BEFORE
THE OHIO POWER SITING BOARD

In the Matter of the Application of Republic Wind, LLC, for a Certificate to Site Wind Powered Electric Generating Facilities in Seneca and Sandusky Counties, Ohio	))))	Case No. 17-2295-EL-BGN

MEMORANDUM OF LOCAL RESIDENT INTERVENORS JOSEPH & DIANE ANDERSON, DENISE BELL, AARON & CARRIE BOES, RICHARD & LINDA BOLLENBACHER, ROB & MARY CHAPPELL, THOMAS & KATHLEEN FRIES, LESLIE HACKENBURG, JEFFREY & DEEANNE HAMILTON, MARY AND ALLEN HASSELLBACH, DUANE & DEB HAY, ETHAN & CRYSTAL HOEPF, GARY & DAWN HOEPF, JASON & MICHELLE HOEPF, TAYLOR HOEPF, DAVID P. HOOVER, JEFFREY A. HOOVER, KENNETH & DEBRA HOSSLER, GREG & LAURA JESS, LEONARD & BEVERLY KUBITZ, GARY & MICHELLE MILLER, STEVEN & KELLEY MILLER, KIM MITCHELL, CHARLES & LINDA MORSHER, PATRICIA MOTRY, STEVEN & LINDA MULLIGAN, DOUG & JENNIFER MYERS, LINDA NIEDERKOHR, KEVIN & JENNIFER ONEY, NICHOLAS & MICHELLE REITER, TOM & LORI SCHEELE, ELAINE SCHULTZ, JAMES & VICTORIA SELIGA, EUGENE & JOANN SMITH, JAMES & ELAINE STEINMETZ, HERMAN & PATRICIA STUDER, CHRISTINE VOGT, MARK WEBER & CINDRA RILEY, CHARLES & RHONDA WEYER, ANN WRIGHT, AND CHRIS & DANIELLE ZEMAN IN OPPOSITION TO REPUBLIC WIND'S APPLICATION FOR REHEARING

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TABLE OF CONTENTS

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By 1961, the residents of the Bellevue, Ohio area had learned to their dismay that contaminants spreading rapidly through the karst channels of the Bellevue-Castalia Karst Plain had caused severe and widespread damage to their drinking water wells. LR Exh. 24, Sasowsky Direct Testimony, p. 14, lines 1-19. In 2013, a previously undiscovered karst sinkhole in Florida collapsed and swallowed a house, killing the homeowner in the process. *Id*., p. 9, line 21 – p. 10, line 2.

Notwithstanding such dangers of construction on karst formations, Republic Wind, LLC ("RW") has paid scant attention to the high risk to groundwater supplies and even its own wind turbines from constructing turbines in karst, asking the Ohio Power Siting Board ("Board") to

approve the siting of its proposed wind project ("Project") in the same Bellevue-Castalia Karst Plain that suffered groundwater contamination from other irresponsible practices prior to 1961. Even worse, RW demands that the Board approve the siting of its turbines despite RW's failure to provide the Board with any expert testimony or other hydrogeological evidence about the risks that installing the turbine foundations, including the probable grouting of karst channels, will damage karst formations, cut off groundwater flow to community wells, flood the area, or provide conduits for the rapid movement of pollutants from turbine sites to the wells. The Board in its Opinion, Order, and Certificate of June 24, 2021 ("Opinion") has justifiably declined RW's unreasonable and irresponsible demand for a certificate that would have allowed RW to proceed with this Project.

Now RW has filed an Application for Rehearing expressing outrage over the Board's decision and repeating its demands that it be allowed to proceed with the Project notwithstanding its failure to produce any record evidence supporting its assertions that construction of turbine foundations will not damage the water supply on which the community depends. The Local Resident Intervenors ("Residents") named in the title of this memorandum request that the Board deny RW's Application for Rehearing.

I. Residents' Response To RW's Assignment of Error No. 1:

The Board Correctly Concluded That The Project Does Not Represent The Minimum Adverse Environmental Impact Under R.C. 4906.10(A)(3) Or Serve The Public Interest, Convenience, And Necessity Under R.C. 4906.10(A)(6), Because RW Has Failed To Prove That Its Plans To Install Turbines In The Karst Plain Will Not Damage The Karst Formations, Causing Flooding, Pollute The Groundwater, Or Block The Flow Of Groundwater To The Community's Wells.

A. An Uninterrupted Supply of Clean Groundwater Is Essential To The Residents In And Around The Project Area.

The Board's Opinion shows that the Board has an accurate view of the importance of groundwater supplies to the community around the Project Area, stating (at Page 2) that "[o]f particular concern, most residents in the area rely on private wells for potable water and the evidence suggests that disruptions in the karst formations has the potential to quickly, and detrimentally, affect those wells." Consistent with that concern, RW itself acknowledges that "the majority of residents in the vicinity of the Project Area rely upon private wells for their potable water." Amd. Applic., p. 73. The majority of residences are supplied by individual private wells, which utilize the groundwater underneath their property. LR Exh. 24, Sasowsky Direct Testimony, p. 16, A.22.

The principal source of groundwater in the Project Area is a carbonate limestone bedrock aquifer. Amd. Applic., p. 73; Amd. Applic., Exh. F, p. 4. Some of the groundwater utilized by the area's residents can be found at shallow depths; a survey of residents in the Project Area found that well water was found as shallow as eight feet from the ground surface. *Id*., p. 5.

The availability of suitable water for drinking, agriculture, and other purposes is critical in a rural area such as this one. LR Exh. 24, Sasowsky Direct Testimony, pp. 15-16, A.22. Even RW witness Shawn McGee acknowledged that changing or contaminating the groundwater flow in the area would have a "significant impact." McGee, Tr. 849:18-24.

In addition, source water protection areas ("SWPAs") for three public water systems are located inside the Project Area. *Id*., p. 4; Amd. Applic., p. 73. SWPAs are recharge areas defined and approved by Ohio EPA to protect drinking water resources from contamination. Amd. Applic., Exh. F, p. 4; Sasowsky, Tr. 1207:4-14. The three SWPAs in the Project Area protect the public water supplies of the City of Clyde, Capital Aluminum and Glass, and the City of Fremont. Amd. Applic., Exh. F, p. 4. RW wants to site numerous turbines in these SWPAs,

including 21 in the Capital Aluminum and Glass SWPA. *Id*. The Capital Aluminum and Glass draws its water supply from the groundwater, while the other two public water systems use surface water. As explained below, RW's Project threatens to obstruct and contaminate the flow of groundwater that is used by the area's groundwater wells.

B. Prior To The Hearing, RW Knew That Its Turbines' Potential Damage To Groundwater Supplies Is A Central Issue In This Case.

RW has known all along that the Project Area is located in a karst plain. The Hull & Associates ("Hull") report of December 10, 2018 in the Application admits that "[t]he majority of the Project Boundary lies within the Bellevue-Castalia Karst Plain, which is characterized as a hummocky plain of rock knobs and numerous sinkholes, large solution features, springs and caves; thinly mantled by drift." Amd. Applic. Exh. F, p. 2. The report states that 21 of the Project's 49 proposed turbine sites are in the karst plain based on a map prepared by the Ohio Department of Natural Resources ("ODNR"). *Id*., p. 3. At the same time, Hull's report noted the importance of the groundwater to the area residents who depended on well water for drinking and other uses. Amd. Applic. Exh. F, p. 4. The report also observed that 21 proposed turbine sites are within an area designated by Ohio EPA as an SWPA for a wellfield owned by Capital Aluminum and Glass, because groundwater flows at a rapid rate of 3,500 to 8,600 feet per day through karst openings. *Id*.

As early as January 8, 2017, prior to RW's application, Resident Deb Hay filed a public comment notifying the Board, and RW, of widespread sinkholes and underground rivers, i.e., karst, in the RW's Project Area. Consequently, RW knew prior to submitting its Application that it had to address hydrogeological threats in karst in the Application and during the hearing. Yet, RW did nothing to investigate this serious threat during the next three years prior to the adjudicatory hearing on November 4, 2019. Instead, RW stubbornly maintained that it would

not do any field work to evaluate this threat until it submitted a geotechnical report following certification.

Prior to the hearing, the Residents made no secret of their concerns about the karst problems and their intent to address these problems during the hearing. In their List of Issues filed on September 5, 2019, the Residents notified the Board and all parties of their intent to question witnesses about the perils of siting the wind turbines in karst, including:

> 50. Whether the Application and Staff Report adequately evaluate and provide adequate protections against adverse impacts from constructing (including blasting, operating heavy construction equipment on, grouting, and filling karst) and the presence wind turbines in karst areas, including collapsing, contaminating, impairing wildlife in, and causing other damage to karst formations, aquifers, underground and aboveground water supplies, caves and caverns (including Seneca Caverns), and geologically fragile areas.
>
> 51. Whether the Facility's construction, operation, or presence will contaminate or diminish springs, wells, underground water flows, and underground water supplies.

Residents' List of Cross-Examination Issues, p. 8. Thus, not only did the Residents warn RW of their intent to address karst issues, but they identified the specific karst-related problems they planned to address including the impairment of underground flows, groundwater contamination, collapses of karst openings, and grouting. RW also conducted considerable discovery against the Residents, including the deposition of karst expert Dr. Ira Sasowsky, in which the Residents emphasized the dangers of constructing turbines on karst. As the Board's Opinion notes (at ¶ 97), numerous citizens also expressed these concerns during the local public hearing. RW should have conducted a hydrogeological study to address these issues, and the company should have been prepared to address these issues with hydrogeological information in the Application and at the evidentiary hearing.

C. RW Offered No Expert Testimony On Hydrogeology.

RW correctly notes (at Page 7) that only one expert testified about the risks from constructing wind turbines in a geologic zone dominated by karst. That expert was Dr. Ira Sasowsky, a witness for the Residents. Despite RW's advance knowledge that hydrogeology is an issue of central importance, RW offered no expert testimony on whether and to what degree the construction of wind turbine foundations on karst threatens underground water supplies. Since Dr. Sasowsky's expert opinions were credible and unrebutted, the Board is well within its discretion to rely on his testimony.

RW argues that the Residents' evidence did not include field data from the individual turbine sites to prove that these sites have karst. This ploy attempts shift the burden of proof onto the Residents. RW has the burden of proof to demonstrate that its turbine sites are safe for foundation construction. That is why the Board's rules require applicants to perform field tests and collect data for inclusion in their applications. RW ignored that duty.

RW did offer testimony from Shawn McGee of Hull & Associates, but he is a geotechnical engineer, not a hydrogeologist. RW Exh. 27, McGee Direct Testimony, p. 2, A.2; McGee, Tr. 839:10-14. His work experience has concentrated on engineering tasks designed to provide stable foundations in the construction of structures, not to evaluate risks to groundwater. RW Exh. 27, McGee Direct Testimony, p. 2, A.2 & A.3; McGee, Tr. 839:10-14. That is, he could focus on what it will take to keep the turbines standing on foundations constructed on karst, but he was not qualified to opine on whether the turbine foundations will harm the region's underground water supplies. He had no qualifications to express expert opinions on hydrogeological issues, as shown by his lack of education and experience in these issues. RW Exh. 27, McGee Direct Testimony, p.2, A.2, A.3. Thus, RW has offered no expert hydrogeology

opinions to identify the turbines' effects on groundwater supplies. This is a critical omission for a Project located in a vulnerable karst area.

