HULL

Environment / Energy / Infrastructure

October 3, 2018

Mr. David Savage
Open Road Renewables
1105 Navasota Street
Austin, Texas 78702

Re: Groundwater Hydrogeological and Geotechnical Desktop Document Review Summary Report for the Proposed Angelina Solar Farm Project Located in Preble County, Ohio; ORR007.0002.

Dear Mr. Savage:

Hull & Associates, Inc. (Hull) is pleased to provide Open Road Renewables, LLC (Client) with this Desktop Document Review of readily available geologic, hydrogeologic, and geotechnical information that was reviewed for the proposed Angelina Solar Farm Project located in Preble County, Ohio (Project). The Client is pursuing the development of a solar powered electric generation facility that includes construction of associated infrastructure.

For this summary report, the following definitions have been used when describing the project pursuant to the Ohio Power Siting Board's (OPSB's) current Ohio Administrative Code (OAC) rules (Chapter 4906-1-01):

- **Project Area:** "all land within a contiguous geographic boundary that contains the facility, associated setbacks, and properties under lease or agreement that contain any components of the facility" (OAC 4906-1-01(GG)).

- **Facility:** "the proposed major utility facility and all associated facilities" (OAC 4901-1-01(W)).

- 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. The Study Area includes all of Preble County, as well as adjacent counties, whose physical characteristics could globally impact the Project Area (ie: floodplains, faults and geophysical anomalies).

PROJECT APPROACH

The Desktop Document Review was completed to gather the applicable geologic, hydrogeological, and geotechnical information specified in the OPSB's current OAC rules (Chapter 4906-4) concerning certificate applications for electric generation facilities. 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 local agencies:

1. Federal Emergency Management Agency (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 8 (ODOT);
6. Ohio State University, Agricultural Extension Office;
7. Office of the Preble County Engineer;

8. United States Department of Agriculture (USDA) Soil Conservation Service Soil Survey of Preble 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 this report.

PROJECT LOCATION

The proposed Project Area consists of approximately 800 acres located in Dixon and Israel Townships, Preble County, Ohio. The currently proposed Project Area is shown on Figure 1and 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

The Project Area lies entirely within the Southern Ohio Loamy Till Plain Region of the Till Plains Section of the Central Lowland Physiographic Province. The Southern Ohio Loamy Till Plain Region is characterized as a surface of loamy till and relatively flat-lying ground moraine. The region is commonly associated with boulder belts and is cut by steep-valleyed large streams filled with outwash. Broad flood plains and buried valleys are common throughout. Elevations in the region range from 530 to 1150 feet above mean sea level (msl) and the region has moderate relief; averaging 200 feet locally (Ohio Division of Geological Survey, 1998).

The surface topography within the Project Area is largely the result of ice-deposited Wisconsinan ground and ridge moraine with localized areas of glacial outwash and loess (wind-blown sediment) deposition. The surface deposits are characterized as loamy, high-lime Wisconsinan-age till, outwash, and loess over Lower Paleozoic-age carbonate rocks. The till and loess deposits are underlain by Ordovician and Silurian-age carbonate rocks and calcareous shales (Ohio Division of Geology, 2005). The area was passed over by both Illinoian and Wisconsinan glaciers.

The uppermost bedrock units, located throughout the entirety of the Project Area, are the Drakes, Whitewater, and Liberty Formations (see Figure 2). The Drakes Formation is composed of interbedded shale (90%) and limestone/dolomite (10%) and is approximately 20 to 30 feet thick with thin to thick bedding. Planes of bedding in the Drakes Formation are planar to irregular. The Whitewater Formation is composed of interbedded limestone (60%) and shale (40%) and is approximately 20 to 80 feet thick with thin to medium bedding. Planes of bedding in the Whitewater Formation are irregular to wavy. The Liberty Formation is composed of interbedded limestone (50%) and shale (50%) and is approximately 20 to 40 feet thick with thin to medium bedding. Planes of bedding in the Liberty Formation are planar to irregular. All formations are gray and weather to yellowish-gray in color. The bedrock topographic surface is shown on Figure 3. ODNR water well logs indicate bedrock has been encountered during the installation of several domestic water wells in the southern portion of the Project Area at depths ranging between 18 and 26 feet below ground surface (bgs). Bedrock was not encountered in the northern portion of the Project Area; however, bedrock was encountered on adjacent properties along Watt Road at depths ranging between 40 and 120 feet bgs. Based on the inferred bedrock topography within the Project Area and adjacent properties, the depth to bedrock appears to vary between approximate depths of 18 and 120 feet.

Information obtained from ODNR, Division of Geological Survey, indicates the Project Area lies north of the Ordovician Uplands Karst Area and west of the Dissected Niagara Escarpment. While the Ohio Geological Survey demonstrates that the Study Area contains carbonate-rich strata that can be prone to karstification, no probable karst areas have been identified within the Project Area, as shown on Figure 4.

Geologic structural and seismic information were evaluated for the Study Area. Structural features and earthquake epicenters within the region are shown on Figure 5. A review of the information indicated that no epicenters are present within the Project Area, nor have any epicenters occurred within Preble County. The Project Area is located within the Ohio Anomaly (magnetic anomaly), but does not pose any significant seismic risk to the Project Area. One of the most historically active seismic areas in Ohio, the western Ohio seismic zone, is located approximately 50 miles northeast of the Project Area, although most events have caused little to no damage. Given the relative proximity to the Project Area, it is unlikely that the western Ohio seismic zone poses any significant seismic risk. Additionally, a small-scale un-named fault is located approximately 35 miles east of the Project Area.

Recorded seismic information shows that no earthquakes epicenters have occurred within the Project Area, and none have originated within Preble County. The closest seismic event to the Project Area occurred in 1834, having a 3.5-magnitude earthquake located in Montgomery County, Ohio, with an epicenter located approximately 25 miles east of the Project Area.

Hydrology and Hydrogeology

Surface water flow within the Project Area is generally to the South. The entire Project Area is located within the Ohio River Drainage Basin. Surface water bodies present within the Project Area include several small streams, tributaries, ditches and ponds. The streams generally flow from the North to the South. The majority of the surface water runoff inside the Project Area flows into Four Mile Creek, located adjacent to the southeastern boundary of the Project Area. This water flows into Acton Lake before discharging to the Great Miami River, and eventually recaching the Ohio River. Fleisch Run, in the northwestern portion of the Project Area, connects with Acton Lake as well before discharging into the Ohio River.

Figure 6 was prepared using information obtained from the ODNR and FEMA and shows there are no 100-year floodplains located inside the Project Area or in the surrounding areas. One small wetland registered with the National Wetlands Inventory is located in the south-central portion of the Project Area. Several other small wetlands and streams are located to the east and west of the Project Area.

The principal groundwater source within the Project Area is an unconsolidated aquifer consisting of thick deposits of clay with thin lenses of sand and gravel. Groundwater yields are typically in the range of three (3) to ten (10) gallons per minute (gpm). Underlying bedrock within the Project Area, consisting of interbedded plastic shales and thin limestone layers, will supply limited yields, typically less than 3 gpm. Water present in the bedrock usually occurs in the upper few feet of the formation where the strata have been weathered. Most wells drilled within this bedrock are commonly pumped dry and produce inadequate water supplies (Walker, 1986).

