

Behrens and Associates, Inc.

Environmental Noise Control



February 19, 2018

Verdad Oil & Gas
5950 Cedar Springs Road, Suite 200
Dallas, TX 75235

Attention: Kenny Trueax

Subject: Operational Sound Level Report

Re: Homestead Pad Site

Dear Mr. Trueax:

Per your request, an operational sound level survey was performed near the Homestead pad location in Lochbuie, Colorado from Wednesday, February 21 to Monday, February 22, 2018 to measure and document the operational sound levels near the site. The following report documents our findings.

Operational Sound Level Survey

An operational sound level survey including A-weighted dB(A) was performed for the Homestead pad location to measure and document operational sound levels for hourly, 15-minute, and daily averages. Per the Colorado Oil and Gas Conservation Commission (COGCC), data collected where winds over five (5) miles per hour are present, are inadmissible. Table 1 averages omit the data collected where the wind speed exceeded 5 miles per hour.

Sound Measurement and Modeling Instrumentation

The instrumentation used for the monitoring locations were Svantek integrating and logging sound level meters, which were calibrated prior to deployment. The metering systems were approximately 4 feet above ground level per COGCC guidelines and in a locked box for security. The measured noise levels are presented graphically in Attachments 2 through 7 and in tabulated form in Attachments 8 through 10.

The operational noise levels were used to determine the typical daytime (7am to 7pm) and nighttime (7pm to 7am) averages at the monitored locations. The daytime and nighttime averages were calculated using the 15-minute noise levels measured at the location. The calculated operational average daytime and nighttime noise levels are summarized in Table 1.

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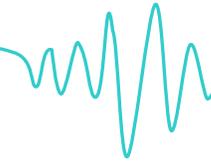


Table 1

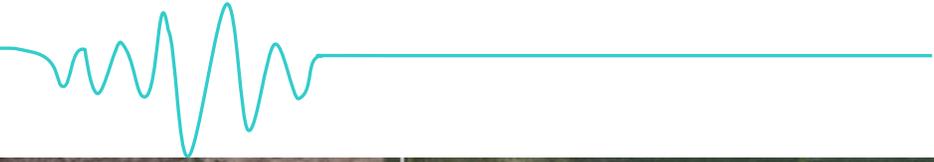
Verdad Oil & Gas - Homestead Pad					
Location 1		Location 2		Location 3	
Average Daytime Operational Noise Levels	Average Nighttime Operational Noise Levels	Average Daytime Operational Noise Levels	Average Nighttime Operational Noise Levels	Average Daytime Operational Noise Levels	Average Nighttime Operational Noise Levels
dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
40.2	47.4	44.3	53.2	47.0	61.7

