33.021 W
5,583.0	4.89	158.31	5,550.0	-121.2	1,105.4	32° 4' 45.258 N	103° 18' 32.991 W
5,600.0	4.88	158.49	5,566.9	-122.5	1,106.0	32° 4' 45.244 N	103° 18' 32.985 W
5,678.0	4.84	159.30	5,644.7	-128.7	1,108.4	32° 4' 45.183 N	103° 18' 32.958 W
5,700.0	4.98	159.44	5,666.6	-130.4	1,109.0	32° 4' 45.165 N	103° 18' 32.951 W
5,772.0	5.44	159.84	5,738.3	-136.6	1,111.3	32° 4' 45.105 N	103° 18' 32.925 W
5,800.0	5.37	161.90	5,766.2	-139.0	1,112.2	32° 4' 45.080 N	103° 18' 32.915 W
5,867.0	5.22	167.04	5,832.9	-145.0	1,113.8	32° 4' 45.021 N	103° 18' 32.897 W
5,900.0	5.24	170.89	5,865.7	-147.9	1,114.4	32° 4' 44.992 N	103° 18' 32.890 W
5,962.0	5.33	177.99	5,927.5	-153.6	1,114.9	32° 4' 44.935 N	103° 18' 32.885 W
6,000.0	5.30	182.92	5,965.3	-157.1	1,114.9	32° 4' 44.901 N	103° 18' 32.885 W
6,057.0	5.32	190.34	6,022.1	-162.4	1,114.3	32° 4' 44.849 N	103° 18' 32.893 W
6,100.0	5.56	190.81	6,064.9	-166.4	1,113.6	32° 4' 44.809 N	103° 18' 32.902 W
6,152.0	5.86	191.33	6,116.6	-171.4	1,112.6	32° 4' 44.759 N	103° 18' 32.914 W
6,200.0	5.79	188.88	6,164.4	-176.2	1,111.7	32° 4' 44.712 N	103° 18' 32.925 W
6,247.0	5.73	186.43	6,211.1	-180.9	1,111.1	32° 4' 44.666 N	103° 18' 32.933 W
6,300.0	5.75	182.55	6,263.9	-186.2	1,110.7	32° 4' 44.613 N	103° 18' 32.938 W
6,342.0	5.79	179.51	6,305.6	-190.4	1,110.6	32° 4' 44.572 N	103° 18' 32.939 W
6,400.0	5.74	174.35	6,363.3	-196.2	1,110.9	32° 4' 44.514 N	103° 18' 32.936 W
6,436.0	5.74	171.13	6,399.2	-199.8	1,111.4	32° 4' 44.479 N	103° 18' 32.931 W
6,500.0	5.74	166.71	6,462.8	-206.1	1,112.6	32° 4' 44.417 N	103° 18' 32.918 W
6,531.0	5.75	164.58	6,493.7	-209.1	1,113.3	32° 4' 44.387 N	103° 18' 32.909 W
6,600.0	5.88	159.19	6,562.3	-215.7	1,115.5	32° 4' 44.321 N	103° 18' 32.885 W
6,625.0	5.94	157.30	6,587.2	-218.1	1,116.5	32° 4' 44.297 N	103° 18' 32.874 W
6,700.0	6.05	150.82	6,661.8	-225.1	1,119.9	32° 4' 44.227 N	103° 18' 32.835 W
6,719.0	6.09	149.22	6,680.7	-226.9	1,120.9	32° 4' 44.210 N	103° 18' 32.823 W
6,800.0	5.84	142.84	6,761.3	-233.9	1,125.6	32° 4' 44.140 N	103° 18' 32.770 W
6,814.0	5.80	141.69	6,775.2	-235.0	1,126.5	32° 4' 44.129 N	103° 18' 32.760 W
6,900.0	4.44	137.33	6,860.8	-240.8	1,131.4	32° 4' 44.071 N	103° 18' 32.703 W
6,908.0	4.32	136.79	6,868.8	-241.3	1,131.8	32° 4' 44.066 N	103° 18' 32.698 W
7,000.0	3.07	134.41	6,960.6	-245.5	1,136.0	32° 4' 44.024 N	103° 18' 32.650 W
7,004.0	3.02	134.26	6,964.6	-245.7	1,136.1	32° 4' 44.022 N	103° 18' 32.649 W

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Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL-FNL (usft)	+FWL-FEL (usft)	Latitude	Longitude
7,099.0	1.91	126.46	7,059.5	-248.4	1,139.2	32° 4' 43.996 N	103° 18' 32.613 W
7,100.0	1.89	126.49	7,060.5	-248.4	1,139.2	32° 4' 43.995 N	103° 18' 32.613 W
7,193.0	0.42	138.46	7,153.5	-249.6	1,140.7	32° 4' 43.984 N	103° 18' 32.596 W
7,200.0	0.38	138.79	7,160.5	-249.6	1,140.7	32° 4' 43.983 N	103° 18' 32.596 W
7,288.0	0.12	304.13	7,248.5	-249.8	1,140.8	32° 4' 43.982 N	103° 18' 32.594 W
7,300.0	0.13	302.67	7,260.5	-249.8	1,140.8	32° 4' 43.982 N	103° 18' 32.595 W
7,383.0	0.19	296.28	7,343.5	-249.6	1,140.6	32° 4' 43.983 N	103° 18' 32.597 W
7,400.0	0.14	296.46	7,360.5	-249.6	1,140.6	32° 4' 43.983 N	103° 18' 32.598 W
7,478.0	0.08	114.47	7,438.5	-249.6	1,140.5	32° 4' 43.983 N	103° 18' 32.598 W
7,496.0	0.09	126.62	7,456.5	-249.6	1,140.5	32° 4' 43.983 N	103° 18' 32.598 W
7,500.0	0.08	124.95	7,460.5	-249.6	1,140.5	32° 4' 43.983 N	103° 18' 32.598 W
7,559.0	0.04	49.89	7,519.5	-249.6	1,140.6	32° 4' 43.983 N	103° 18' 32.597 W
7,600.0	0.08	7.14	7,560.5	-249.6	1,140.6	32° 4' 43.983 N	103° 18' 32.597 W
7,654.0	0.15	353.35	7,614.5	-249.5	1,140.6	32° 4' 43.984 N	103° 18' 32.597 W
7,700.0	0.26	329.88	7,660.5	-249.3	1,140.5	32° 4' 43.986 N	103° 18' 32.598 W
7,748.0	0.39	320.68	7,708.5	-249.1	1,140.4	32° 4' 43.988 N	103° 18' 32.599 W
7,800.0	0.49	320.97	7,760.5	-248.8	1,140.1	32° 4' 43.991 N	103° 18' 32.602 W