The Oxford Complex Aquifer encompasses the majority of the Project Area. Yields as much as 20 gpm can be obtained from wells drilled into this aquifer. The Four Mile Creek Alluvial Aquifer and Camden Complex Aquifer comprise the remaining portions of the Project Area, with each aquifer producing yields of up to 10 gpm. The aquifer locations are shown on Figure 7.

The Project Area lies within a rural area. Property owners within the Project Area utilize private wells to supply potable water. Locations of these water wells are shown in Figure 7. Water well location information was provided by ODNR, Ohio EPA, and the Preble County Health Department.

The presence of Source Water Protection Areas (SWPAs) for public water systems within the Project Area was evaluated. SWPAs are areas defined and approved by the Ohio EPA for the purpose of protecting drinking water resources. A study of available resources from the Ohio EPA shows that there are no SWPAs located within the Project Area. However, there is one Groundwater Protection Area located approximately 7 miles downstream of the Project Area along Four Mile Creek in the City of Oxford. This Groundwater

Protection Area acts as a protective measure for potable water resources at a wellfield located in the City of Oxford, which draws water from an unconsolidated aquifer less than 20 feet from the ground surface. An additional Groundwater Protection Area is located approximately 6.5 miles northeast of the Project Area serving the Lakengren Water Authority Public Water System. This Groundwater Protection Area acts as a protective measure for potable water resources at a wellfield located in the Lakengren community, which draws water from an unconsolidated aquifer less than 20 feet from the ground surface.

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, wastewater treatment land application systems, industrial, municipal and residual waste landfills, leaking underground storage tanks (LUSTs) and voluntary action program (VAP) cleanups. The restrictions typically apply to SWPAs relying on groundwater as their drinking water source. Hull has reviewed the range of programs which have adopted rules related to the presence of SWPAs and has concluded that construction of the proposed solar farm facility will not constitute an activity that would be restricted within either a surface water or groundwater SWPA.

Well Survey

Hull mailed a brief survey to the property owners within the Project Area that were under contract with the Client at the time the hydrogeology review commenced in March 2018. A list of names and addresses for the property owners was provided to Hull by the Client. The survey included multiple questions regarding the number, depth, installation date and construction of the wells. Additional information was requested regarding the aquifer type, depth to water and yield of each well. The survey also requested information regarding any problems experienced by the property owners with their wells.

The survey was mailed to 10 separate property owners in the Project Area. At the time this Desktop Document Review was completed, Hull had received seven (7) responses to the survey. Copies of the well surveys are attached in Attachment A.

Of the 7 survey respondents, two (2) respondents had no wells on their property. Five (5) respondents had at least one well on their property. Of these 5, three (3) reported that they had one well, while two (2) respondents noted two wells. The wells provide potable water and irrigation for the residents. One respondent indicated that a newly installed well will be drilled in the coming months. None of the respondents indicated that they were connected to a municipal water supply.

All five of the respondents who indicated that they had a well on their property were able to provide information regarding the well diameter, total depth, producing formation and depth to water. The majority of wells inside the Project Area appear to be drilled wells, ranging from 6" to 36" wide. Reported well depths ranged between 20 and 98 feet below ground surface (bgs). One well was reported as being hand-dug, and was installed 4 feet wide and 20 feet deep. Two respondents indicated that their well was completed in an unspecified bedrock. The remaining three respondents were unaware of what formation their well was set in. Respondents that provided information as to the depth to water in their wells indicated that the hand-dug well water depth was approximately 3 feet. Water depths in drilled wells ranged from 3 to 18 feet below ground surface.

Respondents were asked on the survey whether they had ever experienced problems with their wells related to the water table being lowered or poor yield. None of the respondents indicated they experienced lowering water tables or poor yield.

Soil Survey

The USDA Soil Conservation Service Soil Survey of Preble County was reviewed (USDA, 2002). Soil surveys furnish surface soil maps and provide general descriptions and potentials of the various soil types to support specific uses, and can be used to compare the suitability of large areas for general land uses. The majority

of the surface soils within the Project Area are comprised of the Cyclone silt loam (CyA) covering approximately 23.4% of the Project Area. The Fincastle silt loam (FcA) covers approximately 15.6%, the Xenia silt loam (XeB) covers approximately 12.7%, and the Sugarvalley-Fincastle silt loams (SwA) cover approximately 10.3% of the Project Area. The remainder of the Project Area is covered by various silt and clay loams as presented in the soils map, Figure 8.

The soil survey information suggests the Cyclone silt loam has a 0 to 2% slope and are poorly drained soils. The permeability of the soil is moderately slow, the available water capacity is high (11.8 inches), and the depth to the seasonal high water table is 0 to 6 inches bgs. The Fincastle silt loam has a 0 to 2% slope and are somewhat poorly drained soils. The permeability of the soil is slow, the available water capacity is high (8.9 inches), and the depth to the top of the seasonal high water table is 6 to 18 inches bgs. The Xenia silt loam has a slope ranging from 2 to 6% and are moderately well drained soils. The permeability of the soil is slow, the available water capacity is high (10.8 inches), and the depth to the seasonal high water table is 1.5 to 2.5 feet bgs. The Sugarvalley-Fincastle silt loams have a 0 to 2% slope and are somewhat poorly drained soils. The permeability of the soil is moderate to slow, the available water capacity ranges from about 9.2 to 11.4 inches, and the depth to the seasonal high water table is 0.5 to 2 feet bgs.

Underground and Surface Mines

Information obtained from the ODNR, Division of Geological Survey, and phone discussions with ODOT District 8 and the Preble County Engineer's Office indicated that there is no information available that suggests that underground mines are located within the Project Area. Soil survey information provided by the USDA further indicates that there are no surface mine quarries located in the Project Area. There are several surface mines located greater than ten miles away to the northeast, southeast, and south of the Project Area. Figure 9 illustrates that no known coal, underground, abandoned or surface mines are located within the Project Area.

PROJECT AREA RECONNAISSANCE

In addition to the desktop study, Hull completed a field reconnaissance on May 15, 2018 at representative points within the Project Area to observe geotechnical-related conditions including topography, surface geologic features, and surface water conditions. The areas within proximity of the Project Area predominantly consist of agricultural fields. In general, the Project Area appears to be adequately drained. Standing water was observed in farm fields after a recent rain storm, water appeared to be draining towards the designated lower elevation drainage pathways. Based on phone conversations with ODOT and the County Engineer's office, rockfalls or landslides are not present within the Project Area. Based on a review of the existing topography of the Project Area and the visual observations completed by Hull during the reconnaissance, it is anticipated that the potential for rockfalls and landslides is very low due to the relative flatness of the Project Area. In addition, Hull did not observe sinkholes, depressions, or other evidence of karst topography within the Project Area. Representative photographs from the site reconnaissance are presented in Attachment B to illustrate the general Project Area conditions.

AGENCY INTERVIEWS

Hull contacted ODOT District 8 in order to discuss typical maintenance issues encountered in the area. Doug Gruver, Transportation Administrator for ODOT District 8, indicated that ODOT does not encounter major geotechnical issues and that their work is typically focused on routine maintenance such as resurfacing, vegetation clearing, and ditch cleaning.

Hull contacted the Preble County Engineer's Office regarding their knowledge and experience of previous construction projects, subsurface conditions, and reoccurring maintenance history within the Project Area. Kyle Cross, Preble County Engineer, was contacted on several occasions, however did not respond to any of our inquiries.

