

FILED³

MAY 11 2006

Missouri Public
Service Commission

Exhibit No.:

Issues: Site Selection

Witness: Chris R. Rogers

Sponsoring Party: Aquila Networks-MPS

Case No.: EA-2006-0309

Before the Public Service Commission
of the State of Missouri

Surrebuttal Testimony

of

Chris R. Rogers

Exhibit No. 13
Case No(s) EA-2006-0309
Date 4-26-06 Rptr KF

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI
SURREBUTTAL TESTIMONY OF CHRIS R. ROGERS
ON BEHALF OF AQUILA, INC.
D/B/A AQUILA NETWORKS-MPS
CASE NO. EA-2006-0309**

1 Q. Please state your name and business address.

2 A. My name is Chris R. Rogers. My business address is 16041 Foster, Stilwell,
3 Kansas, 66085.

4 Q. Are you the same Chris R. Rogers who submitted direct testimony in this case on
5 behalf of Aquila Inc, ("Aquila" or "Company") before the Missouri Public
6 Service Commission ("Commission")?

7 A. Yes.

8

Executive Summary

9 Q. What is the purpose of your testimony?

10 A. First, I am responding to rebuttal testimony filed by StopAquila.org witness
11 Harold R. Stanley. I will specifically address Mr. Stanley's statements
12 concerning the Gas Compressor Station and Intensity of Use. In addition, I am
13 responding to rebuttal testimony filed by Cass County witness Bruce G. Peshoff.
14 I will address Mr. Peshoff's statements concerning land use planning practices,
15 requirements for land use compatibility, examples of Cass County practices and
16 Mr. Peshoff's Potential Industrial Locations.

17 Q. Mr. Peshoff is testifying as a land use planning expert. Do you consider yourself
18 an expert in this field?

1 A. No, I am not a land use planning expert, nor an attorney as is Mr. Peshoff. My
2 detailed resume was submitted with my pre-filed direct testimony as Schedule
3 CR-3 in this case. My experience and qualifications for this case are limited to
4 the siting, project management, design, construction and performance of power
5 plants. I am mindful of the Code of Professional Conduct for registered
6 professional engineers in Missouri (4 CSR 30.2010). My surrebuttal is therefore
7 confined to apparent conflicts in Mr. Peshoff's testimony that pertain to siting of
8 the South Harper Peaking Facility and my personal observations of apparent
9 inconsistent land use in Cass County related to this project. I also provide a
10 preliminary screening of the Potential Industrial Sites identified by Mr. Peshoff
11 for their prospective use for this project.

12 In addition Mr. Block Andrews will provide surrebuttal testimony regarding Mr.
13 Stanley's testimony concerning environmental issues. Mr. Jerry G. Boehm will
14 provide surrebuttal testimony regarding Mr. Stanley's testimony about resource
15 planning.

16 **Stanley's Comparisons and Intensity of Use**

17 Q. What is your response to Mr. Stanley's pre-filed rebuttal testimony comparing the
18 size of the South Harper Peaking Facility ("SHPF") to that of the Southern Star
19 Natural Gas Pipeline Company's Compressor Station?

20 A. Mr. Stanley's comparison is both incorrect and misleading.

21 Q. Please explain.

22 A. Mr. Stanley contends, among other things, that the "...gas compressor station is
23 miniscule compared to the SHPF: in physical size (5 acres versus 74 acres)..."

1 [Page 6, lines 1 and 2.] He continues by stating that the "SHPF overwhelms" the
2 Gas Compressor Station. This assertion is incorrect.

3 Q. Why?

4 A. Mr. Stanley utilized incorrect land area information. Based upon the site survey
5 and as-built records from construction of SHPF, Surrebuttal Schedule CR-4
6 attached to my testimony was prepared to correctly illustrate the relative sizes of
7 the two installations. The Gas Compressor Station is shown in the red cross-
8 hatched area at the top center of CR-4. The site survey is also provided with my
9 testimony as Surrebuttal Schedule CR-5 for convenient reference. As displayed
10 on Surrebuttal Schedule CR-4, the Gas Compressor Station parcel is
11 approximately 6.4 acres, not 5 acres. The same survey indicates the overall
12 Aquila parcel is indeed 73.6 acres more or less. However the SHPF is
13 constructed on the approximate 36-acre southern half of the site. The northern
14 half of the parcel was left essentially as purchased from Mr. Bremmer except for
15 replacement fencing. Close review of the survey in Surrebuttal Schedule CR-5
16 indicates the four farm ponds that were left in tact, as well as the area leased back
17 to the Bremmers that includes a house, a barn and two other small farm buildings.
18 Mr. Bremmer and his wife still reside in the leased area on the northern portion
19 of the property and livestock graze on pastureland that occupies the rest of the
20 northern half of the site.
21 Schedule CR-4 illustrates that the SHPF Power Block utilizes approximately 5.7
22 acres of land and the SHPF Switchyard is contained on about 3.6 acres of land.

1 The total land area in use at SHPF is then only about 9.3 acres of the total 73.6
2 acre tract.

3 Q. How would you characterize Mr. Stanley's comparison?

4 A. It is misleading.

5 Q. Why?

6 A. When Mr. Stanley states that the Gas Compressor Station is "*miniscule*"
7 compared to the SHPF, he implies that Aquila is using the entire tract as a power
8 plant when that is not the case. SHPF uses only about 13 percent of the overall
9 Aquila-owned tract, while the Gas Compressor Station uses most of its total site
10 area. The SHPF left approximately 87 percent of the land in its original
11 pastureland condition for set back and added professionally landscaped berms for
12 screening. This area is indicated on Schedule CR-4 in green and comprises most
13 of the area of the combined 80 acres on which both SHPF and the Gas
14 Compressor Station are located. The Gas Compressor Station, which was
15 constructed in about 1954, is located close to Harper Road with little setback with
16 some grass and little or no landscaping. Mr. Stanley's comparison would lead
17 this Commission to believe that Aquila built a power plant which "*overwhelms*" a
18 "*miniscule*" Gas Compressor Station when that is simply not the case. Aquila has
19 made significant efforts to screen the project from view and retain the original
20 rural character of as much of the site area as possible.

21 Q. How does the SHPF compare with the character of the immediately adjacent Gas
22 Compressor Station?

23 A. The two sites are consistent and even complimentary industrial installations.

1 Q. Please explain.

2 A. Aquila needed a site with ready access to both electric transmission and natural
3 gas supply. The fuel gas must be in sufficient quantity and at an appropriate
4 pressure for the turbines. My understanding is that the total volumetric capacity
5 of the Gas Compressor Station is more than SHPF can use. The pressure of the
6 gas is actually higher than needed for the SHPF. As discussed in my direct
7 testimony, we were seeking potential locations near the intersections of Aquila's
8 electric transmission lines and natural gas transmission lines with adequate fuel
9 capacity and sufficient pressure. This site is one of only a very few in Cass
10 County which satisfies this criteria so well.