D. The Board Is Entitled To Rely On The Uncontradicted Expert Hydrogeological Testimony Of Dr. Ira Sasowsky About The Risks To Groundwater Resulting From Damage To Karst Formations.

The Residents retained Dr. Ira Sasowsky to analyze the turbines' threat to the community groundwater supplies. Dr. Sasowsky is a geoscientist who holds bachelor, masters, and doctorate degrees in geology. LR Exh. 24, Sasowsky Direct Testimony, p. 1, A.2 & A.3. He is a principal in Sasowsky Earth Science Consultants, Ltd. ("SESC"), a professional services company providing geologic, hydrologic, and soils consulting and is a Professor of Geosciences at the University of Akron. *Id*., p. 1, A.3. He has advised a wide variety of clients on geologic issues, much of which have involved karst. *Id*., p. 2, A.4.

Dr. Sasowsky has extensive experience with karst, including extensive experience in Northwest Ohio. Over his career, he has specialized in research on karst (cave and sinkhole) development. *Id*., p. 5, A.10. He has been examining and working in karst terrains for about 40 years. *Id*. This work has included academic research, as well as consulting for technical concerns. *Id*. The technical subfields within which he has worked in karst settings include geomorphology, hydrogeology, geochemistry, and environmental chemistry. *Id*.

Dr. Sasowsky has had field experience in karst areas in more than 25 U.S. states, South America, the Caribbean, and Europe. *Id*., p. 6, A.10. He has entered and examined over 500 caves throughout the world. *Id*. In Ohio, he has directed several research projects in various karst areas. *Id*. He has edited 11 scientific books on karst, has been an author of numerous technical reports, and has published close to 50 scientific articles that have appeared in scientific journals. *Id*. He has presented the results of scientific work and published more than 100

abstracts at national and international meetings, as well as giving invited lectures at universities in North America and Europe. *Id*. His knowledge has been shared with hundreds of students, colleagues, professionals, and the public through classes, field trips, sessions, and conferences. *Id*. During his 15-year tenure as the earth sciences editor of the Journal of Cave and Karst Studies, he has overseen the publication of cutting-edge research in this discipline. *Id*.

Dr. Sasowsky's expertise in karst has led to research contracts with environmental agencies of the federal and state governments. In one such study, the U.S. Department of Agriculture commissioned him to examine methods and make recommendations for handling storm water in karst terrains. *Id*., pp. 6-7, A. 11. In a research project of particular application to the RW case, he was retained by Ohio EPA with U.S. Environmental Protection Agency funding to research a source water protection plan for the Bellevue - Castalia Karst Plain, which significantly overlaps the proposed RW Project Area. *Id*., pp. 6-7, A.11 & A.12. This undertaking involved an extensive desktop study which developed a lengthy annotated bibliography for the area. *Id*., p. 7, A.12. Following that, his investigations in the Bellevue - Castalia Karst Plain included field mapping, dye tracing, well video, statistical analysis of drilling records, geophysical investigations, and geochemical modeling. *Id*.

Dr. Sasowsky has made many other visits to areas within or near the Project Area to examine the karst features and conduct research. *Id*. These visits started 20 years ago with colleagues from the geology department at Oberlin College. *Id*. Since that time he has made many other visits to examine the karst features and conduct research. Thus, not only is Dr. Sasowsky an expert on karst and hydrogeology, he is a longstanding expert on the karst and hydrogeology in the very area in which RW wants to construct its turbines. Accordingly, the

Board, as the finder of fact, is well within its discretion to accept Dr. Sasowsky's expert testimony as germane and accurate.

E. RW Has Provided No Information On Water Impacts Required By OAC 4906-4-08(A)(4)(a) And OAC 4906-4-8(A)(5) That Contradicts The Board's Finding About The Nature Of The Project's Probable Environmental Impact Or The Board's Determinations That The Project Does Not Represent The Minimum Adverse Environmental Impact Or Serve The Public Interest, Convenience, And Necessity.

As required by R.C. 4906.10(A)(2) and (3), the Board's Opinion correctly finds that the nature of the Project's probable environmental impact would pose an unacceptable risk to the public's water supplies and that RW has failed to sustain its burden to prove otherwise. The Board's Opinion accurately determines that the Project does not represent the minimum adverse impact R.C. 4906.10(A)(3) or satisfy R.C. 4906.10(A)(6), because it would threaten the public's water supplies.

RW contends (at Pages 10-11)[1] that the Board's rules in OAC Chapter 4906-4 outline all of the information that an applicant needs to supply in an application and at the hearing to satisfy its burden of proving that a project complies with the criteria in R.C. 4906.10(A). That assumption is untrue. Nothing in the Board's rules, the enabling statute for the rules in R.C. 4906.03(C), or R.C. 4906.10 prohibits the Board from considering, or requiring an applicant to provide, evidence not specifically prescribed in OAC Chapter 4906-4. While the requirements for applications in OAC Chapter 4906-4 are fairly detailed, it would be unreasonable to expect the rules' drafters to anticipate and itemize every fact that could apply to every energy project. The Board must have, and it does have, the authority to consider all available evidence about a project's impacts in order to faithfully determine whether a project complies with the criteria of

[1] Parenthetical references to RW's arguments herein are made to the page numbers of RW's Application for Rehearing where those arguments were made.

R.C. 4906.10(A). Thus, RW cannot hide important facts or issues pertinent to its Project by arguing that it need produce only information specifically required by OAC Chapter 4906-4.

In this case, RW actually has not provided the important information on karst and hydrogeology required by some of the Board's rules in OAC Chapter 4906-4. One of these rules, OAC 4906-4-08(A)(4)(a), provides:

> (4) Water impacts. The applicant shall provide information regarding water impacts
>
> > (a) Provide an evaluation of the impact to public and private water supplies due to construction and operation of the proposed facility.

As explained in the Residents' Post-Hearing Brief, RW conducted no field investigation of the groundwater or the area's geology. As the Board has correctly decided, RW has conducted no such field investigation to figure out whether its turbine foundations will harm the area's water supplies. Instead, RW promises to drill soil borings for that purpose only after Project certification. Amd. Applic., pp. 81-82. RW has not drilled a single boring to examine the geology of the Project Area. Carr, Tr. 313:8-12; McGee, Tr. 824:23 to 825:3. Without this information, RW failed to inform the Board about the turbines' potential threats to groundwater in karst geology.

RW's indifference to its Project's threats to the area's karst features and groundwater has resulted in its failure to meaningfully study these issues. Instead, RW has concentrated primarily on the civil engineering challenges from building heavy turbines on karst. That is, RW has focused on what it will take to keep the turbines standing if they are constructed on karst, with no thought to whether these measures will damage the community's water supplies.

This was evident not only in the Amended Application, but also in the testimony of RW witness Shawn McGee. With regard to risk to groundwater, his direct testimony stated only that Hull's report (Amd. Applic., Exh. F) concluded that turbine construction will not harm the

neighbors' water supply wells. RW Exh. 27, McGee Direct Testimony, p. 5, A.11. His testimony offers no evidence or analysis to support this barebones conclusion. *Id.*

RW's Application for Rehearing does not mention OAC 4906-4-08(A)(4)(a), tacitly recognizing that it did not provide the hydrogeology information required by that rule. RW does contend (at Pages 11-13) that it provided the information required by OAC 4906-4-08(A)(5), which provides:

> (5) Geological features. The applicant shall provide a map of suitable scale showing the proposed facility, geological features of the proposed facility site, topographic contours, existing gas and oil wells, and injection wells. The applicant shall also:
>
> (a) Describe the suitability of the site geology and plans to remedy any inadequacies.

However, RW did not comply with this rule either. RW did not provide the "geological features of the proposed facility site," as required by Subsection (5), nor did the company describe "the suitability of the site geology" as required by Subsection (5)(a). That data is necessary to determine whether karst features at turbine sites may threaten groundwater supplies and whether the geology will safely support the turbines. In this case, soil borings are the only means to produce the foregoing data, since the karst formations are below ground, and even borings will not reveal the extent of karst presence deep underground as discussed in more detail in Section II. A. below.

Notwithstanding RW's failure to provide the information required by OAC 4906-4-08(A)(4)(a) and OAC 4906-4-08(A)(5), the company argues (at Pages 9-15) that the Board erred by requiring the company to implement OAC 4906-4-09(A)(2)(b)(i) prior to certification instead of waiting until after certification. OAC 4906-4-09(A)(2)(b) provides:

(b) Geological features

(i) Sixty days prior to the preconstruction conference, the applicant shall provide a fully detailed geotechnical exploration and evaluation to confirm that there are no issues to preclude development of the facility.

(ii) The geotechnical exploration and evaluation shall include borings at each turbine location to provide subsurface soil properties, static water level, rock quality description, per cent recovery, and depth and description of the bedrock contact and recommendations needed for the final design and construction of each wind turbine foundation, as well as the final location of the transformer substation and interconnection substation.

(iii) The applicant must fill all boreholes and borehole abandonment must comply with state and local regulations.

(iv) The applicant shall provide copies of all geotechnical boring logs to board staff and to the Ohio department of natural resources division of geological survey prior to construction.

The data described in OAC 4906-4-09(A)(2)(b)(i) would be inadequate for determining whether turbine foundations will harm the groundwater, because that rule's objective is to determine whether the geotechnical aspects of the construction sites are suitable for construction. This provision, by its own terms, applies only to "geotechnical exploration and evaluation." According to its dictionary meaning, a geotechnical evaluation pertains to the application of geology to engineering, which in this case pertains to the design of turbine foundations to keep the turbines standing. RW witness Shawn McGee himself drew the distinction between geotechnical work and hydrogeology, advising that he is a "geotechnical engineer" and not a hydrogeologist or geologist. Tr. IV 839:10-12. On the other hand, OAC 4906-4-08(A)(4)(a) and OAC 4906-4-08(A)(5) require RW to evaluate the impact of its Project on public and private water supplies due to the construction and operation of the wind project before a certificate is issued so that the Board can determine whether the Project meets the statutory criteria in R.C. 4906.10(A). While a post-certificate geotechnical report under OAC 4906-4-09(A)(2)(b)(i) may

contain some of the pre-certification hydrogeological data collected earlier under OAC 4906-4-08(A)(4)(a) and OAC 4906-4-08(A)(5), the post-certificate is not a substitute for the hydrogeological data necessary to decide the R.C. 4906.10(A) criteria. The Board does not need to enforce OAC 4906-4-09(A)(2)(b)(i) prior to certification in order to obtain the hydrogeological data necessary to decide the statutory criteria.

An application also must contain enough geotechnical data so that the Board can determine prior to certification whether the Project Area's geology is suitable for the Project's construction. OAC 4906-4-08(A)(5)(a) is designed to provide this information by requiring the application to "[d]escribe the suitability of the site geology and plans to remedy any inadequacies." Due to the prevalence of karst in the Project Area, RW was obligated under this rule to provide enough geotechnical data to prove that its turbines would not collapse into karst openings. While some of this information might overlap with data submitted in a geotechnical report after certification pursuant to OAC 4906-4-09(A)(2)(b)(i), that does not excuse RW from providing enough geotechnical information prior to certification to prove that the criteria of R.C. 4906.10(A) have been met.

