CHEMUNG COUNTY STORMWATER COALITION

851 Chemung Street
Horseheads, New York 14845

September 2, 2022

Mr. Greg Larnard, Code Enforcement Officer
Town of Horseheads Code Enforcement Department
150 Wygant Road
Horseheads, New York 14845

**Re: Breesport Solar Project**
**625 Breesport Road, Horseheads, New York**
**Review of Stormwater Management Plan**

Mr. Larnard:

I have completed a review of the following submitted information for the above-referenced project regarding the Stormwater Pollution Prevention Plan (SWPPP) and stormwater management system design for that project. This information was provided in response to the Chemung County Stormwater Coalition's June 21, 2022 SWPPP review letter.

- Response letter to the Chemung County Stormwater Coalition's June 21, 2022 SWPPP review letter, Prepared by Bergmann Engineers, Dated August 18, 2022, Received on August 23, 2022
- Stormwater Pollution Prevention Plan for Breesport Community Solar, LLC, Not stamped by a NYS Licensed Professional Engineer, Prepared by Bergmann Engineers, Revision dated August 5, 2022, Received on August 23, 2022
- Site Development Plans for Breesport Solar Project, Stamped "Preliminary, Not for Construction", Not stamped by a NYS Licensed Professional Engineer, Prepared by Bergmann Engineers, Revision dated August 5, 2022, Received on August 23, 2022
- Catalyze Breesport Road Microgrid, LLC Maintenance Plan, Received on August 23, 2022

My review comments and questions regarding the SWPPP and site development plans for the above-referenced project, based upon the submitted information, are as follows.

**GENERAL**

1. A refined grading plan (with proposed elevation information) for the Hammer Head/Proposed Office Trailer/Proposed Temporary Parking Area/Proposed Temporary Storage Container and Dumpster Area/Proposed Inverter Concrete Pad Area is requested. As per the August 18, 2022 response letter, it is indicated that it is the design intent to have runoff from this area to flow north and away from Breesport Road.

2. Is all of the topographic mapping for the project site in the submitted plans derived from the March 14, 2022 ground survey performed by Bergmann?

