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MAR 21 2018
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30-025-43135

ALTITUDE ENERGY PARTNERS

State of New Mexico

I, Ryan Nelson, an authorized employee of Altitude Energy Partners, Inc., have verified the Measurement While Drilling surveys performed on 11-25-2017 through 12-16-2017, from 1,708 ft. to a depth 16,500 ft. I certify that the data is true, correct, complete and within the limitations of the tool as set forth by Altitude Energy Partners, Inc. This survey was conducted at the request of Centennial Resource Development, Inc. for the Crazy Wolf 1/2 B2MM Federal Com 1H well in Lea County, State of New Mexico.

Sincerely,

Ryan Nelson
Operations Coordinator

CENTENNIAL
RESOURCE DEVELOPMENT LLC

Survey Report

11/28/2017 15:00:00 AM

Service Company:	Altitude Energy Partners	**Location:**	Lea County
Well:	Crazy Wolf 1/2 B2MM Federal Com 1H	**Rig:**	H & P 650
API or UWI:		**Job Number:**	AEP-1775
State:	New Mexico	**Operating Company:**	Centennial Resource Development LLC
County:	Lea County	**Magnetic Declination:**	7.85
Country:	United States	**Proposed Azimuth:**	270.16
Comment:		**North Reference:**	TRUE
		Latitude:	32° 40' 58.877N
		Longitude:	103° 43' 27.017W

Tie-In Data

MD	Inclination	Azimuth	TVD	NS	EW
1451.00	1.50	166.00	1450.67	-20.38	-0.79

Survey Data

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS	TEMP
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
154.75	0.20	210.70	134.75	-0.20	-0.12	210.70	0.24	0.12	0.15	
273.39	0.40	258.10	253.39	-0.47	-0.63	233.57	0.78	0.63	0.26	
350.48	0.50	271.60	330.48	-0.51	-1.23	247.42	1.33	1.23	0.19	
440.17	0.30	237.80	420.16	-0.63	-1.82	251.02	1.93	1.82	0.34	
529.83	0.40	226.70	509.82	-0.97	-2.25	246.74	2.45	2.24	0.13	
619.54	0.40	241.70	599.53	-1.33	-2.75	244.21	3.05	2.75	0.12	
709.20	0.10	160.30	689.19	-1.55	-3.00	242.66	3.38	3.00	0.44	
798.85	0.40	190.40	778.84	-1.93	-3.03	237.47	3.59	3.02	0.35	
868.48	0.50	198.90	868.47	-2.61	-3.21	230.91	4.14	3.21	0.13	