Very truly yours,

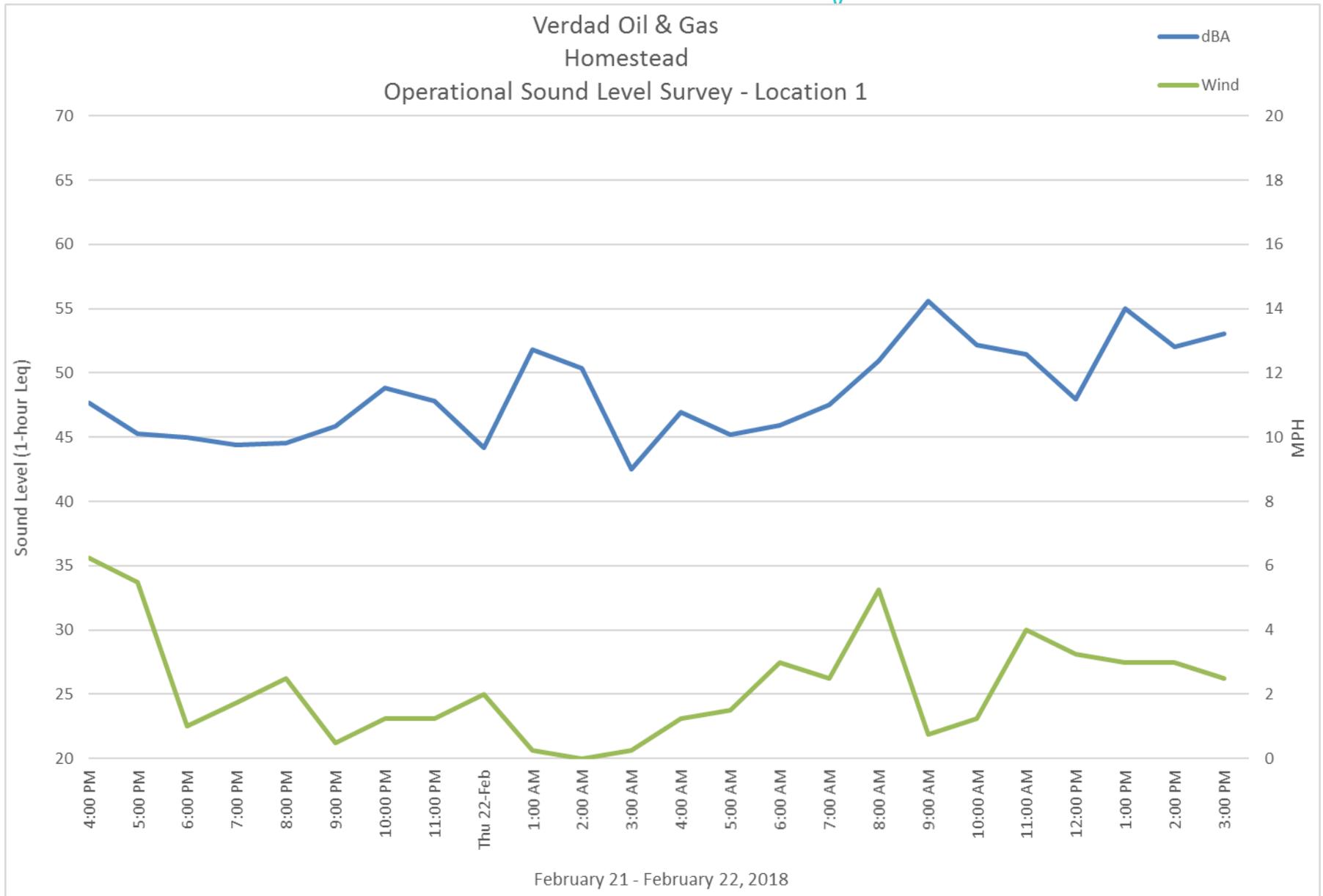
Colin M. Drolshagen
Lead Acoustical Technician

