(PHOTOS 32 AND 33)

0 50 100 200

SCALE IN FEET

LEGEND

IMPACTED AREA A

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ROUTE EVALUATION STUDY
BUCKEYE II WIND FARM
CONSTRAINTS MAP, FIGURE 15
S.R.36 & N. MUTUAL UNION RD
CHAMPAIGN COUNTY, OHIO

PROJECT NO.: EVP010	
CAD DWG FILE: FIG 15	PLOT DATE: FEBRUARY-29-12

(PHOTOS 34 AND 35)

0 50 100 200

SCALE IN FEET

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ROUTE EVALUATION STUDY
BUCKEYE II WIND FARM
CONSTRAINTS MAP, FIGURE 16
S.R.36 & S. MUTUAL UNION RD
CHAMPAIGN COUNTY, OHIO

PROJECT NO.: EVP010	
CAD DWG FILE: FIG 16	PLOT DATE: FEBRUARY-29-12

(PHOTOS 36 AND 37)

0 50 100 200

SCALE IN FEET

LEGEND

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ROUTE EVALUATION STUDY
BUCKEYE II WIND FARM
CONSTRAINTS MAP, FIGURE 17
S. MUTUAL UNION RD & STRINGTOWN RD
CHAMPAIGN COUNTY, OHIO

PROJECT NO.: EVP010	
CAD DWG FILE: FIG 17	PLOT DATE: FEBRUARY-29-12

PHOTOS 19-37

Existing Conditions for Conceptual Improvements

Photo 19 – Supplement to Figure 10: Intersection S.R.56 & S.R.29 (Facing East)

Photo 20 – Supplement to Figure 10: Intersection S.R.56 & S.R.29 (Facing Southeast)

Photo 21 – Supplement to Figure 10: Intersection S.R.56 & S.R.29 (Facing East)

Photo 22 – Supplement to Figure 11: Intersection S.R.161 & S. Parkview (Facing South)

Photo 23 – Supplement to Figure 11: Intersection S.R.161 & S. Parkview (Facing East)

Photo 24 – Supplement to Figure 12: Intersection S.R.36 & Bullard Rutan Rd. (Facing Northeast)

Photo 25 – Supplement to Figure 12: Intersection S.R.36 & Bullard Rutan Rd. (Facing Southeast)

Photo 26 – Supplement to Figure 13: Intersection S.R.36 & N. Parkview Rd. (Facing Northeast)

Photo 27 – Supplement to Figure 13: Intersection S.R.36 & N. Parkview Rd. (Facing East)

Photo 28 – Supplement to Figure 14: Intersection N. Parkview Rd. & Urbana Woodstock Pk (Facing Northeast)

Photo 29 – Supplement to Figure 14: Intersection N. Parkview Rd. & Urbana Woodstock Pk (Facing Southeast)

Photo 30 – Supplement to Figure 14: Intersection N. Parkview Rd. & Urbana Woodstock Pk (Facing Southwest)

Photo 31 – Supplement to Figure 14: Intersection N. Parkview Rd. & Urbana Woodstock Pk (Facing South)

Photo 32 – Supplement to Figure 15: Intersection S.R.36 & N. Mutual Union Rd (Facing North)

Photo 33 – Supplement to Figure 15: Intersection S.R.36 & N. Mutual Union Rd (Facing Northeast)

Photo 34 – Supplement to Figure 16: Intersection S.R.36 & S. Mutual Union Rd (Facing Northeast)

Photo 35 – Supplement to Figure 16: Intersection S.R.36 & S. Mutual Union Rd (Facing Southeast)

Photo 36 – Supplement to Figure 17: Intersection S. Mutual Union Rd & Stringtown Rd (Facing North)

Photo 37 – Supplement to Figure 17: Intersection S. Mutual Union Rd & Stringtown Rd (Facing East)

Exhibit F
Groundwater, Hydrogeology
& Geotechnical Report

EXHIBIT F

Groundwater, Hydrogeology, and Geotechnical Report

• Hull & associates, inc.

February 24, 2012

Mr. Seth Wilmore
EverPower Wind Holdings, Inc.
91 43rd Street
Suite 220
Pittsburgh, PA 15201-3109

RE: Groundwater Hydrogeology and Geotechnical Desktop Document Review Summary Report for Phase II of the Buckeye Wind Power Facility Located in Champaign County, Ohio; EVP010.100.0001

Dear Mr. Wilmore:

Hull & Associates, Inc. (Hull) is pleased to provide Champaign Wind LLC (Client) with this Desktop Document Review of readily available geologic, hydrogeologic, and geotechnical information for the proposed Buckeye II Wind Farm located within the townships of Goshen, Rush, Salem, Union, Urbana, and Wayne in Champaign County, Ohio. The Client is pursuing the development of a wind-powered electric generation facility that includes construction of up to 56 wind turbine generators at various locations. Each of the turbines will also be associated with an access road and an electrical interconnection system.

For the purpose of this summary report, the following definitions have been used when describing the project: [Please note, for consistency purposes the Ohio Power Siting Board's OAC rules (Chapter 4906-17) have been used to define the Project Area and Facility.]

- **Project Area** (pursuant to Ohio Administrative Code (OAC) rule 4906-17-01(B)(1)) is all components of the wind-powered electric generation facility, plus associated setbacks. Based on OAC rule 4906-17-08(C)(1)(c), each of the turbine Sites will have an established setback to the nearest habitable residential structure located on adjacent properties at the time of the certification application.

- **Facility** (pursuant to rule 4906-17-01(B)(2)) includes the turbines, collection lines, access roads, any associated substations, and all other associated equipment.

- The **Study Area** is defined by Hull to better describe the region outside of the Project Area that was included during database searches of available public information.

PROJECT APPROACH

The Desktop Review was completed to gather the applicable geologic, hydrogeological, and geotechnical information specified in the Ohio Power Siting Board's current OAC rules (Chapter 4906-17, effective date May 7, 2009) concerning the preparation of a certificate application to site a wind-powered electric generation facility. The information was gathered by completing a literature search of existing and readily available documents related to the hydrogeological and geotechnical conditions of the Study Area. This information was then reviewed to develop a generalized understanding of the suitability of conditions within the Study Area for the proposed construction within the Project Area. The information summarized below was obtained from available on-line databases and/or documents maintained or produced by the following federal, state, and/or local agencies:

1. Federal Emergency Management Administration (FEMA);
2. Ohio Department of Agriculture (ODA);
3. Ohio Department of Natural Resources (ODNR);
4. Ohio Environmental Protection Agency (Ohio EPA);
5. Ohio Department of Transportation District 7 and the Office of Geotechnical Engineering (ODOT);
6. Ohio State University, Agricultural Extension Office;
7. Champaign County Engineer and Health Department;
8. United States Department of Agriculture (USDA) Soil Conservation Service Soil Survey of Champaign County; and
9. United States Geological Survey (USGS).

No environmental studies or structural evaluations were performed as part of this scope of work, and therefore no recommendations relative to environmental or structural issues are included in the report.

FACILITY LOCATION

As shown on Figure 1 and as previously stated, the Facility is located east of the City of Urbana in eastern Champaign County, within portions of six townships including Goshen, Rush, Salem, Union, Urbana, and Wayne Townships. The Study Area, which encompasses the Facility, is shown on Figure 1, as well as on all of the subsequent figures discussed below.

INFORMATION REVIEW AND ANALYSIS

The following provides a summary of the information reviewed and its applicability to the proposed project.

Geology and Seismology

In general, the geological setting of the Study Area consists of unconsolidated glacial deposits overlying bedrock. Champaign County lies within the Southern Ohio Loamy Till Plain Region of the glaciated Till Plains Section of the Central Lowland Physiographic Province. The Project

Area itself is contained within the Mad River Interlobate Plain District of the Southern Ohio Loamy Till Plain Region. The Mad River Interlobate Plain District is comprised of an area situated between two major converging glacial lobes, and contains extensive water-laid outwash deposits in the form of outwash terraces, which are bordered by ice-deposited moraines. Surficial glacial materials within the district are of Late Wisconsinan-age (ODGS, 1998).

The majority of glacial deposits within the Study Area consist of silty loam till in the form of end moraine, which generally occurs as hummocky ridges higher than the adjacent terrain. "Boulder belts," which are areas having relatively high concentrations of surface boulders, occur within a significant portion of the end moraine deposits in the central and eastern portions of the Study Area in Goshen, Rush, Union, and Wayne Townships. Intermediate-level outwash deposits, consisting predominantly of sand and gravel, are present in the western portions of Union and Wayne Townships. Glacial deposits in the portion of the Study Area included in Urbana Township consist of a thin loam till over sand and gravel outwash (Pavey *et. al.*, 1999).

The Mad River Interlobate Plain District is characterized by the presence of springs and groundwater-fed surface waters. Moderate relief is present in the district (200 feet), and ground elevations range between 800 and 1,350 feet above mean sea level (msl) (ODGS, 1998). The topography of the Study Area is characterized by gently rolling hills and moderate slopes. As shown on Figure 1, surface elevations within the Study Area range from a low of approximately 1,050 feet above msl in the southeastern and southwestern portions of the Study Area to 1,350 feet above msl in the northernmost part of the Study Area.

Depths-to-bedrock within the Study Area were approximated based on information obtained from ODNR database from water well drilling logs for wells installed in the Study Area. The approximated bedrock topographic surface is shown on Figure 2. Documented bedrock depths for water wells drilled into bedrock in the vicinity of the Project Area range from approximately 99 to 345 feet (Schmidt, 1985). Generalized geologic cross-sections are included as Figure 3 and illustrate the typical geologic setting along northwest-southeast (A-A') and southwest-northeast (B-B') transects across the Study Area. The cross-sections were prepared using data compiled from sources including, but not limited to, ODNR well logs and bedrock topographic maps, pursuant to rule 4906-17-05(A)(4). The cross-sections show that depths-to-bedrock typically range from approximately 150 to 250 feet across the Study Area; however, the thickness of overlying glacial materials apparently thins to the northwest to approximately 10 feet in southwestern Wayne Township. Cross-section B-B' also shows a buried pre-glacial valley in which the thickness of glacial materials nears 360 feet, in southeastern Wayne and northeastern Union Townships. This pre-glacial valley is shown on Figure 2 as approaching Mechanicsburg and the eastern portion of the Project Area from the south and continuing to the north-northwest, underlying the Project Area. Bedrock topographic highs are present in southwestern Wayne Township.

Bedrock underlying the Study Area consists primarily of dolomite, and is comprised of four separate units. The oldest unit is the Lower to Upper Silurian-age Lockport Dolomite, which forms the bedrock surface in a significant portion of the buried pre-glacial valley, (north of Mechanicsburg in Goshen Township) as well as the southwestern corner of the Project Area (central Urbana Township). The Lockport formation is overlain by the Tymochtee and

Greenfield Dolomites (undivided) of Upper and Lower Silurian age. The Tymochtee and Greenfield Dolomites predominate as the bedrock surface over the majority of the Project Area, and consist of thin to massive beds of dolomite with shale laminae and beds. The overlying Salina Group consists of alternating thin to medium beds of dolomite, anhydrite, gypsum, and shale, and forms the bedrock surface in areas of increased elevation in the northwestern and northeastern portions of the Study Area, including the northwest and extreme northeast. The youngest bedrock within the Study Area is the Middle Devonian-age Columbus Limestone and Detroit River Group (undifferentiated), which unconformably overlies the Salina Group. In this region, the Columbus Limestone and Detroit River Group unit consists of a thin- to massive-bedded crystalline dolomite (limestone is not present). This unit is present in the two areas having the highest elevations in the Study Area (above approximately 1,300 feet msl) in northern Union and southern Wayne Townships.

Known karst areas in the vicinity of the Project Area are shown on Figure 2. At least 25 known karst areas have been identified in the Study Area. The majority of these are located west of the Project Area in Salem Township, while several are situated north of the Project Area in northern Wayne Township. The closest known karst area to a proposed turbine location occurs in southwestern Wayne Township, where a karst area has been identified approximately 1,690 feet southwest of proposed turbine #110. Another known karst area in southwestern Wayne Township is located approximately 1,940 feet east of proposed turbine #87, and 2,190 feet northwest of proposed turbine #107.

A review of documented geologic structural and seismic information was conducted for the Project Area. Documented structural features and earthquake epicenters located within Ohio are shown on Figure 4. Seismic information was obtained from the ODNR, Division of Geological Survey, Ohio Seismic Network (Hansen, 2007). As shown on the map, a deep structural fault zone labeled "Bellefontaine Outlier Faults", which is documented as being located with the granitic basement rock, is shown in the general vicinity of the Study Area. This majority of this fault zone is located north of the Project Area, however one of the faults is shown as extending to the south in the general vicinity of the Project Area. A 3.5-magnitude earthquake was recorded in south central Champaign County in 1843. The Anna Siesmogenic Zone, centered in neighboring Auglaize and Shelby Counties to the west of the Study Area, contains the area of greatest earthquake activity in this part of Ohio. The epicenter of the highest magnitude earthquake (5.4) recorded in Ohio to date occurred in 1937 beneath the town of Anna, Ohio which is approximately 30 miles northwest of the Project Area.

Hydrology and Hydrogeology

The Project Area is located within two major drainage basins within the State of Ohio. Surface water flow in the two easternmost townships of Rush and Goshen, is primarily east and southeast where it ultimately discharges into the Scioto River. The remainder of the Project Area lies within the Mad River Drainage Basin. Surface water flow in Salem, Urbana, Wayne, and Union Townships of Champaign County is predominantly to the west-southwest where it eventually discharges into the Mad River.

The Project Area was reviewed for the presence of any areas designated as a 100-year flood plain. Flood plain information for the Project Area was obtained from the ODNR and FEMA, and is shown on Figure 1. It should be noted that as part of FEMA's *Map Modernization* program, which is designed to convert National Flood Insurance Maps to digital format, the 100-year floodplain shown is a published preliminary version that has been released for review purposes and is subject to change. Several 100-year floodplains are present in the vicinity of the Project Area, including floodplains along Buck Creek in Union and Urbana Townships, along Dugan Run, extending from southeastern Salem Township into southwestern Wayne Township and along Little Darby Creek in Goshen Township, however the floodplain in closest proximity to a proposed turbine location is the 100-year floodplain established along Treacle Creek, located in northern Goshen Township. Portions of this floodplain extend to within approximately 145 feet of proposed turbine #93.

The principal groundwater source within the vicinity of the Project Area is the carbonate bedrock aquifer. Water wells installed to depths exceeding 225 feet may yield as much as 300 gallons per minute (gpm) (Schmidt, 1985). Unconsolidated aquifers overlying the carbonate bedrock aquifer in the vicinity of the Project Area are shown on Figure 5. The map shows that wells may be developed in the unconsolidated deposits throughout the Study Area. The Mad River Buried Valley Aquifer, which extends northward along eastern Urbana and western Union Townships and also present in north-central Goshen Township, and is capable of producing 25 to 100 gpm. The Mad River Outwash/Kame Deposits, located in eastern Union and western Goshen Townships, comprise the aquifer with the most production potential as yields may approach 500 gpm overall. The Cable Outwash/Kame Aquifer in western Union Township may yield 25 to 100 gpm. The Cable aquifer complex is situated in the central and northern portions of the Project Area, and may yield 5 to 25 gpm.