979.45	1.10	191.50	979.43	-3.87	-3.53	222.39	5.24	3.52	0.67	
1069.00	1.90	188.30	1048.94	-6.15	-3.90	212.38	7.29	3.88	0.90	
1113.76	2.20	176.20	1093.68	-7.74	-3.95	207.03	8.69	3.93	1.17	
1158.46	2.40	167.50	1138.34	-9.51	-3.69	201.21	10.21	3.67	0.90	
1203.23	2.70	164.30	1183.07	-11.44	-3.20	195.64	11.88	3.17	0.74	
1248.46	2.70	171.30	1228.25	-13.52	-2.75	191.51	13.80	2.72	0.73	
1293.26	2.20	164.70	1273.00	-15.40	-2.37	188.74	15.58	2.32	1.28	
1338.02	1.80	167.80	78.84	-16.91	-1.99	186.72	17.03	1.95	0.93	
1382.83	1.60	157.80	1362.53	-18.18	-1.61	185.05	18.25	1.56	0.80	
1427.65	1.50	157.60	1407.33	-19.30	-1.15	183.40	19.33	1.09	0.22	
1471.00	1.50	166.00	1450.67	-20.38	-0.79	182.23	20.39	0.74	0.51	Tie-In
1614.00	1.20	180.88	1613.62	-24.15	-0.30	180.72	24.15	0.24	0.28	86.6℉
1708.00	1.44	121.54	1707.60	-25.75	0.69	178.47	25.76	-0.76	1.41	93.6℉
1802.00	2.27	101.27	1801.55	-26.74	3.52	172.50	26.97	-3.59	1.11	93.6℉
1897.00	2.66	91.80	1896.46	-27.17	7.57	164.44	28.21	-7.64	0.59	93.8℉
1991.00	3.87	77.93	1990.31	-26.58	12.85	154.20	29.52	-12.92	1.53	97.4℉
2086.00	5.00	75.30	2085.02	-24.86	19.99	141.19	31.90	-20.06	1.21	97.4℉
2180.00	6.10	80.17	2178.58	-22.96	28.87	128.50	36.89	-28.94	1.27	97.4℉
2274.00	7.24	82.69	2271.95	-21.36	39.67	118.30	45.05	-39.73	1.25	101℉
2368.00	7.75	83.27	2365.14	-19.86	51.84	110.96	55.51	-51.90	0.55	97.4℉
2462.00	7.74	83.09	2458.28	-18.36	64.42	105.91	66.98	-64.47	0.03	97.4℉
2557.00	7.60	83.93	2552.43	-16.92	77.02	102.39	78.85	-77.06	0.19	101℉
2651.00	7.54	82.06	2645.62	-15.41	89.31	99.79	90.63	-89.35	0.27	97.4℉
2745.00	7.41	80.91	2738.82	-13.60	101.40	97.64	102.31	-101.44	0.21	101℉
2839.00	7.43	80.90	2832.03	-11.69	113.39	95.88	113.99	-113.42	0.02	101℉
2934.00	7.36	80.28	2926.24	-9.69	125.45	94.42	125.82	-125.47	0.11	104.6℉
3028.00	7.07	79.73	3019.50	-7.21	137.00	93.01	137.19	-137.02	0.32	104.6℉
3122.00	6.63	79.58	3112.83	-5.19	148.03	92.01	148.12	-148.04	0.47	108.3℉
3216.00	6.04	78.84	3206.25	-3.25	158.22	91.18	158.25	-158.22	0.63	108.3℉
3311.00	6.23	81.58	3300.71	-1.53	168.22	90.52	168.23	-168.22	0.37	111.9℉
3405.00	6.86	89.23	3394.10	-0.71	178.88	90.23	178.88	-178.88	1.14	108.3℉
3499.00	7.17	93.56	3487.40	-1.00	190.35	90.30	190.35	-190.35	0.65	108.3℉
3593.00	6.72	92.90	3580.71	-1.64	201.69	90.47	201.70	-201.70	0.49	108.3℉
3688.00	6.38	92.73	3675.09	-2.17	212.52	90.59	212.53	-212.52	0.36	104.6℉

