

Exhibit No.:
Issues: Sound Abatement
Witness: Leon C. Bender
Sponsoring Party: MOPSC Staff
Type of Exhibit: Surrebuttal Testimony
Case No.: EA-2006-0309
Date Testimony Prepared: April 18, 2006

MISSOURI PUBLIC SERVICE COMMISSION

UTILITY OPERATIONS DIVISION

FILED³

MAY 11 2006

TESTIMONY SURREBUTTAL

Missouri Public
Service Commission

OF

LEON C. BENDER

AQUILA, INC.

CASE NO. EA-2006-0309

Jefferson City, Missouri
April 18, 2006

Exhibit No. 16
Case No(s). EA-2006-0309
Date 4-26-06 Rptr KF

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

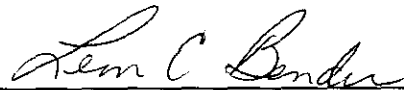
In the Matter of the Application of Aquila,)
Inc. for Permission and Approval and a)
Certificate of Public Convenience and)
Necessity Authorizing it to Acquire,)
Construct, Install, Own, Operate,)
Maintain, and otherwise Control and)
Manage, and otherwise Control and)
Manage Electrical Production and Related)
Facilities in Unincorporated Areas of Cass)
County, Missouri Near the town of)
Peculiar.)

Case No. EA-2006-0309

AFFIDAVIT OF LEON C. BENDER

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

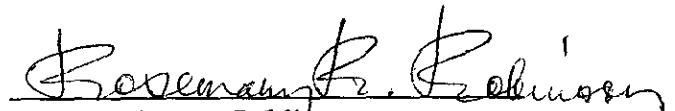
Leon C. Bender, of lawful age, on his oath states: that he has participated in the preparation of the following Surrebuttal Testimony in question and answer form, consisting of 3 pages of Surrebuttal Testimony to be presented in the above case, that the answers in the following Surrebuttal Testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true to the best of his knowledge and belief.



Leon C. Bender

Subscribed and sworn to before me this 17 day of April, 2006.

ROSEMARY R. ROBINSON
Notary Public - Notary Seal
State of Missouri
County of Callaway
My Commission Exp. 09/23/2008


Notary Public

My commission expires 9-23-2008

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Surrebuttal Testimony of
Leon C. Bender

1 A. In Mr. Stanley's testimony, on page 14, line 1, he correctly notes that there
2 was an increase in the 31.5 Hz low frequency as measured by Burns & McDonnell during
3 the Noise Compliance Test study. Burns & McDonnell performed this test to verify the
4 warranty guarantees of the Siemens-Westinghouse combustion turbines (CTs) and the
5 Higgott-Kane exhaust stack. During this test Burns & McDonnell personnel took sound
6 level measurements within three feet of the CTs and stack at points around that
7 equipment and then at the fence line surrounding the property. The measurements were
8 taken with the CTs not operating and once again with all three CTs operating at
9 maximum capacity. These measurements show an increase in the 31.5 Hz frequency
10 with the CTs operating as Mr. Stanley states in his rebuttal testimony. However, Mr.
11 Stanley does not state that the measurements he cited in Table D-4, attached to my
12 testimony as Schedule 1, were taken in close proximity to the equipment and not on any
13 residential properties. The measurements referenced in Schedule 1 were taken at
14 approximately one tenth of a mile from Unit 3. That distance is much closer than the
15 nearest residence which is approximately a half-mile away and much closer than the
16 three-quarters of a mile to Mr. Stanley's residence. Based on the Noise Compliance Test
17 Burns & McDonnell concludes that the noise generated by the CTs and exhaust stack
18 comply with the County noise Ordinance and meet the manufacturer's noise limit
19 guarantees.

20 Burns & McDonnell took additional noise measurements at points beyond the
21 South Harper site on August 11, 12 and 19, 2005, as part of a Residential Noise
22 Assessment Study it performed for Aquila. Mr. Stanley includes exhibits from this
23 second study in his rebuttal testimony. Figure B-1 taken from this study is included in

Surrebuttal Testimony of
Leon C. Bender

1 this surrebuttal testimony as Schedule 2. From Schedule 2 it can be seen that the sound
2 level at 31.5 Hz frequency which Mr. Stanley has referred to in his rebuttal testimony, is
3 approximately 15 dBA. This sound level was measure at approximately a half-mile away
4 from the South Harper CTs and exhaust stack when the CTs were running at maximum
5 capacity. This measurement is much lower than the one referenced by Mr. Stanley in his
6 rebuttal testimony. According to a generally accepted table in the acoustic industry for
7 comparing sound levels to human hearing, (Attached as Schedule 3), 15 dBA is barely
8 audible and comparable to the rustling of leaves or a whisper. It is below the background
9 levels of noise measured by Burns & McDonnell in this second assessment.