11 Q. Do you have any other concerns with Mr. Stanley's testimony?

12 A. Yes. He overstates the fuel consumption of the plant.

13 Q. Please explain.

14 A. Mr. Stanley states that the "*turbines, operating at full load, consume*
15 *approximately 4-1/2 billion*" Btu's of natural gas per hour (page 15, line 10). At
16 full load under guaranteed conditions, the total fuel consumption was proven
17 during performance tests to be only about 70 percent of that amount. Combustion
18 turbine fuel gas consumption does vary with atmospheric conditions, but Mr.
19 Stanley does not bother to qualify the basis of his figure.

20 Q. Is this important?

21 A. Yes. Some might misconstrue from his figure that SHPF's hourly fuel cost is
22 nearly 30 percent higher than it really is, regardless of ambient conditions. This
23 statement by Mr. Stanley clearly misrepresents the performance of these units.

1 Q. Is Mr. Stanley's comparison of the two facilities misleading in other respects?

2 A. Yes. Mr. Stanley's comparison (page 4, line 4 through page 6, line 4) ignores the
3 fact that the SHPF is a peaking plant, while the Gas Compressor Station is not.
4 As other Commission Staff and Company witnesses in this case have noted,
5 SHPF would only be operated to serve peak loads, provide back-up reserve to
6 temporarily replace outages at other plants or as otherwise economically justified
7 for a limited period. The SHPF is limited under the constraints of its emissions
8 permit to operate each unit no more than 2,000 hours per year, totaling no more
9 than 5,000 hours per year for all three. Generally speaking, Aquila would
10 normally plan to operate one or more of the units when Aquila's electric demand
11 peaks during high ambient temperature periods in the summer months. That is
12 not the only time that the SHPF plant would be run, but it is the most likely time
13 and the total annual hours of operation are constrained by emissions permit.

14 Q. How does this compare to the Gas Compressor Station?

15 A. The Gas Compressor Station runs daily most weekday mornings throughout a
16 normal winter to pressurize and pack the transmission lines with gas. The Gas
17 Compressor Station will likely operate anytime that natural gas demand is high
18 and it is needed to maintain adequate pipeline pressure. Thus the Gas
19 Compressor Station may run most winter days as well as summer days when fuel
20 gas demand is high due to electric peaking plants like SHPF. The Gas
21 Compressor Station likely operates far more than the SHPF.

22 Q. Why do you believe the Gas Compressor Station operates in this fashion?

1 A. For two reasons, the first being the stated intent of the Gas Compressor Station's
2 owners, and the second is the manner in which it has been operated during the
3 first quarter of this year, i.e. winter peaking.

4 Q. Please explain.

5 A. Surrebuttal Schedule CR-6, attached to my testimony describes the historic and
6 planned operation of the Gas Compressor Station. The document is a page from a
7 letter dated April 28, 2000 from David N. Roberts, Williams Natural Gas Pipeline
8 Company (then owner) to David P. Boerger with the Federal Energy Regulatory
9 Commission ("FERC"), addressing citizen concerns about the operations of the
10 Gas Compressor Station. This document and other pertinent data about the Gas
11 Compressor Station can be found on the ferc.gov website in Docket No. CP00-82-
12 000. In numbered paragraph 6 on page 3 of the letter, Mr. Roberts indicates that
13 the Gas Compressor Station was originally constructed to be a "*base load*
14 *station*", but had been operated in recent years as a "*winter peaking station*" with
15 "*limited run time.*" Mr. Roberts goes on to say that with additional new load, "*the*
16 *station will once again be operated more as a base load station with daily*
17 *incremental usage through the summer months in addition to its winter peaking*
18 *function.*"

19 Q. Please explain your second reason that the Gas Compressor Station operates more
20 than the SHPF.

21 A. Winter peaking for the Gas Compressor Station relates to low ambient
22 temperatures that cause peaks in residential and commercial fuel heating load
23 demand. Known in the industry as the "Biscuit Load", gas pipeline companies

1 typically ramp up their compressor stations to pack their pipelines with gas during
2 the very early morning hours on cold days so that when their customers arise and
3 begin to turn up the heat and run their hot water heaters, there will also be enough
4 gas in the pipelines to cook their breakfasts.

5 Q. Did the 2005-2006 winter peaking operations of the Gas Compressor Station
6 cause complaints about SHPF?

7 A. Yes.

8 Q. Please explain.

9 A. The Commission recently conducted three public hearings in Harrisonville
10 concerning this case. During the first such hearing on March 20, 2006 witness
11 Chuck Cress (Transcript Volume 1, page 71) cited noise coming from what he
12 thought had been SHPF early in the morning during what had been relatively cold
13 weather. Similarly witness Frank Dillon (Transcript Volume 3, page 44) testified
14 at hearing on March 30, 2006. Both Dillon and Cress testified that they heard
15 noises coming from the SHPF early in the mornings this winter since January.
16 Both alleged that Aquila had been operating the SHPF and complained of the
17 noise. However, the likely cause of these noises was operation of the Gas
18 Compressor Station.

19 Q. Has Aquila been operating SHPF since January 27, 2006 in violation of the
20 Circuit Court's order?

21 A. I do not believe so. Staff witness Leon Bender's testimony (page 7 at line 15)
22 addresses this question. Mr. Bender requested that Aquila confirm the operating
23 status of SHPF. He determined that according to the Aquila SHPF operating logs

1 he reviewed that the plant had not operated during the period from December 6,
2 2005 through March 30, 2006. I have also reviewed these documents. This
3 period would cover the days for which witnesses Cress and Dillon complained of
4 SHPF operating noise. The normal winter peaking operations of the Gas
5 Compressor Station are the only logical explanation for the noises that caused
6 these witnesses to complain, since Aquila's SHPF was not operating.

7 Q. Returning to Mr. Stanley's comparisons of the Gas Compressor Station to SHPF,
8 is the difference in the operating hours of the two facilities significant?

9 A. Yes. Mr. Stanley describes the two facilities as being vastly different in size and
10 intensity. The reality is that while the Gas Compressor Station is indeed
11 somewhat smaller, but not "*miniscule*" in comparison, it will normally operate for
12 a much more significant portion of the year. His statement that "*the SHPF is a*
13 *heavy industrial facility using the area many times more intensely than the*
14 *surrounding area*" mischaracterizes the situation (Page 15, lines 17 and 18) since
15 it is not consistent with the manner in which the two facilities are normally
16 operated. And since there are complaints (such as those documented above)
17 about noise from the Gas Compressor Station when SHPF is not operating, it is
18 apparent that the Gas Compressor Station is a significant industrial facility around
19 which Cass County allowed houses to be built.

20 Q. Were the houses constructed sometime after the Gas Compressor Station was
21 built in 1954?

22 A. Apparently so. Referring back to Surrebuttal Schedule CR-6 again, Mr. Roberts
23 of the pipeline company states in response to neighbors concerns about property

1 values that the “houses near the station were constructed sometime after the
2 station” (paragraph number 4.) Elsewhere on the same page he responds to
3 complaints of alleged noise, vibration, safety, and environmental impacts, as well
4 as property devaluation, from neighbors who had built their houses nearby after
5 the Gas Compressor Station was operating. So it appears that these same issues
6 that have been blamed on SHPF existed six years ago, before Aquila
7 contemplated siting a power plant there.