3782.00	6.56	91.97	3768.49	-2.61	223.10	90.67	223.12	-223.11	0.21	108.3℉
3876.00	7.23	89.68	3861.81	-2.76	234.38	90.67	234.40	-234.39	0.77	108.3℉
3970.00	7.46	91.12	3955.04	-2.84	246.40	90.66	246.41	-246.40	0.31	108.3℉
4064.00	7.17	91.39	4048.27	-3.11	258.36	90.69	258.38	-258.37	0.31	108.3℉
4159.00	6.68	90.90	4142.58	-3.34	269.81	90.71	269.84	-269.82	0.52	108.3℉
4253.00	6.26	93.67	4235.98	-3.75	280.40	90.77	280.42	-280.41	0.56	108.3℉
4347.00	6.62	91.53	4329.39	-4.22	290.93	90.83	290.96	-290.94	0.46	108.3℉
4441.00	6.73	92.33	4422.75	-4.59	301.85	90.87	301.88	-301.86	0.15	108.3℉
4536.00	7.43	91.71	4517.02	-5.00	313.55	90.91	313.59	-313.56	0.74	108.3℉
4630.00	7.74	88.94	4610.20	-5.07	325.95	90.89	325.99	-325.96	0.51	111.9℉
4724.00	7.27	90.86	4703.40	-5.04	338.23	90.85	338.27	-338.24	0.57	108.3℉
4818.00	7.11	92.72	4796.66	-5.40	349.99	90.88	350.03	-350.00	0.30	108.3℉
4913.00	6.67	92.55	4890.97	-5.93	361.37	90.94	361.42	-361.39	0.46	108.3℉
5008.00	6.24	95.01	4985.37	-6.62	372.03	91.02	372.08	-372.04	0.54	108.3℉
5102.00	6.17	92.96	5078.82	-7.33	382.16	91.10	382.23	-382.18	0.25	111.9℉
5193.00	5.75	95.14	5169.33	-7.99	391.58	91.17	391.66	-391.60	0.52	111.9℉
5288.00	6.84	92.61	5263.75	-8.68	401.97	91.24	402.07	-402.00	1.18	111.9℉
5382.00	7.49	92.33	5357.02	-9.18	413.69	91.27	413.79	-413.71	0.69	111.9℉
5476.00	7.52	93.13	5450.21	-9.77	425.95	91.31	426.06	-425.98	0.12	111.9℉
5571.00	7.69	92.12	5544.38	-10.34	438.51	91.35	438.63	-438.54	0.23	115.5℉
5665.00	7.33	90.53	5637.57	-10.63	450.79	91.35	450.92	-450.82	0.44	119.1℉
5759.00	7.12	89.39	5730.82	-10.62	462.61	91.32	462.73	-462.64	0.27	122.7℉
5854.00	6.96	88.89	5825.11	-10.45	474.25	91.26	474.37	-474.28	0.18	122.7℉
5948.00	6.73	89.26	5918.44	-10.27	485.46	91.21	485.56	-485.48	0.25	122.7℉
6042.00	6.56	87.20	6011.81	-9.93	496.33	91.15	496.43	-496.35	0.31	119.1℉
6136.00	6.47	87.30	6105.20	-9.42	506.98	91.06	507.07	-507.00	0.10	119.1℉
6230.00	6.37	87.74	6198.61	-8.97	517.48	90.99	517.56	-517.50	0.12	122.7℉
6324.00	6.34	87.77	6292.03	-8.56	527.88	90.93	527.95	-527.90	0.03	126.3℉
6419.00	6.46	90.12	6386.44	-8.36	538.46	90.89	538.53	-538.48	0.30	126.3℉
6513.00	7.63	94.52	6479.73	-8.87	549.97	90.92	550.04	-550.00	1.37	129.9℉
6607.00	7.91	94.66	6572.87	-9.88	562.64	91.01	562.73	-562.67	0.30	129.9℉
6701.00	8.06	94.53	6665.95	-10.93	575.66	91.09	575.76	-575.68	0.16	129.9℉
6796.00	8.12	92.32	6760.01	-11.73	589.00	91.14	589.12	-589.03	0.33	126.3℉
6890.00	8.23	91.50	6853.05	-12.17	602.36	91.16	602.48	-602.39	0.17	129.9℉