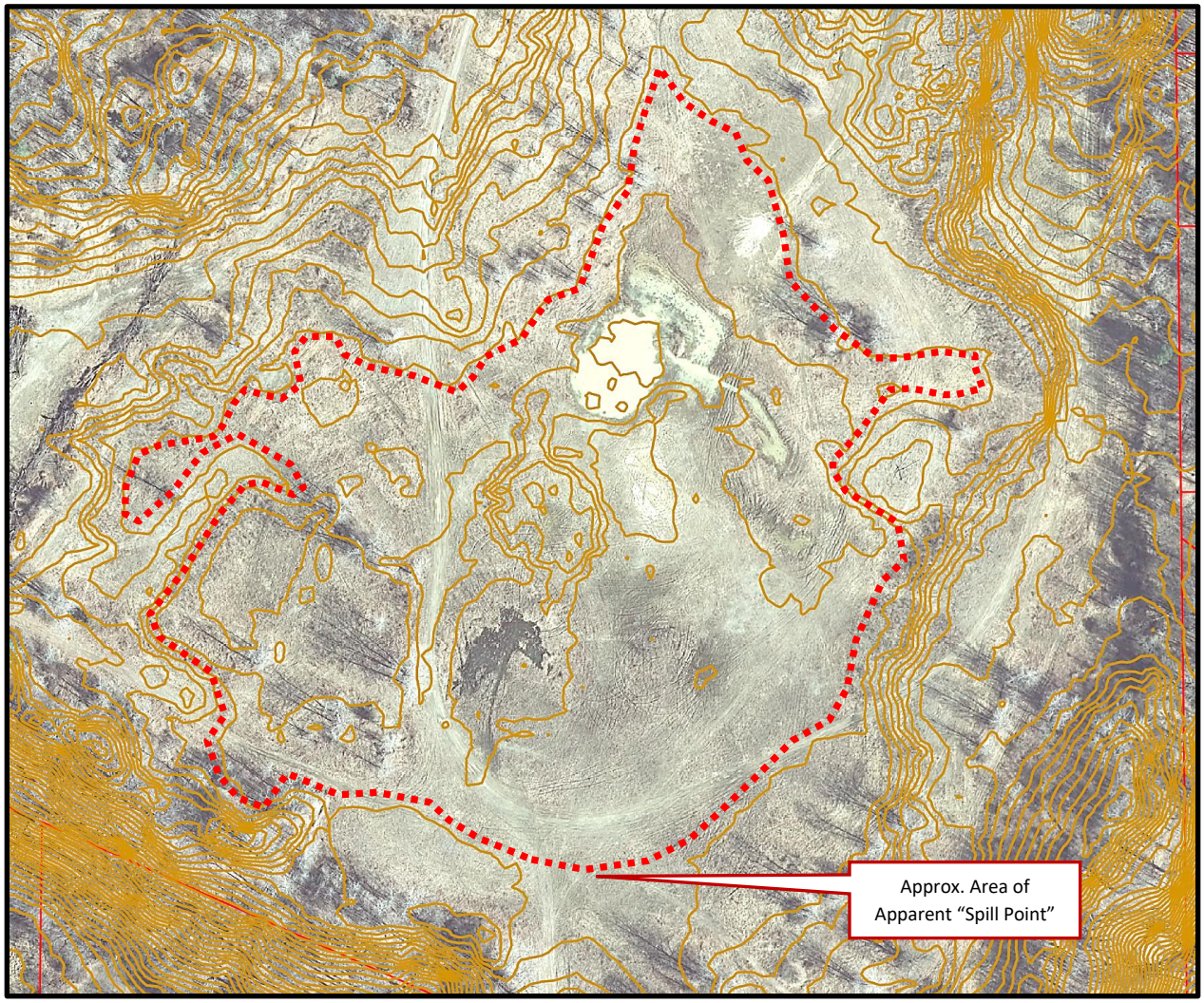
3. Based upon submitted topographic mapping, the area in and around the existing topographic depressions appears to be capable of providing a significant volume for the storage and infiltration of stormwater runoff. The associated limits of storage are shown with a dashed red line on the topographic map below and is based on apparent "spill point" noted below. The following items could result in a reduction of this available storage.

- As noted in the August 18, 2022 response letter from the Applicant's engineer, "*Topsoil will be imported onto the site as necessary per stabilization and restoration requirements. Existing gravel areas will receive soil decompaction/restoration*". As such, the addition of topsoil and compost would act to reduce the storage volume, unless a compensatory volume of soil is removed.
- Proposed grading could result in the elevation of the "spill point" to be lowered, resulting in a reduction of the available storage.

With a goal of not reducing the available storage volume, the following items are requested.

a) All proposed grading shall be shown on the grading plan, including in the area in and around the existing depressions. The proposed "spill point" elevation should be noted on the grading plan.

b) The plans and supporting calculations shall be provided that demonstrate that a reduction in the available storage volume will not result, as well as details of any compensatory improvements.



4. The NYSDEC has established criteria for a Solar Panel Construction project to be considered to be a "*Land clearing and grading for the purposes of creating vegetated open space (i.e. recreational parks, lawns, meadows, fields)*" type project. These criteria are outlined in NYSDEC's April 5, 2018 memorandum and is included in Appendix G-1 of the SWPPP.

   The following questions pertain to the following criterion, as these apply to this project. It is requested that information be included in the SWPPP and plans that documents how the proposed project will comply with each of these criteria.

   Criterion #1: *The panels are spaced apart so that rain water can flow off the down gradient side of the panel and continue as sheet flow across the ground surface?*

   - Will the vegetated area receiving runoff from the panels be equal to or greater in length than the disconnected panel width? What is the proposed "Disconnection Length" between panels? An appropriate detail should be included in the plans.

   Criterion #2: *For solar panels constructed on slopes, the individual rows of solar panels are generally installed along the contour so rainwater sheet flows down the slope.*

   On Sheet C120, the proposed solar panel arrays are shown in relation to the existing elevation contours within the project property.

   - A significant percentage of the slopes on the project property are greater than 10 percent. Furthermore, slopes of over 20% exist on the project site.
   - It appears that in a number of areas of the site, the panels would be oriented (in relation to the land contour) that runoff from the panels would not result in sheet flow down the slope, but rather be concentrated flow). This coupled with steep slopes could result in erosion.