PRELIMINARY CONSTRUCTION CONSIDERATIONS

Based on our experience with earthwork in the region and our understanding that solar array equipment is lightly loaded; conventional, helical piles are typical for supporting solar modules. However, this assumption will need to be confirmed by a detailed geotechnical exploration and evaluation for each solar array site (e.g., each solar module and associated access road locations). If it is determined that helical piles are not suitable for structural support, extended foundation systems, such as driven H-piles or rammed aggregate pier systems, may be necessary to bear in suitable material or on bedrock. Additionally, other suitable foundation types may be utilized depending on their compatibility with the geotechnical parameters of the specified solar array. 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 limited risk associated with construction concerns related to the access roads. Like any preparation work related to access roads, localized subgrade areas may need to be stabilized by undercutting, chemical stabilization, geogrid reinforcement, etc. However, this assumption will need to be confirmed by a detailed geotechnical exploration and evaluation of each access road location.

Adequate surface water run-off drainage should be established at each solar array, access road, and the switchyard location to minimize any increase in the moisture content of the subgrade material. Positive drainage of each solar array site and access road 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 due to variations in rainfall, construction activity, surface runoff, and other factors. Because such variation is anticipated, we recommend that design drawings and specifications accommodate such possibilities and that construction planning assume that such variation can occur.

It is understood that 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 solar array is prepared as discussed in the Geotechnical Engineering Report. Due to the anticipated depth of bedrock, it is unlikely that excavation within bedrock will be necessary. Furthermore, no karst areas were identified in the Project Area. These assumptions 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 C for reference. These considerations are provided as general guidelines and may not be applicable to site-specific conditions. 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 regarding construction of the proposed solar modules, access roads, and/or switchyard. Likewise, based on Hull's knowledge of typical solar module foundation construction, it does not appear that the construction of the proposed solar array will have a significant impact on the local geology and/or hydrogeology of the Project Area.

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 solar arrays, 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 solar arrays, access roads and switchyard location that should be considered during construction is variable subsurface conditions (i.e., depth to bedrock) and the need for drainage improvements for the relative flatness and poor drainage characteristics of the surface soils within the Project Area. As previously discussed, adequate surface water drainage should be established at each Project Area, access road and substation location to minimize any increase in the moisture content of the subgrade material. Surface water drainage can be managed by implementing techniques such as surface water swales, drainage berms, etc. Furthermore, foundation system design for each solar array should consider the findings and recommendations of the geotechnical subsurface investigation and laboratory testing.

Site-specific geotechnical information should be obtained by the Client prior to design of the solar array 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 module. A generalized scope of work template for the geotechnical explorations has been provided in Attachment D which can be used to prepare detailed Requests for Proposals for the solar array.

The conclusions included in this Desktop Document 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 Facility 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 solar array 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 Project 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 Report, please do not hesitate to contact either of the undersigned at your convenience.

Sincerely,

Cory E. Schoonover
Project Manager

Shawn D. McGee, P.E.
Geotechnical Practice Leader

Attachments

REFERENCES

1. Ohio Department of Natural Resources. *Water Well Log and Drilling Report*. Retrieved March 2018, from Division of Water Web-site: https://apps.ohiodnr.gov/water/maptechs/wellogs/app/.

2 Ohio Division of Geological Survey, 1998, Physiographic regions of Ohio: Ohio Department of Natural Resources, Division of Geological Survey, page-size map with text, 2p., scale 1:2,100,000.

3. Ohio Division of Geological Survey, 1999, Ohio Karst Areas: Ohio Department of Natural Resources, Division of Geological Survey, page-size map with text, 2p., scale 1:2,000,000.

4 Ohio Division of Geological Survey, 2005, Glacial Map of Ohio: Ohio Department of Natural Resources, Division of Geological Survey, page-size map with text, 2p., scale 1:2,000,000.

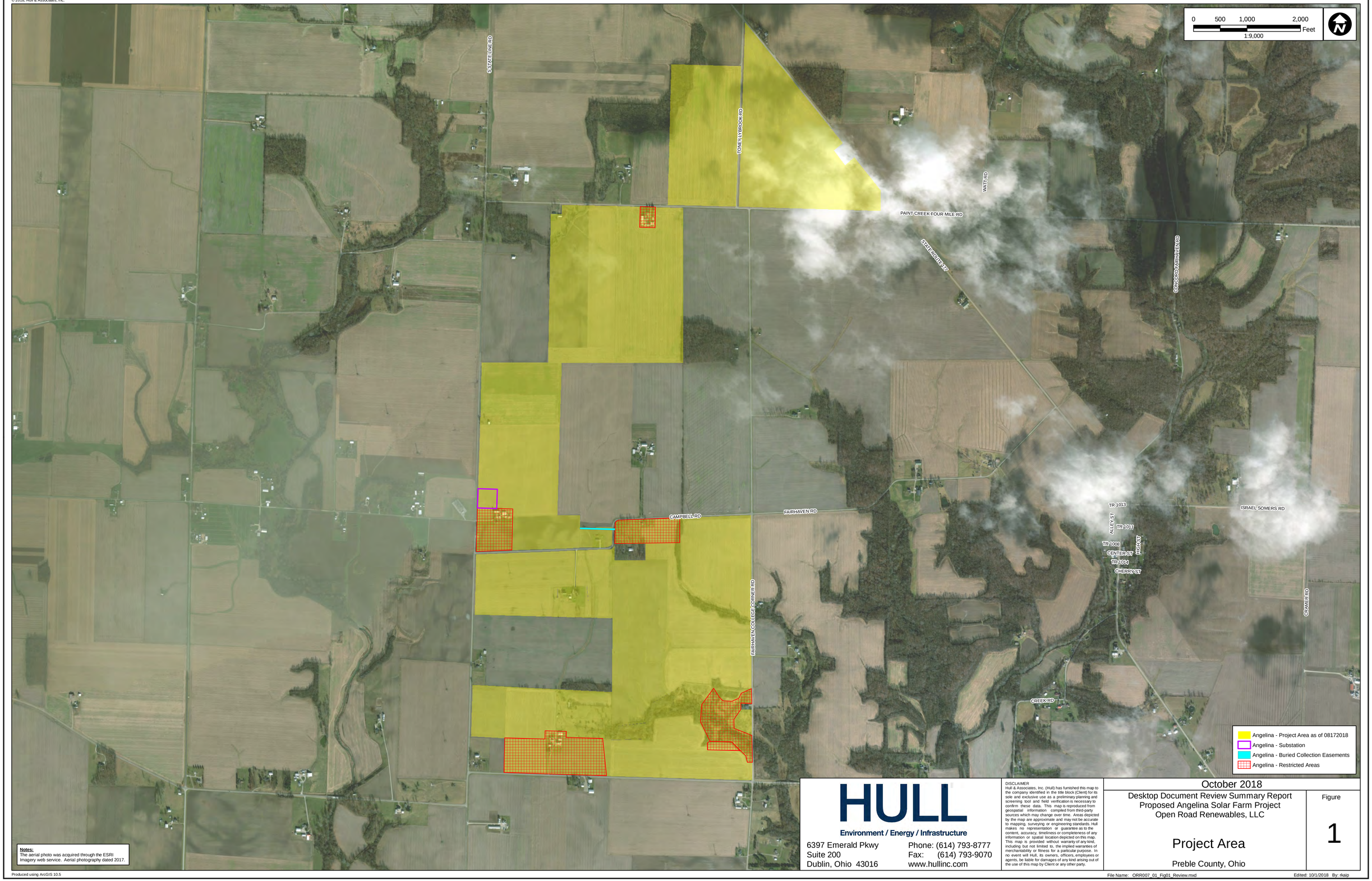
5. Ohio Division of Geological Survey, 2010, Shaded Elevation Map of Ohio: Ohio Department of Natural Resources, Division of Geological Survey, page-size map with text, 2p., scale 1:2,000,000.

