

## **Geotechnical Investigation Scope of Study**

The geotechnical investigation will consist of three main tasks, which are described below.

### **Task 1: Geology, Seismology, and Soil Desktop Study**

The scope of study for Task 1 will include a visit to the Facility Site, the collection of readily available public data, and the completion of a preliminary geotechnical assessment regarding the feasibility of the proposed Facility. Task 1 will focus on collecting available public records, reports, and other data, and will be considered a preliminary screening level assessment.

Data on bedrock types, geologic hazards, seismic requirements, and groundwater will be collected for the Facility. Some of the sources that will be used to acquire this information include the following:

- Surficial Geologic Map of New York – Finger Lakes Sheet
- Geologic (Bedrock) Map of New York – Finger Lakes Sheet
- Soil Survey of Steuben County
- Deep Wells in New York State
- Geology of Steuben County, New York
- Tectonic Units and Preliminary Brittle Structures of New York
- Aquifers of New York State
- Geology of New York – A Simplified Account, and the
- New York State Building Code.

The Site visit will be conducted to gain an understanding of the general Facility location, as well as to locate and stake proposed locations to be assessed as a part of a limited geotechnical exploration drilling program as detailed in Task 2.

### **Task 2: Limited Subsurface Explorations**

In order to collect data that is representative of the Facility Site, multiple test borings will be drilled through overburden soils into bedrock (if encountered) or to a maximum depth of 40 feet below ground surface (bgs). Test borings will be completed at select proposed wind turbine locations selected based on accessibility, location, and distribution. At each test boring location, overburden soils shall be sampled continuously to a depth of 12 feet. Should overburden thicknesses exceed 12 feet, soil samples will be collected at 5-foot intervals thereafter to a depth of 40 feet below ground surface (bgs) or auger refusal, whichever is encountered first. Sampler/auger refusal will be considered as apparent top-of-bedrock. Should auger refusal be encountered at depths less than 30 feet bgs, a 10-foot rock core

sample (using an NQ sized rock core) will be obtained from each location to determine rock quality and the general condition of the uppermost bedrock unit. Groundwater measurements will be attempted from within the augers prior to backfilling. Soil borings will be backfilled with soil spoil upon completion of drilling.

Soil and/or rock samples collected from the test borings will be retained for classification. Selected samples will be tested for engineering index properties (moisture content, grain size distribution and Atterberg limits). Upon request, additional bulk soil samples from representative test boring locations can be collected should other soil laboratory tests be considered (i.e., thermal resistivity, moisture-density, corrosivity, resistivity, etc.).

### **Task 3: Report**

A preliminary geotechnical assessment report will be prepared to include the data collected during the limited subsurface investigation and from information obtained as part of Task 1. Recommendations related to geotechnical/foundation concerns for the wind tower locations, access roads and crane haul path/pick points will be provided. The report will include the preliminary soil/bedrock data encountered during the limited subsurface investigation and the findings from Task 1 to address the requirements of Article 10 Exhibits 21 and section (a)(1) through (a)(3) for Exhibit 23. If conditions encountered during the subsurface investigation indicate overburden soils are highly variable, conceptual recommendations for additional subsurface explorations and soil/bedrock testing will be provided. Recommendations for geotechnical work that would be appropriate for final design and construction documents will also be provided. A generalized geologic cross-section will be included that indicates assumed index properties for the overburden soils and bedrock. An estimated preliminary bearing capacity and foundation type will be provided for the completed soil boring locations. In addition, typical foundation recommendations such as shallow or deep foundation type, general size and depth, subgrade preparation (e.g., cut/fill, erosion control, etc.) and on-site soil re-use will be addressed.