7,842.0	0.57	321.13	7,802.5	-248.5	1,139.9	32° 4' 43.994 N	103° 18' 32.605 W
7,900.0	0.72	321.19	7,860.5	-248.0	1,139.5	32° 4' 43.999 N	103° 18' 32.610 W
7,936.0	0.81	321.21	7,896.5	-247.6	1,139.2	32° 4' 44.003 N	103° 18' 32.613 W
8,000.0	0.94	321.58	7,960.5	-246.9	1,138.6	32° 4' 44.011 N	103° 18' 32.620 W
8,029.0	1.00	321.72	7,989.5	-246.5	1,138.3	32° 4' 44.014 N	103° 18' 32.624 W
8,100.0	1.38	322.45	8,060.5	-245.3	1,137.4	32° 4' 44.026 N	103° 18' 32.634 W
8,124.0	1.51	322.61	8,084.5	-244.8	1,137.0	32° 4' 44.031 N	103° 18' 32.638 W
8,200.0	1.76	327.56	8,160.4	-243.0	1,135.8	32° 4' 44.049 N	103° 18' 32.653 W
8,219.0	1.83	328.58	8,179.4	-242.5	1,135.4	32° 4' 44.054 N	103° 18' 32.656 W
8,300.0	1.95	327.68	8,260.4	-240.3	1,134.0	32° 4' 44.076 N	103° 18' 32.672 W
8,313.0	1.97	327.55	8,273.4	-239.9	1,133.8	32° 4' 44.080 N	103° 18' 32.675 W
8,400.0	1.84	329.73	8,360.3	-237.4	1,132.3	32° 4' 44.105 N	103° 18' 32.692 W
8,408.0	1.83	329.95	8,368.3	-237.2	1,132.2	32° 4' 44.107 N	103° 18' 32.694 W
8,500.0	1.78	326.59	8,460.3	-234.7	1,130.6	32° 4' 44.131 N	103° 18' 32.711 W
8,502.0	1.78	326.51	8,462.3	-234.7	1,130.6	32° 4' 44.132 N	103° 18' 32.712 W
8,597.0	2.24	320.85	8,557.2	-232.0	1,128.6	32° 4' 44.158 N	103° 18' 32.734 W
8,600.0	2.26	320.79	8,560.2	-231.9	1,128.5	32° 4' 44.159 N	103° 18' 32.735 W
8,653.0	2.58	319.79	8,613.2	-230.2	1,127.1	32° 4' 44.176 N	103° 18' 32.752 W
8,692.0	2.78	317.95	8,652.1	-228.8	1,125.9	32° 4' 44.190 N	103° 18' 32.765 W
8,700.0	2.79	317.88	8,660.1	-228.5	1,125.6	32° 4' 44.193 N	103° 18' 32.768 W
8,786.0	2.84	317.15	8,746.0	-225.4	1,122.8	32° 4' 44.224 N	103° 18' 32.801 W
8,800.0	2.85	316.19	8,760.0	-224.9	1,122.3	32° 4' 44.229 N	103° 18' 32.807 W
8,880.0	2.93	310.88	8,839.9	-222.2	1,119.4	32° 4' 44.257 N	103° 18' 32.840 W
8,900.0	2.98	310.82	8,859.9	-221.5	1,118.6	32° 4' 44.264 N	103° 18' 32.849 W
8,961.0	3.15	310.66	8,920.8	-219.3	1,116.1	32° 4' 44.285 N	103° 18' 32.878 W
9,000.0	3.29	307.60	8,959.7	-218.0	1,114.4	32° 4' 44.299 N	103° 18' 32.897 W
9,068.0	3.56	302.88	9,027.6	-215.6	1,111.1	32° 4' 44.322 N	103° 18' 32.936 W

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 Wellbore: Final Survey
 Design: Final

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 TVD Reference: KB @ 3050.0usft
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 Survey Calculation Method: Minimum Curvature
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Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL-FNL (usft)	+FWL-FEL (usft)	Latitude	Longitude
9,100.0	3.82	299.17	9,059.5	-214.6	1,109.4	32° 4' 44.333 N	103° 18' 32.956 W
9,113.0	3.93	297.81	9,072.5	-214.2	1,108.6	32° 4' 44.337 N	103° 18' 32.965 W
9,176.0	4.26	293.57	9,135.3	-212.2	1,104.5	32° 4' 44.357 N	103° 18' 33.012 W
9,200.0	4.47	291.58	9,159.3	-211.5	1,102.8	32° 4' 44.364 N	103° 18' 33.031 W
9,271.0	5.10	286.64	9,230.0	-209.6	1,097.3	32° 4' 44.383 N	103° 18' 33.096 W
9,300.0	5.27	286.09	9,258.9	-208.8	1,094.7	32° 4' 44.391 N	103° 18' 33.125 W
9,349.0	5.55	285.24	9,307.7	-207.6	1,090.3	32° 4' 44.404 N	103° 18' 33.177 W
9,400.0	5.59	287.02	9,358.4	-206.2	1,085.5	32° 4' 44.418 N	103° 18' 33.232 W
9,443.0	5.62	288.50	9,401.2	-204.9	1,081.5	32° 4' 44.431 N	103° 18' 33.278 W
9,500.0	5.46	287.70	9,458.0	-203.2	1,076.3	32° 4' 44.448 N	103° 18' 33.339 W
9,538.0	5.36	287.14	9,495.8	-202.2	1,072.9	32° 4' 44.459 N	103° 18' 33.379 W
9,600.0	5.27	285.04	9,557.5	-200.6	1,067.4	32° 4' 44.475 N	103° 18' 33.443 W
9,633.0	5.22	283.90	9,590.4	-199.8	1,064.5	32° 4' 44.483 N	103° 18' 33.476 W
9,700.0	5.43	282.51	9,657.1	-198.4	1,058.4	32° 4' 44.498 N	103° 18' 33.547 W
9,727.0	5.51	281.98	9,684.0	-197.9	1,055.9	32° 4' 44.503 N	103° 18' 33.576 W
9,800.0	5.45	279.53	9,756.6	-196.6	1,049.0	32° 4' 44.517 N	103° 18' 33.655 W
9,821.0	5.44	278.81	9,777.5	-196.2	1,047.1	32° 4' 44.520 N	103° 18' 33.678 W