6. Ohio Division of Geological Survey, 2012, Earthquake Epicenters in Ohio and Adjacent Areas: Ohio Department of Natural Resources, Division of Geological Survey, page-size map., scale 1:2,000,000.

7. United States Department of Agriculture, 2002, Soil Conservation Service, *Soil Survey of Preble County*.

8. Walker, Alfred, 1986, Ground-Water Resources of Preble County, Ohio Department of Natural Resources, Division of Water.

FIGURES



Notes:
The aerial photo was acquired through the ESRI Imagery web service. Aerial photography dated 2017.

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October 2018

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Proposed Angelina Solar Farm Project
Open Road Renewables, LLC

Project Area

Preble County, Ohio

Figure
1

Produced using ArcGIS 10.5

File Name: ORR007_01_Fig01_Review.mxd

Edited: 10/1/2018 By: rkaip

0 500 1,000 2,000 Feet
1:9,000

DIXON TOWNSHIP
ISRAEL TOWNSHIP
TONEY LYBROOK RD
WATT RD
PAINT CREEK FOUR MILE RD
STATE ROUTE 177
CONCORD FAIRHAVEN RD
CAMPBELL RD
FAIRHAVEN RD
FAIRHAVEN COLLEGE CORNER RD
S STATE LINE RD
TR 1013
ISRAEL SOMERS RD
ALLEY ST
TR 1011
TR 1008
CENTER ST
HIGH ST
TR 1014
CHERRY ST
CRAMER RD
CREEK RD

- Angelina - Project Area as of 08072018
- Angelina - Substation
- Angelina - Buried Collection Easements
- Angelina - Restricted Areas
- Civil Township
- Drakes, Whitewater and Liberty Formations, Undivided (Ordovician)
- Waynesville and Arnheim Formations, Undivided (Ordovician)
- Upper Ordovician (Cincinnatian)
- Whitewater Formation (Ordovician)

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The aerial photo was acquired through the ESRI Imagery web service. Aerial photography dated 2017.

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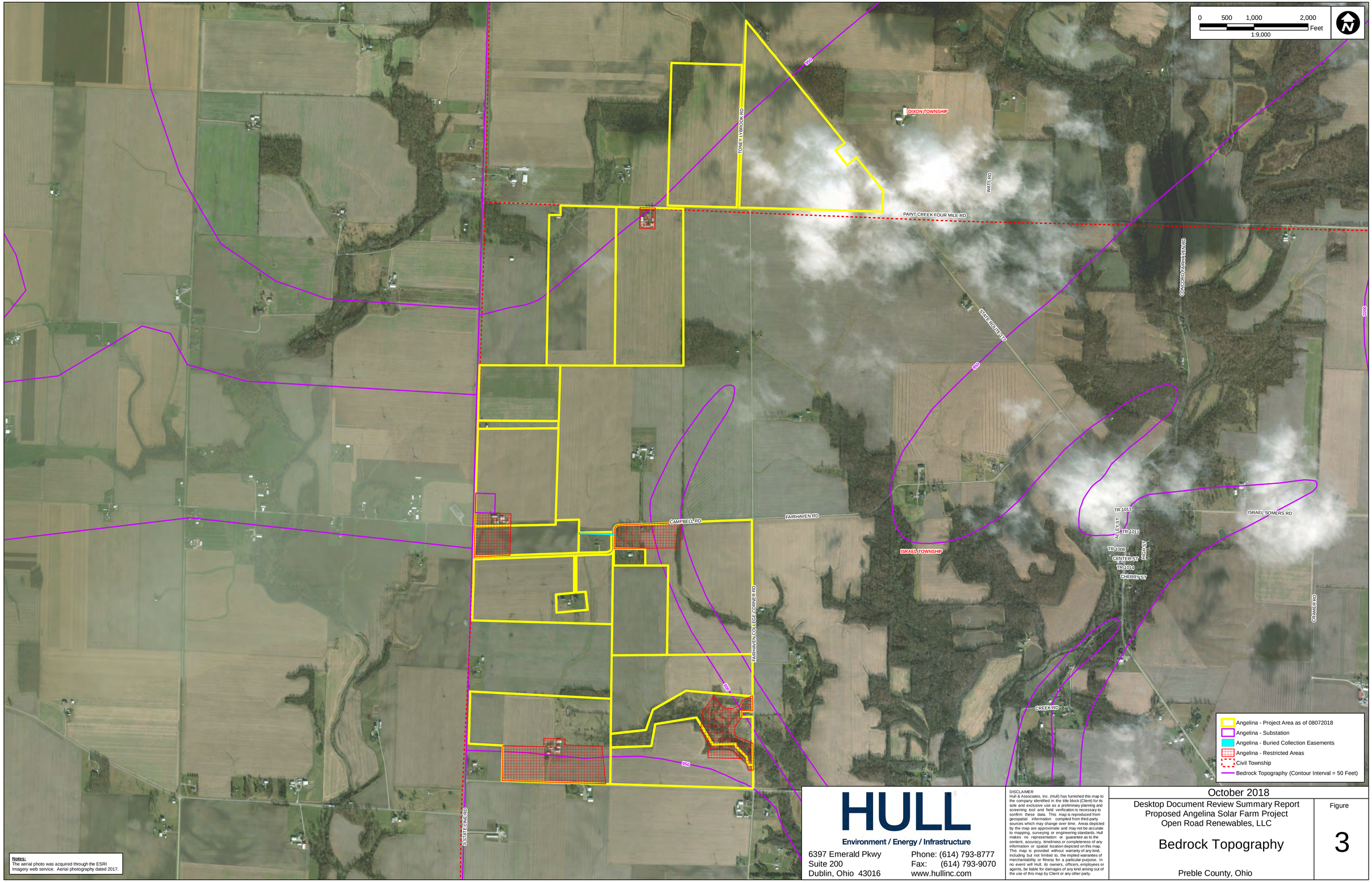
Bedrock Geology