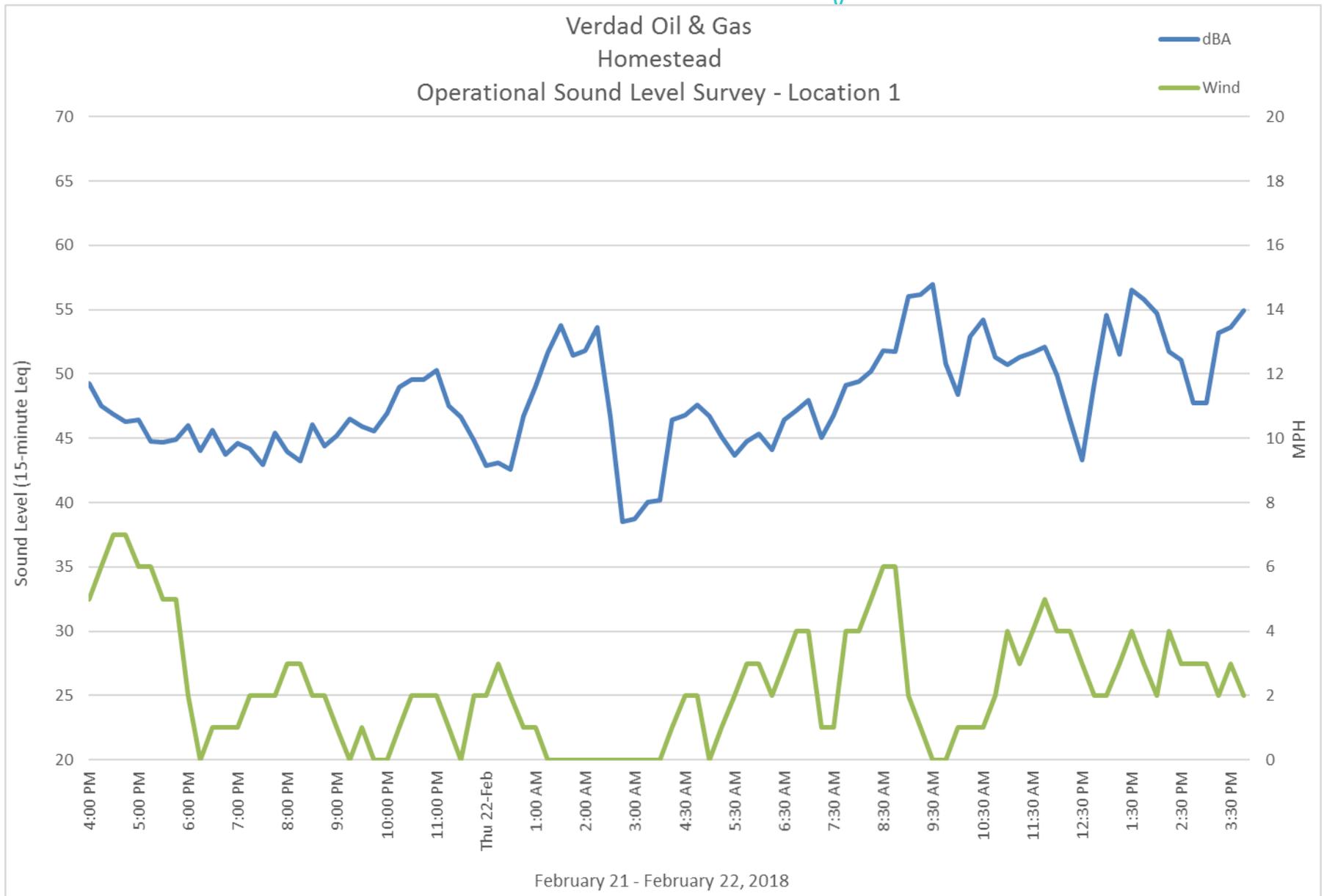
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