RW's argument that the Board is enforcing OAC 4906-4-09(A)(2)(b)(i) against RW prior to deciding on certification attempts to divert the Board's attention from RW's pre-certification obligations under OAC 4906-4-08(A)(4)(a) and OAC 4906-4-08(A)(5). RW conflates geotechnical data under OAC 4906-4-09(A)(2)(b)(i) with hydrogeological data under OAC 4906-4-08(A)(4)(a) and OAC 4906-4-08(A)(5), but they are not the same thing. Only the non-hydrogeological geotechnical challenges discussed by Application Exhibit F and Mr. McGee's testimony, *i.e.*, whether the turbines will fall down if constructed, would be addressed by the geotechnical report under OAC 4906-4-09(A)(2)(b)(i). Not only has RW failed to address

hydrogeological threats prior to certification, but its promise to comply with OAC 4906-4-09(A)(2)(b)(i) would not provide that data either. RW also failed to submit enough geotechnical data necessary to demonstrate under OAC 4906-4-08(A)(5)(a) that its turbines can be safely constructed.

To bolster its argument that the Board is requiring RW to implement OAC 4906-4-09(A)(2)(b)(i) prior to certification, RW has inserted bracketed references to OAC 4906-4-09(A)(2)(b)(i) into its quotes from Paragraphs 98 and 132 of the Opinion that indicate hydrogeological evidence is needed prior to certification. Whereas Paragraph 98 of the Opinion states that "the Board is unable to find that this Project is in the public interest without such information first being in the record," RW's quotation of this statement (at Page 10) is that "the Board is unable to find that this Project is in the public interest without [the information required by O.A.C. 4906-4-09(A)(2)(b)(i)] first being in the record." Contrary to RW's interpretation, the Residents read the Board's statement to mean that RW had to submit data to show its Project would not harm underground water supplies and that its turbines can be safely built, not that the company had to implement all of the geotechnical requirements of OAC 4906-4-09(A)(2)(b)(i). The reference to OAC 4906-4-09(A)(2)(b)(i) in Paragraph 98 is to a statement <u>by RW</u> that it would implement OAC 4906-4-09(A)(2)(b)(i) after certificate issuance instead of submitting karst and hydrogeology data prior to certification, not that the Board requires RW to implement this rule prior to certification. The correct response to RW's argument is that submitting karst and hydrogeology data is necessary under OAC 4906-4-08(A)(4)(a) and OAC 4906-4-08(A)(5) prior to certification, not that all of the data in OAC 4906-4-09(A)(2)(b)(i) must be provided.

Similarly, RW misleadingly added (at Page 10) a bracketed reference to OAC 4906-4-09(A)(2)(b)(i) in its quotation from Paragraph 132 of the Board's Opinion, stating that the

Opinion requires the "post-certificate studies [required by O.A.C. 4906-4-09(A)(2)(b)(i)]." But the Board's Opinion does not reference OAC 4906-4-09(A)(2)(b)(i) in the sentence RW has misquoted. As does Paragraph 98, Paragraph 132 states that pre-construction karst and hydrogeology studies are necessary, but not that RW must implement all of the geotechnical requirements of OAC 4906-4-09(A)(2)(b)(i). These studies are required by R.C. 4906.10(A)(2), (3), and (6), OAC 4906-4-08(A)(4)(a), and OAC 4906-4-08(A)(5). RW does not dispute that the information described in these rules must be provided prior to certification even though some of these requirements might overlap with data submitted in a geotechnical report after certification pursuant to OAC 4906-4-09(A)(2)(b)(i). Because the Board is requiring RW to implement OAC 4906-4-08(A)(4)(a), and OAC 4906-4-08(A)(5), RW has no grounds to argue that the Board's Opinion violates any of RW's rights under R.C. Chapter 119 or any due process rights.

RW also fails to differentiate between hydrogeological and geotechnical issues in its selective quotes of the Staff Report and Staff testimony. RW quotes (at Pages 8, 13) a statement from the Staff Report that "Staff finds there are no particular geological features that exist that would adversely affect or restrict the construction of the wind turbine facility." Staff Exh. 1, Staff Report, p. 26 (emphasis added). As noted in the statement, this statement refers to geotechnical concerns affecting construction, not to hydrogeological impacts. As Staff employee Derek Collins explained during the hearing, this statement was simply based on the fact that "those areas have not been further studied in detail" for that purpose by the applicant. Collins, Tr. VII 1414:1-15. He said that this geotechnical data would be collected after certification, and, based on that data, "[t]hey would either have to address those features from a standpoint of whether those are suitable for building the wind turbines, or decide that those areas are not suitable at all for construction." Collins, Tr. VII 1414:14-18, 1414:22 – 1415:5 (emphasis

added). In this language from the Staff Report, the Staff was focused on geotechnical issues, not hydrogeological threats. The same distinction applies to RW's attempt to invoke (at Page 13) recommended Condition 2 of the Staff Report, which states only that RW must comply with all of OAC 4906-4-09 without any reference to hydrogeology. And, to the extent that the Staff Report is construed to indicate that RW had submitted enough geotechnical information to satisfy OAC 4906-4-08(A)(5), the Staff was mistaken.

RW tries (at Page 13) to blame the Staff for the company's failure to provide hydrogeological data, stating that the "Staff never indicated during its investigation that RW's application was incomplete or that fully detailed geotechnical information must be submitted prior to certification." Emphasis added. Here, again, RW conflates the hydrogeological threats addressed pre-certification by OAC 4906-4-08(A)(4)(a) and OAC 4906-4-08(A)(5) with the fully-developed geotechnical issues addressed post-certification by OAC 4906-4-09(A)(2)(b)(i). Similarly, RW asserts (at Page 13) that the Staff issued various data requests about turbine foundations and geotechnical issues, citing the company's responses to the Staff's first data requests. LR Exh. 1. But those data requests were limited to geotechnical details on the design of turbine foundations, such as industry standards for concrete construction. *Id*., data requests 2, 5, 6, and 7.

RW's reliance on the Staff's completeness letter also is unfounded. This letter states the Staff's finding of completeness only "means the Board's Staff has received sufficient information to begin its review of this application" and that additional information may be requested. Although the Staff did not serve RW with data requests on the Project's hydrogeological effects, RW had only itself to blame because its Amended Application misled the Staff into believing no hydrogeological threats would occur.

Moreover, the fact that the Amended Application fails to address hydrogeological issues as required by the Board's rules does not relieve RW of its burden to address those issues at the evidentiary hearing in order to demonstrate the Project's compliance with the criteria in R.C. 4906.10(A). R.C. 4906.08 mandates that testimony and evidence be taken at a hearing, and R.C. 4906.09 requires that "a record shall be made of the hearing and of all testimony taken." R.C. 4906.10(A) requires the Board to "render a decision upon the record," of which the application is only a part. The Board's rules provide discovery tools so that all parties, including RW, can find out prior to hearing what issues will be contested at the hearing. Based on its discovery, the Residents' List of Issues, and public comments, RW knew that hydrogeological threats from construction in karst was a central issue in this case. Consequently, RW cannot blame the Staff's completeness review and data requests for RW's failure to address hydrogeological issues with expert testimony and hydrogeological data at the hearing.

The outcome of RW's position, if accepted by the Board, would be that OAC 4906-4-09(A)(2)(b)(i) precludes the Board from requiring an applicant to submit any soil boring data prior to certification, even though soil borings may be necessary to satisfy the data requirements of such rules as OAC 4906-4-08(A)(4)(a) and OAC 4906-4-08(A)(5). Neither OAC 4906-4-09(A)(2)(b)(i) nor any other rule contains any such statement designed to handcuff the Board's investigation of a project prior to certification. The Board correctly found that RW had to demonstrate prior to certification whether its Project will damage the area's water supplies. Certificating the Project without that evidence would not have complied with R.C. 4906.10(A)(2), (3), or (6).

F. The Protection Of The Karst Geology That Dominates The Project Area Is Necessary To Protect Community Groundwater Supplies That Move Rapidly Through Karst Openings.

RW admits that about 50% of the Project Area is located within the Bellevue-Castalia Karst Plain, which is characterized by numerous sinkholes, large solution features, springs, and caves. Amd. Applic., p. 77; McGee, Tr. 823:16-23. Dr. Ira Sasowsky estimates that at least 70%, and possibly 100%, of the Project Area is occupied by karst or potential karst based on the geologic data on Exhibit D of his direct testimony. Sasowsky, Tr. 1207:18 to 1209:22. RW offered no testimony to rebut this opinion.

Karst is a type of topography that is formed on limestone, gypsum, and other rocks, primarily by dissolution, and that is characterized by sinkholes, caves, and underground drainage. LR Exh. 24, Direct Testimony of Ira Sasowsky, pp. 3-4, A.9. Karst regions are usually underlain by limestone or dolostone, which are types of carbonate-rich bedrock where dissolution of the rocks has produced a characteristic set of features and behaviors. *Id*., p. 4, A.9. Karst forms on, and in, these particular rocks because they are easier to dissolve than many other rocks. *Id*. The primary features of karst regions are sinkholes and caves, along with disappearing streams. *Id*. These features originate by the movement of naturally acidic water through the bedrock, which wears away the rock. *Id*. This can create relatively large, and laterally extensive, routes for water to move through the rock. *Id*. When these pathways are large enough for humans to traverse, they are called caves. *Id*.

To understand the basic process by which karst features form, it is useful to consider them in the context of the water cycle. *Id*. One pathway in this cycle is for the rainwater to infiltrate, or soak into, the soil. *Id*., p. 5, A.9. When this occurs, the water can make its way downward to join with the groundwater flow system. *Id*. This is called groundwater recharge.

Id. Along this pathway, which is typically quite slow in non-karst areas, water is driven by hydraulic gradients in downward, lateral, or even upward directions. *Id*. It eventually makes its way back to the surface, emerging as springs or seeps, or as base flow in streams. *Id*. In those cases where the bedrock is a carbonate material, such as limestone or dolomite, the water traveling along the path can act to dissolve away the rock creating larger pathways. *Id*. This process is known as karstification, which develops extensive pathways and large features. *Id*.

Karst pathways allow the very rapid and focused movement of water. *Id*., p. 4, A.9. For example, RW's application recounts that "Ohio EPA delineated the entire region contributing water via the karst system as a SWPA" for the Capital Aluminum and Glass water supply, because the groundwater flows at a rapid rate of 3,500 to 8,600 feet per day, the bedrock is at a shallow depth, and sinkholes are present. Amd. Applic., p. 75; Amd. Applic., Exh. F, p. 4. RW's interview of a district manager for the Ohio Department of Transportation revealed that an "underground river" associated with the cave system in the area flows between Bellevue and Bloomville, Ohio. Amd. Applic., p. 79; Amd. Applic., Exh. F, p. 6. Mr. McGee admitted that he knows that underground groundwater pathways are present at turbine sites, even though no hydrogeological study or bedrock borings have been done. McGee, Tr. 851:18 to 852:2. These underground groundwater pathways lead to significant challenges for the safe development of any infrastructure in these settings, even in the absence of large sized openings. LR Exh. 24, Sasowsky Direct Testimony, p. 4, A.9.