8 Q. What do you conclude from this?

9 A. SHPF is built on a site that is compatible with its immediate neighbor, an
10 industrial-zoned Gas Compressor Station.

11 **Inconsistent Land Use / Zoning**

12 Q. Do you find any conflicts in Mr. Peshoff’s rebuttal testimony pertaining to siting
13 of the SHPF?

14 A. Yes. Mr. Peshoff’s pre-filed rebuttal testimony goes to great lengths to explain
15 and justify his practice of land use planning and zoning in general and their
16 application in Cass County. Among other things Mr. Peshoff states:

17 *Zoning Regulations protect residential land uses from the negative*
18 *impacts of industrial and commercial land uses **and vice versa.** (Page 4 at*
19 *line 31, emphasis added)*

20 *Zoning ordinances generally include provisions that encourage*
21 *compatibility between uses and seek to **minimize conflicts between***
22 ***different types of land uses.** (Page 5 at line3, emphasis added.)*

23
24 However, Mr. Peshoff does not deal with the situation at the heart of this case
25 where Cass County did not follow his advice and these principles he espouses.

26 The original owners of the Southern Star Gas Compressor Station built their plant

1 in about 1954 immediately west and adjacent to where the T-intersection of 243rd
2 Street and Harper Road is now located. Mr. Peshoff states that Cass County did
3 not adopt zoning until 1959 and provides a history of Cass County's development
4 of land use planning and zoning since that time (page 11 at line 27 and continuing
5 through all of page 12).

6 Q. Where is the conflict?

7 A. Cass County apparently allowed the construction of residences directly across
8 Harper Road such as the Dillon Residence in Moonlight Acres and other homes
9 within a block of the Gas Compressor Station along 241st Street west of Harper
10 Road. Mr. Peshoff declares the siting of SHPF is an inconsistent land use (page
11 25 at line 41), but Cass County apparently believes that putting residences next to
12 the Gas Compressor Station is compatible land use. So an industrial-zoned site
13 which compresses natural gas to pressures in excess of 800 psig using multiple
14 engines in near base load operations is compatible with residential land use, but a
15 peaking plant that consumes natural gas at 425 psig for limited hours each year is
16 not according to Mr. Peshoff. The Gas Compressor Station is zoned industrial in
17 between parcels that are zoned residential and agricultural within an area
18 classified as a Multi-Use Tier according to Mr. Peshoff's Schedule BGP-3 Map 2.

19 Q. Why do you find this inconsistent?

20 A. The Gas Compressor Station was built before zoning was adopted by Cass
21 County, so it must have received its apparent Industrial Zoning status at the time
22 Cass County adopted zoning or sometime thereafter. It appears that Cass County
23 will permit inconsistent land use if it is residential adjacent to an industrial-zoned

1 parcel, but in the case of SHPF, Mr. Peshoff argues that locating the peaking plant
2 next to an industrial-zoned Gas Compressor Station is incompatible. This is
3 inconsistent favoritism for residential growth that fails to allow for the utility
4 infrastructure which supports the residential growth.

5 Q. Can you cite a similar example of inconsistency in Cass County's land use
6 compatibility concepts as explained by Mr. Peshoff?

7 A. Yes. During the summer of 2004 Aquila sought a Special Use Permit ("SUP") for
8 the Camp Branch Energy Center ("CBEC") which was the initial site selected for
9 this project. Mr. Peshoff notes the Cass County Planning Board denied the SUP
10 (page 18 at line 20.) Schaeffer Estates, a subdivision of homes on large multi-
11 acre lots is located north of 235th Street and east of Missouri Highway 7, but the
12 CBEC was planned for an approximately 40-acre tract on the south side of 235th
13 Street. In between CBEC and Schaeffer Estates there are four large high-pressure
14 Panhandle Eastern Pipeline Company ("PEP") interstate natural gas transmission
15 lines in an underground corridor running west to east within Schaeffer Estates.
16 My understanding is that these lines operate in excess of 800 psig. Actually, the
17 northern most of these four lines is within or very close to several residences in
18 Schaeffer Estates. In addition there is an Aquila 161-kV electric transmission
19 corridor running from south to north through the edge of Schaeffer estates and
20 almost perpendicular across the natural gas pipelines.

21 But as Mr. Peshoff recounts CBEC was planned in "*an area the city of*
22 *Harrisonville intended to annex for residential purposes according to its Plan of*
23 *Intent*" and the Cass County Planning Board recommended that the CBEC special

1 use permit application be denied for land use incompatibility among other reasons
2 (page 18, lines 1 through 6.)

3 Q. Why is this an inconsistency on the part of Cass County?

4 A. Once again Cass County (in this case along with the City of Harrisonville) favors
5 residential construction over utility infrastructure to support the residences even
6 when the homes are located in the immediate vicinity of high pressure interstate
7 natural gas pipelines and in this instance, a high voltage electric transmission
8 corridor as well. It appears that Cass County's zoning regulations protect
9 residential land uses from the negative impacts of industrial and commercial land
10 uses but **not vice versa** as Mr. Peshoff states they should (Page 4 at line 31).

11 Neither does Cass County's application of zoning ordinances **minimize conflicts**
12 **between different types of land uses** (Page 5 at line 3) by allowing residential
13 sites nearly on top of high pressure natural gas pipeline corridors and adjacent to
14 high voltage electric transmission right of ways. Nonetheless Mr. Peshoff asserts
15 that Aquila should have located this project within the Urban Service Tier
16 (throughout page 26 of his testimony) which was the case for the CBEC site.

17 These examples clearly indicate that Cass County arbitrarily applies the concept
18 of incompatible land use in an inconsistent manner when it serves Cass County's
19 preference for residential use.

20 Q. Are there other inconsistencies in Cass County's application of Mr. Peshoff's land
21 use concepts?

22 A. Yes. Mr. Peshoff concludes that the SHPF "*is not an appropriate use for its rural*
23 *location*" (page 25, line 36), but Cass County did not oppose SHPF when it was

1 originally planned to be annexed by the City of Peculiar (Fisher rebuttal
2 testimony, page 6, lines 6 through 13.) The character of the finished site and the
3 project itself would have been no different when it was originally planned to be
4 annexed into the City of Peculiar. Thus, Cass County supported the project and
5 set aside its land use plans when a municipal jurisdiction was involved. It simply
6 became another jurisdiction's problem. This is a working demonstration of the
7 concept Mr. Peshoff identified as "*not in my backyard*", aka "*NIMBY*" (page 23,
8 line 37 and page 24, line 1).

9 Q. Are there functional requirements for siting peaking plants?

10 A. Yes. Peaking plants like SHPF primarily require access to electric transmission
11 and fuel gas supplies, among other things. Electric transmission lines bring
12 startup power to the peaking plant and deliver the plant's electric output to the
13 transmission grid for use by ratepayers. Natural gas transmission pipelines
14 deliver fuel to operate the plant. Both the electric transmission lines and the
15 natural gas pipelines must have sufficient capabilities to support the peaking
16 facility. These are "functional requirements" for the siting of peaking plants.