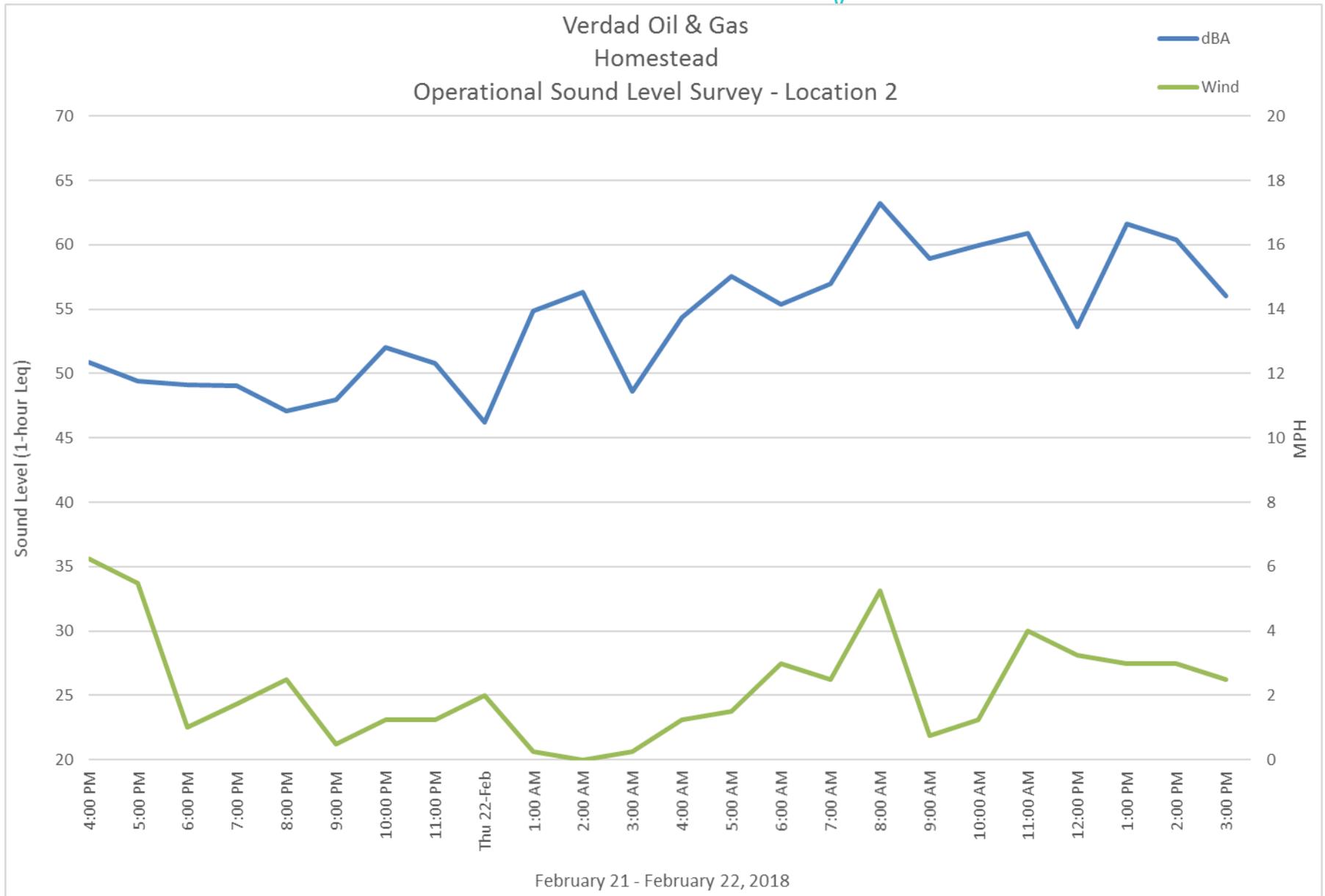
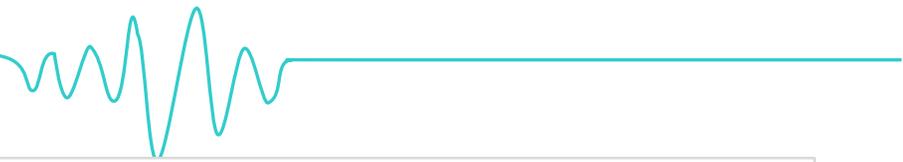