The Hull report in RW's Amended Application acknowledges that its turbine foundations are likely to extend into the underground water table by advising RW to dewater the excavations for turbine foundations where they were below the water table. Amd. Applic., Exh. F, p. 7. That is, not only did the Hull report fail to provide measures for protecting groundwater supplies to

preserve their use by the Project's neighbors, but the report actually recommends that this valuable resource be pumped out of the aquifer and wasted rather than allow the water to travel to nearby wells.

RW opines that these essential groundwater resources will be protected from damage simply because the setback in OAC 4906-4-08(C)(2)(b) will keep the turbines 1371 feet away from neighboring homes. Amd. Applic., p. 74; Amd. Applic., Exh. F, p. 8. The Staff Report repeats this assertion without any analysis or independent research to demonstrate that the water supply wells cannot be damaged at this distance. Staff Exh. 1, Staff Report, p. 25; Collins, Tr. 1414:19-21. The Staff did no independent research into the karst issue. Collins, Tr. VII 1414:19-21. Nor did the Staff offer any expert testimony on hydrogeology. The Staff member who wrote the Staff Report's section on public and private water supplies is a geologist who typically concentrates on geotechnical review, and his testimony does not indicate that he has any expertise in hydrogeology. Staff Exh. 9, Collins Direct Testimony, p. 2, lines 10-17, p. 3, lines 1-4. Thus, the Staff relied on RW to provide the necessary hydrogeological information, and RW misled the Staff by representing that the 1371-foot setback between turbines and homes would protect the groundwater.

This representation in the Amended Application was the only basis for RW's position that the turbines cannot damage water wells. But groundwater travels much faster in karst than non-karstic geology. RW's own geotechnical report recounts that Ohio EPA has determined that the area's groundwater travels through karst at a rapid rate of 3,500 to 8,600 feet per day. Amd. Applic. Exh. F, p. 4. At this rate, groundwater in this karst area can travel 1371 feet in four to nine hours. That means that severing an underground channel at a turbine site could cut off the

water supply to a neighboring well in four to nine hours, while allowing contaminants to enter into karst openings at a turbine site could contaminate the well in four to nine hours.

RW and the Staff would have better understood the Project's risk to groundwater if RW had satisfied its obligation under by OAC 4906-4-08(A)(4)(a) and OAC 4906-4-08(A)(5) to evaluate the impact to public and private water supplies due to the construction and operation of the wind project. RW's geotechnical expert betrayed his ignorance of hydrogeology by stating, without evidentiary support, that groundwater cannot travel 1371 feet from a turbine site to a water well in karst.

RW contends (at Page 7) that Dr. Sasowsky speculated about the potential effects of karst formations and did not know "the specific geotechnical details" for each turbine site, citing his testimony at Pages 1197-1199 of the transcript. Actually, what Dr. Sasowsky said was that he did not know the dimensions, construction methods, and grouting plans for each turbine foundation, because RW did not include these details in the Amended Application. Tr. VI 1197-1199, 1200:14-19. So RW criticizes Dr. Sasowsky for not knowing information that only RW could provide, and which it withheld from the Amended Application.

Contrary to RW's representation, Dr. Sasowsky's testimony at Pages 1197-1199 of the transcript contains no indication that Dr. Sawosky "speculated" about the potential effects of karst. RW's cross-examination did not even attempt to challenge Dr. Sasowsky's testimony that constructing turbines in a karst area can cut off or pollute the water supply. Tr. VI 1190-1199. The potential impacts from damaging or polluting karst formations are well known, in large part due to the field research that Dr. Sasowsky performed for years on behalf of U.S. EPA, Ohio EPA, and the U.S. Department of Agriculture in the very area RW wants to install its turbines. The people in the Bellevue area learned about this risk the hard way in the 1960s, after

discovering that their uninformed methods of waste disposal into karst openings in the same karst plain as the Project Area had polluted their groundwater supply. LR Exh. 24, Sasowsky Direct Testimony, p. 14, A.21. While RW asserts (at Page 7) that the Residents only asserted "concerns" about karst, Dr. Sasowsky's testimony dispelled any notion that these concerns were imaginative. The Board has wisely decided not to risk a similar disaster in this case. The Board correctly realized the risks of constructing turbine foundations in a karst-dominated area and took proper action to preserve the area's water supplies.

G. <u>As Confirmed By Dr. Ira Sasowsky's Extensive Field Experience With Karst In And Near The Project Area, The Groundwater Flows Rapidly Throughout The Bedrock In The Area Whether Or Not Karst Features Are Noticeable On The Land Surface</u>.

Based on his personal observations, Dr. Sasowsky found that karst is pervasive throughout the RW Project Area. *Id*., pp. 7-9, A.13. In his field investigations of the Bellevue - Castalia Karst Plain, Dr. Sasowsky discovered that the absence or rarity of surficial karst features such as sinkholes does not indicate that karst is absent, after he conducted dye tracing, well videos, statistical analysis of drilling records, geophysical investigations, and geochemical modeling to find them. LR 24, Sasowsky Direct Testimony, p. 7, A.12, pp. 11-12, A.17. He also discovered that, even in certain areas that did not appear to be karst due to the absence of known sinkholes or caves on the land surface, the bedrock had openings that allow the fast movement of water. *Id*., p. 7, A.12. The Bellevue – Castalia Karst Plain is characterized by loose sedimentary material such as sand and silt that hides the underground sinkholes, caves, and groundwater conduits. *Id*., p. 9, A.14; Sasowsky, Tr. 1204:1 to 1205:19. This means that groundwater flows rapidly in this area, even in portions of this region that are not traditionally considered to be karst. *Id*.

H. Karst Openings Can Develop Under And Collapse Wind Turbines.

Dr. Sasowsky also observed that karstification (the creation of holes and pathways) in the Project Area is occurring via two processes. *Id*., p. 11, A.17. There is evidence of the typical top-down karstification that occurs when water moves down into the ground. *Id*. This is seen, for example, in sinkholes and sinking stream points in much of the region. *Id*. However, there is another significant process at work. Relatively deep groundwater circulation, moving in a generally north direction, is dissolving certain beds in the underlying Salina Group. *Id*. This is causing upwards collapses which in some cases reach the land surface, creating very large sinkholes in the overlying carbonate rocks. *Id*. For example, a collapse sinkhole suddenly opened up under a man's bedroom in Florida in 2013 and killed him. *Id*., pp. 9-10, A.14.

Wind turbines are equally susceptible to this hazard, which can result from either slow land subsidence, or rapid collapse. *Id*., p. 13, A.20. Additional weight on the land surface can create a hole by compressing sedimentary material, by breaking the bedrock, or by eroding sedimentary fill from existing karst cavities by directing water into them. *Id*.

RW realizes that karst areas may have sinkholes, solution cavities, and cave systems. Amd. Applic., Exh. F, p. 8. RW's Amended Application warns that a "[s]udden collapse of an underground cavern or opening of a sinkhole can cause surface subsidence that can severely damage or destroy any overlying structure such as a building, bridge, or highway." Amd. Applic., Exh. J, p. 4-2, § 4.2.2 (Pt. 1/33). A turbine that collapses into a karst opening also will obstruct the flow of groundwater through that opening. Yet RW does not address this threat to its proposed turbines or the groundwater, except to promise that it will drill borings after certification to evaluate the soils' stability.

Recognizing the threat of subsidence or collapse, RW's geotechnical consultant, Hull & Associates, advised RW to pump grout into the karst openings to provide adequate foundation support. Amd. Applic., p. 80. Dalton Carr and Mr. McGee testified that grout may be used to fill the voids (cavities) in the karst formations under the turbine foundations. McGee, Tr. 840:6-16; RW Exh. 13, Carr Direct Testimony, p. 14, A.26. In fact, Mr. Carr stated that mitigation measures such as grouting "is likely to be the recommended course of action" where a turbine site is found to be on karst. *Id*., p. 14, A.26. Grout is a bentonite or cement bentonite mixture that is pumped into the ground and sets up like concrete. McGee, Tr. 840:17-22. It seals areas. *Id*., Tr. 840:22-23. Grout can seal karst cavities to a depth of either 20 feet, or 30 feet, below the surface, depending on which of Mr. McGee's conflicting answers about this depth is accurate. *Id*., Tr. 842:22 to 843:7, 848:12-21.

Ironically, RW's proposal to grout the karst cavities under its turbine foundations to promote foundation stability actually may increase karst collapses elsewhere in the area. The grout would block the natural drainage of surface water into the cavities, thereby rerouting the water flow elsewhere where it could erode sediments in the subsurface and induce surface collapses. *Id*., p. 21, A.31.

To prevent the subsidence problems described above, the subsurface must be thoroughly explored with borings or other methods. *Id*. However, RW's amended application contains only a general promise to conduct subsurface exploration after certification and a vague assurance that RW will stabilize the turbines' foundations if problematic karst features are found. Given RW's complete failure to look for karst features at the turbine sites, the Board correctly found that RW had failed its burden to prove that the Project represents the minimum adverse environmental

impact under R.C. 4906.10(A)(3) and serves the public interest, convenience, and necessity under R.C. § 4906.10(A)(6).

I. Constructing Turbines In A Karst Area Can Pollute The Water Supply, But RW Has Conducted No Studies To Determine Whether Its Project Will Pollute The Neighbors' Water Supplies.

Groundwater contamination occurs in karst areas because there may be open and quick pathways that connect surface water to the groundwater. LR Exh. 24, Sasowsky Direct Testimony, p. 14, A.21. This rapid water movement is in contrast to what happens in non-karst areas, where the slow movement of water through tiny openings usually filters and cleans surface water before it can reach the groundwater. *Id*. Risks of groundwater contamination primarily result from changes to the surface that facilitate the rapid movement of surface water into the ground. *Id*.

This is a well-known problem in the Bellevue Castalia Karst Plain area. *Id*. For example, there was severe and widespread damage to drinking water supplies in the Bellevue area just north of the RW Project from the early 1900s through the early 1960s. *Id*. This occurred due to contaminated water making its way into wells and sinkholes. *Id*.

When changes are made to the land surface from activities like constructing turbines, contaminated water from fields, ditches, and constructed areas may be directed into sinkholes or other openings that provide a direct connection to the aquifer. *Id*. This water is generally of lesser quality than existing groundwater, and can be unhealthy for human consumption. *Id*.

RW's Amended Application contains information confirming these facts. An article in Exhibit F of the Amended Application explains:

> The many passageways formed in karst terrain allow for high connectivity between the land surface and the water table. These passageways permit water to bypass soil and rock layers that filter out contaminants. Consequently, when compounds such as fertilizers, pesticides, and water enter sinkholes, they are

> rapidly transported to the water table and quickly pollute water wells, streams, and rivers.

Amd. Applic., Exh. F, "Karst of the Fireside Quadrangle and Portions of the Flat Rock and Clyde Quadrangles, Ohio," by Douglas J. Aden, et al., p. 1 (found online at Exh. F., Pt. 4 of 6, p. 39 of 85).