   - What measures are proposed to be implemented to ensure that sheet flow conditions are maintained? These measures should be detailed on the plans and the SWPPP.

   Of note, as per the April 5, 2018 NYSDEC memo regarding Solar Panel Construction Stormwater Permitting, "*Installations on slopes greater than 10% will require an engineered plan that ensures adequate treatment and the safe and non-erosive conveyance of runoff to the property line or downstream stormwater management practice*".

**EROSION & SEDIMENT CONTROL**

1. In regards to the Phasing Plan on Sheet C130, the following items are noted.

   a) For each phase, the proposed individual erosion and sediment control measures should be shown. The measures should consider such items as woods being removed and preventing sediment from leaving the phased area.

      Will perimeter controls (such as silt fence and/or filter sock) or other erosion control measures be installed along the downhill limits of a section of disturbed land? Will rows of compost silt sock or silt fence be required for some of the phased areas? Justification for the proposed sizing and spacing of compost filter sock and silt fence should be provided.

   b) For each phase, a detailed Sequence of Construction should be noted on the plans and/or SWPPP.

   c) The approximate locations of soil stockpiles for each phase should be noted.

2. A portion of the proposed solar arrays is proposed to be constructed on slopes over 20% and up to 60% (+/-). It is expected that significant challenges would exist with construction on these steep slopes, as well as issues with erosion/sediment control and stormwater management. Is the establishment of a maximum land slope above which construction would not be pursued in order for this site? What measures are proposed for these steep slopes?

3. As per the submitted SWPPP and NOI, it is the intent of the Erosion & Sediment Control Plan that no more than 5 acres of land will be disturbed at any one time. With that said, a number of the proposed eight (8) phases have areas of 4.95 acres (or larger). During construction, it may be difficult not to exceed 5 acres for a phased area that is just below 5 acres. The following items should be considered.

   - Will a surveyor stake out the boundaries of each phase?
   - Are soil stockpiles for a phased area to be situated on that phase? If not, the area of these would need to be considered.
   - Will portions of adjacent phases need to be disturbed (such as for temporary access drives)?
   - Would the area of the disturbance associated with off-site staging and disposal areas be considered as part of the land disturbance?

4. In regards to the Stockpile Detail on Sheet C502, it is shown that silt fence is proposed to be placed around the proposed stockpiles. Details and specifications for the silt fence should be included in the plans and SWPPP.

5. On Sheet C130, the use of straw wattles is proposed during the installation of the panels. Details regarding straw wattles should be included in the plans and SWPPP.

6. As per aerial photos from April 2021, it appears that portions of Stream 1 (ephemeral) are significantly eroded. Also, other channels on the project site appear to be actively eroding. What measures are proposed to stabilize existing channels on the project site?

**SOIL RESTORATION & DECOMPACTION**

1. It is requested that NYSDEC's Deep Ripping and Decompaction (April 2008) document be included in the SWPPP and referenced in the Plans.

2. The Soil Restoration Requirements in the bottom right corner of Sheet C504 appear to be mis-labeled as "Site Stabilization Seed Mix".

3. In regards to the Soil Restoration Detail on Sheet C502, what type of soil disturbances (as noted in the Table on Sheet C504) pertains to this detail? As per the "Soil Restoration Requirements" table on Sheet C504, the use of 6 inches of topsoil (as opposed to 4 inches) is noted for certain types of soil disturbance and HSGs.

4. In the list of notes in the bottom left corner of Sheet C504, the word "should" is used in many of these notes. It is requested that the word "shall" be used in lieu of "should".

5. As per the Construction Sequence provided in the SWPPP, it is indicated that the subgrade soils below the proposed limited-use pervious gravel driveway shall be decompacted in accordance with NYSDEC standards. On the other hand, it is noted in Note #9 of the General Notes on Sheet C501 indicates that soil restoration may be applicable and its need apparently dependent upon a comparison of penetrometer readings from pre- and post-construction. What is proposed for this? This would impact the performance of the proposed limited-use pervious gravel driveway.