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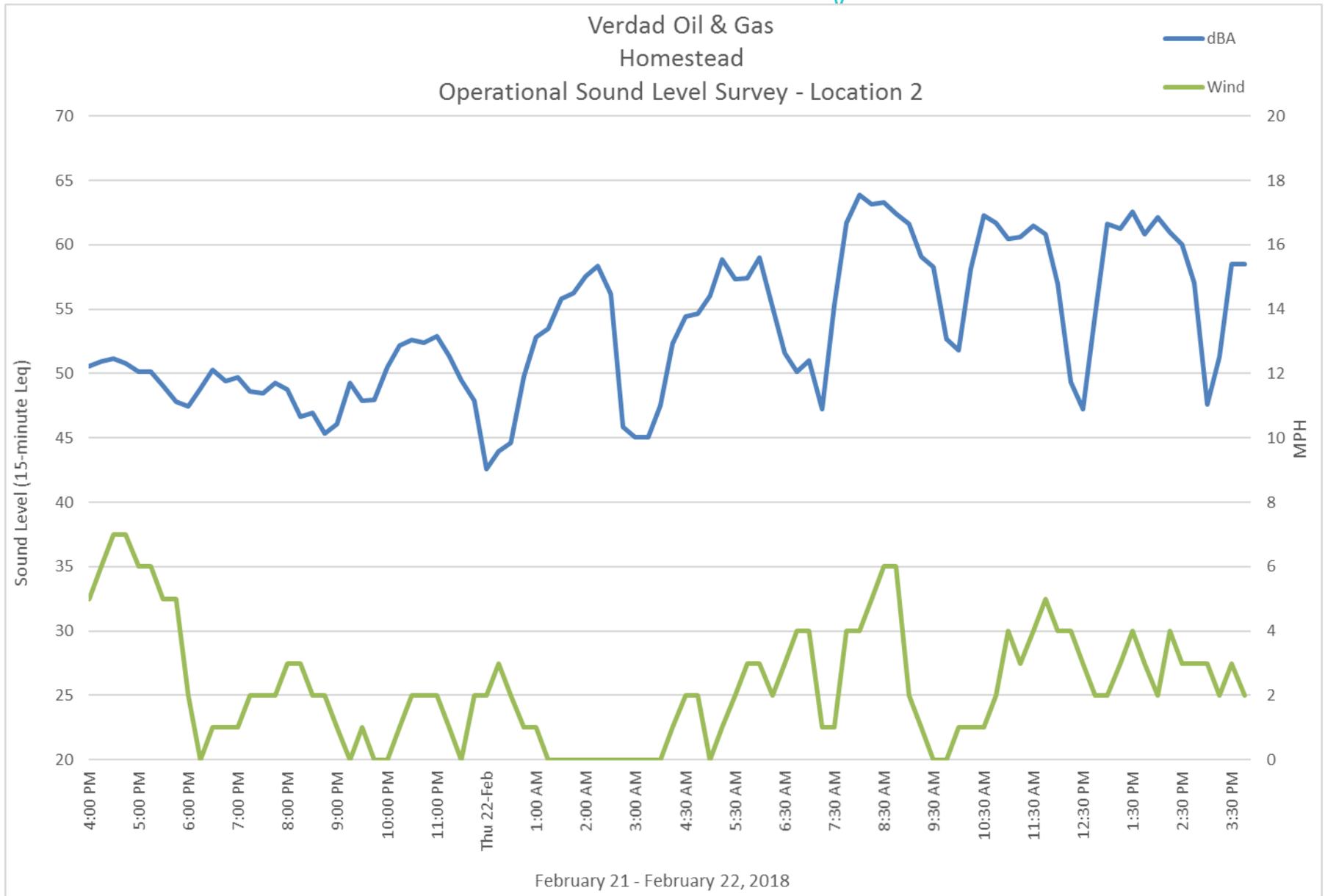