10 Burns & McDonnell also concluded in the Residential Noise Assessment Study
11 that the noise emitted from South Harper Station as measured in various spots near many
12 residences does not exceed the 55 dBA limit in the Cass County Noise Ordinance. The
13 Cass County Noise Ordinance No. 02-20 is attached as Schedule 4.

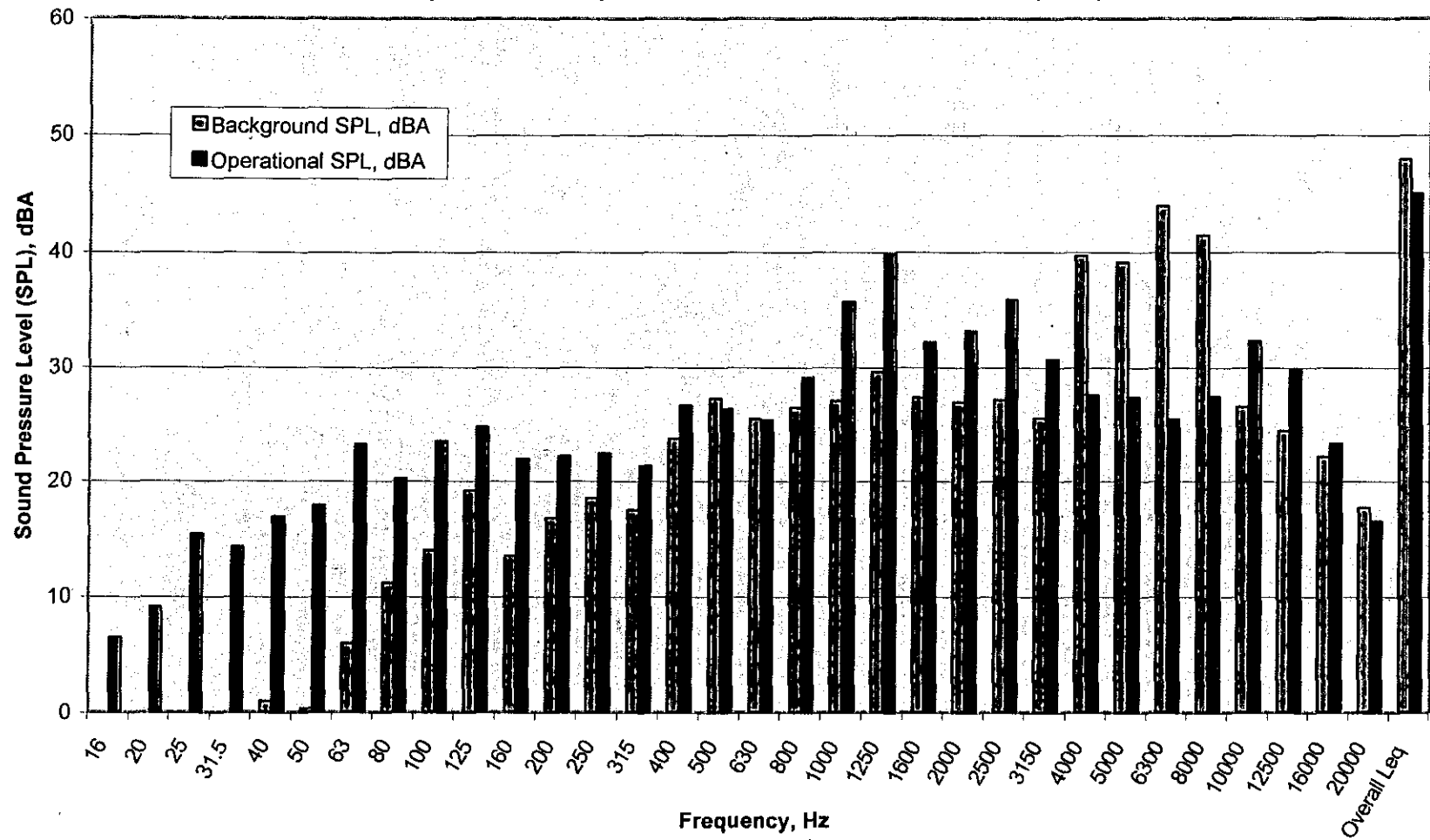
14 Q. Does this conclude your surrebuttal testimony?