The Study Area lies within a rural portion of Champaign County. With the exception of the City of Urbana, there are no urban areas in close enough proximity to the Study Area that are large enough to extend municipal water service out into rural areas. Consequently, residents in the Study Area rely upon private wells for their groundwater. The information on Figure 5 was compiled from well location information provided by ODNR, Ohio EPA, and the county health department. As shown on the figure, there are reportedly hundreds of private wells located within the Study Area. Due to the number of wells located in the area, Hull has not reviewed the specific information associated with any of the wells depicted on the figure, nor has there been an attempt to differentiate between wells installed in the unconsolidated aquifers or wells installed within the underlying bedrock.

Source Water Protection Areas (SWPAs) as defined and approved by Ohio EPA for the protection of drinking water sources are also shown on Figure 5. Environmental regulatory programs within the Ohio EPA, as well as other regulatory agencies such as the Ohio Bureau of Underground Storage Regulations (BUSTR), have adopted regulations that restrict specific activities within SWPAs. These activities include concentrated animal feeding operations, sanitary, industrial or residual waste landfills, land application of biosolids, and voluntary brownfield cleanups. The restrictions typically apply to SWPAs relying on groundwater as their drinking water source. The figure indicates that there are multiple Ground Water SWPAs located in the eastern portion of Champaign County, and shows the estimated one-year and five-year time of travel distances from the respective supply wells. The only SWPA in close proximity to the Project Area is associated with public water supply wells located in

Mechanicsburg, in west-central Goshen Township. The boundary for the five-year time of travel zone for this SWPA extends to approximately 115 feet from the location of proposed turbine #78. Hull has reviewed the range of programs which have adopted rules related to the presence of SWPAs (http://www.epa.state.oh.us/ddagw/Documents/regstable.pdf), and we conclude that construction of the proposed wind turbine facility should not constitute an activity that would be restricted within either a surface water or groundwater SWPA.

Well Survey

The water well survey was mailed by Hull to property owners based on a list of owner names and addresses provided by the Client. Surveys were mailed to the owners of 29 properties located within the Project Boundary. At the time of this report, 12 surveys have been completed and returned. Copies of the well surveys are attached in Appendix A. It should be noted that Hull has not matched the addresses of the property owners that responded to the survey to well or turbine locations shown on Figure 5 of the Desktop Review.

The survey included several questions pertaining to the presence and number of water wells on each property, and whether the property is supplied with municipal water. For respondents stating that water well(s) were present on a particular property, the survey requested additional information including the well installation date, depth to water within the well, well depth, approximate yield of well, well construction material, and the producing formation. Respondents were also asked whether they have ever had to drill a new well as a result of lowering of the water table or poor well yield.

Each survey respondent stated that at least one water well had been installed on their property. Four respondents indicated that multiple wells were present on their property or properties, including two wells on two properties, and three and four wells respectively on the remaining properties. All respondents indicated that their well water was used for domestic purposes, and six of the respondents stated that their well water is also used for irrigation. None of the responding property owners indicated that they were connected to a municipal water supply.

Survey respondents reported well depths ranging between 18 and 265 feet, and the majority of well diameters measured either four or six inches, with the exception of a pair of wells on one property having diameters of eight and 16 inches, respectively. The majority of respondents were unable to provide information on the producing formation, depth to water, or well yield, however two respondents did report a producing formation of sand/gravel and another reported a producing formation of bedrock. Depths to water provided by five respondents ranged between 20 and 95 feet, and one respondent indicated a well yield of five gallons per minute. None of the respondents indicated that they had ever had to drill a new well as a result of lowering of the water table or poor well yield.

The data gathered from the well surveys is generally consistent with information obtained from the Ohio Department of Natural Resources (ODNR) concerning groundwater resources within the Project Area, and typical well depths and production rates, as discussed in the Desktop review. It is assumed that potable wells are located in close proximity to property owners' residences. Therefore, based on the information presented herein and in the Desktop Review, construction of the wind turbines or other project components is not anticipated to result in any negative impact to the property owners' wells.

Soil Survey

The USDA Soil Conservation Service Soil Survey Champaign County was reviewed. Soil surveys furnish surface soil maps and provide general descriptions and potentials of the soil to support specific uses, and can be used to compare the suitability of large areas for general land uses. Surface soils of the Study Area are comprised mostly of Celina, Fox, Miami, and Miamian silt loams (Figure 6). The soil survey information indicates that the Celina and Miami silt loams are well drained, have a moderately high capacity to transmit water (0.20 to 0.60 inches / hour), with the depth to water table being 24 to 36 inches. The Fox silt loams are well drained, have a moderately high to high capacity to transmit water (0.60 to 2.0 inches / hour), with the depth to water table being more than 80 inches. The Miamian silt loams are well drained and have a moderately high capacity to transmit water (0.20 to 0.60 inches / hour), with the depth to water table being more than 80 inches. The soil surveys also indicate that the soils do not frequently flood or pond surface water runoff.

Underground and Surface Mines

Review of information obtained from the ODNR, Division of Geological Survey and the Champaign County Engineer's Office did not reveal any suggestion that underground or surface mines are located in the Project Area. Soil survey information provided by the USDA indicates that there are former gravel pits and quarries located within the Study Area, but not within or immediately adjacent to the proposed Facility locations. Figure 4 illustrates that no known abandoned mines shafts or probable abandoned mines are located within the Study Area.

Study Area Reconnaissance

In addition to the desktop study, Hull completed a limited field reconnaissance on December 16, 2011 at representative points within the Study Area to observe geotechnical-related conditions including topography, surface geologic features, and surface water conditions. Photographs from the site reconnaissance are presented in Attachment A to illustrate general conditions within the Study Area. The areas within proximity of the Study Area predominantly consist of agricultural fields with no visible geotechnical-related site constraints for the proposed construction. The area within the Study Area appears to be adequately drained. Nominal amounts of standing water were observed in localized areas within surface water ditches and farm fields, but it should be noted that the area within the Study Area received 0.66 inches of rainfall in the five days prior to the field reconnaissance (based on information for Bellefontaine, Ohio, which was the nearest data available). On the basis of these data, Hull determined that the observed areas of standing water were ephemeral.

Construction of gravel access roads will be necessary to access turbine locations from the Township and County roads. The Township and County roads generally appear to be in good condition with limited fatigue cracking being observed. The roads appeared to be asphalt paved roads; however several of the Township and County roads were narrow (with the narrowest being approximately ten feet wide). These roads may need to be widened and/or improved to provide access to turbine locations. No information was available from ODOT or the Champaign County Engineer's office concerning rockfalls or landslides within the Study Area.

Based on a review of the existing topography of the Study Area and the visual observations completed by Hull during the reconnaissance, it is anticipated that the potential for rockfalls and landslides is very low. In addition, Hull did not observe any sink holes or depressions within the Study Area.

Agency Interviews

ODOT District 7 was contacted in order to review boring logs from historic projects that were located near and within the Study Area. The projects included the original roadway soil profile reports for portions of SR 29, 54, 56, and 296 (circa 1960s) as well as several structure soil profiles for bridges and abutments over Kings Creek and its tributaries and over Dugan Ditch. The soil profile drawings reviewed by Hull suggest non-conventional foundation design or roadway subgrade improvements are not necessary for the proposed project.

The Champaign County Engineers Offices were contacted regarding their knowledge and experience of previous construction projects, subsurface conditions, maintenance history within the Study Area, and also permit applicability requirements that may be necessary for construction. Representatives from the Engineer's offices indicated that based on their experience they do not believe that there would be significant geotechnical constraints for the planned construction and that only the typical construction permits would be necessary.

The ODA and the Champaign Counties Soil and Water Conservation Districts were contacted as to whether an agricultural impact study would be required prior to construction. Representatives of these agencies indicated that an agricultural study would not be required due to the relatively small impacted area anticipated for each wind turbine.

Preliminary Construction Considerations

Based on our experience with earthwork in the region, conventional, shallow foundations may be able to support the turbines and the substation. However, this assumption will need to be confirmed by a detailed geotechnical exploration and evaluation for each turbine-site and the substation location. If it is determined that shallow foundations are not suitable for structural support, extended foundation systems (such as driven H-piles or auger cast piles) may be necessary to bear in suitable material or on bedrock. Additionally, other suitable foundation types may be utilized according to their compatibility with the geotechnical parameters of the specified turbine-site and substation location.

The geotechnical engineer, or a designated representative, should examine foundation designs and compatibility with the supporting soils and approve the work prior to placement of foundation components.

Based on the information collected to date, it is anticipated that there will be no construction concerns related to the access roads. However, this assumption will need to be confirmed by a detailed geotechnical exploration and evaluation of each access road location when considering site-specific subgrade conditions at the time of construction, anticipated vehicle loads/volume, grading plans, etc.

Adequate surface water run-off drainage should be established at each turbine-site, access road and the substation location to minimize any increase in the moisture content of the subgrade material. Positive drainage of each turbine-site, access road, and substation location should be created by gently sloping the surface toward existing or proposed drainage swales. Surface water runoff should be properly controlled and drained away from the work area. It should be noted that the subgrade soils are subject to shrinking and swelling with variation in seasonal moisture content and consideration should be given during constructability reviews to determine how best to deal with potential moisture fluctuations.

The contractors should be prepared to deal with any seepage or surface water that may accumulate in excavations. Site dewatering may be required during construction if excavations extend below the water table, or significant precipitation events occur when the foundation excavations are exposed. The contractor should be able to minimize the amount of excavation exposed at one time, especially when precipitation is forecasted. Fluctuations in the groundwater level may occur seasonally and due to variations in rainfall, construction activity, surface runoff, and other factors. Since such variation is anticipated, we recommend that design drawings and/or specifications accommodate such possibilities and that construction planning be based on the assumption that such variation can occur.

The foundations and excavations are to be designed by the Client's structural designer. The contractor should be solely responsible for constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. All excavations should comply with applicable local, state, and federal safety regulations including the current Occupational Safety and Health Administration (OSHA) Excavation and Trench Safety Standards (29 CFR Part 1926).

Based on a review of the soil survey information and our experience with earthwork in the Study Area, the soils should be suitable for grading, compaction, and drainage when each turbine-site is prepared as discussed in this report and the guidance provided in the Geotechnical Exploration Report for each individual turbine location. Due to the anticipated depth of bedrock, it is anticipated that conventional excavation equipment (e.g., trackhoe, dozer, ripper) could be used for excavating bedrock and that bedrock blasting will probably not be necessary; however, this assumption must be confirmed with geotechnical test borings prior to construction.

Additional considerations relative to site preparation, suitability of fill materials, fill placement and weather limitations are presented in Attachment B for reference. These considerations are provided as general guidelines and the contractor is responsible for selecting and implementing the most appropriate construction techniques (e.g., construction means, methods, sequences or procedures, and safety precautions or programs) for each site-specific condition(s).

SUMMARY

Based on the information reviewed to date and the field reconnaissance, it does not appear that the local geology and/or hydrogeology will be prohibitive to construction of the proposed wind turbines, access roads, interconnects and substation. In addition, based on Hull's knowledge of typical wind turbine foundation construction, it does not appear that the construction of the proposed wind turbines will have a significant impact on the local geology and/or hydrogeology of the Study Area. Therefore, based on the information presented herein and the associated analysis, construction of the wind turbines or other project components are not anticipated to result in any significant negative impact to drinking water wells in the Study Area.

It is Hull's understanding that there is a minimum setback distance which will be established from each turbine to the nearest residential structure. Although the exact location of each potable use well cannot be determined with the information obtained to date, it is assumed that the potable wells are located in close proximity to each property owners' residence. Therefore, based on the information presented herein and the associated analysis, construction of the wind turbines, or other project components, are not anticipated to result in any significant negative impact to the property owners' wells.

Based on the information reviewed and the field reconnaissance, it appears that the primary geotechnical issue for the turbines, access roads, and substation location that should be considered during construction is the poor drainage of the surface soils within the Study Area. As previously discussed, adequate surface water run-off drainage should be established at each turbine, access road, and substation location to minimize any increase in the moisture content of the subgrade material. Surface water run-off drainage can be managed by implementing techniques such as surface water swales, drainage berms, etc.

Site-specific geotechnical information should be obtained by the Client prior to design of the turbine foundations, and prior to preparation of construction specifications and design plans. This may require, but not be limited to, completion of geotechnical explorations to further evaluate the *in situ* materials at each turbine. A generalized scope of work template for the geotechnical explorations has been provided in Attachment C, which can be used to prepare detailed Requests for Proposals for the individual turbines.

The conclusions included in this Desktop Review are based on general summaries available through the resources previously listed. There may be anomalies in the hydrogeology or geotechnical conditions of a specific turbine location that cannot be resolved at the scale of the publicly available data used in this study. As noted previously, site-specific geotechnical information should be obtained prior to final turbine foundation design.

STANDARD OF CARE

Hull has performed its services using that degree of care and skill ordinarily exercised under similar conditions by reputable members of its profession practicing in the same or similar locality at the time of service. No other warranty, expressed or implied, is made or intended by our proposal or by our oral or written reports. The work does not attempt to evaluate past or present compliance with federal, state, or local environmental or land use laws or regulations. Conclusions presented by Hull regarding the area within the Study Area are consistent with the Scope of Work, level of effort specified, and investigative techniques employed. Reports, opinions, letters, and other documents do not evaluate the presence or absence of any condition not specifically analyzed and reported. Hull makes no guarantees regarding the completeness or accuracy of any information obtained from public or private files or information provided by subcontractors.

If you have any questions regarding the summary and conclusions presented in this Desktop Document Review Summary Report, please do not hesitate to contact either of the undersigned at your convenience.

Sincerely,

Shawn D. McGee, P.E.
Geoenvironmental Practice Leader
(440) 232-9945

Hugh F. Crowell, PWS
Ecology & Wetlands Practice Leader
(614) 793-8777

Attachments

REFERENCES

Hansen, Michael C., 2007, Earthquakes in Ohio: Ohio Department of Natural Resources, Division of Geological Survey, Ohio Seismic Network, Educational Leaflet No. 9.

Kirby, J, 2006, Earthquakes in Indiana: Indiana Geological Survey.