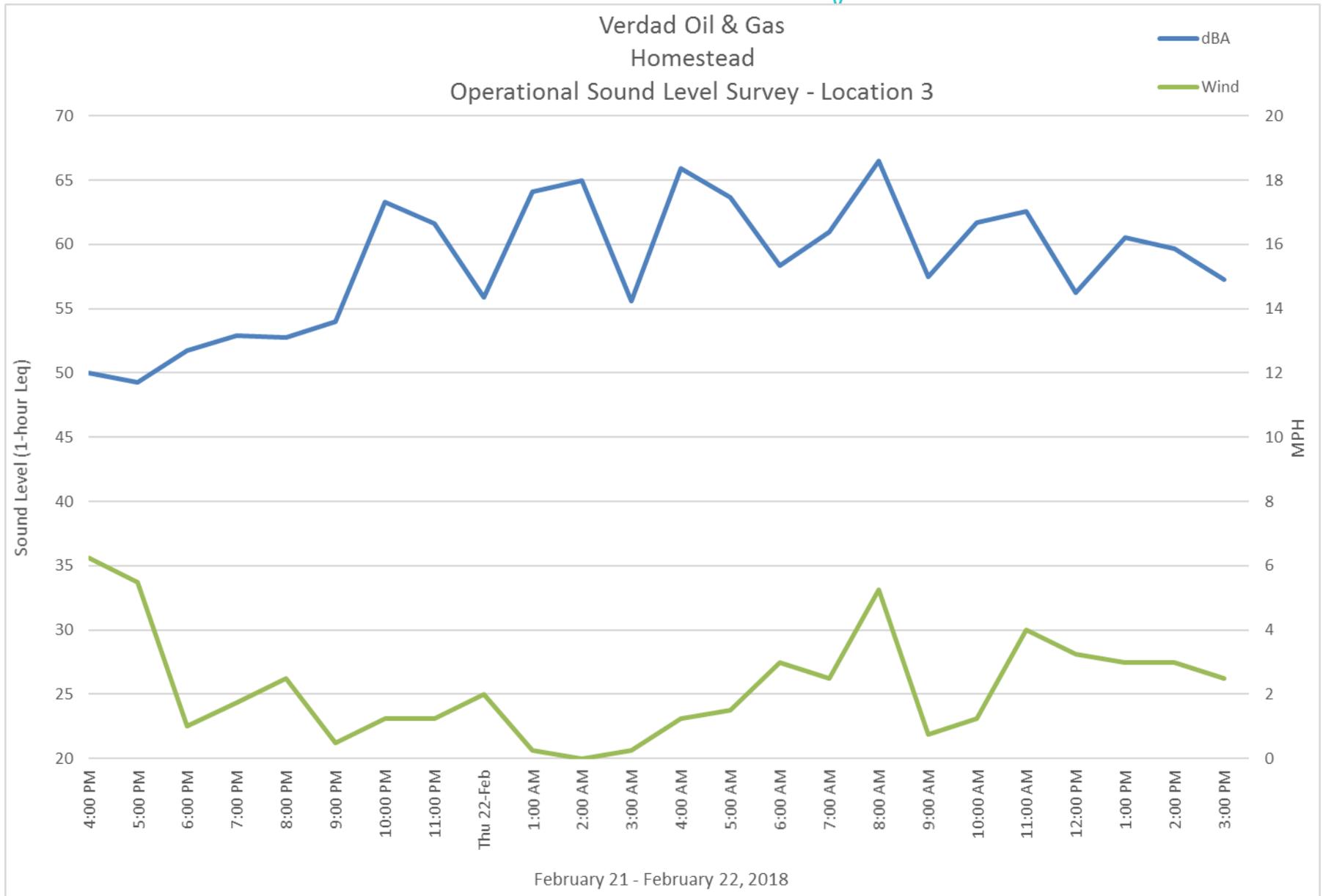
Attachment 1
Operational Noise Monitoring Locations