Preble County, Ohio

Figure 2

File Name: ORR007_01_Fig02_BedrockGeol.mxd

Edited: 10/1/2018 By: rkaip



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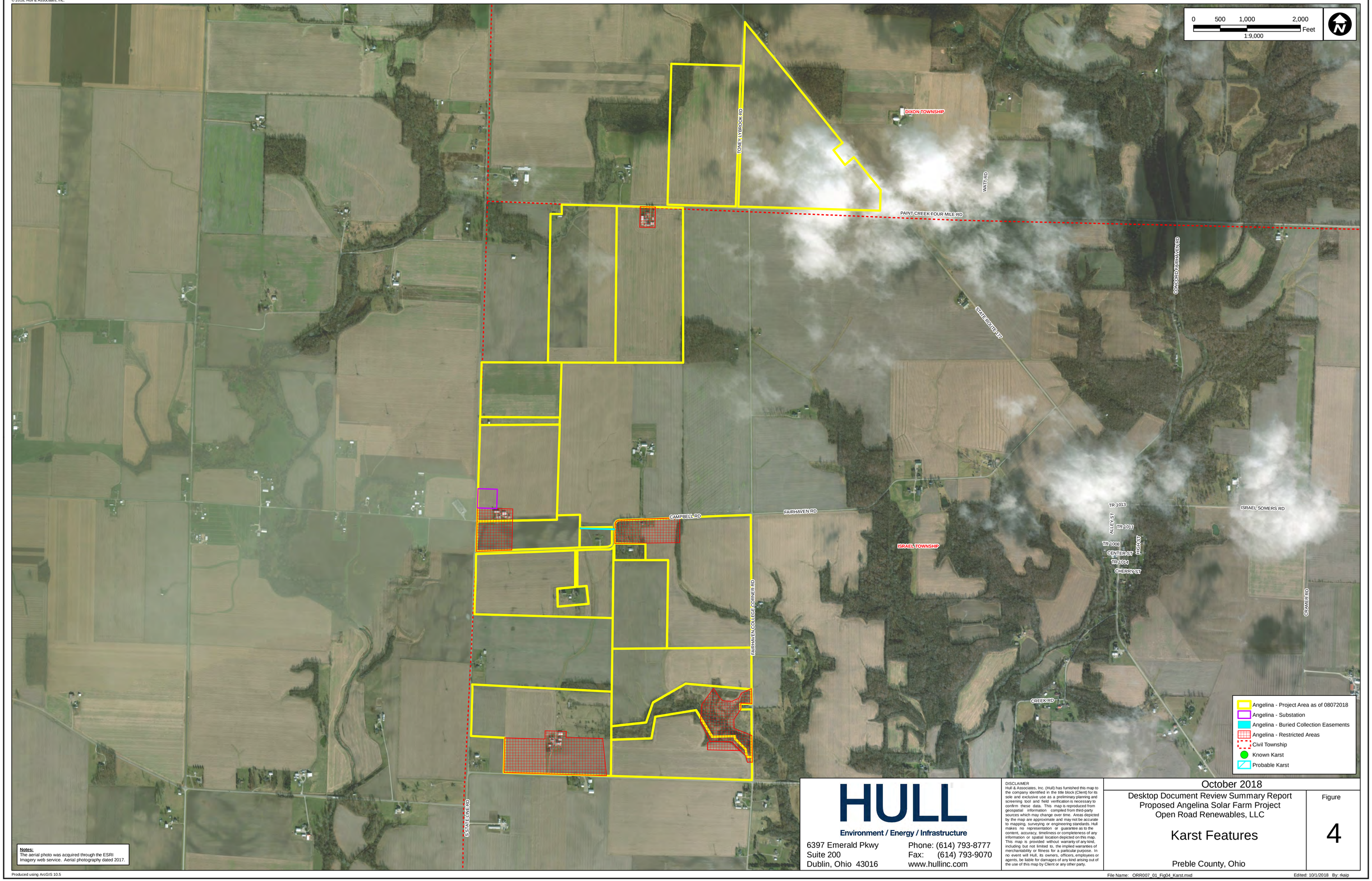
Bedrock Topography

Preble County, Ohio

Figure 3

File Name: ORR007_01_Fig03_BedrockTopo.mxd

Edited: 10/1/2018 By: rkaip



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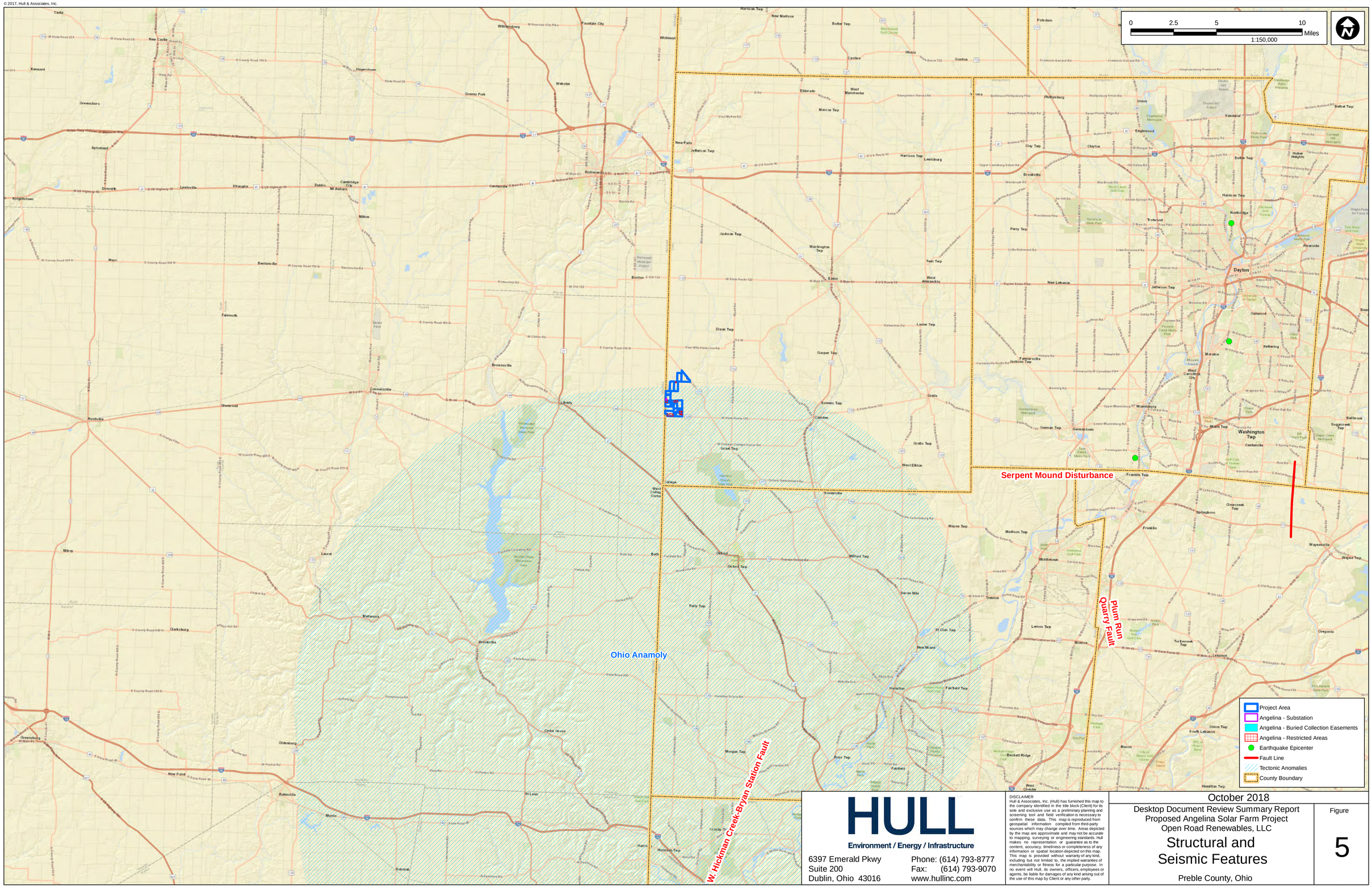
Karst Features

Preble County, Ohio

Figure 4

File Name: ORR007_01_Fig04_Karst.mxd

Edited: 10/1/2018 By: rkaip



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Structural and Seismic Features