6984.00	7.88	89.08	6946.13	-12.25	615.53	91.14	615.65	-615.56	0.52	129.9℉
7077.00	8.12	87.92	7038.22	-11.91	628.46	91.09	628.58	-628.50	0.31	129.9℉
7172.00	7.21	86.46	7132.37	-11.29	641.12	91.01	641.22	-641.15	0.98	129.9℉
7266.00	7.07	86.24	7225.64	-10.55	652.77	90.93	652.86	-652.80	0.16	133.6℉
7360.00	6.90	85.88	7318.95	-9.77	664.17	90.84	664.24	-664.19	0.18	133.6℉
7454.00	6.74	84.46	7412.27	-8.93	675.41	90.76	675.46	-675.43	1.37	133.6℉
7548.00	6.41	83.90	7505.66	-7.74	686.01	90.65	686.06	-686.03	0.36	129.9℉
7643.00	6.80	86.94	7600.03	-6.87	696.90	90.57	696.94	-696.92	0.55	133.6℉
7737.00	6.82	88.90	7693.37	-6.47	708.04	90.52	708.07	-708.06	0.25	137.2℉
7831.00	6.76	87.01	7786.71	-6.07	719.15	90.48	719.17	-719.16	0.25	137.2℉
7925.00	7.06	88.19	7880.03	-5.60	730.44	90.44	730.47	-730.46	0.35	137.2℉
8019.00	6.97	88.35	7973.32	-5.26	741.92	90.41	741.94	-741.93	0.10	137.2℉
8113.00	6.73	88.78	8066.65	-4.97	753.13	90.38	753.14	-753.14	0.26	137.2℉
8207.00	6.42	89.46	8160.03	-4.81	763.89	90.36	763.90	-763.90	0.34	140.08℉
8302.00	6.09	91.80	8254.47	-4.92	774.24	90.36	774.25	-774.25	0.44	140.08℉
8396.00	5.95	93.36	8347.95	-5.36	784.08	90.39	784.10	-784.10	0.23	140.8℉
8490.00	5.09	94.72	8441.51	-5.99	793.10	90.43	793.13	-793.12	0.93	140.8℉
8585.00	4.55	94.18	8536.18	-6.61	801.06	90.47	801.09	-801.08	0.57	140.8℉
8679.00	3.78	89.47	8629.93	-6.85	807.88	90.49	807.91	-807.89	0.90	144.4℉
8774.00	3.47	88.61	8724.74	-6.75	813.88	90.48	813.91	-813.90	0.33	144.4℉
8868.00	2.35	85.67	8818.61	-6.54	818.65	90.46	818.68	-818.67	1.20	144.4℉
8962.00	1.31	103.69	8912.57	-6.65	821.62	90.46	821.64	-821.63	1.25	144.4℉
9033.00	0.63	98.01	8983.55	-6.89	822.79	90.48	822.82	-822.81	0.97	140.8℉
9087.00	0.23	113.63	9037.55	-6.98	823.18	90.49	823.21	-823.20	0.77	129.9℉
9150.00	6.11	265.22	9100.44	-7.31	819.96	90.51	819.99	-819.97	10.02	129.9℉
9182.00	9.59	266.95	9132.13	-7.59	815.60	90.53	815.63	-815.61	10.90	129.9℉
9229.00	14.62	271.97	9178.07	-7.60	805.75	90.54	805.79	-805.77	10.92	129.9℉
9276.00	18.41	274.00	9223.13	-6.87	792.41	90.50	792.44	-792.43	8.16	129.9℉
9323.00	21.25	279.83	9267.34	-4.90	776.61	90.36	776.63	-776.62	7.36	129.9℉
9370.00	26.45	277.97	9310.31	-1.99	757.84	90.15	757.85	-757.85	11.18	133.6℉
9417.00	32.58	277.22	9351.19	1.05	734.90	89.92	734.90	-734.89	13.07	133.6℉
9464.00	37.12	277.17	9389.75	4.41	708.26	89.64	708.28	-708.25	9.66	133.6℉
9511.00	39.67	274.86	9426.59	7.45	679.24	89.37	679.28	-679.21	6.22	133.6℉
9558.00	42.38	272.02	9462.05	9.28	648.45	89.18	648.52	-648.42	7.00	133.6℉