9,900.0	5.20	278.00	9,856.2	-195.2	1,039.8	32° 4' 44.531 N	103° 18' 33.762 W
9,916.0	5.15	277.83	9,872.1	-195.0	1,038.4	32° 4' 44.533 N	103° 18' 33.779 W
10,000.0	5.45	267.81	9,955.8	-194.6	1,030.7	32° 4' 44.538 N	103° 18' 33.868 W
10,011.0	5.50	266.59	9,966.7	-194.7	1,029.6	32° 4' 44.537 N	103° 18' 33.881 W
10,100.0	5.84	259.16	10,055.3	-195.8	1,020.9	32° 4' 44.527 N	103° 18' 33.982 W
10,105.0	5.86	258.77	10,060.3	-195.9	1,020.4	32° 4' 44.526 N	103° 18' 33.988 W
10,200.0	5.58	254.28	10,154.8	-198.1	1,011.2	32° 4' 44.505 N	103° 18' 34.095 W
10,220.0	5.53	253.28	10,174.7	-198.6	1,009.4	32° 4' 44.500 N	103° 18' 34.117 W
10,300.0	4.92	251.03	10,254.4	-200.8	1,002.4	32° 4' 44.479 N	103° 18' 34.197 W
10,314.0	4.81	250.58	10,268.3	-201.2	1,001.3	32° 4' 44.475 N	103° 18' 34.210 W
10,400.0	4.88	244.98	10,354.0	-204.0	994.6	32° 4' 44.449 N	103° 18' 34.289 W
10,409.0	4.89	244.40	10,363.0	-204.3	993.9	32° 4' 44.445 N	103° 18' 34.297 W
10,500.0	4.49	242.67	10,453.7	-207.6	987.2	32° 4' 44.413 N	103° 18' 34.375 W
10,503.0	4.48	242.61	10,456.7	-207.7	987.0	32° 4' 44.412 N	103° 18' 34.377 W
10,598.0	4.59	233.48	10,551.4	-211.7	980.7	32° 4' 44.374 N	103° 18' 34.451 W
10,600.0	4.58	233.57	10,553.4	-211.8	980.5	32° 4' 44.373 N	103° 18' 34.453 W
10,687.0	4.18	237.86	10,640.1	-215.5	975.1	32° 4' 44.336 N	103° 18' 34.517 W
10,700.0	4.27	240.55	10,653.1	-216.0	974.2	32° 4' 44.331 N	103° 18' 34.527 W
10,782.0	5.04	254.78	10,734.8	-218.5	968.1	32° 4' 44.308 N	103° 18' 34.598 W
10,800.0	5.24	257.24	10,752.7	-218.8	966.5	32° 4' 44.304 N	103° 18' 34.616 W
10,876.0	6.19	265.71	10,828.4	-219.9	959.1	32° 4' 44.294 N	103° 18' 34.703 W
10,900.0	5.77	266.26	10,852.2	-220.1	956.6	32° 4' 44.293 N	103° 18' 34.732 W
10,970.0	4.53	268.45	10,921.9	-220.4	950.3	32° 4' 44.290 N	103° 18' 34.805 W
11,000.0	3.75	266.93	10,951.9	-220.5	948.1	32° 4' 44.289 N	103° 18' 34.830 W
11,064.0	2.11	259.94	11,015.8	-220.8	944.9	32° 4' 44.287 N	103° 18' 34.868 W
11,100.0	1.74	255.89	11,051.8	-221.0	943.7	32° 4' 44.284 N	103° 18' 34.882 W
11,158.0	1.18	244.14	11,109.7	-221.5	942.3	32° 4' 44.280 N	103° 18' 34.898 W

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Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL-FNL (usft)	+FWL-FEL (usft)	Latitude	Longitude
11,200.0	0.93	237.16	11,151.7	-221.9	941.6	32° 4' 44.276 N	103° 18' 34.906 W
11,252.0	0.66	221.57	11,203.7	-222.4	941.1	32° 4' 44.272 N	103° 18' 34.913 W
11,278.0	0.75	219.62	11,229.7	-222.6	940.9	32° 4' 44.269 N	103° 18' 34.915 W
11,300.0	0.70	221.87	11,251.7	-222.8	940.7	32° 4' 44.267 N	103° 18' 34.917 W
11,400.0	0.51	236.99	11,351.7	-223.5	939.9	32° 4' 44.260 N	103° 18' 34.926 W
11,434.0	0.46	244.79	11,385.7	-223.6	939.7	32° 4' 44.259 N	103° 18' 34.929 W
11,466.0	4.59	17.49	11,417.7	-222.5	939.9	32° 4' 44.270 N	103° 18' 34.926 W
11,497.0	9.64	18.63	11,448.4	-218.8	941.1	32° 4' 44.306 N	103° 18' 34.912 W
11,500.0	10.14	18.50	11,451.4	-218.3	941.3	32° 4' 44.311 N	103° 18' 34.910 W
11,529.0	15.01	17.70	11,479.7	-212.3	943.2	32° 4' 44.370 N	103° 18' 34.886 W
11,600.0	21.48	11.62	11,547.1	-190.8	948.7	32° 4' 44.583 N	103° 18' 34.821 W
11,623.0	23.61	10.34	11,568.3	-182.2	950.3	32° 4' 44.668 N	103° 18' 34.801 W
11,700.0	31.53	10.26	11,636.5	-147.1	956.7	32° 4' 45.014 N	103° 18' 34.723 W
11,719.0	33.48	10.24	11,652.6	-137.1	958.5	32° 4' 45.114 N	103° 18' 34.701 W
11,800.0	40.22	7.58	11,717.3	-89.1	966.0	32° 4' 45.588 N	103° 18' 34.609 W
11,811.0	41.14	7.28	11,725.7	-82.0	966.9	32° 4' 45.658 N	103° 18' 34.597 W
11,900.0	49.66	3.79	11,788.1	-19.0	972.8	32° 4' 46.281 N	103° 18' 34.521 W
11,905.0	50.14	3.62	11,791.3	-15.2	973.1	32° 4' 46.318 N	103° 18' 34.518 W
11,998.0	62.06	3.15	11,843.1	61.7	977.6	32° 4' 47.079 N	103° 18' 34.457 W
12,000.0	62.24	3.11	11,844.1	63.5	977.7	32° 4' 47.097 N	103° 18' 34.455 W