This is why it is important to have a specific understanding of the movement of water at each site. LR Exh. 24, Sasowsky Direct Testimony, p. 14, A.21. This can be accomplished in a number of ways, but almost always requires more than simple visual inspection. *Id*. Dye tracing is a common approach to identifying flow directions and recharge zones. *Id*. This has been carried out in some parts of Ohio by ODNR and other entities. *Id*.

RW's Amended Application identifies three SWPAs overlapped by the RW Project. *Id*., p. 15, A.21. The largest of these areas is a groundwater SWPA for Capital Aluminum and Glass, where 21 turbines are proposed. *Id*. This area is noted to have a high vulnerability to contamination. *Id*. RW's Amended Application recounts that "Ohio EPA delineated the entire region contributing water via the karst system as a SWPA" for the Capital Aluminum and Glass water supply, because the groundwater flows at a rapid rate of 3,500 to 8,600 feet per day, the bedrock is at a shallow depth, and sinkholes are present. Amd. Applic., p. 75; Amd. Applic., Exh. F, p. 4. That means that contaminants drawn into the bedrock from the turbine's construction could reach a neighboring well in four to nine hours. In such an aquifer, contaminants can travel rapidly and destroy this important water resource.

RW's proposal to grout the karst cavities under the turbine foundations also will threaten the groundwater supplies with contamination. The grout will block the natural drainage of surface water into the cavities. LR Exh. 24, Sasowsky Direct Testimony, p. 21, A.31. Since the

surface water has to go somewhere, it will open new pathways for surface water movement into the groundwater system that may convey contaminants into the water supply. *Id*.

RW has conducted no field work to determine whether its turbine construction could contaminate the area's water supplies. Given RW's complete failure to look for karst features and underground water conduits at the turbine sites, RW has defaulted on its obligation to provide the Board with information on whether the Project represents the minimum adverse environmental impact under R.C. 4906.10(A)(3) and serves the public interest, convenience, and necessity under R.C. § 4906.10(A)(6). Instead, the Board had to rely on evidence provided by the Residents, upon which the Board reasonably relied to find that the Project complies with neither of these criteria.

J. The Project May Increase Flooding Hazards In The Area.

The Project Area has few streams available to remove stormwater from the land surface. LR Exh. 24, p. 13, A.20 & its Exh. G. RW's Amended Application notes that "[s]urface drainage on the plain is very limited, and many of the streams which are present disappear into sinkholes called swallow holes." Amd. Applic., Exh. J, p. 4-3, § 4.2.2 (Pt. 1/33). This means it can be challenging to safely deal with stormwater. LR Exh. 24, p. 13, A.20 & its Exh. G. In such an area, sinkholes can be an important means of surface water drainage.

However, sinkholes can flood if plugged up with sediment. *Id*., p. 16, A.23. This plugging can result from erosion at the surface, and changes to surface drainage due to construction of structures such as turbines. *Id*. If flooding can result from filling sinkholes with sediment, then filling them with grout as proposed by RW also can cause flooding. If RW fills, grouts, or causes sediment to clog such openings, the water would have nowhere to go except to

flood the area. RW's Amended Application identifies no precautions to prevent this threat, but instead threatens to create flooding by installing turbines upon karst formations.

In addition, what may be more hazardous is underground water that floods upwards from the sinkholes under certain conditions. *Id*. In this case, the sinkholes act as groundwater discharge points, instead of groundwater recharge points. *Id*. It is well documented in this region that occasionally intense rain falls result in severe flooding from upward movement of groundwater. *Id*. This last occurred in 2008, and was explained in a report and detailed map prepared by the Ohio Department of Natural Resources that was published in 2009. *Id*. These sorts of upward movements of water can be extremely disruptive of turbine foundation stability. *Id*.

RW's Amended Application acknowledges this flooding problem in the Project Area. According to the Amended Application, the district manager for the Ohio Department of Transportation and the Sandusky County engineer's office both noted that the most common geotechnical issue encountered in the Project Area is sinkholes from karst features. Amd. Applic., Exh. F, pp. 6-7. Sinkholes have been associated with flooding in the area, including one instance in which sinkhole-related flooding did not subside for about three months. Amd. Applic., Exh. F, p. 7. The Amended Application also stated that, "in the Bellevue region, low-lying karst features may be subject to flooding during periods of unusually high precipitation when the water table rises above the land surface." Amd. Applic., Exh. F, p. 3. In recognition of these potential flooding conditions, the Amended Application notes that site dewatering may be necessary during construction if significant precipitation events occur when the foundation excavations are exposed. Amd. Applic., Exh. F, p. 7.

While RW's Amended Application acknowledges these flooding risks, it proposes nothing to prevent its turbine construction from worsening the flooding. Even more, its proposal to grout the karst openings under the turbine foundations will block the natural surface water drainage into the sinkholes and increase flooding. LR Exh. 24, Sasowsky Direct Testimony, p. 21, A.31. Thus, the Board correctly determined that the Project does not represent the minimum adverse environmental impact under R.C. 4906.10(A)(3) or serve the public interest, convenience, and necessity under R.C. § 4906.10(A)(6).

K. RW's Plans To Install Turbine Foundations In Shallow Bedrock And To Grout Karst Openings May Obstruct The Groundwater Flow Necessary To Recharge The Community's Water Supply Wells.

In karst areas, groundwater moves through bedrock via passages that are colloquially called underground streams or rivers. Sasowsky, Tr. 1202:12-14. Bedrock in the Project Areas can be found at depths as shallow as four feet below the surface. Amd. Applic., p. 3. RW's survey of residents in the Project Area found that well water was found as shallow as eight feet from the ground surface. Amd. Applic., Exh. F, p. 5. Turbine foundations typically are 10 feet deep and 60 feet wide. McGee, Tr. 816:2-7.

RW may need to excavate the shallow bedrock to install turbine foundations. Amd. Applic., p. 80; McGee, Tr. 825:19 to 826:1. Blasting may even be necessary to install the turbine foundations. Amd. Applic.,, p. 65. By digging or blasting away the bedrock to install the foundations, RW may construct its turbine foundations in karst openings that transmit surface water to and replenish the groundwater table and in karst pathways that convey groundwater through the bedrock to people's wells. RW tacitly admits this problem when it predicts that site dewatering may be necessary during construction if excavations extend below the water table. Amd. Applic., Exh. F, p. 7.

The installation of concrete turbine bases and grouting the karst openings under the foundations can limit the water recharge to an underlying aquifer, and these practices need to be avoided or managed to preserve the recharge. LR Exh. 24, Sasowsky Direct Testimony, p. 16, A.22. Otherwise, the proposed Project could disrupt residential or other water supplies. *Id*.

For this reason, it was necessary for RW to understand the source of water for each neighborhood well. *Id*., p. 16, A.22. This includes identifying the aquifer, as well as the recharge zone for the well which is extracting the water. *Id*. RW was required to identify the aquifers present, the groundwater flow directions, the recharge and discharge areas, the water users, and the capture zone for the users' water extraction. *Id*., p. 18, A.26.

The availability of suitable water for drinking, agriculture, and other purposes is critical in a rural area such as this. *Id*., pp. 15-16, A.22. The majority of residences are supplied by individual private wells, which make use of groundwater from underneath their property. *Id*., p. 16, A.22. If such supply were to be lost, it would be devastating for the residents. *Id*. Yet RW has done nothing to investigate the Project's potential threat to the community water supplies and even promises to grout the natural karst features necessary to replenish these water supplies. Thus, the Project does not represent the minimum adverse environmental impact under R.C. 4906.10(A)(3) or serve the public interest, convenience, and necessity under R.C. § 4906.10(A)(6).

L. <u>RW Is Not Eligible For A Do-Over</u>.

RW requests (at Pages 8, 39) that, in the alternative to granting a certificate, the Board rehear the case to admit "the fully detailed geotechnical information called for in O.A.C. 4906-4-09(A)(2)(b)(i)." Again, RW's reference to the geotechnical data in OAC 4906-4-09(A)(2)(b)(i) misses the mark, since it is the hydrogeological information required by OAC 4906-4-

08(A)(4)(a) and OAC 4906-4-08(A)(5) that should have been included in the record. Notwithstanding that important distinction, the Board has no authority to grant a rehearing to admit such additional evidence, whether it be geotechnical or hydrogeological.

The statute governing applications for rehearing at the Board, R.C. 4903.10, states:

> If the commission grants such rehearing, it shall specify in the notice of such granting the purpose for which it is granted. The commission shall also specify the scope of the additional evidence, if any, that will be taken, but it shall not upon such rehearing take any evidence that, with reasonable diligence, could have been offered upon the original hearing.

Emphasis added. As explained above, RW had ample notice and opportunity to address the hydrogeological issues upon which the Board's decision is based:

1. OAC 4906-4-08(A)(4)(a) and OAC 4906-4-08(A)(5) notified RW of its duty to provide this evidence in the Application and at the hearing;
2. Public comments prior to and after the filing of the Application discussed these problems.
3. Witnesses at the local public hearing flagged these issues;
4. The Residents' List of Cross-Examination Issues specifically identified these issues;
5. RW had ample opportunity to explore these issues during discovery, including the company's deposition of Dr. Sasowsky; see RW's notice of deposition filed on October 29, 2019; and
6. RW could have called an expert witness on hydrogeology on rebuttal during the evidentiary hearing in an attempt to refute Dr. Sasowsky's hearing testimony.

Consequently, RW, by exercising reasonable diligence, could have offered this evidence during the original hearing but chose not do so. R.C. 4903.10 does not authorize the Board to reopen the record upon rehearing in this situation.

RW's Application for Rehearing complains that the Board should decide all of the issues raised by the parties in this case in order to avoid piecemeal litigation. This principle applies just as well to RW's request. If a disappointed party were able to reopen the hearing record whenever it wanted to introduce evidence that could have been submitted previously, the Board's proceedings could be endless. RW should not be allowed to omit from its Application the information required by the Board's rules, choose not to fill those gaps at the hearing, and then demand another hearing to introduce evidence it should have produced from the beginning of the application process.

II. Residents' Response To RW's Assignment Of Error No. 2:

The Board's Opinion Is Supported By Findings Of Fact Based On Evidence In The Record Demonstrating That The Project Does Not Comply With The Criteria Of R.C. 4906.10(A)(2), (3) and (6).[2]

Section I above reveals that RW failed to provide the Board with the evidence necessary to determine the nature of the Project's probable environmental impact under R.C. 4906.10(A)(2). Nevertheless, the evidence from the Residents outlined in Section I above provided the Board with all the evidence it needed to find and determine under R.C. 4906.10(A)(3) that the Project does not represent the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, and other pertinent considerations. The same evidence supports the Board's

[2] The arguments in RW's first assignment of error substantially duplicate arguments in its second assignment of error. To the degree that this occurs, the Residents' response to the first assignment of error is incorporated by reference into the second assignment of error, and vice versa.

determination under R.C. 4906.10(A)(6) that the Project does not serve the public interest, convenience, and necessity. Accordingly, the Board reasonably and lawfully denied RW's request for a certificate.

A. The Board's Findings Of Fact Based On Uncontroverted Evidence In The Record Support The Board's Finding That The Project Poses A High Likelihood Of Harm To Karst Formations And The Public's Water Supplies.

