

**BEFORE
THE OHIO POWER SITING BOARD**

In the Matter of the Application of Oak Run Solar)
Project, LLC for a Certificate of Environmental)
Compatibility and Public Need to Construct a) Case No. 22-549-EL-BGN
Solar-Powered Electric Generation Facility in)
Madison County, Ohio.)

In the Matter of the Application of Oak Run Solar)
Project, LLC for a Certificate of Environmental) Case No. 22-550-EL-BTX
Compatibility and Public Need to Construct a)
Transmission Line in Madison County, Ohio.)

DIRECT TESTIMONY OF

**Andrew Pursifull
Agricultural Project Manager
The Mannik & Smith Group, Inc.**

**on behalf of
Oak Run Solar Project, LLC**

May 2, 2023

/s/ Christine M.T. Pirik

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Attorneys for Oak Run Solar Project, LLC

1 **1. Please state your name, current title, and business address.**

2 My name is Andrew Pursifull. I am an Agricultural Project Manager for The Mannik &
3 Smith Group, Inc. (“Mannik & Smith”). My business address is 6657 Frank Ave, NW
4 Suite 200, North Canton, OH.

6 **2. Please summarize your educational background and professional experience.**

7 I have a Bachelor of Science in Agricultural and Biological Engineering from Purdue
8 University. I currently serve as an Agricultural Project Manager with Mannik & Smith and
9 have since July of 2022. Prior to coming to Mannik & Smith I spent 4 years as an Area
10 Engineer and 10 years as a Conservation Delivery Team Engineer with the USDA-Natural
11 Resources Conservation Service (“NRCS”) (formerly known as the Soil Conservation
12 Service) in northeast Indiana. I have been a registered Professional Engineer in the state
13 of Indiana since 2014 and just became registered in Ohio and Michigan since joining
14 Mannik & Smith. While working for NRCS I was responsible for developing and
15 implementing plans to restore farm fields to their naturally drained state as part of the
16 Wetlands Reserve Program. As part of the program, farm fields were converted back to
17 wetlands. In order to accomplish this, all field tile (which are numerous in northeast
18 Indiana), had to be rendered inoperable or replaced to a state where there were no adverse
19 impacts on the wetland easement area. This often required tile investigations to determine
20 which tile could be abandoned, or needed replaced because they were servicing
21 neighboring properties. I have also assisted with designing and installing pattern drain tile
22 systems on two of my family’s farms. A copy of my resume is attached to my testimony
23 as Attachment AP-1.

25 **3. On whose behalf are you offering testimony?**

26 I am testifying on behalf of Oak Run Solar Project, LLC (“Applicant” or “Oak Run”),
27 which is seeking to develop the proposed Oak Run facility (“Project”) in Madison County,
28 Ohio.

30 **4. What is the purpose of your testimony?**

31 The purpose of my testimony is to summarize Oak Run’s commitment to determine the

1 location of drain tile in the Project area and avoid damage to subsurface drainage during
2 construction, operation, and maintenance of the Project, in support of Oak Run's
3 Application for a Certificate of Environmental Compatibility and Public Need
4 ("Certificate") filed with the Ohio Power Siting Board ("Board") by Oak Run in Case Nos.
5 22-549-EL-BGN and 22-550-EL-BTX on September 2, 2022, as supplemented on
6 November 21, 2022 and March 22, 2023, and as further supplemented by responses to data
7 requests that were received from the Board's Staff and filed in the docket ("Application").
8

9 My testimony, together with the other witnesses testifying for Oak Run in this case,
10 supports the Board's approval of Oak Run's Application for a Certificate to construct the
11 Project.
12

13 **5. Please describe the history of your involvement with the Oak Run Project?**

14 Mannik & Smith has been involved with the Oak Run Project for some time, however, my
15 department, the Agricultural Engineering section of Mannik & Smith, was recently tapped
16 to assist with the development of existing drainage tile maps. My first contact with the
17 client was March 22, 2023.
18

19 **6. Have you reviewed the Staff Report of Investigation filed in these dockets on March**
20 **28, 2023 ("Staff Report"), and the conditions found on pages 51-63 of that document**
21 **recommended by the Board's Staff?**

22 Yes, I have.
23

24 **7. Are you aware that Oak Run has committed to comply with, and for some conditions**
25 **enhance, the conditions recommended by the Board's Staff in the Staff Report?**

26 Yes.
27

28 **8. Please summarize the requirements set forth in Condition 22 of the Staff Report.**

29 Condition 22 requires Oak Run to "avoid where possible, or minimize to the extent
30 practicable, any damage to functioning field tile drainage systems resulting from the
31 construction, operation, and/or maintenance of the facility." To accomplish this, prior to

1 construction, Oak Run is to consult with local property owners adjacent to the Project area,
2 and government officials and records to document and map the existing conditions of
3 surface and subsurface drainage systems. The results of this analysis are then to be used
4 in the development of a field tile avoidance and repair plan to be filed by Oak Run in the
5 docket 30 days prior to the preconstruction conference. The plan is to be used during
6 construction, operation, and maintenance of the proposed Project. Oak Run is required to
7 maintain the conditions of the drainage to the best of their ability throughout the life of the
8 Project. In addition, the purpose of drain tile on agricultural farm ground is to maximize
9 productivity. Because the Applicant proposes to use Between the Rows techniques, it will
10 be in their best interests to maintain the drainage..