17 Q. How does Mr. Peshoff address these "functional requirements" in his testimony?

18 A. Except to question the electric transmission lines and gas pipelines that Aquila
19 utilized for SHPF (page 24, line 27) Mr. Peshoff's testimony ignores these
20 requirements and their resulting capital and operation and maintenance costs that
21 must ultimately be borne by Aquila's rate payers, a great number of which are
22 Cass County residents. The Potential Industrial Locations identified in his

1 Schedule BGP-3 Map 5 and introduced in Mr. Peshoff's testimony (page 30, line
2 25 through page 31, line 8) largely ignore these requirements.

3 Q. Is there more involved in "functional requirements" than the costs of extending
4 electric lines and gas pipes?

5 A. Yes. It is difficult and time consuming to gain approval for siting overhead
6 electric transmission lines. It often requires condemnation of land for rights of
7 way and causes difficulties for all concerned. Indeed, as Ameren pointed out in
8 an amicus brief to the Western District Court of Appeals in Case No. WD64985,
9 the land use requirements for a transmission path can readily exceed those of a
10 power plant. This is in addition to the fact that a transmission path can affect
11 many more land owners than a power plant. Although essential to bring electric
12 service to ratepayers, overhead electric lines cause NIMBY reactions. Natural
13 gas pipelines seem to have less impact because they are ultimately "out of sight;
14 out of mind". However, the point is that locating a peaking plant far away from
15 any populated area not only increases capital and operating costs for ratepayers,
16 such siting practices guarantee that many more citizens will be impacted by the
17 construction, on going maintenance and appearance of overhead electric
18 transmission lines. The confluence of infrastructure necessary to support the
19 economic siting of a power plant almost guarantees that some portion of the
20 population will be affected.

21 Q. Must Aquila have its own electric transmission lines to connect to a new peaking
22 plant?

1 A. Yes, Aquila would most likely need to utilize its own electric transmission lines.
2 In a situation such as this in which a regulated public utility is building a peaking
3 plant in its certified service territory to serve its own native load, it would not
4 make much sense to site it to connect to another regulated utility's transmission
5 lines. For instance, if Aquila sited this peaking plant to connect only directly with
6 Kansas City Power and Light Company ("KCPL") transmission lines, Aquila
7 would have to pay KCPL for transmission service; but more importantly Aquila is
8 building the plant to serve its loads, not those of KCPL. So this project could not
9 be sited merely anywhere there is an overhead electric transmission line, it would
10 need to be Aquila's line, and need to have sufficient capability or the ability to
11 have its capability increased to appropriately match the peaking plant.

12 Q. Why do you raise this point?

13 A. Because Mr. Peshoff has identified eleven potential sites for this peaking plant
14 with no apparent regard for such requirements (page 30, line 25 through page 31,
15 line 8 and Schedule BGP-3 Map 5). The next section of my testimony will
16 evaluate each of Mr. Peshoff's potential sites with respect to the criteria used for
17 this project.

18 PESHOFF'S POTENTIAL SITES

19 Q. What are Mr. Peshoff's Potential Sites?

20 A. Mr. Peshoff identified eleven potential sites "*where an industrial use, such as a*
21 *power plant would be appropriate*" (page 30, line 25). He describes them as
22 "*examples of areas that appear to accommodate heavy and industrial uses*" (page
23 31, line 36) with the clear implication that such sites would be appropriate for this

1 peaking plant. Mr. Peshoff only identifies these sites in Schedule BGP-3 on Map
2 5 and provides no other specific information about their respective locations.

3 Q. What have you done to evaluate these sites?

4 A. Time constraints did not permit a walk down of each site and the level of
5 investigation that was conducted for each of the Aquila sites identified in my
6 direct testimony (Schedules CR1 and CR-2). For presentation purposes another
7 map was developed that contains Mr. Peshoff's Potential Sites, the sites evaluated
8 by Aquila, Mr. Peshoff's County Wide Land Use Tiers (Schedule BGP-3 Map1),
9 electric transmission lines and natural gas transmission lines on a map of Cass
10 County. This new map is attached to this testimony as Surrebuttal Schedule CR-
11 7. However, since this new map is literally a compilation of several maps
12 developed by various sources, a disclaimer must be made. In compiling this map,
13 we relied upon work performed by others and over which we have no control
14 (including Aquila, Planning Works, Cass County, and commercial cartographers).
15 Therefore I cannot take responsibility for the accuracy of any discrete dimension
16 on this map, but I submit it as a fair representation of these locations.

17 Q. Please describe Surrebuttal Schedule CR-7, which you have titled "Compilation
18 of Aquila Sites and Peshoff Sites".

19 A. Each of Mr. Peshoff's Potential Sites is identified with a red dot and a number.
20 Surrebuttal Schedule CR-8 to this testimony also provides the results of a brief
21 preliminary screening table of these sites. Each site is listed in chronological
22 order as numbered on Schedule CR-7. The only order of presentation is a
23 generally north to south orientation. No other relative significance applies to the

1 numbering system; the sites are not ranked. It should be noted that this is merely
2 a screening of the sites conducted from reviewing Mr. Peshoff's Schedule BGP-3,
3 Googletm aerial photographs of each site area and the information compiled on
4 Schedule CR-7 from other sources as noted.

5 Q. Are any of the Peshoff Potential Sites suitable for a peaking plant project like the
6 SHPF?

7 A. Based on this very preliminary screening, a few of these sites might be suitable,
8 but none are any more so or any more appropriate than the existing SHPF site or
9 the CBEC site Aquila originally selected. Several of the Peshoff Potential Sites
10 are completely unsuitable. One is so remote as to be too costly to warrant further
11 consideration and many landowners would be affected by lengthy electric
12 transmission line and gas supply pipeline extensions to serve it. Others of Mr.
13 Peshoff's sites are nearby sites that Aquila already evaluated and which either did
14 not compare favorably to Aquila's other site options or were ruled out due to
15 opposition or other flaws.

16 Q. Which of the Peshoff Potential Sites do you consider to be fatally flawed so as not
17 to be worthy of consideration?

18 A. Potential Site No. 1 is close to a Belton City Park and has dense residential
19 neighborhoods on two sides with no apparent natural screening.

20 Potential Site No. 4 is near two apparent quarry operations. Inlet filter dust and
21 likely bearing vibration issues generally make quarries and combustion turbine
22 peaking plants virtually incompatible.

1 Potential Site No. 5 would be in the same category as No. 4 above with an
2 apparent quarry operation nearby.

3 Potential Site No. 7 is within about ¼ mile or so of an apparent airfield. Exhaust
4 from simple cycle gas turbines such as this is problematic in the vicinity of
5 airfield traffic patterns and should be avoided because heat rising upward in the
6 exhaust plume could cause unstable air conditions in aircraft flight paths for take
7 off and landing.

8 Q. Which of the Peshoff Potential Sites are nearby sites that Aquila already
9 evaluated which either did not compare favorably to Aquila's other site options or
10 were ruled out due to opposition or other flaws?