RW's position on whether the Board has enough evidence to deny the certificate is summed up by the following admission in its Application for Rehearing:

> It is impossible for the Board to credibly claim there is a "high likelihood of harm" due to impacts from karst formations if site-specific geotechnical surveys have yet to be performed.

RW Application, Page 17. Thus, RW admits that it believes the hydrogeological data it has chosen to withhold from the Board is necessary to determine whether the wind turbines will harm the region's water supplies. That is, the company is purposely depriving the Board of the evidence that, in RW's opinion, is necessary for the Board to determine whether the Project complies with the criteria of R.C. 4906.10(A). Instead, RW wants the Staff to make these all-important decisions unfettered by Board and public involvement based on data to be submitted after certification. However, the Board, as it properly noted in its Opinion, has the duty and authority to decide during the certification process whether the R.C. 4906.10(A) criteria have been met, not the Staff.

RW's statement reveals its realization that it has withheld from the Board the evidence necessary to find and determine that "the facility represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, and other pertinent considerations" as required by R.C. 4906.10(A)(3). This language does not require the Board to grant a certificate even if that project is the least harmful

of several harmful alternatives. RW's statement (at Page 16) that this criterion requires the Board to consider the "technological and economic limitations of remedying potential impacts" and other "pertinent considerations" does not give the Board leave to approve a project that will cause serious harm to the public. By its own admission on Page 17 of its memorandum as quoted above, RW has not provided that information. And while RW argues that post-certificate soil borings will provide that information, that does not satisfy its duty to ensure that the Board has enough evidence to find and determine that the facility represents the minimum adverse environmental impact at the time of certification. Without producing that information, RW is not entitled to a certificate.

Moreover, while RW argues (at Pages 15-16) that the Board must decide whether a project represents the minimum adverse environmental impact under R.C. 4906.10(A)(3) in consideration of the "technological and economic limitations of remedying potential impacts" and other "pertinent considerations," RW omits to mention that R.C. 4906.10(A)(3) also requires the consideration of "the nature and economics of the various alternatives." This language is a corollary to the mandate in R.C. 4906.04(A)(4) that every application contain a "statement of the reasons why the proposed location is best suited for the facility." In recognition of this consideration, OAC 4906-4-04(A) requires an application to describe alternative locations that were considered for the facility and the siting criteria used to select the chosen location. Thus, when deciding whether "the facility represents the minimum adverse environmental impact, considering … the nature and economics of the various alternatives," the Board can take into account the fact that siting a wind project in a karst area does not represent the minimum adverse impact when the project could have been sited in a non-karst area in Ohio.

RW's argument that the Board cannot determine the effect of turbine construction on groundwater without RW's investigation and report on the geological characteristics of the turbine sites necessarily means that it has not satisfied its burden of proof under R.C. 4906.10(A)(2), since it just asks the Board to wait for the soil boring data that it believes is necessary to find and determine the nature of the probable environmental impact. However, the Residents have filled that gap by supplying ample evidence to show the Project's probable environmental impact. Nevertheless, while the Board did not make render a conclusion under R.C. 4906.10(A)(2), the Residents agree with the Board's finding (at ¶¶ 163-164) that it has enough evidence to conclude under R.C. 4906.10(A)(3) that the Project does not present the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, and other pertinent considerations. The Residents also agree with the Board's finding (at ¶¶ 163, 165) that it has enough evidence to conclude that the project will not serve the public interest, convenience, and necessity under R.C. 4906.10(A)(6).

This evidence is based on Dr. Sasowsky's unrebutted testimony, Staff statements, and RW's admissions. The Board duly recited these facts as the bases of its conclusions, thus satisfying the mandate in R.C. 4903.09 to provide findings of fact supporting its decisions. Board's Opinion, ¶¶ 91-100, 127-132. The function of findings of fact as required by R.C. 4903.09 in Board decisions is to provide an appellate court with sufficient details to enable the court to determine, upon appeal, how the commission reached its decision. *Cleveland Elec. Illuminating Co. v. Pub. Utilities Comm'n of Ohio*, 12 Ohio St. 3d 320, 322 (1984). Findings of fact are sufficient if they enable an appellate court to identify the basis for the Board's decision without reading the voluminous record, and with the assistance of record citations by the parties'

counsel. *Motor Serv. Co. v. Pub. Utilities Comm'n of Ohio*, 39 Ohio St.2d 5, 14 (1974). The Board's findings of fact satisfy this standard for compliance with R.C. 4903.09.

The highlights of the detailed findings of fact about the karst issue made by the Board include the following:

1. According to RW's witness McGee, about half of the Project Area is within the Bellevue-Castalia Karst Plain and 21 proposed turbine sites are located in probable karst areas. Board's Opinion, ¶¶ 95, 127. The Staff identified karst topography in the Project Area. *Id*., ¶ 127. According to Residents' expert Dr. Sasowsky, between 70% to 100% of the Project Area is occupied by karst or potential karst. *Id*, ¶¶ 95, 127. The prevalence of karst heightens potential complications that could result from constructing turbines there. *Id*., ¶ 95;
2. The presence of karst in the Project Area remains below the ground surface and its difficult to detect. *Id*., ¶ 128. The presence of karst estimated to occupy 50% to 100% of the Project Area is significant and concerning. *Id*.
3. Turbine construction may direct contaminated water into sinkholes, where it will pollute the groundwater. *Id*., ¶¶ 96, 129. Karst provides open and quick pathways that connect surface water to groundwater. *Id*., ¶ 129. Based on the travel rate of groundwater in the Project Area, contaminants can travel from a turbine construction site to a neighboring well in four to nine hours. *Id*.
4. Installing turbine foundations in shallow bedrock and grouting the underlying karst openings can limit water recharges to the aquifer, potentially disrupting the water supply. *Id*., ¶¶ 96, 130.

5. Grouting karst openings can increase karst collapses elsewhere in the area by blocking the natural drainage of surface water into cavities. *Id*., ¶ 130.

6. Karst openings can develop under turbines and collapse them via both slow land subsidence, erosion, and the rapid collapse under the turbines' weight. *Id*., ¶¶ 96, 131.

7. Sediment from turbine construction and grouting can plug sinkholes and cause flooding. *Id*. ¶¶ 96 96, 130.

8. Grouting may not be a remedy for karst openings at all, because it can cause water contamination and flooding. *Id*., ¶ 131. RW has identified no alternative remedy. *Id*., ¶ 132.

9. Due to the rural nature of the Project Area, the availability of suitable water for drinking, agriculture, and other purposes is critical. *Id*., ¶¶ 96, 129.

10. Most residences in the area rely on individual private wells supplied by groundwater. *Id*., ¶¶ 96, 129.

11. If the residents lost these water supplies, the results would be devastating. *Id*., ¶¶ 96, 129.

12. RW has not tried to refute Dr. Sasowsky's expert testimony about the facts listed in 1-11 above. *Id*., ¶ 98.

13. RW does not dispute the presence of karst in the Project Area and admits that it could be prevalent. *Id*.

14. RW has not produced evidence pertaining to any plans for preserving the area's water supplies from the hazards described above. *Id*.

15. The Staff recommended that turbine construction be avoided on karst features. *Id*., ¶ 127.

16. The Project's potential economic benefits are outweighed by the potentially catastrophic damage that could result from the contamination of community private wells and water supplies. *Id*., ¶ 99.

17. Turbine construction in the Project Area poses a high likelihood of harm with no reliable remedy. *Id*., ¶ 132.

Contrary to RW's allegations, this evidence is specific and based on expert testimony, not speculative or generalized. For instance, the widespread existence of karst in the Project Area is well-known; even RW's witness McGee admitted that fact. The danger of blocking groundwater recharges from filling or collapsing karst openings is unconverted. The Bellevue disaster and Dr. Sasowsky's testimony prove that contaminants seeping into karst formations will rapidly pollute the area's water supplies.

Karst does not occur as isolated sinkholes and other features, but rather pervades the entire landscape. LR Exh. 24, Sasowsky Direct Testimony, p. 20, lines 1-13. Deep groundwater in this karst plain is dissolving bedrock and causing collapses of the overhead land. *Id*., p. 11, lines 9-21. The dissolution of rock is ongoing, so the absence of karst features now does not preclude their development later. *Id*., p. 10, lines 18-20. Thus, the use of soil borings to look for sinkholes or other shallow karst features does not reveal whether karst hazards are lurking well below the surface or will develop in the future. In an area dominated by karst, as in the Project Area, it is wise to refrain from constructing a wind project.

RW again claims (at Page 17) that Dr. Sasowsky did not know the "specific geotechnical details of the actual turbine locations" or know what construction methods will be used. The

Residents have already addressed this irrelevant argument in Section I above, pointing out these geotechnical considerations have little to do with hydrogeology. RW also points out that Dr. Sasowsky does not know whether RW will grout the karst cavities at its turbine sites. However, the prevalence of karst throughout the Project Area makes this a virtual certainty. That is why the Amended Application stresses the need for grouting and asks for permission to do it.

RW contends (at Page 17) that RW has submitted the most reliable evidence about karst and groundwater. In defense of this statement, RW states that its Geotechnical Report analyzed the various regulations governing source water protection areas, but the report actually concluded that no such regulations protect the SWPAs from turbine impacts. Amd. Applic., Exh. F, pp. 3-5. RW also argues that the report concluded that the Project will not harm the groundwater, but the only fact identified in support of this assertion is the report's statement that a setback separates turbine sites from neighboring wells, while at the same time recounting Ohio EPA's discovery that groundwater travels from 3,500 to 8,600 feet per day. *Id*., pp. 4, 8. RW also represents (at Page 17) that Mr. McGee's testified at Pages 846-847 of the Transcript that final project design, including grouting, would "manage groundwater such that existing natural drainage patterns would not be modified." This statement misrepresents Mr. McGee's testimony. Mr. McGee said only that surface water would be directed away from turbine construction sites to prevent wet soil there; this testimony did not mention grouting or groundwater. Tr. IV 846-847. In reality, then, RW has submitted no hydrogeological information supporting its supposition that its turbine sites will not harm underground water supplies.

RW asserts (at Page 18) that Dr. Sasowsky does not actually know the prevalence of karst in the Project Area, since he estimated that between 70% and 100% of the Project Area had

karst. Actually, Dr. Sasowsky testified that, based on a karst map, "at least 70 percent and possibly 100 percent" of the Project Area has karst. Tr. VI 1208:3-19. As the Board noted, even at the 50% karst coverage admitted by Mr. McGee, the presence of karst is significant and concerning. Board's Opinion, ¶ 128.

Finally, RW claims (at Page 19) that the Board should allow RW to submit its geotechnical report under OAC 4906-4-09(A)(2)(b)(i), because the Board let other wind companies do that in other certificate cases. This argument fails for two reasons. First, as explained in Section I above, the geotechnical data promised post-certificate under OAC 4906-4-09(A)(2)(b)(i) would not correct RW's failure to supply hydrogeological data to the record as required under OAC 4906-4-08(A)(4)(a) and OAC 4906-4-08(A)(5) to inform the Board's evaluation of the R.C. 4906.10(a) criteria. The Board's Opinion is not inconsistent with other wind power cases, because the Board did not require RW to produce a geotechnical report under OAC 4906-4-09(A)(2)(b)(i) prior to the decision.