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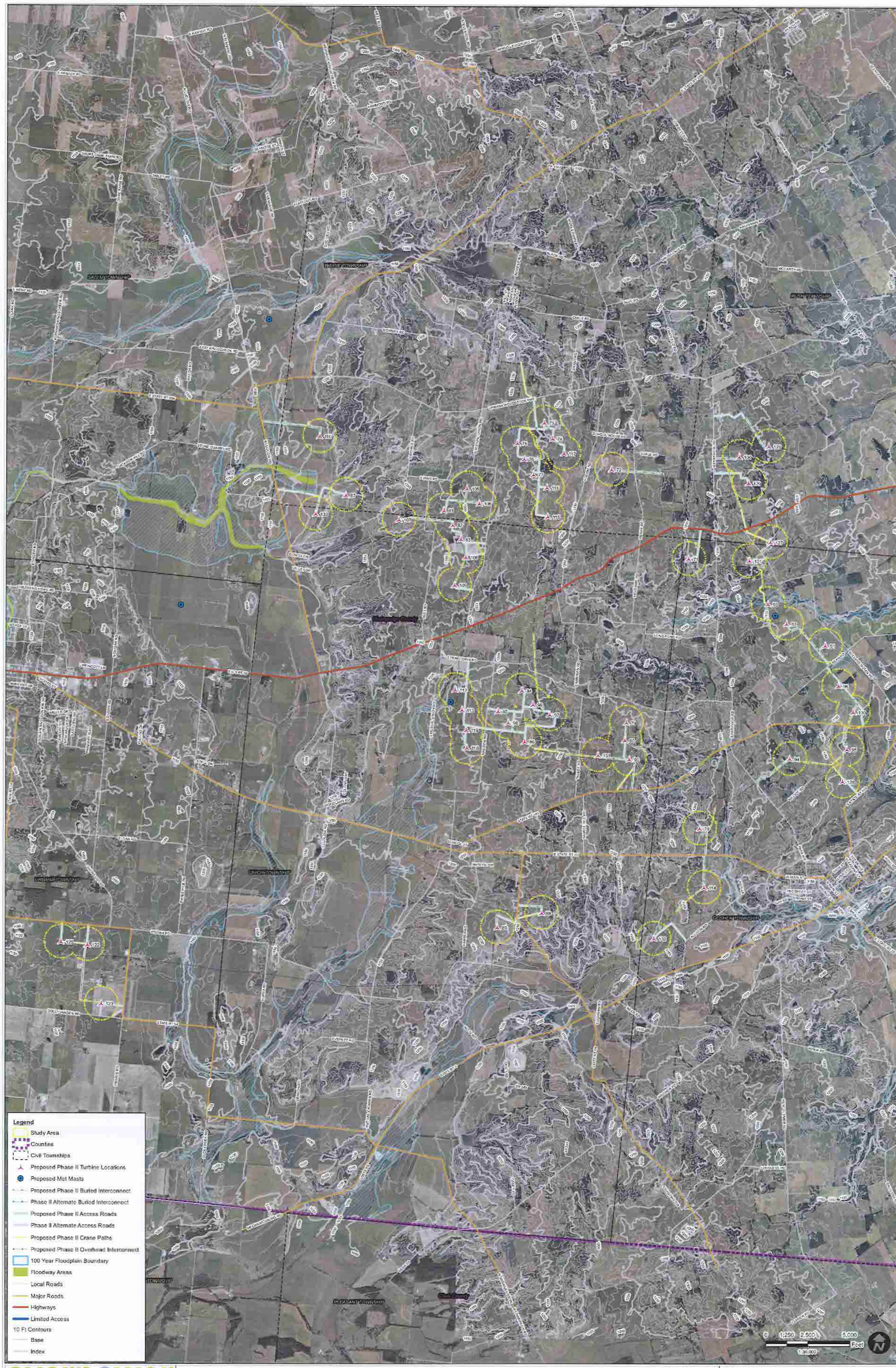
FIGURES



everpower

Prepared By: Hull

Buckeye Wind Power Project Area
Project Area, Topography & 100 Year Floodplain

Date: February 2012

Project Number: EVP010

Geodatabase: EVP010.mdb

File: EVP010_11_Fig01_ProjArea.mxd

Figure: 1

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Buckeye Wind Power Project Area
Bedrock Topography
Karst features are not present in the viewable area

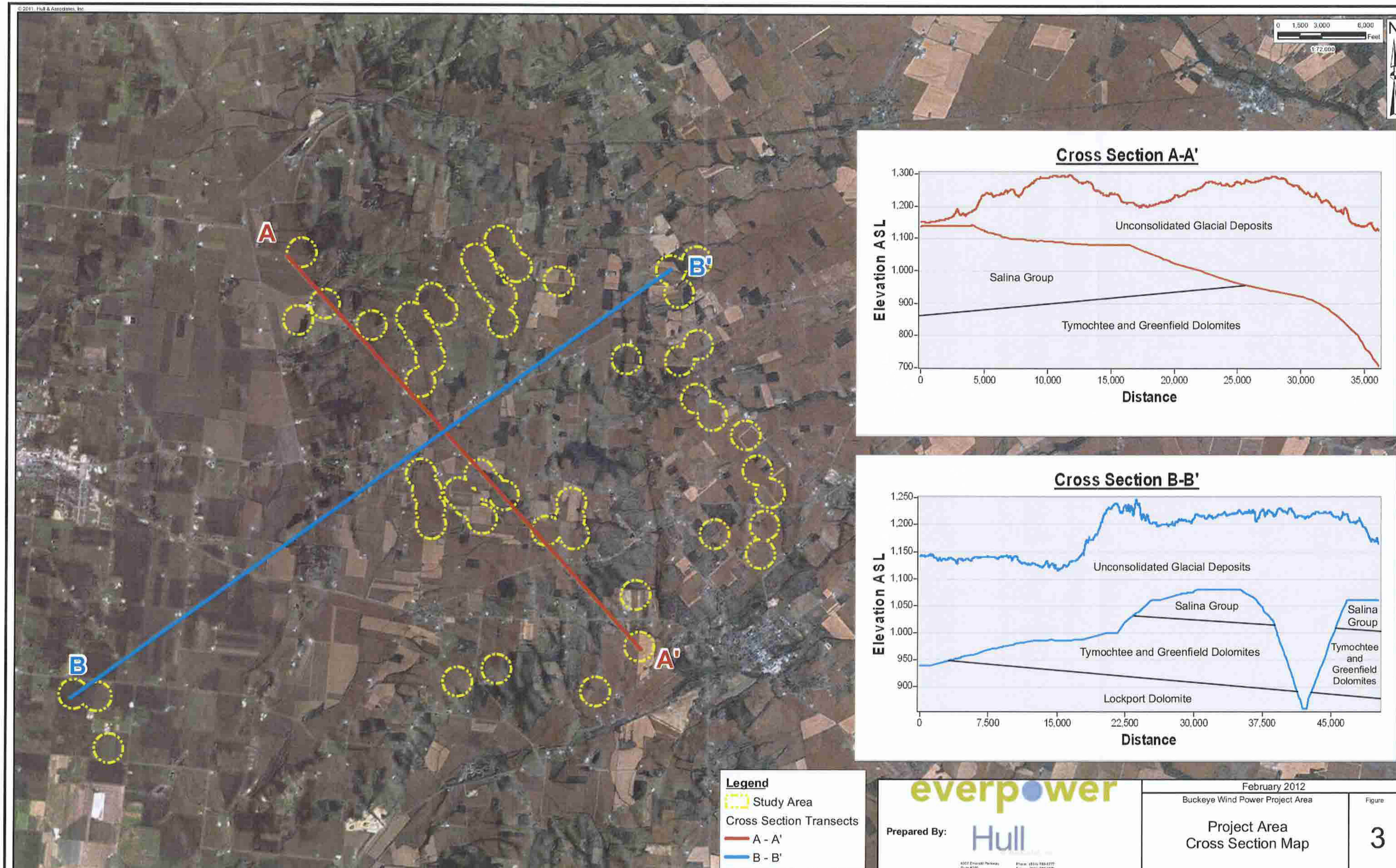
Date: February 2012

Project Number: EVP010

Geodatabase: EVP010.mdb

File: EVP010_11_Fig02_BdrkCntr.mxd

Figure: 2



Prepared By: Hull

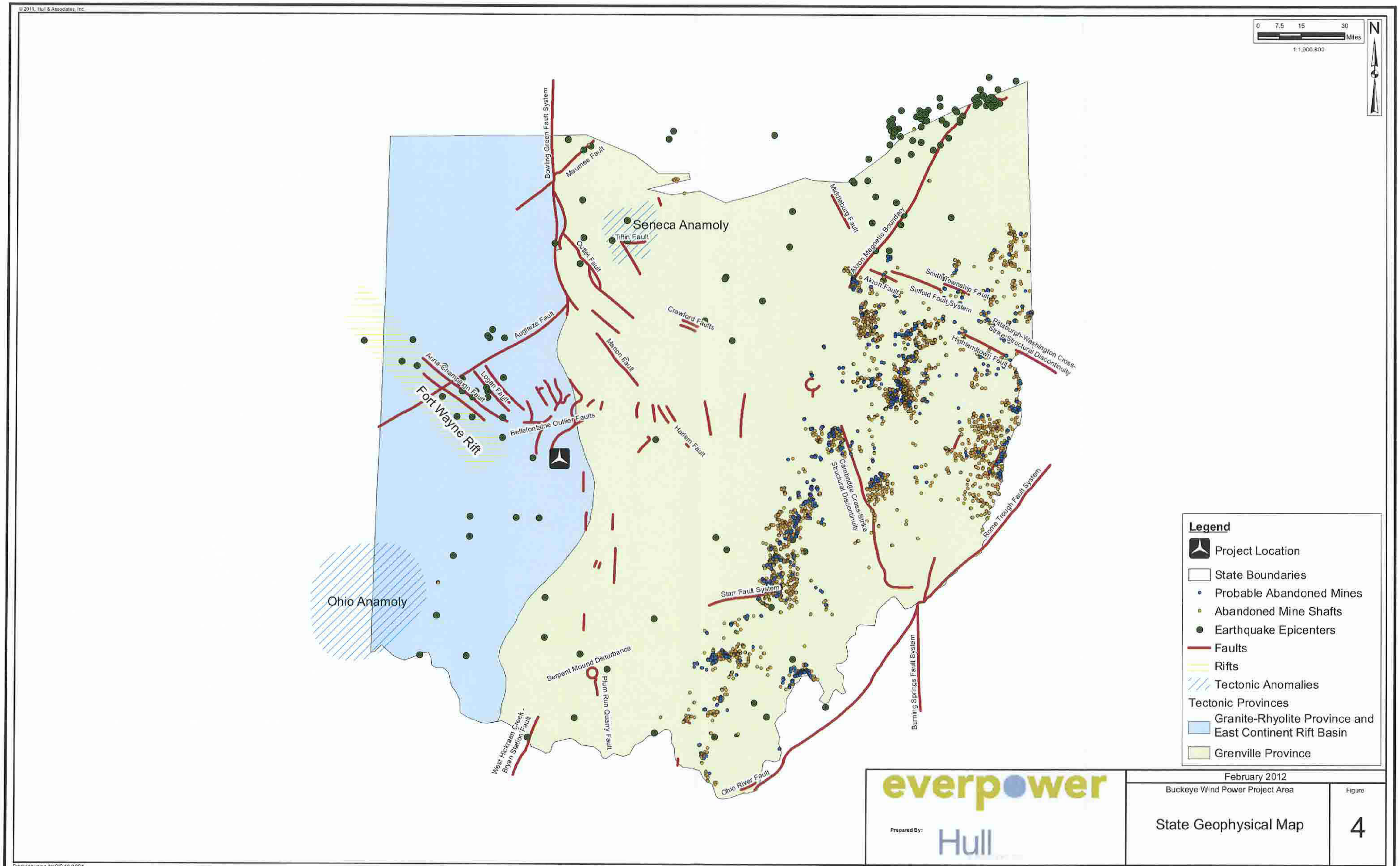
February 2012

Buckeye Wind Power Project Area

Project Area
Cross Section Map

Figure 3

Geodatabase: EVP010.mdb
File Name: EVP010_11_Fig03_CrossSect.mxd
Edited: 2/17/2012 By: jslkr



© 2011, Hull & Associates, Inc.
0 7.5 15 30 Miles
1:1,900,800
N
Bowling Green Fault System
Maumee Fault
Seneca Anamoly
Tiffin Fault
Outlet Fault
Augalize Fault
Crawford Faults
Marion Fault
Anna-Champaign Fault
Logan Fault
Fort Wayne Rift
Bellefontaine Outlier Faults
Harlem Fault
Middleburg Fault
Akron Magnetic Boundary
Akron Fault
Suffield Fault System
Smith Township Fault
Pittsburgh-Washington Cross-Strike Structural Discontinuity
Highlandtown Fault
Cambridge Cross-Strike Structural Discontinuity
Rome Trough Fault System
Starr Fault System
Ohio Anamoly
Serpent Mound Disturbance
Plum Run Quarry Fault
West Hickman Creek - Bryan Station Fault
Burning Springs Fault System
Ohio River Fault
Legend
Project Location
State Boundaries
Probable Abandoned Mines
Abandoned Mine Shafts
Earthquake Epicenters
Faults
Rifts
Tectonic Anomalies
Tectonic Provinces
Granite-Rhyolite Province and East Continent Rift Basin
Grenville Province
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Prepared By:
Hull
February 2012
Buckeye Wind Power Project Area
State Geophysical Map
Figure
4
Produced using ArcGIS 10.0 SP1

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Buckeye Wind Power Project Area
Aquifers & Water Wells

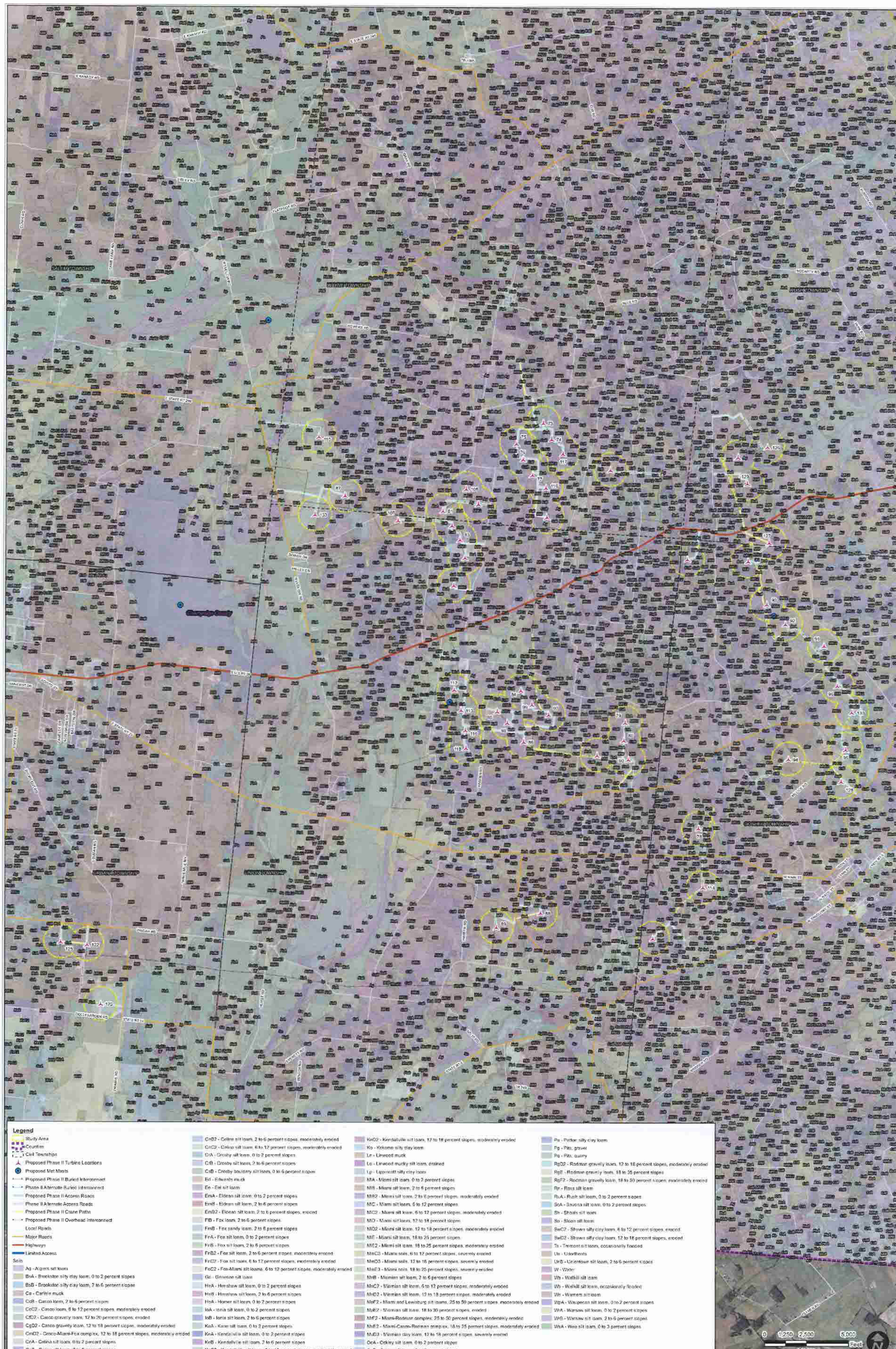
Date: February 2012

Project Number: EVP010

Geodatabase: EVP010.mdb

File: EVP010_11_Fig05_AquiferWl.mxd

Figure: 5



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Prepared By: Hull

Buckeye Wind Power Project Area
USDA Soils Map

Date: February 2012

Project Number: EVP010
Geodatabase: EVP010.mdb
File: EVP010_11_Fig06_USDASoils.mxd
Figure: 6

ATTACHMENT A

Photographs from December 16, 2011 Site Reconnaissance

PHOTO 1: Looking south from Evans Road toward turbine locations 105 and 106.