11 A. Potential Site No. 2 – is adjacent to the Aries Combined Cycle merchant plant.
12 The plant site is owned by Calpine. As the Commission knows, Calpine has been
13 adamantly opposed to Aquila constructing a peaking plant. It seems safe to say
14 that Calpine views a peaking plant as a competitive threat to Aries. It is my
15 understanding that even when Aquila, through its merchant subsidiary co-owned
16 the Aries plant with Calpine, it would have required the approval of Calpine to
17 construct another generating facility at that location. Despite Mr. Peshoff's
18 question about them (page 24, line 30), there were several other factors which
19 contributed to the prior elimination of this site. These included insufficient
20 Aquila-owned substation area for the necessary expansion; insufficient natural
21 gas supply pipeline capacity for additional turbines; potential electric
22 transmission impacts from additional generation; and the possibility of air

1 permitting requirements for the additional turbines affecting the operating permits
2 for the existing units.

3 Potential Site No. 6 – is less than one mile east of the Aquila Camp Branch
4 Energy Center site which was not acceptable to the Cass County Planning Board
5 and the City of Harrisonville despite being in the Urban Service Tier. There was
6 strong, organized local opposition to this site.

7 Potential Site No. 5 – in addition to the reason cited in the preceding answer, this
8 site is located about one mile from the Aquila North Lake site which was first
9 offered by and subsequently opposed by the City of Harrisonville.

10 Q. Which of the Peshoff Potential Sites is so remote as to be too costly to receive
11 further consideration?

12 A. Potential Site No. 11 – setting just north of Drexel is nowhere near appropriate
13 fuel gas supply or Aquila electric services. Applying similar evaluating criteria to
14 those utilized for the Aquila sites on Schedule CR-2 (which was filed with my
15 direct testimony in this case) results in an estimated incremental cost of between
16 \$24.5 to \$33 Million for natural gas pipeline and electric transmission extensions
17 and upgrades. Such extra costs and likely difficulty in obtaining rights of way
18 would eliminate this site from further contention for the project.

19 Q. Have you identified any of the Peshoff Potential Sites that might be potentially
20 suitable for a peaking plant like the SHPF?

21 A. Yes. There are four sites that might be suitable, but would be no better than the
22 existing SHPF or the CBEC sites.

23 Q. Please explain.

1 A. Potential Site No. 3 – was assigned an incremental cost of \$12 to \$16 million for
2 natural gas supply and electric transmission interconnections. However, as with
3 the SHPF site, No. 3 is located in the Multi-Use Tier, and is similar in character to
4 the SHPF. It is in apparent agricultural use with large lot residential use in the
5 immediate vicinity.

6 Potential Site No. 8 – is within the Urban Service Tier like the CBEC site, and is
7 also in apparent agricultural use with some large lot residential use in the vicinity.

8 Additional incremental natural gas supply and electric transmission costs were
9 estimated at \$11 million.

10 Potential Site No. 9 – is in the Multi-Use Tier like the SHPF. However this site is
11 near a potentially sensitive Missouri Department of Conservation parcel which
12 could preclude its use for a power plant site. Otherwise it is a similar rural setting
13 to the SHPF site, but with no apparent natural screening features. Additional
14 incremental natural gas supply and electric transmission costs were estimated at
15 \$14 million.

16 Potential Site No. 10 – is within the Multi-Use Tier like the SHPF site. It is also
17 in apparent agricultural use with large lot residential use nearby. Additional
18 incremental natural gas supply and electric transmission costs were estimated at
19 \$11 million.

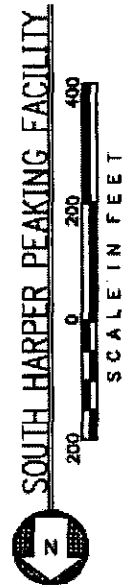
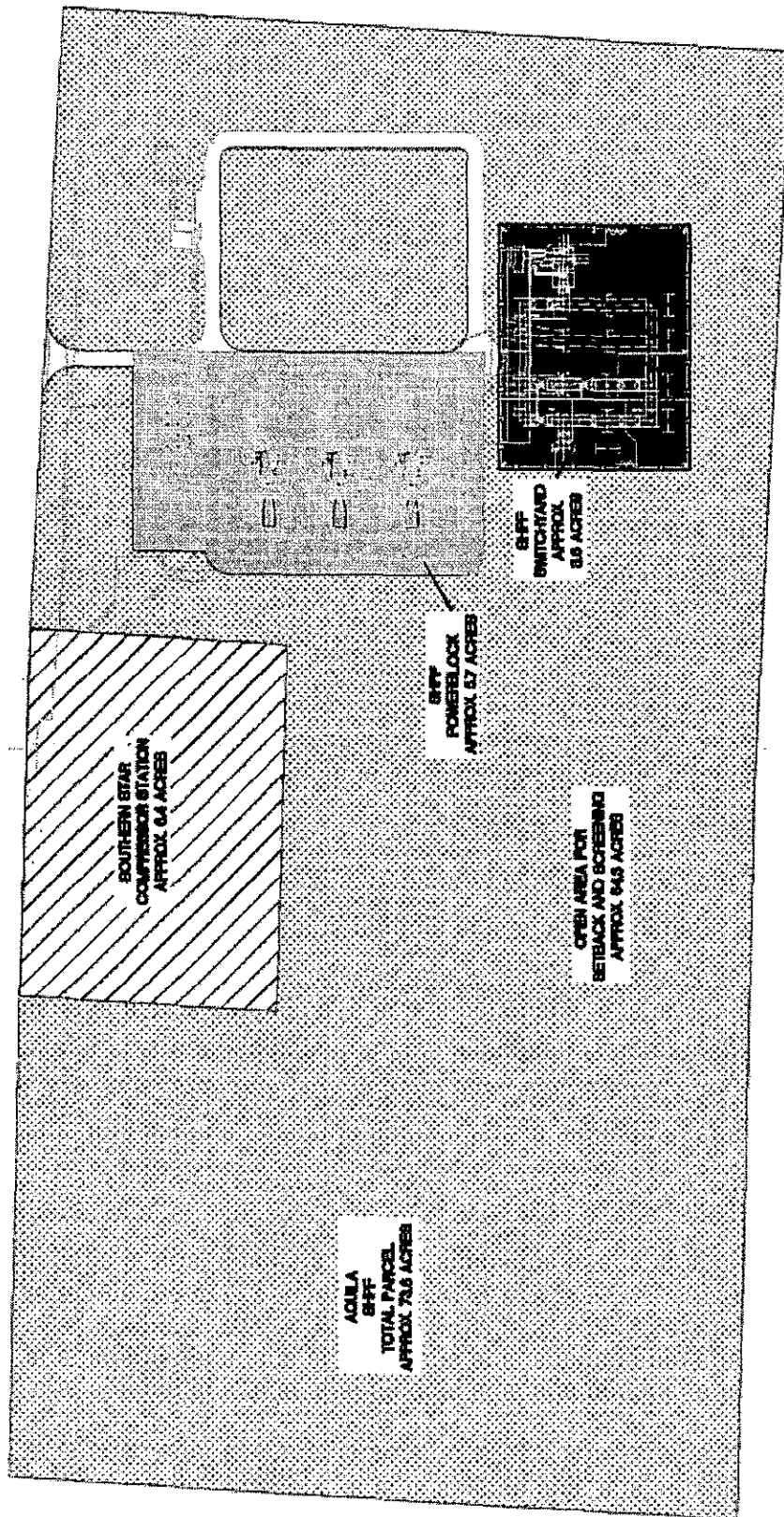
20 Q. What do you conclude from your preliminary review of Mr. Peshoff's Potential
21 Sites?