15 A. Yes, it does.

TABLE D-4, Far-Field Stack Background and Operational Measurements**Type** Far-Field Stack Measurements**Unit** Unit 1 and All three**Date** 8/11/2005**Location** Receptor No. 1

Location	Description	Overall Sound Pressure Level, dBA	31.5 Hz Sound Pressure Level, dBA	Extraneous Noises
Receptor No.1	Ambient - No turbines operating	55.7	43.4	Insect noise, Some fans on-site operating
Receptor No.1	Unit 3 operating	53.0	75.7	Insect noise
Receptor No.1	Unit 1, 2, and 3 operating	56.3	76.9	Insect noise, backup beeping

Figure B-1
241st Street One-third Octave Band Frequency
Background and Operational Sound Pressure Levels (dBA)



12-138 **SOUND, NOISE, AND ULTRASONICS**

Table 12.6.3 Typical Sound Levels

Decibels		
	120	Threshold of feeling Thunder, artillery
Deafening	110	Nearby riveter Elevated train
	100	Boiler factory Loud street noise
Very loud	90	Noisy factory Truck unmuffled
	80	Police whistle Noisy office
Loud	70	Average street noise Average radio
	60	Average factory Noisy home
Moderate	50	Average office Average conversation
	40	Quiet radio Quiet home or private office
Faint	30	Average auditorium Quiet conversation
	20	Rustle of leaves Whisper
Very faint	10	Soundproof room Threshold of audibility
	0	

From Mark's Standard Handbook for Mechanical Engineers.

McGraw Hill

Certified Copy of Record

STATE OF MISSOURI, }
County of Cass, } ss.

In the County Commission of Cass County, Missouri, at the August Term, 2002, held on the 26 day of August, 2002, amongst others, were the following proceedings:

**CASS COUNTY, MISSOURI
ORDINANCE NO.02-20
Noise Disturbance
August, 2002**

**BE IT ORDAINED, BY THE COUNTY COMMISSION OF CASS COUNTY, MISSOURI,
ORDINANCE NO. 02-20 AS THE FOLLOWS:**

Section I. DEFINITIONS –The following words and phrases when used in this ordinance shall, for the purpose of this ordinance, have the meanings respectively ascribed to them in this section unless otherwise defined in the text of the section.

- a. Plainly Audible –
- b. Property Owner –
- c. Sound Amplification or Producing Device or Similar Equipment –
- d. Suburban Residential District
- e. Single-Family Residential District
- f. Two-Family Residential District
- g. Multi-Family Residential District

Section II. UNLAWFUL TO CAUSE A NOISE DISTURBANCE –It shall be unlawful to make or cause to be made a Noise Disturbance within the unincorporated area of Cass County. A Noise Disturbance shall include any or all of the following:

- a. A sound registered on a decibel meter from any source not exempted or otherwise regulated by this Ordinance and which, when measured anywhere off of the property of the sound source, is in excess of the dB(A) established for the time period and zones listed below.

<u>Area</u>	<u>7:00 a.m. – 10:00 p.m.</u>	<u>10:00 p.m. – 7:00 a.m.</u>
Residential	60 dB(A)	55 dB(A)
Commercial	65 dB(A)	60 dB(A)
Industrial	70 dB(A)	65 dB(A)
- b. The owning, keeping or harboring of any animal that continuously, repeatedly, or persistently for thirty (30) minutes or more, without provocation by the complainant, creates a sound which is Plainly Audible across any property boundary line.
- c. A sound resulting from the erecting, constructing, excavating, demolishing, altering or repair ing of any structure, or operating, or permitting the operation of any tools or equipment used in construction, drilling, or demolition work in such a manner as to cause a sound Plainly

Audible across any property boundary line between the hours of 10:00 p.m. and 7:00 a.m.. Between the hours 7:00 a.m. and 10:00 p.m., this activity shall not be subject to the time, area and dB(A) limits set forth in subsection A.