12,040.9	66.01	2.32	11,861.9	100.2	979.5	32° 4' 47.460 N	103° 18' 34.431 W
Final Nan112 FTP							
12,091.0	70.64	1.41	11,880.4	146.8	981.0	32° 4' 47.920 N	103° 18' 34.408 W
12,100.0	71.49	1.45	11,883.3	155.3	981.2	32° 4' 48.004 N	103° 18' 34.405 W
12,185.0	79.52	1.84	11,904.6	237.5	983.5	32° 4' 48.818 N	103° 18' 34.368 W
12,200.0	81.00	1.71	11,907.1	252.3	984.0	32° 4' 48.964 N	103° 18' 34.362 W
12,279.0	88.82	1.06	11,914.1	330.9	985.9	32° 4' 49.741 N	103° 18' 34.331 W
12,300.0	88.72	0.80	11,914.6	351.9	986.2	32° 4' 49.949 N	103° 18' 34.325 W
12,375.0	88.36	359.86	11,916.5	426.8	986.7	32° 4' 50.691 N	103° 18' 34.311 W
12,400.0	88.76	359.86	11,917.1	451.8	986.6	32° 4' 50.938 N	103° 18' 34.309 W
12,470.0	89.88	359.86	11,917.9	521.8	986.4	32° 4' 51.631 N	103° 18' 34.303 W
12,500.0	90.05	0.42	11,918.0	551.8	986.5	32° 4' 51.927 N	103° 18' 34.299 W
12,565.0	90.42	1.63	11,917.7	616.8	987.7	32° 4' 52.570 N	103° 18' 34.279 W
12,600.0	89.72	1.81	11,917.6	651.8	988.7	32° 4' 52.916 N	103° 18' 34.263 W
12,660.0	88.52	2.11	11,918.6	711.7	990.8	32° 4' 53.509 N	103° 18' 34.232 W
12,700.0	87.96	1.96	11,919.8	751.7	992.2	32° 4' 53.905 N	103° 18' 34.211 W
12,755.0	87.18	1.76	11,922.1	806.6	994.0	32° 4' 54.448 N	103° 18' 34.184 W
12,800.0	87.84	2.20	11,924.1	851.5	995.5	32° 4' 54.892 N	103° 18' 34.161 W
12,849.0	88.56	2.67	11,925.6	900.5	997.6	32° 4' 55.376 N	103° 18' 34.132 W
12,900.0	89.07	2.52	11,926.7	951.4	999.9	32° 4' 55.880 N	103° 18' 34.099 W
12,945.0	89.52	2.38	11,927.2	996.4	1,001.8	32° 4' 56.325 N	103° 18' 34.072 W
13,000.0	89.35	2.19	11,927.8	1,051.3	1,004.0	32° 4' 56.868 N	103° 18' 34.041 W
13,040.0	89.22	2.06	11,928.3	1,091.3	1,005.5	32° 4' 57.264 N	103° 18' 34.019 W
13,100.0	88.16	1.42	11,929.6	1,151.2	1,007.3	32° 4' 57.857 N	103° 18' 33.991 W

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MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
13,136.0	87.52	1.04	11,931.0	1,187.2	1,008.1	32° 4' 58.213 N	103° 18' 33.978 W
13,200.0	88.42	1.17	11,933.3	1,251.2	1,009.3	32° 4' 58.845 N	103° 18' 33.957 W
13,231.0	88.86	1.23	11,934.0	1,282.1	1,010.0	32° 4' 59.152 N	103° 18' 33.946 W
13,300.0	89.64	1.06	11,934.9	1,351.1	1,011.4	32° 4' 59.834 N	103° 18' 33.922 W
13,326.0	89.94	1.00	11,935.0	1,377.1	1,011.8	32° 5' 0.091 N	103° 18' 33.914 W
13,400.0	90.55	1.10	11,934.7	1,451.1	1,013.2	32° 5' 0.823 N	103° 18' 33.890 W
13,421.0	90.72	1.13	11,934.5	1,472.1	1,013.6	32° 5' 1.031 N	103° 18' 33.883 W
13,500.0	89.26	359.99	11,934.5	1,551.1	1,014.4	32° 5' 1.812 N	103° 18' 33.865 W
13,517.0	88.95	359.74	11,934.7	1,568.1	1,014.3	32° 5' 1.981 N	103° 18' 33.864 W
13,600.0	88.02	358.69	11,936.9	1,651.1	1,013.2	32° 5' 2.802 N	103° 18' 33.868 W
13,613.0	87.87	358.53	11,937.4	1,664.0	1,012.9	32° 5' 2.930 N	103° 18' 33.870 W
13,700.0	87.84	357.78	11,940.6	1,750.9	1,010.1	32° 5' 3.790 N	103° 18' 33.893 W
13,708.0	87.84	357.71	11,941.0	1,758.9	1,009.8	32° 5' 3.869 N	103° 18' 33.896 W
13,800.0	87.81	358.65	11,944.4	1,850.8	1,006.9	32° 5' 4.779 N	103° 18' 33.920 W
13,804.0	87.81	358.69	11,944.6	1,854.8	1,006.8	32° 5' 4.818 N	103° 18' 33.920 W
13,899.0	86.65	0.48	11,949.2	1,949.7	1,006.1	32° 5' 5.757 N	103° 18' 33.918 W
13,900.0	86.67	0.47	11,949.2	1,950.7	1,006.1	32° 5' 5.767 N	103° 18' 33.918 W
13,995.0	88.92	359.95	11,952.9	2,045.6	1,006.4	32° 5' 6.706 N	103° 18' 33.903 W
14,000.0	89.01	359.96	11,953.0	2,050.6	1,006.4	32° 5' 6.756 N	103° 18' 33.902 W
14,090.0	90.62	0.10	11,953.3	2,140.6	1,006.5	32° 5' 7.646 N	103° 18' 33.892 W
14,100.0	90.59	0.10	11,953.2	2,150.6	1,006.5	32° 5' 7.745 N	103° 18' 33.891 W
14,186.0	90.35	0.07	11,952.5	2,236.6	1,006.6	32° 5' 8.596 N	103° 18' 33.880 W
14,200.0	90.51	0.14	11,952.4	2,250.6	1,006.6	32° 5' 8.735 N	103° 18' 33.878 W
14,281.0	91.41	0.54	11,951.0	2,331.6	1,007.1	32° 5' 9.536 N	103° 18' 33.863 W
14,300.0	91.24	0.38	11,950.6	2,350.6	1,007.3	32° 5' 9.724 N	103° 18' 33.860 W