22 A. None of Mr. Peshoff's Potential Sites would be a more appropriate location for
23 this project than the SHPF site or the CBEC site. Six of the 11 Peshoff Potential

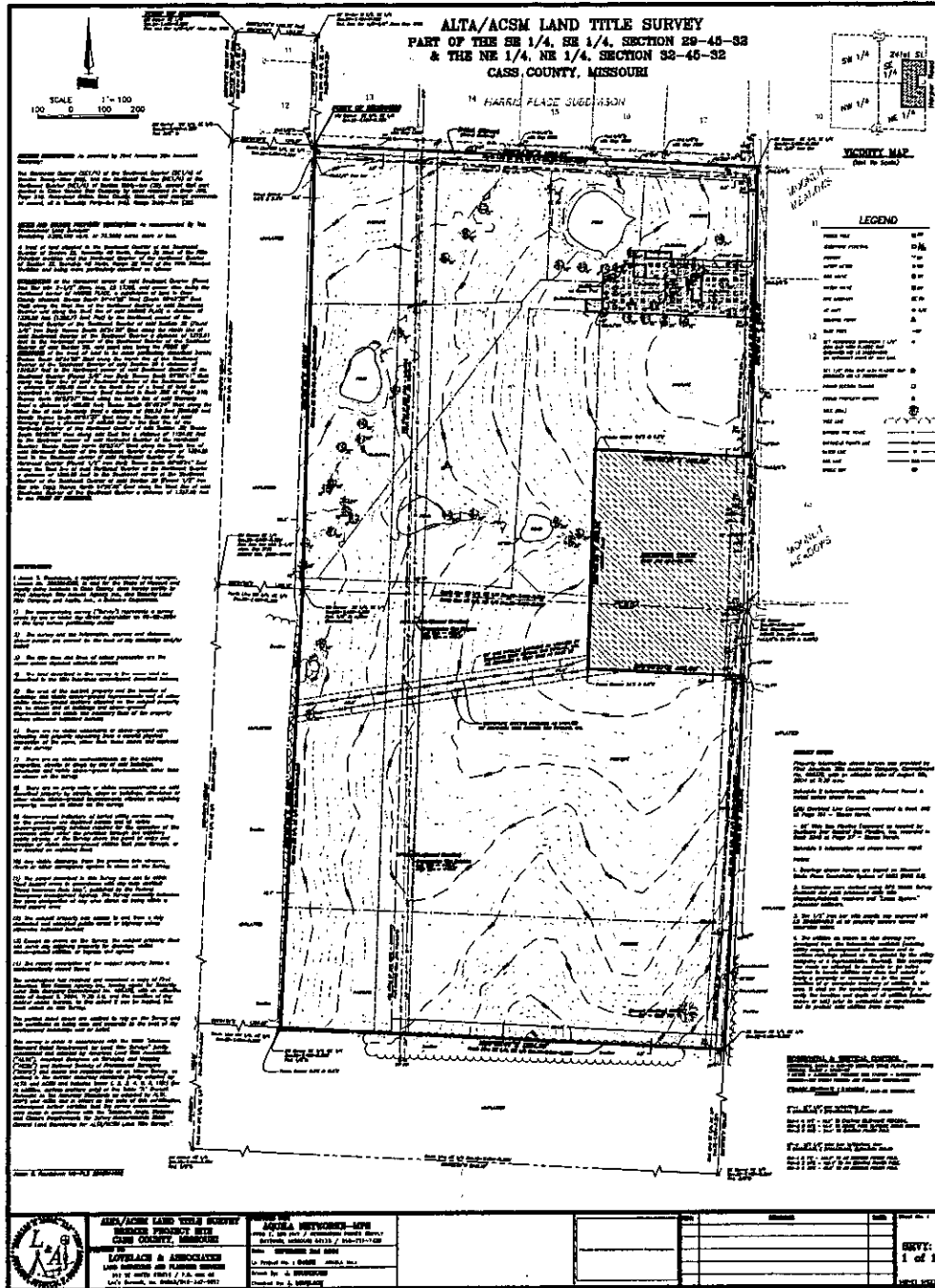
1 Sites are either fatally flawed as described above or so remote as to be
2 prohibitively expensive and likely difficult to connect for this project. One is a
3 clone of the CBEC site which was not acceptable to Cass County or the City of
4 Harrisonville, regardless of being located in the Urban Service Tier. The
5 remaining Peshoff Potential Sites are so similar to the SHPF site that Aquila
6 would likely suffer the same treatment from Cass County as has occurred for the
7 SHPF site.