Preble County, Ohio

Figure 5

Produced using ArcGIS 10.3

File Name: ORR007_01_Fig05_GeophysicalMxd

Edited: 10/1/2018 By: rkaip

0 500 1,000 2,000 Feet
1:9,000

Railsback Creek
French Run
TONEY KYBROOK RD
DIXON TOWNSHIP
WATT RD
PAINT CREEK FOUR MILE RD
SR365/SR7/AURAVEN RD
STATE ROUTE 727
Four Mile Creek
Goodwins Creek
Paint Creek
CAMPBELL RD
FAIRHAVEN RD
FAIRHAVEN CORNER RD
ISRAEL TOWNSHIP
TR 1013
ALLEY ST
TR 1011
TR 1008
CENTER ST
MAIN ST
TR 1014
CHERRY ST
ISRAEL SOMERS RD
CRATER RD
CREEK RD
S STATE LINE RD

Angelina - Project Area as of 08072018
Angelina - Substation
Angelina - Buried Collection Easements
Angelina - Restricted Areas
Civil Township
Stream
National Wetlands Inventory
100-Year Floodplain

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Surface Water, Floodlain, and Wetland Information

Preble County, Ohio

Figure 6

Produced using ArcGIS 10.5

File Name: ORR007_01_Fig06_Eco.mxd

Edited: 10/1/2018 By: rkaip

0 500 1,000 2,000 Feet
1:9,000

DIXON TOWNSHIP
ISRAEL TOWNSHIP
TONEY KYBECK RD
WATT RD
PAINT CREEK FOUR MILE RD
STATE ROUTE 127
SR 3/CR 3/FAIRHAVEN RD
FAIRHAVEN RD
CAMPBELL RD
FAIRHAVEN COLLEGE CORNER RD
S STAPELINE RD
ISRAEL SOMERS RD
TR 1013
TR 1011
TR 1008
CENTER ST
TR 1014
CHERRY ST
ALLEY ST
MAIN ST
CRAMER RD
CREEK RD

Angelina - Project Area as of 08072018
Angelina - Substation
Angelina - Buried Collection Easements
Angelina - Restricted Areas
Civil Township
Unconsolidated Aquifer
Located Oil & Gas Wells (ODNR)
Located Water Wells (ODNR)

Notes:
The aerial photo was acquired through the ESRI Imagery web service. Aerial photography dated 2017.

Produced using ArcGIS 10.5

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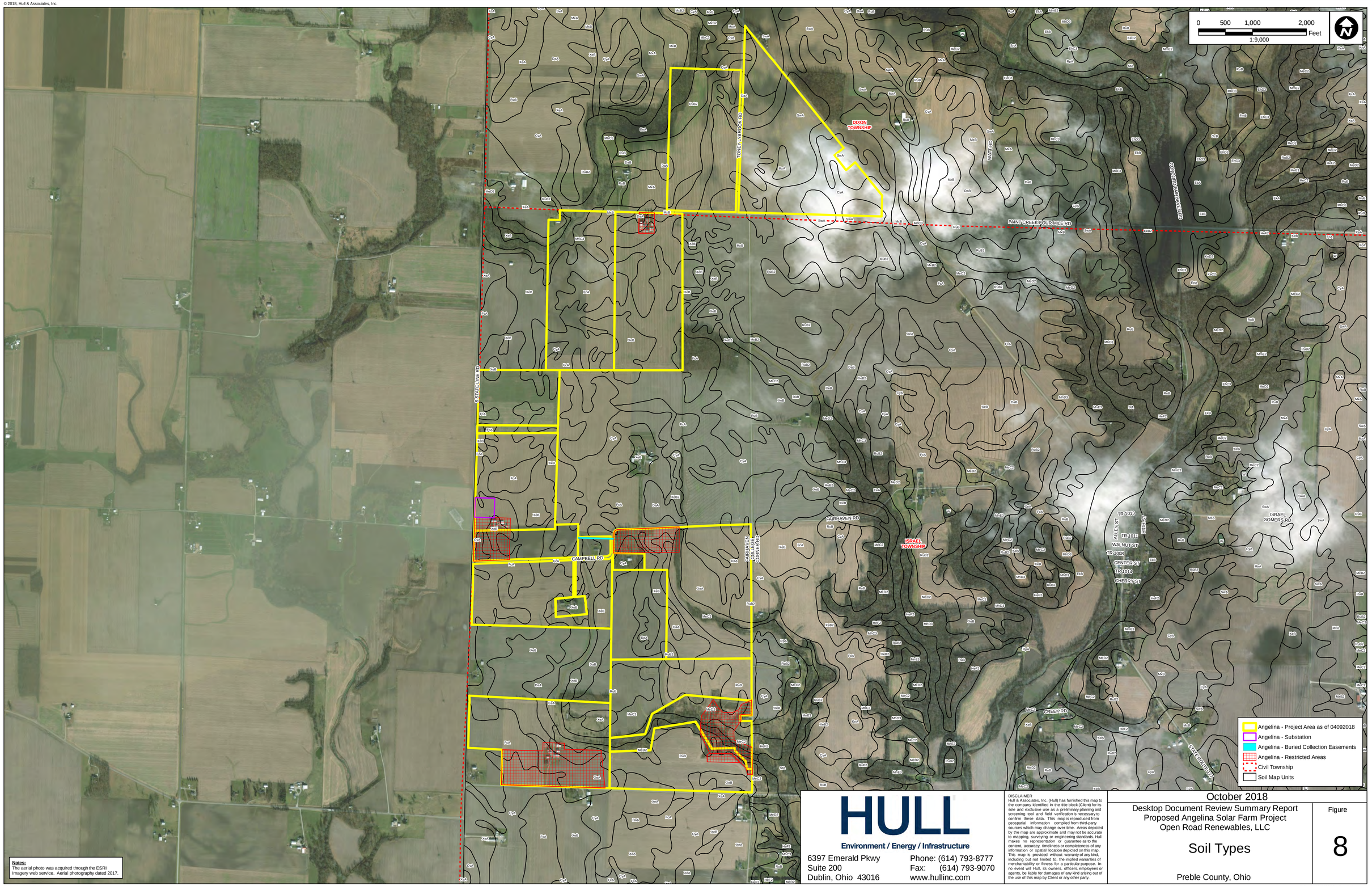
Aquifers and Wells

Preble County, Ohio

Figure 7

File Name: ORR007_01_Fig07_Wells.mxd

Edited: 10/1/2018 By: rkaip



Notes:
The aerial photo was acquired through the ESRI Imagery web service. Aerial photography dated 2017.

Produced using ArcGIS 10.5

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Soil Types

Preble County, Ohio

Figure 8

File Name: ORR007_01_Fig08_Soils.mxd

Edited: 10/1/2018 By: rkaip

Notes:
The aerial photo was acquired through the ESRI Imagery web service. Aerial photography dated 2015.