14,377.0	90.54	359.71	11,949.4	2,427.6	1,007.3	32° 5' 10.486 N	103° 18' 33.850 W
14,400.0	89.68	359.61	11,949.3	2,450.6	1,007.2	32° 5' 10.713 N	103° 18' 33.849 W
14,472.0	86.99	359.29	11,951.4	2,522.5	1,006.5	32° 5' 11.425 N	103° 18' 33.850 W
14,500.0	87.30	359.14	11,952.8	2,550.5	1,006.1	32° 5' 11.702 N	103° 18' 33.851 W
14,567.0	88.04	358.78	11,955.5	2,617.4	1,004.9	32° 5' 12.364 N	103° 18' 33.858 W
14,600.0	88.51	358.51	11,956.5	2,650.4	1,004.1	32° 5' 12.691 N	103° 18' 33.863 W
14,662.0	89.39	358.01	11,957.7	2,712.4	1,002.2	32° 5' 13.304 N	103° 18' 33.878 W
14,700.0	87.98	357.31	11,958.5	2,750.3	1,000.7	32° 5' 13.680 N	103° 18' 33.892 W
14,758.0	85.83	356.24	11,961.7	2,808.1	997.4	32° 5' 14.252 N	103° 18' 33.923 W
14,800.0	85.64	355.57	11,964.8	2,849.9	994.4	32° 5' 14.666 N	103° 18' 33.954 W
14,853.0	85.40	354.73	11,968.9	2,902.6	990.0	32° 5' 15.187 N	103° 18' 34.000 W
14,900.0	86.58	356.19	11,972.2	2,949.3	986.3	32° 5' 15.650 N	103° 18' 34.038 W
14,949.0	87.82	357.70	11,974.6	2,998.2	983.7	32° 5' 16.134 N	103° 18' 34.063 W
15,000.0	85.89	357.91	11,977.4	3,049.1	981.7	32° 5' 16.637 N	103° 18' 34.080 W
15,044.0	84.22	358.09	11,981.2	3,092.9	980.2	32° 5' 17.071 N	103° 18' 34.093 W
15,100.0	85.94	359.46	11,986.0	3,148.6	979.0	32° 5' 17.623 N	103° 18' 34.100 W
15,162.0	87.85	0.97	11,989.4	3,210.5	979.2	32° 5' 18.235 N	103° 18' 34.091 W
15,200.0	87.69	1.15	11,990.8	3,248.5	979.9	32° 5' 18.611 N	103° 18' 34.078 W
15,257.0	87.46	1.42	11,993.3	3,305.4	981.2	32° 5' 19.174 N	103° 18' 34.057 W
15,300.0	87.42	0.99	11,995.2	3,348.4	982.1	32° 5' 19.599 N	103° 18' 34.042 W

Company: Ameredev Operating, LLC.
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 Wellbore: Final Survey
 Design: Final

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 TVD Reference: KB @ 3050.0usft
 MD Reference: KB @ 3050.0usft
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
15,352.0	87.37	0.48	11,997.5	3,400.3	982.8	32° 5' 20.113 N	103° 18' 34.028 W
15,400.0	86.63	0.14	12,000.1	3,448.3	983.0	32° 5' 20.587 N	103° 18' 34.020 W
15,447.0	85.90	359.80	12,003.1	3,495.2	983.0	32° 5' 21.051 N	103° 18' 34.015 W
15,500.0	86.32	359.29	12,006.7	3,548.0	982.6	32° 5' 21.575 N	103° 18' 34.014 W
15,542.0	86.66	358.89	12,009.3	3,590.0	981.9	32° 5' 21.989 N	103° 18' 34.017 W
15,600.0	86.93	358.43	12,012.5	3,647.8	980.6	32° 5' 22.562 N	103° 18' 34.027 W
15,638.0	87.11	358.13	12,014.5	3,685.8	979.4	32° 5' 22.938 N	103° 18' 34.036 W
15,700.0	89.22	358.12	12,016.5	3,747.7	977.4	32° 5' 23.551 N	103° 18' 34.053 W
15,733.0	90.35	358.11	12,016.6	3,780.7	976.3	32° 5' 23.877 N	103° 18' 34.062 W
15,800.0	90.94	359.39	12,015.8	3,847.7	974.8	32° 5' 24.540 N	103° 18' 34.071 W
15,829.0	91.20	359.94	12,015.3	3,876.7	974.7	32° 5' 24.827 N	103° 18' 34.070 W
15,900.0	90.59	0.87	12,014.2	3,947.7	975.2	32° 5' 25.529 N	103° 18' 34.056 W
15,924.0	90.38	1.19	12,014.0	3,971.6	975.6	32° 5' 25.767 N	103° 18' 34.049 W
16,000.0	91.05	1.68	12,013.0	4,047.6	977.5	32° 5' 26.518 N	103° 18' 34.018 W
16,020.0	91.22	1.81	12,012.7	4,067.6	978.1	32° 5' 26.716 N	103° 18' 34.009 W
16,100.0	90.56	1.78	12,011.4	4,147.6	980.6	32° 5' 27.507 N	103° 18' 33.971 W
16,115.0	90.44	1.77	12,011.3	4,162.5	981.1	32° 5' 27.655 N	103° 18' 33.964 W
16,200.0	91.84	2.42	12,009.6	4,247.5	984.2	32° 5' 28.495 N	103° 18' 33.918 W
16,210.0	92.01	2.50	12,009.2	4,257.5	984.6	32° 5' 28.594 N	103° 18' 33.912 W
16,300.0	91.94	1.22	12,006.1	4,347.4	987.6	32° 5' 29.483 N	103° 18' 33.868 W
16,305.0	91.94	1.15	12,006.0	4,352.3	987.7	32° 5' 29.532 N	103° 18' 33.867 W
16,399.0	89.60	359.39	12,004.7	4,446.3	988.1	32° 5' 30.462 N	103° 18' 33.851 W
16,400.0	89.58	359.38	12,004.7	4,447.3	988.1	32° 5' 30.472 N	103° 18' 33.851 W
16,494.0	88.05	358.23	12,006.7	4,541.3	986.1	32° 5' 31.402 N	103° 18' 33.864 W
16,500.0	88.04	358.24	12,006.9	4,547.3	985.9	32° 5' 31.461 N	103° 18' 33.865 W