- d. The repairing, rebuilding, modifying or testing of any motor vehicle, motorcycle, or motor-boat in such a manner as to cause a sound Plainly Audible across any property boundary line between the hours of 10:00 p.m. and 7:00 a.m. Between the hours of 7:00 a.m. and 10:00 p.m., this activity shall not be subject to the time, area and dB(A) limits set forth in subsection A.
- e. The operating or occupancy of a vehicle, which is moving or stationary, standing or parked, whether persons are seated in the vehicle or not, from which any Sound Amplification or Producing Device or Similar Equipment is creating a sound that is Plainly Audible at least fifty (50) feet from the source of the sound. A violation of this subsection shall be a traffic offense.
- f. The operation of any power tool, garden tool, lawnmower, snow blower or other similar equipment or device in Residential Areas in such a manner as to cause a sound Plainly Audible across any property boundary line between the hours of 10:00 p.m. and 7:00 a.m. Between the hours of 7:00 a.m. and 10:00 p.m., this activity shall not be subject to the time, area and dB(A) limits set forth in subsection A.
- g. The operating playing, permitting or causing to be operated or played any Sound Amplification or Producing Device or Similar Equipment in a manner as to cause a sound Plainly Audible across any property boundary line between the hours of 12:00 a.m. (midnight) and 6:00 a.m. Between the hours of 6:00 a.m. and 12:00 a.m. (midnight), this activity is subject to the area and dB(A) limits set forth in subsection A above.

Section III. UNLAWFUL TO ALLOW A NOISE DISTURBANCE; RESPONSIBILITY FOR ABATEMENT.

- a. It is unlawful for any Property Owner or Tenant, or other person with control, occupancy, or possession of residential property, to allow or permit a person or group of persons to create a Noise Disturbance as defined in subsections A through G of the Cass County Noise Control Ordinance on said property.
- b. The Property Owner, Tenant or other such person with control, occupancy, or possession of property, shall be responsible for abatement of Noise Disturbances occurring on that property and failure to do so shall be a violation of this section.

Section IV. PENALTIES.

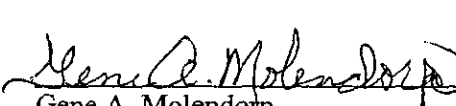
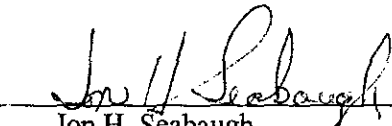
- a. Upon a first conviction for a violation of this chapter, a fine of no less than fifty dollars (\$50.00) shall be assessed. Upon a second conviction, a fine of no less than one hundred fifty dollars (\$150.00) shall be assessed. Upon a third or subsequent conviction, a fine of no less than two hundred fifty dollars (\$250.00) shall be assessed. No prior conviction shall be considered in determining the penalty to be assessed if twenty-four (24) months have elapsed between the date of the violation and the date of the conviction next immediately proceeding the sentencing date.
- b. No person shall be eligible for a parole, suspension or reduction of any part of said fine except that portion of any fine or combination of fines that exceeds two hundred dollars (\$200.00) assessed from the same set of operative facts may be suspended for twelve (12) months on the condition the violator have no further violations of the noise ordinance during that period. In addition to any such fine imposed, the jail term of up to six (6) months may be imposed.
- c. Each occurrence of a violation, or in the case of a continuous violation, each day a violation occurs or continues, constitutes a separate offense and shall be punishable as such hereunder.

Section V. EXEMPTIONS. -- The following shall not be considered to be Noise Disturbances for purposes of this:

- a. Sound from law enforcement motor vehicles and other Emergency Motor Vehicles including, but not limited to, snow-clearing equipment.
- b. Sound from vehicles or equipment belonging to the city, state, county, federal government, school or other governmental agencies or utilities engaged in preparing for or remedying a potentially hazardous situation.
- c. Sound that a person is making or causing to be made when said person has received and maintains a valid license or permit which specifically allows said sound from the County Commission of Cass County.

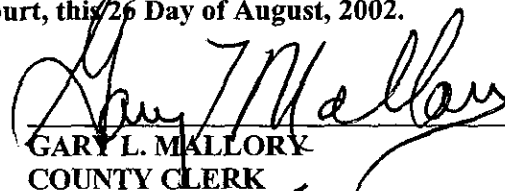
Passed by County Commission this 26 day of August, 2002.

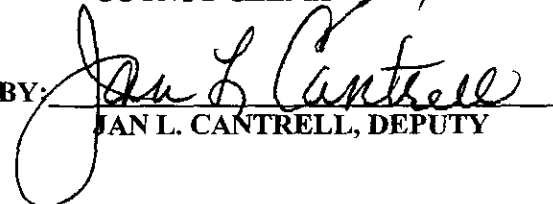
This ordinance shall take effect and be in full force September 15, 2002.

 Gene A. Molendorp Presiding Commissioner	 Jim Meara Associate Commissioner #2	 Jon H. Seabaugh Associate Commissioner #1
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A true copy from the Records of said Court.

WITNESS my Hand and the Seal of said Court, this 26 Day of August, 2002.


GARY L. MALLORY
COUNTY CLERK

BY: 
JAN L. CANTRELL, DEPUTY