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Underground and Suface Mines in Study Area

Preble County, Ohio

Figure
9

Produced using ArcGIS 10.3

File Name: ORR007_01_Fig09_Mines.mxd

Edited: 10/1/2018 By: rkaip

ATTACHMENT A

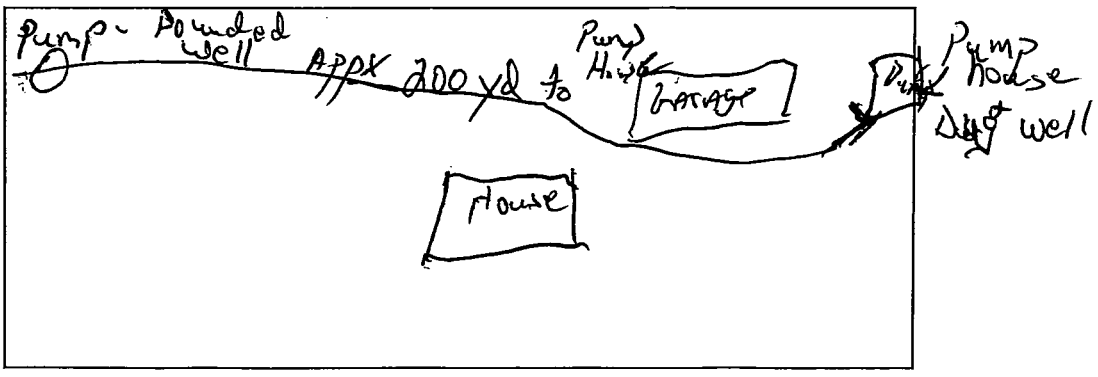
Well Survey Responses

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. Name and Contact Info: Scott Chapin
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)? (98)' x 1' (20)' x 4'
6. Diameter of Well(s)? 1' 4'
7. Type of Well/Groundwater Source (i.e., Bedrock Well – B; or Overburden/Sand-Gravel Well – O/SG)? 20' well Dug well Bedrock Wall
8. Type of Well Construction (i.e., Steel Casing – SC; PVC; brick/clay – B/C; Other – O)? 98' well pounded steel casing well
9. Date of Installation of Well(s)? 20' 1860? 98' - 1984
10. Depth to Water/Groundwater Within Well (or depth to water encountered during drilling of well)? 20' - 3' To water 98' - 3' It hit an artesian well or underground River or lake
11. Approximate Yield of Well(s) [i.e., referenced in gallons per minute (gpm)]? 20' 3.5 GPM 98' 15 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)? Draught & large increase of livestock

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):



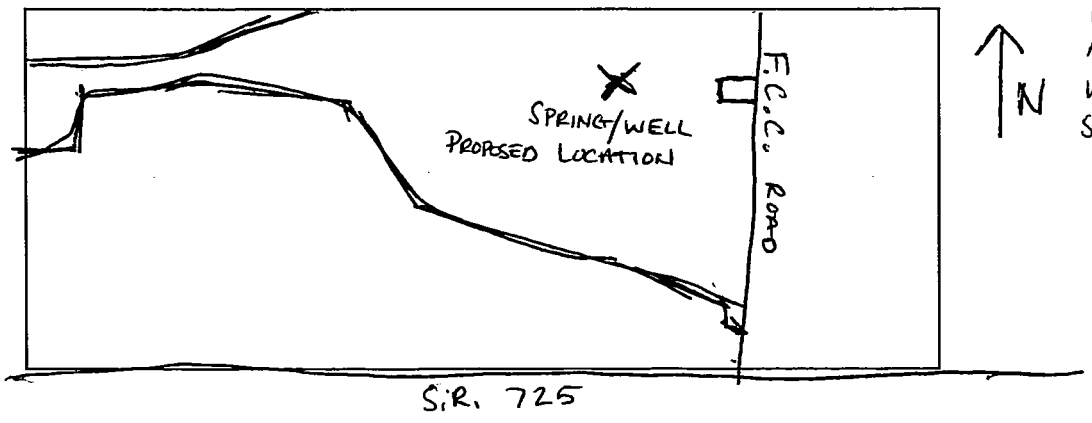
WELL SURVEY QUESTIONNAIRE

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. Name and Contact Info: RYAN SCHWEGMAN 513.839.0123
2. How Many Wells Do You Have On Your Property? ONE PLANNED IN NEXT 3 MONTHS
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? WILL BE DOMESTIC
5. Approximate Depth of Well(s)? 20'
6. Diameter of Well(s)? 36"
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)? CONCRETE
9. Date of Installation of Well(s)? JUNE - JULY 2018
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)? UNKNOWN

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):

WE PROPOSING TO DEVELOPE A SPRING AT THIS LOCATION. WATER WILL PASS THROUGH SEDIMENT & UV FILTERS.

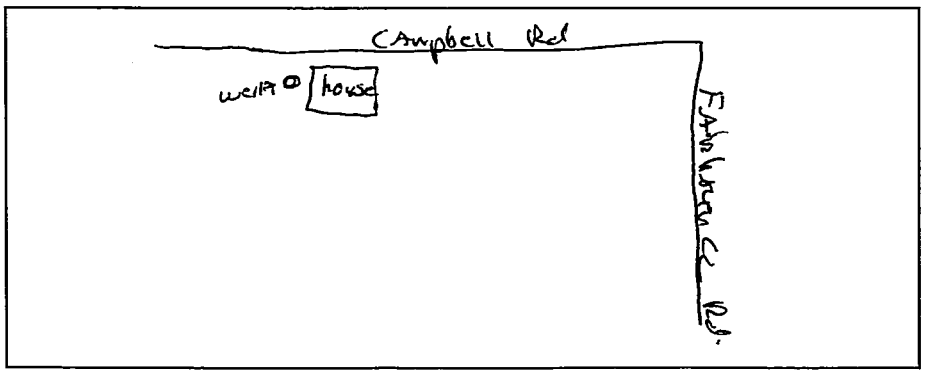


WELL SURVEY QUESTIONNAIRE

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. Name and Contact Info: Don Jackson cell 937-603-0416
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? Yes
5. Approximate Depth of Well(s)? 50 ft.
6. Diameter of Well(s)? 30"
7. Type of Well/Groundwater Source (i.e., Bedrock Well – B; or Overburden/Sand-Gravel Well – O/SG)? Bedrock
8. Type of Well Construction (i.e., Steel Casing – SC; PVC; brick/clay – B/C; Other – O)? Clay
9. Date of Installation of Well(s)? 1950'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

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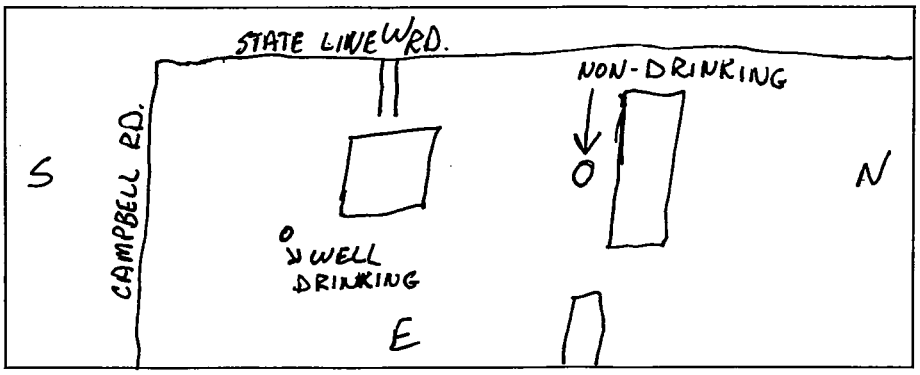
1. Name and Contact Info: DAVID R. GIFFEN 937-533-7707
2. How Many Wells Do You Have On Your Property? 2
3. Are You Connected/Provided with Municipal Water (i.e., water provided by town or private water supply company)? NO
4. Are the Wells Used for Domestic Purposes (i.e., Drinking/Potable Water) and/or for Irrigation Purposes? ONE OF THEM
5. Approximate Depth of Well(s)? 25 FT.
6. Diameter of Well(s)? 6 inch
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. Name and Contact Info: Ross McCampbell 13931 Monroeville Rd. Monroeville, IN 46773
2. How Many Wells Do You Have On Your Property? 0 (None)
3. Are You Connected/Provided with Municipal Water (i.e., water provided by town or private water supply company)?
4. Are the Wells Used for Domestic Purposes (i.e., Drinking/Potable Water) and/or for Irrigation Purposes?
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)? N/A
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)?