PHOTO 2: Looking northeast from Ault Road toward turbine locations 82 and 83.

Hull & associates, inc 6397 Emerald Parkway, Suite #200, Dublin, Ohio 43016 Phone: (614) 793-8777, Fax: (614) 793-9070, www.hullinc.com © 2011, Hull & Associates, Inc.	Everpower Renewables Phase II - Buckeye Wind Farm Project Site Photographs Champaign County, Ohio	Date: December 2011 Project Number: EVP010 File Name: EVP010.100.0001.XLS

PHOTO 3: Looking southwest from Bullard Rutan Road toward turbine locations 91 and 92.

PHOTO 4: Looking east from Madden Road toward turbine locations 85 and 98.

Hull & associates, inc. 6397 Emerald Parkway Suite #200 Dublin, Ohio 43016 Phone: (614) 793-8777 Fax: (614) 793-9070 www.hullinc.com 	Everpower Renewables Phase II - Buckeye Wind Farm Project Site Photographs Champaign County, Ohio	Date: December 2011 Project Number: EVP010 File Name: EVP010.100.0001.XLS

PHOTO 5: Yocum Road near turbine location 116.

PHOTO 6: Bean Road near turbine location 96.

Hull & associates, inc 6397 Emerald Parkway Phone: (614) 793-8777 Suite #200 Fax: (614) 793-9070 Dublin, Ohio 43016 www.hullinc.com © 2011, Hull & Associates, Inc.	Everpower Renewables Phase II - Buckeye Wind Farm Project Site Photographs Champaign County, Ohio	Date: December 2011 Project Number: EVP010 File Name: EVP010.100.0001.XLS

ATTACHMENT B

General Earthwork Recommendations

ATTACHMENT B
GENERAL EARTHWORK RECOMMENDATIONS

Earthwork is most efficiently accomplished using large, heavy-duty equipment, unimpeded by obstacles. Consequently, it is preferable to complete as much of this work as is possible prior to initiating other phases of construction, such as footing excavation and installation of underground utilities. The following are general recommendations concerning earthwork construction and may not be applicable to site-specific conditions. Furthermore, the contractor is responsible in selecting and implementing the most appropriate construction techniques (e.g., construction means, methods, sequences or procedures, or for safety precautions or programs) for each site-specific condition(s).

1. Stripping, clearing and grubbing

In areas where fill is to be placed to support structures, drive and parking areas, the following is proposed:

Strip and remove all sod, topsoil, and organic contaminated soils.

Remove all trees and shrubs, designated to be cleared, inclusive of grubbing roots of larger trees.

Remove all trash, debris, rubble, existing random fill, soil softened by standing water, and any other soft soil as determined necessary by the geotechnical engineer. The fill placement should begin on firm, relatively unyielding foundation material.

The fill foundation should be stripped and cleared beyond the limits of the structure by a distance equal to not less than the thickness of the fill below the structure foundation plus 10 feet. For drives and parking areas, the fill foundation should be stripped and cleared for a distance of at least 5 feet beyond the limits of the pavement.

2. Fill Material – Composition

Material satisfactory for use as fill includes clayey silt and silty (lean) clay soils or sand and gravel, free of topsoil, organic or other decomposable matter, rocks having a major dimension greater than 6 inches, or frozen soil.

Soils having a maximum dry density of less than 90 pounds per cubic foot as determined by the moisture-density relationship are not considered suitable for use as fill.

Soils described as SILT (USCS ML, MH or ODOT A-4B) are considered questionably suitable for use as fill material because the stability of these materials is very sensitive to increases in moisture. These soils should not be placed within three feet of the top of the subgrade.

3. Fill Material – Moisture

Predominately fine grained fill materials clayey silts and silty (lean) clays are recommended to contain moisture not exceeding two percent above optimum moisture as determined by the moisture-density relationship, or less if found to be needed to obtain stability below the compaction equipment. This provides the best assurance of establishing not only adequate density for ultimate support of construction but also provides stability of the compacted soil under the dynamic loading induced by the heavy weight construction equipment during placement.

Predominately sand and gravel fill material is not as sensitive to moisture content with regards to stability. Therefore, we recommend no specified limitation, as long as specified density and stability can be established.

4. Moisture Adjustment

If the moisture content of the material from the fill source or native subgrade is not appropriate to establish density, moisture adjustment of the material will be required.

If the moisture content of the fill being placed or the native subgrade is too high, appropriate adjustment entails spreading and exposing to the sun and wind for drying and using equipment such as a disc and/or a grader. This may not be feasible during wet seasonal conditions. Wet soils will pump and may cause excessive rutting under heaving equipment traffic. Therefore, improvements to the subgrade may be achieved by undercutting and replacing with suitable granular subbase (possibly in combination with a non-woven geotextile or biaxial geogrid) or stabilization with lime or cement. The most appropriate subgrade improvement technique should be determined at the time of construction.

If the moisture content of the fill is too low, a water truck with a sprinkler bar may be required. After sprinkling, the soil should be thoroughly mixed with a disc and/or a grader.

5. Equipment

Equipment to compact the fill should be heavy duty. For example:

Fine-grained materials (clayey silts and lean clays) may be efficiently compacted using a sheepsfoot roller comparable to a caterpillar 815 self-propelled roller.

Coarse-grained materials (sand and gravel) having little or no silt and clay sizes may be efficiently compacted using a heavy, self propelled, vibratory smooth wheel roller.

Coarse-grained materials having about 10% or more silt and clay sizes may be efficiently compacted using a sheepsfoot roller comparable to a caterpillar 815 self-propelled sheepsfoot roller.

6. Lift Thickness

Fill should be placed in horizontal layers, 8-inch loose thickness, compacted uniformly to approximately 6-inch thickness.
If equipment is used which is lighter weight than recommended above, lift thickness should be appropriately thinner.

7. Fill Density

In areas to support pavements and building construction, the fill and backfill should be compacted to the density requirements as recommended in the main body of the report.

8. Season of Earthwork

Weather conditions are very important to efficiency in working soils. Generally earthwork is accomplished most efficiently between May and November. Cold periods may hamper moisture adjustment. If the temperature is below 32 degrees Fahrenheit (^{o}F) for prolonged periods, frozen material on the fill surface must be removed before subsequent lifts may be placed. Also, densification of fill is more difficult when air temperatures are below freezing. Granular material, such as bank run sand and gravel is somewhat less sensitive to weather conditions but is not immune from difficulties that may be presented by precipitation and low temperatures.

9. Trench Backfill

Trench backfill should be controlled compacted fill, placed in accordance with recommendations presented above and as engineered for thermal properties in collection systems

It is recommended that suitable granular material be used to backfill trenches that traverse beneath buildings, drives, or parking areas.

10. Proof Rolling

Upon completion of stripping, clearing, and grubbing, the areas planned to support pavement or building floor slab shall be proof rolled in accordance with ODOT Item 204 to identify any soft, weak, loose, or excessively wet subgrade conditions. At a minimum, the proof rolling should be completed with a minimum 20-ton loaded tandem axle dump truck. The vehicle should pass in each of two perpendicular directions covering the proposed work area. Any observed unsuitable materials should be undercut and replaced with suitable fill as directed by the geotechnical engineer.

11. General

All fill should be placed and compacted under continuous observation and testing by a soils technician under the general guidance of the geotechnical engineer.

ATTACHMENT C

Generalized Geotechnical Exploration Work Plan

ATTACHMENT C
GENERALIZED GEOTECHNICAL EXPLORATION WORK PLAN

A geotechnical engineer licensed by the State of Ohio shall prepare a proposal for a geotechnical site exploration in general accordance with the suggested scope of work provided below. The geotechnical engineer shall be qualified in geotechnical investigations within the region. The geotechnical exploration program suggested below (e.g., boring frequency, location, and depth) should be adjusted by the geotechnical engineer based on their experience and to allow for specific geological, topographic, and drainage conditions of the site.

PROJECT DESCRIPTION

A geotechnical exploration will be performed at the proposed Study Area in Champaign County, Ohio. The project involves planned construction of wind turbine generators at various locations (Sites) for Phase II of the Buckeye Wind Power Facility. Upon completion of the geotechnical exploration suitable foundation systems will be reviewed that will work with the Site conditions as determined by the geotechnical exploration and design preferences provided by the Client. The foundation types that will be considered include spread footings, P&H foundations, and pile supported foundations.

The purpose of the geotechnical exploration is to obtain geologic information and to determine relevant engineering properties of the Site soils. A review of generalized geologic references, including ODNR Well Logs and ODNR Groundwater Resource Maps, suggest the Study Area is underlain by glacial end moraine deposits with limestone and dolomite bedrock depths being highly variable (e.g., from 15 to over 100 feet below existing ground surface).

PROPOSED SCOPE OF WORK

Reconnaissance, Planning and Boring Layout
The following will be conducted as part of this task:

1. A review of pertinent, readily available subsurface geotechnical information for the Site that is provided to the Geotechnical Engineer will be performed.

2. A site visit will be performed to lay out the borings and clear underground utilities at the boring locations. The landowner will be consulted to provide the geotechnical engineer with information and the locations of all private utilities at the site. The geotechnical engineer will be responsible for locating the boring, which should be surveyed and staked on the site prior to drilling.

3. The Ohio Utility Protection Service (OUPS) and Ohio Oil & Gas Producers Underground Protection Service (OGPUPS) will be notified a minimum of 48-hours prior to the commencement of drilling services.

Drilling and Sampling
After the geotechnical engineer has reviewed all available desktop information, they will determine the number of borings to be drilled at turbine locations. In addition, borings will be taken at the proposed substation locations. The borings will extend to the proposed depth or competent bedrock, whichever is encountered first.

For all borings, the following will be performed:

1. Split-barrel sampling of soil will be performed in accordance with American Society for Testing and Materials (ASTM) D 1586 for each boring in increments of 2.5 feet to the depth of 10 feet and at five-foot intervals below 10 feet to the depth of the borings. In all the borings, Standard Penetration Test (SPT) data will be developed and representative samples preserved.

2. It is anticipated that the drilling will be accessible with and performed by a truck-mounted drilling rig. Provisions shall be made by the Geotechnical Engineer based on the time of year the fieldwork will occur in using an ATV drill rig if the borings can not be accessed with a truck-mounted drilling rig.

3. Water observations in the boreholes will be recorded during and at the completion of drilling.

4. All borings will be backfilled at the completion of drilling with bentonite chips and drill cuttings.

Geotechnical Laboratory Testing

A laboratory testing program will be established by the geotechnical engineer based on the observations made during the drilling activities and experience. The following laboratory tests shall be performed on samples retained during the drilling activities:

1. All samples will be classified in the laboratory based on the visual-manual examination (ASTM D 2488) Soil Classification System and the laboratory test results. Formal boring logs will be prepared using the field logs and the laboratory classifications.

2. Laboratory testing will include moisture content, particle-size analyses, and Atterberg limits of a limited number of samples considered to be representative of the foundation materials encountered by the borings. Unconfined compression and consolidation tests will be performed if low strength and/or highly compressible cohesive soils are encountered as deemed necessary by the geotechnical engineer.

3. All laboratory testing will be performed in accordance with ASTM or other specified standards.

Geotechnical Exploration Report

The geotechnical engineer will prepare a Geotechnical Exploration Report that will include the findings, conclusions and recommendations concerning proposed geotechnical related design-construction considerations and foundation design recommendations. The report shall also include an Appendix, which will include a boring location plan, a legend of the boring log terminology, the boring logs, and the results of any laboratory tests. Three (3) copies of the report will be presented by the Geotechnical Engineer.

APPENDIX A

Property Owner Well Surveys

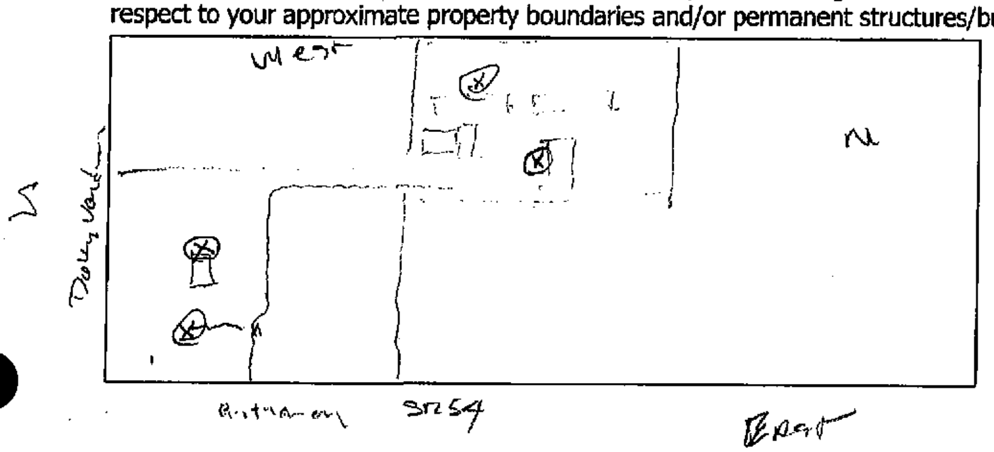
Hearthstone
12-23-11

WELL SURVEY QUESTIONNAIRE

PLEASE FILL OUT THE FOLLOWING QUESTIONNAIRE TO THE BEST OF YOUR KNOWLEDGE. IF YOU ARE NOT SURE OF THE ANSWER TO A QUESTION, PLEASE COMMENT AS "UNKNOWN". AFTER COMPLETION, PLEASE RETURN THIS QUESTIONNAIRE IN THE ENCLOSED STAMPED ENVELOPE.