16,589.0	87.92	358.39	12,010.0	4,636.2	983.3	32° 5' 32.341 N	103° 18' 33.886 W
16,600.0	88.01	358.37	12,010.4	4,647.2	983.0	32° 5' 32.450 N	103° 18' 33.888 W
16,684.0	88.72	358.18	12,012.8	4,731.1	980.5	32° 5' 33.281 N	103° 18' 33.908 W
16,700.0	88.65	358.16	12,013.1	4,747.1	980.0	32° 5' 33.439 N	103° 18' 33.912 W
16,779.0	88.29	358.06	12,015.3	4,826.0	977.4	32° 5' 34.220 N	103° 18' 33.934 W
16,800.0	88.50	358.16	12,015.8	4,847.0	976.7	32° 5' 34.428 N	103° 18' 33.940 W
16,874.0	89.25	358.52	12,017.3	4,920.9	974.5	32° 5' 35.160 N	103° 18' 33.956 W
16,900.0	88.91	358.55	12,017.7	4,946.9	973.9	32° 5' 35.417 N	103° 18' 33.961 W
16,969.0	88.01	358.64	12,019.6	5,015.9	972.2	32° 5' 36.100 N	103° 18' 33.973 W
17,000.0	87.75	358.38	12,020.7	5,046.9	971.4	32° 5' 36.406 N	103° 18' 33.979 W
17,064.0	87.20	357.83	12,023.5	5,110.8	969.3	32° 5' 37.038 N	103° 18' 33.997 W
17,100.0	87.49	358.27	12,025.2	5,146.7	968.0	32° 5' 37.394 N	103° 18' 34.007 W
17,159.0	87.96	359.00	12,027.5	5,205.6	966.6	32° 5' 37.978 N	103° 18' 34.017 W
17,200.0	88.69	359.53	12,028.7	5,246.6	966.1	32° 5' 38.383 N	103° 18' 34.018 W
17,254.0	89.65	0.23	12,029.5	5,300.6	966.0	32° 5' 38.917 N	103° 18' 34.014 W
17,300.0	90.66	359.75	12,029.4	5,346.6	966.0	32° 5' 39.372 N	103° 18' 34.009 W
17,353.0	91.83	359.19	12,028.3	5,399.6	965.5	32° 5' 39.897 N	103° 18' 34.009 W
17,400.0	92.12	359.66	12,026.6	5,446.6	965.0	32° 5' 40.362 N	103° 18' 34.009 W
17,446.0	92.40	0.12	12,024.8	5,492.5	964.9	32° 5' 40.816 N	103° 18' 34.005 W

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 MD Reference: KB @ 3050.0usft
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 Survey Calculation Method: Minimum Curvature
 Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
17,500.0	92.65	2.09	12,022.4	5,546.5	966.0	32° 5' 41.350 N	103° 18' 33.987 W
17,540.0	92.84	3.55	12,020.5	5,586.4	967.9	32° 5' 41.745 N	103° 18' 33.960 W
17,600.0	92.60	3.89	12,017.7	5,646.2	971.8	32° 5' 42.336 N	103° 18' 33.908 W
17,634.0	92.46	4.09	12,016.2	5,680.1	974.2	32° 5' 42.671 N	103° 18' 33.877 W
17,700.0	92.48	4.40	12,013.3	5,745.8	979.1	32° 5' 43.321 N	103° 18' 33.813 W
17,731.0	92.49	4.54	12,012.0	5,776.7	981.5	32° 5' 43.627 N	103° 18' 33.781 W
17,800.0	92.53	4.49	12,009.0	5,845.4	986.9	32° 5' 44.306 N	103° 18' 33.710 W
17,826.0	92.55	4.47	12,007.8	5,871.3	988.9	32° 5' 44.562 N	103° 18' 33.684 W
17,900.0	92.90	3.96	12,004.3	5,945.0	994.4	32° 5' 45.291 N	103° 18' 33.613 W
17,921.0	93.00	3.82	12,003.2	5,965.9	995.8	32° 5' 45.498 N	103° 18' 33.594 W
18,000.0	92.74	2.33	11,999.3	6,044.7	1,000.0	32° 5' 46.277 N	103° 18' 33.536 W
18,017.0	92.68	2.01	11,998.5	6,061.7	1,000.7	32° 5' 46.445 N	103° 18' 33.527 W
18,100.0	93.05	0.61	11,994.3	6,144.6	1,002.6	32° 5' 47.265 N	103° 18' 33.495 W
18,111.0	93.10	0.43	11,993.7	6,155.6	1,002.7	32° 5' 47.373 N	103° 18' 33.493 W
18,200.0	91.86	358.97	11,989.9	6,244.5	1,002.2	32° 5' 48.253 N	103° 18' 33.489 W
18,206.0	91.78	358.87	11,989.7	6,250.5	1,002.1	32° 5' 48.312 N	103° 18' 33.489 W
18,300.0	90.45	358.08	11,987.8	6,344.4	999.6	32° 5' 49.242 N	103° 18' 33.508 W
18,301.0	90.44	358.07	11,987.8	6,345.4	999.6	32° 5' 49.252 N	103° 18' 33.508 W
18,397.0	90.25	359.09	11,987.3	6,441.4	997.2	32° 5' 50.202 N	103° 18' 33.525 W
18,400.0	90.18	359.07	11,987.2	6,444.4	997.1	32° 5' 50.232 N	103° 18' 33.526 W
18,492.0	88.03	358.51	11,988.7	6,536.3	995.2	32° 5' 51.142 N	103° 18' 33.538 W
18,500.0	87.98	358.52	11,989.0	6,544.3	995.0	32° 5' 51.221 N	103° 18' 33.540 W
18,586.0	87.46	358.65	11,992.4	6,630.2	992.9	32° 5' 52.071 N	103° 18' 33.555 W
18,600.0	87.53	358.70	11,993.0	6,644.2	992.5	32° 5' 52.209 N	103° 18' 33.557 W
18,682.0	87.94	358.96	11,996.2	6,726.1	990.9	32° 5' 53.020 N	103° 18' 33.567 W
18,700.0	87.92	358.87	11,996.9	6,744.1	990.5	32° 5' 53.198 N	103° 18' 33.569 W
18,777.0	87.81	358.47	11,999.8	6,821.0	988.7	32° 5' 53.959 N	103° 18' 33.582 W