Second, R.C. 4903.09 does not allow the Board to rely on facts in the decisions of other cases, because the statute requires the Board to base its decision solely on the record in this case. *In re 6011 Greenwich Windpark, L.L.C.,* 2019-Ohio-2406, 157 Ohio St.3d 235, 247, ¶ 53; *Ideal Transp. Co. v. Pub. Utilities Comm'n*, 42 Ohio St.2d 195, 199 (1975). Under R.C. 4903.09, the Board in a case may rely only on the evidence in the record of that case, and may not draw support from other documents within its knowledge. *Werlin Corp. v. Pub. Utilities Comm'n*, 53 Ohio St.2d 76, 82-83 (1978); *Michele Transp. Co. v. Pub. Utilities Comm'n*, 121 Ohio St. 441, 444 (1929). There are good reasons for this principle. Decisions and other documents from other cases have not been subject to the parties' cross-examination in this case to find out whether they have probative value for this case. Each case stands on its own based on its own

set of facts. For example, the other cases invoked by RW as "precedent" may not have involved the prevalent karst that affects this case. Accordingly, the Board may not rely on decisions in other wind power cases, which have not been subject to the parties' scrutiny in this case. A decision in RW's case may be based only on the facts in the record of this case.

B. The Board Correctly Stated That The Record Describes No Acceptable Remedy To Prevent Groundwater Damage From Siting Turbines In The Karst Area.

After discussing RW's proposal to grout karst formations under turbine foundations, the Board's Opinion concluded:

> [T]he Board finds that there is a high likelihood of harm with no reliable remedy and that the identified concerns are too significant in nature to wait until the conducting of post-certificate studies. No other conditions were proposed for consideration for the purpose of remedying the identified concerns.

Board's Opinion at ¶ 132. RW takes issue with this conclusion (at Page 20), but this conclusion is accurate and supported by evidence in the record.

As explained above, the Board justifiably found that grouting is an unacceptable remedy in this case for providing turbines with foundational stability in karst. Nevertheless, RW argues (at Pages 20-23) that the Board left the door open for Firelands Wind, LLC in its case to propose grouting on an individual turbine-by-turbine case for the post-certificate consideration of the Staff. RW contends that the Firelands decision should be followed as Board "precedent."

As explained above, the Board is allowed to consider only information that is in the record for this case. The Firelands decision is not "precedent" for this case. Even if one decision could be considered as precedent for the other one, the RW decision would be considered precedent for the Firelands case since the RW decision was issued first.

Nevertheless, RW argues (at Pages 20-23) that the Board should commission RW with the responsibility to find a remedy during a post-certificate geotechnical investigation under

OAC 4906-4-09(A)(2)(b)(i). RW states (at Page 20) that Staff member Andrew Conway recommended this course of action. However, Mr. Conway's testimony was not addressing hydrogeological concerns, but was aimed only at making the turbines stable. Tr. VI 1311:19 – 1312:2; Conway Direct Testimony, p. 9.

The Board correctly noted (at ¶ 132) that "[n]o other conditions were proposed for consideration for the purpose of remedying the identified concerns." RW proposed only grouting as its solution for karst problems in the Amended Application, at the hearing, in its post-hearing briefs, and in its Application for Rehearing. The nature of the proposed remedy will affect not only the groundwater, but the turbines' stability as well. Consequently, the identification of an appropriate remedy for karst had to be accomplished as a pre-condition to certification so that the Board could determine that the Project complies with R.C. 4906.10(A) criteria. As RW notes (at Page 35), the Board cannot authorize the Staff to decide whether the criteria of R.C. 4906.10(A) are met. R.C. 4906.02(C); *In re Application of Am. Tansm. Sys., Inc*., 2010-Ohio-1841, ¶ 21, 125 Ohio St.3d 333, 337. Thus, the Board cannot delegate decisions to the Staff that are necessary to determine whether a Project represents the minimum adverse environmental impact to the Staff or to figure out what, if any, remedial measures can be used to achieve such a standard. Such an action would deprive intervenors of their right to test these determinations through discovery, prevent the public from commenting on these determinations during a public hearing, and deprive the Residents of their statutory right to call and examine witnesses at the hearing under R.C. 4906.07 and R.C. 4906.08.

RW also contests the Board's finding "that there is a high likelihood of harm with no reliable remedy and that the identified concerns are too significant in nature to wait until the conducting of post-certificate studies." Board's Opinion at ¶ 132. RW misconstrues this

statement, paraphrasing it (at Page 21) to state that the Board believes the groundwater would be harmed during the time between the certificate and a post-certificate geotechnical report even though no turbines would be built during that interval. The Residents read the Board's statement to mean that the identified groundwater concerns are so significant that they preclude the Board from finding that the Project represents the minimum adverse environmental impact under R.C. 4906.10(A)(3). This means that the Board must address this issue rather than leaving it to post-certificate determinations. That would be a correct statement of the law, since groundwater concerns must be considered, as the Board did, in order to determine compliance with the R.C. 4906.10(A) criteria.

RW belittles (at Pages 23-24) the Board's use of the terms "potential" and "concerns" to describe problems posed the Project. RW reads these statements out of context. As stated in the Board's Opinion at ¶ 132, the Board has determined that there is a "high likelihood of harm with no reliable remedy" to the area's water supplies if the Project is approved. Emphasis added. The Residents also note that, under R.C. 4906.10(A)(2), the Board is tasked with the duty to determine the "nature of the probable environmental impact," which is exactly what the Board did in this case.

C. The Board Correctly Determined That The Project Does Not Serve The Public Interest, Convenience, And Necessity Under R.C. 4906.10(A)(6).

R.C. Chapter 4906 does not define "public interest, convenience, and necessity" as that standard is used in R.C. 4906.10(A)(6). Nor was counsel able to find a definition in decisions of Ohio's courts. However, the U.S. Supreme Court, in cases involving the application of this standard in a federal statute for licensing broadcasting stations, has noted that this standard is "a supple instrument for the exercise of discretion by the expert body which Congress has charged to carry out its legislative policy." *F.C.C. v. WNCN Listeners Guild*, 450 U.S. 582, 593 (1981),

citing *FCC v. Pottsville Broadcasting Co.*, 309 U.S. 134, 138 (1940). Consistent with this principle, Paragraph 91 of the Board's Opinion notes that public interest, convenience, and necessity under R.C. 4906.10(A)(6) must be "examined through a broad lens." This standard provides the Board with broad discretion on what factors will be considered in employing this standard.

Contrary to RW's arguments, the Board properly determined that the Project does not serve the public interest, convenience, and necessity under R.C. 4906.10(A)(6). The Project's endangerment to karst and local water supplies, by itself, is sufficient support for this determination. All of the evidence described in Section I above supports this determination, as it probative for both environmental impact under R.C. 4906.10(A)(3) and public interest, convenience, and necessity under R.C. 4906.10(A)(6). Indeed, this danger mandates a finding that the Project does not comply with R.C. 4906.10(A)(6), regardless of whether the public supports or opposes the Project. That is why the Board determined in Paragraph 98 of the Opinion that the karst problem precludes a finding that the Project complies with R.C. 4906.10(A)(6).

The Board also noted that the overwhelming local opposition to the Project weighed in favor of finding that the Project does not serve the public interest, convenience, and necessity under R.C. 4906.10(A)(6). This position is lawful and appropriate, since the local citizens directly affected by the Project are the members of the "public" whose "interest, convenience, and necessity" are the most seriously affected by the Project. As stated in the Board's Opinion (at ¶ 3), part of the "public interest" gauged by R.C. 4906.10(A)(6) is the "local public interest." The local residents' widespread opposition to the Project is one of the facts that the Board may consider in deciding that the Project is not in their best interest, convenience, and necessity.

RW can hardly claim that local support of or opposition to the Project is irrelevant, when its project manager devoted six pages of his written direct testimony at the evidentiary hearing to analyzing the public comments in this case, including a calculation of the number of persons opposed to and supporting the Project. Applicant Exh. 13, Carr Direct Testimony, p. 9, line 16 to p. 15, line 14. Although Mr. Carr greatly undercalculated the number of persons opposed to the Project, his testimony betrays RW's understanding that local support or opposition is relevant.

Contrary to RW's argument (at Page 31), the Board's Opinion does not base its R.C. 4906.10(A)(6) determination "on a popularity contest" to the exclusion of all other evidence. Nor is this decision based "almost entirely on whether the project is popular with local governments and residents" as alleged in RW's memorandum (at Page 30). Moreover, RW cannot rely on the Board's decision in the *Duke* case to argue that the Board ordinarily disregards public opposition to a project, since each case is based on its own facts, because the *Duke* decision is not in the record of this case, and because the relevance of *Duke's* facts to the RW case was not tested in the RW hearing. Although the Board's Opinion accurately characterized the "especially prominent and one-sided" opposition to the Project as shown by the 3,000 signatures on a petition against the Project, RW wrongly contends that this is the only factor in the Board's decision that the Project fails the test in R.C. 4906.10(A)(6). Board's Opinion, ¶ 92. The Board also based its R.C. 4906.10(A)(6) determination on the karst-related threats to underground water supplies, road and bridge damage, and visual impacts to public parks. Board's Opinion, ¶¶ 93, 94, 95, 96, 97, and 98. These Project impacts are described in detail in the Board's Opinion and the case record, and they justify the Board's R.C. 4906.10(A)(6) determination with or without also considering public opposition.

The record also describes numerous other harms from the Project that preclude a finding that the Project complies with R.C. 4906.10(A)(6), including its adverse impacts on birds (including bald eagles), bats, shadow flicker, noise, blade shear, and aviation, as described in the Residents' post-hearing briefs. All of these negative impacts justify the denial of the certificate not only under R.C. 4906.10(A)(6), but under R.C. 4906.10(A)(3) as well.

The Board understandably is concerned about the Project's visual impacts on local parks (Board's Opinion at ¶ 93), an issue that RW glosses over. Many locally owned natural recreational areas are located within the Project Area, such as Bowen Nature Preserve, and they will be physically damaged by the turbines' destruction of their views. In the case of Bowen Nature Preserve, RW's Amended Application failed to evaluate the turbines' visual impact on the park or to even identify the park on its map of ecological resources. This violates the mandatory requirement of OAC 4906-4-08(B)(1)(a)(iii). RW's failures to lawfully and properly analyze the visual impacts on recreational and wildlife areas are described in more detail in the briefs of Seneca County and the townships.

RW argues (at Pages 27-29) that the Board should not ascribe as much weight to the contents of unsworn public comments about karst and other public concerns, because those comments were made by non-experts who were not subject to cross-examination. The Residents agree with this premise, but disagree with RW's assertion that the Board relied on those unsworn comments to decide that the Project is contrary to the public interest, convenience, and necessity due to its threats to underground water supplies, roads and bridges, and the visual enjoyment of public parks. The Board properly summarized the many concerns about the Project expressed by the unsworn public comments in Paragraphs 62-76 of the Board's Opinion. However, none of these unsworn public comments were mentioned or utilized in the Board's findings of fact in

Paragraphs 95, 96, 97, and 98 about the sworn testimony subject to cross-examination taken at the local public hearing and the adjudicatory hearing, which provided the factual bases for the Board's determination that building turbines on karst is contrary to the public interest, convenience, and necessity. In particular, the Board found that it could not approve the Project under R.C. 4906.10(A)(6) where RW had submitted no protective measures "for a matter as vital as the preservation of local water supplies, particularly with respect to a project being constructed in an area with widespread karst formations." Board's Opinion, ¶ 98.