1. Property Owner and Address: Hearthstone Farm Inc 3548 SR 54 Urbana, Oh 43078
2. How Many Wells Do You Have On Your Property? ~~3~~ 4
3. Are You Connected/Provided with Municipal Water (i.e., water provided by town or private water supply company)? NO
4. Are the Wells Used for Domestic Purposes (i.e., Drinking/Potable Water) and/or for Irrigation Purposes?
   2 - Drinking 2 - Irrigation
5. Approximate Depth of Well(s)? 80'
6. Diameter of Well(s)? 2-4" - drinking 1-8" & 1-16"
7. Type of Well/Groundwater Source (i.e., Bedrock Well – B; or Overburden/Sand-Gravel Well – O/SG)?
   Unknown
8. Type of Well Construction (i.e., Steel Casing – SC; PVC; brick/clay – B/C; Other – O)?
   PVC & Unknown
9. Date of Installation of Well(s)? 2 - 1940's 1 - 1995 1 - 1996
10. Depth to Water/Groundwater Within Well (or depth to water encountered during drilling of well)?
    Unknown
11. Approximate Yield of Well(s) [i.e., referenced in gallons per minute (gpm)]? Unknown
12. Have You Ever Had to Drill a New Well Due to Lowering of Water Table or Poor Well Yield (if yes, indicate reason)?
    NO

DIAGRAM OF WELL LOCATION(S) (If known, please provide a rough sketch of where your well(s) are with respect to your approximate property boundaries and/or permanent structures/buildings):



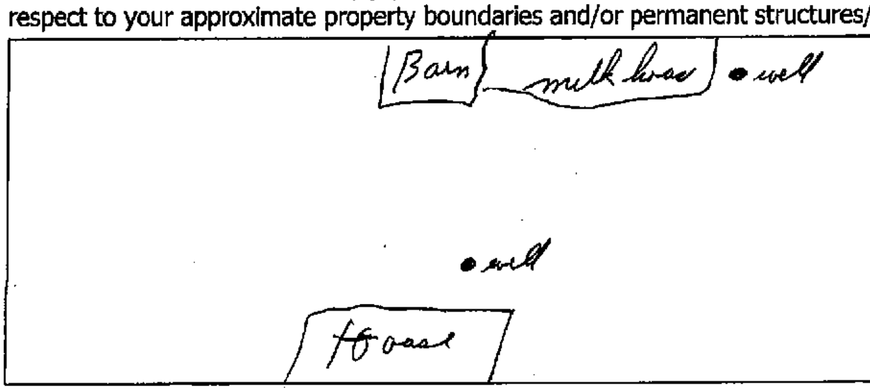
for 2 surveys:
Hearthstone Farm

WELL SURVEY QUESTIONNAIRE

PLEASE FILL OUT THE FOLLOWING QUESTIONNAIRE TO THE BEST OF YOUR KNOWLEDGE. IF YOU ARE NOT SURE OF THE ANSWER TO A QUESTION, PLEASE COMMENT AS "UNKNOWN". AFTER COMPLETION, PLEASE RETURN THIS QUESTIONNAIRE IN THE ENCLOSED STAMPED ENVELOPE.

1. Property Owner and Address: Roger E Yocom 773 Yocom Rd Cable Oh 43009
2. How Many Wells Do You Have On Your Property? 2
3. Are You Connected/Provided with Municipal Water (i.e., water provided by town or private water supply company)? no
4. Are the Wells Used for Domestic Purposes (i.e., Drinking/Potable Water) and/or for Irrigation Purposes? yes
5. Approximate Depth of Well(s)? 80' 210'
6. Diameter of Well(s)? 6"
7. Type of Well/Groundwater Source (i.e., Bedrock Well – B; or Overburden/Sand-Gravel Well – O/SG)? X
8. Type of Well Construction (i.e., Steel Casing – SC; PVC; brick/clay – B/C; Other – O)? X
9. Date of Installation of Well(s)? unknown
10. Depth to Water/Groundwater Within Well (or depth to water encountered during drilling of well)? 20' to 30ft
11. Approximate Yield of Well(s) [i.e., referenced in gallons per minute (gpm)]? unknown
12. Have You Ever Had to Drill a New Well Due to Lowering of Water Table or Poor Well Yield (if yes, indicate reason)? no

DIAGRAM OF WELL LOCATION(S) (If known, please provide a rough sketch of where your well(s) are with respect to your approximate property boundaries and/or permanent structures/buildings):

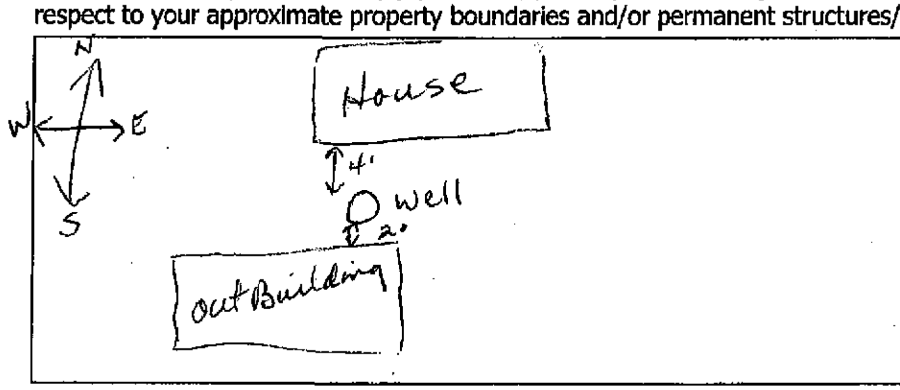


WELL SURVEY QUESTIONNAIRE

PLEASE FILL OUT THE FOLLOWING QUESTIONNAIRE TO THE BEST OF YOUR KNOWLEDGE. IF YOU ARE NOT SURE OF THE ANSWER TO A QUESTION, PLEASE COMMENT AS "UNKNOWN". AFTER COMPLETION, PLEASE RETURN THIS QUESTIONNAIRE IN THE ENCLOSED STAMPED ENVELOPE.

1. Property Owner and Address: Paul E Bailey 614 Bullard-Rutan Mechanicsburg Ohio 43044
2. How Many Wells Do You Have On Your Property? 1
3. Are You Connected/Provided with Municipal Water (i.e., water provided by town or private water supply company)? No
4. Are the Wells Used for Domestic Purposes (i.e., Drinking/Potable Water) and/or for Irrigation Purposes? DRINKING
5. Approximate Depth of Well(s)? 18'
6. Diameter of Well(s)? unknown
7. Type of Well/Groundwater Source (i.e., Bedrock Well – B; or Overburden/Sand-Gravel Well – O/SG)? unknown
8. Type of Well Construction (i.e., Steel Casing – SC; PVC; brick/clay – B/C; Other – O)? steel casing
9. Date of Installation of Well(s)? unknown
10. Depth to Water/Groundwater Within Well (or depth to water encountered during drilling of well)? unknown
11. Approximate Yield of Well(s) [i.e., referenced in gallons per minute (gpm)]? unknown
12. Have You Ever Had to Drill a New Well Due to Lowering of Water Table or Poor Well Yield (if yes, indicate reason)? NO

DIAGRAM OF WELL LOCATION(S) (If known, please provide a rough sketch of where your well(s) are with respect to your approximate property boundaries and/or permanent structures/buildings):

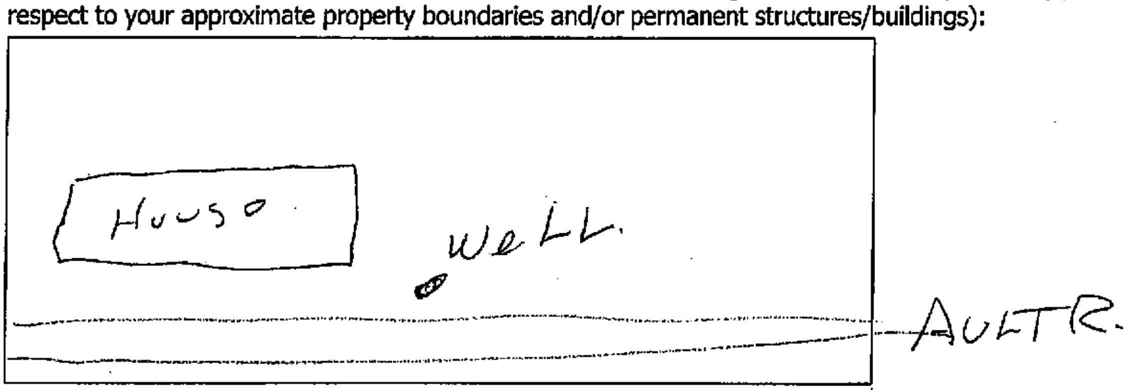


WELL SURVEY QUESTIONNAIRE

PLEASE FILL OUT THE FOLLOWING QUESTIONNAIRE TO THE BEST OF YOUR KNOWLEDGE. IF YOU ARE NOT SURE OF THE ANSWER TO A QUESTION, PLEASE COMMENT AS "UNKNOWN". AFTER COMPLETION, PLEASE RETURN THIS QUESTIONNAIRE IN THE ENCLOSED STAMPED ENVELOPE.

1. Property Owner and Address: CARL OBERLEY 277 N WAShingTON ST DeLaWARE Ohio 43015
2. How Many Wells Do You Have On Your Property? one
3. Are You Connected/Provided with Municipal Water (i.e., water provided by town or private water supply company)? NO
4. Are the Wells Used for Domestic Purposes (i.e., Drinking/Potable Water) and/or for Irrigation Purposes? DRINKing POTABLE WATER
5. Approximate Depth of Well(s)? 238 Feet
6. Diameter of Well(s)? 4"
7. Type of Well/Groundwater Source (i.e., Bedrock Well – B; or Overburden/Sand-Gravel Well – O/SG)? B
8. Type of Well Construction (i.e., Steel Casing – SC; PVC; brick/clay – B/C; Other – O)? STeeL.
9. Date of Installation of Well(s)? 1978
10. Depth to Water/Groundwater Within Well (or depth to water encountered during drilling of well)? DONOT KNOW
11. Approximate Yield of Well(s) [i.e., referenced in gallons per minute (gpm)]? AS MUCH AS A One H/P Pump will Pump.
12. Have You Ever Had to Drill a New Well Due to Lowering of Water Table or Poor Well Yield (if yes, indicate reason)? NO

DIAGRAM OF WELL LOCATION(S) (If known, please provide a rough sketch of where your well(s) are with respect to your approximate property boundaries and/or permanent structures/buildings):



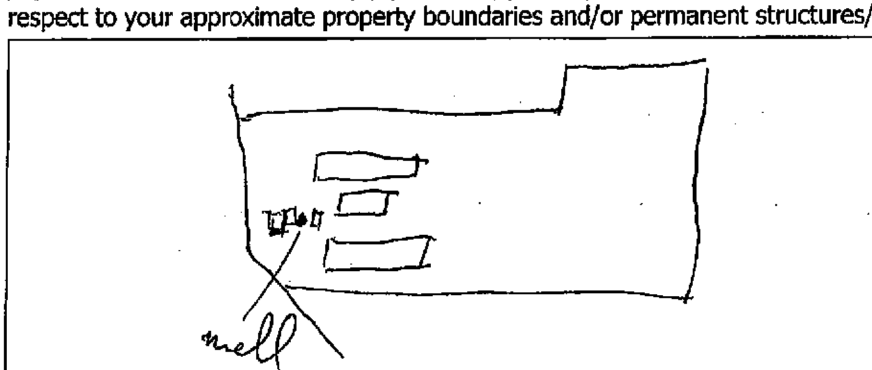
830 AULT Rd URBANA OHIO

WELL SURVEY QUESTIONNAIRE

PLEASE FILL OUT THE FOLLOWING QUESTIONNAIRE TO THE BEST OF YOUR KNOWLEDGE. IF YOU ARE NOT SURE OF THE ANSWER TO A QUESTION, PLEASE COMMENT AS "UNKNOWN". AFTER COMPLETION, PLEASE RETURN THIS QUESTIONNAIRE IN THE ENCLOSED STAMPED ENVELOPE.

1. Property Owner and Address: James W. Pratt Jr 3985 ST RT 56
2. How Many Wells Do You Have On Your Property? One
3. Are You Connected/Provided with Municipal Water (i.e., water provided by town or private water supply company)? No
4. Are the Wells Used for Domestic Purposes (i.e., Drinking/Potable Water) and/or for Irrigation Purposes? Yes / Yes
5. Approximate Depth of Well(s)? 265 ft
6. Diameter of Well(s)? 6"
7. Type of Well/Groundwater Source (i.e., Bedrock Well – B; or Overburden/Sand-Gravel Well – O/SG)? unknown
8. Type of Well Construction (i.e., Steel Casing – SC; PVC; brick/clay – B/C; Other – O)? SC
9. Date of Installation of Well(s)? Prior To 1961
10. Depth to Water/Groundwater Within Well (or depth to water encountered during drilling of well)? 35 ft standing water
11. Approximate Yield of Well(s) [i.e., referenced in gallons per minute (gpm)]? 5 gallon per minute +
12. Have You Ever Had to Drill a New Well Due to Lowering of Water Table or Poor Well Yield (if yes, indicate reason)? No

DIAGRAM OF WELL LOCATION(S) (If known, please provide a rough sketch of where your well(s) are with respect to your approximate property boundaries and/or permanent structures/buildings):



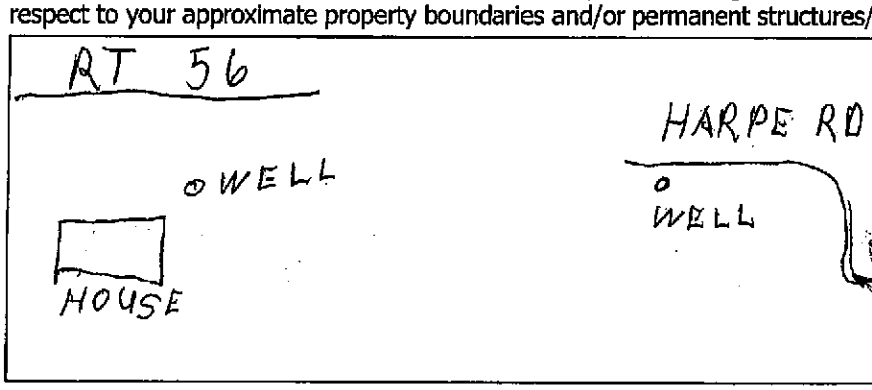
WELL SURVEY QUESTIONNAIRE

John - Charlotte Steberl

PLEASE FILL OUT THE FOLLOWING QUESTIONNAIRE TO THE BEST OF YOUR KNOWLEDGE. IF YOU ARE NOT SURE OF THE ANSWER TO A QUESTION, PLEASE COMMENT AS "UNKNOWN". AFTER COMPLETION, PLEASE RETURN THIS QUESTIONNAIRE IN THE ENCLOSED STAMPED ENVELOPE.