6. Soil restoration and decompaction activities for the project, in addition to those required for the existing entrance drive, should be noted in the Sequence of Construction.

7. Will the proposed electric conduits (including the associated buried caution tape) be deep enough to avoid impacts from the soil decompaction process?

8. It is requested that the use of biosolids compost be excluded as an alternative for soil restoration.

**OPERATION & MAINTENANCE AGREEMENT**

1. In regards to the submitted "Catalyze Breesport Road Microgrid, LLC Maintenance Plan", it appears that this document is a template that may not be specific to the proposed project. In this document, phrases such as "are strongly recommended", "should be", "sample service checklist", and "authors suggest" are utilized.

2. In the submitted Maintenance Plan, it is noted that "*Most module manufacturers have specific guidelines about how to clean modules, such as not using high pressure water, not using harmful chemicals, and even not using cold water when the module glass temperature is hot or using hot water to clean cold modules*". What are the specific procedures for cleaning the proposed modules? Are chemicals proposed for the cleaning of the modules?

3. In regards to long-term stormwater management and erosion & sediment control considerations, the following items are requested to be included in a detailed, project-specific Operation & Maintenance Plan.

    a) Maintenance of Vegetation & Correction of Areas of Soil Erosion

    b) Maintenance of the Pervious Gravel Access Driveway

    c) Maintenance of Level Spreaders (and other stormwater management controls)

    d) Washing of Modules

    e) Management of Chemicals & Debris (including broken modules)

4. Refer to Comments #1 and #2 under the Operation & Maintenance section of our June 21, 2022 SWPPP review letter for this project, regarding requirements for Operation & Maintenance plans and agreements.

**ENTRANCE DRIVES**

1. In regards to Sheet C505, the following questions and comments are provided.

    a) The dimensions should be noted on the Commercial Drive Radius Layout detail should be noted.

    b) The extents of the proposed Heavy Duty Asphalt Pavement Section should be indicated on the plans.

    c) Some of the notes for the Heavy Duty Asphalt Pavement Section are difficult to discern.

    d) Was the area of this Heavy Duty Asphalt Pavement considered in the hydrologic analysis? What post-construction stormwater management measures are proposed for this area?

2. What is the status of the driveway access permit with the NYSDOT? Has NYSDOT provided any technical input that would result in changes to the plans. For example, NYSDOT often requires a sag in the vertical alignment of the drive profile before the highway right-of-way.

3. As per the Existing Conditions Plan (Sheet X100), an existing 18-inch diameter culvert is noted. Is the existing culvert or a new culvert proposed to be used?

**CHEMICAL USE & POTENTIAL POLLUTANTS**

1. Are chemicals proposed for the cleaning of the modules? If so, what chemicals are proposed to be used and do these present a pollution issue? Will the modules introduce other pollutants to the environment?

2. Are herbicides and/or pesticides proposed to be utilized for this project?

3. What other chemicals are proposed to be utilized for this project?

Will these chemicals present a risk to the environment, as well as to groundwater supplies. In addition to individual groundwater supplies, the Village of Horseheads' groundwater supply wells are located along Newtown Creek down-gradient of the project site.

**MISCELLANEOUS**

1. This review pertains to stormwater management. The Applicant is responsible to obtaining all necessary approvals, including those from the Town of Horseheads and the New York State Department of Transportation.

2. Was permitting required for construction in the existing wetland within the project site? If so, please provide a copy of the associated permit to the Town of Horseheads and the Chemung County Stormwater Coalition.

3. No information was included in Appendix B of the submitted SWPPP.

4. In regards to the Notice of Intent (NOI) that was provided in the SWPPP, the following items are noted.

    a) In regards to the Pre-Developed Land Use (under Project Details), woods should be included. Also, pasture is noted. Is there pasture on the project property?

    b) In regards to #43 under MS4 SWPPP Acceptance, the project site is subject to the requirements of a regulated, traditional land use control MS4 (the Town of Horseheads).

If you have any questions regarding these comments, please do not hesitate to contact us. Furthermore, I would be happy to meet to discuss this project.

Sincerely,

Jimmie Joe Carl, P.E.

Cc: Bergmann Engineers