Despite advising the Board to base its scientific findings on expert testimony, RW disregards its own advice by arguing (at Page 29) that the Board should have given weight to the public comment about karst from Attorney Ronald Smith at the public hearing, which is summarized in Dalton Carr's Direct Testimony. Applicant's Exh. 13, p. 13, line 25 to p. 14, line 1. However, Mr. Smith had no scientific credentials to express such an expert opinion. After the Residents filed a motion in limine to exclude Mr. Carr's summary of Mr. Smith's comments, RW withdrew Mr. Carr's summary from his testimony. Applicant's Exh. 15.

RW disputes (at 27) the Board's finding about the widespread public opposition to the Project by citing to Dalton Carr's testimony that 250 of 450 commenters in the case docket opposed the Project. However, the cross-examination of Mr. Carr revealed that RW manipulated the public comments to provide the false appearance of support. RW wrote form letters in support of the Project and then invited people to dinners and parties to sign them. Carr, Tr. 299:1 to 302:5. The people signing these letters did not even bother to send to letters to OPSB themselves; RW sent them. *Id*., Tr. 303:15 to 304:3. Even the Staff expressed concern about the lack of meaningfulness of comments that were not submitted by the persons signing them.

Butler, Tr. 1432:15 to 1433:24. The Board properly saw through RW's subterfuge in finding that local opposition to the Project is overwhelming.

RW augmented the appearance of its support by employing high-pressure methods to recruit supporters. Resident Robert Chappell's testimony described the pressure that RW put on him to sign a "Good Neighbor Agreement" to waive his rights to oppose the Project and to waive setback requirements in exchange for payments of $500 per year. LR Exh. 17, Chappell Direct Testimony, p. 9, A.19, lines 19-21. Three persons identifying themselves as Apex Clean Energy representatives visited Mr. Chappell's home on separate occasions. *Id*., lines 16-17. Two of them came to Mr. Chappell's home without appointments and the third left a business card requesting to speak with him. *Id*., lines 17-18. All three Apex representatives used high-pressure tactics in attempts to bludgeon Mr. Chappell into signing an agreement. *Id*., p 10, A.22, lines 7-19. One of them even became belligerent and accused Mr. Chappell of not caring about what she referred to as "our" children or community, notwithstanding that her Florida license plates revealed that she lived out of state. *Id*., lines 12-16. Such tactics bring into question the amount of any genuine support that exists for RW's Project, as opposed to support that is the product of RW's monetary payments and pressure tactics.

RW claims (at Page 29) that the Board's Opinion ignored comments at the public hearing that favored the Project. To the contrary, the Board acknowledged these comments in Paragraphs 63, 66, 68, 70, 73, 75, and 91.

RW contends (at Pages 30-31) that the Board ignored the economic benefits from the Project in deciding that the Project does not comply with R.C. 4906.19(A)(6). That statement is untrue. The Board specifically considered the Project's purported economic benefits in Paragraph 91 of the Opinion, but rightly noted that any projected benefits must be balanced

"against the magnitude of potential negative impacts on the local community." In the Board's rulemaking exercises, the Board has advised that an applicant's assertion of its project's economic benefit is not a premise for reducing the Board's protection of the public from the project:

> Further, the Board emphasizes that an applicant's assertion that there is a particular economic benefit to the community regarding a proposed wind-energy facility will not be an offset to the public protection.

In the Matter of the Power Siting Bd.'s Adoption of Chapter 4906-17 of the Ohio Admin. Code & the Amendment of Certain Rules in Chapters 4906-1, 4906-5 & Rule 4906-7-17 of the Ohio Admin. Code to Implement Certification Requirements for Elec. Generating Wind Facilities., OPSB No. 08-1024-EL-ORD, 2008 WL 4822923 (Oct. 28, 2008), ¶ 40. Also see Paragraphs 39, 128, and 129 of that decision. Making money off a project is not in the public interest, convenience, and necessity if the community loses its water supply in the meantime.

RW also asserts that the Board should have followed the recommendation in the Staff Report to conclude that the Project complies with R.C. 4906.10(A)(6). However, the Staff's recommendations are only that – recommendations – and it is the Board that has the duty and authority to make the ultimate decision as to the R.C. 4906.10(A) criteria. Moreover, the Staff's Report is prepared prior to the parties' vetting of evidence in the evidentiary hearing, and in this case, that testimony exposed the falsity of much of the information that RW had provided to the Staff, in particular, about the karst-related threats to water supplies. That is why R.C. 4906.07 requires evidentiary hearings, instead of letting the Staff make the decisions outside of the adjudicatory process.

III. Residents' Response to RW Assignment of Error No. 4:[3]

The Board Has Not Transferred To Local Governmental Officials Its Authority To Act On RW's Application For A Certificate.

RW interprets (at Page 35) Paragraphs 3, 91, and 92 of the Board's Opinion as statements that the Board has delegated its certification decision to the many local governments that oppose this Project. Nothing in those paragraphs, or any other statement in the Board's Opinion, supports RW's accusation. The Board finds that local governmental opposition to the Project is pervasive, but the Board does not transfer its decision-making authority to local officials.

As RW states (at Page 35), R.C. 4906.13(C) preempts local governmental officials from requiring major utility facilities to obtain permission for construction and operation from local government. That does not mean, however, that R.C. Chapter 4906 allows the Board to ride roughshod over the wishes of local citizens by making decisions without their input. In fact, the lack of local control over these decisions makes it all the more important for the Board to protect local interests. That is why The Board's Opinion duly recognizes this function of R.C. 4906.10(A)(6) in stating that local opposition is one factor the Board considered in denying RW's certificate.

RW pretends that local opposition is the only basis for the Board's denial of RW's certificate. As explained above in Section II, local opposition is evidence that a Project does not serve the public interest, convenience, and necessity. However, as explained in Sections I and II above, the Board's Opinion also makes it clear that the Board also considered other factors as bases for its certificate denial. Most prominently, the Board found that the karst and groundwater problem mandates certificate denial under R.C. 4906.10(A)(3) and (6), a decision

[3] The Residents have switched the order of RW's assignments of error to make them flow more logically, since RW's second and fourth assignments substantially overlap.

based on expert testimony rather than local opinion. This fact, in itself, indicates that the Board is not letting local governments determine whether the R.C. 4906.10(A) criteria are met.

Because the Board's Opinion is not based solely on local opposition, RW fails in its attempts (at Pages 36-37) to analogize this decision with other decisions in which the Board has issued certificates over local government opposition. In this case, the karst problem is a prominent reason for the Board's certificate denial. That distinguishes RW's case from the other decisions it attempts to invoke. Moreover, as explained above, the Board cannot consider other certification decisions that are not in the record of this case.

The fact that local opposition is not the sole, or even the most important, grounds for the Board's Opinion also disposes of RW's comments (at Page 38) that the Board cannot deny a certificate due to local opposition when the Board has no rules quantifying an objective percentage of local opposition necessary to deny a project. Nor would such an objective standard be required in any event. None of the eight criteria in R.C. 4906.10(A) are based on mathematical formulas. This subjectivity does not invalidate the Board's judgment.

Finally, RW suggests (at Page 38) that the Board is getting a jumpstart on implementing SB 52, which provides local governments with more input on whether a project will proceed. RW speculates (at Pages 6, 38) that the Board will promulgate rules establishing the amount of local support necessary to obtain Board approval. This suggestion is illogical, since the new legislation provides no such role for the Board. The legislation itself sets the guidelines by which local support or opposition will affect a project.

RW's argument that the Board's Opinion delegates its decision-making under R.C. 4906.10(A) to local governments is unfounded. The Board's Opinion is not based solely on the opposition from local officials and local citizens, but instead ascribes the appropriate amount of

weight to that factor while also finding that karst and other problems contribute heavily to its decision to deny the certificate.

IV. Residents' Response to RW Assignment of Error No. 3:

For Judicial Efficiency, The Board Should Find That Other Issues Raised By The Intervening Parties Preclude The Issuance Of A Certificate Under R.C. 4906.10(A)(3 And (6).

The introduction to the eight criteria in R.C. 4906.10(A) provides:

> The board shall not grant a certificate for the construction, operation, and maintenance of a major utility facility, either as proposed or as modified by the board, unless it finds and determines all of the following:

Emphasis added. According to the plain language of this provision, the Board is required to rule on all eight criteria only if it grants a certificate. Since an applicant's failure to comply with one of these criteria dooms the certificate, the Board is not required by statute to rule on all eight criteria to deny the certificate. Nor does the Board's declination to rule on other criteria violate any of RW's constitutional rights. However, the Residents have asked the Board in their Application for Reconsideration to rule on all of the issues in the case for the sake of judicial efficiency.

RW requests (at Pages 32-33) that the Board rule on the other six criteria in R.C. 4906.10(A) besides those in (3) and (6). However, if the Board chooses to address any other issues, it should address the other issues applicable to R.C. 4906.10(A)(3) and (6) as well. The record describes numerous other harms from the Project that preclude a finding that the Project complies with R.C. 4906.10(A)(3) and (6), including its adverse impacts on birds (including bald eagles), bats, shadow flicker, noise, blade shear, and aviation, as described in the Residents' post-hearing briefs. The Board should rule that all of these issues preclude a certificate.

V. Conclusion

The Board has correctly determined that RW's Project does not represent the minimum adverse environmental impact under R.C. 4906.10(A)(3) or serve the public interest, convenience, and necessity under R.C. § 4906.10(A)(6). The Board should deny RW's Application for Rehearing.

Respectfully submitted,

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CERTIFICATE OF SERVICE

On August 5, 2021, the docketing division's e-filing system will electronically serve notice of the filing of this document on the following counsel for the parties: Sally W. Bloomfield (sbloomfield@bricker.com), Dylan Borchers (dborchers@bricker.com), Joshua D. Clark (jclark@senecapros.org), Leah F. Curtis (lcurtis@ofbf.org), Chad A. Endsley (cendsley@ofbf.org), Miranda Leppla (mleppla@theoec.org), Amy M. Milam (amilam@ofbf.org), Mark Mulligan (mulligan_mark@co.sandusky.oh.us), Devin D. Parram (dparram@bricker.com), Chris Tavenor (ctavenor@theoec.org), Trent Dougherty (theoec.org), Dane Stinson (dstinson@bricker.com), Derek Devine (dwd@senecapros.org), William Cole (William.Cole@ohioattorneygeneral.gov), Jodi Bair (jodi.bair@ohioattorneygeneral.gov), and Jennifer Flint (jflint@bricker.com). On the same date, I served a copy of this filing by electronic

mail on the above-listed counsel, Dennis Hackenburg at Dennyh7@frontier.com, and Mike and Tiffany Kessler at mkessler7@gmail.com.

/s/ Jack A. Van Kley
Jack A. Van Kley

Summary: Memorandum in Opposition to Republic Wind's Application for Rehearing electronically filed by Mr. Jack A Van Kley on behalf of Local Resident Intervenors