1. Property Owner and Address: 3700 ST. RT. 56, McBURG, OH, 43044
2. How Many Wells Do You Have On Your Property? 2
3. Are You Connected/Provided with Municipal Water (i.e., water provided by town or private water supply company)? NO
4. Are the Wells Used for Domestic Purposes (i.e., Drinking/Potable Water) and/or for Irrigation Purposes? 1 WELL IS
5. Approximate Depth of Well(s)? 106' UNKNOWN
6. Diameter of Well(s)? 6" 4"
7. Type of Well/Groundwater Source (i.e., Bedrock Well – B; or Overburden/Sand-Gravel Well – O/SG)? SAND-GRAVEL
8. Type of Well Construction (i.e., Steel Casing – SC; PVC; brick/clay – B/C; Other – O)? ~~STEEL~~ STEEL
9. Date of Installation of Well(s)? 1996 UNKNOWN
10. Depth to Water/Groundwater Within Well (or depth to water encountered during drilling of well)? 95' UNKNOWN
11. Approximate Yield of Well(s) [i.e., referenced in gallons per minute (gpm)]? UNKNOWN
12. Have You Ever Had to Drill a New Well Due to Lowering of Water Table or Poor Well Yield (if yes, indicate reason)? NO

DIAGRAM OF WELL LOCATION(S) (If known, please provide a rough sketch of where your well(s) are with respect to your approximate property boundaries and/or permanent structures/buildings):

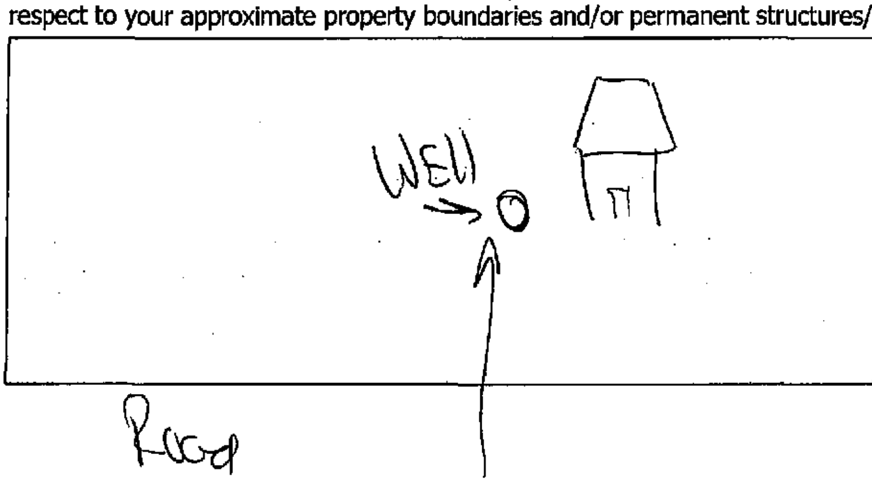


WELL SURVEY QUESTIONNAIRE

PLEASE FILL OUT THE FOLLOWING QUESTIONNAIRE TO THE BEST OF YOUR KNOWLEDGE. IF YOU ARE NOT SURE OF THE ANSWER TO A QUESTION, PLEASE COMMENT AS "UNKNOWN". AFTER COMPLETION, PLEASE RETURN THIS QUESTIONNAIRE IN THE ENCLOSED STAMPED ENVELOPE.

1. Property Owner and Address: Nancy Roberts, The Roberts Family Trust 940 N. Mutual-Union RD Cable, OH 43009
2. How Many Wells Do You Have On Your Property? 1
3. Are You Connected/Provided with Municipal Water (i.e., water provided by town or private water supply company)? NO
4. Are the Wells Used for Domestic Purposes (i.e., Drinking/Potable Water) and/or for Irrigation Purposes? Domestic Purposes
5. Approximate Depth of Well(s)? 120'
6. Diameter of Well(s)? unknown
7. Type of Well/Groundwater Source (i.e., Bedrock Well – B; or Overburden/Sand-Gravel Well – O/SG)? unknown
8. Type of Well Construction (i.e., Steel Casing – SC; PVC; brick/clay – B/C; Other – O)? Steel Casing
9. Date of Installation of Well(s)? unknown
10. Depth to Water/Groundwater Within Well (or depth to water encountered during drilling of well)? unknown
11. Approximate Yield of Well(s) [i.e., referenced in gallons per minute (gpm)]? unknown
12. Have You Ever Had to Drill a New Well Due to Lowering of Water Table or Poor Well Yield (if yes, indicate reason)? NO

DIAGRAM OF WELL LOCATION(S) (If known, please provide a rough sketch of where your well(s) are with respect to your approximate property boundaries and/or permanent structures/buildings):



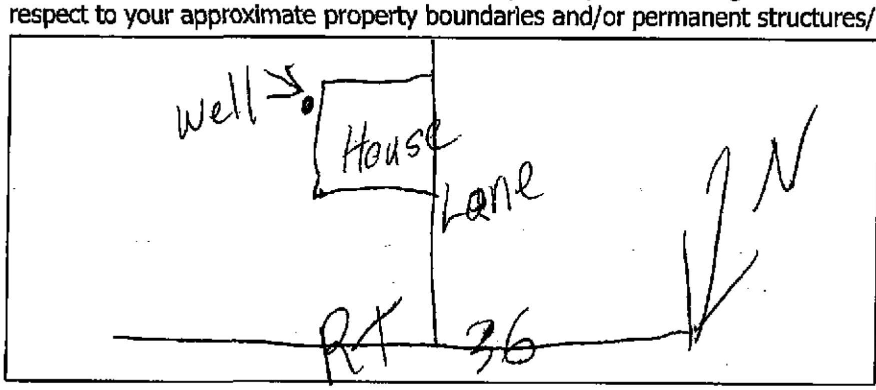
for 2 surveys
- Donald Roberts
- Eugene and Nancy Roberts

WELL SURVEY QUESTIONNAIRE

PLEASE FILL OUT THE FOLLOWING QUESTIONNAIRE TO THE BEST OF YOUR KNOWLEDGE. IF YOU ARE NOT SURE OF THE ANSWER TO A QUESTION, PLEASE COMMENT AS "UNKNOWN". AFTER COMPLETION, PLEASE RETURN THIS QUESTIONNAIRE IN THE ENCLOSED STAMPED ENVELOPE.

1. Property Owner and Address: Michael C. Salyers 8127 E. St. Rt. 36 Woodstock, O
2. How Many Wells Do You Have On Your Property? one
3. Are You Connected/Provided with Municipal Water (i.e., water provided by town or private water supply company)? NO
4. Are the Wells Used for Domestic Purposes (i.e., Drinking/Potable Water) and/or for Irrigation Purposes? Yes
5. Approximate Depth of Well(s)? 70 ft.
6. Diameter of Well(s)? 4"
7. Type of Well/Groundwater Source (i.e., Bedrock Well – B; or Overburden/Sand-Gravel Well – O/SG)?
8. Type of Well Construction (i.e., Steel Casing – SC; PVC; brick/clay – B/C; Other – O)?
9. Date of Installation of Well(s)? unknown
10. Depth to Water/Groundwater Within Well (or depth to water encountered during drilling of well)? 40 ft
11. Approximate Yield of Well(s) [i.e., referenced in gallons per minute (gpm)]? N/A
12. Have You Ever Had to Drill a New Well Due to Lowering of Water Table or Poor Well Yield (if yes, indicate reason)? NO

<u>DIAGRAM OF WELL LOCATION(S)</u> (If known, please provide a rough sketch of where your well(s) are with respect to your approximate property boundaries and/or permanent structures/buildings):

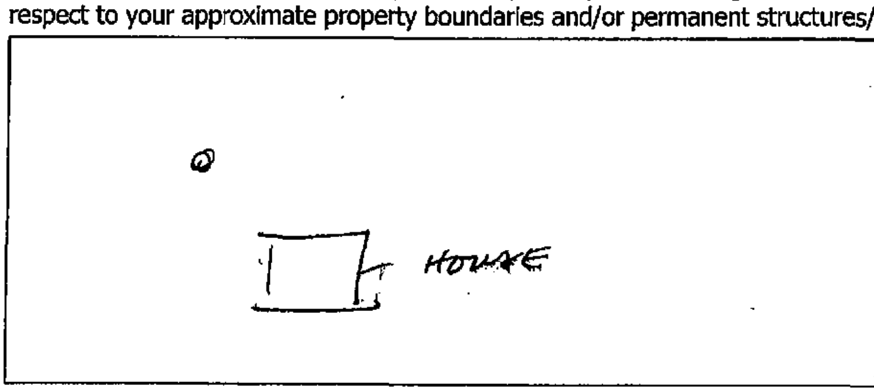


WELL SURVEY QUESTIONNAIRE

PLEASE FILL OUT THE FOLLOWING QUESTIONNAIRE TO THE BEST OF YOUR KNOWLEDGE. IF YOU ARE NOT SURE OF THE ANSWER TO A QUESTION, PLEASE COMMENT AS "UNKNOWN". AFTER COMPLETION, PLEASE RETURN THIS QUESTIONNAIRE IN THE ENCLOSED STAMPED ENVELOPE.

1. Property Owner and Address: 9804 ST RT 29 MECHANICSBURG OH 43044
2. How Many Wells Do You Have On Your Property? 1 - CONNECTED TO HOUSE ON FARM
3. Are You Connected/Provided with Municipal Water (i.e., water provided by town or private water supply company)? NO
4. Are the Wells Used for Domestic Purposes (i.e., Drinking/Potable Water) and/or for Irrigation Purposes? DRINKING + POTABLE - NO IRRIGATION
5. Approximate Depth of Well(s)? ?
6. Diameter of Well(s)? ?
7. Type of Well/Groundwater Source (i.e., Bedrock Well – B; or Overburden/Sand-Gravel Well – O/SG)? ?
8. Type of Well Construction (i.e., Steel Casing – SC; PVC; brick/clay – B/C; Other – O)? ?
9. Date of Installation of Well(s)? ?
10. Depth to Water/Groundwater Within Well (or depth to water encountered during drilling of well)? ?
11. Approximate Yield of Well(s) [i.e., referenced in gallons per minute (gpm)]? ?
12. Have You Ever Had to Drill a New Well Due to Lowering of Water Table or Poor Well Yield (if yes, indicate reason)? NO

DIAGRAM OF WELL LOCATION(S) (If known, please provide a rough sketch of where your well(s) are with respect to your approximate property boundaries and/or permanent structures/buildings):

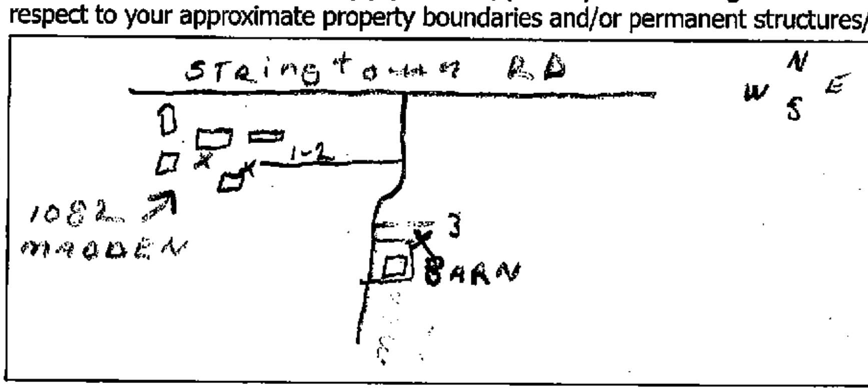


WELL SURVEY QUESTIONNAIRE

PLEASE FILL OUT THE FOLLOWING QUESTIONNAIRE TO THE BEST OF YOUR KNOWLEDGE. IF YOU ARE NOT SURE OF THE ANSWER TO A QUESTION, PLEASE COMMENT AS "UNKNOWN". AFTER COMPLETION, PLEASE RETURN THIS QUESTIONNAIRE IN THE ENCLOSED STAMPED ENVELOPE.

1. Property Owner and Address: RoBerT CHANNEll 1082 madder RD CABLE OHIO
2. How Many Wells Do You Have On Your Property? 3
3. Are You Connected/Provided with Municipal Water (i.e., water provided by town or private water supply company)? NO
4. Are the Wells Used for Domestic Purposes (i.e., Drinking/Potable Water) and/or for Irrigation Purposes? YES
5. Approximate Depth of Well(s)? 90 FEET
6. Diameter of Well(s)? 6 in
7. Type of Well/Groundwater Source (i.e., Bedrock Well – B; or Overburden/Sand-Gravel Well – O/SG)? DonT Know
8. Type of Well Construction (i.e., Steel Casing – SC; PVC; brick/clay – B/C; Other – O)? STEEL CASING
9. Date of Installation of Well(s)? 1990 NEWEST 1950s oLdEST
10. Depth to Water/Groundwater Within Well (or depth to water encountered during drilling of well)? 60 FEET
11. Approximate Yield of Well(s) [i.e., referenced in gallons per minute (gpm)]? unKown
12. Have You Ever Had to Drill a New Well Due to Lowering of Water Table or Poor Well Yield (if yes, indicate reason)? NO

DIAGRAM OF WELL LOCATION(S) (If known, please provide a rough sketch of where your well(s) are with respect to your approximate property boundaries and/or permanent structures/buildings):



X = WElls

Exhibit G
Economic Impact
Assessment

EXHIBIT G

Economic Impact Assessment

ASSESSING THE ECONOMIC IMPACTS OF BUCKEYE II WIND FARM

An Evaluation of Potential Impacts on the Local Economy

CHAMPAIGN COUNTY, OHIO

PREPARED FOR
CHAMPAIGN WIND, LLC

BY
CAMIROS
411 S. WELLS STREET
CHICAGO, ILLINOIS 60607

March 20, 2012

ACKNOWLEDGEMENTS

This report was prepared by Jacques Gourguechon, AICP, Principal, and Jacob Seid, AICP, Associate, of Camiros, Ltd. for Champaign Wind, LLC. Questions regarding this report should be directed to Mr. Gourguechon at *jgourgue@camiros.com* or by phoning Camiros, Ltd. at (312) 922-9211.

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ASSESSING THE ECONOMIC IMPACTS OF BUCKEYE II WIND FARM

An Evaluation of Potential Impacts on the Local Economy

As part of the application and approval process for this project, pursuant to Ohio Administrative Code Chapter 4906: Public Utilities, Champaign Wind, LLC engaged Camiros, Ltd. to evaluate the economic impacts of constructing and operating the proposed Buckeye II Wind Farm on the local economy. For the purposes of this study, the local economy includes Champaign, Logan, Union, Madison, Clark, Miami and Shelby Counties. Specifically, Camiros was asked to analyze and quantify impacts within four economic components: employment, total dollars injected into the local economy, land lease revenue to participating land owners, and payments in lieu of taxes made to local governments, resulting from the construction of the proposed 90 to 140 megawatt wind farm.