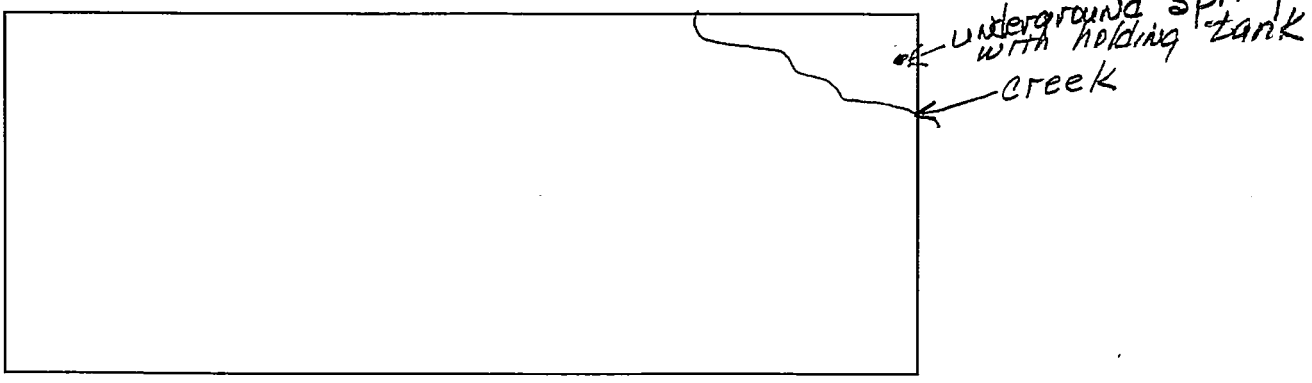
DIAGRAM OF WELL LOCATION(S) (If known, please provide a rough sketch of where your well(s) are with respect to your approximate property boundaries and/or permanent structures/buildings):

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. Name and Contact Info: Richard Giffen 513-988-6251 or cell 513-646-8357
2. How Many Wells Do You Have On Your Property? No wells; underground spring
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)? holding tank is 4ft deep
6. Diameter of Well(s)? 24in.
7. Type of Well/Groundwater Source (i.e., Bedrock Well – B; or Overburden/Sand-Gravel Well – O/SG)? underground spring
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)? do not know; approx 1960's
10. Depth to Water/Groundwater Within Well (or depth to water encountered during drilling of well)? 4ft.
11. Approximate Yield of Well(s) [i.e., referenced in gallons per minute (gpm)]? do not know; does feed house at adjoining property
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):

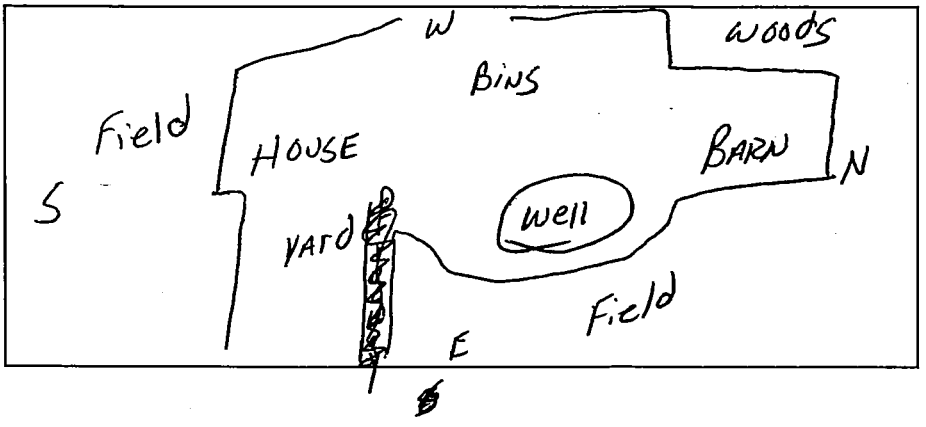


WELL SURVEY QUESTIONNAIRE

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. Name and Contact Info: Broermann Family, LLC c/o Mike Broermann Managing Member
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 / Potable Water
5. Approximate Depth of Well(s)? 88'
6. Diameter of Well(s)? ± 36"
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)? cement casing
9. Date of Installation of Well(s)? 1978
10. Depth to Water/Groundwater Within Well (or depth to water encountered during drilling of well)? 18'
11. Approximate Yield of Well(s) [i.e., referenced in gallons per minute (gpm)]? 15 gal min
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):



ATTACHMENT B

Photographs from May 15, 2018 Site Reconnaissance

PHOTO 1: View of the southern portion of the Project Area (facing northwest).

PHOTO 2: View of the south-central portion of the Project Area from South State Line Road (facing southest).

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Open Road Renewables
Proposed Angelina Solar Project

Site Photographs

Preble County, Ohio

Date:
MAY 2018

Project Number:
ORR007

File Name:
ORR007.300.0001.xslx

PHOTO 3: View of the northern portion of the Project Area from Paint Creek Four Mile Road (facing north).

PHOTO 4: View of the eastern portion of the Project Area from Fairhaven College Corner Road (facing southwest).

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Open Road Renewables
Proposed Angelina Solar Project

Site Photographs

Preble County, Ohio

Date: MAY 2018

Project Number: ORR007

File Name: ORR007.300.0001.xslx

ATTACHMENT C

General Earthwork Recommendations

ATTACHMENT C
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 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 soils containing organics.

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 (lean clayey soils) are recommended to contain moisture contents within 3 percent (above or below) the optimum moisture as determined by the moisture-density relationship (ASTM International D698), 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 heavyweight construction equipment during placement.

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 heavy equipment traffic. Therefore, improvements to the subgrade may be achieved by undercutting and replacing with suitable fill (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 with a steel drum roller having a minimum effective unit weight of 10 tons. 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 access roads and within the pad, 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 (°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 D

Generalized Geotechnical Exploration Work Plan

APPENDIX D

GENERALIZED GEOTECHNICAL EXPLORATION WORK PLAN

A geotechnical engineer 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. The geotechnical exploration program suggested below (e.g., boring frequency, location, depth, and sampling and testing procedures) should be adjusted by the geotechnical engineer based on their experience and to allow for specific geological, topographic, and drainage conditions of the individual site(s).

PROJECT DESCRIPTION

A geotechnical exploration will be performed at the proposed Project Area in Preble County, Ohio. The project involves planned construction of solar arrays at various locations (Sites) for the Angelina Solar Farm Project. 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 type that is typical to support the solar arrays is a helical pile supported foundation systems.

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 Project Area is underlain by glacial plain till deposits with shale and limestone bedrock depths ranging from 18 and 120 feet below existing ground surface in the Project Area.

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 located (e.g., survey or via a GPS) 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 the solar array locations. The borings will extend to the proposed depth or competent bedrock, whichever is encountered first.

For all borings, the following can be performed:

1. Split-barrel sampling of soil will be performed in accordance with ASTM International 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 cannot 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 should be classified in the laboratory based on the visual-manual examination (ASTM International 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 may 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 should 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 International 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.

Summary: Application Exhibit F electronically filed by Mr. Michael J. Settineri on behalf of Angelina Solar I, LLC