11
12 **9. Please describe the methods you use to determine the location of drainage systems,**
13 **including the location of laterals, mains, grassed waterways, and county-maintained**
14 **ditches.**

15 The first order of determining the location of existing field tile is to conduct an
16 investigation into what information is readily available. Modern tile installations are
17 conducted with equipment using GPS to establish grade and location. Contractors many
18 times will provide tile maps to landowners upon completion of tile installations so that tile
19 may be located easier in the future. Prior to GPS technology, most operators would take
20 measurements and hand draw maps of tile installations. The property owner is asked if
21 they can provide maps or GIS data of this nature for the Project area.

22
23 The next step would be for Mannik & Smith to review past project files (Mannik & Smith
24 has worked with many farms over the years) to determine if we have any information on
25 the Project area in our possession already. In addition, Mannik & Smith has many contacts
26 across the state of Ohio which may be able to provide useful information.

27
28 Many counties maintain GIS websites that display county maintained subsurface and
29 surface drainage that can be used to identify whether there are any within the Project area
30 and their approximate location. Mannik & Smith will also contact local officials, such as
31 the County Engineer and Soil and Water Conservation District, to inquire about any

1 information that may be available for the Project area.

2
3 If the landowner cannot provide any maps of tile recently installed and there are not maps
4 from projects completed by NRCS and/or the County Engineer, then the site will be
5 investigated by analyzing aerial photography. There are services online that have features
6 that allow the user to see the most up to date aerial imagery, as well as historical imagery.
7 It has been my experience that typically at some point in the historical imagery the
8 conditions were apt for visually locating some existing subsurface tile lines. The most up
9 to date imagery can also be used to identify any existing grassed waterways that may be in
10 the Project area.

11
12 The final step that could be used to locate existing field tile is on-site investigation. There
13 are a few options that may be exercised. If there are open drainage ditches located in the
14 Project area, they may be walked to find any drainage tile outlets. These would be “mains.”
15 The mains could potentially be traced back into the field by probing, if they are not more
16 than 3-4 feet deep in the ground. Another option would be to fly the site with a drone that
17 has a high resolution camera to produce the most up to date aerial photography. That
18 coupled with GPS surveying equipment can be used to create geo-referenced imagery. If
19 the conditions are right (recent rain, tilled soils, low residue) drainage tile can be located
20 to within a few feet using this method. The final option would be to incorporate all the
21 above applications with LiDAR data to determine where tile investigation trenches or
22 probing should occur during construction. Then physically walking any trenches to look
23 for tile and recording location with GPS rover and determine the course of action needed
24 based upon tile found at property lines. At this point in time, Oak Run has committed to
25 the steps that can be taken prior to construction via a contract with Mannik & Smith.

26
27 There may be additional newer technologies which can be used. These may include, but
28 are not limited to: Ground Penetrating Radar, Infrared imagery, other types of locating
29 services, etc.

1 **10. Based upon the commitments Oak Run has made through the Application, together**
2 **with the conditions in the Staff Report committed to by the Applicant, is it possible to**
3 **determine the nature of the probable impact of the facility on drainage in the area?**

4 Yes.

5
6 **11. Based upon the commitments Oak Run has made through the Application, together**
7 **with the conditions in the Staff Report committed to by the Applicant, does the facility**
8 **represent the minimum adverse impact on drainage in the area considering the state**
9 **of available technology and the nature and economics of the various alternatives, and**
10 **other pertinent considerations?**

11 Yes. The facility does represent the minimum adverse environmental impact.

12
13 **12. Are your opinions and conclusions in your testimony made with a reasonable degree**
14 **of professional engineering certainty?**

15 Yes, using engineering principles and experience, they are.

16
17 **13. Does this conclude your testimony?**

18 Yes. However, I reserve the right to update my testimony to respond to any further
19 testimony, reports, and/or evidence submitted in this case.

CERTIFICATE OF SERVICE

The Ohio Power Siting Board's e-filing system will electronically serve notice of the filing of this document on the parties referenced in the service list of the docket card who have electronically subscribed to these cases. In addition, the undersigned certifies that a copy of the foregoing document is also being served upon the persons below this 2nd day of May, 2023.