8 Q. Does this conclude your testimony?

9 A. Yes.



SOUTH HARPER PEAKING FACILITY

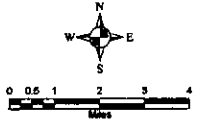
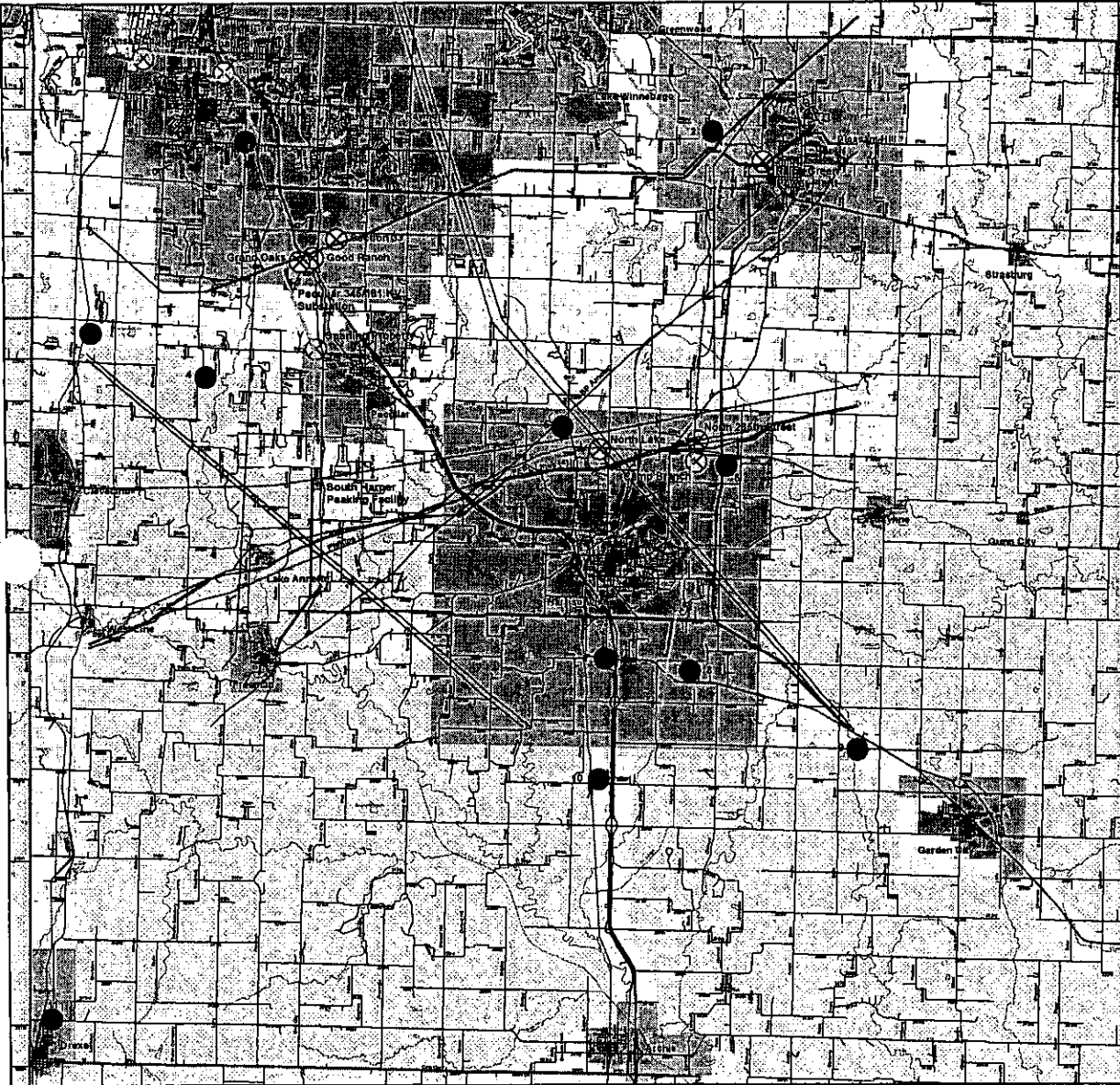


David P. Boergers, Secretary
April 28, 2000
Page Three

conducted at Peculiar station show that the station currently exceeds the required noise level established by the FERC. Since Williams proposes to modify the existing units and add a new turbine, the entire station will have to meet the FERC noise requirements. A copy of a letter sent to Mr. Rew on April 19, 2000 addressing the noise levels is attached.

- 2) House vibration - Peculiar station currently operates on a limited basis and any associated vibration is of a short duration. The modifications proposed to the existing engines at Peculiar station should minimize any vibration problem.
 - 3) Safety - Before Williams increased the operating pressure of the Sedalia 20" pipeline, the line was water tested to 1.5 times the proposed increased pressure to insure the pipeline would withstand the higher pressure. There have been no safety issues related to the Sedalia 20" pipeline and the line is in compliance with DOT Office of Pipeline Safety requirements.
 - 4) Property value - As stated above, the Peculiar compressor station has been in operation since 1954. The houses near the station were constructed some time after the station. Williams has no policy to offer compensation to property owners for perceived property devaluation.
 - 5) Environmental impact - There will be minimal environmental impact to the surrounding area since the new turbine will be constructed on existing station property. Some increased equipment noise and activity will occur as a result of construction, but will be short-term in nature.
 - 6) Change in usage of station - When Peculiar station was originally constructed, it was used as a base load station. However, in recent years the station has been operated as a winter peaking station and has had limited run time. With the addition of the power plant load, the station will once again be operated more as a base load station with daily incremental usage through the summer months in addition to its winter peaking function.
2. For all gas releases which occurred within the previous year where public safety officials were notified (as mentioned in the letter) or which were significant unscheduled releases provide:

As stated in response to question 1, attachment 1(a), there have been no gas releases within the previous year where public safety officials were notified or where significant releases of gas were involved. The following information is provided for the most recent occurrence when public safety officials were notified.



This map should only be used as a guide and not as definitive information for construction or assessment. The areas and locations depicted on this map are approximations and are provided for information only. You have acknowledged to make the map accurate, complete, correct and timely. We have not taken upon information provided by others, which appears to be accurate. However, we do not warrant that we have no liability for the accuracy of the information. It is provided with no warranty whatsoever.

Legend

- South Harper Peaking Facility
- Peculiar 345/161 KV Substation
- Planning Works
- Potential Industrial Sites
- Sites Evaluated by Aquila
- Aquila 161 KV Transmission Line
- Aquila 69 KV Transmission Line
- Aquila 345 KV Transmission Line
- KCP&L Transmission Line
- Gas Pipeline
- Incorporated Areas
- Multi-Use Tier
- Urban Service Tier



18041 Foster
P.O. Box 1000
Stow, Kansas 66205-1000



**COMPILATION OF
AQUILA SITES
AND
PESHOFF SITES**

DESIGNED BY: S. ROBERTS	CHECKED BY: C. ROBERTS
DRAWN BY: J. CLAWSON	DATE: 4-11-00
CUSTOMER ID: S&M PROJECT NO.	SCALE: AS SHOWN