18,800.0	87.79	358.58	12,000.6	6,844.0	988.1	32° 5' 54.187 N	103° 18' 33.586 W
18,872.0	87.74	358.91	12,003.4	6,916.0	986.6	32° 5' 54.899 N	103° 18' 33.596 W
18,900.0	87.83	358.83	12,004.5	6,943.9	986.0	32° 5' 55.175 N	103° 18' 33.600 W
18,967.0	88.05	358.63	12,006.9	7,010.9	984.5	32° 5' 55.838 N	103° 18' 33.610 W
19,000.0	87.88	358.19	12,008.1	7,043.8	983.6	32° 5' 56.164 N	103° 18' 33.617 W
19,061.0	87.58	357.37	12,010.5	7,104.7	981.2	32° 5' 56.767 N	103° 18' 33.637 W
19,100.0	87.60	357.44	12,012.2	7,143.7	979.5	32° 5' 57.152 N	103° 18' 33.654 W
19,156.0	87.62	357.54	12,014.5	7,199.6	977.0	32° 5' 57.706 N	103° 18' 33.676 W
19,200.0	87.66	357.70	12,016.3	7,243.5	975.2	32° 5' 58.141 N	103° 18' 33.692 W
19,250.0	87.71	357.88	12,018.3	7,293.4	973.3	32° 5' 58.635 N	103° 18' 33.709 W
19,300.0	87.76	358.17	12,020.3	7,343.3	971.6	32° 5' 59.129 N	103° 18' 33.724 W
19,344.0	87.80	358.43	12,022.0	7,387.3	970.3	32° 5' 59.564 N	103° 18' 33.734 W
19,400.0	87.97	358.45	12,024.1	7,443.2	968.7	32° 6' 0.118 N	103° 18' 33.745 W
19,438.0	88.08	358.47	12,025.4	7,481.2	967.7	32° 6' 0.493 N	103° 18' 33.753 W
19,500.0	87.62	358.15	12,027.7	7,543.1	965.9	32° 6' 1.106 N	103° 18' 33.767 W
19,531.0	87.39	357.99	12,029.1	7,574.1	964.8	32° 6' 1.413 N	103° 18' 33.776 W
19,600.0	88.12	358.34	12,031.8	7,643.0	962.6	32° 6' 2.095 N	103° 18' 33.794 W

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 Survey Calculation Method: Minimum Curvature
 Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL-FNL (usft)	+FWL-FEL (usft)	Latitude	Longitude
19,625.0	88.38	358.46	12,032.5	7,668.0	961.9	32° 6' 2.342 N	103° 18' 33.800 W
19,700.0	88.70	358.62	12,034.4	7,742.9	960.0	32° 6' 3.084 N	103° 18' 33.814 W
19,719.0	88.78	358.66	12,034.9	7,761.9	959.6	32° 6' 3.272 N	103° 18' 33.817 W
19,800.0	89.33	358.56	12,036.2	7,842.9	957.6	32° 6' 4.073 N	103° 18' 33.831 W
19,812.0	89.41	358.54	12,036.3	7,854.9	957.3	32° 6' 4.192 N	103° 18' 33.833 W
19,837.0	87.04	0.00	12,037.1	7,879.8	957.0	32° 6' 4.439 N	103° 18' 33.834 W
19,868.0	85.75	1.45	12,039.0	7,910.8	957.4	32° 6' 4.745 N	103° 18' 33.826 W
19,900.0	85.45	1.72	12,041.5	7,942.7	958.3	32° 6' 5.060 N	103° 18' 33.812 W
19,932.0	85.16	1.99	12,044.1	7,974.6	959.3	32° 6' 5.376 N	103° 18' 33.797 W
20,000.0	86.66	2.42	12,049.0	8,042.3	961.9	32° 6' 6.046 N	103° 18' 33.759 W
20,026.0	87.23	2.58	12,050.4	8,068.3	963.0	32° 6' 6.303 N	103° 18' 33.743 W
20,100.0	89.66	2.54	12,052.4	8,142.2	966.3	32° 6' 7.033 N	103° 18' 33.696 W
20,119.0	90.29	2.53	12,052.4	8,161.1	967.2	32° 6' 7.221 N	103° 18' 33.684 W
20,200.0	93.04	0.96	12,050.0	8,242.1	969.6	32° 6' 8.022 N	103° 18' 33.647 W
20,214.0	93.52	0.69	12,049.2	8,256.0	969.8	32° 6' 8.160 N	103° 18' 33.643 W
20,300.0	97.53	359.17	12,040.9	8,341.6	969.7	32° 6' 9.007 N	103° 18' 33.634 W
20,309.0	97.95	359.01	12,039.7	8,350.5	969.6	32° 6' 9.095 N	103° 18' 33.635 W
20,400.0	100.09	358.47	12,025.5	8,440.4	967.6	32° 6' 9.984 N	103° 18' 33.648 W
20,404.0	100.18	358.45	12,024.8	8,444.3	967.5	32° 6' 10.023 N	103° 18' 33.649 W
20,500.0	99.32	357.57	12,008.5	8,538.9	964.2	32° 6' 10.959 N	103° 18' 33.677 W
20,596.0	96.68	357.77	11,995.1	8,633.8	960.4	32° 6' 11.899 N	103° 18' 33.711 W
20,600.0	96.54	357.73	11,994.7	8,637.8	960.2	32° 6' 11.938 N	103° 18' 33.713 W
20,690.0	93.29	356.75	11,987.0	8,727.4	955.9	32° 6' 12.825 N	103° 18' 33.753 W
20,700.0	92.32	356.42	11,986.5	8,737.3	955.3	32° 6' 12.924 N	103° 18' 33.759 W
20,740.0	88.43	355.11	11,986.2	8,777.2	952.3	32° 6' 13.318 N	103° 18' 33.789 W
20,783.0	87.79	355.96	11,987.6	8,820.1	949.0	32° 6' 13.743 N	103° 18' 33.823 W
20,800.0	87.92	355.23	11,988.3	8,837.0	947.7	32° 6' 13.910 N	103° 18' 33.836 W
20,878.0	88.53	351.87	11,990.7	8,914.5	938.9	32° 6' 14.678 N	103° 18' 33.929 W
20,900.0	88.55	350.87	11,991.2	8,936.2	935.6	32° 6' 14.893 N	103° 18' 33.965 W