9605.00	48.30	269.21	9495.07	9.60	615.04	89.11	615.12	-615.01	13.29	133.6℉
9653.00	54.75	267.99	9524.92	8.67	577.50	89.14	577.56	-577.47	13.58	133.6℉
9700.00	58.69	267.83	9550.71	7.23	538.24	89.23	538.29	-538.22	8.39	133.6℉
9747.00	61.92	267.52	9573.99	5.57	497.45	89.36	497.48	-497.43	6.90	129.9℉
9794.00	66.77	267.37	9594.33	3.68	455.14	89.54	455.15	-455.13	10.32	133.6℉
9841.00	71.40	267.67	9611.10	1.79	411.29	89.75	411.29	-411.28	9.87	133.6℉
9888.00	74.04	267.50	9625.06	-0.10	366.45	90.02	366.45	-366.45	5.63	133.6℉
9935.00	79.74	266.85	9635.72	-2.36	320.75	90.42	320.76	-320.76	12.20	133.6℉
9966.00	82.47	267.03	9640.51	-4.00	290.17	90.79	290.20	-290.18	8.83	129.9℉
10047.00	87.93	267.38	9647.29	-7.94	209.58	92.17	209.73	-209.61	6.75	126.3℉
10141.00	90.62	267.21	9648.48	-12.37	115.71	96.10	116.36	-115.74	2.87	133.6℉
10235.00	92.52	267.05	9645.90	-17.08	21.86	127.99	27.74	-21.91	2.03	133.6℉
10330.00	91.85	267.38	9642.28	-21.69	-72.96	253.44	76.11	72.89	0.79	137.2℉
10424.00	90.06	267.70	9640.71	-25.72	-166.85	261.24	168.82	166.78	1.93	137.2℉
10518.00	89.05	268.60	9641.44	-28.76	-260.80	263.71	262.38	260.72	1.44	137.2℉
10612.00	87.76	269.92	9644.06	-29.97	-354.75	265.17	356.01	354.66	1.96	140.8℉
10706.00	87.14	270.96	9648.24	-29.25	-448.65	266.27	449.60	448.57	1.29	140.8℉
10800.00	89.33	271.17	9651.14	-27.50	-542.59	267.10	543.28	542.51	2.34	144.4℉
10894.00	87.42	272.17	9653.77	-22.78	-636.44	267.95	636.85	636.38	2.07	148℉
10989.00	87.53	271.63	9657.99	-21.61	-731.36	268.31	731.68	731.29	0.58	133.6℉
11083.00	89.61	271.72	9660.33	-18.87	-825.28	268.69	825.50	825.23	2.21	140.8℉
11177.00	91.07	271.36	9659.78	-16.34	-919.24	268.98	919.39	919.20	1.60	144.4℉
11271.00	89.89	270.43	9658.99	-14.87	-1013.23	269.16	1013.34	1013.18	1.60	144.4℉
11365.00	90.73	270.04	9658.48	-14.49	-1107.22	269.25	1107.32	1107.18	0.99	144.4℉
11459.00	90.95	270.32	9657.10	-14.19	-1201.21	269.32	1201.30	1201.17	0.38	144.4℉
11553.00	91.40	270.05	9655.17	-13.89	-1295.19	269.39	1295.27	1295.15	0.56	144.4℉
11647.00	92.24	269.78	9652.19	-14.03	-1389.14	269.42	1389.22	1389.10	0.94	151.6℉
11742.00	92.47	270.06	9648.28	-14.16	-1484.06	269.45	1484.13	1484.02	0.38	151.6℉
11836.00	92.30	270.24	9644.37	-13.91	-1577.98	269.49	1578.04	1577.94	0.26	151.6℉
11930.00	91.91	270.72	9640.92	-13.13	-1671.91	269.55	1671.97	1671.87	0.66	155.2℉
12023.00	91.80	270.78	9637.91	-11.91	-1764.86	269.61	1764.90	1764.82	0.13	155.2℉
12118.00	91.57	271.18	9635.12	-10.29	-1859.80	269.68	1859.83	1859.77	0.49	155.2℉
12212.00	91.46	271.08	9632.63	-8.43	-1953.75	269.75	1953.77	1953.72	0.16	158.9℉
12306.00	91.12	270.72	9630.51	-6.96	-2047.72	269.81	2047.73	2047.69	0.53	158.9℉