SEE FILE NAME: SITES.SXD
SCHEDULE CR-7 REV
1



Schedule CR - 8
Preliminary Screening
Peshoff's Potential Sites



BGP Site No.	Description / Location	Electric Transmission Access	Natural Gas Supply Access	Air Permit Issues	Comments
		Δ Improvement Cost (M)	Δ Improvement Cost (M)		
1.	Inside southern border of Belton near intersection of Cambridge and Mullen Roads. Large open tract near dense residential neighborhoods. West of US Highway 71 and South of MO State Highway 58.	Close proximity to Aquila 69-kV/161-kV transmission line.	12 miles south to Panhandle Eastern Pipeline (PEP); 9 miles south to Southern Star (SS). Many road crossings and density issues add cost. \$15 to \$20 Million likely.	Likely within probable future ozone non-attainment.	Close to Belton Memorial Park and dense residential neighborhoods to the north and south. No apparent natural screening. Potential extra Air Pollution Controls (APC) expense and emissions permit difficulty.
		+ \$1.0 Million	+ \$15 Million		+ \$16 Million
2.	Adjacent to Arise Plant site owned by Calpine, a non-regulated independent power producer. Inside the Urban Service Tier west of Pleasant Hill near 176 th Street and Cemetery Road.	Close to Aquila 161-kV transmission line. Capacity for additional generation uncertain. Will require updated transmission study.	Requires gas pipeline extension. 12 miles south to PEP; 9 miles south to SS. Several crossings - State Highway 58 and railroads.	Near probable future ozone non-attainment area. Also Arise emissions compound ground level concentrations. Likely 110'± Stacks req'd.	Calpine financial problems add uncertainty. Potential extra APC expense and emissions permitting difficulty. Little natural screening for tall stacks.
		+ \$2 Million	+ \$15 Million		+ \$17 Million
	East of MO State Road D (Holmes Road) and north of 223 rd Street, along rail road. In Multi-Use Tier.	6.5 miles east to Aquila 161-kV transmission (runs from Peculiar to South Belton Substation) or about 3 miles northeast to Aquila's side of the 345-kV transmission line.	3.5 miles south to SS; 6 miles south to PEP.	Close to probable future ozone non-attainment area.	Similar site character to SHPP, somewhat denser residential use in immediate vicinity.
		+ \$7 to \$8 Million	+ \$5 to \$8 Million		+ \$12 to \$16 million
4.	East of MO State Road Y at 227 th Street, on south edge of Multi-Use Tier; 3 miles south east of No. 3 above. Appears to be agricultural use.	3.5 miles east to Aquila 161-kV transmission (runs from Peculiar to South Belton Substation) or about 2 miles north to Aquila's side of the 345-kV transmission line.	2.5 miles south to SS; 6 miles south to PEP.	Outside probable future ozone non-attainment area.	Two nearby apparent quarry operations a concern for seismic alignment and Inlet filter dust. Otherwise similar site character to SHPP.
		+ \$4 Million	+ \$3 to \$5 million		+ \$7 to \$9 Million
5.	Near Aquila's North Lake Site, west of MO State Route 291 at about 231 st Street. Inside Urban Service Tier.	3.5 miles east to Aquila 161-kV transmission line.	Within 1 mile of SS; and about 1 mile to PEP.	Outside probable future ozone non-attainment area.	Proximity to apparent quarry or batch plant. Residential in vicinity. Otherwise similar to SHPP. About 1 mile from Aquila North Lake site that was offered by and then opposed by the City of Harrisonville.
		+ \$4 Million	+ \$1 Million		+ \$5 Million
6.	West of Timberview Road south of 235 th Street, about 1/2-mile east of the original Aquila Camp Branch Energy Center site. Inside Urban Service.	1/2 mile east of Aquila 161-kV transmission line.	PEP 1/2 mile north; SS 1-1/2 mile north.	Outside probable future ozone non-attainment area.	Due east of CBEC and visible from Schaeffer Estates. In or near Harrisonville Plan of Incent. Near CBEC site previously rejected by both Harrisonville and Cass County.
		+ \$1 Million	+ \$1 to \$2 Million		+ \$3 Million
7.	West of the intersection of US Highway 71 and MO State Highway 7 in the Urban Service Tier surrounded by, if not now within Harrisonville.	1.5 miles east to Aquila 161-kV transmission line.	5.5 miles northwest to PEP; 8 miles northwest to SS. Many crossings and density factors.	Outside probable future ozone non-attainment area.	Within 1/2 mile of apparent airfield - problematic conflict with stack heights and 1,900 °F + exhaust gas temperatures. Prior rejection of Aquila plant by Harrisonville. Anticipate high land costs.
		+ \$2 Million	+ \$8 Million		+ \$10 Million



Schedule CR - 8
Preliminary Screening
Peshoff's Potential Sites



BQP Site No.	Description / Location	Electric Transmission Access	Natural Gas Supply Access	Air Permit Issues	Comments
		Δ Improvement Cost ⁽¹⁾	Δ Improvement Cost ⁽²⁾		
8.	North of MO Highway 7 and 2 miles east of US Highway 71 in Urban Service Tier and about 2 miles east of Site No. 7 above. South east of Harrisonville. Rural in character with some large lot residential.	About 1/4 mile west to Aquila 161-kV transmission line.	7.5 miles west northwest to PEP or 6.5 miles north to PEP around Harrisonville; 8 miles west northwest to SS or 8.5 miles north to SS. Many crossings on route to the north.	Outside probable future ozone non-attainment area.	Rural character similar to SHPF. Prior rejection of Aquila plant by Harrisonville. + \$11 Million
9.	South of MO Highway 7 and 6 miles east of US Highway 71, in Multi-Use Tier.	6 miles northwest to Aquila 161-kV transmission line.	6.5 miles north to PEP; 9 miles north to SS. Highway crossing but mostly rural route.	Outside probable future ozone non-attainment area.	1 mile east of potentially sensitive MO Conservation lands. Rural setting similar to SHPF, but no apparent natural screening. + \$14 Million
10.	Between rail line and west side of US Highway 71, north of 299 th Street. In Multi-Use Tier.	2 miles northeast to Aquila 161-kV transmission line.	8 miles northwest to PEP; 9 miles northwest to SS.	Outside probable future ozone non-attainment area.	In Multi-Use Tier. Similar to SHPF in rural character with large lot residential tracts in vicinity. + \$11 Million
11.	Immediately north of Drexal in Urban Service Tier. North of State Road A at State Road D. Between State Road A and rail line to the west.	11 miles northeast to Aquila 69-kV transmission line at Freeman with likely insufficient capacity.	8.5 miles north to PEP at West Line; 13 miles north to SS at Cleveland.	Outside probable future ozone non-attainment area.	Nowhere near appropriate gas or electric services. Apparent rural character with denser residential in Drexal immediately south. Otherwise similar to SHPF. + \$24.5 to \$33 Million

(1) Differential Improvement Costs for Access to Electric Column do not reflect total actual costs. Differential costs are meant to compare the items of a design that differ from a zero distance site, e.g. distances to electrical interconnect. Number assumes site requires plant substation and that new or reconducted line costs \$1.0 Million/mile.

(2) Differential Improvement Costs for Access to Natural Gas do not reflect total actual costs. Differential costs are meant to compare the items of a design that differ from a zero distance site, e.g. distances to gas supply. Number assumes new gas line costs \$1.0 Million/mile. An arbitrary factor was used to account for added costs of extra wall thickness for large pipe runs through towns, road borings, creek crossings, and r.o.w. or easement acquisition.

**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 electrical production and)
 Related facilities in unincorporated areas of Cass)
 County, Missouri near the town of Peculiar.)

Case No. EA-2006-0309

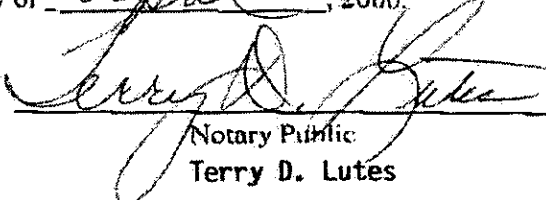
County of Jackson)
) ss
 State of Missouri)

AFFIDAVIT OF CHRIS R. ROGERS

Chris R. Rogers, being first duly sworn, deposes and says that he is the witness who sponsors the accompanying testimony entitled "Supplemental Testimony of Chris R. Rogers;" that said testimony was prepared by him and under his direction and supervision; that if inquiries were made as to the facts in said testimony and schedules, he would respond as therein set forth; and that the aforesaid testimony and schedules are true and correct to the best of his knowledge, information, and belief.


 Chris R. Rogers

Subscribed and sworn to before me this 18th day of April, 2006.


 Notary Public
 Terry D. Lutes

My Commission expires:

8-20-2008



TERRY D. LUTES
 Jackson County
 My Commission Expires
 August 20, 2008