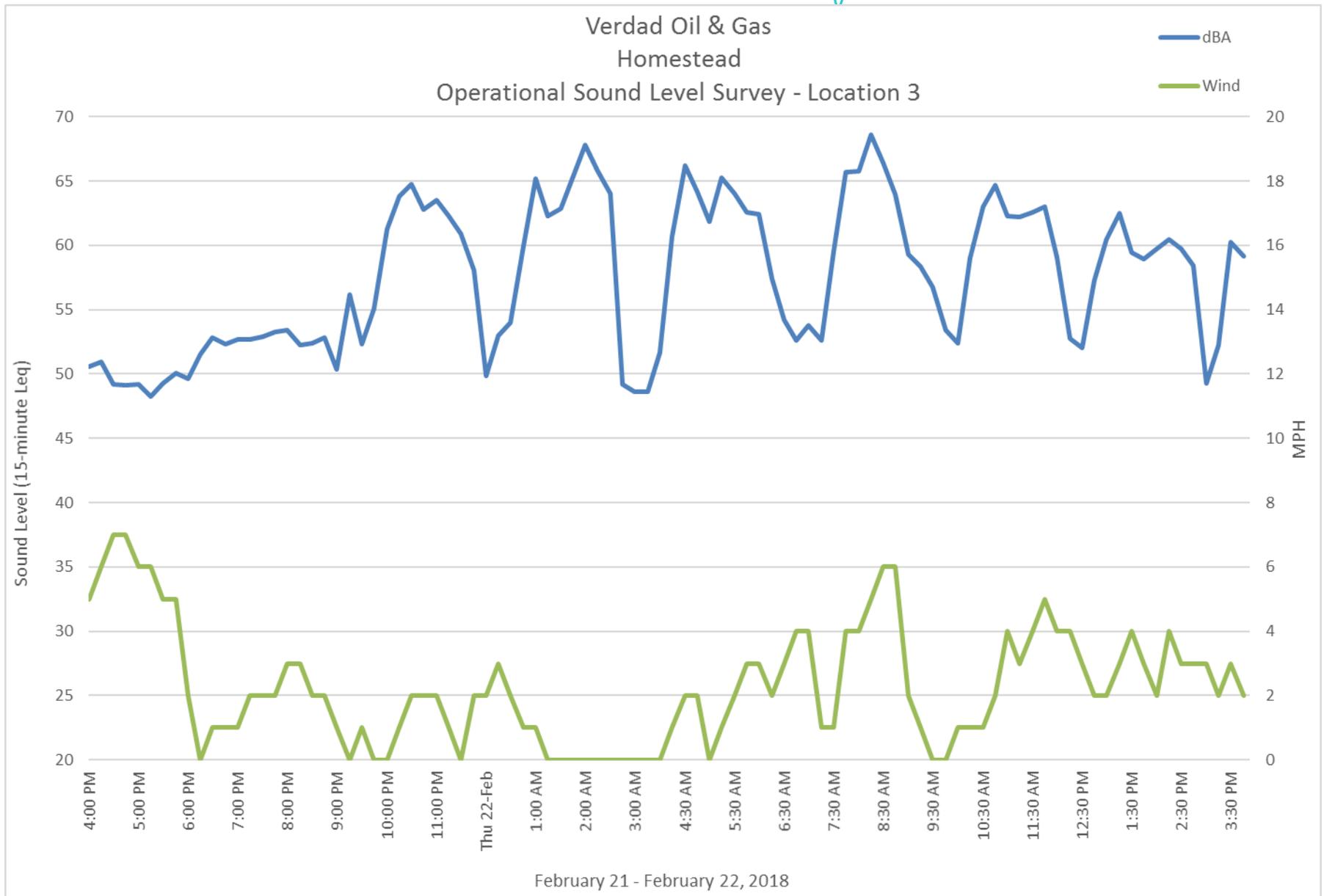












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Location 1 - 15-Minute Averages			
Time	dBA	Time	dBA
4:00 PM	49.3	4:00 AM	46.6
4:15 PM	47.5	4:15 AM	46.8
4:30 PM	46.9	4:30 AM	46.8
4:45 PM	46.3	4:45 AM	47.6
5:00 PM	46.5	5:00 AM	46.8
5:15 PM	44.8	5:15 AM	45.2
5:30 PM	44.7	5:30 AM	43.7
5:45 PM	44.9	5:45 AM	44.7
6:00 PM	46.0	6:00 AM	45.4
6:15 PM	44.1	6:15 AM	44.1
6:30 PM	45.7	6:30 AM	46.4
6:45 PM	43.8	6:45 AM	47.2
7:00 PM	44.6	7:00 AM	48.0
7:15 PM	44.2	7:15 AM	45.1
7:30 PM	43.0	7:30 AM	46.8
7:45 PM	45.4	7:45 AM	49.2
8:00 PM	43.9	8:00 AM	49.4
8:15 PM	43.2	8:15 AM	50.2
8:30 PM	46.1	8:30 AM	51.8
8:45 PM	44.4	8:45 AM	51.8
9:00 PM	45.2	9:00 AM	56.0
9:15 PM	46.5	9:15 AM	56.2
9:30 PM	45.9	9:30 AM	57.0
9:45 PM	45.5	9:45 AM	50.8
10:00 PM	46.9	10:00 AM	48.4
10:15 PM	49.0	10:15 AM	52.9
10:30 PM	49.5	10:30 AM	54.2
10:45 PM	49.6	10:45 AM	51.3
11:00 PM	50.3	11:00 AM	50.7
11:15 PM	47.6	11:15 AM	51.3
11:30 PM	46.7	11:30 AM	51.6
11:45 PM	44.9	11:45 AM	52.1
Thu 22-Feb	42.9	12:00 PM	49.9
12:15 AM	43.1	12:15 PM	46.4
12:30 AM	42.6	12:30 PM	43.3
12:45 AM	46.8	12:45 PM	49.3
1:00 AM	49.0	1:00 PM	54.6
1:15 AM	51.7	1:15 PM	51.6
1:30 AM	53.8	1:30 PM	56.5
1:45 AM	51.5	1:45 PM	55.8
2:00 AM	51.8	2:00 PM	54.7
2:15 AM	53.6	2:15 PM	51.8
2:30 AM	46.6	2:30 PM	51.1
2:45 AM	38.5	2:45 PM	47.7
3:00 AM	38.7	3:00 PM	47.8
3:15 AM	40.0	3:15 PM	53.2
3:30 AM	40.2	3:30 PM	53.6
3:45 AM	46.4	3:45 PM	54.9