12400.00	90.50	270.33	9629.19	-6.10	-2141.70	269.84	2141.71	2141.68	0.78	158.9°F
12494.00	90.90	270.32	9628.04	-5.56	-2235.69	269.86	2235.70	2235.67	0.43	158.9°F
12589.00	90.17	270.42	9627.15	-4.95	-2330.69	269.88	2330.69	2330.66	0.78	158.9°F
12683.00	89.78	270.68	9627.19	-4.05	-2424.68	269.90	2424.69	2424.66	0.50	158.9°F
12777.00	91.40	270.86	9626.22	-2.78	-2518.66	269.94	2518.67	2518.65	1.73	162.5°F
12871.00	91.35	270.62	9623.97	-1.57	-2612.63	269.97	2612.63	2612.62	0.26	158.9°F
12965.00	91.40	270.36	9621.71	-0.77	-2706.60	269.98	2706.60	2706.59	0.28	158.9°F
13059.00	92.47	270.21	9618.54	-0.30	-2800.54	269.99	2800.54	2800.53	1.15	162.5°F
13153.00	92.53	270.20	9614.44	0.04	-2894.45	270.00	2894.45	2894.44	0.06	162.5°F
13247.00	92.24	269.70	9610.53	-0.05	-2988.37	270.00	2988.37	2988.36	0.61	162.5°F
13342.00	92.97	269.58	9606.21	-0.64	-3083.27	269.99	3083.27	3083.26	0.78	162.5°F
13436.00	91.96	269.33	9602.17	-1.54	-3177.18	269.97	3177.18	3177.16	1.11	162.5°F
13530.00	92.41	269.40	9598.58	-2.58	-3271.10	269.95	3271.10	3271.08	0.48	158.9°F
13625.00	93.26	268.88	9593.88	-4.00	-3365.98	269.93	3365.98	3365.95	1.05	158.9°F
13719.00	93.20	268.89	9588.59	-5.83	-3459.81	269.90	3459.81	3459.78	0.06	158.9°F
13813.00	92.92	268.93	9583.57	-7.61	-3553.66	269.88	3553.67	3553.62	0.30	140.8°F
13907.00	92.92	268.71	9578.78	-9.55	-3647.52	269.85	3647.53	3647.47	0.23	144.4°F
14001.00	92.13	269.07	9574.64	-11.36	-3741.41	269.83	3741.42	3741.36	0.92	148.0°F
14095.00	90.62	269.47	9572.38	-12.56	-3835.37	269.81	3835.39	3835.32	1.66	155.2°F
14189.00	90.34	269.45	9571.60	-13.45	-3929.36	269.80	3929.38	3929.31	0.30	158.9°F
14284.00	89.94	269.56	9571.36	-14.27	-4024.36	269.80	4024.38	4024.30	0.44	162.5°F
14365.00	91.40	269.52	9570.42	-14.92	-4105.35	269.79	4105.37	4105.29	1.80	144.4°F
14459.00	93.42	270.47	9566.46	-14.93	-4199.26	269.80	4199.28	4199.20	2.37	148.0°F
14553.00	93.08	269.75	9561.14	-14.75	-4293.10	269.80	4293.13	4293.05	0.85	151.6°F
14647.00	94.54	269.96	9554.89	-14.98	-4386.89	269.80	4386.92	4386.83	1.57	151.6°F
14741.00	92.30	271.21	9549.28	-14.03	-4480.71	269.82	4480.74	4480.66	2.73	151.6°F
14836.00	91.68	271.31	9545.98	-11.94	-4575.63	269.85	4575.65	4575.58	0.66	155.2°F
14930.00	92.86	270.94	9542.26	-10.09	-4669.54	269.88	4669.55	4669.49	1.32	155.2°F
15024.00	91.90	270.99	9538.36	-8.51	-4763.44	269.90	4763.45	4763.40	1.02	158.9°F
15118.00	91.29	270.99	9535.74	-6.89	-4857.39	269.92	4857.40	4857.35	0.65	158.9°F
15212.00	93.03	271.23	9532.20	-5.07	-4951.30	269.94	4951.31	4951.27	1.87	162.5°F
15306.00	92.58	271.14	9527.60	-3.13	-5045.17	269.96	5045.17	5045.14	0.49	162.5°F
15400.00	94.04	270.88	9522.17	-1.47	-5139.00	269.98	5139.00	5138.97	1.58	166.0°F
15495.00	93.48	271.08	9515.94	0.15	-5233.78	270.00	5233.78	5233.76	0.63	166.1°F

15588.00	92.41	271.11	9511.16	1.92	-5326.64	270.02	5326.64	5326.62	1.15	158.9°F
15683.00	93.59	271.22	9506.19	3.85	-5421.49	270.04	5421.49	5421.48	1.25	166.1°F
15778.00	93.76	271.28	9500.10	5.92	-5516.27	270.06	5516.27	5516.26	0.19	162.5°F
15873.00	94.71	270.76	9493.09	7.61	-5610.99	270.08	5611.00	5610.99	1.14	148.0°F
15967.00	91.18	271.49	9488.26	9.45	-5704.83	270.09	5704.84	5704.84	3.83	151.6°F
16062.00	90.62	270.72	9486.76	11.28	-5799.80	270.11	5799.82	5799.81	1.00	155.2°F
16156.00	92.07	271.05	9484.56	12.73	-5893.76	270.12	5893.78	5893.78	1.58	158.9°F
16251.00	91.46	271.18	9481.63	14.58	-5988.70	270.14	5988.72	5988.72	0.66	158.9°F
16345.00	92.02	270.97	9478.78	16.34	-6082.64	270.15	6082.66	6082.66	0.64	158.9°F
16424.00	93.42	270.68	9475.03	17.48	-6161.54	270.16	6161.57	6161.57	1.81	162.5°F
16500.00	93.42	270.68	9470.50	18.38	-6237.40	270.17	6237.43	6237.43	0.00	162.5°F

BIT PROJECTION