The analysis concludes that the project will result in a positive economic benefit to the local economy, including the creation of new jobs as well as an increase in local spending. The project will also provide taxes to local governments and confer land lease payments to participating land owners.

To research the economic impact of the proposed wind farm, Camiros employed a number of techniques. Data from the U.S Census Bureau was used to formulate population projections for communities within a five mile radius of the proposed wind farm. Camiros also reviewed data from the U.S. Bureau of Labor Statistics, the Renewable Energy Policy Project and comprehensive plans and zoning policy from communities in the seven-county region. Local economic impacts were estimated using an input-output model designed by the U.S. Department of Energy for wind energy facilities based on data from existing wind farm projects around the United States.

The economic analysis is based on reasonable assumptions of future expenditure patterns for constructing and operating the proposed wind farm. Findings from the analysis should not be taken as precise projections of future performance. Rather, the values included in this report provide insight into the likely economic impact of the project.

I. INTRODUCTION

There are several kinds of natural resources used for energy production. The major types of energy used today are derived from fossil fuels, and include coal, oil, and natural gas. Alternatives to this type of energy production are referred to as "clean energy" and include wind energy, solar power, geothermal energy and hydroelectric power. Wind energy is currently the second most prevalent pollution-free source of power in the United States behind hydroelectric power and does not create emissions associated with the production of energy from fossil-fuels. While China leads the world in total installed capacity of wind energy, the United States is a close second, followed by Germany, Spain, India and Italy.

Champaign Wind is currently developing plans and seeking approvals for the construction of the proposed Buckeye II Wind Farm to be located upon approximately 13,500 acres in east Champaign County, Ohio. If approved, the project will construct 56 wind turbines with a total nameplate capacity of approximately 90 to 140 megawatts. The project is expected to be constructed over a twelve month period beginning in late 2012 to early 2013 as a counterpart to the Buckeye I Wind Farm, which will also be located in Champaign County, Ohio.

Total investment in the wind farm project has been estimated at $345 million through development, engineering and construction. During construction, the project will result in the employment of 86 workers, a substantial portion of which will be hired from within the seven-county region, herein referred to as the *local economy*[1]. Total estimated construction labor costs are approximately $4.9 million.

Total yearly costs for the operations and management phase of the project are estimated at $3.6 million. Approximately seven new jobs are directly related to operating and managing the wind farm. Estimated annual labor costs for operations are $400,000.

The Local Economy

This economic analysis focuses on the anticipated impact of the project on the local economy. The proposed wind farm is located in rural Champaign County, approximately 38 miles northeast of Dayton and approximately 45 miles west of Columbus. It is expected that economic activity created by the project will reach beyond Champaign County into the surrounding counties and nearby population centers. The project will draw new employees and derive its necessary goods and services primarily from the surrounding area.

Champaign County, the site of the proposed wind farm, is bounded by the Ohio counties of Logan to the north, Union and Madison to the east, Clark to the south and Miami and Shelby to the west. For the purposes of this analysis, these seven counties make up the *local economy*. See Figure 1: Seven County Local Economy.

[1] For the purposes of this analysis, the "local economy" shall be the whole area of the Ohio counties of Champaign, Logan, Union, Madison, Clark, Miami and Shelby.

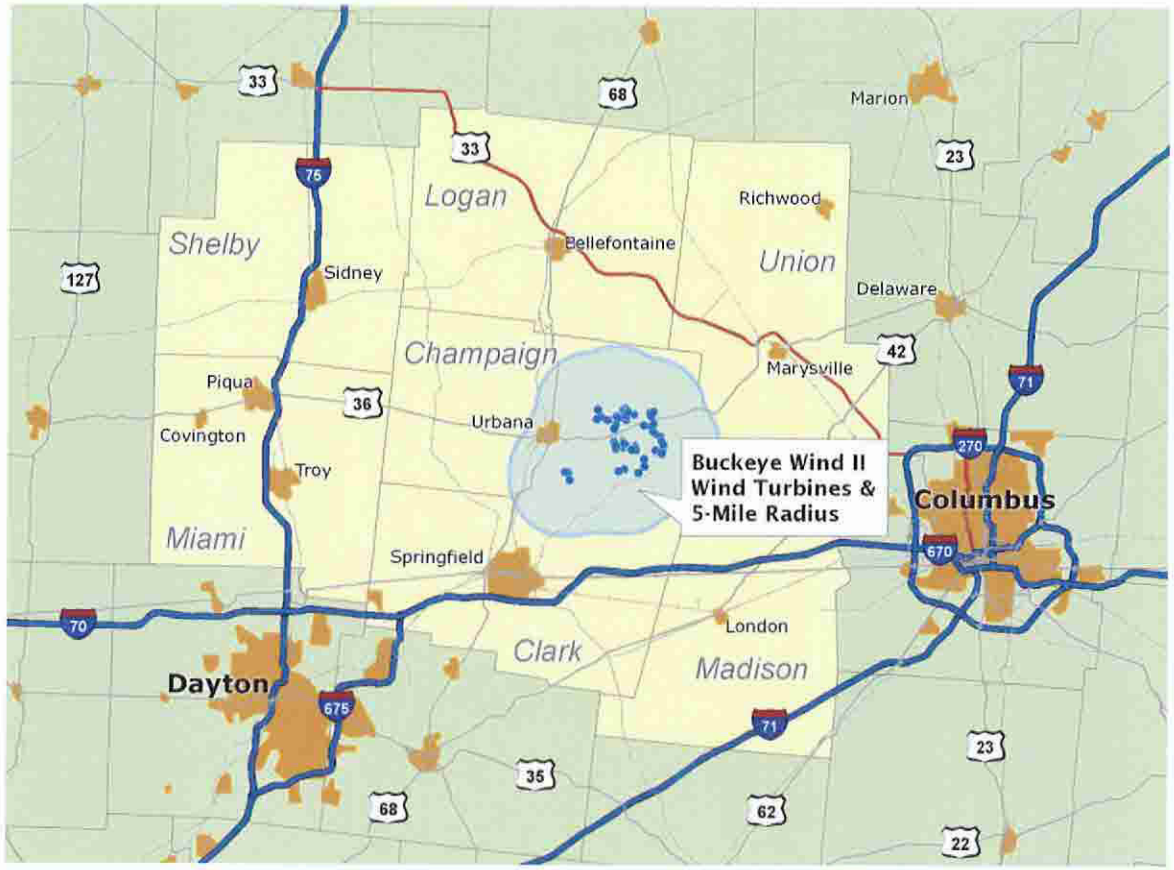

Figure 1: Seven County Local Economy

II. SOCIOECONOMIC PROFILE

Population Trends

The population of the local economy in 2010 was approximately 471,952. The majority of this population is located within Clark County and Miami County. Springfield, Ohio is the major population center within the seven-county area and has a population of 60,608. The remaining five counties each had a population of less than 53,000 in 2010. Since 1990, Union County has experienced a 64 percent growth in population, while Champaign, Logan, Madison, Miami and Shelby Counties have had population growth from eight to seventeen percent. Clark County lost six percent of its population over the last two decades and is the only county that has lost population within the local economy, See *Figure 2: Local Economy Population Trends*.

Figure 2: Local Economy Population Trends

County	1990 Population	2000 Population	2010 Population	% Change 1990-2010
Champaign County	36,020	38,890	40,097	11.3%
Logan County	42,310	46,005	45,858	8.4%
Union County	31,969	40,909	52,300	63.6%
Madison County	37,068	40,213	43,435	17.2%
Clark County	147,548	144,742	138,333	-6.2%
Miami County	93,182	98,868	102,506	10.0%
Shelby County,	44,915	47,910	49,423	10.0%
Local Economy Total	**433,011**	**457,537**	**471,952**	**9.0%**

Source: U.S. Census Bureau, 2012.

The Ohio Administrative Code requires the preparation of ten year population change estimates for communities that are located within a five-mile radius of a proposed wind farm. *Communities* are defined as incorporated municipalities and/or townships. There are six incorporated municipalities and fourteen townships that are fully or partially within five miles of the proposed wind farm. Because local level population projections are not conducted for interim years at this geography, projections for these communities were created using the methodology prescribed by the U.S. Census Bureau. Straight line population projections were made based on the change in population between U.S. Census data from 2000 to 2010, for which an average annual rate of change was calculated and interpolated at five year intervals to the year 2022. Population projections were generated using this methodology for the years 2012, 2017 and 2022.

As *Figure 3: Population Projections* illustrates, five of the six municipalities within a five-mile radius of the wind farm are projected to experience a loss in population by 2022. These five municipalities are located in Champaign and Clark Counties. In contrast, the City of Urbana, the County Seat of Champaign County, is projected to experience modest population gains by 2022.

Figure 3: Population Projections

Municipalities Within Five Miles of Project Site	2000 Pop.	2010 Pop.	Est. 2012 Pop.	Est. 2017 Pop.	Est. 2022 Pop.	% Change 2012-2022
City of Urbana, Champaign Co.	11,613	11,793	11,830	11,922	12,014	1.6%
Village of Mutual, Champaign Co.	132	104	100	90	80	-19.3%
Village of Mechanicsburg, Champaign Co.	1,744	1,644	1,625	1,579	1,534	-5.6%
Village of North Lewisburg, Champaign Co.	1,588	1,490	1,472	1,427	1,383	-6.0%
Village of Woodstock, Champaign Co.	317	305	303	297	291	-3.7%
Village of Catawba, Clark Co.	312	272	265	249	233	-12.1%
Total Population	**15,706**	**15,608**	**15,595**	**15,564**	**15,535**	**-0.4%**
Townships Within Five Miles of Project Site	**2000 Pop.**	**2010 Pop.**	**Est. 2012 Pop.**	**Est. 2017 Pop.**	**Est. 2022 Pop.**	**% Change 2012-2022**
Salem Township, Champaign Co.	2,307	2,539	2,590	2,723	2,863	10.5%
Wayne Township, Champaign Co.	1,660	1,809	1,842	1,926	2,014	9.3%
Rush Township, Champaign Co.	2,779	2,613	2,582	2,506	2,432	-5.8%
Goshen Township, Champaign Co.	3,383	3,696	3,765	3,942	4,128	9.6%
Union Township, Champaign Co.	1,920	2,210	2,277	2,455	2,646	16.2%
Urbana Township, Champaign Co.	14,968	14,795	14,761	14,676	14,591	-1.1%
Mad River Township, Champaign Co.	2,650	2,821	2,858	2,951	3,047	6.6%
Union Township, Union Co.	1,565	1,763	1,808	1,925	2,050	13.4%
Pike Township, Madison Co.	531	580	591	619	648	9.6%
Monroe Township, Madison Co.	1,769	1,719	1,709	1,685	1,662	-2.8%
Somerford Township, Madison Co. *	6,975	2,898	2,883	2,846	2,809	-2.6%
German Township, Clark Co.	7,663	7,487	7,453	7,367	7,283	-2.3%
Moorefield Township, Clark Co.	11,402	12,436	12,663	13,247	13,859	9.4%
Pleasant Township, Clark Co.	3,134	3,238	3,260	3,314	3,369	3.4%
Total Population	**62,706**	**60,604**	**61,042**	**62,182**	**63,401**	**3.9%**

** Note: The 2000 Census included a population of approximately 4,000 prisoners as part of the 2000 Census for Somerford Township that was subsequently counted as part of adjacent Union Township in Madison County in the 2010 Census.*

Source: U.S. Census Bureau, Camiros, Ltd., 2012.

Townships within five miles of the project site are projected to follow very different population trends. Of the seven townships in Champaign County, five of them are projected to have population gains that range from approximately six to sixteen percent. Of the seven townships in neighboring Union, Madison and Clark Counties, four are projected to have population gains. Overall, the population of the region is expected to remain relatively stable over the next ten years, with the townships in the area projected to increase by approximately four percent.

Employment

According to the U.S. Bureau of Labor Statistics, 235,061 people are currently in the labor force of the local economy. Of this total, there are approximately 215,245 employed and 19,814 unemployed persons as of October 2011. The average unemployment rate dropped from 9.6 percent in October 2010 to 8.4 percent in October 2011. Clark, Champaign and Logan Counties have the highest current unemployment rate, at 8.9 percent for Clark County and 8.8 percent for Champaign and Logan Counties, which are followed closely by Shelby County with an October 2011 unemployment rate of 8.6 percent. See *Figure 4: Civilian Labor Force Estimates*.

Figure 4: Civilian Labor Force Estimates

County	Labor Force October 2011	Employed October 2011	Unemployed October 2011	Unemployment Rate October 2010	Unemployment Rate October 2011
Champaign County	19,475	17,759	1,716	10.4%	8.8%
Logan County	23,198	21,147	2,051	10.4%	8.8%
Union County	25,535	23,713	1,822	7.7%	7.1%
Madison County	20,004	18,342	1,662	8.7%	8.3%
Clark County	69,272	63,123	6,147	9.7%	8.9%
Miami County	52,824	48,548	4,276	9.4%	8.1%
Shelby County	24,753	22,613	2,140	10.6%	8.6%
Local Economy	**235,061**	**215,245**	**19,814**	**9.6%**	**8.4%**
State of Ohio	*5,853,731*	*5,328,033*	*525,698*	*9.7%*	*9.0%*

Source: U.S. Bureau of Labor Statistics, January 2012.

The average unemployment rate within the local economy is currently 0.6 percent lower than the unemployment rate for the State of Ohio. Economic development and the creation of new jobs continue to be an important economic priority throughout the local economy and for Ohio as a whole.

III. Regional Development Impacts

The seven-county region which makes up the local economy is adjacent to the Dayton and Columbus metropolitan areas. According to the U.S. Department of Agriculture's Rural-Urban Continuum Code, the region is made up of three rural areas in non-metro counties (Champaign, Logan and Shelby Counties) and four urban areas in metro counties (Union, Madison, Clark and Miami Counties). As previously described, the population has grown nine percent since 1990. This growth has occurred throughout the area with large population growth in Union and Madison Counties, and more moderate growth in Champaign, Miami, Shelby and Logan Counties. Clark County is the only county in the region that has lost population over the last two decades, but the decrease in population has not been excessive. As is common throughout the country, the trend of migration toward urban areas is expected to continue. The regional impacts of the proposed wind farm on future development, including the anticipated impacts on housing demand, commercial and industrial development, regional transportation, and land use compatibility are described in further detail below.

Housing

As previously shown in *Figure 3: Population Projections*, the population of townships within five miles of the proposed wind farm is projected to increase from 61,042 in 2012 to approximately 63,401 by 2022. This modest growth is projected to create pockets of both population growth and population loss throughout the area within five miles of the project site. The fourteen Ohio townships in the area are projected to experience a net gain in population of approximately 2,359 people by 2022.