20,972.0	88.61	347.59	11,993.0	9,006.9	922.2	32° 6' 15.594 N	103° 18' 34.114 W
21,000.0	88.91	345.83	11,993.6	9,034.1	915.8	32° 6' 15.864 N	103° 18' 34.186 W
21,067.0	89.63	341.62	11,994.5	9,098.4	897.0	32° 6' 16.502 N	103° 18' 34.397 W
21,100.0	87.86	338.77	11,995.2	9,129.5	885.8	32° 6' 16.810 N	103° 18' 34.523 W
21,108.0	87.43	338.08	11,995.5	9,136.9	882.9	32° 6' 16.884 N	103° 18' 34.557 W
21,140.0	87.80	337.46	11,996.9	9,166.5	870.8	32° 6' 17.178 N	103° 18' 34.694 W
21,171.0	88.49	337.96	11,997.9	9,195.2	859.0	32° 6' 17.463 N	103° 18' 34.827 W
21,200.0	89.43	339.10	11,998.4	9,222.2	848.4	32° 6' 17.731 N	103° 18' 34.948 W
21,203.0	89.53	339.22	11,998.4	9,225.0	847.3	32° 6' 17.759 N	103° 18' 34.960 W
21,235.0	89.45	340.43	11,998.7	9,255.0	836.3	32° 6' 18.057 N	103° 18' 35.085 W
21,300.0	91.97	342.71	11,997.9	9,316.6	815.8	32° 6' 18.669 N	103° 18' 35.317 W
21,304.0	92.12	342.85	11,997.8	9,320.5	814.6	32° 6' 18.707 N	103° 18' 35.330 W
21,335.0	90.11	343.23	11,997.2	9,350.1	805.5	32° 6' 19.001 N	103° 18' 35.432 W
21,367.0	86.76	342.67	11,998.0	9,380.7	796.2	32° 6' 19.304 N	103° 18' 35.538 W
21,399.0	86.61	342.65	11,999.9	9,411.2	786.6	32° 6' 19.607 N	103° 18' 35.645 W

Company: Ameredev Operating, LLC.
Project: NAN/GB
Site: NAN/GB #2N
Well: Nandina 112H
Wellbore: Final Survey
Design: Final

Local Co-ordinate Reference: Well Nandina 112H
TVD Reference: KB @ 3050.0usft
MD Reference: KB @ 3050.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5000

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	+FSL/-FNL (usft)	+FWL/-FEL (usft)	Latitude	Longitude
21,400.0	86.63	342.67	12,000.0	9,412.1	786.3	32° 6' 19.616 N	103° 18' 35.648 W
21,430.0	87.37	343.31	12,001.5	9,440.8	777.6	32° 6' 19.901 N	103° 18' 35.747 W
21,462.0	86.77	343.28	12,003.2	9,471.4	768.4	32° 6' 20.204 N	103° 18' 35.850 W
21,500.0	86.69	343.21	12,005.3	9,507.7	757.5	32° 6' 20.565 N	103° 18' 35.974 W
21,525.0	86.63	343.17	12,006.8	9,531.6	750.2	32° 6' 20.802 N	103° 18' 36.055 W
21,600.0	87.50	343.08	12,010.6	9,603.3	728.5	32° 6' 21.513 N	103° 18' 36.300 W
21,620.0	87.73	343.05	12,011.5	9,622.4	722.7	32° 6' 21.703 N	103° 18' 36.365 W
21,700.0	89.17	343.43	12,013.6	9,699.0	699.6	32° 6' 22.463 N	103° 18' 36.625 W
21,715.0	89.44	343.50	12,013.8	9,713.4	695.3	32° 6' 22.605 N	103° 18' 36.673 W
21,800.0	89.19	344.12	12,014.8	9,795.0	671.6	32° 6' 23.415 N	103° 18' 36.939 W
21,810.0	89.16	344.19	12,015.0	9,804.6	668.9	32° 6' 23.511 N	103° 18' 36.970 W
21,900.0	89.69	343.35	12,015.9	9,891.0	643.8	32° 6' 24.368 N	103° 18' 37.253 W
21,906.0	89.73	343.29	12,015.9	9,896.7	642.0	32° 6' 24.425 N	103° 18' 37.272 W
22,000.0	90.18	343.86	12,016.0	9,986.9	615.5	32° 6' 25.320 N	103° 18' 37.571 W
22,001.0	90.18	343.87	12,016.0	9,987.9	615.2	32° 6' 25.329 N	103° 18' 37.575 W
22,097.0	90.17	344.12	12,015.7	10,080.2	588.7	32° 6' 26.245 N	103° 18' 37.872 W
22,100.0	90.19	344.13	12,015.7	10,083.0	587.9	32° 6' 26.273 N	103° 18' 37.881 W
22,192.0	90.73	344.58	12,014.9	10,171.6	563.1	32° 6' 27.152 N	103° 18' 38.160 W
22,200.0	90.73	344.55	12,014.8	10,179.3	561.0	32° 6' 27.229 N	103° 18' 38.184 W
22,287.0	90.78	344.23	12,013.7	10,263.1	537.5	32° 6' 28.060 N	103° 18' 38.447 W
22,300.0	90.73	344.20	12,013.5	10,275.6	534.0	32° 6' 28.184 N	103° 18' 38.486 W
22,382.0	90.40	344.04	12,012.7	10,354.5	511.6	32° 6' 28.967 N	103° 18' 38.738 W
22,400.0	90.03	343.78	12,012.6	10,371.8	506.6	32° 6' 29.138 N	103° 18' 38.795 W
22,433.0	89.34	343.29	12,012.8	10,403.4	497.2	32° 6' 29.452 N	103° 18' 38.900 W
22,490.9	89.34	343.29	12,013.5	10,458.9	480.6	32° 6' 30.003 N	103° 18' 39.087 W
Final Nan112 LTP							
22,500.0	89.34	343.29	12,013.6	10,467.6	478.0	32° 6' 30.089 N	103° 18' 39.117 W
22,510.0	89.34	343.29	12,013.7	10,477.2	475.1	32° 6' 30.184 N	103° 18' 39.149 W
Final Nan112 BHL							

Checked By: _____ Approved By: _____ Date: _____