/s/ Christine M.T. Pirik

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Oak Run Solar Project, LLC
Case No. 22-549-EL-BGN
Case No. 22-550-EL-BTX

Attachment AP-1

Andrew Pursifull Resume

Andrew M. Pursifull PE

Agricultural Project Manager



Professional Background

Andrew has been a registered Professional Engineer in Indiana since 2014. He started his career with the USDA-Natural Resources Conservation Service (NRCS) as a field engineer. He spent his time working with farmers to design and certify construction of conservation practices that received funding through many USDA programs. Andrew was solely responsible for projects from initial planning all the way through to final approval of construction. The types of practices Andrew was responsible for designing and helping implement include, but are not limited to: Grassed Waterways, Wetland Restorations, Water and Sediment Control Basins (WASCoB), Animal Waste Storage Facilities, Drainage Water Management, Two-Stage Ditches, and more.

Andrew also served as an Area Engineer for NRCS working on many of the same types of projects, while also providing technical guidance to field engineers, helping to direct policy for engineering standards, practices, and program requirements.

Since coming to MSG, Andrew has served as a task manager and project manager for primarily animal waste management systems. This includes working in the newer and exciting field of Anaerobic Digesters. Andrew has also been the certifying engineer for many agricultural projects which require certification to receive permit approval to operate the agricultural facility.

As a bonus to his experience, Andrew also helps his father on his small cash crop grain farm. Andrew has helped to design the drainage system on two fields as well as physically install the systems which he helped design. In addition to drainage advice, Andrew is responsible for some equipment maintenance and operation on the farm.

Specializations

Agricultural Conservation BMPs

In his time as a field and area engineer with NRCS Andrew helped to plan, design, and manage QA/QC on construction of over 100 conservation projects. The most common practice implemented was grassed waterways. Grassed waterway designs include not only the design of the grassed waterway itself but also design of the drainage tile which was required along the side of the grassed waterway, culvert design for any crossings over the waterway, and inlet/outlet protection for the waterway or culverts. WASCoBs are another practice in which Andrew has extensive experience in designing and providing QA/QC over. These designs include flood routing analysis and drainage tile design.

Agricultural Waste Management Design

Federally funded programs offer cost-sharing for animal waste management system components. As part of the cost-sharing engineering services are provided for some components. While working for NRCS Andrew planned, designed, and oversaw construction of many animal waste storage facilities. The primary components Andrew was charged with designing included earthen ponds and concrete dry stacking facilities. By the time he left NRCS, Andrew was the agency's expert for earthen pond design in Indiana. Now with MSG, Andrew is managing projects that are integrating not only earthen ponds and dry stacking facilities, but also sand separation, pumps, and reception pits into animal waste management systems. Many of these in relation to incorporating anaerobic digesters on existing farms.



Specializations

Agricultural Conservation BMPs

Agricultural Waste Management System Design

Agricultural Drainage Design

Wetland Restoration Design

AutoCAD Civil3D

Trimble Survey Grade Equipment

Education

BS, Agricultural & Biological Engineering, Specializing in Environmental and Natural Resources, Purdue University, 2009

Certifications / Affiliations

Registered Professional Engineer in the States of Indiana (PE11400034), Ohio (PE 88285), Michigan (6201311636)

Member Hoosier Chapter Soil and Water Conservation Society

Years of Experience

With MSG	2022 - Present
USDA-NRCS	2009 - 2022

Agricultural Drainage Design

Within the suite of conservation practices available for cost-sharing are many specifically related to agricultural drainage. Andrew was responsible for the planning, design, and construction oversight of 4 two-stage ditches and for the planning and design of several more. Another practice in which Andrew completed plan review, design, and construction oversight of is Drainage Water Management. This practice involves retrofitting control structures to existing field drainage systems. This is another practice in which Andrew became NRCS Indiana's practice expert by the time he left the agency. Several other practices include drainage as a supporting role to the practice. These practices include Grassed Waterways, WASCoBs, Roof Runoff Management, Wetland Restoration, and others.

Wetland Restoration Design

As a field engineer and area engineer with NRCS Andrew had the opportunity to work on projects involved in the Wetland Reserve Easement program (WRE). These projects would take marginally productive farmland and restore them to wetland conditions. This design work included macro topography, water control structures, and drainage modifications. This also included working with clients to achieve the wildlife goals they wanted to pursue with the restoration of the land.

Experience

Agricultural Conservation BMPs

Conrad Grassed Waterway, Adams County, IN, Client: Leslie Conrad – Role: Project Engineer

Andrew was the project engineer for a grassed waterway project that stretched more than 8,000 feet in length. The project spread across multiple landowners, contained a county regulated drainage tile, and rock grade stabilization structure at the outlet. There were multiple road crossing culverts which had to be designed around as well.