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Verdad Oil & Gas - Homestead Pad			
Location 2 - 15-Minute Averages			
Time	dBA	Time	dBA
4:00 PM	50.6	4:00 AM	54.1
4:15 PM	50.9	4:15 AM	54.4
4:30 PM	51.2	4:30 AM	54.4
4:45 PM	50.8	4:45 AM	54.6
5:00 PM	50.1	5:00 AM	56.0
5:15 PM	50.2	5:15 AM	58.9
5:30 PM	49.1	5:30 AM	57.4
5:45 PM	47.8	5:45 AM	57.4
6:00 PM	47.5	6:00 AM	59.0
6:15 PM	48.8	6:15 AM	55.2
6:30 PM	50.3	6:30 AM	51.6
6:45 PM	49.4	6:45 AM	50.1
7:00 PM	49.7	7:00 AM	51.0
7:15 PM	48.6	7:15 AM	47.2
7:30 PM	48.4	7:30 AM	55.3
7:45 PM	49.3	7:45 AM	61.7
8:00 PM	48.8	8:00 AM	63.9
8:15 PM	46.6	8:15 AM	63.2
8:30 PM	46.9	8:30 AM	63.3
8:45 PM	45.3	8:45 AM	62.4
9:00 PM	46.1	9:00 AM	61.6
9:15 PM	49.3	9:15 AM	59.1
9:30 PM	47.9	9:30 AM	58.3
9:45 PM	48.0	9:45 AM	52.7
10:00 PM	50.5	10:00 AM	51.8
10:15 PM	52.2	10:15 AM	58.2
10:30 PM	52.6	10:30 AM	62.3
10:45 PM	52.4	10:45 AM	61.7
11:00 PM	52.9	11:00 AM	60.4
11:15 PM	51.4	11:15 AM	60.6
11:30 PM	49.5	11:30 AM	61.5
11:45 PM	47.9	11:45 AM	60.9
Thu 22-Feb	42.6	12:00 PM	57.0
12:15 AM	44.0	12:15 PM	49.4
12:30 AM	44.7	12:30 PM	47.2
12:45 AM	49.8	12:45 PM	54.6
1:00 AM	52.9	1:00 PM	61.6
1:15 AM	53.5	1:15 PM	61.2
1:30 AM	55.8	1:30 PM	62.6
1:45 AM	56.3	1:45 PM	60.8
2:00 AM	57.6	2:00 PM	62.2
2:15 AM	58.4	2:15 PM	61.0
2:30 AM	56.2	2:30 PM	60.0
2:45 AM	45.9	2:45 PM	57.1
3:00 AM	45.1	3:00 PM	47.6
3:15 AM	45.0	3:15 PM	51.3
3:30 AM	47.5	3:30 PM	58.5
3:45 AM	52.3	3:45 PM	58.5

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Verdad Oil & Gas - Homestead Pad			
Location 3 - 15-Minute Averages			
Time	dBA	Time	dBA
4:00 PM	50.6	4:00 AM	66.1
4:15 PM	50.9	4:15 AM	66.9
4:30 PM	49.2	4:30 AM	66.2
4:45 PM	49.1	4:45 AM	64.2
5:00 PM	49.2	5:00 AM	61.9
5:15 PM	48.2	5:15 AM	65.3
5:30 PM	49.3	5:30 AM	64.0
5:45 PM	50.1	5:45 AM	62.6
6:00 PM	49.7	6:00 AM	62.4
6:15 PM	51.5	6:15 AM	57.4
6:30 PM	52.8	6:30 AM	54.2
6:45 PM	52.3	6:45 AM	52.6
7:00 PM	52.7	7:00 AM	53.8
7:15 PM	52.7	7:15 AM	52.6
7:30 PM	52.9	7:30 AM	59.5
7:45 PM	53.2	7:45 AM	65.7
8:00 PM	53.4	8:00 AM	65.8
8:15 PM	52.3	8:15 AM	68.6
8:30 PM	52.4	8:30 AM	66.4
8:45 PM	52.8	8:45 AM	64.0
9:00 PM	50.3	9:00 AM	59.3
9:15 PM	56.2	9:15 AM	58.3
9:30 PM	52.3	9:30 AM	56.8
9:45 PM	55.1	9:45 AM	53.4
10:00 PM	61.3	10:00 AM	52.4
10:15 PM	63.8	10:15 AM	59.0
10:30 PM	64.7	10:30 AM	63.0
10:45 PM	62.8	10:45 AM	64.7
11:00 PM	63.5	11:00 AM	62.3
11:15 PM	62.3	11:15 AM	62.2
11:30 PM	60.9	11:30 AM	62.6
11:45 PM	58.1	11:45 AM	63.0
Thu 22-Feb	49.9	12:00 PM	59.1
12:15 AM	53.0	12:15 PM	52.8
12:30 AM	54.0	12:30 PM	52.0
12:45 AM	60.0	12:45 PM	57.3
1:00 AM	65.2	1:00 PM	60.5
1:15 AM	62.3	1:15 PM	62.5
1:30 AM	62.9	1:30 PM	59.5
1:45 AM	65.3	1:45 PM	58.9
2:00 AM	67.8	2:00 PM	59.8
2:15 AM	65.9	2:15 PM	60.4
2:30 AM	64.1	2:30 PM	59.8
2:45 AM	49.2	2:45 PM	58.4
3:00 AM	48.7	3:00 PM	49.3
3:15 AM	48.7	3:15 PM	52.2
3:30 AM	51.7	3:30 PM	60.3
3:45 AM	60.7	3:45 PM	59.1