Given these population estimates, a local unemployment rate of approximately eight percent and an average housing vacancy rate of ten percent within the seven-county region according to the U.S. Census, it is unlikely that demand for housing will increase due to the construction or operation of the proposed wind farm. While the project will result in a substantial increase in temporary jobs during the construction phase of the project, these jobs are short term in nature and will not have an impact on demand for new housing development over the long term. Permanent jobs created as a result of the project are far more limited in number, and will have some appreciable effect on housing demand within the region.

Commercial and Industrial Development

The construction and operation of the proposed wind farm will have a significant positive impact on commercial and industrial development within the region. The positive impacts on commercial activity are described in detail in Section V of this report.

In terms of industrial development, wind power projects typically require a substantial number of inputs from outside the local area as is the case with the proposed wind farm. In Ohio, there is a substantial amount of growth potential in renewable energy production and the manufacturing sectors that support it according to a 2004 report by the Renewable Energy Policy Project (REPP) entitled "*Wind Turbine Development: Location of Manufacturing Activity.*" This benefit would include job creation in the manufacturing sector, particularly for those companies already involved in wind infrastructure production.

REPP assessed the location of manufacturing activity related to wind turbine development. It measured the number of potential employees at existing companies capable of manufacturing turbine parts. Ohio ranked second in the nation behind California in the number of employees at companies with the potential for wind farm infrastructure manufacturing. This report estimates existing firms in Ohio with the technical potential to become involved in wind turbine development have approximately 80,500 employees and the potential for approximately 11,500 new jobs in the wind farm component industry. Currently, manufacturers in Ohio are already producing wind turbine components including blade extenders, brakes, cooling systems, gear boxes, pitch drives, power electronics, rotor blades, tower flange and bolts, and yaw drives.

Transportation

The seven-county region is served by a network of Interstate, U.S. and State routes, and local roads. This existing roadway network provides access to the Dayton, Columbus and Cincinnati metropolitan areas as well as smaller, nearby communities including Urbana, Springfield, Troy, Piqua, Sidney, Bellefontaine and Marysville.

The area is served by U.S. Interstate Highway 70, which connects Dayton to Columbus and U.S. Interstate 75, which connects Dayton to Toledo. See *Figure 1: Seven County Local Economy*. U.S. Highway 68 is located west of the proposed project, connecting Bellefontaine to Urbana, north to Kenton and South to Springfield. Northeast of the project site, U.S. Highway 33 connects Bellefontaine to Marysville and the Columbus metropolitan area where it meets U.S. Interstate Highway 270. U.S. Highway 36 runs east of the project site linking Urbana to Marysville and points east. The area is also served by State Routes 4, 29, 54, 55, 56, 161, 187, 287, 296, 507 and 559 and numerous local roads. Given the limited population and the existence of numerous alternate routes around the Buckeye II site, temporary road closures during the construction phase are not expected to create any significant adverse impacts on the vehicular transportation network.

Three CSX-operated rail lines are located in the vicinity of the proposed wind farm providing freight access to and from various regional centers. East of the site, one rail line runs north/south near U.S. Interstate Highway 75 through Shelby and Miami Counties. South of the project site, a second rail line runs east/west near U.S. Interstate 70 providing rail transportation between Columbus, Springfield and Dayton. The third rail line runs north/south through Bellefontaine, Urbana and Springfield. The area is also served by the American Rail Center near U.S. Highway 68 in Kenton, Ohio, which opened in December 2011. Neither the construction nor operation of the proposed wind farm is expected to create any significant adverse impacts on the railroad network.

There are five airports located within approximately forty miles of the proposed wind farm. Northeast of Columbus, Port Columbus International Airport is the largest of the primary airports in the region, and is also served by the secondary facilities at Rickenbacker International Airport, Bolton Field and Ohio State University Airport. The other major airport in the area is James M. Cox Dayton International Airport, located north of Dayton. Two small airports are located near Urbana: Grimes Field, two miles north of downtown, and Weller Airport, three miles east of downtown. There are also many smaller municipal or private airfields in close proximity to the project site, but many of these are used primarily for recreational purposes. Neither the construction nor operation of the proposed facility is expected to have any significant impact on these airports or the existing air travel network.

Regional Plan Compatibility

Several comprehensive plans exist for the counties, townships, cities and villages that surround the proposed Buckeye II Wind Farm within the seven-county region. All of the counties in the region have updated their comprehensive plans since 1999, or are in the process of a comprehensive plan update. All of the townships within five miles of the proposed wind farm have zoning regulations in place, as do a majority of the townships in the seven-county area. See *Figure 5: Comprehensive Plans and Zoning Ordinances*.

Land use designations for the townships within five miles of the proposed wind farm are predominantly agriculture, open space and other types of low density development. The more dense development in and around the Cities of Urbana and Springfield and the Villages of Mechanicsburg, North Lewisburg, Woodstock, Mutual and Catawba do not make up a significant portion of the area. A common goal among the comprehensive plans that have been adopted throughout the region is utilizing agricultural land in order to encourage economic diversity and to promote the conservation of high quality farm land. Residential, commercial, industrial and mixed-use development should be directed to existing population centers and away from agricultural land. The proposed Buckeye II project aligns with these comprehensive planning goals, and the proposed facility will be compatible with the land uses and zoning policy within five miles of the project site.

Figure 5: Comprehensive Plans and Zoning Ordinances

County	Comprehensive Plan Adopted/Expected	Zoning Ordinance
Champaign County	2004	Eleven of twelve townships have zoning ordinances
Logan County	2012*	Sixteen of seventeen townships have zoning ordinances
Union County	1999	Thirteen of fourteen townships have zoning ordinances
Madison County	2005	County-wide zoning ordinance
Clark County	1999	All ten townships have zoning ordinances
Miami County	2006	Eight of twelve townships use the county zoning ordinance Four of twelve townships have their own zoning ordinances
Shelby County	2005	All ten townships have zoning ordinances

* *Note: The Logan County Comprehensive Plan is currently being drafted and is expected to be adopted in 2012.*
Source: Champaign County, Logan County, Union County, Madison County, Clark County, Miami County, Shelby County, Logan-Union-Champaign Regional Planning Commission, 2012.

IV. MEASURING ECONOMIC IMPACT

Wind farms across the country have had a positive economic impact on the communities where they are located. They represent large capital investments that drive various sectors of the local economy and have a positive impact on local employment and local government revenues. Wind farms also provide significant benefits to property owners who lease land for the turbines.

This analysis addresses the anticipated economic impact that the proposed Buckeye II project will have on the *local economy*, as defined in Section I of this report. The projected economic impact was analyzed separately for the construction phase and the operations and management phase of the project. The economic impacts measured are new jobs and wages, new dollars injected into the local economy through total local spending on goods and services, and land lease payments to participating land owners.

Calculating Economic Benefits

Wind farms and other economic investments that bring new dollars and jobs to a community are typically measured using three components of economic impact: *direct, indirect* and *induced impacts*. Variables that determine the extent of these impacts include project size and duration, construction and operating costs, and the availability of local goods and services. Direct, indirect, and induced impacts are defined as follows:

Direct impacts are immediate impacts created by expenditures that are directly applied to the project. In constructing a wind farm, a *direct impact* refers to such things as the money spent on labor, including site crews, contractors, maintenance workers, consultants and engineers. It also includes the money spent to pay those working at the turbine and blade manufacturing plants, the purchase and delivery of construction materials, property taxes, other direct purchases and lease payments. Of course, not all of these direct impacts will occur in the local economy but those that do become the *local share*, which is made up of the impacts that originate in the local economy.

Indirect impacts refer to the secondary benefits that result from the increase in economic activity when businesses other than those directly working on the project support businesses that are. When a vendor receives payment for goods or services related to the project, the vendor is then able to pay others who support his/her own business. Examples of *indirect impacts* include bank financing, accountants, equipment and fuel suppliers. In this case, the indirect impacts are comprised of purchases from vendors who provide supplies and secondary services to businesses who are working directly on the project either building the wind farm or operating it after it is online.

Induced impacts reflect increases in household spending as household income increases due to the additional economic activity created by the project. Induced impacts result when people and firms spend money for their personal needs, as opposed to project needs, which is the case with direct and indirect spending. *Induced impacts* result from the additional income accruing to households that in turn leads to greater spending on such things as food, clothing, housing, day care, medical services, and insurance. Those who benefit from this type of spending have more money to spend on their own needs as dollars cycle through the economy.

Together, the interrelationship among the direct impacts, indirect impacts and induced impacts gives the local economy a significant boost. The three measures reflect the total economic impact that a capital investment can be expected to have on the local economy. New jobs will be created and suppliers will see higher sales. The local economy will benefit and these new workers and suppliers will spend newly earned dollars on daily necessities and major purchases.

Methodology

The purpose of the economic analysis is to identify the direct, indirect, and induced economic impacts associated with construction and operation of the proposed Buckeye II Wind Farm. Typically, input-output models are used to track the various economic benefits that will accrue to a local economy. The approximation of these benefits is based upon project-specific data, including estimated capital costs, project location and the size of the project, among others.

Members of the Camiros, Ltd. staff interviewed representatives of Champaign Wind, LLC to determine the amount of spending and employment expected for the proposed Buckeye II Wind Farm. Research studies and contacts with the U.S. Department of Energy's National Renewable Energy Laboratory (NREL) helped determine how economic projections anticipated from the proposed wind farm compared to completed wind farm projects around the country. Using this information, an input-output model with data specific to the local economy was developed to estimate the economic impacts of the proposed project. The model looks at both the construction phase of the project and its ongoing operations and management phase.

The model used for this analysis is called the *Job and Economic Development Impact* (JEDI) *Wind Model*. The JEDI Wind Model is specifically designed for wind power generation projects. The model was developed for NREL under the auspices of the U.S. Department of Energy's *Wind Powering America* project and is regularly updated to provide current industry data and facilitate a more accurate description of local impacts. Originally developed with state-specific parameters, subsequent refinements make it possible to analyze impacts on regional and county level economies. The input values come from past experience constructing wind farms and the budget values that Everpower Wind Holdings, Inc. has established for the proposed wind farm. Output values result from a combination of factors, including the amount of direct and indirect impacts, the population of the local economy which sets the local share, state specific multipliers, and expenditure patterns taken from the JEDI Wind Model database.

Camiros staff received data from Everpower Wind Holdings, Inc. to confirm the size of the project, turbine locations, and costs related to the construction and operation of the proposed wind farm. The JEDI model cannot calculate economic impact based on a range of values, therefore rather than analyzing the total project size of 90 to 140 megawatts, an average of 115 megawatts was used instead. In cases where input data was not available locally, values were taken from the JEDI model's database for the State of Ohio, which are based on averages of existing wind farms as measured by NREL.

V. Economic Impact on the Local Economy

New Jobs in the Local Economy

Jobs created by the proposed Buckeye II Wind Farm will include workers who will be directly employed to construct and subsequently operate and maintain the wind farm. Other jobs will also be created that play a supportive role in the local economy. The increased wealth from jobs and spending will have a ripple effect in the local economy thereby creating the need for additional jobs in the area as the wages of local workers support households and businesses in the community.

According to Everpower Wind Holdings, the construction and operation of a wind farm requires a portion of workers to have highly specialized skills, which creates the opportunity for high-paying jobs. Generally, two to three managers are required for every ten crew members on a wind farm project, but this can vary based on the stage of development. Managers are expected to earn a base wage of approximately $30 per hour, or $62,000 per year. Field crews, or technicians, are expected to earn approximately $18 per hour, or $37,000 per year. These figures are estimates and may be subject to change based on benefits, number of hours worked and overtime. It is the policy of Everpower Wind Holdings to maximize the number of local workers, subject to the nature and stage of the construction process.

The proposed wind farm will take approximately twelve months to construct, beginning in 2013. The size of the construction crew is variable based on the stage of construction, hours worked per week and weather conditions. Generally, the construction period can be divided into three phases. The first phase of the project is startup, which typically calls for smaller construction crews. The second phase of the project, the peak phase of construction, includes the full complement of employees working at the site. The third phase of the project is the completion of the Buckeye II Wind Farm and again calls for a reduced number of construction workers. Following this phase, workers at the site are employed as part of the operations and management of the wind farm.

Local Economic Impact: Construction Phase

Jobs, wages, and salaries. It is estimated that during the construction phase of the project, a total of 598 full-time equivalent jobs will be created within the local economy, generating $29.8 million in wages and salaries. Approximately 86 of these new jobs will be in those industries that directly support the project. Earnings from those jobs are expected to total $4.9 million. Another 391 jobs and $19.8 million in earnings are expected to be generated by indirect impacts, which result from the inter-industry economic activity created by the project. The induced impacts, which result from changes in local household spending, are projected to bring another 121 jobs and approximately $5.1 million in wages and salaries to the local economy.

Local expenditures. During the construction phase of the project, the proposed wind farm is expected to generate a total of $48.8 million in local expenditures. Approximately $9.6 million of this will be in direct local expenditures. Based on the availability of local goods and services, the indirect impacts on supportive businesses are expected to generate another $28.8 million. Induced impacts will generate approximately $10.4 million in local spending. This includes money expended by employees and others connected to the project for normal cost of living, including spending on groceries, clothing and the like.

The total estimated impact of wages and salaries, combined with local expenditures, is anticipated to have a *total local benefit* of approximately $78.6 million during the twelve month construction phase of the project. *Total local benefit* refers to the sum of economic activity, or the overall value of production, including new jobs, total wages and salaries for those new jobs, new dollars injected into the local economy through local spending on goods and services, and payments to participating land owners. *Figure 6: Benefits to the Local Economy during Construction Phase*, shows the estimates of the total benefits to the local economy during the construction phase of the project.

Figure 6: Benefits to the Local Economy during Construction Phase

Impact Type	Jobs	Wages and Salaries	Local Expenditures	Total Local Benefit
Direct Impacts	86	$4,900,000	$9,600,000	$14,500,000
Indirect Impacts	391	$19,800,000	$28,800,000	$48,600,000
Induced Impacts	121	$5,100,000	$10,400,000	$15,500,000
Total Impacts	**598**	**$29,800,000**	**$48,800,000**	**$78,600,000**

Source: JEDI Wind, Everpower Wind and Camiros, Ltd., January 2012.
Note: Amounts rounded to the nearest hundred thousand dollars.

Local Economic Impact: Operations and Management Phase

The proposed wind farm is expected to have a twenty to thirty year life expectancy, and during that time will be producing positive economic impacts from wages and salaries, material purchases, local property taxes and payments to cooperating property owners. A proportion of that spending and employment will come from the local area and will provide continuing benefits to the local economy.

Jobs, wages, and salaries. Wages and salaries from new jobs will continue to add to the local economy during the operation of the proposed Buckeye II Wind Farm once it is completed and online. Operations and maintenance of the proposed wind farm will create approximately 38 new full-time equivalent jobs in the local economy, generating approximately $1.8 million in annual wages and salaries. Of these 38 new full-time jobs, approximately seven employees will *directly* support the operations of the wind farm, and earnings from those jobs will total $400,000 annually. Fifteen jobs and $700,000 in earnings are expected to be generated by the *indirect* impacts of the operations of the wind farm, which result from the inter-industry economic activity created by the project. The *induced* impacts, which result in changes in household spending, will bring another sixteen jobs and $700,000 in earnings to the local economy.