Agricultural Waste Management System Design

Community Emergency Lagoon, Adams County, IN, Client: Girod Farms – Role: Project Engineer

Special funding was available in priority watersheds for unique projects that would address specific problems. Andrew served as a technical expert to help write the grant which was used to procure the grant. The project was a satellite manure storage lagoon that was to be utilized for emergency storage for local farms. In this particular county there are many small farmers who struggle to properly manage their manure. The Community Emergence Lagoon project was installed to help address the mis-management of manure by providing storage at all times of the year. Andrew not only helped to procure the grant, but also completed the design and oversaw construction of the facility which was regulated by IDEM.

Waste Storage Pond and Solids Settling Basin, Keystone, IN, Client: Sunshine Dairy – Role: Project Engineer

As part of IDEM regulations for CFOs in Indiana silage leachate and silage pad runoff must be captured and land applied at the appropriate rate and timing. To help Sunshine Dairy accomplish, Andrew was tasked with designing a

Waste storage pond to store the runoff from a 4 acre silage leachate pad. The design also included implementing a structure which would capture many of the solids that would be part of the runoff from the silage leachate pad. Andrew over saw the everything from the planning, the geotechnical investigation, engineering plans for permitting and construction as well as construction quality assurance. Andrew used his technical training and available resources to design a concrete basin and weir wall to capture the solids before the runoff was conveyed to a storage pond. This prevented the build up of solids in the storage pond which saved the farmer operating costs.

Andrew M. Pursifull PE

Agricultural Project Manager



Agricultural Drainage Design

2-Stage Drainage Ditch, Allen County, IN – Client: Jamie and Traci Bultimeyer – Role: Project Engineer

In order to improve water quality in the state's drainage ditches, NRCS would provide cost-sharing for the installation of 2-stage ditches. Engineering services were provided by NRCS for these projects as well. This project consisted of converting 1100' an existing drainage ditch to a 2-stage ditch. This section of ditch had over an 8 sq. mile drainage area. Andrew had to present the project to the Allen County Drainage Board to receive their approval and work with the County Surveyor to get buy-in on the project. Due to the nature of the project USFWS and IDEM were also consulted to ensure all regulatory items were met. Andrew's responsibilities were complete oversight of the project from initial planning to construction approval and as-built submittal for contract payment from NRCS. The project was very successful and has been a stop on multiple site tours for conferences and trainings and the client specifically requested Andrew for later projects.

Drainage Water Management, Adams County, IN – Client: Mike Werling – Role: Project Engineer

Mr. Werling was awarded a contract to implement Drainage Water Management on one of his farms. Andrew was requested by Mr. Werling to complete the design and implementation of the project due to past projects with Andrew. The challenge of this project was that there were multiple county regulated drains through the middle of the field which had to be incorporated to the design as county drains cannot have flow restricted. There was also a home which had basement and gutter drains that utilized the farms drainage system to convey their flow to the county drains. The system was designed to make all parties happy and installation was conducted during a field day at which Andrew presented to interested parties about the project.

Wetland Restoration Design

Aquatic Nuisance Species Control Berm, Allen County, IN – Client: Little River Wetland Project, Indiana Dept. of Natural Resources – Role: Design Engineer

The Asian Carp has been deemed a nuisance species that could potentially be catastrophic to the ecosystem of the Great Lakes. A site within Andrew's coverage area was identified as the second most likely area for the Asian Carp to enter the Great Lakes basin. Andrew worked with the project engineer to develop the design for a 9,000' long berm that was used to permanently separate watersheds and prevent them from mixing during flood events. The design also included dealing with the drainage of the water behind the berms, working with multiple federal, state, and local agencies. Andrew was responsible for the surveying and surface modeling in CAD. The model was then used for construction by equipment with GPS technology installed. Andrew also helped with the design of overflow channels that utilized new erosion control technologies. The site was located on an existing wetland under easement with USDA-NRCS. This entailed incorporating the wetland into the design and maintaining or improving the function of the wetlands

Loblolly & Limberlost Wetland restoration, Adams County, IN – Client: Indiana Dept. of Natural Resources – Role Project Engineer

Andrew has spent many years working with different directors of preservation at the Loblolly and Limberlost wetland sites. While both sites had been restored when Andrew began with NRCS, over his time there many projects were completed on these sites. This includes a spillway repair where a 300' emergency spillway had to be constructed where Andrew oversaw construction of the project. After several years, beavers damaged the spillway and Andrew was responsible for designing an armored portion of the spillway. Andrew also was the project engineer for another spillway project where he worked with the site manager to incorporate a new vegetation establishment method. There were also many projects involving locating and removing existing tile on these two wetland projects. Andrew was responsible for helping to locate the tile and determining whether they could be abandoned or needed replaced due to draining neighboring properties.

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Summary: Testimony - Direct Testimony of Andrew Pursifull electronically filed by
Christine M.T. Pirik on behalf of Oak Run Solar Project, LLC.